

DrayTek

Vigor2850 Series

VDSL2 Security Firewall



Your reliable networking solutions partner

User's Guide

V2.0

Vigor2850 Series VDSL2 Security Firewall User's Guide

Version: 2.0

Firmware Version: V3.6.2_RC1

Date: 12/03/2012

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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.

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

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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.

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European Community Declarations

Manufacturer: DrayTek Corp.
Address: No. 26, Fu Shing Road, Hukou Township, Hsinchu Industrial Park, Hsinchu County, Taiwan 303
Product: Vigor2850 Series Router

DrayTek Corp. declares that Vigor2850 Series of routers are in compliance with the following essential requirements and other relevant provisions of R&TTE Directive 1999/5/EEC.

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.

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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.

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



This product is designed for the DSL, ISDN, POTS, 2.4GHz/5GHz WLAN network throughout the EC region and Switzerland with restrictions in France. Please see the user manual for the applicable networks on your product.

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Preface

Vigor2850 series is a VDSL2 router. It 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 32 VPN tunnels.


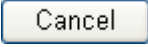
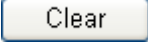
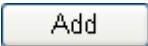


The object-based design used in SPI (Stateful Packet Inspection) firewall allows users to set firewall policy with ease. CSM (Content Security Management) provides users control and management in IM (Instant Messenger) and P2P (Peer to Peer) more efficiency than before. By the way, DoS/DDoS prevention 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, Vigor2850 series supports USB interface for connecting USB printer to share printing function or 3G USB modem for network connection.

Vigor2850 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:

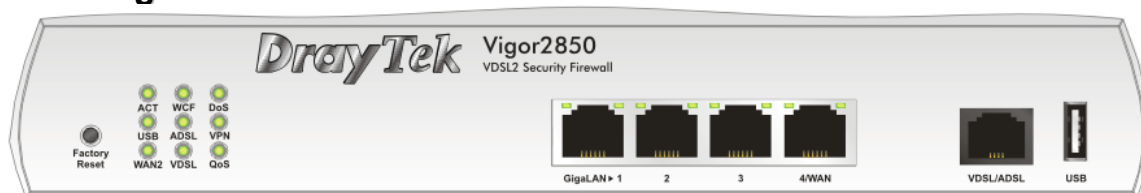
	Save and apply current settings.
	Cancel current settings and recover to the previous saved settings.
	Clear all the selections and parameters settings, including selection from drop-down list. All the values must be reset with factory default settings.
	Add new settings for specified item.
	Edit the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

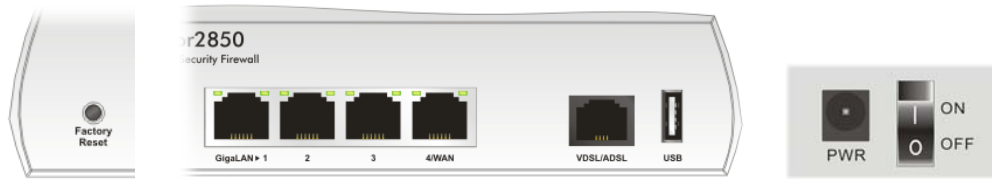
1.2.1 For Vigor2850



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	USB device is connected and ready for use.
	Blinking	The data is transmitting.
WAN2	On	Internet connection is ready.
	Off	Internet connection is not ready.
	Blinking	The data is transmitting.
WCF	On	The Web Content Filter is active. (It is enabled from Firewall >> General Setup).
ADSL	On	The router is ready to access Internet through ADSL link.
	Blinking	Slowly: The ADSL connection is ready. Quickly: The connection is training.
VDSL	On	The router is ready to access Internet through VDSL link.
	Blinking	Slowly: The VDSL connection is ready. Quickly: The connection is training.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while an attack is detected.
VPN	On	The VPN tunnel is active.
QoS	On	The QoS function is active.

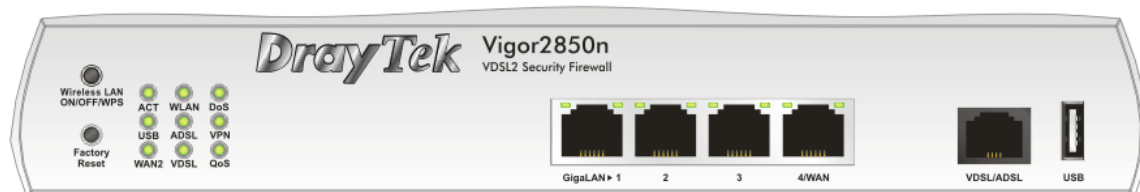
LED on Connector

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



Interface	Description
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
GigaLAN (1-3)	Connecters for local network devices.
4/WAN	Connector for local network devices or remote network devices.
VDSL/ADSL	Connector for accessing the Internet.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.2.2 For Vigor2850n



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	USB device is connected and ready for use.
	Blinking	The data is transmitting.
WAN2	On	Internet connection is ready.
	Off	Internet connection is not ready.
	Blinking	The data is transmitting.
WLAN	On	Wireless access point is ready.
	Blinking	It will blink slowly while wireless traffic goes through. If ACT and WLAN LEDs blink quickly and simultaneously when WPS is working, and it will return to normal condition after two minutes. (You need to setup WPS within 2 minutes.)
ADSL	On	The router is ready to access Internet through ADSL link.
	Blinking	Slowly: The ADSL connection is ready. Quickly: The connection is training.
VDSL	On	The router is ready to access Internet through VDSL link.
	Blinking	Slowly: The VDSL connection is ready. Quickly: The connection is training.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while an attack is detected.
VPN	On	The VPN tunnel is active.
QoS	On	The QoS function is active.

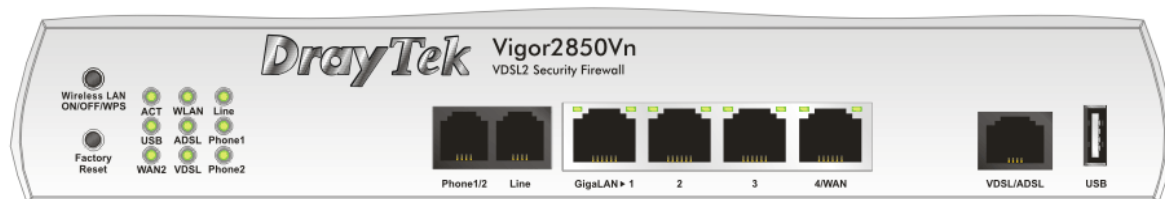
LED on Connector

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



Interface	Description
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.
GigaLAN (1-3)	Connecters for local network devices.
4/WAN	Connector for local network devices or remote network devices.
VDSL/ADSL	Connector for accessing the Internet.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

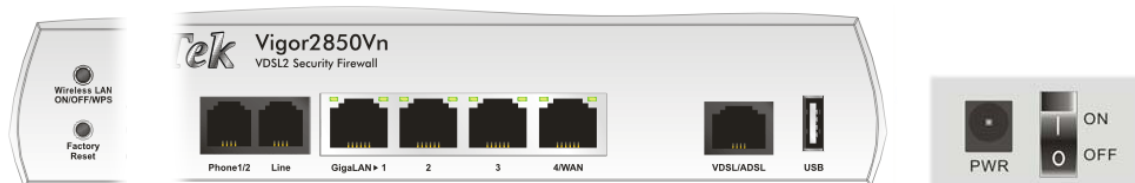
1.2.3 For Vigor2850Vn



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	USB device is connected and ready for use.
	Blinking	The data is transmitting.
WAN2	On	Internet connection is ready.
	Off	Internet connection is not ready.
	Blinking	The data is transmitting.
WLAN	On	Wireless access point is ready.
	Blinking	It will blink slowly while wireless traffic goes through. If ACT and WLAN LEDs blink quickly and simultaneously when WPS is working, and it will return to normal condition after two minutes. (You need to setup WPS within 2 minutes.)
ADSL	On	The router is ready to access Internet through ADSL link.
	Blinking	Slowly: The ADSL connection is ready. Quickly: The connection is training.
VDSL	On	The router is ready to access Internet through VDSL link.
	Blinking	Slowly: The VDSL connection is ready. Quickly: The connection is training.
Line	On	A PSTN phone call comes (in and out). However, when the phone call is disconnected, the LED will be off.
	Off	There is no PSTN phone call.
Phone 1/2	On	The phone connected to this port is off-hook.
	Off	The phone connected to this port is on-hook.
	Blinking	A phone call comes.

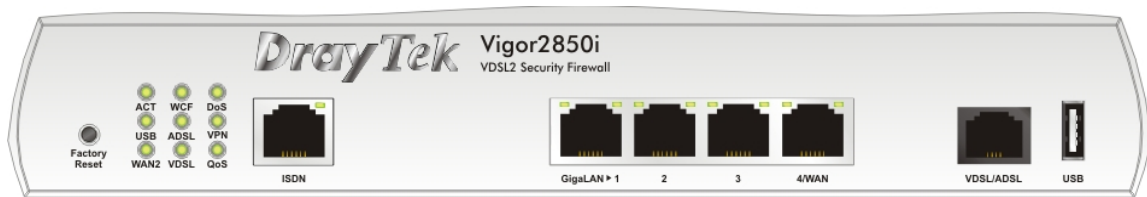
LED on Connector

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



Interface	Description
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.
Phone 1/2	Connector for analog phone(s).
Line	Connector for PSTN life line.
GigaLAN (1-3)	Connectors for local network devices.
4/WAN	Connector for local network devices or remote network devices.
VDSL/ADSL	Connector for accessing the Internet.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

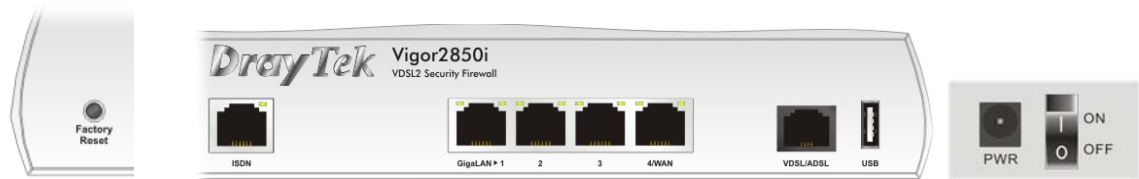
1.2.4 For Vigor2850i



LED	Status	Explanation
ACT (Activity)	Blinking	The router is powered on and running normally.
	Off	The router is powered off.
USB	On	USB device is connected and ready for use.
	Blinking	The data is transmitting.
WAN2	On	Internet connection is ready.
	Off	Internet connection is not ready.
	Blinking	The data is transmitting.
WCF	On	The Web Content Filter is active. (It is enabled from Firewall >> General Setup).
	Off	The Web Content Filter is disabled.
ADSL	On	The router is ready to access Internet through ADSL link.
	Blinking	Slowly: The ADSL connection is ready. Quickly: The connection is training.
VDSL	On	The router is ready to access Internet through VDSL link.
	Blinking	Slowly: The VDSL connection is ready. Quickly: The connection is training.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while detecting an attack.
VPN	On	The VPN tunnel is active.
QoS	On	The QoS function is active.

LED on Connector

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

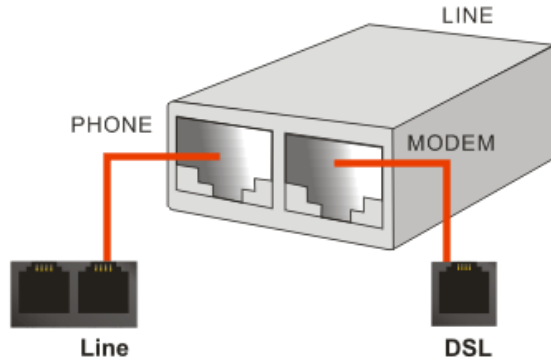


Interface	Description
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
ISDN	Connector for ISDN line.
GigaLAN (1-3)	Connectors for local network devices.
4/WAN	Connector for local network devices or modem for accessing Internet.
VDSL/ADSL	Connector for accessing the Internet.
USB	Connector for a USB device (for 3G USB Modem or printer).
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.3 Hardware Installation

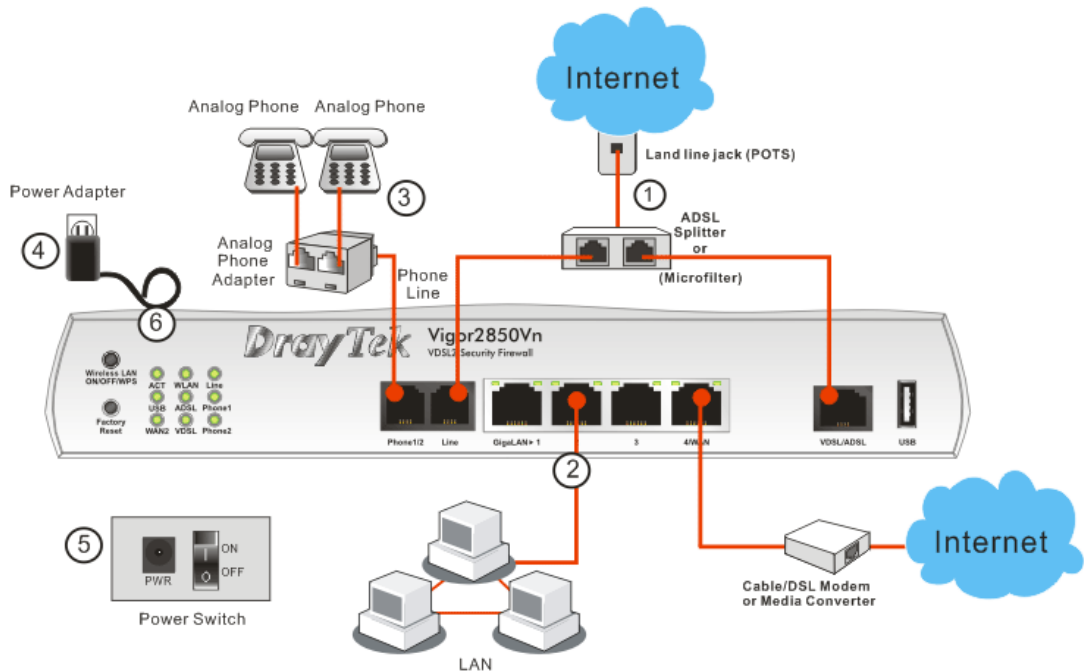
Before starting to configure the router, you have to connect your devices correctly.

1. Connect the XDSL interface to the external XDSL splitter with an XDSL line cable for all models. For Vigor2850Vn, also connect Line interface to external XDSL splitter.



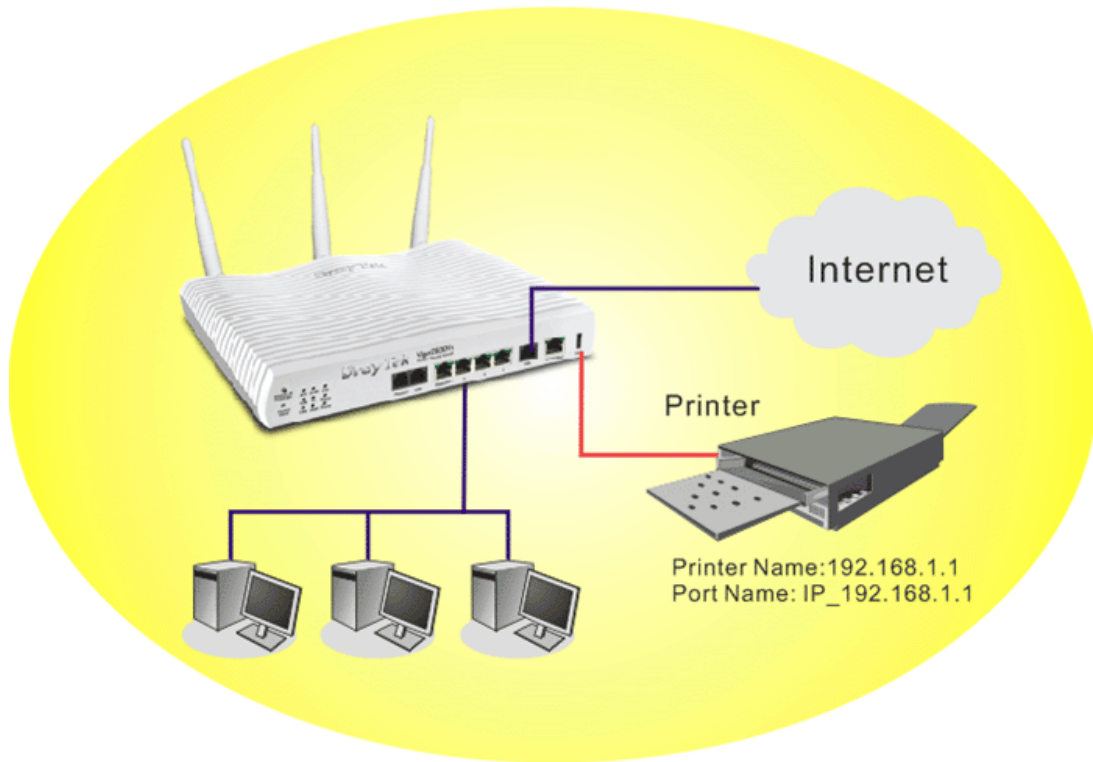
2. Connect one end of an Ethernet cable (RJ-45) to one of the **LAN** ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer.
3. Connect the telephone set with phone lines (for using VoIP function). For the model without phone ports, skip this step.
4. Connect one end of the power adapter to the router's power port on the rear panel, and the other side into a wall outlet.
5. Power on the device by pressing down the power switch on the rear panel.
6. 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 "Vn" model as an example.)



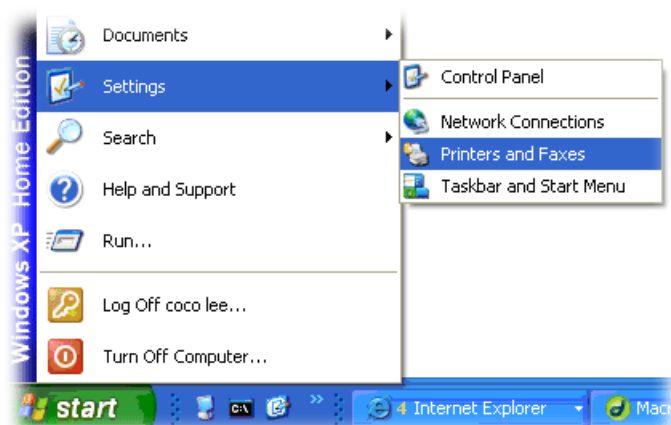
1.4 Printer Installation

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.

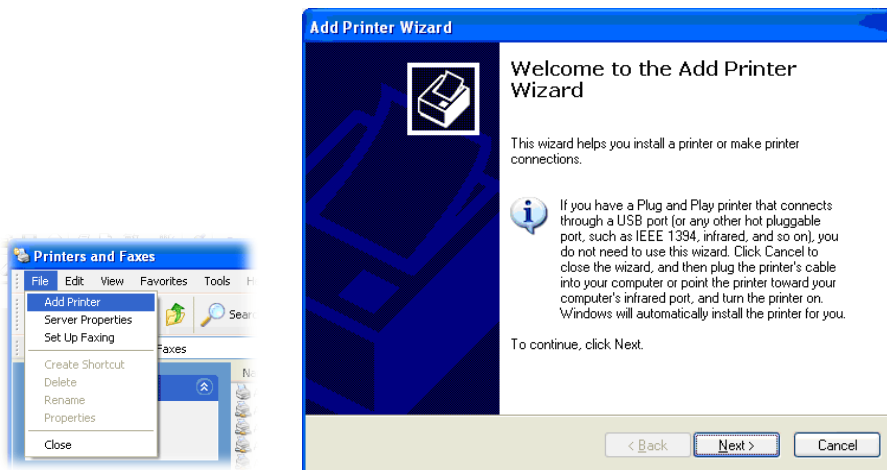


Before using it, please follow the steps below to configure settings for connected computers (or wireless clients).

1. Connect the printer with the router through USB/parallel port.
2. Open **Start->Settings-> Printer and Faxes**.



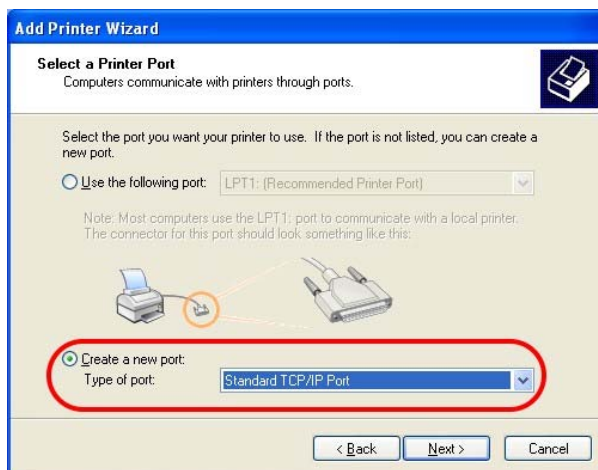
3. Open **File->Add Printer**. A welcome dialog will appear. Please click **Next**.



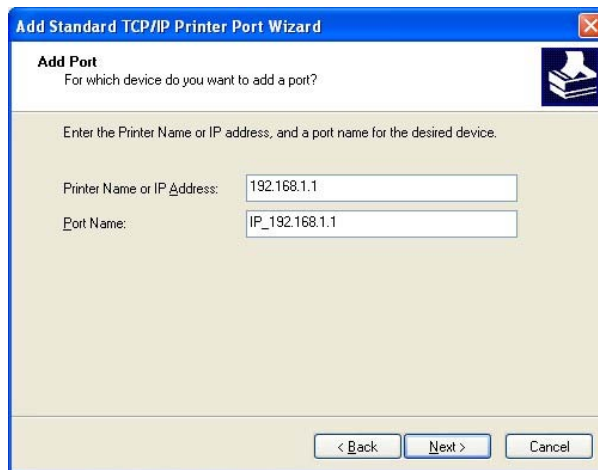
4. Click Local printer attached to this computer and click Next.



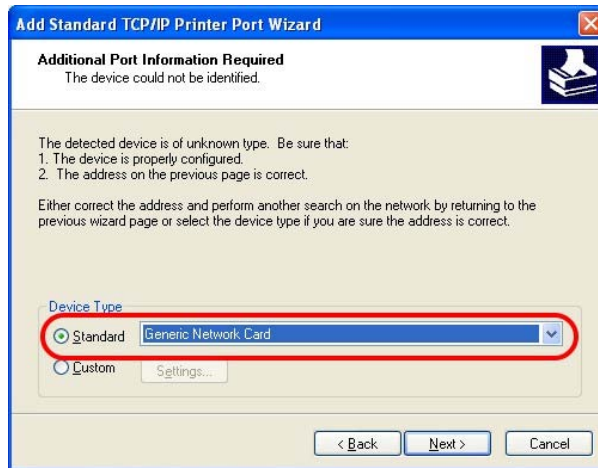
5. In this dialog, choose **Create a new port Type of port** and use the drop down list to select **Standard TCP/IP Port**. Click Next.



6. In the following dialog, type **192.168.1.1** (router's LAN IP) in the field of **Printer Name or IP Address** and type **IP_192.168.1.1** as the port name. Then, click **Next**.



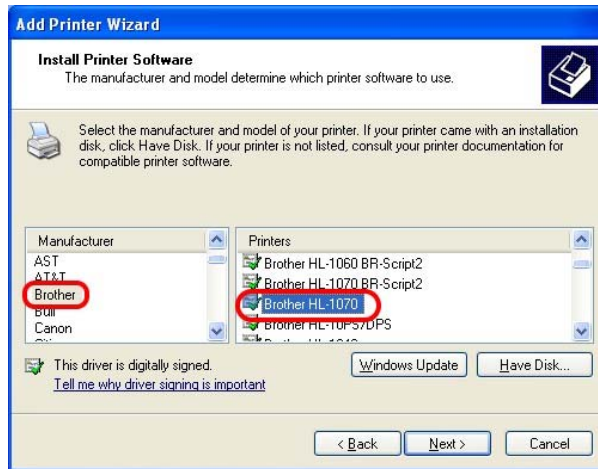
7. Click **Standard** and choose **Generic Network Card**.



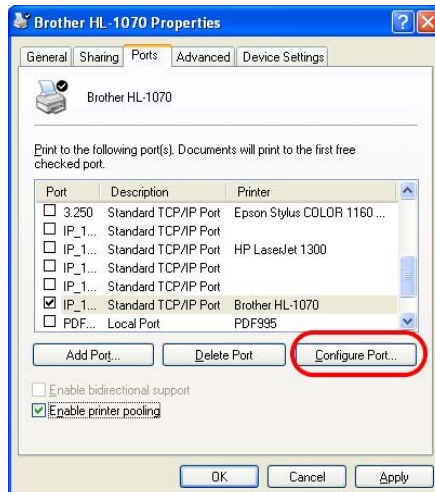
8. Then, in the following dialog, click **Finish**.



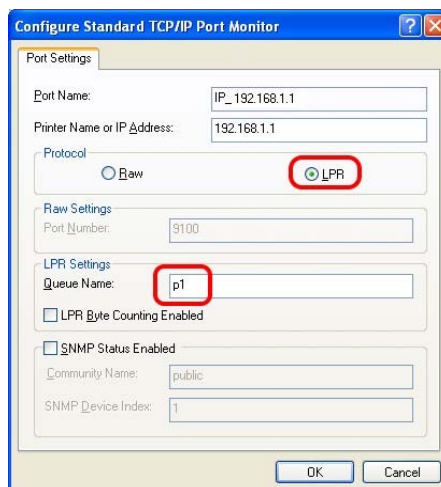
9. Now, your system will ask you to choose right name of the printer that you installed onto the router. Such step can make correct driver loaded onto your PC. When you finish the selection, click **Next**.



10. For the final stage, you need to go back to **Control Panel-> Printers** and edit the property of the new printer you have added.



11. 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**; find out the link of **Printer Server** and click it.

About DrayTek Products Support Education Partners Contact Us		
Home > Support > Latest FAQ		
Basic	FAQ - Latest FAQ	
Advanced	01. Best Solution for VDSL	2011/09/13
NAT	02. What types of 3.5G modem are compatible with Vigor router ?	2011/08/30
VPN	03. What types of printers are compatible with Vigor router?	2011/08/08
DHCP	04. How to Configure Dynamic DNS Service on Vigor 2130	2011/07/25
Wireless	05. What types of printers are compatible with Vigor router?	2011/07/19
VoIP	06. What types of 3.5G cellphone are compatible with Vigor router ?	2011/06/29
QoS	07. How to open UDP 5060 port to the internal SIP server behind Vigor VoIP routers ?	2011/06/28
ISDN	08. How to Recovery Password on VigorSwitch G2240	2011/06/01
IP PBX	09. How to monitor VPN status via Syslog Utility	2011/03/15
Firewall / IP Filter	10. How to add a new printer in Windows7	2011/03/03
Printer Server	11. How to force all traffics going through WAN2 when both WANs on Vigor are active	2011/01/04

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

FAQ - Printer Server	
01. What types of printers are compatible with Vigor router?	2011/08/08
02. How to add a new printer in Windows7	2011/03/03
03. How do I configure LPR printing on Windows2000/XP ?	2010/04/06
04. How do I configure LPR printing on Windows98/Me ?	2009/01/20
05. How do I configure LPR printing on Linux boxes ?	2009/01/20
06. Why there are some strange print-out when I try to print my documents through Vigor2104P / 2300's print server?	2009/01/20
07. What are the limitations in the USB Printer Port of Vigor Router ?	2009/01/20

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

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2

Basic Settings

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

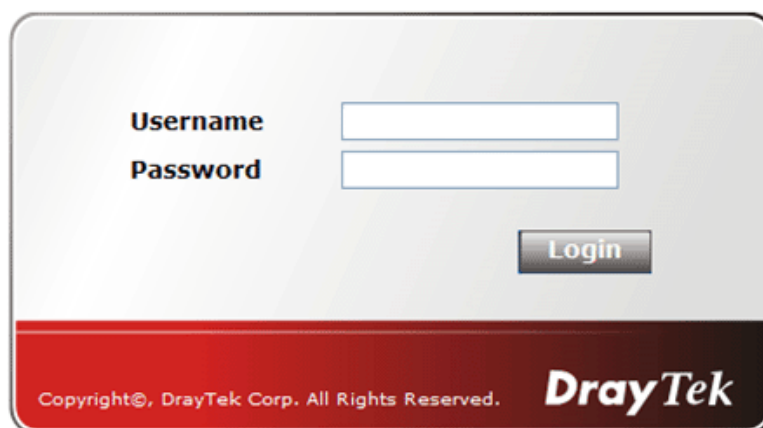
This chapter explains how to setup a password for accessing into the web configurator of Vigor router and how to adjust settings for accessing Internet successfully.

2.1 Accessing Web Page

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

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

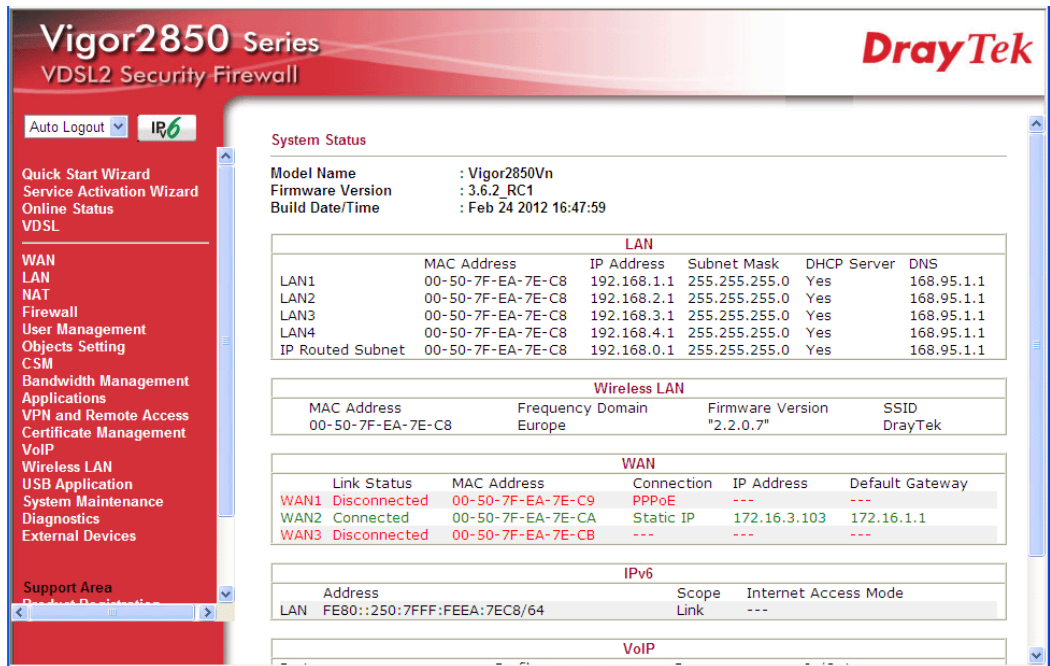
2. Open a web browser on your PC and type **http://192.168.1.1**. The following window will be open to ask for username and password.



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

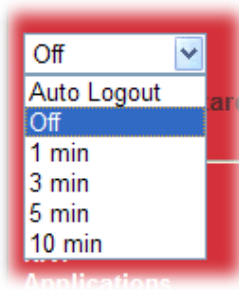
Notice: If you fail to access to the web configuration, please go to “Trouble Shooting” for detecting and solving your problem.

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



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

- 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.



2.2 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 configurator with admin mode.
3. Go to **System Maintenance** page and choose **Administrator Password/**.

System Maintenance >> Administrator Password Setup

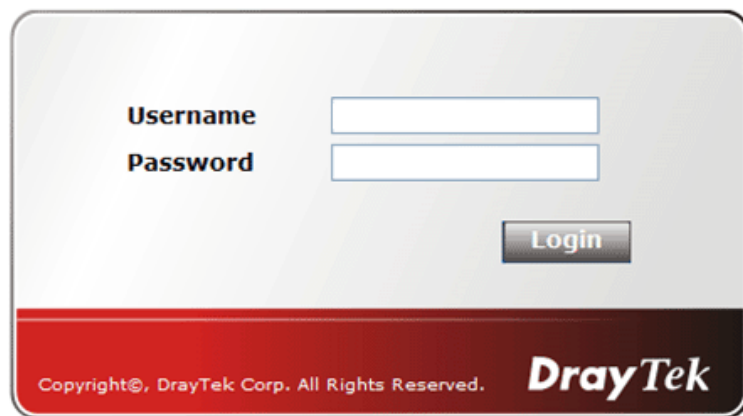
Administrator Password

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 , ; : " < > * + = \ | ? @ # ^ ! ()

OK

4. Enter the login password (the default is “admin”) on the field of **Old Password**. Type **New Password**. Then click **OK** to continue.
5. Now, the password has been changed. Next time, use the new password to access the Web Configurator for this router.



The image shows a login screen with a light gray background and a red footer. It features two input fields: one for 'Username' and one for 'Password'. Below the fields is a 'Login' button. The footer contains the text 'Copyright©, DrayTek Corp. All Rights Reserved.' and the 'DrayTek' logo.

2.3 Quick Start Wizard

If your router can be under an environment with high speed NAT, the configuration provide here can help you to deploy and use the router quickly. The first screen of **Quick Start Wizard** is entering login password. After typing the password, please click **Next**.

Quick Start Wizard

Enter login password

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

Old Password	<input type="password" value="••••"/>
New Password	<input type="password" value="••••"/>
Confirm Password	<input type="password" value="••••"/>

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

Quick Start Wizard

WAN Interface

WAN Interface:	<input type="text" value="WAN1"/>
Display Name:	<input type="text"/>
Physical Mode:	ADSL / VDSL
Physical Type:	<input type="text" value="Auto negotiation"/>

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

2.3.1 For WAN1 (ADSL/VDSL)

WAN1 is specified for ADSL or VDSL connection.

Quick Start Wizard

WAN Interface

WAN Interface: WAN1 ▾

Display Name:

Physical Mode: ADSL / VDSL

Physical Type: Auto negotiation ▾

You have to 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. In addition, the field of **For ADSL Only** will be available only when ADSL is detected. Then click **Next** for next step.

PPPoE/PPPoA

1. Choose **WAN1** as WAN Interface and click the **Next** button; you will get the following page.

Quick Start Wizard

Connect to Internet

WAN 1

Protocol PPPoE / PPPoA ▾

For ADSL Only:

Encapsulation PPPoE LLC/SNAP ▾

VPI

VCI

Fixed IP Yes No(Dynamic IP)

IP Address

Subnet Mask

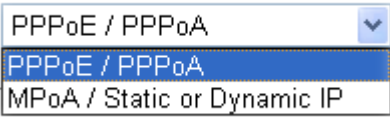
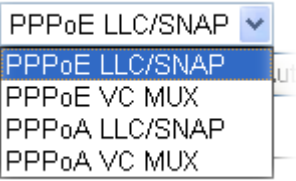
Default Gateway

Primary DNS

Second DNS

Available settings are explained as follows:

Item	Description
Protocol	There are two modes offered for you to choose for WAN1

	<p>interface.</p>  <p>Choose PPPoE or PPPoA as the protocol.</p>
For ADSL Only	<p>Such field is provided for ADSL only. You have to choose encapsulation and type the values for VPI and VCI. Or, click Auto detect to find out the best values.</p> 
Fixed IP	Click Yes to enable Fixed IP feature.
IP Address	Type the IP address if Fixed IP is enabled.
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.

2. After finished the above settings, simply click **Next**.

Quick Start Wizard

Set PPPoE / PPPoA

WAN 1

User Name

Password

Confirm Password

Available settings are explained as follows:

Item	Description
User Name	Assign a specific valid user name provided by the ISP.

Item	Description
Password	Assign a valid password provided by the ISP.
Confirm Password	Retype the password.

3. Please manually enter the Username/Password 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:	ADSL / VDSL
Fallback Mode:	AUTO
VPI:	0
VCI:	33
Protocol / Encapsulation:	PPPoE / LLC
Fixed IP:	No
Primary DNS:	
Secondary DNS:	

< Back

Next >

Finish

Cancel

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.

MPoA / Static or Dynamic IP

1. Choose **WAN1** as WAN Interface and click the **Next** button; you will get the following page.

Quick Start Wizard

Connect to Internet

WAN 1

Protocol: MPoA / Static or Dynamic IP

For ADSL Only:

Encapsulation: 1483 Bridged IP LLC

VPI: 0

VCI: 33

Fixed IP: Yes No(Dynamic IP)

IP Address:

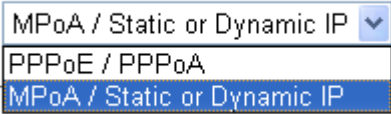
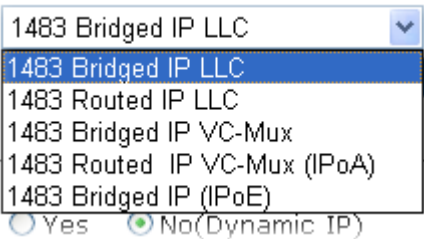
Subnet Mask:

Default Gateway:

Primary DNS:

Second DNS:

Available settings are explained as follows:

Item	Description
Protocol	<p>There are two modes offered for you to choose for WAN1 interface.</p>  <p>Choose MPoA / Static or Dynamic IP as the protocol.</p>
For ADSL Only	<p>Such field is provided for ADSL only. You have to choose encapsulation and type the values for VPI and VCI. Or, click Auto detect to find out the best values.</p> 
Fixed IP	Click Yes to enable Fixed IP feature.
IP Address	Type the IP address if Fixed IP is enabled.
Subnet Mask	Type the subnet mask.
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.

2. 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:	ADSL
Fallback Mode:	ADSL only
VPI:	0
VCI:	33
Protocol / Encapsulation:	1483 Bridge LLC
Fixed IP:	No
Primary DNS:	
Secondary DNS:	

3. 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 !!!

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

2.3.2 For WAN2 (Ethernet)

WAN2 is dedicated to physical mode in Ethernet. If you choose WAN2, please specify physical type. Then, click **Next**.

Quick Start Wizard

WAN Interface

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

< Back Next > Finish Cancel

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 **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

- 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.

User Name

Password

Confirm Password

Available settings are explained as follows:

Item	Description
User Name	Assign a specific valid user name provided by the ISP.
Password	Assign a valid password provided by the ISP.
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.

- 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.

- 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.

PPTP/L2TP

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

Quick Start Wizard

Connect to Internet

WAN 2
Select one of the following Internet Access types provided by your ISP.

- PPPoE
- PPTP
- L2TP
- Static IP
- DHCP

< Back Next > Finish Cancel

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

Quick Start Wizard

L2TP Client Mode

WAN 2
Enter the user name, password, WAN IP configuration and L2TP 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:

L2TP 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.
Password	Assign a valid password provided by the ISP.
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.

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

Quick Start Wizard

Please confirm your settings:

WAN Interface:	WAN2
Physical Mode:	Ethernet
Physical Type:	Auto negotiation
Internet Access:	L2TP

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 !!!

- Now, you can enjoy surfing on the Internet.

Static IP

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

Quick Start Wizard

Connect to Internet

WAN 2
Select one of the following Internet Access types provided by your ISP.

PPPoE
 PPTP
 L2TP
 Static IP
 DHCP

< Back Next > Finish Cancel

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

Quick Start Wizard

Static IP Client Mode

WAN 2
Enter the Static IP configuration provided by your ISP.

WAN IP	<input type="text" value="172.16.3.102"/>
Subnet Mask	<input type="text" value="255.255.0.0"/>
Gateway	<input type="text" value="172.16.1.1"/>
Primary DNS	<input type="text" value="168.95.1.1"/>
Secondary DNS	<input type="text"/> (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.

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

Quick Start Wizard

Please confirm your settings:

WAN Interface: WAN2
 Physical Mode: Ethernet
 Physical Type: Auto negotiation
 Internet Access: Static IP

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.

DHCP

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

Quick Start Wizard

Connect to Internet

WAN 2
Select one of the following Internet Access types provided by your ISP.

PPPoE
 PPTP
 L2TP
 Static IP
 DHCP

< 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 - 50 - 7F - 00 - 00 - 02 (optional)

< Back Next > Finish Cancel

Available settings are explained as follows:

Item	Description
Host Name	Type the name of the host.
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.

- 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.

- 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.

2.3.3 For WAN3 (USB)

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

Quick Start Wizard

WAN Interface

WAN Interface:	WAN3
Display Name:	
Physical Mode:	USB
Physical Type:	Auto negotiation

< Back Next > Finish Cancel

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

Quick Start Wizard

Please confirm your settings:

WAN Interface:	WAN3
Physical Mode:	
Internet Access:	DHCP

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

< Back Next > Finish Cancel

3. 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 !!!

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

2.4 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 configurator.**

Service Activation Wizard is a tool which allows you to use trial version or update the license 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 **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.

Service Activation Wizard

Select the service type that you want to activate

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

- Free trial edition
 Formal edition with license key

Next >

Finish

Cancel

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

Formal edition with license key: you can extend the license valid time manually.

Note: If you activate **Formal edition with license key** first, the free trial edition will be invalid.

- 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 (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 : 2010-10-27

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.

- 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

- 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	2010-10-27	2010-11-27	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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Later, if you need to extend the license valid time for the same service, you can also use the **Service Activation Wizard** again to reach your goal by clicking the radio button of **Formal edition with license key** and clicking **Next**.

Service Activation Wizard

Select the service type that you want to activate

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

Free trial edition

Formal edition with license key

Service Activation Wizard

Select the service type that you want to activate

Please choose the item you want to use.
WCF service:

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.

Enter your License key: Activation Date : [select](#)

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.

2.5 Online Status

- Online Status**
- ▶ Physical Connection
- ▶ Virtual WAN

2.5.1 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: 4:7:53			
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		53964	729498		
WAN 1 Status					>> Dial PPPoE
Enable	Line	Name	Mode	Up Time	
Yes	VDSL		PPPoE	00:00:00	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0
Message [PPP Shutdown]					
WAN 2 Status					
Enable	Line	Name	Mode	Up Time	
Yes	Ethernet		Static IP	4:07:44	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
172.16.3.103	172.16.1.1	29011	351	125630	1230
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

Physical Connection for IPv6 Protocol

Online Status

Physical Connection		System Uptime: 4:8:42			
IPv4		IPv6			
LAN Status					
IP Address					
FE80::250:7FFF:FEEA:7EC8/64 (Link)					
TX Packets	RX Packets	TX Bytes	RX Bytes		
2	0	156	0		
WAN IPv6 Status					
Enable	Mode	Up Time			
No	Offline	---			
IP	Gateway IP				
---	---				

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.

2.5.2 Virtual WAN

Such page displays the virtual WAN connection information.

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

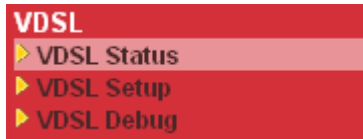
The field of Application will list the purpose of such WAN connection.

Online Status

Virtual WAN						System Uptime: 69:7:20
WAN 5 Status						
Enable	Line	Name	Mode	Up Time	Application	
Yes	ADSL		---	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	ADSL		---	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	ADSL		---	00:00:00	Management	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)	
---	---	0	0	0	0	

2.6 VDSL

This menu allows you to check VDSL status and configure VDSL settings for you request.



2.6.1 VDSL Status

This page displays the VDSL information for such router such as current connection status, the firmware version of such router, the profile used by such VDSL2 line, the rates for upstream and downstream, and so on.

VDSL >> VDSL Status

Auto-refresh Refresh

VDSL			
Link Status	Idle		
Firmware Version	1411f0		
Basic Status	Upstream	Downstream	Unit
VDSL Profile	None		
Actual Data Rate	0	0	Kb/s
SNR	N/A	N/A	0.1dB
Advance Status	Upstream	Downstream	Unit
Actual delay	0	0	ms
Actual INP	0	0	0.1 symbols
Actual INP	0	0	0.1 symbols
15M CV	0	0	counter
1Day CV	0	0	counter
15M FEC	0	0	counter
1Day FEC	0	0	counter
Total FEC	0	0	counter

2.6.2 VDSL Setup

This page allows you to set VDSL2 profile and G.hs Carrier Set.

VDSL >> VDSL Setup

VDSL Setup
Handshake Settings

VDSL2 Profile	<input checked="" type="checkbox"/> 8a	<input checked="" type="checkbox"/> 8b	<input checked="" type="checkbox"/> 8c	<input checked="" type="checkbox"/> 8d	<input checked="" type="checkbox"/> 12a	<input checked="" type="checkbox"/> 12b	<input checked="" type="checkbox"/> 17a	<input checked="" type="checkbox"/> 30a
G.hs Carrier Set	<input checked="" type="radio"/> Auto	<input type="radio"/> A43	<input type="radio"/> B43	<input type="radio"/> V43				
Bit Swap	<input checked="" type="radio"/> on	<input type="radio"/> off						

Ok

Available settings are explained as follows:

Item	Description
VDSL2 Profile	Check the profiles that the router will support. Each profile can be used in different VDSL deployment architectures. The working profile will be decided by CO side.

G.hs Carrier Set	Choose one of the items as the G.hs Carrier Set. Each set will have different frequency indices and maximum power level for data in upstream and downstream.
Bit Swap	As line conditions change, bit swapping allows the modem to swap bits around different channels without retraining, as each channel becomes more or less capable.

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

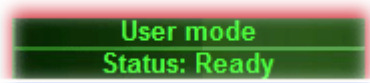
2.6.3 VDSL Debug

Such feature can offer a system log while encountering the compatibility problem for VDSL connection. Simply click the **Generate** button. The system will generate the log for connection procedure. Later, you can save the log by clicking **Export** and send the information to DrayTek service center.



2.7 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.



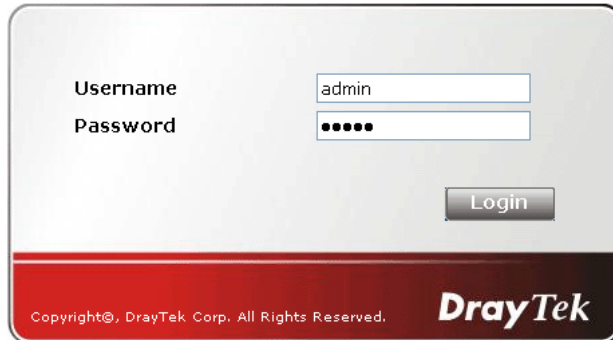
Ready indicates the system is ready for you to input settings.

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

2.8 Registering Vigor Router

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

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



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



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



Please take a moment to register.

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

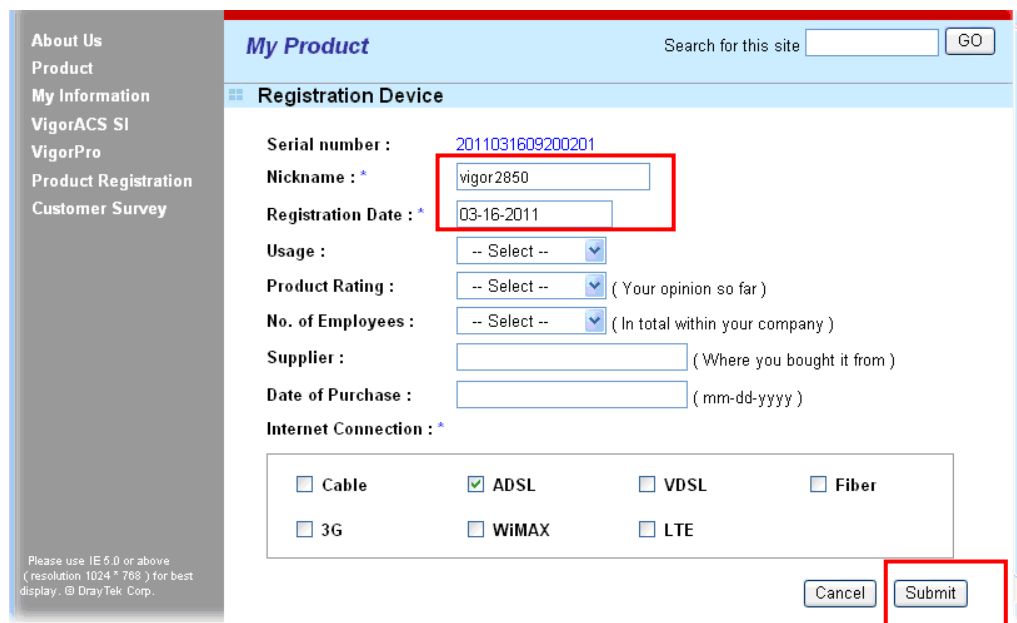


If you are having difficulty logging in, contact our customer service.
Customer Service : (886) 3 597 2727 or

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



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



- 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**.

Home Search GO

Apply For A License Number Cancel

Service Name: **WCF**

STEP 2

Activation Date (MM-DD-YYYY): 03-16-2011 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

Web Configuration

This chapter will guide users to execute web configuration.

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 different model will have different web pages.

The screenshot displays the web configuration interface for a DrayTek Vigor2850 Series VDSL2 Security Firewall. The interface is divided into a left sidebar with navigation menus and a main content area. The main content area is titled "System Status" and includes the following information:

System Status

Model Name : Vigor2850i
Firmware Version : 3.6.2_RC1
Build Date/Time : Feb 24 2012 16:55:30

LAN

	MAC Address	IP Address	Subnet Mask	DHCP Server	DNS
LAN1	00-1D-AA-00-00-00	192.168.1.1	255.255.255.0	Yes	168.95.1.1
LAN2	00-1D-AA-00-00-00	192.168.2.1	255.255.255.0	Yes	168.95.1.1
LAN3	00-1D-AA-00-00-00	192.168.3.1	255.255.255.0	Yes	168.95.1.1
LAN4	00-1D-AA-00-00-00	192.168.4.1	255.255.255.0	Yes	168.95.1.1
IP Routed Subnet	00-1D-AA-00-00-00	192.168.0.1	255.255.255.0	Yes	168.95.1.1

WAN

Link Status	MAC Address	Connection	IP Address	Default Gateway
WAN1 Disconnected	00-1D-AA-00-00-01	PPPoE	---	---
WAN2 Connected	00-1D-AA-00-00-02	Static IP	172.16.3.103	172.16.1.1
WAN3 Disconnected	00-1D-AA-00-00-03	---	---	---

IPv6

Address	Scope	Internet Access Mode
LAN FE80::21D:AFF:FE00:0/64	Link	---

User Mode is OFF now.

3.1 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.

3.1.1 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 USB Modem

For 3G mobile communication through Access Point is popular more and more, Vigor2850 adds the function of 3G network connection for such purpose. By connecting 3G USB Modem to the USB port of Vigor2850, it can support HSDPA/UMTS/EDGE/GPRS/GSM and the future 3G standard (HSUPA, etc). Vigor2850n with 3G USB Modem allows you to receive 3G 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 Vigor2850n, and enjoy the powerful firewall, bandwidth management, VPN features of Vigor2850n series.



After connecting into the router, 3G 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 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 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**.

- WAN**
- ▶ General Setup
- ▶ Internet Access
- ▶ Multi-PVCs
- ▶ Multi-VLAN
- ▶ Load-Balance Policy

3.1.2 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**.

WAN >> General Setup

Load Balance Mode:

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

Note: Line Speed only used for load balance mode: according to Line Speed

Available settings are explained as follows:

Item	Description
Load Balance Mode	<p>This option is available for multiple-WAN for getting enough bandwidth for each WAN port. If you know the practical bandwidth for your WAN interface, please choose the setting of According to Line Speed. Otherwise, please choose Auto Weigh to let the router reach the best load balance.</p> <p>Load Balance Mode: <input type="text" value="Auto Weight"/></p> <p style="margin-left: 200px;"> <input type="text" value="Auto Weight"/> <input type="text" value="According to Line Speed"/> </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.
Backup WAN	Display the Backup WAN interface for such WAN when it is disabled.

Note: In default, each WAN port is enabled.

WAN1 with ADSL/VDSL

Vigor router will **detect** the physical line is connected by ADSL or VDSL **automatically**. Therefore, this page allows you to configure settings for ADSL and VDSL at one time. That is, it is not necessary for you to configure different profile settings for ADSL and VDSL respectively.

WAN >> General Setup

WAN 1

Enable:	Yes	▼
Display Name:	<input type="text"/>	
Physical Mode:	VDSL	
Fallback Mode:	Auto	▼
Physical Type:	Auto negotiation ▼	
Line Speed(Kbps):		
DownLink	<input type="text"/>	
UpLink	<input type="text"/>	
VLAN Tag insertion (ADSL):	Disable ▼	
Tag value:	<input type="text"/>	(0~4095)
Priority:	<input type="text"/>	(0~7)
VLAN Tag insertion (VDSL):	Disable ▼	
Tag value:	<input type="text"/>	(0~4095)
Priority:	<input type="text"/>	(0~7)
Send SMS if line drops out	Disable ▼	
Send Mail Alert if line drops out	<input type="checkbox"/>	
Active Mode:	Always On ▼	

OK

Cancel

Available settings are explained as follows:

Item	Description
Enable	Choose Yes to invoke the settings for this WAN interface. Choose No to disable the settings for this WAN interface.
Display Name	Type the description for such interface.

Physical Mode	Display the physical mode of such interface. If VDSL is detected, this field will display “ VDSL ”; if ADSL is detected, it will display “ ADSL ”.
Fallback Mode	It allows you to specify which physical connection is used. Once the mode is specified, the router will not detect physical mode automatically whenever powering up the router.
Physical Type	For such interface, no type can be selected.
Line Speed (Kpbs)	If you choose According to Line Speed as the Load Balance Mode in previous page, please type the line speed for downloading and uploading for such WAN interface. The unit is kbps.
VLAN Tag insertion (ADSL)	<p>The settings configured in this field are available for VDSL only.</p> <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>
VLAN Tag insertion (VDSL)	<p>The settings configured in this field are available for VDSL only.</p> <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>
Send SMS if line drops out	Use the drop down list to choose one of the profiles which will be used to notify the administrator when the network connection is off.
Send Mail Alert if line drops out	Check the box to enable this function. When the network connection is off, the system will send a mail alert to notify the administrator.

Active Mode	<p>Choose Always On to make the WAN1 connection being activated always;</p> <div style="border: 1px solid black; padding: 2px;"> Always On ▾ Always On Backup </div>
Backup Type	<p>If you choose Backup as the Active Mode, Backup Type will appear. Please specify which WAN will be the Backup interface.</p> <p>Active Mode: Backup ▾</p> <p><input type="checkbox"/> WAN 1 <input type="checkbox"/> WAN 2 <input type="checkbox"/> WAN 3</p> <p>Backup Type (Only if acting as backup for multiple WAN):</p> <p><input checked="" type="radio"/> When any of selected WAN disconnect</p> <p><input type="radio"/> When all of selected WAN disconnect</p> <p>When any WAN disconnect – Such backup WAN will be activated when any master WAN interface disconnects.</p> <p>When all WAN disconnect – Such backup WAN will be activated only when all master WAN interfaces disconnect.</p>

WAN2 with Ethernet

WAN2 is fixed with physical mode of Ethernet.

WAN >> General Setup

WAN 2

Enable: Yes ▾

Display Name:

Physical Mode: Ethernet

Physical Type: Auto negotiation ▾

Line Speed(Kbps):

DownLink

UpLink

VLAN Tag insertion : Disable ▾

Tag value: (0~4095)

Priority: (0~7)

Send **SMS** if line drops out Disable ▾


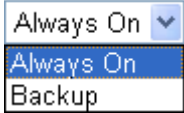

Send **Mail Alert** if line drops out

Active Mode: Always On ▾

OK
Cancel

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	<p>You can change the physical type for WAN2 or choose Auto negotiation for determined by the system.</p> <p>Physical Type: </p>
Line Speed	<p>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.</p>
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>
Send SMS if the drops out	<p>Use the drop down list to choose one of the profiles which will be used to notify the administrator when the network connection is off.</p>
Send Mail Alert if line drops out	<p>Check the box to enable this function. When the network connection is off, the system will send a mail alert to notify the administrator.</p>
Active Mode	<p>Choose Always On to make the WAN2 connection being activated always.</p> 
Backup Type	<p>If you choose Backup as the Active Mode, Backup Type will appear. Please specify which WAN will be treated as the Backup WAN.</p> <p>Active Mode: </p> <p><input type="checkbox"/> WAN 1 <input type="checkbox"/> WAN 2 <input type="checkbox"/> WAN 3</p> <p>Backup Type (Only if acting as backup for multiple WAN):</p> <p><input checked="" type="radio"/> When any of selected WAN disconnect</p> <p><input type="radio"/> When all of selected WAN disconnect</p> <p>When any WAN disconnect – Such backup WAN will be activated when any master WAN interface disconnects.</p> <p>When all WAN disconnect – Such backup WAN will be activated only when all master WAN interfaces disconnect.</p>

WAN3 with USB

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

WAN >> General Setup

WAN 3

Enable:	Yes ▾
Display Name:	<input type="text"/>
Physical Mode:	USB
Physical Type:	Auto negotiation ▾
Line Speed(Kbps):	
DownLink	<input type="text"/>
UpLink	<input type="text"/>
Send SMS if line drops out	Disable ▾
Send Mail Alert if line drops out	<input type="checkbox"/>
Active Mode:	Always On ▾

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	In such WAN interface, no type can be selected.
Line Speed	If your choose According to Line Speed as the Load Balance Mode , please type the line speed for downloading and uploading for such WAN interface. The unit is kbps.
Active Mode	Choose Always On to make the WAN3 connection being activated always. <div style="border: 1px solid black; padding: 2px; width: fit-content;"> Always On ▾ Always On Backup </div>
Send SMS if the drops out	Use the drop down list to choose one of the profiles which will be used to notify the administrator when the network connection is off.
Send Mail Alert if line drops out	Check the box to enable this function. When the network connection is off, the system will send a mail alert to notify the administrator.
Active Mode	Choose Always On to make the WAN2 connection being activated always. <div style="border: 1px solid black; padding: 2px; width: fit-content;"> Always On ▾ Always On Backup </div>

Backup Type	<p>If you choose Backup as the Active Mode, Backup Type will appear. Please specify which WAN will be treated as the Backup WAN.</p> <p>Active Mode: Backup <input type="button" value="v"/></p> <p style="text-align: right;"><input type="checkbox"/> WAN 1 <input type="checkbox"/> WAN 2 <input type="checkbox"/> WAN 3</p> <p>Backup Type (Only if acting as backup for multiple WAN):</p> <p style="text-align: right;"><input checked="" type="radio"/> When any of selected WAN disconnect <input type="radio"/> When all of selected WAN disconnect</p> <p>When any WAN disconnect – Such backup WAN will be activated when any master WAN interface disconnects.</p> <p>When all WAN disconnect – Such backup WAN will be activated only when all master WAN interfaces disconnect.</p>
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3.1.3 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		ADSL / VDSL	PPPoE / PPPoA <input type="button" value="v"/>
WAN2		Ethernet	None PPPoE / PPPoA <input type="button" value="v"/>
WAN3		USB	MPoA / Static or Dynamic IP None <input type="button" value="v"/>

Note : Only one WAN can support IPv6.

WAN >> Internet Access

Internet Access			
Index	Display Name	Physical Mode	Access Mode
WAN1		ADSL / VDSL	PPPoE / PPPoA <input type="button" value="v"/>
WAN2		Ethernet	Static or Dynamic IP <input type="button" value="v"/>
WAN3		USB	None PPPoE Static or Dynamic IP PPTP/L2TP <input type="button" value="v"/>

Note : Only one WAN can support IPv6.

WAN >> Internet Access

Internet Access			
Index	Display Name	Physical Mode	Access Mode
WAN1		ADSL / VDSL	PPPoE / PPPoA <input type="button" value="v"/>
WAN2		Ethernet	Static or Dynamic IP <input type="button" value="v"/>
WAN3		USB	None None PPP <input type="button" value="v"/>

Note : Only one WAN can support IPv6.

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(ADSL/VDSL) /WAN2 (Ethernet) /WAN3 (3G USB Modem) according to the real network connection.
Access Mode	Use the drop down list to choose a proper access mode. The details page of that mode will be popped up. If not, click Details Page for accessing the page to configure the settings.
Details Page	This button will open different web page (based on IPv4) according to the access mode that you choose in WAN interface
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.

Details Page for PPPoE/PPPoA in WAN1

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

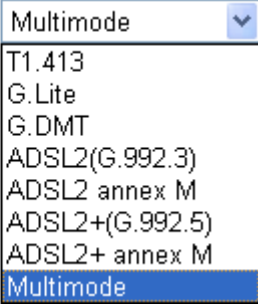
WAN >> Internet Access

WAN 1

PPPoE / PPPoA	MPoA / Static or Dynamic IP	IPv6
<input checked="" type="radio"/> Enable <input type="radio"/> Disable		
Modem Settings (for ADSL only)		
Multi-PVC channel	<input type="text" value="Channel 1"/>	
VPI	<input type="text" value="0"/>	
VCI	<input type="text" value="33"/>	
Encapsulating Type	<input type="text" value="LLC/SNAP"/>	
Protocol	<input type="text" value="PPPoE"/>	
Modulation	<input type="text" value="Multimode"/>	
PPPoE Pass-through		
<input type="checkbox"/> For Wired LAN		
<input type="checkbox"/> For Wireless LAN		
WAN Connection Detection		
Mode	<input type="text" value="ARP Detect"/>	
Ping IP	<input type="text"/>	
TTL:		
ISP Access Setup		
Username	<input type="text"/>	
Password	<input type="text"/>	
<input type="checkbox"/> Separate Account for ADSL		
PPP Authentication	<input type="text" value="PAP or CHAP"/>	
Idle Timeout	<input type="text" value="-1"/> second(s)	
IP Address From ISP <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"/>	
<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="50"/> . <input type="text" value="7F"/> : <input type="text" value="EA"/> : <input type="text" value="7E"/> . <input type="text" value="C9"/>	
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
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.
Modem Settings (for ADSL only)	Set up the DSL parameters required by your ISP. These settings configured here are specified for ADSL only. Multi-PVC channel - The selections displayed here are determined by the page of Internet Access >> Multi PVCs . Select M-PVCs Channel means no selection will be chosen. VPI - Type in the value provided by ISP. VCI - Type in the value provided by ISP. Encapsulating Type - Drop down the list to choose the type provided by ISP. Protocol - Drop down the list to choose the one (PPPoE or PPPoA) provided by ISP. If you have already used Quick Start Wizard to set the protocol, then it is not necessary for you to change any

	<p>settings in this group.</p> <p>Modulation –Default setting is Multimode. Choose the one that fits the requirement of your router.</p> <p>Modulation </p>
<p>PPPoE Pass-through</p>	<p>The router offers PPPoE dial-up connection. Besides, you also can establish the PPPoE connection directly from local clients to your ISP via the Vigor router. When PPPoA protocol is selected, the PPPoE package transmitted by PC will be transformed into PPPoA package and sent to WAN server. Thus, the PC can access Internet through such direction.</p> <p>For Wired LAN – If you check this box, PCs on the same network can use another set of PPPoE session (different with the Host PC) to access into Internet.</p> <p>For Wireless LAN – If you check this box, PCs on the same wireless network can use another set of PPPoE session (different with the Host PC) to access into Internet.</p> <p>Note: To have PPPoA Pass-through, please choose PPPoA protocol and check the box(es) here. The router will behave like a modem which only serves the PPPoE client on the LAN. That's, the router will offer PPPoA dial-up connection.</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.</p> <p>Ping IP – If you choose Ping Detect as detection mode, you have to type IP address in this field for pinging.</p> <p>TTL (Time to Live) – Displays value for your reference. TTL value is set by telnet command.</p>
<p>ISP Access Setup</p>	<p>Enter your allocated username, password and authentication parameters according to the information provided by your ISP.</p> <p>Username – Type in the username provided by ISP in this field.</p> <p>Password – Type in the password provided by ISP in this field.</p> <p>Separate Account for ADSL – In default, WAN1 supports VDSL/ADSL and uses the same PPPoE account and password for connection. If required, you can configure another account and password for ADSL connection by</p>

checking this box. If it is checked, the system will ask you to type another group of account and password additionally.

PPP Authentication – Select **PAP only** or **PAP or CHAP** for PPP. If you want to connect to Internet all the time, you can check **Always On**.

Idle Timeout – Set the timeout for breaking down the Internet after passing through the time without any action.

IP Address From ISP

Usually ISP dynamically assigns IP address to you each time you connect to it and request. In some case, your ISP provides service to always assign you the same IP address whenever you request. In this case, you can fill in this IP address in the Fixed IP field. Please contact your ISP before you want to use this function.

WAN IP Alias - If you have multiple public IP addresses and would like to utilize them on the WAN interface, please use WAN IP Alias. You can set up to 8 public IP addresses other than the current one you are using.

Index	Enable	Aux. WAN IP	Join NAT IP Pool
1.	<input checked="" type="checkbox"/>	172.16.3.229	<input checked="" type="checkbox"/>
2.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>

OK Clear All Close

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

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

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

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 **Applications >> Schedule** web page and you can use the number that you have set in that web page.

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

Details Page for MPoA/Static or Dynamic IP in WAN1

MPoA is a specification that enables ATM services to be integrated with existing LANs, which use either Ethernet, token-ring or TCP/IP protocols. The goal of MPoA is to allow different LANs to send packets to each other via an ATM backbone.

To use **MPoA/Static or Dynamic IP** as the accessing protocol of the Internet, select **MPoA /Static or Dynamic IP** from the **WAN>>Internet Access >>WAN1** page. The following web page will appear.

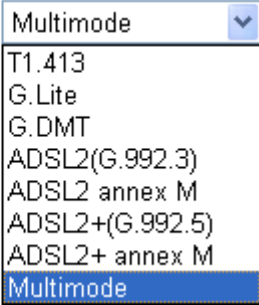
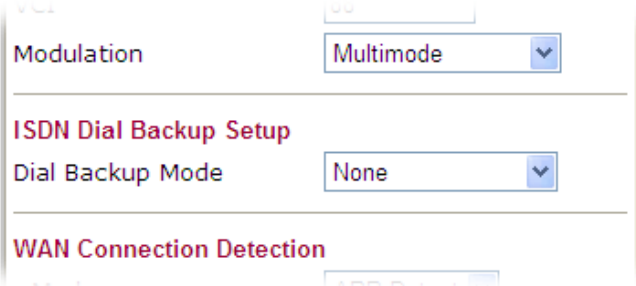
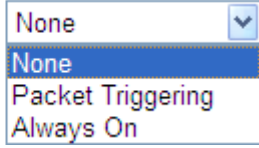
[WAN >> Internet Access](#)

WAN 1

PPPoE / PPPoA	MPoA / Static or Dynamic IP	IPv6
<input type="radio"/> Enable <input checked="" type="radio"/> Disable		
<p>Modem Settings (for ADSL only)</p> <p>Multi-PVC channel: <input type="text" value="Channel 2"/></p> <p>Encapsulation: <input type="text" value="1483 Bridged IP LLC"/></p> <p>VPI: <input type="text" value="0"/></p> <p>VCI: <input type="text" value="88"/></p> <p>Modulation: <input type="text" value="Multimode"/></p>		
<p>WAN Connection Detection</p> <p>Mode: <input type="text" value="ARP Detect"/></p> <p>Ping IP: <input type="text"/></p> <p>TTL: <input type="text"/></p>		
<p>RIP Protocol</p> <p><input type="checkbox"/> Enable RIP</p>		
<p>Bridge Mode</p> <p><input type="checkbox"/> Enable Bridge Mode</p>		
		<p>WAN IP Network Settings <input type="button" value="WAN IP Alias"/></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><small>* : Required for some ISPs</small></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><input checked="" type="radio"/> Default MAC Address</p> <p><input type="radio"/> Specify a MAC Address</p> <p>MAC Address: <input type="text" value="00"/> <input type="text" value=".50"/> <input type="text" value=".7F"/> <input type="text" value=".EA"/> <input type="text" value=".7E"/> <input type="text" value=".C9"/></p>
		<p>DNS Server IP Address</p> <p>Primary IP Address: <input type="text"/></p> <p>Secondary IP Address: <input type="text"/></p>

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.
Modem Settings (for ADSL only)	<p>Set up the DSL parameters required by your ISP. These settings configured here are specified for ADSL only.</p> <p>Multi-PVC channel - The selections displayed here are determined by the page of Internet Access >>Multi PVCs. Select M-PVCs Channel means no selection will be chosen.</p> <p>Encapsulating - Drop down the list to choose the type provided by ISP.</p> <p>VPI - Type in the value provided by ISP.</p> <p>VCI - Type in the value provided by ISP.</p>

	<p>Modulation –Default setting is Multimode. Choose the one that fits the requirement of your router.</p> 
<p>ISDN Dial Backup Setup</p>	<p>This setting is only available for the router supporting ISDN function.</p>  <p>Before utilizing the ISDN dial backup feature, you must create a dial backup profile first. Please click ISDN > Dialing to a Single ISP to create the backup profile.</p>  <p>None - Disable the backup function.</p> <p>Packet Triggering -The backup line is not on until a packet from a local host triggers the router to establish a connection.</p> <p>Always On - If the broadband connection is no longer available, the backup line will be activated automatically and always on until the broadband connection is restored. We recommend you to enable this feature if you host a web server for your customers' access.</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.</p> <p>Ping IP – If you choose Ping Detect as detection mode, you have to type IP address in this field for pinging.</p> <p>TTL (Time to Live) – Displays value for your reference. TTL value is set by telnet command.</p>
<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</p>

	function.																																				
Bridge Mode	If you choose Bridged IP as the protocol, you can check this box to invoke the function. The router will work as a bridge modem.																																				
WAN IP Network Settings	<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. Notice that this setting is available for WAN1 only. Type the additional WAN IP address and check the Enable box. Then click OK to exit the dialog.</p> <p>WAN1 IP Alias (Multi-NAT)</p> <table border="1"> <thead> <tr> <th>Index</th> <th>Enable</th> <th>Aux. WAN IP</th> <th>Join NAT IP Pool</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td><input checked="" type="checkbox"/></td> <td>---</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>3.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>4.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>6.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>7.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>8.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: center;"> <input type="button" value="OK"/> <input type="button" value="Clear All"/> <input type="button" value="Close"/> </p> <p>Obtain an IP address automatically – Click this button to obtain the IP address automatically.</p> <p>Router Name – Type in the router name provided by ISP.</p> <p>Domain Name – Type in the domain name that you have assigned.</p> <p>Specify an IP address – Click this radio button to specify some data.</p> <p>IP Address – Type in the private IP address.</p> <p>Subnet Mask – Type in the subnet mask.</p> <p>Gateway IP Address – Type in gateway IP address.</p> <p>Default MAC Address – Type in MAC address for the router. You can use Default MAC Address or specify another MAC address for your necessity.</p> <p>Specify a MAC Address – Type in the MAC address for the router manually.</p>	Index	Enable	Aux. WAN IP	Join NAT IP Pool	1.	<input checked="" type="checkbox"/>	---	<input checked="" type="checkbox"/>	2.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	3.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	4.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	5.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	6.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	7.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	8.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
Index	Enable	Aux. WAN IP	Join NAT IP Pool																																		
1.	<input checked="" type="checkbox"/>	---	<input checked="" type="checkbox"/>																																		
2.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
3.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
4.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
5.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
6.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
7.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
8.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
DNS Server IP Address	Type in the primary IP address for the router. If necessary, type in secondary IP address for necessity in the future.																																				

Details Page for PPPoE in WAN2

To choose PPPoE as the accessing protocol of the Internet, please select **PPPoE** from the **WAN>>Internet Access >>WAN2** page. The following web page will be shown.

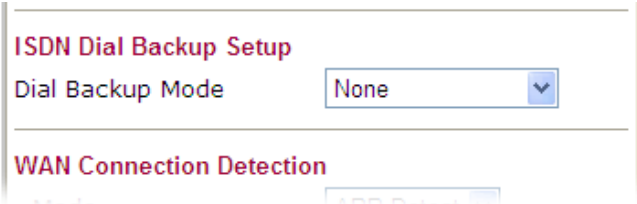
[WAN >> Internet Access](#)

WAN 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
<input type="radio"/> Enable <input checked="" type="radio"/> Disable			
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"/>		PPP/MP Setup PPP Authentication: <input type="text" value="PAP or CHAP"/> Idle Timeout: <input type="text" value="-1"/> second(s)	
ISDN Dial Backup Setup Dial Backup Mode: <input type="text" value="None"/>		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"/>	
WAN Connection Detection Mode: <input type="text" value="ARP Detect"/> Ping IP: <input type="text"/> TTL: <input type="text"/>		<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="00"/> : <input type="text" value="00"/> : <input type="text" value="02"/>	
MTU <input type="text" value="1442"/> (Max:1492)			

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>Username – Type in the username provided by ISP in this field.</p> <p>Password – Type in the password provided by ISP in this field.</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>ISDN Dial Backup Setup</p>	<p>This setting is only available for the router supporting ISDN function.</p>  <p>Before utilizing the ISDN dial backup feature, you must create a dial backup profile first. Please click ISDN > Dialing to a Single ISP to create the backup profile.</p> <p>Dial Backup Mode <input type="text" value="None"/></p> <p>None - Disable the backup function. Packet Triggering -The backup line is not on until a packet from a local host triggers the router to establish a connection.</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.</p> <p>Ping IP – If you choose Ping Detect as detection mode, you have to type IP address in this field for pinging.</p> <p>TTL (Time to Live) – Displays value for your reference. TTL value is set by telnet command.</p>
<p>PPP/MP Setup</p>	<p>PPP Authentication – Select PAP only or PAP or CHAP for PPP. If you want to connect to Internet all the time, you can check Always On.</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)

Usually ISP dynamically assigns IP address to you each time you connect to it and request. In some case, your ISP provides service to always assign you the same IP address whenever you request. In this case, you can fill in this IP address in the Fixed IP field. Please contact your ISP before you want to use this function.

WAN IP Alias - If you have multiple public IP addresses and would like to utilize them on the WAN interface, please use WAN IP Alias. You can set up to 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.

WAN2 IP Alias (Multi-NAT)

Index	Enable	Aux. WAN IP	Join NAT IP Pool
1.	<input type="checkbox"/>	172.16.3.102	<input type="checkbox"/>
2.	<input checked="" type="checkbox"/>	<input type="text" value="172.16.3.200"/>	<input checked="" type="checkbox"/>
3.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>

OK

Clear All

Close

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

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

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

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

Details Page for Static or Dynamic IP in 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 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
<input checked="" type="radio"/> Enable <input type="radio"/> Disable		WAN IP Network Settings WAN IP Alias	
ISDN Dial Backup Setup Dial Backup Mode: <input type="text" value="None"/>		<input type="radio"/> Obtain an IP address automatically Router Name: <input type="text"/> * Domain Name: <input type="text"/> * <small>* : Required for some ISPs</small>	
Keep WAN Connection <input type="checkbox"/> Enable PING to keep alive PING to the IP: <input type="text"/> PING Interval: <input type="text" value="0"/> minute(s)		<input checked="" type="radio"/> Specify an IP address IP Address: <input type="text" value="172.16.3.103"/> Subnet Mask: <input type="text" value="255.255.0.0"/> Gateway IP Address: <input type="text" value="172.16.1.1"/>	
WAN Connection Detection Mode: <input type="text" value="ARP Detect"/> Ping IP: <input type="text"/> TTL: <input type="text"/>		<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="00"/> <input type="text" value="00"/> <input type="text" value="02"/>	
MTU: <input type="text" value="1442"/> (Max:1500)		DNS Server IP Address Primary IP Address: <input type="text" value="168.95.1.1"/> Secondary IP Address: <input type="text"/>	
RIP Protocol <input type="checkbox"/> Enable RIP			

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.
ISDN Dial Backup Setup	<p>This setting is only available for the router supporting ISDN function.</p> <p>Before utilizing the ISDN dial backup feature, you must create a dial backup profile first. Please click ISDN > Dialing to a Single ISP to create the backup profile.</p> <p>Dial Backup Mode: <input type="text" value="None"/></p> <p>None - Disable the backup function.</p> <p>Packet Triggering -The backup line is not on until a packet from a local host triggers the router to establish a connection.</p> <p>Always On - If the broadband connection is no longer available, the backup line will be activated automatically and always on until the broadband connection is restored. We recommend you to enable this feature if you host a web server for your customers' access.</p>
Keep WAN Connection	Normally, this function is designed for Dynamic IP

	<p>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.</p> <p>PING to the IP - If you enable the PING function, please specify the IP address for the system to PING it for keeping alive.</p> <p>PING Interval - Enter the interval for the system to execute the PING operation.</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.</p> <p>Ping IP – If you choose Ping Detect as detection mode, you have to type IP address in this field for pinging.</p> <p>TTL (Time to Live) – Displays value for your reference. TTL value is set by telnet command.</p>																																				
<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>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>WAN2 IP Alias (Multi-NAT)</p> <table border="1" data-bbox="708 1249 1369 1626"> <thead> <tr> <th>Index</th> <th>Enable</th> <th>Aux. WAN IP</th> <th>Join NAT IP Pool</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>v</td> <td>172.16.3.102</td> <td>v</td> </tr> <tr> <td>2.</td> <td><input checked="" type="checkbox"/></td> <td><input type="text" value="172.16.3.200"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>3.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>4.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>6.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>7.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>8.</td> <td><input type="checkbox"/></td> <td><input type="text" value="0.0.0.0"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <p style="text-align: center;"> <input type="button" value="OK"/> <input type="button" value="Clear All"/> <input type="button" value="Close"/> </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> <p>Router Name: Type in the router name provided by ISP.</p> <p>Domain Name: Type in the domain name that you have assigned.</p> <p>Specify an IP address – Click this radio button to specify some data if you want to use Static IP mode.</p>	Index	Enable	Aux. WAN IP	Join NAT IP Pool	1.	v	172.16.3.102	v	2.	<input checked="" type="checkbox"/>	<input type="text" value="172.16.3.200"/>	<input checked="" type="checkbox"/>	3.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	4.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	5.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	6.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	7.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>	8.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
Index	Enable	Aux. WAN IP	Join NAT IP Pool																																		
1.	v	172.16.3.102	v																																		
2.	<input checked="" type="checkbox"/>	<input type="text" value="172.16.3.200"/>	<input checked="" type="checkbox"/>																																		
3.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
4.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
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7.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		
8.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>																																		

	<p>IP Address: Type the IP address.</p> <p>Subnet Mask: Type the subnet mask.</p> <p>Gateway IP Address: Type the gateway IP address.</p> <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.

Details Page for PPTP/L2TP in 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.

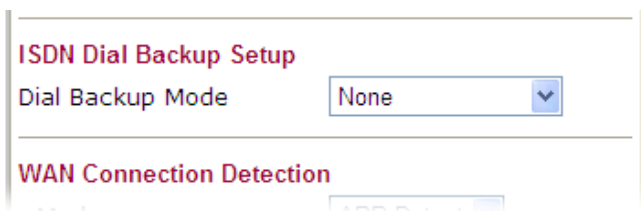
WAN >> Internet Access

WAN 2

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" value="172.16.1.1"/>		PPP Setup PPP Authentication <input type="text" value="PAP or CHAP"/> Idle Timeout <input type="text" value="-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 <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"/>		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" value="172.16.3.103"/> Subnet Mask <input type="text" value="255.255.0.0"/>	
ISDN Dial Backup Setup Dial Backup Mode <input type="text" value="None"/>			
MTU <input type="text" value="1442"/> (Max:1460)			

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.</p> <p>Password -Type in the password provided by ISP in this field.</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>
ISDN Dial Backup Setup	<p>This setting is only available for the router supporting ISDN function.</p>  <p>Before utilizing the ISDN dial backup feature, you must create a dial backup profile first. Please click ISDN > Dialing to a Single ISP to create the backup profile.</p> <p>Dial Backup Mode</p> <p>None - Disable the backup function.</p> <p>Packet Triggering -The backup line is not on until a packet from a local host triggers the router to establish a connection.</p>
MTU	It means Max Transmit Unit for packet. The default setting is 1442.
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)	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.

WAN2 IP Alias (Multi-NAT)

Index	Enable	Aux. WAN IP	Join NAT IP Pool
1.	v	172.16.3.102	v
2.	<input checked="" type="checkbox"/>	<input type="text" value="172.16.3.200"/>	<input checked="" type="checkbox"/>
3.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="text" value="0.0.0.0"/>	<input type="checkbox"/>

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.

Details Page for PPP in WAN3

To use **PPP** (for 3G USB Modem) as the accessing protocol of the internet, please choose **Internet Access** from **WAN** menu. Then, select **PPP** mode for WAN2. The following web page will be shown.

WAN >> Internet Access

WAN 3

3G USB Modem **IPv6**

3G Modem 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#)

PPP Username (Optional)

PPP Password (Optional)

PPP Authentication ▾

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

WAN Connection Detection

Mode ▾

Ping IP

TTL:

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.
SIM PIN code	Type PIN code of the SIM card that will be used to access Internet.
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.
APN Name	APN means Access Point Name which is provided and required by some ISPs. Type the name and click Apply.
Modem Initial String2	The initial string 1 is shared with APN. In some cases, user may need another initial AT command to restrict 3G band or do any special settings.
Modem Dial String	Such value is used to dial through USB mode. Please use the default value. If you have any question, please contact to your ISP.

PPP Username	Type the PPP username (optional).
PPP Password	Type the PPP password (optional).
Always On	<p>If you want to connect to Internet all the time, you can check Always On.</p> <p>Idle Timeout – Set the timeout for breaking down the Internet after passing through the time without any action.</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>
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.</p> <p>Ping IP – If you choose Ping Detect as detection mode, you have to type IP address in this field for pinging.</p> <p>TTL (Time to Live) – Displays value for your reference. TTL value is set by telnet command.</p>

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	IPv6
Internet Access Mode			
Connection Type		Offline <input type="button" value="v"/>	

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	IPv6
Internet Access Mode			
Connection Type		PPP	
Note : IPv4 WAN setting should be PPPoE client.			
OK		Cancel	

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

Online Status

Physical Connection		System Uptime: 0:0:30	
IPv4	IPv6		
LAN Status			
IP Address			
2001:B010:7300:200:21D:AFF:FE7A:3E58/64 (Global)			
FE80::21D:AFF:FE7A:3E58/64 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
7	8	618	672
WAN2 IPv6 Status			
Enable	Mode	Up Time	
Yes	PPP	0:00:11	
IP		Gateway IP	
2001:B010:7300:200:21D:AFF:FE7A:3E5A/128 (Global)		FE80::90:1A00:242:AD52	
FE80::1D:AFF:FE7A:3E5A/128 (Link)			
DNS IP			
2001:B000:168::1			
2001:B000:168::2			
TX Packets	RX Packets	TX Bytes	RX Bytes
7	4	544	616

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.

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	IPv6
Internet Access Mode			
Connection Type		TSPC	
TSPC Configuration			
Username		<input type="text"/>	
Password		<input type="text"/>	
Confirm Password		<input type="text"/>	
Tunnel Broker		<input type="text"/>	

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 .
Password	Type the password assigned with the user name.
Confirm Password	Type the password again to make the confirmation.
Tunnel Broker	Type the address for the tunnel broker IP, FQDN or an optional port number.

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

WAN >> Internet Access

WAN 1

PPPoE	Static or Dynamic IP	PPTP	IPv6
Internet Access Mode			
Connection Type		AICCU	
AICCU Configuration			
Username		<input type="text"/>	
Password		<input type="text"/>	
Confirm Password		<input type="text"/>	
Tunnel Broker		tic.sixxs.net	
Subnet Prefix		<input type="text"/> / <input type="text"/>	

Available settings are explained as follows:

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

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.
Password	Type the password assigned with the user name.
Confirm Password	Type the password again to make the confirmation.
Tunnel Broker	Type the address for the tunnel broker IP, FQDN or an optional port number.
Subnet Prefix	Type the subnet prefix address getting from service provider

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	Static or Dynamic IP	PPTP	IPv6
Internet Access Mode			
Connection Type		DHCPv6 Client	
DHCPv6 Client Configuration			
Identity Association		<input checked="" type="radio"/> Prefix Delegation <input type="radio"/> Non-temporary Address	
IAID (Identity Association ID)		4103699993	
OK		Cancel	

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.

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	Static or Dynamic IP	PPTP	IPv6						
Internet Access Mode									
Connection Type		Static IPv6							
Static IPv6 Address configuration									
IPv6 Address		/ Prefix Length							
<input type="text"/>		/ <input type="text"/> <input type="button" value="Add"/> <input type="button" value="Delete"/>							
Current IPv6 Address Table									
<table border="1"> <thead> <tr> <th>Index</th> <th>IPv6 Address/Prefix Length</th> <th>Scope</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>				Index	IPv6 Address/Prefix Length	Scope			
Index	IPv6 Address/Prefix Length	Scope							
Static IPv6 Gateway configuration									
IPv6 Gateway Address		<input type="text" value="::"/>							

Available settings are explained as follows:

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

3.1.4 Multi-PVCs

This router allows you to create multi-PVCs for different data transferring for using. Simply go to **Internet Access** and select **Multi-PVCs** page.

General

The system allows you to set up to eight channels which are ready for choosing as the first PVC line that will be used as multi-PVCs.

WAN >> Multi-PVCs

Multi-PVCs

General		ATM QoS		Port-based Bridge		
Channel	Enable	VPI	VCI	QoS Type	Protocol	Encapsulation
1.	<input checked="" type="checkbox"/>	0	33	UBR	PPPoE	LLC/SNAP
2.	<input checked="" type="checkbox"/>	0	88	UBR	MPoA	1483 Bridged IP LLC
3.	<input type="checkbox"/>	1	43	UBR	PPPoA	VC MUX
4.	<input type="checkbox"/>	1	44	UBR	PPPoA	VC MUX
5.	WAN <input type="checkbox"/>	1	45	UBR	PPPoA	VC MUX
6.	WAN <input type="checkbox"/>	1	46	UBR	PPPoA	VC MUX
7.	WAN <input type="checkbox"/>	1	47	UBR	PPPoA	VC MUX
8.	<input type="checkbox"/>	1	48	UBR	PPPoA	VC MUX

Note: VPI/VCI must be unique for each channel!

OK Clear Cancel

Available settings are explained as follows:

Item	Description
Enable	Check this box to enable that channel. The channels that you enabled here will be shown in the Multi-PVC channel drop down list on the web page of Internet Access . Though you can enable eight channels in this page, yet only one channel can be chosen on the web page of Internet Access .
VPI	Type in the value provided by your ISP.
VCI	Type in the value provided by your ISP.
QoS Type	Select a proper QoS type for the channel. QoS Type UBR CBR ABR nrtVBR rtVBR

Protocol	Select a proper protocol for this channel. Protocol <div style="border: 1px solid black; padding: 2px;"> PPPoE ▼ PPPoA PPPoE MPoA </div>
Encapsulation	Choose a proper type for this channel. The types will be different according to the protocol setting that you choose. <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; padding: 2px;"> VC MUX ▼ VC MUX LLC/SNAP </div> <div style="border: 1px solid black; padding: 2px;"> 1483 Route IP LLC ▼ 1483 Bridged IP LLC 1483 Route IP LLC 1483 Bridged IP VC-Mux 1483 Routed IP VC-Mux(IPoA) 1483 Bridged IP(IPoE) </div> </div>

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.

WAN >> Multi-PVCs >> PVC Channel 5

WAN for Router-borne Application: Management ▼

Enable Disable

DSL Modem Settings

VPI: QoS Type: ▼

VCI: Protocol: ▼

Encapsulation: ▼

WAN Connection Detection

Mode: ▼

Ping IP:

TTL:

PPPoE/PPPoA Client

ISP Access Setup

ISP Name:

Username:

Password:

PPP Authentication: ▼

Always On

Idle Timeout: second(s)

IP Address From ISP

Fixed IP: Yes No (Dynamic IP)

Fixed IP Address:

MPoA (RFC1483/2684)

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:

Available settings are explained as follows:

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

WAN for Router-borne Application	<p>Choose the router service for channel 5, 6 or 7.</p> <p>Management - It can be specified for general management (Web configuration/telnet/TR069). If you choose Management, the configuration for this PVC will be effective for Web configuration/telnet/TR069.</p> <p>VoIP - It can be specified for VoIP only. If you choose VoIP, the configuration for this PVC will be effective for VoIP data transmitting and receiving.</p>
---	---

For other settings, refer to **Details Page for PPPoE/PPPoA in WAN1**.

ATM QoS

Such configuration is applied to upstream packets. Such information will be provided by ISP. Please contact with your ISP for detailed information.

WAN >> Multi-PVCs

Multi-PVCs


General	ATM QoS	Port-based Bridge		
Channel	QoS Type	PCR	SCR	MBS
1.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
2.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
3.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
4.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
5.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
6.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
7.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>
8.	UBR <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>	0 <input type="text"/>

Note: 1.Set 0 means default value.

2.PCR(max) = ADSL Up Speed / 53 / 8.

OK Clear Cancel

Available settings are explained as follows:

Item	Description
QoS Type	<p>Select a proper QoS type for the channel according to the information that your ISP provides.</p> 
PCR	It represents Peak Cell Rate. The default setting is "0".
SCR	It represents Sustainable Cell Rate. The value of SCR must be smaller than PCR.

MBS	It represents Maximum Burst Size. The range of the value is 10 to 50.
------------	---

Port-based Bridge

General page lets you set the first PVC. As to set the second PVC line, please click the **Port-based Bridge** tab to open Bridge configuration page.

WAN >> Multi-PVCs

Multi-PVCs

General		ATM QoS				Port-based Bridge			
Channel	Enable	P1	P2	P3	P4	Service Type	Add Tag	Priority	
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input type="checkbox"/> 0	0	
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input type="checkbox"/> 0	0	
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input checked="" type="checkbox"/> 0	0	
4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input checked="" type="checkbox"/> 0	0	
5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input checked="" type="checkbox"/> 0	0	
6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input checked="" type="checkbox"/> 0	0	
7.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input checked="" type="checkbox"/> 0	0	
8.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal	<input checked="" type="checkbox"/> 0	0	

Note: 1.Channel 1 to 2 are reserved for Nat/Route use.

2.P1 is reserved for Nat/Route use.

OK Clear Cancel

Available settings are explained as follows:

Item	Description
Enable	Check this box to enable that channel. Only channel 3 to 8 can be set in this page, for channel 1 to 2 are reserved for NAT using.
P1 to P4	It means the LAN port 1 to 4. Check the box to designate the LAN port for channel 3 to 8.
Service Type	Normally, service type is used for the service of video stream (e.g., IPTV). It can divide the packets from remote control and from video stream into different PVC. Such feature is used for specific application. Please choose Normal as the Service Type . Normal – It means that the PVC can accept all packets. IGMP –It means that such PVC can accept IGMP packets only. Such type just meets a specific environment on some ISPs. Data and IGMP packets will be transmitted and received with different PVC.
Add Tag	To identify the usage of PVC, check this box to invoke this setting. And type the number for VLAN ID (number).
Priority	To add the packet priority number for such VLAN. The range is from 0 to 7.

Click **Clear** to remove all the configurations in this page if you do not satisfy it. When you finish the configuration, please click **OK** to save and exit this page. Or click **Cancel** to abort the configuration and exit this page.

3.1.5 Multi-VLAN

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

General

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

WAN >> Multi-VLAN

General		Bridge	
Channel	Enable	Add Tag	Priority
1.	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
2.	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
3.	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
4.	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
5.	<input type="checkbox"/>	WAN	<input type="text" value="0"/>
6.	<input type="checkbox"/>	WAN	<input type="text" value="0"/>
7.	<input type="checkbox"/>	WAN	<input type="text" value="0"/>
8.	<input type="checkbox"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

- Note:**
1. Tag value must be set between 1 ~ 4095 and unique for each channel.
 2. Only one channel can be untagged (equal to 0) at a time.
 3. Channel 1 and channel 2 are reserved for NAT/Route application.
 4. Channel 5 to channel 8 can be used for Router-borne application.

Available settings are explained as follows:

Item	Description
Channel	Display the number of each channel.
Enable	Check this box to enable that channel. The channels that you enabled here will be shown in the Multi-VLAN channel drop down list on the web page of Internet Access . Though you can enable eight channels in this page, yet only one channel can be chosen on the web page of Internet Access .
Add Tag	To identify the usage of VLAN, check this box to invoke this setting. And type the number for VLAN ID (number).
Priority	To add the packet priority number for such VLAN. The range is from 0 to 7.

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.

WAN >> Multi-VLAN >> PVC Channel 5

WAN for Router-borne Application: Management ▾

<p>PPPoE/PPPoA Client <input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <hr/> <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>Static or Dynamic IP <input type="radio"/> Enable <input checked="" type="radio"/> Disable</p> <hr/> <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><small>*: Required for some ISPs</small></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> <hr/> <p>DNS Server IP Address</p> <p>Primary IP Address <input type="text"/></p> <p>Secondary IP Address <input type="text"/></p>
--	--

Available settings are explained as follows:

Item	Description
WAN for Router-borne Application	<p>Choose the router service for channel 5, 6 or 7.</p> <p>Management - It 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>VoIP - It can be specified for VoIP only. If you choose VoIP, the configuration for this VLAN will be effective for VoIP data transmitting and receiving.</p> <p>IPTV - It can be specified for IPTV only. If you choose IPTV, the configuration for this VLAN will be effective for IPTV data transmitting and receiving.</p>

For other settings, refer to **Details Page for PPPoE in WAN1**.

Bridge

General page lets you set the first channel. As to set the third channel, please click the **Bridge** tab to open **Bridge** configuration page.

WAN >> Multi-VLAN

General		Bridge			
Channel	Enable	P1	P2	P3	P4
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: P1 is reserved for Nat/Route use.

Available settings are explained as follows:

Item	Description
Enable	Check this box to enable that channel. Only channel 3 to 8 can be set in this page, for channel 1 to 2 are reserved for NAT using.
P1 to P4	It means the LAN port 1 to 4. Check the box to designate the LAN port for channel 3 to 8.

Click **Clear** to remove all the configurations in this page if you do not satisfy it. When you finish the configuration, please click **OK** to save and exit this page. Or click **Cancel** to abort the configuration and exit this page.

3.1.6 Load-Balance Policy

This router supports the function of load balancing. It can assign traffic with protocol type, IP address for specific host, a subnet of hosts, and port range to be allocated in WAN1, WAN2, and WAN3 interface. The user can assign traffic category and force it to go to dedicate network interface based on the following web page setup. Twenty policies of load-balance are supported by this router.

Note: Load-Balance Policy is running only when WAN1, WAN2 and WAN3 are activated.

WAN >> Load-Balance Policy

Load-Balance Policy

Index	Enable	Protocol	WAN	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								Down
2	<input type="checkbox"/>	any	WAN1							UP	Down
3	<input type="checkbox"/>	any	WAN1							UP	Down
4	<input type="checkbox"/>	any	WAN1							UP	Down
5	<input type="checkbox"/>	any	WAN1							UP	Down
6	<input type="checkbox"/>	any	WAN1							UP	Down
7	<input type="checkbox"/>	any	WAN1							UP	Down
8	<input type="checkbox"/>	any	WAN1							UP	Down
9	<input type="checkbox"/>	any	WAN1							UP	Down
10	<input type="checkbox"/>	any	WAN1							UP	Down

<< [1-10](#) | [11-20](#) | [21-30](#) | [31-32](#) >>

[Next](#) >>

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.
WAN	Use the drop-down menu to change the WAN interface.
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.

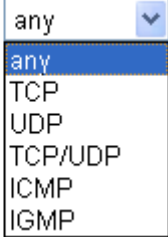
Click **Index 1** to access into the following page for configuring load-balance policy.

WAN >> Load-Balance Policy

Index: 1

<input type="checkbox"/> Enable	
Protocol	any
Binding WAN Interface	WAN1 <input checked="" type="checkbox"/> Auto failover to the other WAN
Src IP Start	<input type="text"/>
Src IP End	<input type="text"/>
Dest IP Start	<input type="text"/>
Dest IP End	<input type="text"/>
Dest Port Start	<input type="text"/>
Dest Port End	<input type="text"/>

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. <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">Protocol</div>  </div>
Binding WAN interface	Choose the WAN interface (WAN1/WAN2/WAN3) for binding. Auto failover to other WAN – Check this button to lead the data passing through other WAN automatically when the selected WAN interface is failover.
Src IP Start	Type the source IP start for the specified WAN interface.
Src IP End	Type the source IP end for the specified WAN interface. If this field is blank, it means that all the source IPs inside the LAN will be passed through the WAN interface.
Dest IP Start	Type the destination IP start for the specified WAN interface.
Dest IP End	Type the destination IP end for the specified WAN interface. If this field is blank, it means that all the destination IPs will be passed through the WAN interface.
Dest Port Start	Type the destination port start for the destination IP.
Dest Port End	Type the destination port end for the destination IP. If this field is blank, it means that all the destination ports will be passed through the WAN interface.

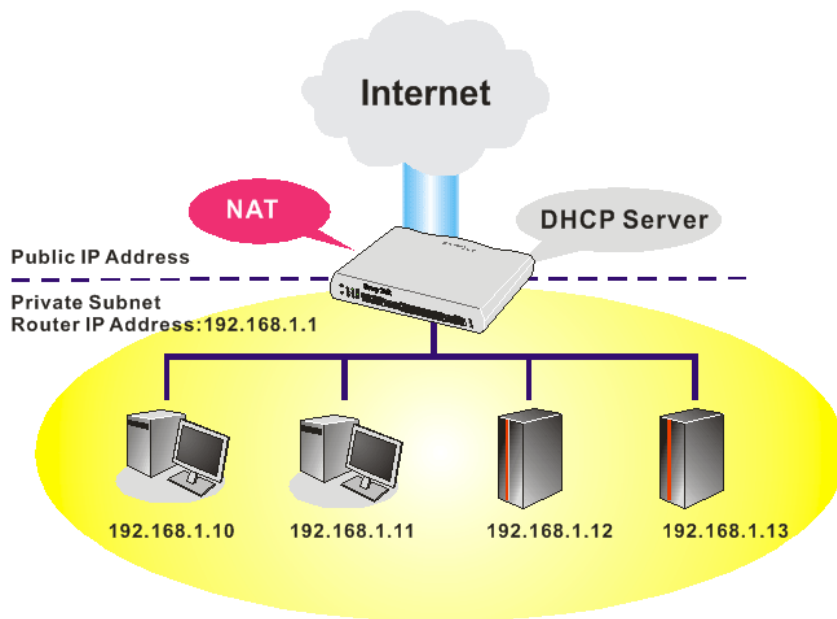
3.2 LAN

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.

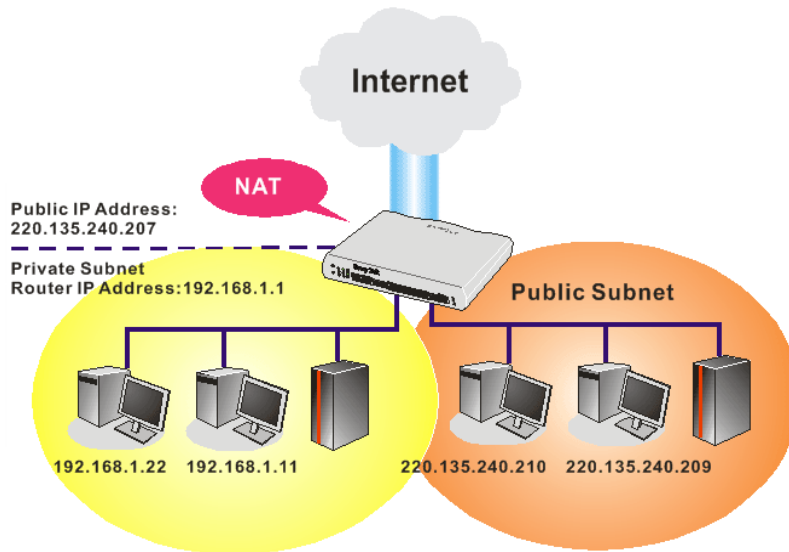


3.2.1 Basics of LAN

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)

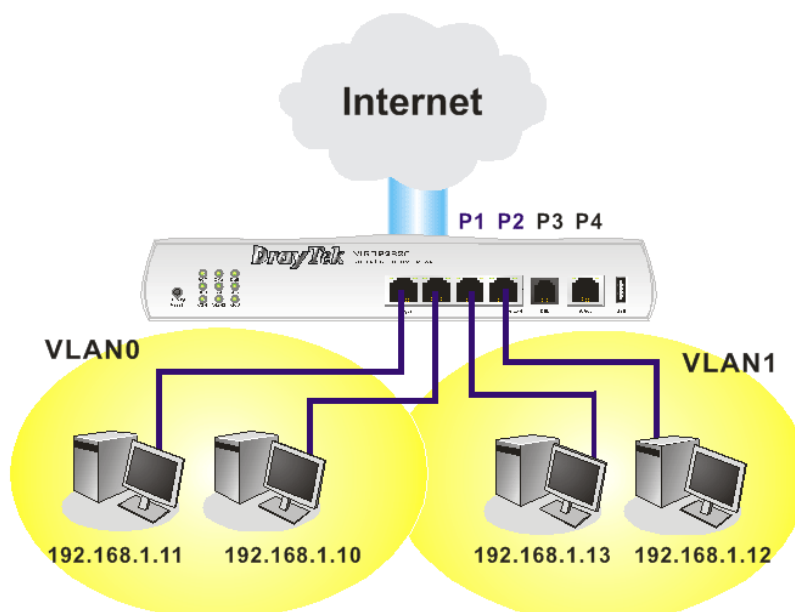
Vigor router will exchange routing information with neighboring routers using the RIP to accomplish IP routing. This allows users to change the information of the router such as IP address and the routers will automatically inform for each other.

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.



3.2.2 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 four subnets provided by the router which allow users to divide groups into different subnets (LAN1 – LAN4). 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 – LAN4 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	
LAN 3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.3.1	Details Page	
LAN 4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.4.1	Details Page	
IP Routed Subnet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	192.168.0.1	Details Page	

Inter-LAN Routing

Subnet	LAN 1	LAN 2	LAN 3	LAN 4
LAN 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN 3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LAN 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: LAN 2/3/4 are 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, LAN3, LAN3 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>
Inter-LAN Routing	<p>Check the box to link two or more different subnets (LAN and LAN).</p>

Details Page for LAN1 – Ethernet TCP/IP and DHCP Setup

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

LAN >> General Setup

LAN 1 Ethernet TCP / IP and DHCP Setup	LAN 1 IPv6 Setup
<p>Network Configuration For NAT Usage</p> <p>IP Address <input type="text" value="192.168.1.1"/></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>DHCP Server Configuration</p> <p><input checked="" type="radio"/> Enable Server <input type="radio"/> Disable Server</p> <p><input type="checkbox"/> Enable Relay Agent</p> <p>Start IP Address <input type="text" value="192.168.1.10"/></p> <p>IP Pool Counts <input type="text" value="50"/></p> <p>Gateway IP Address <input type="text" value="192.168.1.1"/></p> <hr/> <p>DNS Server IP Address</p> <p>Primary IP Address <input type="text"/></p> <p>Secondary IP Address <input type="text"/></p> <p><input type="checkbox"/> Force router to use address for DNS</p>
<input type="button" value="OK"/>	

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

	<p>server is located the relay agent should redirect the DHCP request to.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>DHCP Server IP Address for Relay Agent - 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.</p>																
<p>DNS Server IP Address</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>The default DNS Server IP address can be found via Online Status:</p> <table border="1" data-bbox="708 1464 1426 1554"> <tr> <td colspan="2">System Status</td> <td colspan="2">System Uptime: 71:4</td> </tr> <tr> <td>LAN Status</td> <td>Primary DNS: 194.109.6.66</td> <td colspan="2">Secondary DNS: 168.95.1.1</td> </tr> <tr> <td>IP Address</td> <td>TX Packets</td> <td colspan="2">RX Packets</td> </tr> <tr> <td>192.168.1.1</td> <td>347390</td> <td colspan="2">214004</td> </tr> </table> <p>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.</p> <p>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.</p> <p>Force DNS manual setting - Force Vigor router to use DNS servers in this page instead of DNS servers given by the Internet Access server (PPPoE, PPTP, L2TP or DHCP server).</p>	System Status		System Uptime: 71:4		LAN Status	Primary DNS: 194.109.6.66	Secondary DNS: 168.95.1.1		IP Address	TX Packets	RX Packets		192.168.1.1	347390	214004	
System Status		System Uptime: 71:4															
LAN Status	Primary DNS: 194.109.6.66	Secondary DNS: 168.95.1.1															
IP Address	TX Packets	RX Packets															
192.168.1.1	347390	214004															

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

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::250:7FFF:FEEA:7EC8/64	Link

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
RADVD Configuration	<p>Enable – Click it to enable RADVD server. The router advertisement daemon (radvd) sends Router Advertisement messages, specified by RFC 2461, to a local Ethernet LAN periodically and when requested by a node sending a Router Solicitation message. These messages are required for IPv6 stateless auto-configuration.</p> <p>Disable – Click it to disable RADVD server.</p> <p>Advertisement Lifetime - The lifetime associated with the default router in units of seconds. It's used to control the lifetime of the prefix. The maximum value corresponds to 18.2 hours. A lifetime of 0 indicates that the router is not a default router and should not appear on the default router</p>

	list.
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>Start IPv6 Address / End IPv6 Address –Type the start and end address for IPv6 server.</p>
DNS Server IPv6 Address	<p>Primary DNS Sever – Type the IPv6 address for Primary DNS server.</p> <p>Secondary DNS Server –Type another IPv6 address for DNS server if required.</p>
Static IPv6 Address configuration	<p>IPv6 Address –Type static IPv6 address for LAN.</p> <p>Prefix Length – Type the fixed value for prefix length.</p> <p>Add – Click it to add a new entry.</p> <p>Delete – Click it to remove an existed entry.</p>
Current IPv6 Address Table	Display current used IPv6 addresses.

Details Page for LAN2/LAN3/LAN4

LAN >> General Setup

Lan 2 Ethernet TCP / IP and DHCP Setup

Network Configuration <input type="radio"/> Enable <input checked="" type="radio"/> Disable <input checked="" type="radio"/> For NAT Usage <input type="radio"/> For Routing Usage IP Address: <input type="text" value="192.168.2.1"/> Subnet Mask: <input type="text" value="255.255.255.0"/>		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="192.168.2.10"/> IP Pool Counts: <input type="text" value="100"/> Gateway IP Address: <input type="text" value="192.168.2.1"/>	
--	--	---	--

OK

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 NAT Usage - Click this radio button to invoke NAT function.</p> <p>For Routing Usage - Click this radio button to invoke this function.</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>
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.</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 - 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>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.</p> <p>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.</p>

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.

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>DHCP Server Configuration</p> <p>Start IP Address: <input type="text"/></p> <p>IP Pool Counts: <input type="text" value="0"/> (max. 10)</p> <p><input type="checkbox"/> Use LAN Port <input checked="" type="checkbox"/> P1 <input checked="" type="checkbox"/> P2</p> <p><input checked="" type="checkbox"/> Use MAC Address</p> <hr/> <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"/> : <input type="text"/> : <input type="text"/> : <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> <p style="text-align: center;"><input type="button" value="OK"/></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 - Click this radio button to invoke this function.</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

DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts a DHCP server for your network so it automatically dispatch related IP settings to any local user configured as a DHCP client. It is highly recommended that you leave the router enabled as a DHCP server if you do not have a DHCP server for your network.

If you want to use another DHCP server in the network other than the Vigor Router's, you can let Relay Agent help you to redirect the DHCP request to the specified location.

Start IP Address - Enter a value of the IP address pool for the DHCP server to start with when issuing IP addresses. If the 1st IP address of your router is 192.168.1.1, the starting IP address must be 192.168.1.2 or greater, but smaller than 192.168.1.254.

IP Pool Counts - Enter the maximum number of PCs that you want the DHCP server to assign IP addresses to. The default is 50 and the maximum is 253.

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 IP address 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.

3.2.3 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.

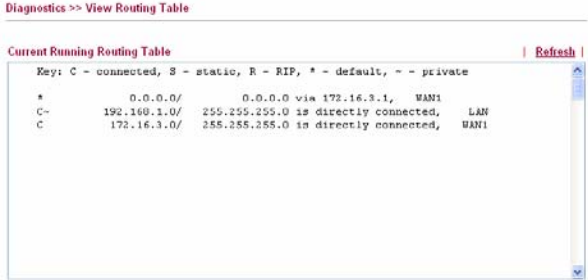
Static Route for IPv4

[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
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.
Set to Factory Default	Clear all of the settings and return to factory default settings.
Viewing Routing Table	Displays the routing table for your reference. 

Static Route for IPv6

You can set up to 40 profiles for IPv6 static route.

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

Available settings are explained as follows:

Item	Description
Index	The number (1 to 40) under Index allows you to open next page to set up static route.
Destination Address	Displays the destination address of the static route.
Status	Displays the status of the static route.
Set to Factory Default	Clear all of the settings and return to factory default settings.
Viewing IPv6 Routing Table	Displays the routing table for your reference.

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

LAN >> Static Route Setup

Index No. 1

Enable


Destination IPv6 Address / Prefix Len: /

Gateway IPv6 Address:

Network Interface: ▼

OK Cancel Delete

Available settings are explained as follows:

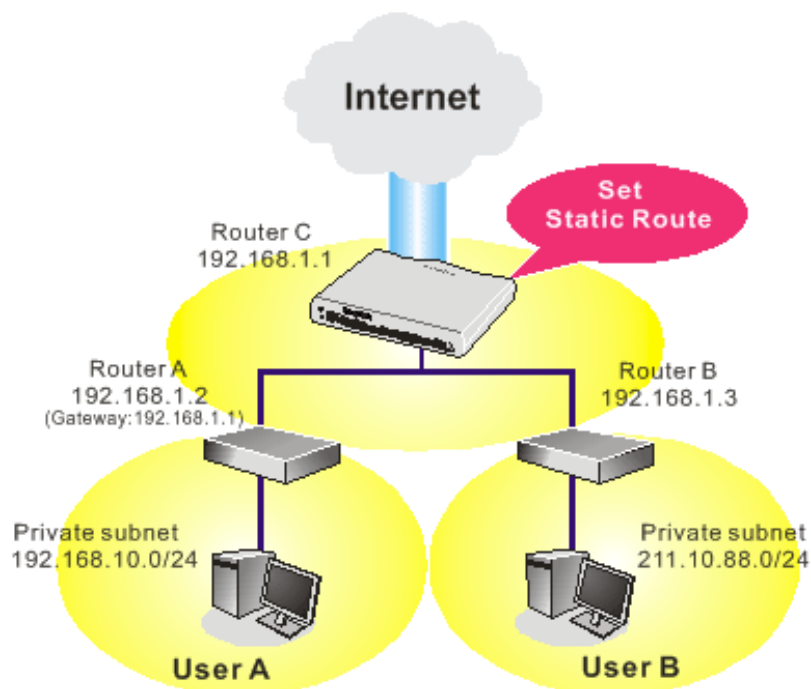
Item	Description
Enable	Click it to enable this profile.
Destination IPv6 Address / Prefix Len	Type the IP address with the prefix length for this entry.
Gateway IPv6 Address	Type the gateway address for this entry.
Network Interface	Use the drop down list to specify an interface for this static route. 

Add Static Routes to Private and Public Networks

Here is an example (based on IPv4) of setting Static Route in Main Router so that user A and B locating in different subnet can talk to each other via the router. Assuming the Internet access has been configured and the router works properly:

- use the Main Router to surf the Internet.
- create a private subnet 192.168.10.0 using an internal Router A (192.168.1.2)
- create a public subnet 211.100.88.0 via an internal Router B (192.168.1.3).
- have set Main Router 192.168.1.1 as the default gateway for the Router A 192.168.1.2.

Before setting Static Route, user A cannot talk to user B for Router A can only forward recognized packets to its default gateway Main Router.



1. Go to **LAN** page and click **General Setup**, select 1st Subnet as the **RIP Protocol Control**. Then click the **OK** button.

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.

2. Click the **LAN - Static Route** and click on the **Index Number 1**. Check the **Enable** box. Please add a static route as shown below, which regulates all packets destined to 192.168.10.0 will be forwarded to 192.168.1.2. Click **OK**.

LAN >> Static Route Setup

Index No. 1

Enable

Destination IP Address: 192.168.10.0

Subnet Mask: 255.255.255.0

Gateway IP Address: 192.168.1.2

Network Interface: LAN1

OK Cancel Delete

3. Return to **Static Route Setup** page. Click on another **Index Number** to add another static route as show below, which regulates all packets destined to 211.100.88.0 will be forwarded to 192.168.1.3.

LAN >> Static Route Setup

Index No. 2

Enable

Destination IP Address: 211.100.88.0

Subnet Mask: 255.255.255.0

Gateway IP Address: 192.168.1.3

Network Interface: LAN1

OK Cancel Delete

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

Diagnostics >> View Routing Table

Current Running 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, LAN
C~ 192.168.1.0/ 255.255.255.0 is directly connected, LAN
S~ 211.100.88.0/ 255.255.255.0 via 192.168.1.3, LAN

```

3.2.4 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. Go to **LAN** page and select **VLAN**. The following page will appear. Click **Enable** to invoke VLAN function.

LAN >> VLAN Configuration

VLAN Configuration

Enable

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

1. Tag based VLAN only applied for LAN Ports;
2. The checked Wireless LAN SSID will not has VLAN tagging function but regarded as joining VLAN group;
3. The set VLAN ID (VID) must be unique and not duplicate.

OK Clear Cancel

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

Available settings are explained as follows:

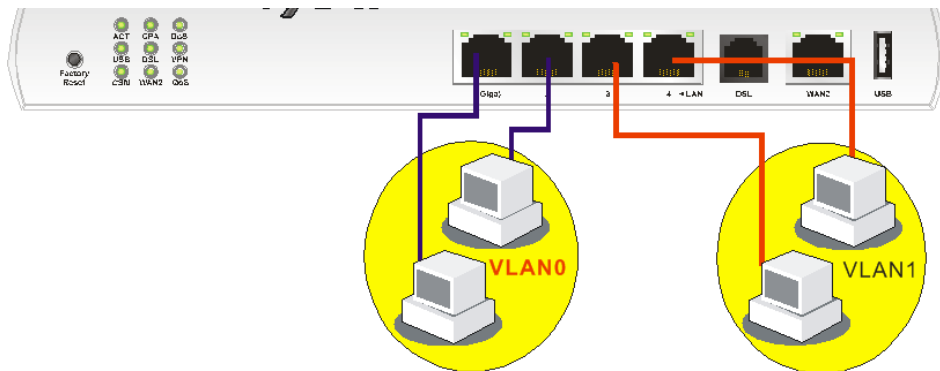
Item	Description
Enable	Click it to enable VLAN configuration.
VLAN Tag	<p>Enable – Enable the function of VLAN with tag. The router will add specific VLAN number to all packets on the LAN while sending them out. Please type the tag value and specify the priority for the packets sending by LAN.</p> <p>Disable – Disable the function of VLAN with tag.</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>
LAN	P1 – P4 – Check the LAN port(s) to be grouped under the selected VLAN.
Wireless LAN	SSID1 – SSID4 – Check the SSID box(es) for the wireless clients to be grouped under the selected VLAN.

Subnet	Choose one of them to make the selected VLAN mapping to the specified subnet only. For example, LAN1 is specified for VLAN0. It means that PCs grouped under VLAN0 can get the IP address(es) that specified by the subnet.
---------------	---

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.

- If, VLAN 0 is consisted of hosts linked to P1 and P2 and VLAN 1 is consisted of hosts linked to P3 and P4. VLAN0 and VLAN1 are configured with different subnets.



- After checking the box to enable VLAN function, you will check the table according to the needs as shown below.

LAN >> VLAN Configuration

VLAN Configuration

	VLAN Tag			LAN				Wireless LAN				Subnet
	Enable	VID	Priority	P1	P2	P3	P4	SSID1	SSID2	SSID3	SSID4	
VLAN0	<input type="checkbox"/>	0	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 1
VLAN1	<input type="checkbox"/>	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAN 2
VLAN2	<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
VLAN3	<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
VLAN4	<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
VLAN5	<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
VLAN6	<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
VLAN7	<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

- Tag based VLAN only applied for LAN Ports;
- The checked Wireless LAN SSID will not has VLAN tagging function but regarded as joining VLAN group;
- The set VLAN ID (VID) must be unique and not duplicate.

OK Clear Cancel

To remove VLAN, uncheck the needed box and click **OK** to save the results.

3.2.5 Bind IP to MAC

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

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

LAN >> Bind IP to MAC

Bind IP to MAC

Enable
 Disable
 Strict Bind

ARP Table | [Select All](#) | [Sort](#) | [Refresh](#)

IP Address	Mac Address
192.168.1.10	E0-CB-4E-DA-48-79

IP Bind List | [Select All](#) | [Sort](#)

Index	IP Address	Mac Address
-------	------------	-------------

Add and Edit

IP Address

Mac Address

Comment

Show Comment

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

Available settings are explained as follows:

Item	Description
Enable	Click this radio button to invoke this function. However, IP/MAC which is not listed in IP Bind List also can connect to Internet.
Disable	Click this radio button to disable this function. All the settings on this page will be invalid.
Strict Bind	Click this radio button to block the connection of the IP/MAC which is not listed in IP Bind List.
ARP Table	This table is the LAN ARP table of this router. The information for IP and MAC will be displayed in this field. Each pair of IP and MAC address listed in ARP table can be selected and added to IP Bind List by clicking Add below.
Select All	Click this link to select all the items in the ARP table.
Sort	Reorder the table based on the IP address.

Refresh	Refresh the ARP table listed below to obtain the newest ARP table information.
Add and Edit	<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 it to display the content of the comment.</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 .
Edit	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 .

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 configurator of the router might not be accessed.

3.2.6 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:

P2 P3 P4

Mirrored port:

P1 P2 P3 P4

OK

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.

3.3 NAT

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

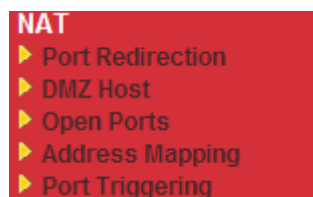
When the outgoing packets destined to some public server on the Internet reach the NAT router, the router will change its source address into the public IP address of the router, select the available public port, and then forward it. At the same time, the router shall list an entry in a table to memorize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

The benefit of the NAT includes:

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

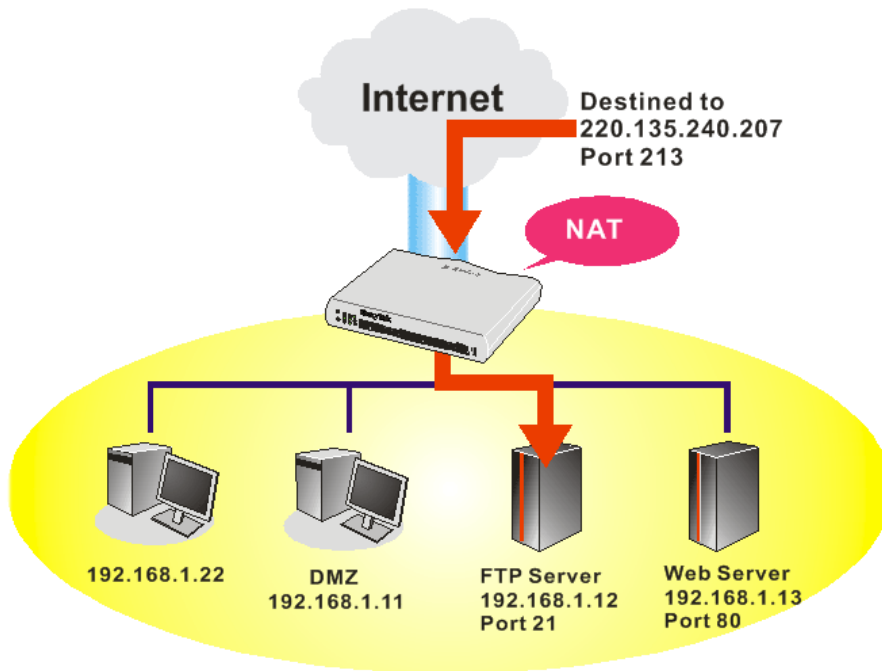
On NAT page, you will see the private IP address defined in RFC-1918. Usually we use the 192.168.1.0/24 subnet for the router. As stated before, the NAT facility can map one or more IP addresses and/or service ports into different specified services. In other words, the NAT function can be achieved by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

Below shows the menu items for NAT.



3.3.1 Port Redirection

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



The port redirection can only apply to incoming traffic.

To use this function, please go to NAT page and choose **Port Redirection** web page. The **Port Redirection Table** provides 20 port-mapping entries for the internal hosts.

[NAT >> Port Redirection](#)

Port Redirection				Set to Factory Default
Index	Service Name	Public Port	Private IP	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 >>](#)

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

NAT >> Port Redirection

Index No. 1

<input checked="" type="checkbox"/> Enable	
Mode	Range <input type="button" value="v"/> Single Range
Service Name	<input type="text"/>
Protocol	--- <input type="button" value="v"/>
WAN IP	1.All <input type="button" value="v"/>
Public Port	<input type="text"/> - <input type="text"/>
Private IP	<input type="text"/> - <input type="text"/>
Private Port	<input type="text"/>

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.

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 configurator 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.

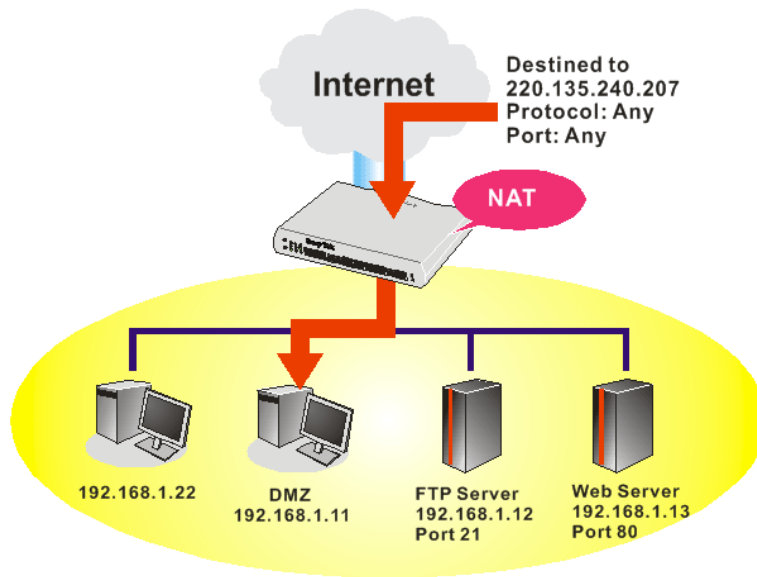
System Maintenance >> Management

Management Setup

<p>Management Access Control</p> <p><input checked="" type="checkbox"/> Allow management from the Internet</p> <p style="margin-left: 20px;"><input type="checkbox"/> FTP Server</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> HTTP Server</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> HTTPS Server</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Telnet Server</p> <p style="margin-left: 20px;"><input type="checkbox"/> SSH Server</p> <p><input checked="" type="checkbox"/> Disable PING from the Internet</p> <hr/> <p>Access List</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;"></th> <th style="width: 30%;">List</th> <th style="width: 30%;">IP</th> <th style="width: 35%;">Subnet Mask</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾</td> </tr> <tr> <td>2</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾</td> </tr> <tr> <td>3</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾</td> </tr> </tbody> </table>		List	IP	Subnet Mask	1	<input type="text"/>	<input type="text"/>	<input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾	2	<input type="text"/>	<input type="text"/>	<input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾	3	<input type="text"/>	<input type="text"/>	<input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾	<p>Management Port Setup</p> <p><input checked="" type="radio"/> User Define Ports <input type="radio"/> Default Ports</p> <p>Telnet Port <input type="text" value="23"/> (Default: 23)</p> <p>HTTP Port <input type="text" value="80"/> (Default: 80)</p> <p>HTTPS Port <input type="text" value="443"/> (Default: 443)</p> <p>FTP Port <input type="text" value="21"/> (Default: 21)</p> <p>SSH Port <input type="text" value="22"/> (Default: 22)</p> <hr/> <p>SNMP Setup</p> <p><input type="checkbox"/> Enable SNMP Agent</p> <p>Get Community <input type="text" value="public"/></p> <p>Set Community <input type="text" value="private"/></p> <p>Manager Host IP <input type="text"/></p> <hr/> <p>Trap Community <input type="text" value="public"/></p> <p>Notification Host IP <input type="text"/></p> <p>Trap Timeout <input type="text" value="10"/> seconds</p>
	List	IP	Subnet Mask														
1	<input type="text"/>	<input type="text"/>	<input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾														
2	<input type="text"/>	<input type="text"/>	<input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾														
3	<input type="text"/>	<input type="text"/>	<input style="border-bottom: none; border-top: none; border-right: none; border-left: none; border: none;" type="text"/> ▾														

3.3.2 DMZ Host

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



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

Click **DMZ Host** to open the following page:

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"/> <input type="button" value="Choose PC"/></p> <p>MAC Address of the True IP DMZ Host <input type="text"/> . <input type="text"/> . <input type="text"/> : <input type="text"/> . <input type="text"/> . <input type="text"/></p> <p>Note: When a True-IP DMZ host is turned on, it will force the router's WAN connection to be always on.</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.

NAT >> DMZ Host Setup

DMZ Host Setup

WAN1	WAN2	WAN3
	<p>WAN 2</p> <p>Enable <input type="checkbox"/></p> <p>Private IP <input type="text" value="0.0.0.0"/> <input type="button" value="Choose PC"/></p>	

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.

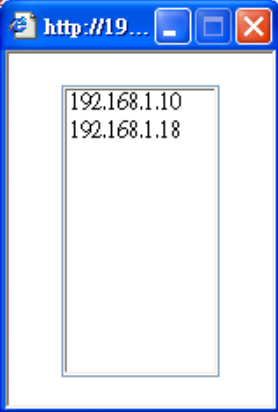
NAT >> DMZ Host Setup

DMZ Host Setup

WAN1		WAN2		WAN3	
WAN 2					
Index	Enable	Aux. WAN IP	Private IP		
1.	<input type="checkbox"/>	172.16.3.102	<input type="text" value="0.0.0.0"/>	<input type="button" value="Choose PC"/>	
2.	<input type="checkbox"/>	172.16.3.200	<input type="text" value="0.0.0.0"/>	<input type="button" value="Choose PC"/>	

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 PC	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.



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.

WAN1		WAN2		WAN3	
WAN 2					
Index	Enable	Aux. WAN IP	Private IP		
1.	<input checked="" type="checkbox"/>	172.16.3.102	<input type="text" value="192.168.1.10"/>	<input type="button" value="Choose PC"/>	
2.	<input type="checkbox"/>	172.16.3.200	<input type="text" value="0.0.0.0"/>	<input type="button" value="Choose PC"/>	

3.3.3 Open Ports

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

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

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

[NAT >> Open Ports](#)

Open Ports Setup				Set to Factory Default
Index	Comment	WAN Interface	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](#) >>

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.
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

<input checked="" type="checkbox"/> Enable Open Ports							
Comment	P2P						
WAN Interface	WAN1						
Local Computer	192.168.1.10					Choose PC	
	Protocol	Start Port	End Port		Protocol	Start Port	End Port
1.	TCP	4500	4700	6.	----	0	0
2.	UDP	4500	4700	7.	----	0	0
3.	----	0	0	8.	----	0	0
4.	----	0	0	9.	----	0	0
5.	----	0	0	10.	----	0	0

Available settings are explained as follows:

Item	Description
Enable Open Ports	Check to enable this entry.
Comment	Make a name for the defined network application/service.
WAN IP	Specify the WAN IP address that will be used for this entry. This setting is available when WAN IP Alias is configured.
Local Computer	Enter the private IP address of the local host or click Choose PC to select one. Choose PC - 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.

3.3.4 Address Mapping

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

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

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

NAT >> Address Mapping

Address Mapping Setup					Set to Factory Default
Index	Protocol	Public IP	Private IP	Mask	Status
1.	ALL	172.16.3.102		/32	x
2.	ALL	172.16.3.102		/32	x
3.	ALL	172.16.3.102		/32	x
4.	ALL	172.16.3.102		/32	x
5.	ALL	172.16.3.102		/32	x
6.	ALL	172.16.3.102		/32	x
7.	ALL	172.16.3.102		/32	x
8.	ALL	172.16.3.102		/32	x
9.	ALL	172.16.3.102		/32	x
10.	ALL	172.16.3.102		/32	x

Available settings are explained as follows:

Item	Description
Protocol	Display the protocol used for this address mapping.
Public IP	Display the public IP address selected for this entry, e.g., 172.16.3.102.
Private IP	Display the private IP set for this address mapping, e.g., 192.168.1.10.
Mask	Display the subnet mask selected for this address mapping.
Status	Display the status for the entry, enable or disable.

Click the index number link to open the configuration page.

NAT >> Address Mapping

Index No. 1

Enable

Protocol: ALL ▼

WAN Interface: WAN1 ▼

WAN IP: 1-172.16.3.102 ▼

Private IP:

Subnet Mask: /32 ▼

Available settings are explained as follows:

Item	Description
Enable	Check to enable this entry.
Protocol	Specify the transport layer protocol. It could be TCP , UDP , or ALL for selection.

	<div style="border: 1px solid black; padding: 2px;"> ▼ ALL ALL TCP UDP </div>
WAN Interface	Choose the WAN interface for such address mapping profile.
WAN IP	<p>Select an IP address (the selections provided here are set in IP Alias List of Network >>WAN interface). Local host can use this IP to connect to Internet.</p> <p>If you want to choose any one of the Public IP settings, you must specify some IP addresses in the IP Alias List of the Static/DHCP Configuration page first. If you did not type in any IP address in the IP Alias List, the Public IP setting will be empty in this field. When you click Apply, a message will appear to inform you.</p>
Private IP	Assign an IP address (e.g., 192.168.1.10) or a subnet to be compared with the Public IP address for incoming packets.
Subnet Mask	Select a value of subnet mask for private IP address.

3.3.5 Port Triggering

Port Triggering is a variation of open ports function; the difference is that the port triggering has the dynamic characteristics. It is more secure comparing to open ports.

In Open Ports setting, once we setup the ports be opened, all traffic can go through these open ports into LAN device; with Port Triggering function, the ports will be opened only when specific application triggers the specific ports, and then the needed ports will be opened automatically.

[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 --- ▾

Triggering Port



Incoming Protocol --- ▾

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 #ccc; padding: 5px; margin-top: 10px;"> User Defined ▾ User Defined Real Player QuickTime WMP IRC AIM Talk ICQ PalTalk BitTorrent </div>
Comment	Type the text to memorize the application of this rule.
Triggering Protocol	Select the protocol (TCP, UDP or TCP/UDP) for such triggering profile.

	
Triggering Port	Type the port or port range for such trigger 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.

3.4 Firewall

3.4.1 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:

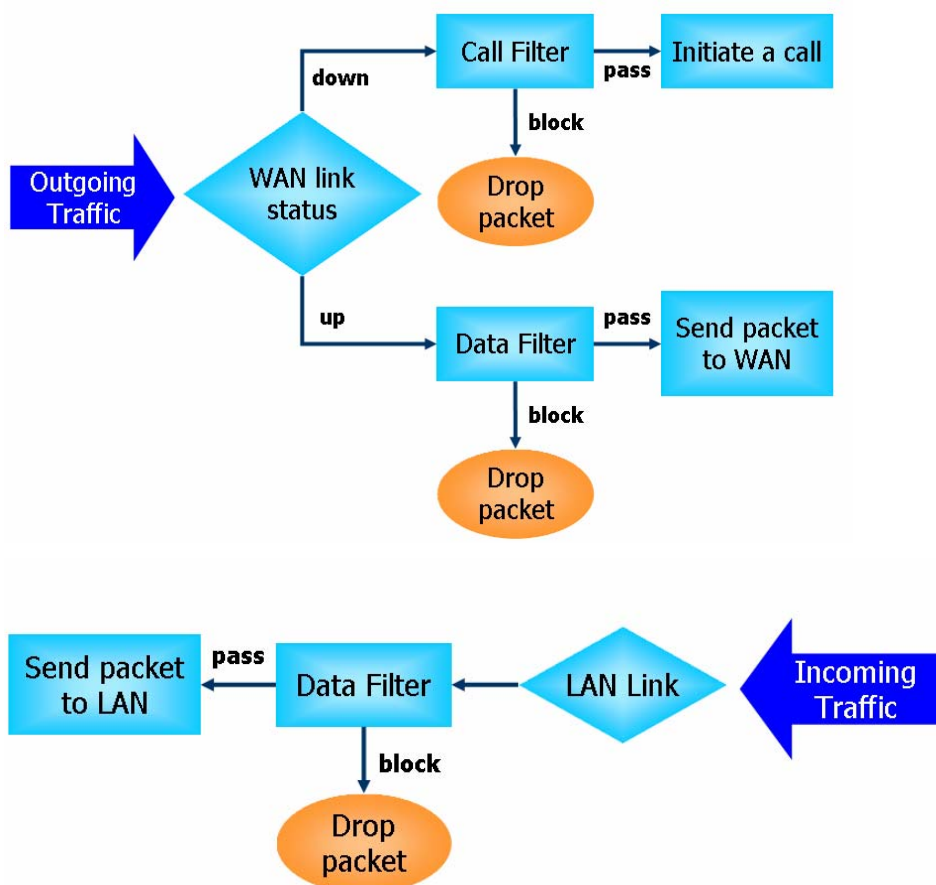
- User-configurable IP filter (Call Filter/ Data Filter).
- Stateful Packet Inspection (SPI): tracks packets and denies unsolicited incoming data
- Selectable Denial of Service (DoS) /Distributed DoS (DDoS) attacks protection

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.

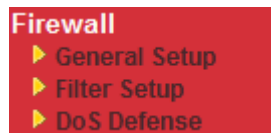
The **DoS Defense** function enables the Vigor router to inspect every incoming packet based on the attack signature database. Any malicious packet that might duplicate itself to paralyze the host in the secure LAN will be strictly blocked and a Syslog message will be sent as warning, if you set up Syslog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

Below shows the menu items for Firewall.



3.4.2 General Setup

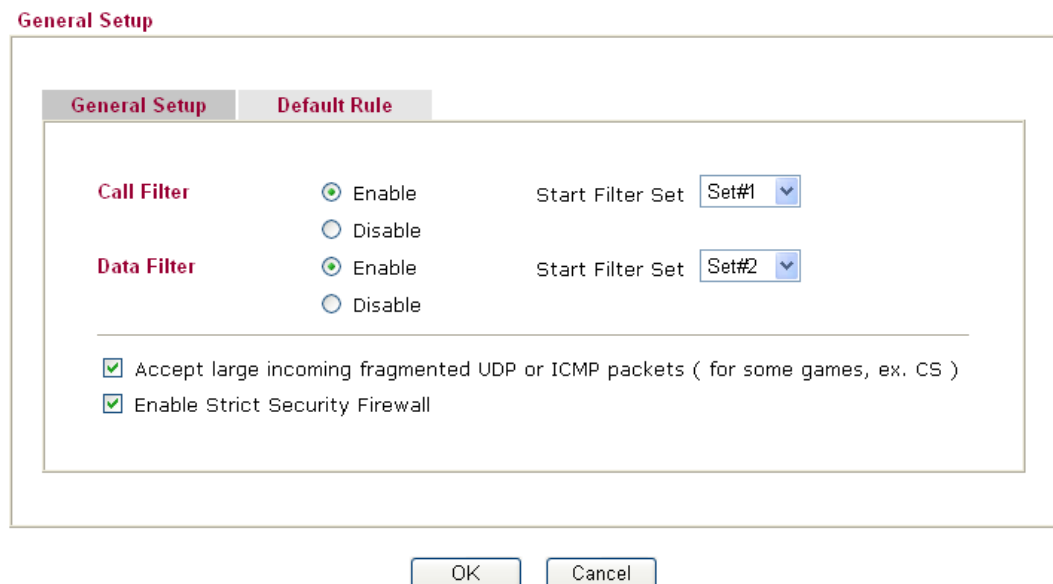
General Setup allows you to adjust settings of IP Filter and common options. Here you can enable or disable the **Call Filter** or **Data Filter**. Under some circumstance, your filter set can be linked to work in a serial manner. So here you assign the **Start Filter Set** only. Also you can configure 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.

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



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	Check the box to enable such function. All the packets, while transmitting through Vigor router, will be filtered by firewall settings configured by Vigor router if such feature is enabled. If the firewall system does not have any response (pass or block) for these packets, such as no response coming from web content filter, then the router’s firewall will block the packets directly.

Default Rule Page

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

[Firewall >> General Setup](#)

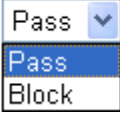
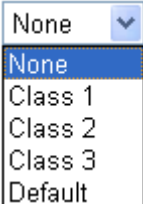
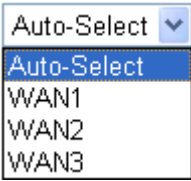
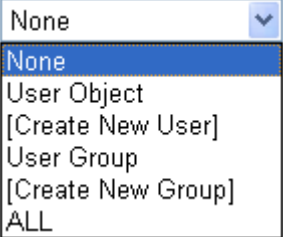
General Setup

General Setup
Default Rule

Actions for default rule:	Action/Profile	Syslog
Application Filter	Pass <input type="button" value="v"/>	<input type="checkbox"/>
Sessions Control	67 / <input type="text" value="60000"/>	<input type="checkbox"/>
Quality of Service	None <input type="button" value="v"/>	<input type="checkbox"/>
Load-Balance policy	Auto-Select <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"/>

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 </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 default setting is 60000.</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></p>
Load-Balance Policy	<p>Choose the WAN interface for applying Load-Balance Policy.</p> <p></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></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	Select an APP Enforcement profile for global IM/P2P application blocking. If there is no profile for you to select, please choose [Create New] from the drop down list in this page to create a new profile. All the hosts in LAN must follow the standard configured in the APP Enforcement profile selected here. For detailed information, refer to the section of APP Enforcement profile setup. For troubleshooting needs, you can specify to record information for IM/P2P by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.
URL Content Filter	Select one of the URL Content Filter profile settings (created in CSM>> URL Content Filter) for applying with this router. Please set at least one profile for choosing in CSM>> URL Content Filter web page first. Or choose [Create New] from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for URL Content Filter by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.
Web Content Filter	Select one of the Web Content Filter profile settings (created in CSM>> Web Content Filter) for applying with this router. Please set at least one profile for anti-virus in CSM>> Web Content Filter web page first. Or choose [Create New] from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for Web Content Filter by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.

Advance Setting

Click **Edit** to open the following window. However, it is **strongly recommended** to use the default settings here.

Firewall >> General Setup

Advance Setting

Codepage: ANSI(1252)-Latin I

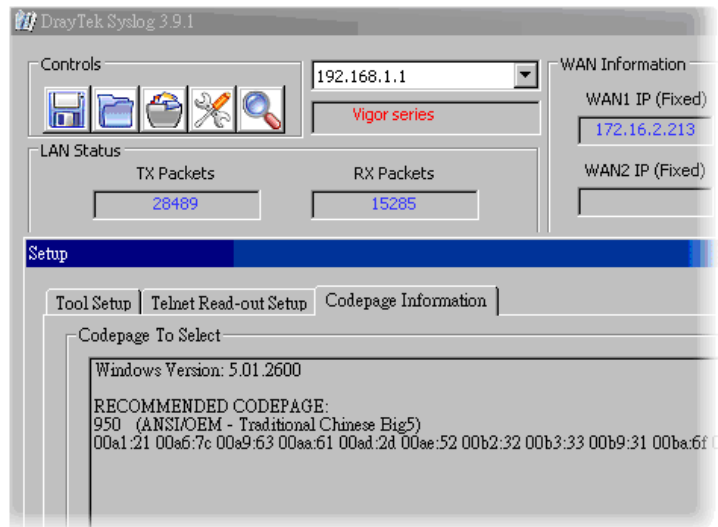
Window size: 65535

Session timeout: 1440 Minute

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.

3.4.3 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 3 Rule 1

Check to enable the Filter Rule

Comments:

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

Clear sessions when schedule ON: Enable

Direction: LAN/RT/VPN -> WAN

Source IP: Any

Destination IP: Any

Service Type: Any

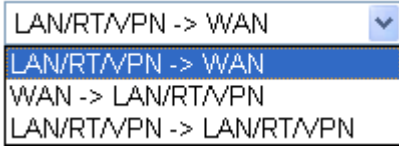
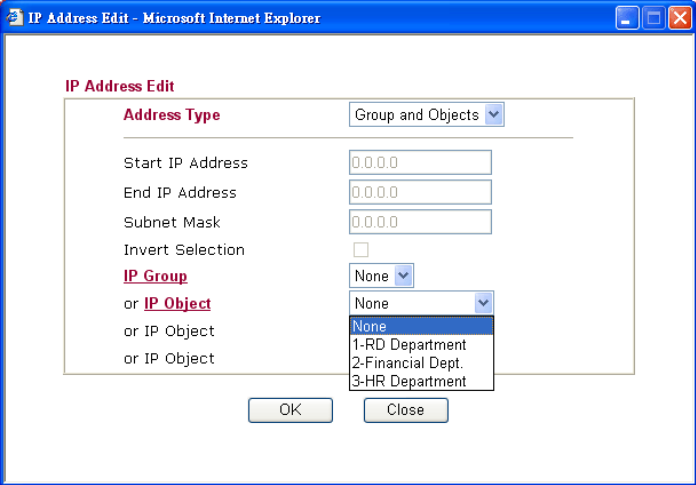
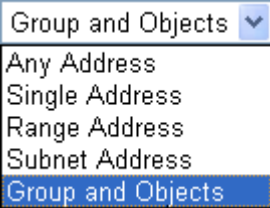
Fragments: Don't Care

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

Advance Setting

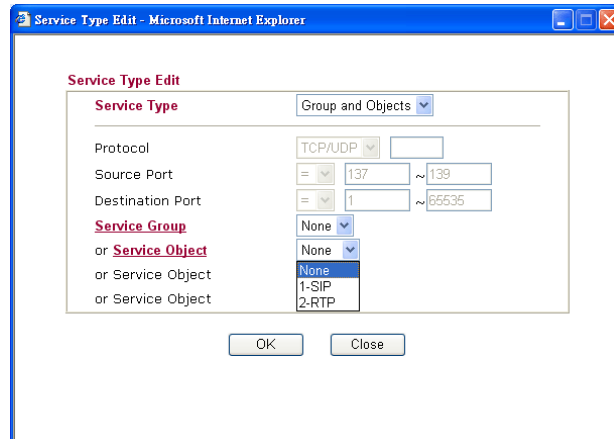
Available settings are explained as follows:

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.

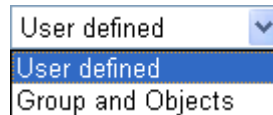
<p>Direction</p>	<p>Set the direction of packet flow. It is for Data Filter only. For the Call Filter, this setting is not available since Call Filter is only applied to outgoing traffic.</p>  <p>Note: RT means routing domain for 2nd subnet or other LAN.</p>
<p>Source/Destination IP</p>	<p>Click Edit to access into the following dialog to choose the source/destination IP or IP ranges.</p>  <p>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.</p>  <p>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.</p>

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 addition, if you want to use the service type from defined groups or objects, please choose **Group and Objects** as the Service Type.



Protocol - Specify the protocol(s) which this filter rule will apply to.

Source/Destination Port –

(=) – when the first and last value are the same, it indicates one port; when the first and last values are different, it indicates a range for the port and available for this service type.

(!=) – when the first and last value are the same, it indicates all the ports except the port defined here; when the first and last values are different, it indicates that all the ports except the range defined here are available for this service type.

(>) – the port number greater than this value is available.

(<) – the port number less than this value is available for this profile.

Service Group/Object - Use the drop down list to choose the one that you want.

Fragments

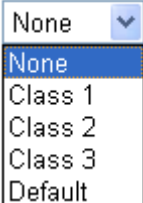
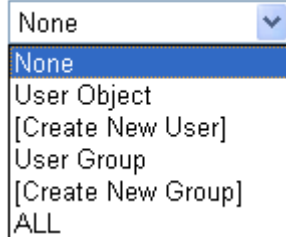
Specify the action for fragmented packets. And it is used for **Data Filter** only.

Don't care -No action will be taken towards fragmented packets.

Unfragmented -Apply the rule to unfragmented packets.

Fragmented - Apply the rule to fragmented packets.

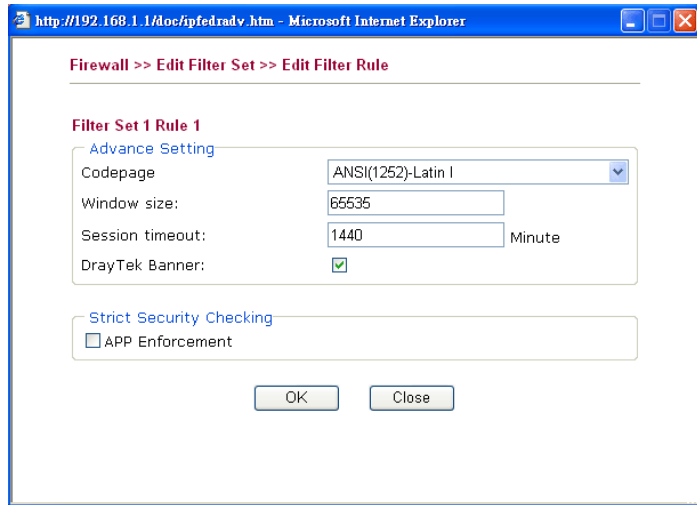
Too Short - Apply the rule only to packets that are too short to contain a complete header.

Filter	<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 default setting is 60000.</p>
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> 
Load-Balance policy	<p>Choose the WAN interface for applying Load-Balance Policy.</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	Select an APP Enforcement profile for global IM/P2P application blocking. If there is no profile for you to select, please choose [Create New] from the drop down list in this page to create a new profile. All the hosts in LAN must follow the standard configured in the APP Enforcement profile selected here. For detailed information, refer to the section of APP Enforcement profile setup. For troubleshooting needs, you can specify to record information for IM/P2P by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.
URL Content Filter	Select one of the URL Content Filter profile settings (created in CSM>> URL Content Filter) for applying with this router. Please set at least one profile for choosing in CSM>> URL Content Filter web page first. Or choose [Create New] from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for URL Content Filter by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.
Web Content Filter	Select one of the Web Content Filter profile settings (created in CSM>> Web Content Filter) for applying with this router. Please set at least one profile for anti-virus in CSM>> Web Content Filter web page first. Or choose [Create New] from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for Web Content Filter by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.
URL Content Filter	Select one of the URL Content Filter profile settings (created in CSM>> URL Content Filter) for applying with this router. Please set at least one profile for choosing in CSM>> URL Content Filter web page first. Or choose [Create New] from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for URL Content Filter by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.
Web Content Filter	Select one of the Web Content Filter profile settings (created in CSM>> Web Content Filter) for applying with this router. Please set at least one profile for anti-virus in CSM>> Web Content Filter web page first. Or choose [Create New] from the drop down list in this page to create a new profile. For troubleshooting needs, you can specify to record information for Web Content Filter by checking the Log box. It will be sent to Syslog server. Please refer to section Syslog/Mail Alert for more detailed information.

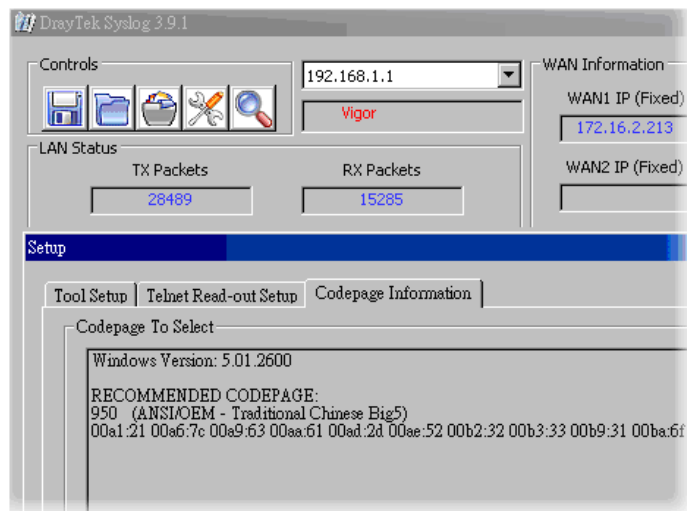
Advance Setting

Click **Edit** to open the following window. However, it is **strongly recommended** to use the default settings here.



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.

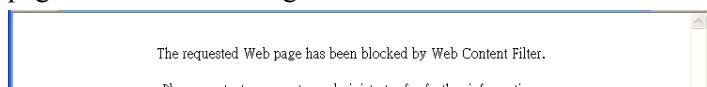
If you do not have any idea of choosing suitable codepage, please open Syslog. From Codepage Information of Setup dialog, you will see the recommended codepage listed on the dialog box.



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. 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.



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 screenshots illustrate the configuration process for firewall filter sets and rules:

- Firewall >> General Setup:** Shows the 'General Setup' tab with 'Call Filter' and 'Data Filter' options. The 'Start Filter Set' dropdowns are highlighted with red boxes and labeled 'Set#1' and 'Set#2'.
- Firewall >> Filter Setup:** Shows a table of filter sets. The first two rows are highlighted with red boxes and labeled 'Set#1' and 'Set#2'.
- Firewall >> Filter Setup >> Edit Filter Set:** Shows a table of filter rules. The first row is highlighted with a red box and labeled 'Set#1'.
- Firewall >> Edit Filter Set >> Edit Filter Rule:** Shows the configuration for 'Filter Set 1 Rule 1'. The 'Index(1-15)' field is highlighted with a red box and labeled 'Set#1'.

3.4.4 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 Select All

<input type="checkbox"/> Enable SYN flood defense	Threshold	<input type="text" value="50"/>	packets / sec
	Timeout	<input type="text" value="10"/>	sec
<input type="checkbox"/> Enable UDP flood defense	Threshold	<input type="text" value="150"/>	packets / sec
	Timeout	<input type="text" value="10"/>	sec
<input type="checkbox"/> Enable ICMP flood defense	Threshold	<input type="text" value="50"/>	packets / sec
	Timeout	<input type="text" value="10"/>	sec
<input type="checkbox"/> Enable Port Scan detection	Threshold	<input type="text" value="150"/>	packets / sec
<input type="checkbox"/> Block IP options	<input type="checkbox"/> Block TCP flag scan		
<input type="checkbox"/> Block Land	<input type="checkbox"/> Block Tear Drop		
<input type="checkbox"/> Block Smurf	<input type="checkbox"/> Block Ping of Death		
<input type="checkbox"/> Block trace route	<input type="checkbox"/> Block ICMP fragment		
<input type="checkbox"/> Block SYN fragment	<input type="checkbox"/> Block UnknownProtocol		
<input type="checkbox"/> Block Fraggle Attack			

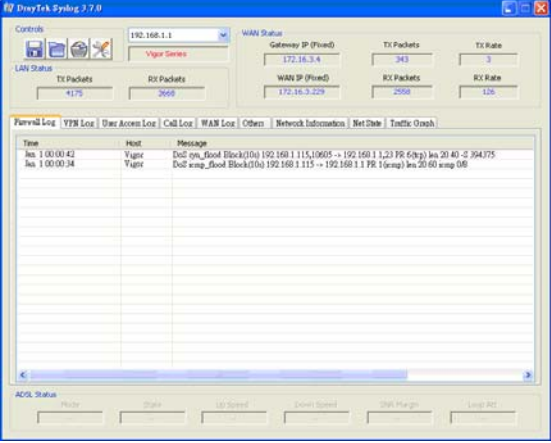
Enable DoS defense function to prevent the attacks from hacker or crackers.

OK Clear All Cancel

Available settings are explained as follows:

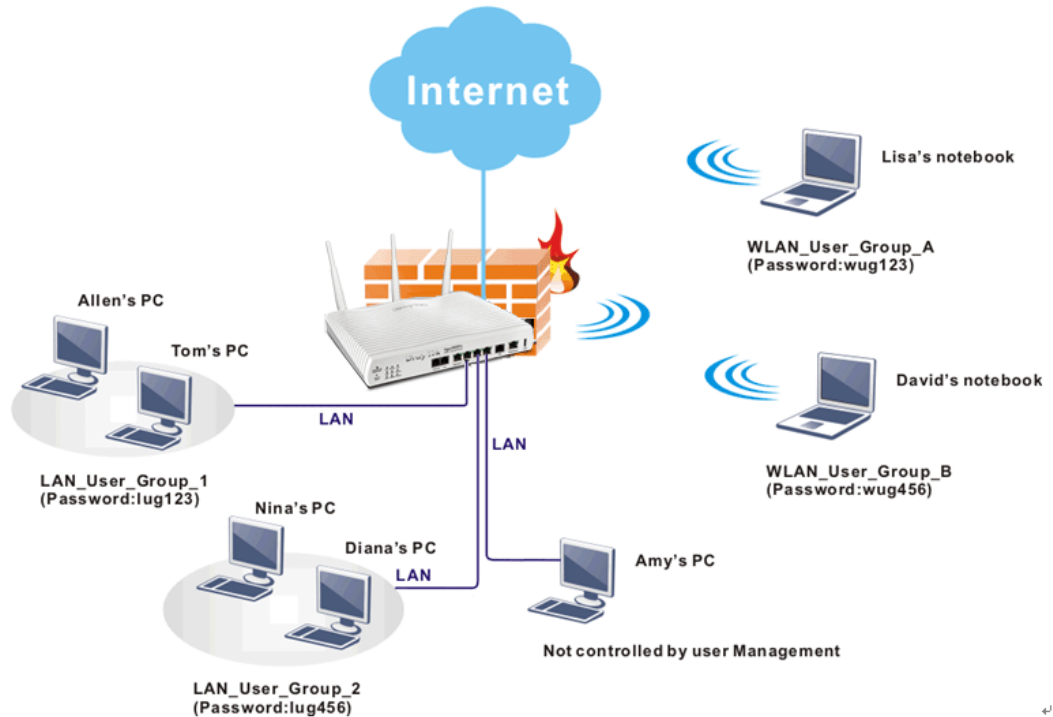
Item	Description
Enable Dos Defense	Check the box to activate the DoS Defense Functionality.
Select All	Click this button to select all the items listed below.
Enable SYN flood defense	Check the box to activate the SYN flood defense function. Once detecting the Threshold of the TCP SYN packets from the Internet has exceeded the defined value, the Vigor router will start to randomly discard the subsequent TCP SYN packets for a period defined in Timeout. The goal for this is prevent the TCP SYN packets' attempt to exhaust the limited-resource of Vigor router. By default, the threshold and timeout values are set to 50 packets per second and 10 seconds, respectively.
Enable UDP flood defense	Check the box to activate the UDP flood defense function. Once detecting the Threshold of the UDP packets from the Internet has exceeded the defined value, the Vigor router will start to randomly discard the subsequent UDP packets for a period defined in Timeout. The default setting for threshold and timeout are 150 packets per second and 10 seconds, respectively.

Enable ICMP flood defense	Check the box to activate the ICMP flood defense function. Similar to the UDP flood defense function, once if the Threshold of ICMP packets from Internet has exceeded the defined value, the router will discard the ICMP echo requests coming from the Internet. The default setting for threshold and timeout are 50 packets per second and 10 seconds, respectively.
Enable PortScan detection	Port Scan attacks the Vigor router by sending lots of packets to many ports in an attempt to find ignorant services would respond. Check the box to activate the Port Scan detection. Whenever detecting this malicious exploration behavior by monitoring the port-scanning Threshold rate, the Vigor router will send out a warning. By default, the Vigor router sets the threshold as 150 packets per second.
Block IP options	Check the box to activate the Block IP options function. The Vigor router will ignore any IP packets with IP option field in the datagram header. The reason for limitation is IP option appears to be a vulnerability of the security for the LAN because it will carry significant information, such as security, TCC (closed user group) parameters, a series of Internet addresses, routing messages...etc. An eavesdropper outside might learn the details of your private networks.
Block Land	Check the box to enforce the Vigor router to defense the Land attacks. The Land attack combines the SYN attack technology with IP spoofing. A Land attack occurs when an attacker sends spoofed SYN packets with the identical source and destination addresses, as well as the port number to victims.
Block Smurf	Check the box to activate the Block Smurf function. The Vigor router will ignore any broadcasting ICMP echo request.
Block trace router	Check the box to enforce the Vigor router not to forward any trace route packets.
Block SYN fragment	Check the box to activate the Block SYN fragment function. The Vigor router will drop any packets having SYN flag and more fragment bit set.
Block Fraggle Attack	Check the box to activate the Block fraggle Attack function. Any broadcast UDP packets received from the Internet is blocked. Activating the DoS/DDoS defense functionality might block some legal packets. For example, when you activate the fraggle attack defense, all broadcast UDP packets coming from the Internet are blocked. Therefore, the RIP packets from the Internet might be dropped.
Block TCP flag scan	Check the box to activate the Block TCP flag scan function. Any TCP packet with anomaly flag setting is dropped. Those scanning activities include <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.

	<p>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.</p>		
<p>Block Ping of Death</p>	<p>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.</p>		
<p>Block ICMP Fragment</p>	<p>Check the box to activate the Block ICMP fragment function. Any ICMP packets with more fragment bit set are dropped.</p>		
<p>Block Unknown Protocol</p>	<p>Check the box to activate the Block Unknown Protocol function. Individual IP packet has a protocol field in the datagram header to indicate the protocol type running over the upper layer. However, the protocol types greater than 100 are reserved and undefined at this time. Therefore, the router should have ability to detect and reject this kind of packets.</p>		
<p>Warning Messages</p>	<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> <p style="color: red; font-size: small;">System Maintenance >> SysLog / Mail Alert Setup</p> <div style="border: 1px solid gray; padding: 5px; margin: 5px 0;"> <p style="color: red; font-size: small;">SysLog / Mail Alert Setup</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; border-right: 1px solid gray; padding: 5px;"> <p style="color: red; font-size: small;">SysLog Access Setup</p> <p><input checked="" type="checkbox"/> Enable</p> <p>Server IP Address <input type="text"/></p> <p>Destination Port <input type="text" value="514"/></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"/> Call Log</p> <p><input checked="" type="checkbox"/> WAN Log</p> <p><input checked="" type="checkbox"/> Router/DSL information</p> </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p style="color: red; font-size: small;">Mail Alert Setup</p> <p><input checked="" type="checkbox"/> Enable <input type="button" value="Send a test e-mail"/></p> <p>SMTP Server <input type="text"/></p> <p>Mail To <input type="text"/></p> <p>Return-Path <input type="text"/></p> <p><input type="checkbox"/> Authentication</p> <p>User Name <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"/> IM-P2P</p> </td> </tr> </table> <p style="text-align: center; margin-top: 5px;"> <input type="button" value="OK"/> <input type="button" value="Clear"/> <input type="button" value="Cancel"/> </p> </div>  <p>The screenshot shows the DrayTek Syslog 2.7.0 interface. At the top, there are network statistics for WAN Status, Gateway IP (Fixed), TX Packets, TX Rate, LAN Status, TX Packets, RX Packets, WAN IP (Fixed), RX Packets, and RX Rate. Below this is a navigation bar with tabs for Firewall Log, VPN Log, User Access Log, Call Log, WAN Log, Others, Network Information, Net Date, and Traffic Graph. The main area displays a log of messages with columns for Time, Host, and Message. Two messages are visible, both from 'Vigor' and indicating a DoS attack: 'DoS on_flood Block(10) 192.168.1.115,10605 -- 192.168.1.123 FR (6ty) len 20 40 - 354775' and 'DoS on_flood Block(10) 192.168.1.115 -- 192.168.1.1 FR. 1(sup) len 20 00 temp 0/0'. At the bottom, there is an ADSL Status section with fields for Mode, State, Up Speed, Down Speed, DSL Plug-in, and Line No.</p>	<p style="color: red; font-size: small;">SysLog Access Setup</p> <p><input checked="" type="checkbox"/> Enable</p> <p>Server IP Address <input type="text"/></p> <p>Destination Port <input type="text" value="514"/></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"/> Call Log</p> <p><input checked="" type="checkbox"/> WAN Log</p> <p><input checked="" type="checkbox"/> Router/DSL information</p>	<p style="color: red; font-size: small;">Mail Alert Setup</p> <p><input checked="" type="checkbox"/> Enable <input type="button" value="Send a test e-mail"/></p> <p>SMTP Server <input type="text"/></p> <p>Mail To <input type="text"/></p> <p>Return-Path <input type="text"/></p> <p><input type="checkbox"/> Authentication</p> <p>User Name <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"/> IM-P2P</p>
<p style="color: red; font-size: small;">SysLog Access Setup</p> <p><input checked="" type="checkbox"/> Enable</p> <p>Server IP Address <input type="text"/></p> <p>Destination Port <input type="text" value="514"/></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"/> Call Log</p> <p><input checked="" type="checkbox"/> WAN Log</p> <p><input checked="" type="checkbox"/> Router/DSL information</p>	<p style="color: red; font-size: small;">Mail Alert Setup</p> <p><input checked="" type="checkbox"/> Enable <input type="button" value="Send a test e-mail"/></p> <p>SMTP Server <input type="text"/></p> <p>Mail To <input type="text"/></p> <p>Return-Path <input type="text"/></p> <p><input type="checkbox"/> Authentication</p> <p>User Name <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"/> IM-P2P</p>		

3.5 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.

Note: If **Transparency Mode** is selected in **Firewall>>General Setup**, User Management cannot be used any more. Please uncheck Transparency Mode first if you want to utilize user management to handle users in LAN, WAN or WLAN.

- User Management**
- ▶ General Setup
- ▶ User Profile
- ▶ User Group
- ▶ User Online Status

3.5.1 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.

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.

Welcome Message (Max 255 characters) [Preview](#) | [Set to Factory Default](#) |

```
<body stats=1><script language='javascript'>
window.location='http://www.draytek.com'</script></body>
```

OK Clear Cancel

Available settings are explained as follows:

Item	Description
Mode	<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>

3.5.2 User Profile

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

[User Management >> User Profile](#)

[Set to Factory Default](#) |

Profile	Name	Profile	Name
1.	admin	17.	
2.	System Reservation	18.	
3.	LAN_User_Group_1	19.	
4.	WLAN_User_Group_A	20.	
5.	WLAN_User_Group_B	21.	
6.		22.	
7.		23.	
8.		24.	
9.		25.	
10.		26.	
11.		27.	
12.		28.	
13.		29.	
14.		30.	
15.		31.	
16.		32.	

<< [1-32](#) | [33-64](#) | [65-96](#) | [97-128](#) | [129-160](#) | [161-192](#) | [193-200](#) >> [Next >>](#)

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

Enable this account

User Name

Password

Confirm Password

Idle Timeout min(s) 0:Unlimited

Max User Login 0:Unlimited

External Server Authentication

Log

Pop Browser Tracking Window

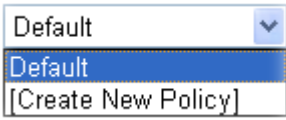
Authentication Web Alert Tool Telnet

Landing Page

Enable Time Quota min(s) more min(s)

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

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.
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.
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.
Policy	<p>It is available only when User-Based mode selected in User Management>>General Setup.</p>  <p>Default – If you choose such item, the filter rules pre-configured in Firewall can be adopted for such user profile.</p> <p>Create New Policy – If you choose such item, the following page will be popped up for you to define another filter rule as a new policy.</p>

	<p>Firewall >> Edit Filter Set >> Edit Filter Rule</p> <hr/> <p>Filter Set 1 Rule 2</p> <p>Comments: <input type="text"/></p> <p>Index(1-15) in Schedule Setup: <input type="text"/>, <input type="text"/>, <input type="text"/>, <input type="text"/></p> <hr/> <p>Direction: <input type="text" value="LAN/RT/VPN -> WAN"/></p> <p>Source IP: <input type="text" value="Any"/></p> <p>Destination IP: <input type="text" value="Any"/></p> <p>Service Type: <input type="text" value="Any"/></p> <p>Fragments: <input type="text" value="Don't Care"/></p> <p>For the detailed configuration, simply refer to Firewall>>Filter Rule. The firewall filter rules that are not selected in Firewall>>General>>Default rule can be available for use in User Management>>User Profile.</p>
<p>External Service Authentication</p>	<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> <p><input type="text" value="None"/></p> <ul style="list-style-type: none"> None LDAP Radius
<p>Log</p>	<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> <p><input type="text" value="None"/></p> <ul style="list-style-type: none"> None Login Event All
<p>Pop Browser Tracking Window</p>	<p>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.</p>
<p>Authentication</p>	<p>Any user (from LAN side or WLAN side) tries to connect to Internet via Vigor router must be authenticated by the router first. There are three ways offered by the router for the user to choose for authentication.</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</p>

	<p>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 configurator 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.</p> <p>Check this box to enable such function.</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>Refresh – Click this button to recalculate the time quota.</p> <p>Add – Click this box to set the time quota for such profile.</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>

3.5.3 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 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.	

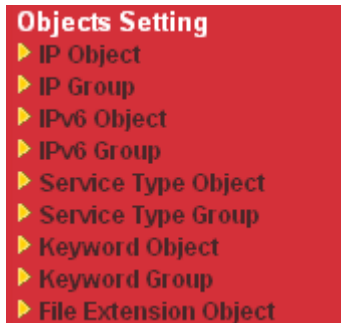
Please click any index number link to open the following page.

Available settings are explained as follows:

Item	Description
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.
Active User	Display the users which connect to Vigor router currently. You can click the link under the username to open the user profile setting page for that user.
IP Address	Display the IP address of the device.
Last Login Time	Display the login time that such user connects to the router last time.
Expired Time	Display the expired time of the network connection for the user.
Idle Time	Display the idle timeout setting for such profile.
Action	<p>Block - can prevent specified user accessing into Internet.</p> <p>Unblock – the user will be blocked.</p> <p>Logout – the user will be logged out forcefully.</p>

3.6 Objects Settings

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



3.6.1 IP Object

You can set up to 192 sets of IP Objects with different conditions.

[Objects Setting >> IP Object](#)

IP Object Profiles: [Set to Factory Default](#)

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

<< [1-32](#) | [33-64](#) | [65-96](#) | [97-128](#) | [129-160](#) | [161-192](#) >> [Next >>](#)

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.

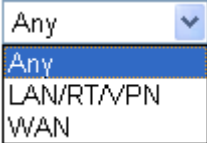
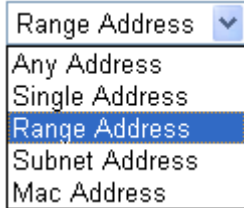
Click the number under Index column for settings in detail.

[Objects Setting >> IP Object](#)

Profile Index : 11

Name:	<input type="text" value="RD Department"/>
Interface:	<input type="text" value="Any"/>
Address Type:	<input type="text" value="Range Address"/>
Mac Address:	<input type="text" value="00.00.00.00.00.00"/>
Start IP Address:	<input type="text" value="192.168.1.65"/>
End IP Address:	<input type="text" value="192.168.1.69"/>
Subnet Mask:	<input type="text" value="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 or any IP address. If you choose LAN as the Interface here, and choose LAN as the direction setting in Edit Filter Rule, then all the IP addresses specified with LAN 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.

Below is an example of IP objects settings.

[Objects Setting >> IP Object](#)

IP Object Profiles:

Index	Name	Index
1.	RD Department	17.
2.	Financial Dept.	18.
3.	HR Department	19.
4.		20.
5.		21.

3.6.2 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.
-------------------------------	---------------------

Click the number under Index column for settings in detail.

Objects Setting >> IP Group

Profile Index : 1

Name:

Interface:

Available IP Objects

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

Selected IP Objects

Available settings are explained as follows:

Item	Description
Name	Type a name for this profile. Maximum 15 characters are allowed.
Interface	Choose WAN, LAN or Any to display all the available IP objects with the specified interface.
Available IP Objects	All the available IP objects with the specified interface chosen above will be shown in this box.
Selected IP Objects	Click >> button to add the selected IP objects in this box.

3.6.3 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.

Click the number under Index column for settings in detail.

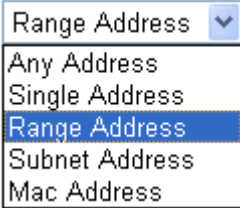
[Objects Setting >> IPv6 Object](#)

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"/> : <input type="text" value="00"/> : <input type="text" value="00"/> : <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. Select Single Address if this object contains one IPv6 address only. Select Range Address if this object contains several IPv6s within a range. Select Subnet Address if this object contains one subnet for IPv6 address. Select Any Address if this object contains any IPv6 address. Select Mac Address if this object contains Mac address.</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 IPv6 addresses except the ones listed above will be applied later while it is chosen.

3.6.4 IPv6 Group

This page allows you to bind several IPv6 objects into one IPv6 group.

[Objects Setting >> IP 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.

Click the number under Index column for settings in detail.

[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.

3.6.5 Service Type Object

You can set up to 96 sets of Service Type Objects with different conditions.

[Objects Setting >> Service Type Object](#)

Service Type Object Profiles: | [Set to Factory Default](#) |

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

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

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.

Click the number under Index column for settings in detail.

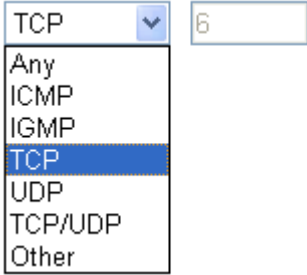
[Objects Setting >> Service Type Object Setup](#)

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="80"/> ~ <input type="text" value="80"/>

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	<p>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.</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 profile.</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>

Below is an example of service type objects settings.

Service Type Object Profiles:

Index	Name
<u>1.</u>	SIP
<u>2.</u>	RTP
<u>3.</u>	

3.6.6 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
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.

Click the number under Index column for settings in detail.

Objects Setting >> Service Type Group Setup

Profile Index : 1

Name:

Available Service Type Objects

1-SIP
2-RTP

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.

3.6.7 Keyword Object

You can set 200 keyword object profiles for choosing as black /white list in **CSM >>URL Web Content Filter Profile**.

Objects Setting >> Keyword Object

Keyword Object Profiles: [Set to Factory Default](#)

Index	Name	Index	Name
1.		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](#) | [193-200](#) >>
[Next >>](#)

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.

Click the number under Index column for setting in detail.

[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.
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.

3.6.8 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
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.

Click the number under Index column for setting in detail.

[Objects Setting >> Keyword Group Setup](#)

Profile Index : 1

Name:

Available Keyword Objects

1-keyword-1
2-keyword-2

Selected Keyword Objects(Max 16 Objects)

(Empty)

Available settings are explained as follows:

Item	Description
Name	Type a name for this group.

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.

3.6.9 File Extension Object

This page allows you to set eight profiles which will be applied in **CSM>>URL Content Filter**. All the files with the extension names specified in these profiles will be processed according to the chosen action.

[Objects Setting >> File Extension Object](#)

File Extension Object Profiles:				Set to Factory Default
Profile	Name	Profile	Name	
1.		5.		
2.		6.		
3.		7.		
4.		8.		

Available settings are explained as follows:

Item	Description
Set to Factory Default	Clear all profiles.

Click the number under Index column for setting in detail.

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="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .ace <input type="checkbox"/> .arj <input type="checkbox"/> .bzip2 <input type="checkbox"/> .bz2 <input type="checkbox"/> .cab <input type="checkbox"/> .gz <input type="checkbox"/> .gzip <input type="checkbox"/> .rar <input type="checkbox"/> .sit <input type="checkbox"/> .zip
Execution <input type="button" value="Select All"/> <input type="button" value="Clear All"/>	<input type="checkbox"/> .bas <input type="checkbox"/> .bat <input type="checkbox"/> .com <input type="checkbox"/> .exe <input type="checkbox"/> .inf <input type="checkbox"/> .pif <input type="checkbox"/> .reg <input type="checkbox"/> .scr

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for this profile.

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.

3.7 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.

CSM

- ▶ APP Enforcement Profile
- ▶ URL Content Filter Profile
- ▶ Web Content Filter Profile

3.7.1 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 Misc 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	Misc
<input type="button" value="Select All"/>	<input type="button" value="Clear All"/>		
Protocol			
<input type="checkbox"/> DNS	<input type="checkbox"/> FTP	<input type="checkbox"/> HTTP	<input type="checkbox"/> IMAP
<input type="checkbox"/> NNTP	<input type="checkbox"/> POP3	<input type="checkbox"/> SMB	<input type="checkbox"/> SMTP
<input type="checkbox"/> SSH	<input type="checkbox"/> SSL/TLS	<input type="checkbox"/> TELNET	<input type="checkbox"/> MSSQL
<input type="checkbox"/> Oracle	<input type="checkbox"/> PostgreSQL	<input type="checkbox"/> Sybase	<input type="checkbox"/> DB2
			<input type="checkbox"/> IRC
			<input type="checkbox"/> SNMP
			<input type="checkbox"/> MySQL
			<input type="checkbox"/> Informix
<input type="button" value="OK"/> <input type="button" value="Cancel"/>			

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for the CSM profile.
Select All	Click it to choose all of the items in this page.
Clear All	Uncheck all the selected boxes.

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.

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

CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM	P2P	Protocol	Misc
<input type="button" value="Select All"/>	<input type="button" value="Clear All"/>		
Advanced Management			
Activity / Application	MSN	YahooIM	AIM(<= v5.9)
Login	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Message	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
File Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Game	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conference(Video/Voice)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IM Application			
<input type="checkbox"/> AIM6/7	<input type="checkbox"/> QQ/TM	<input type="checkbox"/> iChat	<input type="checkbox"/> Jabber/GoogleTalk
<input type="checkbox"/> GoogleChat	<input type="checkbox"/> XFire	<input type="checkbox"/> GaduGadu	<input type="checkbox"/> PalTalk
<input type="checkbox"/> Qnext	<input type="checkbox"/> POCO/PP365	<input type="checkbox"/> AresChat	<input type="checkbox"/> AliiWW
<input type="checkbox"/> KC	<input type="checkbox"/> Lava-Lava	<input type="checkbox"/> ICU2	<input type="checkbox"/> iSpQ
<input type="checkbox"/> UC	<input type="checkbox"/> MobileMSN	<input type="checkbox"/> BaiduHi	
VoIP			
	<input type="checkbox"/> Skype	<input type="checkbox"/> Kubao	
	<input type="checkbox"/> Gizmo	<input type="checkbox"/> SIP/RTP	
	<input type="checkbox"/> TelTel	<input type="checkbox"/> TeamSpeak	
Web IM (* = more than one address)			
<input type="checkbox"/> WebIM URLs	eMessenger	WebMSN	meebo*
	ICQ Java*	ICQ Flash*	goowy*
	IMUnitive*	WabLet*	mabber*
	MessengerFX*	MessengerAdictos	WebYahooIM
	eBuddy	IMhaha*	MSN2GO*
	ILoveIM*	getMessenger	KoolIM
<input type="button" value="OK"/> <input type="button" value="Cancel"/>			

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

CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM	P2P	Protocol	Misc
<input type="button" value="Select All"/> <input type="button" value="Clear All"/>			
Protocol		Applications	
<input type="checkbox"/> SoulSeek		SoulSeek	
<input type="checkbox"/> eDonkey		eDonkey, eMule, Shareaza	
<input type="checkbox"/> FastTrack		KazaA, BearShare, iMesh	
<input type="checkbox"/> OpenFT		KCeasy, FilePipe	
<input type="checkbox"/> Gnutella		BearShare, Limewire, Shareaza, Foxy, KCeasy	
<input type="checkbox"/> OpenNap		Lopster, XNap, WinLop	
<input type="checkbox"/> BitTorrent		BitTorrent, BitSpirit, BitComet	
<input type="checkbox"/> Winny		Winny, WinMX, Share	
Other P2P Applications			
<input type="checkbox"/> Xunlei	<input type="checkbox"/> Vagaa	<input type="checkbox"/> PP365	<input type="checkbox"/> POCO
<input type="checkbox"/> Clubbox	<input type="checkbox"/> Ares	<input type="checkbox"/> ezPeer	<input type="checkbox"/> Pando
<input type="checkbox"/> Huntmine	<input type="checkbox"/> Kuwo		
<input type="button" value="OK"/> <input type="button" value="Cancel"/>			

The items categorized under **Misc** -----

CSM >> APP Enforcement Profile

Profile Index : 1 Profile Name:

IM	P2P	Protocol	Misc
<input type="button" value="Select All"/> <input type="button" value="Clear All"/>			
Tunneling			
<input type="checkbox"/> Socks4/5	<input type="checkbox"/> PGPNet	<input type="checkbox"/> HTTP Proxy	<input type="checkbox"/> Tor
<input type="checkbox"/> VNN	<input type="checkbox"/> SoftEther	<input type="checkbox"/> MS TEREDO	<input type="checkbox"/> Wujie/UltraSurf
<input type="checkbox"/> Hamachi	<input type="checkbox"/> Ping Tunnel	<input type="checkbox"/> TinyVPN	<input type="checkbox"/> RealTunnel
<input type="checkbox"/> HTTP Tunnel	<input type="checkbox"/> FreeU	<input type="checkbox"/> Skyfire	<input type="checkbox"/> DynaPass
<input type="checkbox"/> UltraVPN			
Streaming			
<input type="checkbox"/> MMS	<input type="checkbox"/> RTSP	<input type="checkbox"/> TVAnts	<input type="checkbox"/> PPStream
<input type="checkbox"/> PPTV	<input type="checkbox"/> FeiDian	<input type="checkbox"/> UUSee	<input type="checkbox"/> NSPlayer
<input type="checkbox"/> PCAST	<input type="checkbox"/> SopCast	<input type="checkbox"/> UDLiveX	<input type="checkbox"/> TVUPlayer
<input type="checkbox"/> MySee	<input type="checkbox"/> FlashVideo	<input type="checkbox"/> SilverLight	<input type="checkbox"/> Slingbox
<input type="checkbox"/> QVOD			
Remote Control			
<input type="checkbox"/> VNC	<input type="checkbox"/> Radmin	<input type="checkbox"/> SpyAnywhere	<input type="checkbox"/> ShowMyPC
<input type="checkbox"/> LogMeIn	<input type="checkbox"/> TeamViewer	<input type="checkbox"/> Gogrok	<input type="checkbox"/> RemoteControlPro
<input type="checkbox"/> WindowsRDP	<input type="checkbox"/> pcAnywhere	<input type="checkbox"/> Timbuktu	<input type="checkbox"/> WindowsLiveSync
<input type="checkbox"/> SharedView			
Web HD			
<input type="checkbox"/> HTTP Upload	<input type="checkbox"/> HiNet SafeBox	<input type="checkbox"/> MS SkyDrive	<input type="checkbox"/> GDoc Uploader
<input type="checkbox"/> ADrive	<input type="checkbox"/> MyOtherDrive	<input type="checkbox"/> Mozy	<input type="checkbox"/> BoxNet
<input type="checkbox"/> OfficeLive			
<input type="button" value="OK"/> <input type="button" value="Cancel"/>			

3.7.2 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)

```
<body><center><br><p>The requested Web page has been blocked by URL Content Filter.<p>Please contact your system administrator for further information.</center></body>
```

OK

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:

2.Web Feature

Enable Restrict Web Feature

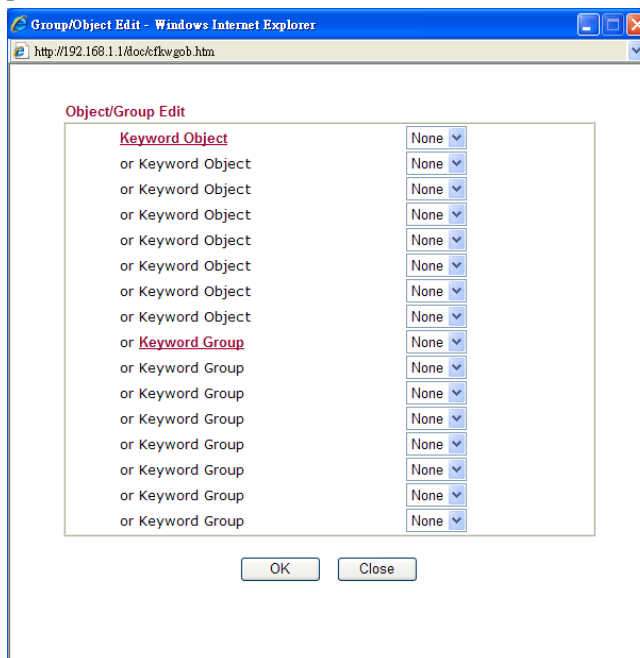
Action: Cookie Proxy Upload **File Extension Profile:**

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for the CSM profile.
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>

	<div data-bbox="703 203 1147 376"> <input type="text" value="Both : Pass"/> <ul style="list-style-type: none"> Both : Pass Both : Block Either : URL Access Control First Either : Web Feature First </div>
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> <div data-bbox="703 645 826 817"> <input type="text" value="None"/> <ul style="list-style-type: none"> None Pass Block All </div>
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. Pass - Allow accessing into the corresponding webpage with the keywords listed on the box below.</p> <p>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> <p>Action:</p> <div data-bbox="699 1615 818 1727"> <input type="text" value="Block"/> <ul style="list-style-type: none"> Pass Block </div> <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 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</p>

should be noticed that the more simplified the blocking keyword list is, the more efficiently the Vigor router performs.



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.

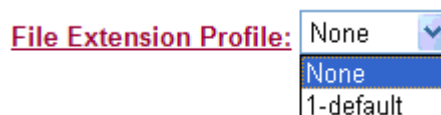
If the web pages do not match with the specified feature set here, it will be processed with reverse action.

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 downloading.



3.7.3 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 or update the license 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.

Note: If you have used **Service Activation Wizard** to activate WCF service, you can skip this section.

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.

CSM >> Web Content Filter Profile

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>
```

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.
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 for a short time (about 1 second) 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.

Profile Index: 1

Profile Name:

Log: ▾

Black/White List

Enable

Action: ▾

Group/Object Selections:

Action: ▾

Groups

Child Protection

Leisure

Business

Categories

Alcohol & Tobacco Criminal Activity Gambling

Hate & Intolerance Illegal Drug Nudity

Porn & Sexually Violence Weapons

School Cheating Sex Education Tasteless

Child Abuse Images

Entertainment Games Sports

Travel Leisure & Recreation Fashion & Beauty

Compromised Dating & Personals Education

Finance Government Health & Medicine

News Non-profits & NGOs Personal Sites

Politics Real Estate Religion

Restaurants & Dining Shopping Translators

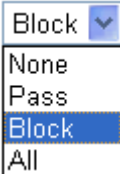
General Cults Greeting cards

Image Sharing Network Errors Parked Domains

Private IP Addresses Uncategorised Sites

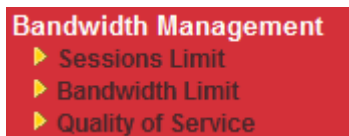
Available settings are explained as follows:

Item	Description
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> 

3.8 Bandwidth Management

Below shows the menu items for Bandwidth Management.



3.8.1 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.

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 256 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 session.</p> <p>Default session limit - Defines the default session number used for each computer in LAN.</p>
Limitation List	Displays a list of specific limitations that you set on this web page.

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>Click Default Message to display the default message on the screen.</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>

3.8.2 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>IP Routed 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</p>

	<p>for each computer in LAN.</p> <p>Default RX limit - Define the default speed of the 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	Display a list of specific limitations that you set on this web page.
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	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.

3.8.3 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?

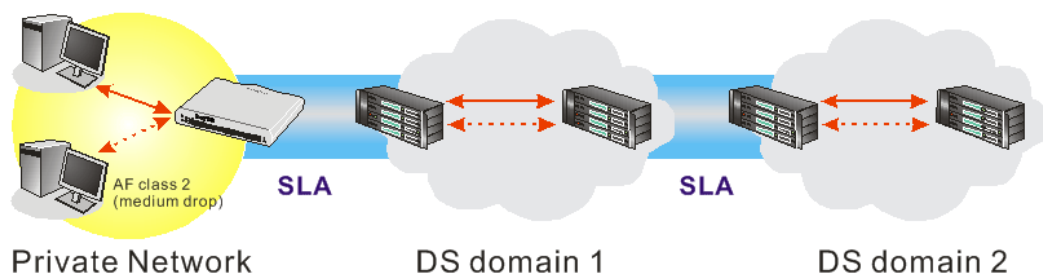
There are two components within Primary configuration of QoS deployment:

- **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.

General Setup | [Set to Factory Default](#) |

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics
WAN1	Enable	--Kbps/--Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Enable	10000Kbps/10000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN3	Disable	10000Kbps/10000Kbps		25%	25%	25%	25%	Inactive	Status Setup

Class Rule

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

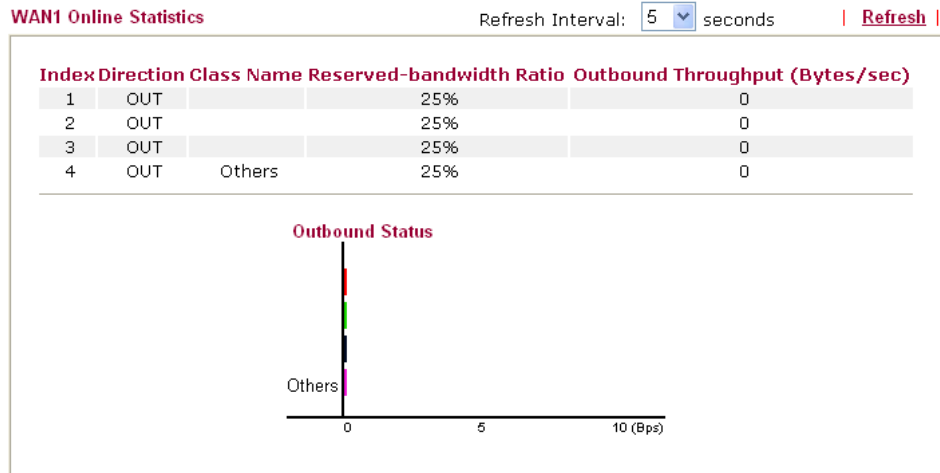
This page displays the QoS settings result of the WAN interface. Click the **Setup** link to access into next page for the general setup of WAN interface. As to class rule, simply click the **Edit** link to access into next for configuration.

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.

[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.

[Bandwidth Management >> Quality of Service](#)

WAN2 General Setup

Enable the QoS Control

WAN Inbound Bandwidth	<input type="text" value="10000"/> Kbps
WAN Outbound Bandwidth	<input type="text" value="10000"/> Kbps

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

Available settings are explained as follows:

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

Enable the QoS Control	<p>The factory default for this setting is checked.</p> <p>Please also define which traffic the QoS Control settings will apply to.</p> <p>IN- apply to incoming traffic only.</p> <p>OUT- apply to outgoing traffic only.</p> <p>BOTH- apply to both incoming and outgoing traffic.</p> <p>Check this box and click OK, then click Setup link again. You will see the Online Statistics link appearing on this page.</p>
WAN Inbound Bandwidth	<p>It allows you to set the connecting rate of data input for WAN2/WAN3. For example, if your ADSL supports 1M of downstream and 256K upstream, please set 1000kbps for this box. The default value is 10000kbps.</p>
WAN Outbound Bandwidth	<p>It allows you to set the connecting rate of data output for WAN2/WAN3. For example, if your ADSL supports 1M of downstream and 256K upstream, please set 256kbps for this box. The default value is 10000kbps.</p>
Reserved Bandwidth Ratio	<p>It is reserved for the group index in the form of ratio of reserved bandwidth to upstream speed and reserved bandwidth to downstream speed.</p>
Enable UDP Bandwidth Control	<p>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.</p>
Outbound TCP ACK Prioritize	<p>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.</p>
Limited_bandwidth Ratio	<p>The ratio typed here is reserved for limited bandwidth of UDP application.</p>

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	Enable	--Kbps/--Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Enable	10000Kbps/10000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN3	Disable	10000Kbps/10000Kbps		25%	25%	25%	25%	Inactive	Status Setup

Class Rule

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

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

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

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

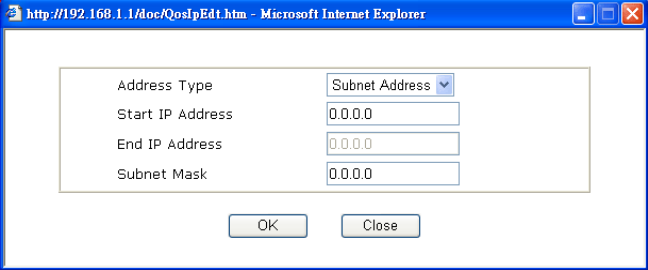
Remote Address

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	<p>Click the Edit button to set the remote IP address (on LAN/WAN) for the rule.</p>  <p>Address Type – Determine the address type for the source address.</p> <p>For Single Address, you have to fill in Start IP address.</p> <p>For Range Address, you have to fill in Start IP address and End IP address.</p> <p>For Subnet Address, you have to fill in Start IP address and Subnet Mask.</p>
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.

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

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1 <input type="radio"/>	Active	Any	Any	IP precedence 2	SYSLOG(UDP:514)
2 <input type="radio"/>	Active	192.168.1.15	192.168.1.65	AF Class1 (Low Drop)	FTP(TCP:20)

Edit the Service Type for Class Rule

To add a new service type, edit or delete an existed service type, please click the Edit link under Service Type field.

Bandwidth Management >> Quality of Service

General Setup

[Set to Factory Default](#)

Index	Status	Bandwidth	Direction	Class 1	Class 2	Class 3	Others	UDP Bandwidth Control	Online Statistics
WAN1	Enable	--Kbps/--Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Enable	10000Kbps/10000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN3	Disable	10000Kbps/10000Kbps		25%	25%	25%	25%	Inactive	Status Setup

Class Rule

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

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"/>

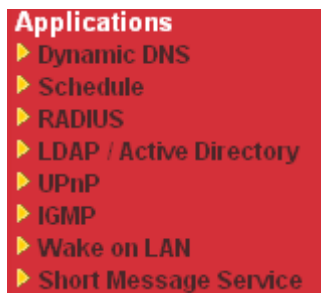
Available settings are explained as follows:

Item	Description
Service Name	Type in a new service for your request.
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>

By the way, you can set up to 10 service types. If you want to edit/delete an existed service type, please select the radio button of that one and click **Edit/Edit** for modification.

3.9 Applications

Below shows the menu items for Applications.



3.9.1 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

Available settings are explained as follows:

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

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.info dyndns.info

Login Name: chronic6653 (max. 64 characters)

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

Wildcards

Backup MX

Mail Extender:

Force WAN IP Update

OK
Clear
Cancel

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 black; padding: 2px; width: fit-content;"> WAN1 First <ul style="list-style-type: none"> <li style="background-color: #e0e0e0; padding: 2px;">WAN1 First <li style="padding: 2px;">WAN1 Only <li style="padding: 2px;">WAN2 First <li style="padding: 2px;">WAN2 Only <li style="padding: 2px;">WAN3 First <li style="padding: 2px;">WAN3 Only </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.
Force WAN IP Update	The system will renew the DDNS IP automatically within certain time.

- 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.

3.9.2 Schedule

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

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

[Applications >> Schedule](#)

Schedule:		Set to Factory Default	
Index	Status	Index	Status
1.	x	9.	x
2.	x	10.	x
3.	x	11.	x
4.	x	12.	x
5.	x	13.	x
6.	x	14.	x
7.	x	15.	x
8.	x		

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

Available settings are explained as follows:

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

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

To add a schedule, please click any index, say Index No. 1. The detailed settings of the call schedule with index 1 are shown below.

Applications >> Schedule

Index No. 1

Enable Schedule Setup

Start Date (yyyy-mm-dd) 2000 . 1 . 1

Start Time (hh:mm) 0 : 0

Duration Time (hh:mm) 0 : 0

Action Force On

Idle Timeout 0 minute(s).(max. 255, 0 for default)

How Often

Once

Weekdays

Sun Mon Tue Wed Thu Fri Sat

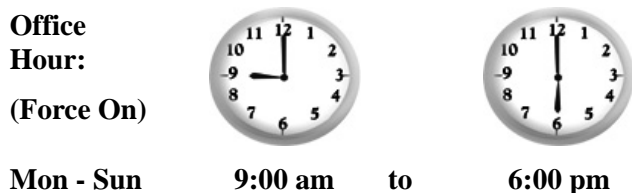
OK Clear Cancel

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.

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.

3.9.3 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"/>

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

3.9.4 LDAP /Active Directory Setup

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

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

[Applications >> LDAP / Active Directory](#)

LDAP / Active Directory Setup

Enable

Server IP Address

Destination Port

Authentication Mode

Common Name Identifier

Base Distinguished Name

Available settings are explained as follows:

Item	Description
Enable	Check this box to enable such function.
Server IP Address	Enter the IP address of RADIUS server.
Destination Port	It means the port on TCP for establishing an LDAP session between clients and LDAP server. The default value is 389.
Authentication Mode	This function is for future use.
Common Name Identifier	Type a name as an identifier. While in authentication, the LDAP server will use some parameters of the account as the common name for identification. In general, such field shall be typed with “cn” or “uid”.
Base Distinguished Name	It means “ Base Distinguished Name ”. Type or edit the distinguished name used to look up entries on the LDAP server.

3.9.5 UPnP

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

Applications >> UPnP

UPnP

Enable UPnP Service

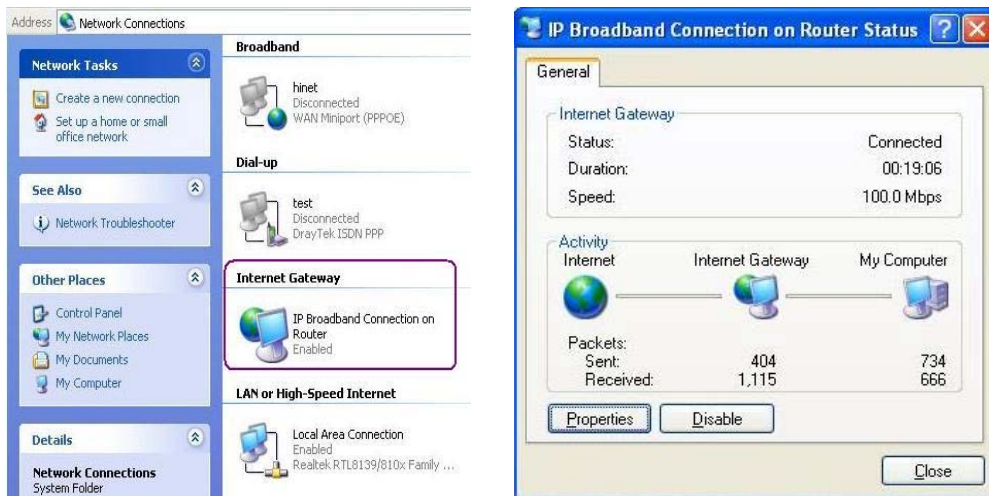
Enable Connection control Service
 Enable Connection Status Service

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:

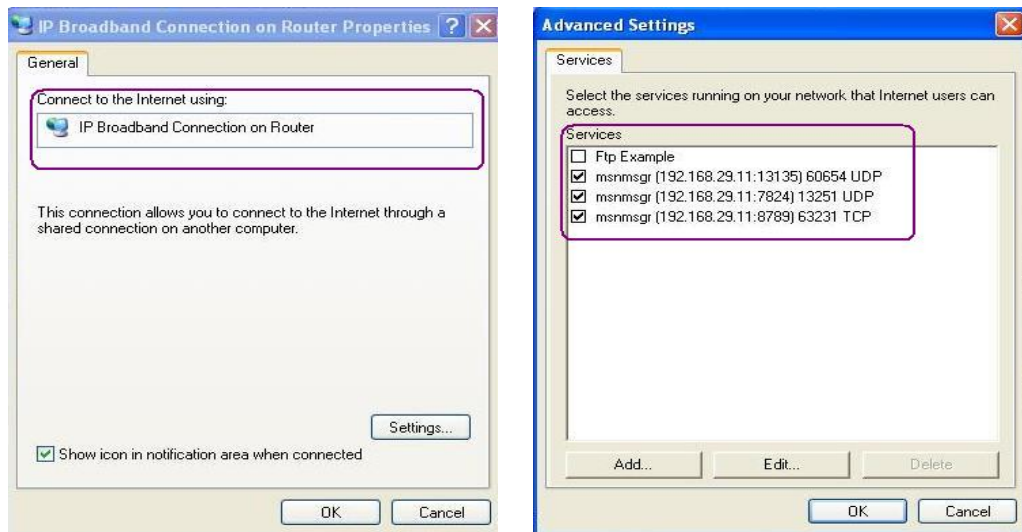
Item	Description
Enable UPNP Service	Accordingly, you can enable either the Connection Control Service or Connection Status Service .

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



The UPnP facility on the router enables UPnP aware applications such as MSN Messenger to discover what are behind a NAT router. The application will also learn the external IP address

and configure port mappings on the router. Subsequently, such a facility forwards packets from the external ports of the router to the internal ports used by the application.



The reminder as regards concern about Firewall and UPnP

Can't work with Firewall Software

Enabling firewall applications on your PC may cause the UPnP function not working properly. This is because these applications will block the accessing ability of some network ports.

Security Considerations

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

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

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

3.9.6 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 affect 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.

3.9.7 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 cooperate 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	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. Wake by: <input type="text" value="MAC Address"/> <input type="text" value="MAC Address"/> <input type="text" value="IP Address"/>
IP Address	The IP addresses that have been configured in Firewall>>Bind IP to MAC will be shown in this drop down list. Choose the IP address from the drop down list that you want to wake up.
MAC Address	Type any one of the MAC address of the bound PCs.
Wake Up	Click this button to wake up the selected IP. See the following figure. The result will be shown on the box.

Application >> Wake on LAN

Wake on LAN

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

Wake by:

IP Address:

MAC Address:

Result

Send command to client done.

3.9.8 Short Message Service

The function of Short Message Service is that Vigor router sends a message to user's mobile through specified service provider to assist the user knowing the real-time abnormal situations.

Vigor router allows you to set up to 8 SMS profiles which will be sent out according to different conditions.

Application >> Short Message Service

Short Message Service Profile: | [Set to Factory Default](#) |

Index	Profile Name	Service Provider	Destination Number	Status
1.				X
2.				X
3.				X
4.				X
5.				X
6.				X
7.				X
8.				X

Click any index number line to access into the web page for detailed configuration.

Application >> Short Message Service

Profile Index: 1

Enable SMS Setup Enable Disable

Profile Name

Service Provider

Username

Password

Destination Number

Quota

Sending Interval (seconds)

Available settings are explained as follows:

Item	Description
Enable SMS Setup	Click Enable to enable SMS function. Click Disable to close SMS function.
Profile Name	Type a name for such SMS profile.
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.
Password	Type a password that the sender can use to register to selected SMS provider.
Destination Number	Type the telephone number that you want it to receive the SMS.
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. For example, it is set with 60 (seconds). If WAN1 disconnects for three times within 60 seconds, the system will send the SMS notification just for once.
Send a test Message	Send one SMS to the user just for test.

3.10 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.



3.10.1 VPN Client Wizard

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

1. Open **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:

Please choose a LAN-to-LAN Profile:

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.

	Route Mode  Route Mode NAT Mode																																																																																										
Please choose a LAN-to-LAN Profile	There are 32 VPN profiles for users to set. <table border="1"> <thead> <tr> <th>[Index]</th> <th>[Status]</th> <th>[Name]</th> </tr> </thead> <tbody> <tr><td>1</td><td>x</td><td>???</td></tr> <tr><td>2</td><td>x</td><td>???</td></tr> <tr style="background-color: #0056b3; color: white;"><td>3</td><td>x</td><td>???</td></tr> <tr><td>4</td><td>x</td><td>???</td></tr> <tr><td>5</td><td>x</td><td>???</td></tr> <tr><td>6</td><td>x</td><td>???</td></tr> <tr><td>7</td><td>x</td><td>???</td></tr> <tr><td>8</td><td>x</td><td>???</td></tr> <tr><td>9</td><td>x</td><td>???</td></tr> <tr><td>10</td><td>x</td><td>???</td></tr> <tr><td>11</td><td>x</td><td>???</td></tr> <tr><td>12</td><td>x</td><td>???</td></tr> <tr><td>13</td><td>x</td><td>???</td></tr> <tr><td>14</td><td>x</td><td>???</td></tr> <tr><td>15</td><td>x</td><td>???</td></tr> <tr><td>16</td><td>x</td><td>???</td></tr> <tr><td>17</td><td>x</td><td>???</td></tr> <tr><td>18</td><td>x</td><td>???</td></tr> <tr><td>19</td><td>x</td><td>???</td></tr> <tr><td>20</td><td>x</td><td>???</td></tr> <tr><td>21</td><td>x</td><td>???</td></tr> <tr><td>22</td><td>x</td><td>???</td></tr> <tr><td>23</td><td>x</td><td>???</td></tr> <tr><td>24</td><td>x</td><td>???</td></tr> <tr><td>25</td><td>x</td><td>???</td></tr> <tr><td>26</td><td>x</td><td>???</td></tr> <tr><td>27</td><td>x</td><td>???</td></tr> <tr><td>28</td><td>x</td><td>???</td></tr> <tr><td>29</td><td>x</td><td>???</td></tr> </tbody> </table>	[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	???
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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

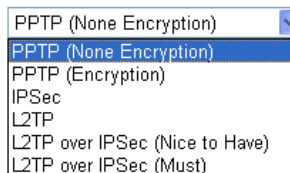
Security ranking (1 is the highest; 5 is the lowest)


1. L2TP over IPSec
2. IPSec
3. PPTP (Encryption)
4. L2TP
5. PPTP (None Encryption)

Throughput ranking (1 is the highest; 5 is the lowest)

1. PPTP (None Encryption)
2. L2TP
3. IPSec
4. L2TP over IPSec
5. PPTP (Encryption)

Select VPN Type:



PPTP (None Encryption) 
 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.

- 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 None Encryption Settings

Profile Name	???
VPN Dial-Out Through	WAN1 First
<input type="checkbox"/> Always on	
Server IP/Host Name for VPN (e.g. 5551234, 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. 5551234, 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 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)	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 and Remote Access >> VPN Client Wizard](#)

VPN Client L2TP Settings

Profile Name	VPN-1
VPN Dial-Out Through	WAN1 First
<input type="checkbox"/> Always on	
Server IP/Host Name for VPN (e.g. 5551234, draytek.com or 123.45.67.89)	draytek.com
Username	marketing
Password	••••••••
Remote Network IP	192.168.1.6
Remote Network Mask	255.255.255.0

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

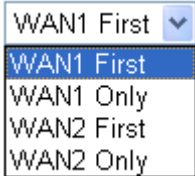
[VPN and Remote Access >> VPN Client Wizard](#)

VPN Client L2TP over IPSec (Nice to Have) Settings

Profile Name	VPN-2
VPN Dial-Out Through	WAN1 First
<input type="checkbox"/> Always on	
Server IP/Host Name for VPN (e.g. 5551234, 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 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)	DES without Authentication
Username	???
Password	
Remote Network IP	0.0.0.0
Remote Network Mask	255.255.255.0

Available settings are explained as follows:

Item	Description
Profile Name	Type a name for such profile. The length of the file is limited to 10 characters.

VPN Dial-Out Through	<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 - While connecting, the router will use WAN1 as the first channel for VPN connection. If WAN1 fails, the router will use another WAN interface instead. WAN1 Only - While connecting, the router will use WAN1 as the only channel for VPN connection. WAN2 First - While connecting, the router will use WAN2 as the first channel for VPN connection. If WAN2 fails, the router will use another WAN interface instead. WAN2 Only - While connecting, the router will use WAN2 as the only channel for VPN connection.</p>
Always On	<p>Check to enable router always keep VPN connection.</p>
Pre-Shared Key	<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. Pre-Shared Key- Specify a key for IKE authentication. Confirm Pre-Shared Key-Confirm the pre-shared key.</p>
Digital Signature (X.509)	<p>Click Digital Signature to invoke this function. 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. Peer ID – Choose the peer ID selection from the drop down list. Local ID – Choose Alternative Subject Name First or Subject Name First.</p>
IPSec Security Method	<p>Medium - Authentication Header (AH) means data will be authenticated, but not be encrypted. By default, this option is active. High - Encapsulating Security Payload (ESP) means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES.</p>
User Name	<p>This field is used to authenticate for connection when you select PPTP or L2TP with or without IPSec policy above.</p>
Password	<p>This field is used to authenticate for connection when you select PPTP or L2TP with or without IPSec policy above.</p>
Remote Network IP	<p>Please type one LAN IP address (according to the real location of the remote host) for building VPN connection.</p>
Remote Network Mask	<p>Please type the network mask (according to the real location of the remote host) for building VPN connection.</p>

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:	3
Profile Name:	VPN-1
VPN Connection Type:	L2TP over IPSec (Must)
VPN Connection Through:	WAN1 First
Always on:	No
Server IP/Host Name:	draytek.com
IKE Authentication Method:	Digital Signature (X.509)
IPSec Security Method:	AH-SHA1
Remote Network IP:	192.168.1.6
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.

3.10.2 VPN Server Wizard

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

1. Open **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: Site to Site VPN (LAN-to-LAN) ▾

Please choose a LAN-to-LAN Profile: [Index] [Status] [Name] ▾

Please choose a Dial-in User Accounts: [Index] [Status] [Name] ▾

Allowed Dial-in Type:

PPTP

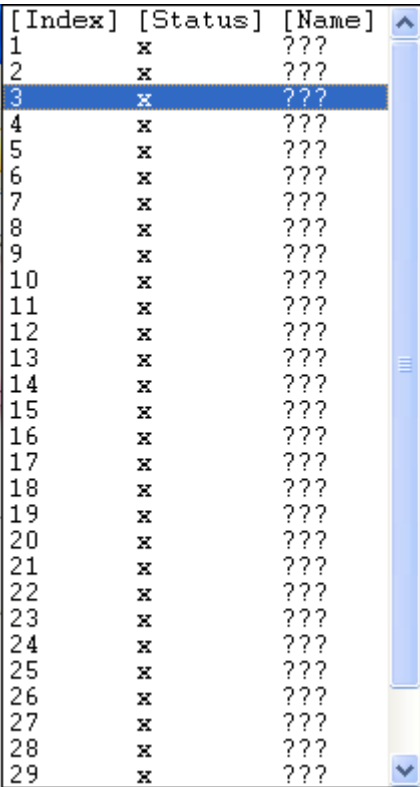
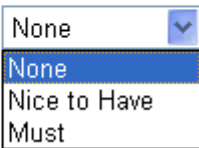
IPSec

L2TP with IPSec Policy None ▾

< 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> <div style="border: 1px solid #ccc; padding: 2px; margin-top: 5px;"> <p>Site to Site VPN (LAN-to-LAN) ▾</p> <p style="background-color: #e0e0e0;">Site to Site VPN (LAN-to-LAN)</p> <p>Remote Dial-in User (Teleworker)</p> </div>

<p>Please choose a LAN-to-LAN Profile</p>	<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> 
<p>Please choose a Dial-in User Accounts</p>	<p>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.</p>
<p>Allowed Dial-in Type</p>	<p>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).</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> PPTP <input checked="" type="checkbox"/> IPsec <input checked="" type="checkbox"/> L2TP with IPsec Policy  <p>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.</p>

- 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 **Remote-Dial-in User** as the **VPN Server Mode**.

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

VPN and Remote Access >> VPN Server Wizard

VPN Authentication Setting

PPTP / L2TP / L2TP over IPSec Authentication

Username

Password

Peer IP/VPN Client IP

- 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 and Remote Access >> VPN Server Wizard

VPN Authentication Setting

PPTP / L2TP / L2TP over IPSec Authentication

Username

Password

IPSec / L2TP over IPSec Authentication

Pre-Shared Key

 Confirm Pre-Shared Key

Digital Signature (X.509)

 Peer ID

Peer IP/VPN Client IP

Peer ID

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

VPN and Remote Access >> VPN Server Wizard

VPN Authentication Setting

IPSec / L2TP over IPSec Authentication

Pre-Shared Key

Confirm Pre-Shared Key

Digital Signature (X.509)

Peer ID

Peer IP/VPN Client IP

Peer ID

< 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.
User Name	This field is used to authenticate for connection when you select PPTP or L2TP with or without IPSec policy above.
Password	This field is used to authenticate for connection when you select PPTP or L2TP with or without IPSec policy above.
Pre-Shared Key	For IPSec/L2TP IPSec authentication, you have to type a pre-shared key.
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. 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.
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.
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.

- 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:	Site to Site VPN (LAN-to-LAN)
Index:	3
Profile Name:	VPN-Ser1
Username:	server1
Allowed Service:	PPTP+IPSec
Peer IP/VPN Client IP:	
Peer ID:	
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 Server Wizard setup.
- View more detailed configurations.

Available settings are explained as follows:

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

3.10.3 Remote Access Control

Enable the necessary VPN service as you need. If you intend to run a VPN server inside your LAN, you should disable the VPN service of Vigor Router to allow VPN tunnel pass through, as well as the appropriate NAT settings, such as DMZ or open port.

VPN and Remote Access >> Remote Access Control Setup

Remote Access Control Setup

<input checked="" type="checkbox"/>	Enable PPTP VPN Service
<input checked="" type="checkbox"/>	Enable IPSec VPN Service
<input checked="" type="checkbox"/>	Enable L2TP VPN Service
<input type="checkbox"/>	Enable ISDN Dial-In

Note: If you intend running a VPN server inside your LAN, you should uncheck the appropriate protocol above to allow pass-through, as well as the appropriate NAT settings.

3.10.4 PPP General Setup

This submenu only applies to PPP-related VPN connections, such as PPTP, L2TP, L2TP over IPsec.

VPN and Remote Access >> PPP General Setup

PPP General Setup

PPP/MP Protocol		IP Address Assignment for Dial-In Users (When DHCP Disable set)	
Dial-In PPP Authentication	PAP or CHAP	Assigned IP start	LAN 1 192.168.1.200
Dial-In PPP Encryption (MPPE)	Optional MPPE		LAN 2 192.168.2.200
Mutual Authentication (PAP)	<input type="radio"/> Yes <input checked="" type="radio"/> No		LAN 3 192.168.3.200
Username	<input type="text"/>		LAN 4 192.168.4.200
Password	<input type="text"/>		

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 or CHAP - 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> <div style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <p>Optional MPPE</p> <p>Optional MPPE</p> <p>Require MPPE(40/128 bit)</p> <p>Maximum MPPE(128 bit)</p> </div> <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)	The Mutual Authentication function is mainly used to communicate with other routers or clients who need bi-directional authentication in order to provide stronger security, for example, Cisco routers. So you should enable this function when your peer router requires mutual authentication. You should further specify the User Name and Password of the mutual authentication peer.
Assigned IP Start	Enter a start IP address for the dial-in PPP connection. You should choose an IP address from the local private network. For example, if the local private network is 192.168.1.0/255.255.255.0, you could choose 192.168.1.200 as the Start IP Address. You can configure up to four start IP addresses for LAN.

3.10.5 IPSec General Setup

In **IPSec General Setup**, there are two major parts of configuration.

There are two phases of IPSec.

- Phase 1: negotiation of IKE parameters including encryption, hash, Diffie-Hellman parameter values, and lifetime to protect the following IKE exchange, authentication of both peers using either a Pre-Shared Key or Digital Signature (x.509). The peer that starts the negotiation proposes all its policies to the remote peer and then remote peer tries to find a highest-priority match with its policies. Eventually to set up a secure tunnel for IKE Phase 2.
- Phase 2: negotiation IPSec security methods including Authentication Header (AH) or Encapsulating Security Payload (ESP) for the following IKE exchange and mutual examination of the secure tunnel establishment.

There are two encapsulation methods used in IPSec, **Transport** and **Tunnel**. The **Transport** mode will add the AH/ESP payload and use original IP header to encapsulate the data payload only. It can just apply to local packet, e.g., L2TP over IPSec. The **Tunnel** mode will not only add the AH/ESP payload but also use a new IP header (Tunneled IP header) to encapsulate the whole original IP packet.

Authentication Header (AH) provides data authentication and integrity for IP packets passed between VPN peers. This is achieved by a keyed one-way hash function to the packet to create a message digest. This digest will be put in the AH and transmitted along with packets. On the receiving side, the peer will perform the same one-way hash on the packet and compare the value with the one in the AH it receives.

Encapsulating Security Payload (ESP) is a security protocol that provides data confidentiality and protection with optional authentication and replay detection service.

VPN 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	<input type="password" value="•••••"/>
Confirm Pre-Shared Key	<input type="password" value="•••••"/>
IPSec Security Method	
<input checked="" type="checkbox"/> Medium (AH)	Data will be authentic, but will not be encrypted.
High (ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES	Data will be encrypted and authentic.

Available settings are explained as follows:

Item	Description
IKE Authentication Method	<p>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.</p> <p>Pre-Shared Key -Currently only support Pre-Shared Key authentication.</p> <p>Pre-Shared Key- Specify a key for IKE authentication</p> <p>Confirm Pre-Shared Key- Retype the characters to confirm the pre-shared key.</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 may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES.</p>

3.10.6 IPsec Peer Identity

To use digital certificate for peer authentication in either LAN-to-LAN connection or Remote User Dial-In connection, here you may edit a table of peer certificate for selection. As shown below, the router provides **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 : 1

Profile Name

Enable this account

Accept Any Peer ID

Accept Subject Alternative Name

Type

IP

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.
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) .

3.10.7 Remote Dial-in User

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

The router provides 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	Status	Index	User	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 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.
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. 11

<p>User account and Authentication</p> <p><input type="checkbox"/> Enable this account</p> <p>Idle Timeout <input type="text" value="300"/> second(s)</p>		<p>Username <input style="width: 100px;" type="text" value="???"/></p> <p>Password <input style="width: 100px;" type="password"/></p> <p>Authentication Type <input style="width: 100px;" type="text" value="Local User Database"/></p> <p><input type="checkbox"/> Enable Mobile One-Time Passwords(mOTP)</p> <p>PIN Code <input style="width: 100px;" type="text"/></p> <p>Secret <input style="width: 100px;" type="text"/></p>	
<p>Allowed Dial-In Type</p> <p><input checked="" type="checkbox"/> ISDN</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 <input style="width: 50px;" type="text" value="None"/></p> <p><input type="checkbox"/> Specify Remote Node</p> <p>Remote Client IP <input style="width: 100px;" type="text"/></p> <p>or Peer ID <input style="width: 100px;" type="text"/></p> <p>Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block</p> <p>Multicast via VPN <input type="radio"/> Pass <input checked="" type="radio"/> Block (for some IGMP,IP-Camera,DHCP Relay..etc.)</p>		<p>IKE Authentication Method</p> <p><input checked="" type="checkbox"/> Pre-Shared Key</p> <p>IKE Pre-Shared Key <input style="width: 100px;" type="text"/></p> <p><input type="checkbox"/> Digital Signature(X.509)</p> <p><input style="width: 50px;" type="text" value="None"/></p>	
<p>Subnet</p> <p><input style="width: 50px;" type="text" value="LAN 1"/></p> <p><input type="checkbox"/> Assign Static IP Address</p> <p><input style="width: 100px;" type="text" value="0.0.0.0"/></p>		<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> <p>Local ID (optional) <input style="width: 100px;" type="text"/></p>	
		<p>Callback Function</p> <p><input type="checkbox"/> Check to enable Callback function</p> <p><input type="checkbox"/> Specify the callback number</p> <p>Callback Number <input style="width: 100px;" type="text"/></p> <p><input checked="" type="checkbox"/> Check to enable Callback Budget Control</p> <p>Callback Budget <input type="text" value="30"/> minute(s)</p>	

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>
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 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.

	<ul style="list-style-type: none"> ● 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, ISDN number 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.
Subnet	<p>Chose one of the subnet selections for such VPN profile.</p> <p>Assign Static IP Address – Allows you to specify certain IP address as a subnet.</p> <p>User Name - This field is applicable when you select PPTP or L2TP with or without IPSec policy above.</p> <p>Password - This field is applicable when you select PPTP or L2TP with or without IPSec policy above.</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>
IKE Authentication Method	<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</p>

	Profiles set in the VPN and Remote Access >>IPSec Peer 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 - 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>
Callback Function	<p>The callback function provides a callback service only for the ISDN LAN-to-LAN connection (this feature is useful for “i” model only). The remote user will be charged the connection fee by the telecom.</p> <p>Check to enable Callback function-Enables the callback function.</p> <p>Specify the callback number - The option is for extra security. Once enabled, the router will ONLY call back to the specified Callback Number.</p> <p>Check to enable Callback budget Control- By default, the callback function has limitation of callback period. Once the callback budget is exhausted, the function will be disabled automatically.</p> <p>Callback Budget - Specify the time budget for the dial-in user. The budget will be decreased automatically per callback connection. The default value 0 means no limitation of callback period.</p>

3.10.8 LAN to LAN

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

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

VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles:			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 to clear all indexes.
Name	Indicate the name of the LAN-to-LAN profile. The symbol ??? represents that the profile is empty.
Status	Indicate the status of individual profiles. The symbol V and X represent the profile to be active and inactive, respectively.

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 : 1

1. Common Settings

Profile Name <input type="text" value="???"/> <input type="checkbox"/> Enable this profile	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"/>
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 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"/>	Link Type <input type="text" value="64k bps"/> Username <input type="text" value="???"/> Password <input type="text"/> PPP Authentication <input type="text" value="PAP/CHAP"/> VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off
Server IP/Host Name for VPN. (such as 5551234, draytek.com or 123.45.67.89) <input type="text"/>	IKE Authentication Method <input checked="" type="radio"/> Pre-Shared Key IKE Pre-Shared Key <input type="text"/> <input type="radio"/> Digital Signature(X.509) <input type="text" value="None"/>
	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> <div style="border: 1px solid black; padding: 2px; width: fit-content;"> <input type="text" value="WAN1 First"/> </div> <ul style="list-style-type: none"> ● WAN1 /WAN2 /WAN3 First - While connecting, the router will use WAN1 /WAN2 /WAN3 as the first channel for VPN connection. If WAN1 fails, the router will use another WAN interface instead.

	<p>WAN1 /WAN2 /WAN3 Only - While connecting, the router will use WAN1 /WAN2 /WAN3 as the only channel for VPN connection.</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>Call Direction - Specify the allowed call direction of this LAN-to-LAN profile.</p> <ul style="list-style-type: none"> ● Both-initiator/responder ● Dial-Out- initiator only ● Dial-In- responder only. <p>Always On-Check to enable router always keep VPN connection.</p> <p>Idle Timeout: The default value is 300 seconds. If the connection has been idled over the value, the router will drop the connection.</p> <p>Enable PING to keep alive - This function is to help the router to determine the status of IPSec VPN connection, especially useful in the case of abnormal VPN IPSec tunnel disruption. For details, please refer to the note below. Check to enable the transmission of PING packets to a specified IP address.</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>
Dial-Out Settings	<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</p>

authentication of remote server.

IPSec Tunnel - Build an IPSec VPN connection to the server through Internet.

L2TP with IPSec Policy - Build a L2TP VPN connection through the Internet. You can select to use L2TP alone or with IPSec. Select from below:

- **None:** Do not apply the IPSec policy. Accordingly, the VPN connection employed the L2TP without IPSec policy can be viewed as one pure L2TP connection.
- **Nice to Have:** Apply the IPSec policy first, if it is applicable during negotiation. Otherwise, the dial-out VPN connection becomes one pure L2TP connection.

Must: Specify the IPSec policy to be definitely applied on the L2TP connection.

User Name - This field is applicable when you select PPTP or L2TP with or without IPSec policy above.

Password - This field is applicable when you select PPTP or L2TP with or without IPSec policy above.

PPP Authentication - This field is applicable when you select, PPTP or L2TP with or without IPSec policy above. PAP/CHAP is the most common selection due to wild compatibility.

VJ compression - This field is applicable when you select PPTP or L2TP with or without IPSec policy above. VJ Compression is used for TCP/IP protocol header compression. Normally set to **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**.

IPSec Security Method - This group of fields is a must for IPSec Tunnels and L2TP with IPSec Policy.

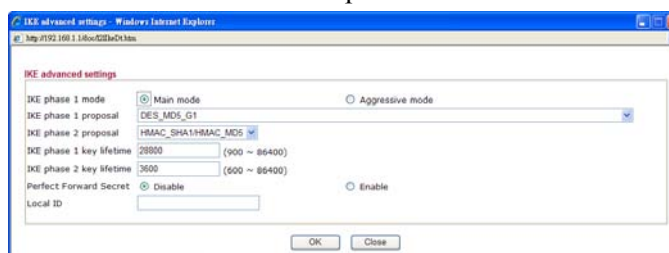
- **Medium AH (Authentication Header)** means data will be authenticated, but not be encrypted. By default, this option is active.
 - **High (ESP-Encapsulating Security Payload)**- means payload (data) will be encrypted and authenticated. Select from below:
 - **DES without Authentication** -Use DES 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.

Callback Function (CBCP) - (for s models only)

The callback function provides a callback service as a part of PPP suite only for the ISDN dial-in user. The router owner will be charged the connection fee by the telecom.

Require Remote to Callback-Enable this to let the router to require the remote peer to callback for the connection afterwards.

Provide ISDN Number to Remote-In the case that the remote peer requires the Vigor router to callback, the local ISDN number will be provided to the remote peer. Check here to allow the Vigor

3. Dial-In Settings

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"/> <input type="checkbox"/> Specify Remote VPN Gateway Peer VPN Server IP <input type="text"/> or Peer ID <input type="text"/>	Username <input type="text" value="???"/> Password <input type="text"/> VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off 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"/> 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
--	---

4. TCP/IP Network Settings

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

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:
 - **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.

Password - This field is applicable when you select PPTP or L2TP with or without IPSec policy above.

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**.

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.

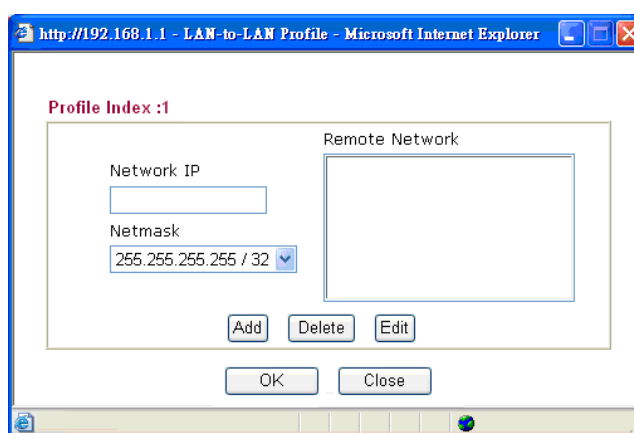
	<ul style="list-style-type: none"> ● High- Encapsulating Security Payload (ESP) means payload (data) will be encrypted and authenticated. You may select encryption algorithm from Data Encryption Standard (DES), Triple DES (3DES), and AES. <p>The callback function provides a callback service only for the ISDN LAN-to-LAN connection (this feature is useful for “i” model only). The remote user will be charged the connection fee by the telecom.</p> <p>Enable Callback Function-Enables the callback function.</p> <p>Use the Following Number to Callback- Check it to use the following parameters for Callback Function.</p> <p>Callback Number - The option is for extra security. Once enabled, the router will ONLY call back to the specified Callback Number.</p> <p>Callback Budget - Specify the time budget for the dial-in user. The budget will be decreased automatically per callback connection. The default value 0 means no limitation of callback period.</p>
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</p>

address here. Do not change the default value if you do not select PPTP or L2TP.

Remote Network IP/ Remote Network Mask - Add a static route to direct all traffic destined to this Remote Network IP Address/Remote Network Mask through the VPN connection. For IPSec, this is the destination clients IDs of phase 2 quick mode.

Local Network IP / Local Network Mask - Display the local network IP and mask for TCP / IP configuration. You can modify the settings if required.

More - Add a static route to direct all traffic destined to more Remote Network IP Addresses/ Remote Network Mask through the VPN connection. This is usually used when you find there are several subnets behind the remote VPN router.



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.

3.10.9 VPN TRUNK Management

VPN trunk includes four features - VPN Backup, VPN load balance, GRE over IPSec, and Binding tunnel policy.

Features of VPN TRUNK – VPN Backup Mechanism

VPN TRUNK Management is a backup mechanism which can set multiple VPN tunnels as backup tunnel. It can assure the network connection not to be cut off due to network environment blocked by any reason.

- VPN TRUNK-VPN Backup mechanism can judge abnormal situation for the environment of VPN server and correct it to complete the backup of VPN Tunnel in real-time.

- VPN TRUNK-VPN Backup mechanism is compliant with all WAN modes (single/multi)
- Dial-out connection types contain IPSec, PPTP, L2TP, L2TP over IPSec and ISDN (depends on hardware specification)
- The web page is simple to understand and easy to configure
- Fully compliant with VPN Server LAN 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.

Features of VPN TRUNK – VPN Load Balance Mechanism

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

- Three types of load sharing algorithm offered, Round Robin, Weighted Round Robin and Fastest
- Binding Tunnel Policy mechanism allows users to encrypt the data in transmission or specified service function in transmission and define specified VPN Tunnel for having effective bandwidth management
- Dial-out connection types contain IPSec, PPTP, L2TP, L2TP over IPSec and GRE over IPSec
- The web page is simple to understand and easy to configure
- The TCP Session transmitted by using VPN TRUNK-VPN Load Balance mechanism will not be lost due to one of VPN Tunnels disconnected. Users do not need to reconnect with setting TCP/UDP Service Port again. The VPN Load Balance function can keep the transmission for internal data on tunnel stably

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

Load Balance Profile List | [Set to Factory Default](#) |

Note: [Active:NO] The LAN-to-LAN Profile is disabled or under Dial-In(Call Direction) at present.

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

Advanced

General Setup

Status Enable Disable

Profile Name

Member1

Member2

Active Mode Backup Load Balance

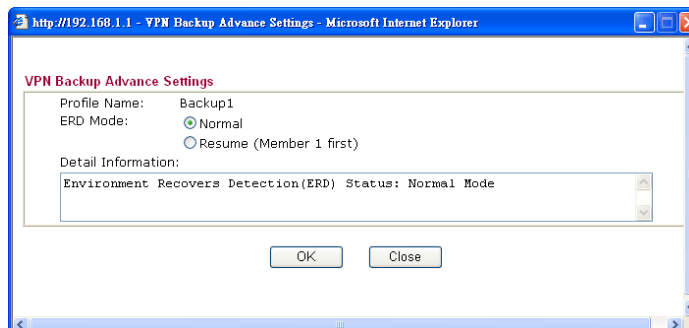
Available settings are explained as follows:

Item	Description
Backup Profile List	<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</p>

IPSec, PPTP, L2TP, L2TP over IPSec (NICE), L2TP over IPSec(MUST) and so on.

Member2 - Display the dial-out profile selected from the Member2 drop down list below.

Advanced – This button is available only when LAN to LAN profile (or more) is created.



Detailed information for this dialog, see later section - **Advanced Load Balance and Backup**.

Load Balance Profile List

Set to Factory Default - Click to clear all VPN TRUNK-VPN Load Balance mechanism profile.

No - The order of VPN TRUNK-VPN Load Balance mechanism profile.

Status - “v” means such profile is enabled; ”x” means such profile is disabled.

Name - Display the name of VPN TRUNK-VPN Load Balance mechanism profile.

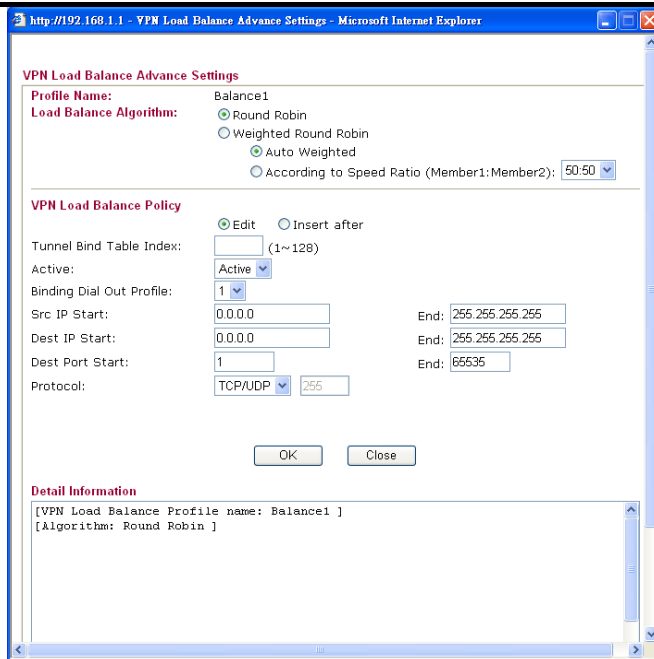
Member1 - Display the dial-out profile selected from the Member1 drop down list below.

Active - “Yes” means normal condition. ”No” means the state might be disabled or that profile currently is set with Dial-in mode (for call direction) in LAN-to-LAN.

Type - Display the connection type for that profile, such as IPSec, PPTP, L2TP, L2TP over IPSec (NICE), L2TP over IPSec(MUST) and so on.

Member2 - Display the dial-out profile selected from the Member2 drop down list below.

Advanced – This button is only available when there is one or more profiles created in this page.



Detailed information for this dialog, see later section - **Advanced Load Balance and Backup**.

General Setup

Status- After choosing one of the profile listed above, please click **Enable** to activate this profile. If you click **Disable**, the selected or current used VPN TRUNK-Backup/Load Balance mechanism profile will not have any effect for VPN tunnel.

Profile Name- Type a name for VPN TRUNK profile. Each profile can group two VPN connections set in LAN-to-LAN. The saved VPN profiles in LAN-to-LAN will be shown on Member1 and Member2 fields.

Member 1/Member2 - Display the selection for LAN-to-LAN dial-out profiles (configured in **VPN and Remote Access >> LAN-to-LAN**) for you to choose for grouping under certain VPN TRUNK-VPN Backup/Load Balance mechanism profile.

- **No** - Index number of LAN-to-LAN dial-out profile.
- **Name** - Profile name of LAN-to-LAN dial-out profile.
- **Connection Type** - Connection type of LAN-to-LAN dial-out profile.
- **VPN ServerIP (Private Network)** - VPN Server IP of LAN-to-LAN dial-out profiles.

Active Mode - Display available mode for you to choose. Choose **Backup** or **Load Balance** for your router.

Add - Add and save new profile to the backup profile list. The corresponding members (LAN-to-LAN profiles) grouped in such new VPN TRUNK – VPN Backup mechanism profile will be locked. The profiles in LAN-to-LAN will be displayed in red. VPN TRUNK – VPN Load Balance mechanism profile will be locked. The profiles in LAN-to-LAN will be displayed in blue.

Edit - Click this button to save the changes to the **Status**

(Enable or Disable), profile name, member1 or member2.

Delete - Click this button to delete the selected VPN TRUNK profile. The corresponding members (LAN-to-LAN profiles) grouped in the deleted VPN TRUNK profile will be released and that profiles in LAN-to-LAN will be displayed in black.

Time for activating VPN TRUNK – VPN Backup mechanism profile

VPN TRUNK – VPN Backup mechanism will be activated automatically after the initial connection of single VPN Tunnel off-line. The content in Member1/2 within VPN TRUNK – VPN Backup mechanism backup profile is similar to dial-out profile configured in LAN-to-LAN web page. VPN TRUNK – VPN Backup mechanism backup profile will process and handle everything unless it is off-line once it is activated.

Time for activating VPN TRUNK – VPN Load Balance mechanism profile

After finishing the connection for one tunnel, the other tunnel will dial out automatically within two seconds. Therefore, you can choose any one of members under VPN Load Balance for dialing out.

Time for activating VPN TRUNK –Dial-out when VPN Load Balance Disconnected

For there is one Tunnel created and connected successfully, to keep the load balance effect between two tunnels, auto-dial will be executed within two seconds.

To close two tunnels of load balance after connecting, please click **Disable** for **Status** in **General Setup** field.

How can you set a VPN TRUNK-VPN Backup/Load Balance mechanism profile?

1. First of all, go to **VPN and Remote Access>>LAN-to-LAN**. Set two or more LAN-to-LAN profiles first that will be used for Member1 and Member2. If you do not set enough LAN-to-LAN profiles, you cannot operate VPN TRUNK – VPN Backup /Load Balance mechanism profile management well.
2. Access into **VPN and Remote Access>>VPN TRUNK Management**.
3. Set one group of VPN TRUNK – VPN Backup/Load Balance mechanism backup profile by choosing **Enable** radio button; type a name for such profile (e.g., 071023); choose one of the LAN-to-LAN profiles from Member1 drop down list; choose one of the LAN-to-LAN profiles from Member2 drop down list; and click **Add** at last.

No.	<Name>	<Connection-Type>	<VPN ServerIP(Private Network)>
1	To-A	PlaceIPSec	192.168.2.25(20.20.20.0)
2	To-B	Site IPsec	192.168.2.26(20.20.21.0)

4. Take a look for LAN-to-LAN profiles. Index 1 is chosen as Member1; index 2 is chosen as Member2. For such reason, LAN-to-LAN profiles of 1 and 2 will be expressed in red to indicate that they are fixed. If you delete the VPN TRUNK – VPN Backup/Load

Balance mechanism profile, the selected LAN-to-LAN profiles will be released and expressed in black.

VPN and Remote Access >> LAN to LAN

LAN-to-LAN Profiles:

Index	Name	Status
<u>1.</u>	To-A Place	▼
<u>2.</u>	To-B Site	▼
<u>3.</u>	To-C place	▼
<u>4.</u>	To-D Site	▼
5	???	▼

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.

Callback Budget minute(s)

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

Remote Gateway IP

Remote Network IP

Remote Network Mask

RIP Direction

From first subnet to remote network, you have to do

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.

Callback Budget minute(s)

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

Remote Gateway IP

Remote Network IP

Remote Network Mask

RIP Direction

From first subnet to remote network, you have to do

Change default route to this VPN tunnel (Only single WAN supports this)

Advanced Load Balance and Backup

After setting profiles for load balance, you can choose any one of them and click Advance for more detailed configuration. The windows for advanced load balance and backup are different. Refer to the following explanation:

Advanced Load Balance

Available settings are explained as follows:

Item	Description
Profile Name	List the load balance profile name.
Load Balance Algorithm	<p>Round Robin – Based on packet base, both tunnels will send the packet alternatively. Such method can reach the balance of packet transmission with fixed rate.</p> <p>Weighted Round Robin –Such method can reach the balance of packet transmission with flexible rate. It can be divided into Auto Weighted and According to Speed Ratio. Auto Weighted can detect the device speed (10Mbps/100Mbps) and switch with fixed value ratio (3:7) for packet transmission. If the transmission rate for packets on both sides of the tunnels is the same, the value of Auto Weighted should be 5.5. According to Speed Ratio allows user to adjust suitable rate manually. There are 100 groups of rate ratio for Member1:Member2 (range from 1:99 to</p>

	99:1).
VPN Load Balance Policy	<p>Below shows the algorithm for Load Balance.</p> <p>Edit – Click this radio button for assign a blank table for configuring Binding Tunnel.</p> <p>Insert after – Click this radio button to adding a new binding tunnel table.</p> <p>Tunnel Bind Table Index- 128 Binding tunnel tables are provided by this device. Specify the number of the tunnel for such Load Balance profile.</p> <p>Active – In-active/Delete can delete this binding tunnel table. Active can activate this binding tunnel table.</p> <p>Binding Dial Out Index – Specify connection type for transmission by choosing the index (LAN to LAN Profile Index) for such binding tunnel table.</p> <p>Scr IP Start /End– Specify source IP addresses as starting point and ending point.</p> <p>Dest IP Start/End – Specify destination IP addresses as starting point and ending point.</p> <p>Dest Port Start /End– Specify destination service port as starting point and ending point.</p> <p>Protocol – Any means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here, such binding tunnel table can be established for TCP Service Port/UDP Service Port/ICMP/IGMP specified here.</p> <p>TCP means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and TCP Service Port also fits the number here, such binding tunnel table can be established. UDP means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and UDP Service Port also fits the number here, such binding tunnel table can be established. TCP/UPD means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and TCP/UDP Service Port also fits the number here, such binding tunnel table can be established. ICMP means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and ICMP Service Port also fits the number here, such binding tunnel table can be established. IGMP means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here and IGMP Service Port also fits the number here, such binding tunnel table can be established. Other means when the source IP, destination IP, destination port and fragment conditions match with the settings specified here with different TCP Service Port/UDP Service Port/ICMP/IGMP, such binding tunnel table can be established.</p>
Detail Information	This field will display detailed information for Binding Tunnel Policy. Below shows a successful binding tunnel

policy for load balance:

VPN Load Balance - Binding Tunnel Policy

Create After insert

Tunnel Bind Table Index: (1~400)

Active:

Binding Dial Out Index:

Binding Src IP Start: End:

Binding Dest IP Start: End:

Binding Dest Port Start: End:

Binding Fragmented: Binding Protocol:

Finish setting up!!

Detail Information

[VPN Load Balance Profile name: VpnLB1]
[Algorithm: Fastest]

No.1 ---> Tunnel Bind Table Idnex :2

```

-----
Binding Dial Out Index = 1
Binding protocol       = TCP Protocol 6
Binding Src IP        = 192.168.10.24 ~ 192.168.10.24
Binding Dst IP        = 192.168.1.20 ~ 192.168.1.20
Binding Dst Port      = 20 ~ 21
Binding Fragmented    = NO
    
```

Note : To configure a successful binding tunnel, you have to:

Type Binding Src IP range (Start and End) and Binding Des IP range (Start and End). Choose TCP/UDP, IGMP/ICMP or Other as Binding Protocol.

Detailed Settings for Advanced Backup

VPN Backup Advance Settings

Profile Name: Backup1

ERD Mode: Normal Resume (Member 1 first)

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

Available settings are explained as follows:

Item	Description
Profile Name	List the backup profile name.
ERD Mode	ERD means “Environment Recovers Detection”. Normal – choose this mode to make all dial-out VPN TRUNK backup profiles being activated alternatively. Resume – when VPN connection breaks down or disconnects, Member 1 will be the top priority for the system to do VPN connection.
Detail Information	This field will display detailed information for Environment

3.10.10 Connection Management

You can find the summary table of all VPN connections. You may disconnect any VPN connection by clicking **Drop** button. You may also aggressively Dial-out by using Dial-out Tool and clicking **Dial** button.

VPN and Remote Access >> Connection Management

Dial-out Tool Refresh Seconds : 10

General Mode:	<input type="text" value=""/>	<input type="button" value="Dial"/>
Backup Mode:	<input type="text" value=""/>	<input type="button" value="Dial"/>
Load Balance Mode:	<input type="text" value=""/>	<input type="button" value="Dial"/>

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	<p>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.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: right;">Refresh Seconds :</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">General Mode:</td> <td style="width: 30%;">(Alfa) 192.168.0.26</td> <td style="width: 10%;"><input type="button" value="Dial"/></td> </tr> <tr> <td>Backup Mode:</td> <td>Alfa) 192.168.0.26</td> <td><input type="button" value="Dial"/></td> </tr> <tr> <td>Load Balance Mode:</td> <td>Bentley) 192.168.0.27</td> <td><input type="button" value="Dial"/></td> </tr> <tr> <td colspan="3"> Audi) 192.168.0.28 BMW) 192.168.0.29 Buick) 192.168.0.30 Cadillac) 192.168.0.31 Chrysler) 192.168.0.32 Citroen) 192.168.0.33 Daihatsu) 192.168.0.34 Ferrari) 192.168.0.35 Fiat) 192.168.0.36 </td> </tr> </table> </div> <p>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.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">General Mode:</td> <td style="width: 30%;">(Alfa) 192.168.0.26</td> <td style="width: 10%;"><input type="button" value="Dial"/></td> </tr> <tr> <td>Backup Mode:</td> <td>(VpnBackup) 192.168.2.103</td> <td><input type="button" value="Dial"/></td> </tr> <tr> <td>Load Balance Mode:</td> <td>VpnBackup) 192.168.2.103</td> <td><input type="button" value="Dial"/></td> </tr> <tr> <td colspan="3"> VpnBackup) 192.168.2.203 </td> </tr> </table> </div> <p>Dial - Click this button to execute dial out function.</p> <p>Refresh Seconds - Choose the time for refresh the dial information among 5, 10, and 30.</p>	General Mode:	(Alfa) 192.168.0.26	<input type="button" value="Dial"/>	Backup Mode:	Alfa) 192.168.0.26	<input type="button" value="Dial"/>	Load Balance Mode:	Bentley) 192.168.0.27	<input type="button" value="Dial"/>	Audi) 192.168.0.28 BMW) 192.168.0.29 Buick) 192.168.0.30 Cadillac) 192.168.0.31 Chrysler) 192.168.0.32 Citroen) 192.168.0.33 Daihatsu) 192.168.0.34 Ferrari) 192.168.0.35 Fiat) 192.168.0.36			General Mode:	(Alfa) 192.168.0.26	<input type="button" value="Dial"/>	Backup Mode:	(VpnBackup) 192.168.2.103	<input type="button" value="Dial"/>	Load Balance Mode:	VpnBackup) 192.168.2.103	<input type="button" value="Dial"/>	VpnBackup) 192.168.2.203		
General Mode:	(Alfa) 192.168.0.26	<input type="button" value="Dial"/>																							
Backup Mode:	Alfa) 192.168.0.26	<input type="button" value="Dial"/>																							
Load Balance Mode:	Bentley) 192.168.0.27	<input type="button" value="Dial"/>																							
Audi) 192.168.0.28 BMW) 192.168.0.29 Buick) 192.168.0.30 Cadillac) 192.168.0.31 Chrysler) 192.168.0.32 Citroen) 192.168.0.33 Daihatsu) 192.168.0.34 Ferrari) 192.168.0.35 Fiat) 192.168.0.36																									
General Mode:	(Alfa) 192.168.0.26	<input type="button" value="Dial"/>																							
Backup Mode:	(VpnBackup) 192.168.2.103	<input type="button" value="Dial"/>																							
Load Balance Mode:	VpnBackup) 192.168.2.103	<input type="button" value="Dial"/>																							
VpnBackup) 192.168.2.203																									

	Refresh - Click this button to refresh the whole connection status.
--	--

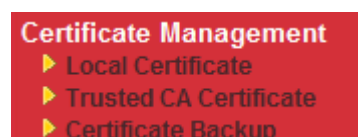
3.11 Certificate Management

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.



3.11.1 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.

	<p>Certificate Management >> Local Certificate</p> <p>Generate Certificate Request</p> <p>Subject Alternative Name</p> <p>Type <input type="text" value="IP Address"/> <input type="button" value="v"/> IP <input type="text"/></p> <hr/> <p>Subject Name</p> <p>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"/></p> <hr/> <p>Key Type <input type="text" value="RSA"/> <input type="button" value="v"/> Key Size <input type="text" value="1024 Bit"/> <input type="button" value="v"/></p> <p><input type="button" value="Generate"/></p> <p>Type in all the information that the window requests. Then click Generate again.</p>
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.

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/O=Draytek/OU=RD/emailA...	Requesting	<input type="button" value="View"/> <input type="button" value="Delete"/>

X509 Local Certificate Request

```

-----BEGIN CERTIFICATE REQUEST-----
MIIBsjCCARsCAQAwUDELMAkGA1UEBhMCVFcxEDAQBgNVBAAoTBORyYX10ZWsxMjEz
BgNVBAsTA1JEMSIwIAAYJKoZIhvcNAQkBFhNzZXJ2aWN1QGRyYX10ZWsuY29tMIGf
MA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDPioahu/gFQaYB1ce5OERSDfWknIdH
b1o1kt9cTdlUDaFk6s8d3wDeQytoV1LBJz2IDFOxjX6ip7ev187twwTsg41gZ6Qk
/rGhuVTKd9j6P1crnkP7du84t23tWBdMD4W5c8VmSyDjShLhjdXVYPWpNKVlrOT2
RZjkrMaHEWpVpWIDAQABoCIwIAAYJKoZIhvcNAQkOMRwETAPBgNVHRECDAGhwTA
qAEqMA0GCSqGSIb3DQEBBQUAA4GBAB43O4N9nod8rIudBAfTt9lts0/tYNb2kfEZ
ikisNdZUoUEnKcejeOndc+HS3VDa23ACEJpzTPFxqk1beZo7a+wE57/+OVhNagBa
GqeJ9trvYqeZybCrSjRU1PN1Hccfo7ANJ/M/D1EPgKn+PWCho6LgVsJHrVkc2HdV
j8kJEimO
-----END CERTIFICATE REQUEST-----

```

3.11.2 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 **Browse...** to find out the saved text file. Then click **Import**. The one you imported will be listed on the Trusted CA Certificate window. Then click **Import** to use the pre-saved file.

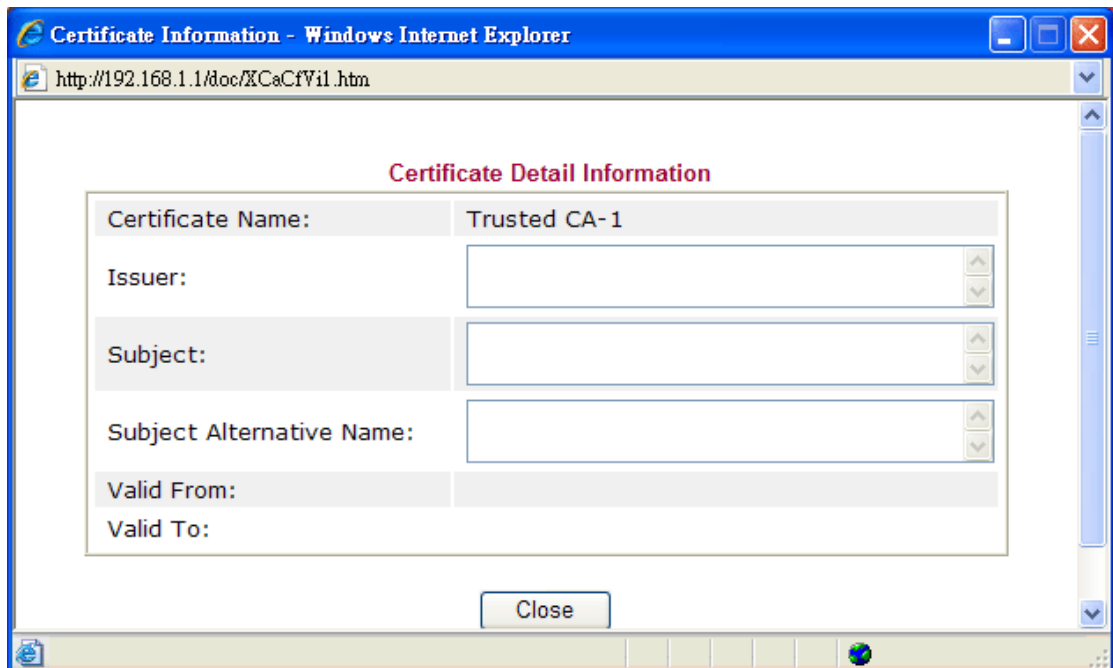
[Certificate Management >> Trusted CA Certificate](#)

Import X509 Trusted CA Certificate

Select a trusted CA certificate file.

Click [Import](#) to upload the certification.

For viewing each trusted CA certificate, click **View** to open the certificate detail information window. If you want to delete a CA certificate, choose the one and click **Delete** to remove all the certificate information.



3.11.3 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 **Retype password**.

Also, you can use **Restore** to retrieve these two settings to the router whenever you want.

[Certificate Management >> Certificate Backup](#)

Certificate Backup / Restoration

Backup

Encrypt password:

Confirm password:

Click to download certificates to your local PC as a file.

Restoration

Select a backup file to restore.

Decrypt password:

Click to upload the file.

3.12 VoIP

Note: This function is used for “V” models.

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

There are many different call signaling protocols, methods by which VoIP devices can talk to each other. The most popular protocols are SIP, MGCP, Megaco and H.323. These protocols are not all compatible with each other (except via a soft-switch server).

The Vigor V models support the SIP protocol as this is an ideal and convenient deployment for the ITSP (Internet Telephony Service Provider) and softphone and is widely supported. SIP is an end-to-end, signaling protocol that establishes user presence and mobility in VoIP structure. Every one who wants to talk using his/her SIP Uniform Resource Identifier, “SIP Address”. The standard format of SIP URI is

sip: user:password @ host: port

Some fields may be optional in different use. In general, "host" refers to a domain. The "userinfo" includes the user field, the password field and the @ sign following them. This is very similar to a URL so some may call it "SIP URL". SIP supports peer-to-peer direct calling and also calling via a SIP proxy server (a role similar to the gatekeeper in H.323 networks), while the MGCP protocol uses client-server architecture, the calling scenario being very similar to the current PSTN/ISDN network.

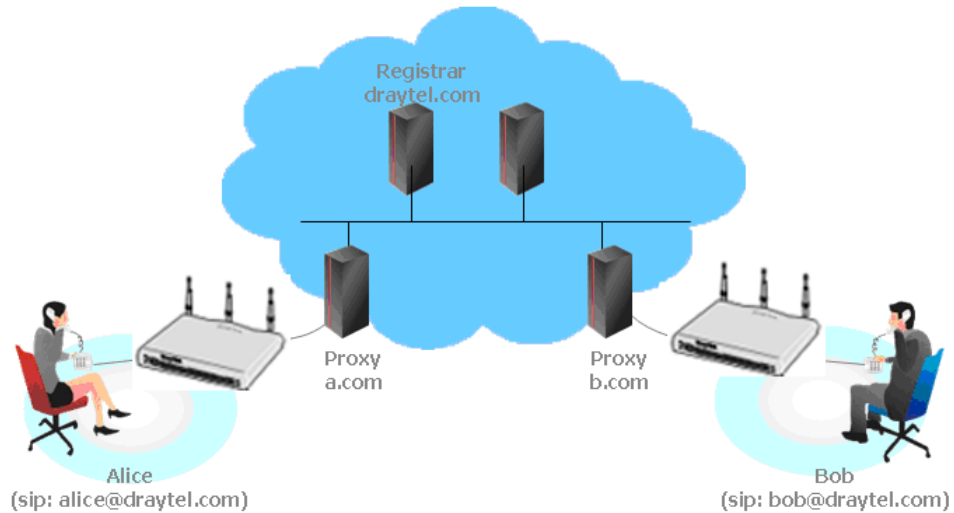
After a call is setup, the voice streams transmit via RTP (Real-Time Transport Protocol). Different codecs (methods to compress and encode the voice) can be embedded into RTP packets. Vigor V models provide various codecs, including G.711 A/ μ -law, G.723, G.726 and G.729 A & B. Each codec uses a different bandwidth and hence provides different levels of voice quality. The more bandwidth a codec uses the better the voice quality, however the codec used must be appropriate for your Internet bandwidth.

Usually there will be two types of calling scenario, as illustrated below:

- **Calling via SIP Servers**

First, the Vigor V models of yours will have to register to a SIP Registrar by sending registration messages to validate. Then, both parties' SIP proxies will forward the sequence of messages to caller to establish the session.

If you both register to the same SIP Registrar, then it will be illustrated as below:



The major benefit of this mode is that you don't have to memorize your friend's IP address, which might change very frequently if it's dynamic. Instead of that, you will only have to using **dial plan** or directly dial your friend's **account name** if you are with the same SIP Registrar.

- **Peer-to-Peer**

Before calling, you have to know your friend's IP Address. The Vigor VoIP Routers will build connection between each other.



- Our Vigor V models firstly apply efficient codecs designed to make the best use of available bandwidth, but Vigor V models also equip with automatic QoS assurance. QoS Assurance assists to assign high priority to voice traffic via Internet. You will always have the required inbound and outbound bandwidth that is prioritized exclusively for Voice traffic over Internet but you just get your data a little slower and it is tolerable for data traffic.

VoIP

- ▶ DialPlan
- ▶ SIP Accounts
- ▶ Phone Settings
- ▶ Status

3.12.1 DialPlan

This page allows you to set phone book and digit map for the VoIP function. Click the **Phone Book** and **Digit Map** links on the page to access into next pages for dialplan settings.

VoIP >> DialPlan Setup

DialPlan Configuration

Phone Book
Digit Map
Call Barring
Regional
PSTN Setup

Secure Phone configuration

<input checked="" type="checkbox"/> Enable Secure Phone (ZRTP+SRTP)
<input checked="" type="checkbox"/> Enable SAS Voice Prompt

OK

Available settings are explained as follows:

Item	Description
Enable Secure Phone	It allows users to have encrypted RTP stream with the peer side using the same protocol (ZRTP+SRTP). Check this box to have secure call.
Enable SAS Voice Prompt	If it is enabled, SAS prompt will be heard for both ends every time. If it is disabled, no SAS prompt will be heard any more.

Application for Secure Phone

Enable SAS Voice Prompt, for ex: if vigor router A calls vigor router B with checking **Enable Secure Phone** and **Enable SAS Voice Prompt**, then:

1. After the connection established, vigor router A will send SAS voice prompt to A and vigor router B will send the SAS voice prompt to B.
2. Then the RTP traffic is secured until the call ends.
3. If vigor router A wants to call vigor router B again next time, both A and B will not hear any voice prompt again even checking **Enable SAS Voice Prompt** on web UI. It means only the first call between them will have voice prompt.

Enable SAS Voice Prompt, for ex: if vigor router A calls vigor router B with checking **Enable Secure Phone** but not **Enable SAS Voice Prompt**, then:

1. After the connection established, vigor router A will **NOT** send SAS voice prompt to vigor router A and vigor router B will NOT send the SAS voice prompt to vigor router B.
2. Even no voice prompt, but the RTP traffic is still secured until the call ends.

Note: If the incoming or outgoing calls do not match any entry on the phonebook, the router will try to make the call "being protected". But, if the call ends up "unprotected"(e.g. peer side does not support ZRTP+SRTP), the router will not play out a warning message.

Phone Book

In this section, you can set your VoIP contacts in the “phonebook”. It can help you to make calls quickly and easily by using “speed-dial” **Phone Number**. There are total 60 index entries in the phonebook for you to store all your friends and family members’ SIP addresses. **Loop through** and **Backup Phone Number** will be displayed if you are using Vigor2850Vn for setting the phone book.

VoIP >> DialPlan Setup

Phone Book

Index	Phone number	Display Name	SIP URL	Dial Out Account	Loop through	Backup Phone Number	Secure Phone	Status
1.				Default	None		None	x
2.				Default	None		None	x
3.				Default	None		None	x
4.				Default	None		None	x
5.				Default	None		None	x
6.				Default	None		None	x
7.				Default	None		None	x
8.				Default	None		None	x
9.				Default	None		None	x
10.				Default	None		None	x
11.				Default	None		None	x
12.				Default	None		None	x
13.				Default	None		None	x
14.				Default	None		None	x
15.				Default	None		None	x
16.				Default	None		None	x
17.				Default	None		None	x
18.				Default	None		None	x
19.				Default	None		None	x
20.				Default	None		None	x

<< [1-20](#) | [21-40](#) | [41-60](#) >>

[Next >>](#)

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

Click any index number to display the dial plan setup page.

VoIP >> DialPlan Setup

Phone Book Index No. 1

Enable

Phone Number:

Display Name:

SIP URL: @

Dial Out Account:

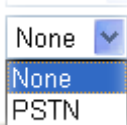
Loop through:

Backup Phone Number:

Secure Phone:

Available settings are explained as follows:

Item	Description
Enable	Click this to enable this entry.
Phone Number	The speed-dial number of this index. This can be any number you choose, using digits 0-9 and * .

Display Name	The Caller-ID that you want to be displayed on your friend's screen. This let your friend can easily know who's calling without memorizing lots of SIP URL Address.
SIP URL	Enter your friend's SIP Address.
Dial Out Account	Choose one of the SIP accounts for this profile to dial out. It is useful for both sides (caller and callee) that registered to different SIP Registrar servers. If caller and callee do not use the same SIP server, sometimes, the VoIP phone call connection may not succeed. By using the specified dial out account, the successful connection can be assured.
Loop through	Choose PSTN to enable loop through function. 
Backup Phone Number	When the VoIP phone is obstructs or the Internet breaks down for some reasons, the backup phone will be dialed out to replace the VoIP phone number. At this time, the phone call will be changed from VoIP phone into PSTN call according to the loop through direction chosen. Note that, during the phone switch, the blare of phone will appear for a short time. And when the VoIP phone is switched into the PSTN phone, the telecom co. might charge you for the connection fee. Please type in backup phone number (PSTN number/ISDN number) for this VoIP phone setting.
Secure Phone	ZRTP+SRTP - It allows users to have encrypted RTP stream with the peer side using the same protocol (ZRTP+SRTP). Check this box to have secure call.

Note: If the incoming or outgoing calls do not match any entry on the phonebook, the router will try to make the call "being protected". But, if the call ends up "unprotected"(e.g. peer side does not support ZRTP+SRTP), the router will not play out a warning message.

Digit Map

For the convenience of user, this page allows users to edit prefix number for the SIP account with adding number, stripping number or replacing number. It is used to help user having a quick and easy way to dial out through VoIP interface.

VoIP >> DialPlan Setup

Digit Map Setup

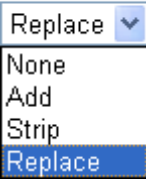
#	Enable	Match Prefix	Mode	OP Number	Min Len	Max Len	Route	Move Up	Move Down
1	<input checked="" type="checkbox"/>	03	Replace	8863	7	8	PSTN		Down
2	<input checked="" type="checkbox"/>	886	Strip	886	9	10	PSTN	UP	Down
3	<input type="checkbox"/>		None		0	0	PSTN	UP	Down
4	<input type="checkbox"/>		None		0	0	PSTN	UP	Down
5	<input type="checkbox"/>		None		0	0	PSTN	UP	Down

18	<input type="checkbox"/>		None		0	0	PSTN	UP	Down
19	<input type="checkbox"/>		None		0	0	PSTN	UP	Down
20	<input type="checkbox"/>		None		0	0	PSTN	UP	

Note:

1. The length for Min Len and Max Len fields should be between 0~25.
2. Wildcard '?' is supported.

Available settings are explained as follows:

Item	Description
Enable	Check this box to invoke this setting.
Match Prefix	It is used to match with the number you dialed and can be modified with the OP Number by the mode (add, strip or replace).
Mode	<p>None - No action.</p> <p>Add - When you choose this mode, the OP number will be added with the prefix number for calling out through the specific VoIP interface.</p> <p>Strip - When you choose this mode, the OP number will be deleted by the prefix number for calling out through the specific VoIP interface. Take the above picture (Prefix Table Setup web page) as an example, the OP number of 886 will be deleted completely for the prefix number is set with 886.</p> <p>Replace - When you choose this mode, the OP number will be replaced by the prefix number for calling out through the specific VoIP interface. Take the above picture (Prefix Table Setup web page) as an example, the prefix number of 03 will be replaced by 8863. For example: dial number of "03111111" will be changed to "8863111111" and sent to SIP server.</p> <p style="text-align: center;">Mode</p> 
OP Number	The front number you type here is the first part of the account number that you want to execute special function (according to the chosen mode) by using the prefix number.
Min Len	Set the minimal length of the dial number for applying the prefix number settings. Take the above picture (Prefix Table Setup web page) as an example, if the dial number is between 7 and 9, that number can apply the prefix number settings here.
Max Len	Set the maximum length of the dial number for applying the prefix number settings.
Route	Choose the one that you want to enable the prefix number

	settings from the saved SIP accounts. Please set up one SIP account first to make this interface available. This item will be changed according to the port settings configured in VoIP>> Phone Settings .
Move UP /Move Down	Click the link to move the selected entry up or down.

Call Barring

Call barring is used to block phone calls coming from the one that is not welcomed.

[VoIP >> DialPlan Setup](#)

Call Barring Setup | [Set to Factory Default](#) |

Index	Call Direction	Barring Type	Barring Number/URL/URI	Route	Schedule	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](#) >>

Advanced:
[Block Anonymous](#)
[Block Unknown Domain](#)
[Block IP Address](#)

Click any index number to display the dial plan setup page.

[VoIP >> DialPlan Setup](#)

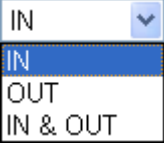
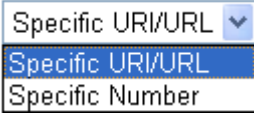
Call Barring Index No. 1

Enable
 Call Direction:
 Barring Type:
 Specific URI/URL:
 Route:
 Index(1-15) in [Schedule](#) Setup: , , ,

Note: Wildcard '?' is supported.

Available settings are explained as follows:

Item	Description
Enable	Check it to enable this entry.

Call Direction	Determine the direction for the phone call, IN – incoming call, OUT-outgoing call, IN & OUT – both incoming and outgoing calls. 
Barring Type	Determine the type of the VoIP phone call, URI/URL or number. 
Specific URI/URL or Specific Number	This field will be changed based on the type you selected for barring Type.
Route	All means all the phone calls will be blocked with such mechanism.
Index (1-15) in Schedule	Enter the index of schedule profiles to control the call barring according to the preconfigured schedules. Refer to section Applications>>Schedule for detailed configuration.

Additionally, you can set advanced settings for call barring such as **Block Anonymous**, **Block Unknown Domain** or **Block IP Address**. Simply click the relational links to open the web page.

For **Block Anonymous** – this function can block the incoming calls without caller ID on the interface (Phone port) specified in the following window. Such control also can be done based on preconfigured schedules.

VoIP >> DialPlan Setup

Call Barring Block Anonymous

Enable
Route Phone1 Phone2
Index(1-15) in [Schedule](#) Setup , , ,

Note:Block the incoming calls which do not have the caller ID.

For **Block Unknown Domain** – this function can block incoming calls (through Phone port) from unrecognized domain that is not specified in SIP accounts. Such control also can be done based on preconfigured schedules.

VoIP >> DialPlan Setup

Call Barring Block Unknown Domain

<input checked="" type="checkbox"/> Enable				
Route		<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	
Index(1-15) in Schedule Setup	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Note: If the domain of the incoming call is different from the domain found in SIP accounts, the call should be blocked.

OK

Cancel

For **Block IP Address** – this function can block incoming calls (through Phone port) coming from IP address. Such control also can be done based on preconfigured schedules.

VoIP >> DialPlan Setup

Call Barring Block IP Address

Enable

Route Phone1 Phone2

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

Note: The incoming calls by means of IP dialing (e.g.#192*168*1*1#) should be blocked.

Regional

This page allows you to process incoming or outgoing phone calls by regional. Default values (common used in most areas) will be shown on this web page. You *can change* the number based on the region that the router is placed.

VoIP >> DialPlan Setup

Enable Regional [Set to Factory Default](#)

Last Call Return [Miss]:	<input type="text" value="*69"/>	Last Call Return [In]:	<input type="text" value="*12"/>	Last Call Return [Out]:	<input type="text" value="*14"/>
Call Forward [All] [Act]:	<input type="text" value="*72"/> +number+#	Call Forward [Deact]:	<input type="text" value="*73"/> +#	Call Forward [Busy] [Act]:	<input type="text" value="*90"/> +number+#
Call Forward [No Ans] [Act]:	<input type="text" value="*92"/> +number+#	Do Not Disturb [Act]:	<input type="text" value="*78"/> +#	Do Not Disturb [Deact]:	<input type="text" value="*79"/> +#
Hide caller ID [Act]:	<input type="text" value="*67"/> +#	Hide caller ID [Deact]:	<input type="text" value="*68"/> +#	Call Waiting [Act]:	<input type="text" value="*56"/> +#
Call Waiting [Deact]:	<input type="text" value="*57"/> +#	Block Anonymous [Act]:	<input type="text" value="*77"/> +#	Block Anonymous [Deact]:	<input type="text" value="*87"/> +#
Block Unknown Domain [Act]:	<input type="text" value="*40"/> +#	Block Unknown Domain [Deact]:	<input type="text" value="*04"/> +#	Block IP Calls [Act]:	<input type="text" value="*50"/> +#
Block IP Calls [Deact]:	<input type="text" value="*05"/> +#	Block Last Calls [Act]:	<input type="text" value="*60"/> +#		

Available settings are explained as follows:

Item	Description
Enable Regional	Check this box to enable this function.
Last Call Return [Miss]	Sometimes, people might miss some phone calls. Please dial number typed in this field to know where the last phone call comes from and call back to that one.
Last Call Return [In]	You have finished an incoming phone call, however you want to call back again for some reason. Please dial number typed in this field to call back to that one.

Last Call Return [Out]	Dial the number typed in this field to call the previous outgoing phone call again.
Call Forward [All][Act]	Dial the number typed in this field to forward all the incoming calls to the specified place.
Call Forward [Deact]	Dial the number typed in this field to release the call forward function.
Call Forward [Busy][Act]	Dial the number typed in this field to forward all the incoming calls to the specified place while the phone is busy.
Call Forward [No Ans][Act]	Dial the number typed in this field to forward all the incoming calls to the specified place while there is no answer of the connected phone.
Do Not Disturb [Act]	Dial the number typed in this field to invoke the function of DND.
Do Not Distrub [Deact]	Dial the number typed in this field to release the DND function.
Hide caller ID [Act]	Dial the number typed in this field to make your phone number (ID) not displayed on the display panel of remote end.
Hide caller ID [Deact]	Dial the number typed in this field to release this function.
Call Waiting [Act]	Dial the number typed in this field to make all the incoming calls waiting for your answer.
Call Waiting [Deact]	Dial the number typed in this field to release this function.
Block Anonymous[Act]	Dial the number typed in this field to block all the incoming calls with unknown ID.
Block Anonymous[Deact]	Dial the number typed in this field to release this function.
Block Unknown Domain [Act]	Dial the number typed in this field to block all the incoming calls from unknown domain.
Block Unknown Domain [Deact]	Dial the number typed in this field to release this function.
Block IP Calls [Act]	Dial the number typed in this filed to block all the incoming calls from IP address.
Block IP Calls [Deact]	Dial the number typed in this field to release this function.
Block Last Calls [Act]	Dial the number typed in this field to block the last incoming phone call.

PSTN Setup

Some emergency phone (e.g., 911) or special phone cannot be dialed out by using VoIP and can be called out through PSTN line only. To solve this problem, this page allows you to set five sets of PSTN number for dialing without passing through Internet. Please type the number in the field of **phone number for PSTN relay**.

VoIP >> PSTN Setup

Default phone number for PSTN relay

Enable	phone number for PSTN relay
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>

OK Cancel

Then, check the **Enable** box to make the PSTN number available for dial whenever you need.

3.12.2 SIP Accounts

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

As Vigor VoIP Router is turned on, it will first register with Registrar using AuthorizationUser@Domain/Realm. After that, your call will be bypassed by SIP Proxy to the destination using AccountName@Domain/Realm as identity.

Note: Selection items for **Ring Port** will differ according to the router you have.

SIP Accounts List Refresh

Index	Profile	Domain/Realm	Proxy	Account Name	Codec	Ring Port		Status
1				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
2				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
3				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
4				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
5				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
6				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
7				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
8				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
9				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
10				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
11				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-
12				---	G.729A/B	<input type="checkbox"/> Phone1	<input type="checkbox"/> Phone2	-

R: success registered on SIP server
-: fail to register on SIP server

NAT Traversal Setting

STUN Server:	<input type="text"/>
External IP:	<input type="text"/>
SIP PING Interval:	<input type="text" value="150"/> sec

Available settings are explained as follows:

Item	Description
Index	Click this link to access into next page for setting SIP account.
Profile	Display the profile name of the account.
Domain/Realm	Display the domain name or IP address of the SIP registrar server.
Proxy	Display the domain name or IP address of the SIP proxy server.
Account Name	Display the account name of SIP address before @.
Codec	Display the codec type for the account.
Ring Port	Specify which port will ring when receiving a phone call. Set Phone, ISDN1-S0 or ISDN-TE as the default ring port for the SIP account. If you choose Phone or ISDN1-S0, the ISDN2-TE selection will be dimmed, vice versa. There are ten internal lines with numbers (30 – 39) offered for ISDN-S0 . You can specify any one of them as ring port for specified SIP account. By the way, ISDN-S0 can be used by mapping with MSN numbers.
Status	Show the status for the corresponding SIP account. R means such account is registered on SIP server successfully. – means the account is failed to register on SIP server.
STUN Server	Type in the IP address or domain of the STUN server.
External IP	Type in the gateway IP address.

SIP PING interval	The default value is 150 (sec). It is useful for a Nortel server NAT Traversal Support.
--------------------------	---

Click any index link to access into the following page for configuring SIP account.


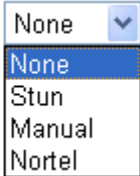
[VoIP >> SIP Accounts](#)

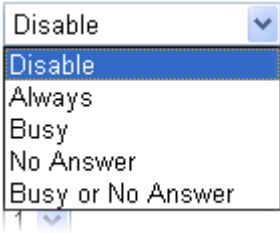
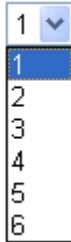
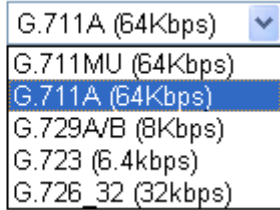
SIP Account Index No. 1

Profile Name	<input type="text"/> (11 char max.)
Register via	None <input type="checkbox"/> Call without Registration
SIP Port	5060
Domain/Realm	<input type="text"/> (63 char max.)
Proxy	<input type="text"/> (63 char max.)
	<input type="checkbox"/> Act as outbound proxy
Display Name	<input type="text"/> (23 char max.)
Account Number/Name	--- (63 char max.)
	<input type="checkbox"/> Authentication ID <input type="text"/> (63 char max.)
Password	<input type="text"/> (63 char max.)
Expiry Time	1 hour <input type="text"/> 3600 sec
NAT Traversal Support	None
Call Forwarding	Disable
SIP URL	<input type="text"/>
Time Out	30 sec
Ring Port	<input type="checkbox"/> Phone1 <input type="checkbox"/> Phone2
Ring Pattern	1
Prefer Codec	G.729AVB (8Kbps) <input type="checkbox"/> Single Codec
Packet Size	20ms
Voice Active Detector	Off

Available settings are explained as follows:

Item	Description
Profile Name	Assign a name for this profile for identifying. You can type similar name with the domain. For example, if the domain name is <i>draytel.org</i> , then you might set <i>draytel-1</i> in this field.
Register via	If you want to make VoIP call without register personal information, please choose None and check the box to achieve the goal. Some SIP server allows user to use VoIP function without registering. For such server, please check the box of Call without Registration . Choosing Auto is recommended. The system will select a proper way for your VoIP call.

	
SIP Port	Set the port number for sending/receiving SIP message for building a session. The default value is 5060 . Your peer must set the same value in his/her Registrar.
Domain/Realm	Set the domain name or IP address of the SIP Registrar server.
Proxy	Set domain name or IP address of SIP proxy server. By the time you can type :port number after the domain name to specify that port as the destination of data transmission (e.g., nat.draytel.org:5065)
Act as Outbound Proxy	Check this box to make the proxy acting as outbound proxy.
Display Name	The caller-ID that you want to be displayed on your friend's screen.
Account Number/Name	Enter your account name of SIP Address, e.g. every text before @.
Authentication ID	Check the box to invoke this function and enter the name or number used for SIP Authorization with SIP Registrar. If this setting value is the same as Account Name, it is not necessary for you to check the box and set any value in this field.
Password	The password provided to you when you registered with a SIP service.
Expiry Time	The time duration that your SIP Registrar server keeps your registration record. Before the time expires, the router will send another register request to SIP Registrar again.
NAT Traversal Support	<p>If the router (e.g., broadband router) you use connects to internet by other device, you have to set this function for your necessity.</p> <p>NAT Traversal Support </p> <p>None – Disable this function. Stun – Choose this option if there is Stun server provided for your router. Manual – Choose this option if you want to specify an external IP address as the NAT transversal support. Nortel – If the soft-switch that you use supports Nortel</p>

	<p>solution, you can choose this option.</p>
Call Forwarding	<p>There are four options for you to choose. Disable is to close call forwarding function. Always means all the incoming calls will be forwarded into SIP URL without any reason. Busy means the incoming calls will be forwarded into SIP URL only when the local system is busy. No Answer means if the incoming calls do not receive any response, they will be forwarded to the SIP URL by the time out.</p>  <p>SIP URL – Type in the SIP URL (e.g., aaa@draytel.org or abc@iptel.org) as the site for call forwarded.</p> <p>Time Out – Set the time out for the call forwarding. The default setting is 30 sec.</p>
Ring Port	<p>Set Phone 1 and/or Phone 2 as the default ring port(s) for this SIP account.</p>
Ring Pattern	<p>Choose a ring tone type for the VoIP phone call.</p> <p>Ring Pattern </p>
Prefer Codec	<p>Select one of five codecs as the default for your VoIP calls. The codec used for each call will be negotiated with the peer party before each session, and so may not be your default choice. The default codec is G.729A/B; it occupies little bandwidth while maintaining good voice quality.</p> <p>If your upstream speed is only 64Kbps, do not use G.711 codec. It is better for you to have at least 256Kbps upstream if you would like to use G.711.</p> <p>Prefer Codec </p> <p>Single Codec – If the box is checked, only the selected Codec will be applied.</p>
Packet Size	<p>The amount of data contained in a single packet. The default value is 20 ms, which means the data packet will contain 20 ms voice information.</p>

	Packet Size <div data-bbox="1043 203 1161 443" style="border: 1px solid black; padding: 2px;"> 20ms ▾ 10ms 20ms 30ms 40ms 50ms 60ms </div>
Voice Active Detector	<p data-bbox="699 465 1407 593">This function can detect if the voice on both sides is active or not. If not, the router will do something to save the bandwidth for other using. Click On to invoke this function; click off to close the function.</p> <p data-bbox="699 611 997 640">Voice Active Detector</p> <div data-bbox="1043 607 1136 714" style="border: 1px solid black; padding: 2px;"> Off ▾ Off On </div>

3.12.3 Phone Settings

This page allows user to set phone settings for Phone 1 and Phone 2 respectively. However, it changes slightly according to different model you have.

VoIP >> Phone Settings

Index	Port	Call Feature	Tone	Gain (Mic/Speaker)	Default SIP Account	DTMF Relay
1	Phone1	CW,CT,	User Defined	5/5		OutBand
2	Phone2	CW,CT,	User Defined	5/5		OutBand

RTP

Symmetric RTP

Dynamic RTP Port Start

Dynamic RTP Port End

RTP TOS

OK

Available settings are explained as follows:

Item	Description
Phone List	<p>Port – there are two phone ports provided here for you to configure. Phone1/Phone2 allows you to set general settings for PSTN phones.</p> <p>Call Feature – A brief description for call feature will be shown in this field for your reference.</p> <p>Tone - Display the tone settings that configured in the advanced settings page of Phone Index.</p> <p>Gain - Display the volume gain settings for Mic/Speaker that configured in the advanced settings page of Phone Index.</p> <p>Default SIP Account – “draytel_1” is the default SIP account. You can click the number below the Index field to change SIP account for each phone port.</p> <p>DTMF Relay – Display DTMF mode that configured in the advanced settings page of Phone Index.</p>
RTP	<p>Symmetric RTP – Check this box to invoke the function. To make the data transmission going through on both ends of local router and remote router not misleading due to IP lost (for example, sending data from the public IP of remote router to the private IP of local router), you can check this box to solve this problem.</p> <p>Dynamic RTP Port Start - Specifies the start port for RTP stream. The default value is 10050.</p> <p>Dynamic RTP Port End - Specifies the end port for RTP stream. The default value is 15000.</p> <p>RTP TOS – It decides the level of VoIP package. Use the drop down list to choose any one of them.</p>

	<div style="border: 1px solid black; padding: 5px;"> <div style="background-color: #e0e0e0; padding: 2px;">Manual</div> IP precedence 1 IP precedence 2 IP precedence 3 IP precedence 4 IP precedence 5 IP precedence 6 IP precedence 7 AF Class1 (Low Drop) AF Class1 (Medium Drop) AF Class1 (High Drop) AF Class2 (Low Drop) AF Class2 (Medium Drop) AF Class2 (High Drop) AF Class3 (Low Drop) AF Class3 (Medium Drop) AF Class3 (High Drop) AF Class4 (Low Drop) AF Class4 (Medium Drop) AF Class4 (High Drop) EF Class <div style="background-color: #e0e0e0; padding: 2px;">Manual</div> </div>
	RTP TOS

Detailed Settings for Phone Port

Click the number link for Phone port, you can access into the following page for configuring Phone settings.

[VoIP >> Phone Settings](#)

Phone1

<p>Call Feature</p> <input type="checkbox"/> Hotline <input style="width: 100px;" type="text"/> <input type="checkbox"/> Session Timer <input style="width: 50px;" type="text" value="90"/> sec <input type="checkbox"/> T.38 Fax Function Error Correction Mode <input type="text" value="REDUNDANCY"/> Call Forwarding <input type="text" value="Disable"/> SIP URL <input style="width: 100px;" type="text"/> Time Out <input style="width: 50px;" type="text" value="30"/> sec <input type="checkbox"/> DND(Do Not Disturb) Mode Index(1-15) in Schedule Setup: <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/> Note: Action and Idle Timeout settings will be ignored. Index(1-60) in Phone Book as Exception List: <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/> <input type="checkbox"/> CLIR (hide caller ID) <input checked="" type="checkbox"/> Call Waiting <input checked="" type="checkbox"/> Call Transfer	<p>Default SIP Account <input type="text"/></p> <input type="checkbox"/> Play dial tone only when account registered
--	---

Available settings are explained as follows:

Item	Description
Hotline	Check the box to enable it. Type in the SIP URL in the field for dialing automatically when you pick up the phone set.
Session Timer	Check the box to enable the function. In the limited time that you set in this field, if there is no response, the

	connecting call will be closed automatically.
T.38 Fax Function	Check the box to enable T.38 fax function. Error Correction Mode – choose a mode for error correction.
DND (Do Not Disturb) mode	Set a period of peace time without disturbing by VoIP phone call. During the period, the one who dial in will listen busy tone, yet the local user will not listen any ring tone. Index (1-15) in Schedule - Enter the index of schedule profiles to control when the phone will ring and when will not according to the preconfigured schedules. Refer to section Application >>Schedule for detailed configuration. Index (1-60) in Phone Book - Enter the index of phone book profiles. Refer to section DialPlan – Phone Book for detailed configuration.
CLIR (hide caller ID)	Check this box to hide the caller ID on the display panel of the phone set.
Call Waiting	Check this box to invoke this function. A notice sound will appear to tell the user new phone call is waiting for your response. Click hook flash to pick up the waiting phone call.
Call Transfer	Check this box to invoke this function. Click hook flash to initiate another phone call. When the phone call connection succeeds, hang up the phone. The other two sides can communicate, then.
Default SIP Account	You can set SIP accounts (up to six groups) on SIP Account page. Use the drop down list to choose one of the profile names for the accounts as the default one for this phone setting. Play dial tone only when account registered - Check this box to invoke the function.

In addition, you can press the **Advanced** button to configure tone settings, volume gain, MISC and DTMF mode. **Advanced** setting is provided for fitting the telecommunication custom for the local area of the router installed. Wrong tone settings might cause inconvenience for users. To set the sound pattern of the phone set, simply choose a proper region to let the system find out the preset tone settings and caller ID type automatically. Or you can adjust tone settings manually if you choose User Defined. TOn1, TOff1, TOn2 and TOff2 mean the cadence of the tone pattern. TOn1 and TOn2 represent sound-on; TOff1 and TOff2 represent the sound-off.

Advance Settings >> Phone 1

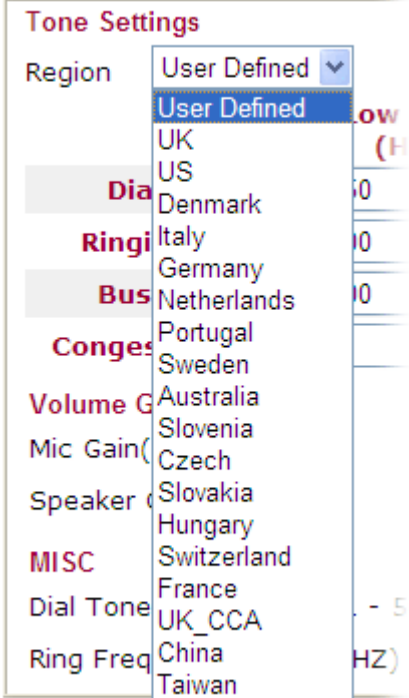
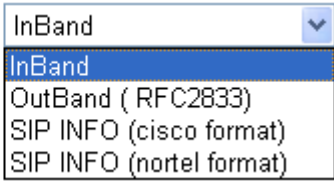
Tone Settings		Caller ID Type				
Region	User Defined					FSK_ETSI
	Low Freq (Hz)	High Freq (Hz)	T on 1 (msec)	T off 1 (msec)	T on 2 (msec)	T off 2 (msec)
Dial tone	350	440	0	0	0	0
Ringing tone	400	450	400	200	400	2000
Busy tone	400	0	375	375	0	0
Congestion tone	0	0	0	0	0	0
Volume Gain			DTMF			
Mic Gain(1-10)	5		DTMF Mode		InBand	
Speaker Gain(1-10)	5		Payload Type (RFC2833) (96 - 127)		101	
MISC						
Dial Tone Power Level (1 - 50)	27					
Ring Frequency (10 - 50HZ)	25					

OK

Cancel

Available settings are explained as follows:

Item	Description
Region	Select the proper region which you are located. The common settings of Caller ID Type , Dial tone , Ringing tone , Busy tone and Congestion tone will be shown automatically on the page. If you cannot find out a suitable one, please choose User Defined and fill out the corresponding values for dial tone, ringing tone, busy tone, congestion tone by yourself for VoIP phone.

	<p style="text-align: center;">Advance Settings >> Phone</p>  <p>Also, you can specify each field for your necessity. It is recommended for you to use the default settings for VoIP communication.</p>
<p>Volume Gain</p>	<p>Mic Gain (1-10)/Speaker Gain (1-10) - Adjust the volume of microphone and speaker by entering number from 1- 10. The larger of the number, the louder the volume is.</p>
<p>MISC</p>	<p>Dial Tone Power Level - This setting is used to adjust the loudness of the dial tone. The smaller the number is, the louder the dial tone is. It is recommended for you to use the default setting.</p> <p>Ring Frequency - This setting is used to drive the frequency of the ring tone. It is recommended for you to use the default setting.</p> <p>Call Waiting Tone Power Level - This setting is used to adjust the loudness of the call waiting tone. The smaller the number is, the louder the tone is. It is recommended for you to use the default setting.</p>
<p>DTMF</p>	<p>DTMF Mode – There are four DTMF modes for you to choose.</p>  <ul style="list-style-type: none"> ● InBand - Choose this one then the Vigor will send the DTMF tone as audio directly when you press the keypad on the phone.

- **OutBand** - Choose this one then the Vigor will capture the keypad number you pressed and transform it to digital form then send to the other side; the receiver will generate the tone according to the digital form it receive. This function is very useful when the network traffic congestion occurs and it still can remain the accuracy of DTMF tone.
- **SIP INFO**- Choose this one then the Vigor will capture the DTMF tone and transfer it into SIP form. Then it will be sent to the remote end with SIP message.

Payload Type (rfc2833) - Choose a number from 96 to 127, the default value was 101. This setting is available for the OutBand (RFC2833) mode.

3.12.4 Status

From this page, you can find codec, connection and other important call status for each port.

VoIP >> Status

Status Refresh Seconds:

Port	Status	Codec	PeerID	Elapse (hh:mm:ss)	Tx Pkts	Rx Pkts	Rx Losts	Rx Jitter (ms)	In Calls	Out Calls	Miss Calls	Speaker Gain
Phone1	IDLE			00:00:00	0	0	0	0	0	0	0	5
Phone2	IDLE			00:00:00	0	0	0	0	0	0	0	5

Log

Date (mm-dd-yyyy)	Time (hh:mm:ss)	Duration (hh:mm:ss)	In/Out/Miss	Account ID	Peer ID
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-
00-00-0	00:00:00	00:00:00	-	-	-

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

Available settings are explained as follows:

Item	Description
Refresh Seconds	Specify the interval of refresh time to obtain the latest VoIP calling information. The information will update immediately when the Refresh button is clicked. Refresh Seconds : <input type="text" value="10"/> <input type="button" value="v"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> 5 10 30 </div>

Port	It shows current connection status for Phone(s) and ISDN ports.
Status	It shows the VoIP connection status. IDLE - Indicates that the VoIP function is idle. HANG_UP - Indicates that the connection is not established (busy tone). CONNECTING - Indicates that the user is calling out. WAIT_ANS - Indicates that a connection is launched and waiting for remote user's answer. ALERTING - Indicates that a call is coming. ACTIVE -Indicates that the VoIP connection is launched.
Codec	Indicates the voice codec employed by present channel.
PeerID	The present in-call or out-call peer ID (the format may be IP or Domain).
Elapse	The format is represented as hours:minutes:seconds.
Tx Pkts	Total number of transmitted voice packets during this connection session.
Rx Pkts	Total number of received voice packets during this connection session.
Rx Losts	Total number of lost packets during this connection session.
Rx Jitter	The jitter of received voice packets.
In Calls	Accumulation for the times of in call.
Out Calls	Accumulation for the times of out call.
Miss Calls	Accumulation for the times of missing call.
Speaker Gain	The volume of present call.
Log	Display logs of VoIP calls.

3.13 ISDN

3.13.1 Basic Concept

Note: This function is used for “i” model.

ISDN means integrated services digital network that is an international communications standard for sending voice, video, and data over digital telephone lines or normal telephone wires.

Below shows the menu items for ISDN.



3.13.2 General Settings

This web page allows you to enable ISDN function.

[ISDN >> General Setup](#)

ISDN Setup

ISDN Port	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	Blocked MSN numbers for the router 1. <input type="text"/> 2. <input type="text"/> 3. <input type="text"/> 4. <input type="text"/> 5. <input type="text"/>
Country Code	International <input type="button" value="v"/>	
D-Channel Mode		
ISDN	<input type="radio"/> Point-to-Point <input checked="" type="radio"/> Point-to-Multipoint	
Own Number	<input type="text"/>	

"Own Number" means that the router will tell the remote end the ISDN number when it's placing an outgoing call.

Index	MSN numbers for the router
0.	<input type="text"/>
1.	<input type="text"/>
2.	<input type="text"/>
3.	<input type="text"/>
4.	<input type="text"/>
5.	<input type="text"/>
6.	<input type="text"/>
7.	<input type="text"/>
8.	<input type="text"/>
9.	<input type="text"/>

"MSN Numbers" means that the router is able to accept number-matched incoming calls. In addition, MSN service should be supported by the local ISDN network provider.

Available settings are explained as follows:

Item	Description
ISDN Port	Click Enable to open the ISDN port and Disable to close it.
Country Code	For proper operation on your local ISDN network, you should choose the correct country code.
D-Channel Mode	It allows you to configure ISDN layer2 protocol as: Point-to-Point - Configure ISDN port to use static TEI (Terminal Endpoint Identifier). Point-to-Multipoint - Configure ISDN port to use Dynamic TEI.
Own Number	Enter your ISDN number that you got from ISDN service provider (To have such number, you have offer your request from ISDN service provider first). Every outgoing call will carry the number to the receiver.
Blocked MSN Numbers for the router	Enter the specified MSN number into the fields to prevent the router from dialing the specific MSN number.
MSN Numbers for the	MSN Numbers mean that the router is able to accept only number-matched incoming calls. In addition, local ISDN

Router	<p>network provider should support MSN services. The router provides ten fields for MSN numbers. Note that MSN service must be acquired from your local telecom operators. By default, MSN function is disabled. If you leave the fields blank, all incoming calls will be accepted without number matching.</p> <p>1-10 fields – Fill in the portion that is different with the own number.</p> <p>For example, the own number is 1234567 and MSN numbers are 1234550, 1234517 and 1234582 respectively. You can type in 1234567 in the field of own number. Fill in 50, 17 and 67 on the fields of 1, 2 and 3 one by one without typing 12345.</p>
---------------	---

3.13.3 Dial to a Single/Dual ISPs

Select **Dialing to a Single ISP** if you access the Internet via a single ISP.

ISDN >> **Dialing to a Single ISP**

Single ISP

<p>ISP Access Setup</p> <p>ISP Name <input style="width: 100%;" type="text"/></p> <p>Dial Number <input style="width: 100%;" type="text"/></p> <p>Username <input style="width: 100%;" type="text"/></p> <p>Password <input style="width: 100%;" type="password"/></p> <p><input type="checkbox"/> Require ISP callback (CBCP)</p> <p>Index(1-15) in Schedule Setup:</p> <p>=> <input style="width: 30px;" type="text"/>, <input style="width: 30px;" type="text"/>, <input style="width: 30px;" type="text"/>, <input style="width: 30px;" type="text"/></p>	<p>PPP/MP Setup</p> <p>Link Type <input style="width: 100%;" type="text" value="Dialup BOD"/></p> <p>PPP Authentication <input style="width: 100%;" type="text" value="PAP or CHAP"/></p> <p>Idle Timeout <input style="width: 50px;" type="text" value="180"/> second(s)</p> <p>IP Address Assignment Method (IPCP)</p> <p>Fixed IP <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP)</p> <p>Fixed IP Address <input style="width: 100%;" type="text"/></p>
---	---

Available settings are explained as follows:

Item	Description
ISP Access Setup	<p>ISP Name - Enter your ISP name such as Seednet, Hinet and so on.</p> <p>Dial Number -Enter the ISDN access number provided by your ISP.</p> <p>Username - Enter the username provided by your ISP.</p> <p>Password - Enter the password provided by your ISP.</p> <p>Require ISP Callback (CBCP) -If your ISP supports the callback function, check this box to activate the Callback Control Protocol during the PPP negotiation.</p> <p>Scheduler (1-15) - Enter the index of schedule profiles to control the Internet access according to the preconfigured schedules. Refer to section Applications>>Schedule for detailed configuration.</p>
PPP/MP Setup	<p>Link Type – There are three link types provided here for different purpose. Link Disable disables the ISDN</p>

	<p>dial-out function. Dialup 64Kbps allows you to use one ISDN B channel for Internet access. Dialup 128Kbps allows you to use both ISDN B channels for Internet access. Dialup BOD (for detailed information of configuration, please refer to section 3.13.4) stands for bandwidth-on-demand. The router will use only one B channel in low traffic situations. Once the single B channel bandwidth is fully used, the other B channel will be activated automatically through the dialup. For more detailed BOD parameter settings, please refer to the section of Call Control.</p> <p>PPP Authentication - PAP only allows you to configure the PPP session to use the PAP protocol to negotiate the username and password with the ISP. PAP or CHAP is to configure the PPP session to use the PAP or CHAP protocols to negotiate the username and password with the ISP.</p> <p>Idle Timeout - Idle timeout means the router will be disconnect after being idle for a preset amount of time. The default is 180 seconds. If you set the time to 0, the ISDN connection to the ISP will always remain on.</p>
<p>IP Address Assignment Method (IPCP)</p>	<p>In most environments, you should not change these settings as most ISPs provide a dynamic IP address for the router when it connects to the ISP. If your ISP provides a fixed IP address, check Yes and enter the IP address in the field of Fixed IP Address.</p>

Select **Dialing to Dual ISPs** if you have more than one ISP. You will be able to dial to both ISPs at the same time. This is mainly for those ISPs that do not support Multiple-Link PPP (ML-PPP). In such cases, dialing to two ISPs can increase the bandwidth utilization of the ISDN channels to 128kbps data speed.

ISDN >> Dialing to Dual ISPs

<p>Dual ISP</p>	
<p>Common Settings</p> <p>1. <input type="checkbox"/> Enable Dual ISPs Function</p> <p>2. <input type="checkbox"/> Require ISP callback (CBCP)</p>	<p>PPP/MP Setup</p> <p>Link Type <input type="text" value="Dialup BOD"/></p> <p>PPP Authentication <input type="text" value="PAP or CHAP"/></p> <p>Idle Timeout <input type="text" value="180"/> second(s)</p>
<p>Primary ISP Setup</p> <p>ISP Name <input type="text"/></p> <p>Dial Number <input type="text"/></p> <p>Username <input type="text"/></p> <p>Password <input type="text"/></p> <p>IP Address Assignment Method (IPCP)</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>Secondary ISP Setup</p> <p>ISP Name <input type="text"/></p> <p>Dial Number <input type="text"/></p> <p>Username <input type="text" value="84005755@hinet.net"/></p> <p>Password <input type="text" value="••••••••"/></p> <p>IP Address Assignment Method (IPCP)</p> <p>Fixed IP <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP)</p> <p>Fixed IP Address <input type="text"/></p>

OK

Available settings are explained as follows:

Item	Description
Common Settings	<p>Enable Dual ISPs Function - Check to enable the Dual ISPs function.</p> <p>Require ISP Callback (CBCP) -If your ISP supports the callback function, check this box to activate the Callback Control Protocol during the PPP negotiation.</p>
PPP/MP Setup	<p>Link Type – There are three link types provided here for different purpose. Link Disable disables the ISDN dial-out function. Dialup 128Kbps allows you to use both ISDN B channels for Internet access. Dialup BOD (for detailed information of configuration, please refer to section 3.13.4) stands for bandwidth-on-demand. The router will use only one B channel in low traffic situations. Once the single B channel bandwidth is fully used, the other B channel will be activated automatically through the dialup.</p> <p>PPP Authentication - PAP only allows you to configure the PPP session to use the PAP protocol to negotiate the username and password with the ISP. PAP or CHAP can configure the PPP session to use the PAP or CHAP protocols to negotiate the username and password with the ISP.</p> <p>Idle Timeout - Idle timeout means the router will be disconnect after being idle for a preset amount of time. The default is 180 seconds. If you set the time to 0, the ISDN connection to the ISP will always remain on.</p>
Primary ISP Setup	<p>ISP Name - Enter your ISP name.</p> <p>Dial Number -Enter the ISDN access number provided by your ISP.</p> <p>Username - Enter the username provided by your ISP.</p> <p>Password - Enter the password provided by your ISP.</p> <p>IP Address Assignment Method (IPCP) - In most environments, you should not change these settings as most ISPs provide a dynamic IP address for the router when it connects to the ISP. If your ISP provides a fixed IP address, check Yes and enter the IP address in the field of Fixed IP Address.</p>
Secondary ISP Setup	<p>ISP Name - Enter the secondary ISP name.</p> <p>Dial Number -Enter the ISDN access number provided by the ISP.</p> <p>Username - Enter the username provided by your ISP.</p> <p>Password - Enter the password provided by your ISP.</p> <p>IP Address Assignment Method (IPCP) - In most environments, you should not change these settings as most ISPs provide a dynamic IP address for the router when it connects to the ISP. If your ISP provides a fixed IP address, check Yes and enter the IP address in the field of Fixed IP Address.</p>

After entering the necessary settings and clicking **OK**, you will see **Goto ISDN Diagnostic** link appears on the bottom of the webpage. To have an ISDN connection, please click this link.

ISDN >> Dialing to a Single ISP

Active Configuration

<p>ISP Access Setup</p> <p>ISP Name <input type="text"/></p> <p>Dial Number <input type="text" value="30"/></p> <p>Username <input type="text" value="vivian"/></p> <p>Password <input type="password" value="•••••"/></p> <p><input type="checkbox"/> Require ISP callback</p> <p>Index(1-15) in Schedule Setup:</p> <p>=> <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/></p> <p>>> Goto ISDN Diagnostic</p>	<p>PPP/MP Setup</p> <p>Link Type <input type="text" value="Dialup 128Kbps"/></p> <p>PPP Authentication <input type="text" value="PAP or CHAP"/></p> <p>Idle Timeout 180 second(s)</p> <p>IP Address Assignment Method (IPCP)</p> <p>Fixed IP <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP)</p> <p>Fixed IP Address</p>
---	---

Now, the system will guide you to click **Dial ISDN**. Wait for a moment after clicking the dial link. Then, a successful ISDN connection will be shown as the following.

Online Status

System Status						System Uptime: 0:0:49					
LAN Status			Primary DNS: 168.95.1.1		Secondary DNS: 168.95.192.1						
IP Address	TX Packets	RX Packets									
192.168.1.1	419	360									
WAN 1 Status											
Enable	Line	Name	Mode	Up Time							
No	Ethernet		---	00:00:00							
IP	GW IP	TX Packets	TX Rate	RX Packets	RX Rate						
---	---	0	0	0	0						
WAN 2 Status											
Enable	Line	Name	Mode	Up Time							
No	Ethernet		---	00:00:00							
IP	GW IP	TX Packets	TX Rate	RX Packets	RX Rate						
---	---	0	0	0	0						
ISDN Status						>> Dial ISDN		>> Drop B1		>> Drop B2	
Channel	Active Connection	TX Pkts	TX Rate	RX Pkts	RX Rate	Up Time	AOC				
B1	[192.168.225.200]	19	4	18	4	0:0:46	0				
B2	[192.168.225.200]	13	3	14	3	0:0:43	0				
D	UP										

3.13.4 Call Control

Some applications require that the router (only for the ISDN models) be remotely activated, or be able to dial up to the ISP via the ISDN interface. Vigor routers provide this feature by allowing user to make a phone call to the router and then ask it to dial up to the ISP. Accordingly, a teleworker can access the remote network to retrieve resources. Of course, a fixed IP address is required for WAN connection and some internal network resource has to be exposed for remote users, such as FTP, WWW.

ISDN >> Call Control

Call Control Setup

Dial Retry	<input type="text" value="0"/>	times	Remote Activation	<input type="text"/>
Dial Delay Interval	<input type="text" value="0"/>	second(s)		

PPP/MP Dial-Out Setup

Basic Setup		Bandwidth On Demand (BOD) Setup	
Link Type	<input type="text" value="Dialup BOD"/>	High Water Mark	<input type="text" value="7000"/> cps
PPP Authentication	<input type="text" value="PAP or CHAP"/>	High Water Time	<input type="text" value="30"/> second(s)
TCP Header Compression	<input type="text" value="None"/>	Low Water Mark	<input type="text" value="6000"/> cps
Idle Timeout	<input type="text" value="180"/> second(s)	Low Water Time	<input type="text" value="30"/> second(s)

Available settings are explained as follows:

Item	Description
Call Control Setup	<p>Dial Retry - It specifies the dial retry counts per triggered packet. A triggered packet is the packet whose destination is outside the local network. The default setting is no dial retry. If set to 5, for each triggered packet, the router will dial 5 times until it is connected to the ISP or remote access router.</p> <p>Dial Delay Interval - It specifies the interval between dialup retries. By default, the interval is 0 second.</p> <p>Remote Activation - It can help users who would like to access the server which is off the Internet in the head office. To remotely make the server to be available on the Internet, i.e. make the router in the head office activating its Internet access either by dialing-up or starting broadband connection, users can make a regular phone call (the number is set in the Remote Activation field) to the router as signaling it for activation. The phone call will be soon disconnected once the router is on line.</p> <p>Note that Dialing to a Single ISP should be pre-configured properly.</p>
Basic Setup	<p>Link Type - Because ISDN has two B channels (64Kbps/per channel), you can specify whether you would like to have single B channel, two B channels or BOD (Bandwidth on Demand). Four options are available: Link Disable, Dialup 64Kbps, Dialup 128Kbps, Dialup BOD.</p>

	<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;">Link Type</div> <div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">Dialup BOD ▾</div> <div style="padding: 2px;">Link Disable</div> <div style="padding: 2px;">Dialup 64Kbps</div> <div style="padding: 2px;">Dialup 128Kbps</div> <div style="background-color: #0056b3; color: white; padding: 2px;">Dialup BOD</div> </div> </div> <p>PPP Authentication - It specifies the PPP authentication method for PPP/MP connections. Normally you can set it to PAP/CHAP for better compatibility.</p> <p>TCP Header Compression - VJ Compression: It is used for TCP/IP protocol header compression. Normally it is set to Yes to improve bandwidth utilization.</p> <p>Idle Timeout - Because our ISDN link type is Dial On Demand, the connection will be initiated only when needed.</p>
<p>Bandwidth-On-Demand (BOD) Setup</p>	<p>Bandwidth-On-Demand is for Multiple-Link PPP (ML-PPP or MP). The parameters are only applied when you set the Link Type to Dialup BOD. The ISDN usually use one B channel to access the Internet or remote network when you choose the Dialup BOD link type. The router will use the parameters here to decide on when you activate/drop the additional B channel. Note that cps (characters-per-second) measures the total link utilization.</p> <p>High Water Mark and High Water Time - These parameters specify the situation in which the second channel will be activated. With the first connected channel, if its utilization exceeds the High Water Mark and such a channel is being used over the High Water Time, the additional channel will be activated. Thus, the total link speed will be 128kbps (two B channels).</p> <p>Low Water Mark and Low Water Time - These parameters specify the situation in which the second channel will be dropped. In terms of the two B channels, if their utilization is under the Low Water Mark and these two channels are being used over the High Water Time, the additional channel will be dropped. As a result, the total link speed will be 64kbps (one B channel).</p>

3.14 Wireless LAN

This function is used for “n” models only.

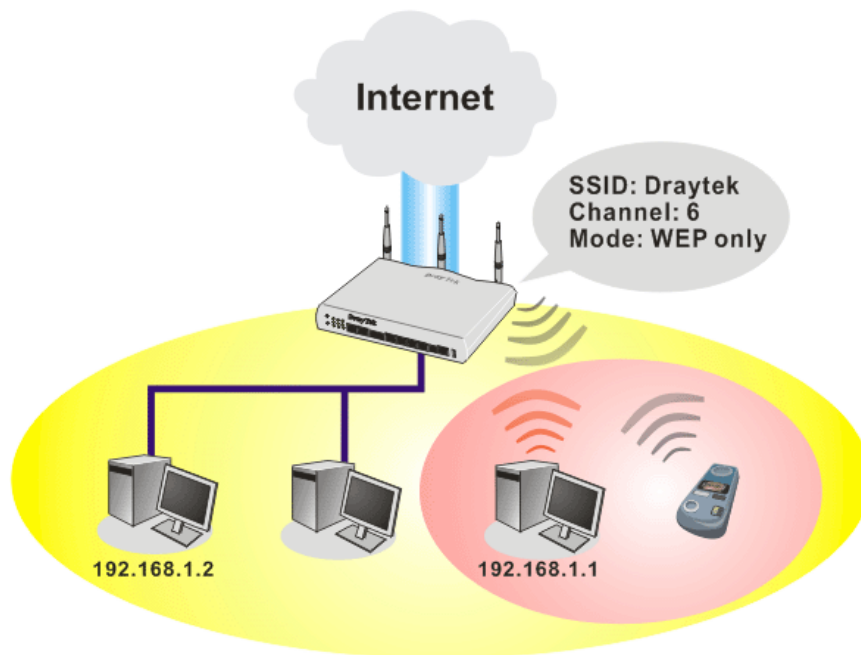
3.14.1 Basic Concepts

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.



3.14.2 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.

Wireless LAN >> General Setup

General Setting (IEEE 802.11)

Enable Wireless LAN

Mode : Mixed(11b+11g+11n)

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

Only schedule profiles that have the action "Force Down" are applied to the WLAN, all other actions are ignored.

	Enable	Hide SSID	SSID	Isolate Member	Isolate VPN
1	<input type="checkbox"/>	<input type="checkbox"/>	DrayTek	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input style="width: 100%;" type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

Isolate Member: Wireless clients (stations) with the same SSID cannot access for each other.

Isolate VPN: isolate wireless with remote dial-in and LAN to LAN VPN.

Channel: Channel 6, 2437MHz Long Preamble:

Long Preamble: necessary for some old 802.11 b devices only(lower performance)

Packet-OVERDRIVE™

Tx Burst


Note:
The same technology must also be supported in clients to boost WLAN performance.

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

Note: range 100~50,000 kbps

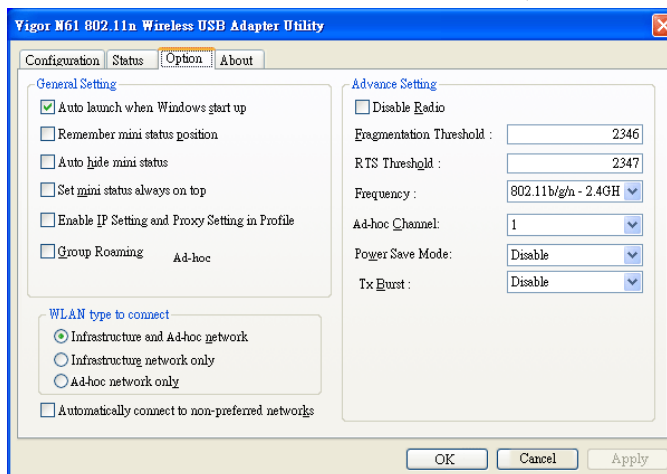
Available settings are explained as follows:

Item	Description
Enable Wireless LAN	Check the box to enable wireless function.
Mode	<p>At present, the router can connect to 11n Only, 11g Only, Mixed (11b+11g), Mixed (11a+11n), Mixed (11g+11n), and Mixed (11b+11g+11n) stations simultaneously. Simply choose Mixed (11b+11g+11n) mode.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> Mixed(11b+11g+11n) <ul style="list-style-type: none"> 11g Only 11n Only Mixed(11b+11g) Mixed(11g+11n) Mixed(11a+11n) <li style="background-color: #e0e0e0;">Mixed(11b+11g+11n) </div> <p>In which, 802.11b/g operates on 2.4G band, 802.11a operates on 5G band, and 802.11n operates on either 2.4G</p>

	or 5G band.
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.
Hide SSID	Check it to prevent from wireless sniffing and make it harder for unauthorized clients or STAs to join your wireless LAN. Depending on the wireless utility, the user may only see the information except SSID or just cannot see any thing about Vigor wireless router while site surveying. The system allows you to set four sets of SSID for different usage. In default, the first set of SSID will be enabled. You can hide it for your necessity.
SSID	Means the identification of the wireless LAN. SSID can be any text numbers or various special characters. The default SSID is "DrayTek". We suggest you to change it.
Isolate	VPN – Check this box to make the wireless clients (stations) with different VPN not accessing for each other. Member –Check this box to make the wireless clients (stations) with the same SSID not accessing for each other.
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. Channel: 
Long Preamble	This option is to define the length of the sync field in an 802.11 packet. Most modern wireless network uses short preamble with 56 bit sync field instead of long preamble with 128 bit sync field. However, some original 11b wireless network devices only support long preamble. Check it to use Long Preamble if needed to communicate with this kind of devices.
Packet-OVERDRIVE	This feature can enhance the performance in data transmission about 40%* more (by checking Tx Burst). It

is active only when both sides of Access Point and Station (in wireless client) invoke this function at the same time. That is, the wireless client must support this feature and invoke the function, too.

Note: Vigor N61 wireless adapter supports this function. Therefore, you can use and install it into your PC for matching with Packet-OVERDRIVE (refer to the following picture of Vigor N61 wireless utility window, choose **Enable** for TxBURST on the tab of **Option**).



Tx Burst :
 Disable
 Disable
 Enable

Note: * means the real transmission rate depends on the environment of the network.

Rate Control

It controls the data transmission rate through wireless connection.

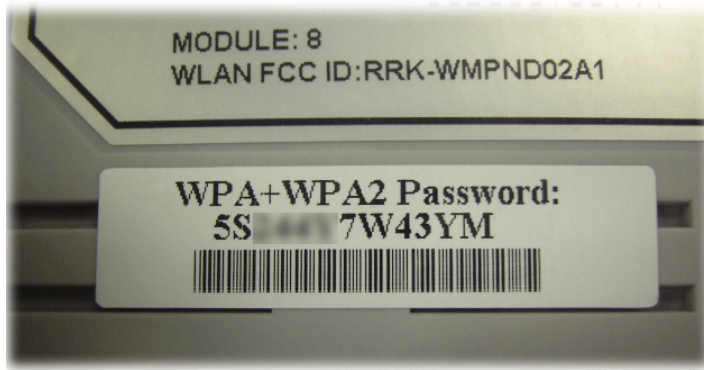
Upload – Check Enable and type the transmitting rate for data upload. Default value is 30,000 kbps.

Download – Type the transmitting rate for data download. Default value is 30,000 kbps.

3.14.3 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 default security mode is **Mixed (WPA+WPA2)/PSK**. Default Pre-Shared Key (PSK) 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.



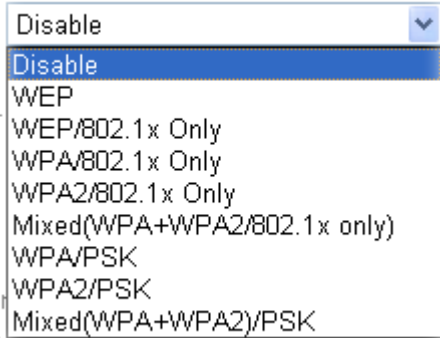
By clicking the **Security Settings**, a new web page will appear so that you could configure the settings of WPA and WEP.

Wireless LAN >> Security Settings

SSID 1	SSID 2	SSID 3	SSID 4
Mode: <input type="text" value="Disable"/>			
Set up RADIUS Server if 802.1x is enabled.			
WPA:			
Encryption Mode:		<input type="text" value="TKIP for WPA/AES for WPA2"/>	
Pre-Shared Key(PSK):		<input type="text" value="*****"/>	
Type 8~63 ASCII character or 64 Hexadecimal digits leading by "0x", for example "cfgs01a2..." or "0x655abcd....".			
WEP:			
Encryption Mode:		<input type="text" value="64-Bit"/>	
<input checked="" type="radio"/> Key 1 :		<input type="text" value="*****"/>	
<input type="radio"/> Key 2 :		<input type="text" value="*****"/>	
<input type="radio"/> Key 3 :		<input type="text" value="*****"/>	
<input type="radio"/> Key 4 :		<input type="text" value="*****"/>	
For 64 bit WEP key Type 5 ASCII character or 10 Hexadecimal digits leading by "0x", for example "AB312" or "0x4142333132".			
For 128 bit WEP key Type 13 ASCII character or 26 Hexadecimal digits leading by "0x", for example "0123456789abc" or "0x30313233343536373839414243".			
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>	

Available settings are explained as follows:

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

<p>Mode</p>	<p>There are several modes provided for you to choose.</p>  <p>Note: You should also set RADIUS Server simultaneously if 802.1x mode is selected.</p> <p>Disable - Turn off the encryption mechanism.</p> <p>WEP-Accepts only WEP clients and the encryption key should be entered in WEP Key.</p> <p>WEP/802.1x Only - Accepts only WEP clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.</p> <p>WPA/802.1x Only- Accepts only WPA clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.</p> <p>WPA2/802.1x Only- Accepts only WPA2 clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.</p> <p>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.</p> <p>WPA/PSK-Accepts only WPA clients and the encryption key should be entered in PSK.</p> <p>WPA2/PSK-Accepts only WPA2 clients and the encryption key should be entered in PSK.</p> <p>Mixed (WPA+ WPA2)/PSK - Accepts WPA and WPA2 clients simultaneously and the encryption key should be entered in PSK.</p>
<p>WPA</p>	<p>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...").</p> <p>Type - Select from Mixed (WPA+WPA2) or WPA2 only.</p> <p>Pre-Shared Key (PSK) - Either 8~63 ASCII characters, such as 012345678..(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde...").</p>
<p>WEP</p>	<p>64-Bit - For 64 bits WEP key, either 5 ASCII characters, such as 12345 (or 10 hexadecimal digitals leading by 0x,</p>

	<p>such as 0x4142434445.)</p> <p>128-Bit - For 128 bits WEP key, either 13 ASCII characters, such as ABCDEFGHIJKLM (or 26 hexadecimal digits leading by 0x, such as 0x4142434445464748494A4B4C4D).</p> <p>Encryption Mode: 64-Bit ▼ 64-Bit 128-Bit</p> <p>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.</p>
--	--

3.14.4 Access Control

In the **Access Control**, the router may restrict wireless access to certain wireless clients only by locking their MAC address into a black or white list. The user may block wireless clients by inserting their MAC addresses into a black list, or only let them be able to connect by inserting their MAC addresses into a white list.

In the **Access Control** web page, users may configure the **white/black** list modes used by each SSID and the MAC addresses applied to their lists.

Wireless LAN >> Access Control

Access Control

Enable Mac Address Filter SSID 1 White List ▼ SSID 2 White List ▼
 SSID 3 White List ▼ SSID 4 White List ▼

Index	Attribute	MAC Address	Apply SSID

Client's MAC Address : : : : : :

Apply SSID : SSID 1 SSID 2 SSID 3 SSID 4

Attribute : s: Isolate the station from LAN

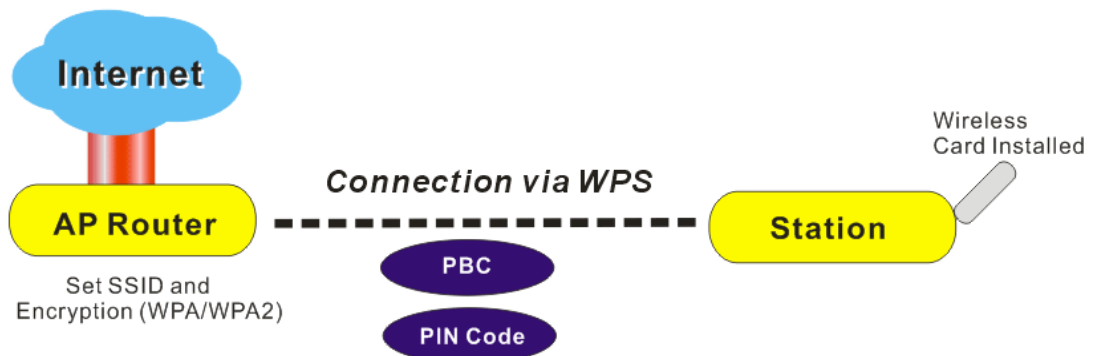
Available settings are explained as follows:

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.

3.14.5 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.

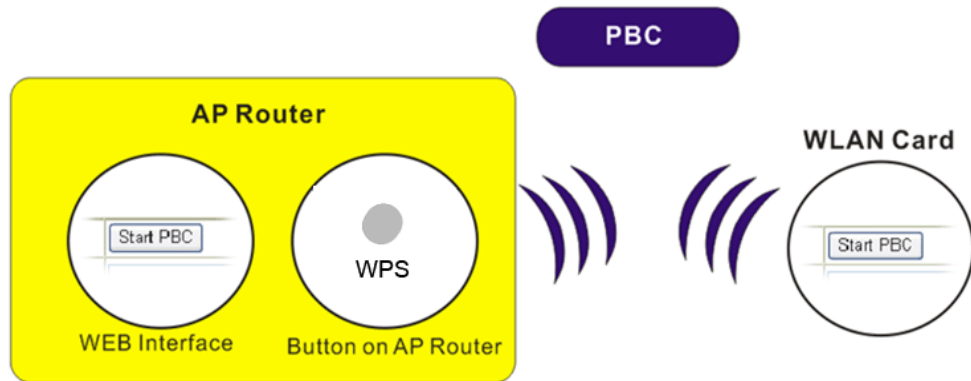


Note: Such function is available for the wireless station with WPS supported.

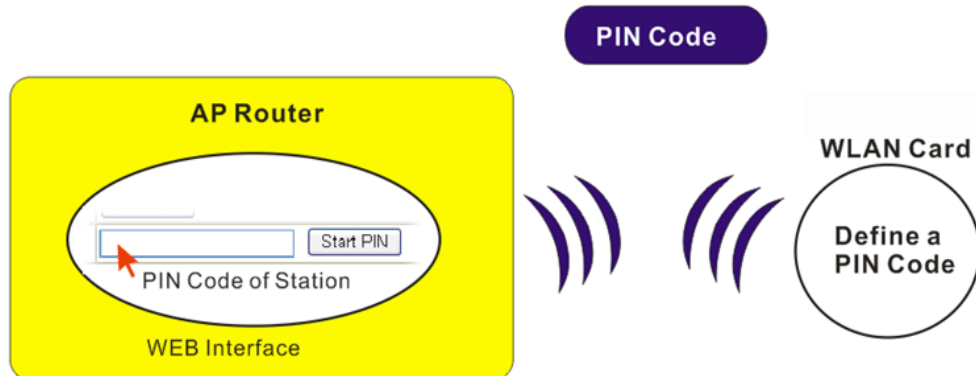
It is the simplest way to build connection between wireless network clients and vigor router. Users do not need to select any encryption mode and type any long encryption passphrase to setup a wireless client every time. He/she only needs to press a button on wireless client, and WPS will connect for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

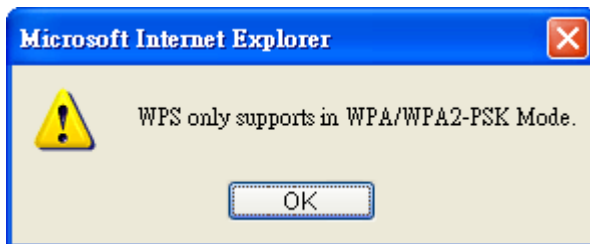
- On the side of Vigor 2850 series which served as an AP, press **WPS** button once on the front panel of the router or click **Start PBC** on web configuration interface. On the side of a station with network card installed, press **Start PBC** button of network card.



- 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	Disable


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: The Authentication Mode is NOT WPA/WPA2 PSK!!

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:

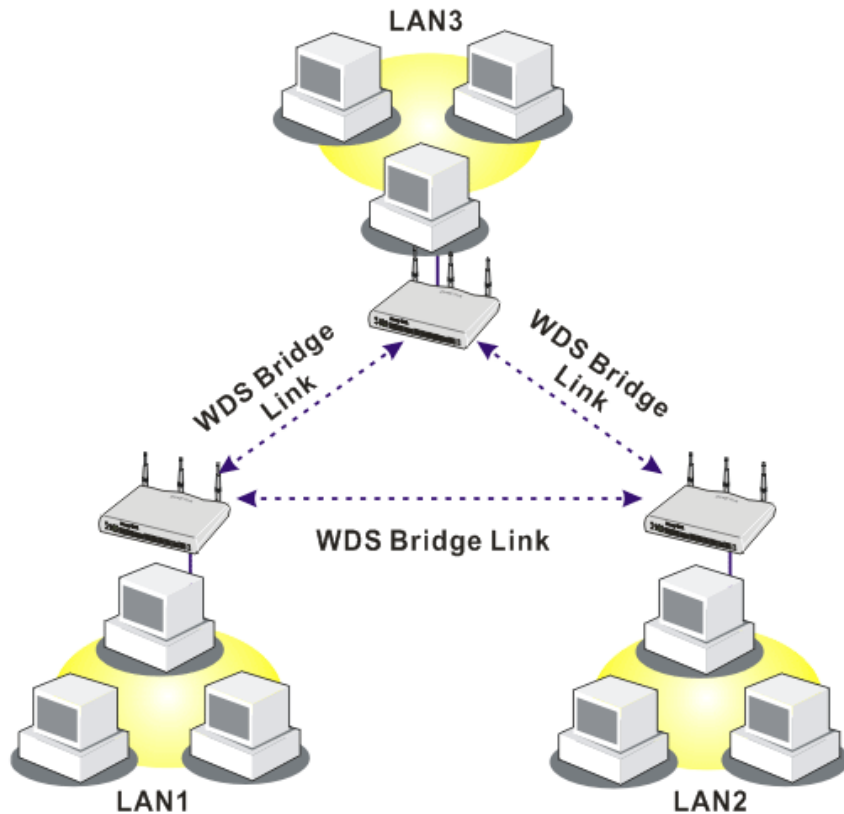
Item	Description
Enable WPS	Check this box to enable WPS setting.
WPS Status	Display related system information for WPS. If the wireless security (encryption) function of the router is properly configured, you can see 'Configured' message here.
SSID	Display the SSID1 of the router. WPS is supported by 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)

3.14.6 WDS

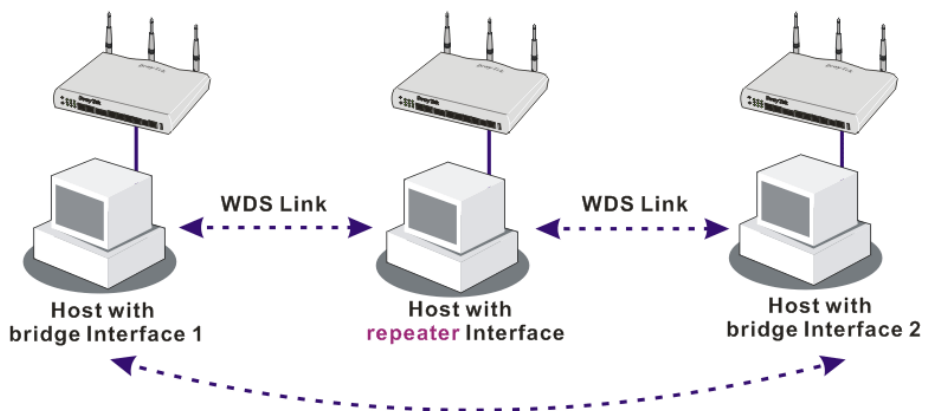
WDS means Wireless Distribution System. It is a protocol for connecting two access points (AP) wirelessly. Usually, it can be used for the following application:

- 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:



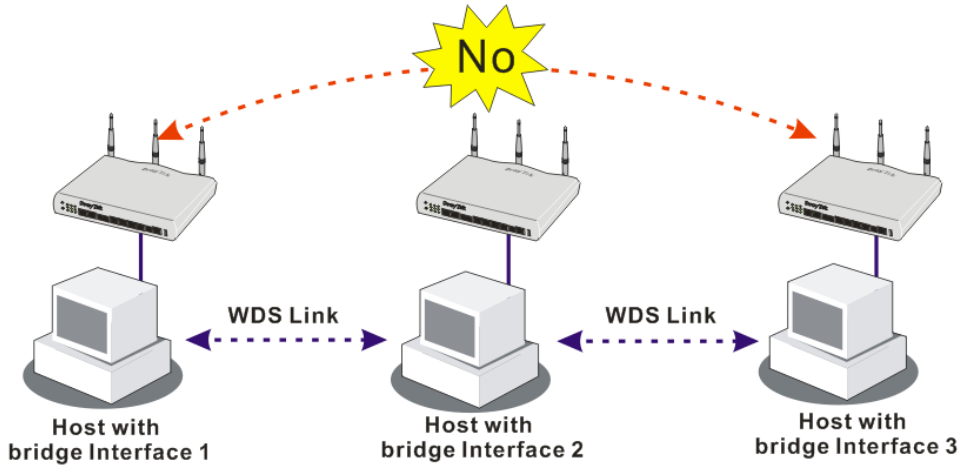
The application for the WDS-Repeater mode is depicted as below:



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.

Wireless LAN >> WDS Settings

WDS Settings
[Set to Factory Default](#)

Mode: Bridge

Security:

Disable WEP Pre-shared Key

WEP:

Use the same WEP key set in [Security Settings](#).

Pre-shared Key:

Type:

WPA WPA2

Key:

Note: WPA and WPA2 are not compatible with DrayTek WPA.

Type 8~63 ASCII characters or 64 hexadecimal digits leading by "0x", for example "cfigs01a2..." or "0x655abcd....".

Bridge

Enable Peer MAC Address

<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>

Note: Disable unused links to get better performance.

Repeater

Enable Peer MAC Address

<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>
<input type="checkbox"/>	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>	:	<input type="text"/>

Access Point Function:

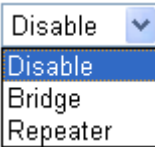
Enable Disable

Status:

Send "Hello" message to peers.

Note: The status is valid only when the peer also supports this function.

Available settings are explained as follows:

Item	Description
Mode	<p>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.</p> 
Security	<p>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.</p>
WEP	<p>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.</p>
Pre-shared Key	<p>Type – There are some types for you to choose. WPA and WPA2 are used for WDS devices (e.g.2920n wireless router, you can set the encryption mode as WPA or WPA2 to establish your WDS system between AP and the router.</p> <p>Key - Type 8 ~ 63 ASCII characters or 64 hexadecimal digits leading by “0x”.</p>
Bridge	<p>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.</p>
Repeater	<p>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.</p>
Access Point Function	<p>Click Enable to make this router serving as an access point; click Disable to cancel this function.</p>
Status	<p>It allows user to send “hello” message to peers. Yet, it is valid only when the peer also supports this function.</p>

3.14.7 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
Guard Interval	<input type="radio"/> long <input checked="" type="radio"/> auto
Aggregation MSDU(A-MSDU)	<input type="radio"/> Disable <input checked="" type="radio"/> Enable

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 transit.</p>
Guard Interval	It is to assure the safety of propagation delays and reflections for the sensitive digital data. If you choose auto as guard interval, the AP router will choose short guard interval (increasing the wireless performance) or long guard interval for data transmit based on the station capability.
Aggregation MSDU	Aggregation MSDU can combine frames with different sizes. It is used for improving MAC layer's performance for some brand's clients. The default setting is Enable .

3.14.8 WMM Configuration

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.

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.

[Wireless LAN >> WMM Configuration](#)

WMM Configuration
[Set to Factory Default](#)

WMM Capable Enable Disable

APSD Capable Enable Disable

WMM Parameters of Access Point

	Aifsn	CWMin	CWMax	Txop	ACM	AckPolicy
AC_BE	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="6"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>
AC_BK	<input type="text" value="7"/>	<input type="text" value="4"/>	<input type="text" value="10"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>
AC_VI	<input type="text" value="1"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="94"/>	<input type="checkbox"/>	<input type="checkbox"/>
AC_VO	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="47"/>	<input type="checkbox"/>	<input type="checkbox"/>

WMM Parameters of Station

	Aifsn	CWMin	CWMax	Txop	ACM
AC_BE	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="10"/>	<input type="text" value="0"/>	<input type="checkbox"/>
AC_BK	<input type="text" value="7"/>	<input type="text" value="4"/>	<input type="text" value="10"/>	<input type="text" value="0"/>	<input type="checkbox"/>
AC_VI	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="94"/>	<input type="checkbox"/>
AC_VO	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="47"/>	<input type="checkbox"/>

Available settings are explained as follows:

Item	Description
WMM Capable	To apply WMM parameters for wireless data transmission, please click the Enable radio button.
APSD Capable	The default setting is Disable .
Aifsn	It controls how long the client waits for each data transmission. Please specify the value ranging from 1 to 15. Such parameter will influence the time delay for WMM accessing categories. For the service of voice or video image, please set small value for AC_VI and AC_VO categories For the service of e-mail or web browsing, please set large value for AC_BE and AC_BK categories.
CWMin/CWMax	CWMin means contention Window-Min and CWMax means contention Window-Max. Please specify the value ranging from 1 to 15. Be aware that CWMax value must be greater than CWMin or equals to CWMin value. Both values will influence the time delay for WMM accessing categories. The difference between AC_VI and AC_VO

	categories must be smaller; however, the difference between AC_BE and AC_BK categories must be greater.
Txop	It means transmission opportunity. For WMM categories of AC_VI and AC_VO that need higher priorities in data transmission, please set greater value for them to get highest transmission opportunity. Specify the value ranging from 0 to 65535.
ACM	It is an abbreviation of Admission control Mandatory. It can restrict stations from using specific category class if it is checked. Note: Vigor2920 provides standard WMM configuration in the web page. If you want to modify the parameters, please refer to the Wi-Fi WMM standard specification.
AckPolicy	“Uncheck” (default value) the box means the AP router will answer the response request while transmitting WMM packets through wireless connection. It can assure that the peer must receive the WMM packets. “Check” the box means the AP router will not answer any response request for the transmitting packets. It will have better performance with lower reliability.

3.14.9 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 all the connected APs.

[Wireless LAN >> Access Point Discovery](#)

Access Point List

BSSID	Channel	SSID

See [Statistics](#).

Note: During the scanning process (~5 seconds), no station is allowed to connect with the router.

Add to [WDS Settings](#) :

AP's MAC address : : : : :

 Bridge Repeater

Available settings are explained as follows:

Item	Description																																																
Scan	It is used to discover all the connected AP. The results will be shown on the box above this button.																																																
Statistics	<p>It displays the statistics for the channels used by APs.</p> <p>Wireless LAN >> Site Survey Statistics</p> <hr/> <p>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 0;"> <p style="text-align: center; color: red;">AP number v.s. Channel</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> <td style="width: 20px; height: 30px;"></td> </tr> <tr> <td style="text-align: center; color: red;">1</td> <td style="text-align: center; color: red;">2</td> <td style="text-align: center; color: red;">3</td> <td style="text-align: center; color: red;">4</td> <td style="text-align: center; color: red;">5</td> <td style="text-align: center; color: red;">6</td> <td style="text-align: center; color: red;">7</td> <td style="text-align: center; color: red;">8</td> <td style="text-align: center; color: red;">9</td> <td style="text-align: center; color: red;">10</td> <td style="text-align: center; color: red;">11</td> <td style="text-align: center; color: red;">12</td> <td style="text-align: center; color: red;">13</td> <td style="text-align: center; color: red;">14</td> <td colspan="2"></td> </tr> <tr> <td colspan="14" style="text-align: center; color: red;">Channel</td> <td colspan="2"></td> </tr> </table> </div> <p style="text-align: center; margin-top: 5px;"><input type="button" value="Cancel"/></p>																	1	2	3	4	5	6	7	8	9	10	11	12	13	14			Channel															
1	2	3	4	5	6	7	8	9	10	11	12	13	14																																				
Channel																																																	
Add to	<p>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.</p>																																																

3.14.10 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.

Station List

Status	MAC Address

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 802.1X or WPA/PSK authentication.

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.

Add to Access Control :

Client's MAC address : : : : :

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 .

3.14.11 Web Portal Log-in

This page allows you to specify an URL for accessing into or display a message when a remote user connects to Internet through this router. No matter what purpose of the wireless 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 the users, can specify the URL in this page to reach its goal.

Web Portal

SSID 1	SSID 2	SSID 3	SSID 4
--------	--------	--------	--------

Specify an URL or short message that you want to show after user connected to your wireless.

Disable
 Redirect to URL:

 User's first HTTP request will be redirected to the URL above.
 Ex: http://www.draytek.com/online.htm or
 https://www.YourBank.com/

Show the message:

The message above will be shown in wireless user's browser for 5 seconds and then redirect to the original web site specified. (126 characters at most)
 Ex: Welcome to Vigorous Wireless~~~~~
 or Welcome~~~~~

OK Cancel

Available settings are explained as follows:

Item	Description
Disable	Click this button to close this function.
Redirect to URL	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.
Show the 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.

3.15 USB Application

USB storage disk connected on Vigor router can be regarded as a server. 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 Samba service through Vigor router.

- USB Application**
- ▶ USB General Settings
- ▶ USB User Management
- ▶ File Explorer
- ▶ USB Disk Status
- ▶ Syslog Explorer

3.15.1 USB General Settings

This page will determine the number of concurrent FTP connection, default charset for FTP server and enable Samba 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 (Maximum 6)

Default Charset

Samba Service Settings(Network Neighborhood)

Enable Disable

Access Mode

LAN Only LAN And WAN

NetBios Name Service

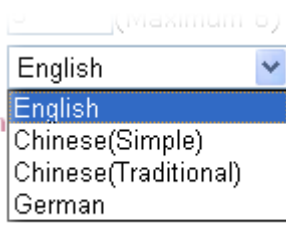
Workgroup Name

Host Name

- 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

Available settings are explained as follows:

Item	Description
General Settings	<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> 
Samba Service Settings	Click Enable to invoke samba service via the router.
Access Mode	LAN Only – Users coming from internet cannot connect to the samba server of the router.

	LAN And WAN - Both LAN and WAN users can access samba server of the router.
NetBios Name Service	<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>

3.15.2 USB User Management

This page allows you to set profiles for FTP/Samba 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

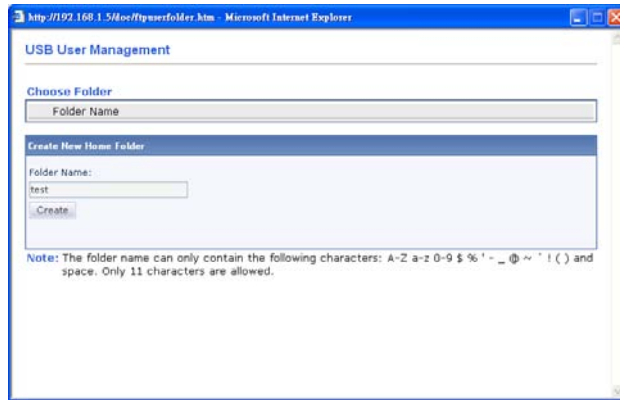
FTP/Samba User	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Username	<input type="text"/>
Password	<input type="text"/> (Maximum 11 Characters)
Confirm Password	<input type="text"/>
Home Folder	<input type="text"/> 
Access Rule	
File	<input type="checkbox"/> Read <input type="checkbox"/> 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/Samba User	<p>Enable – Click this button to activate this profile (account) for FTP service or Samba 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/Samba 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.</p> <p>Note: “Admin” could not be typed here as username, for the word is specified for accessing into web pages of Vigor router only. Also, it is reserved for FTP firmware upgrade usage.</p> <p>Note: FTP Passive mode is not supported by Vigor Router. Please disable the mode on the FTP client.</p>
Password	<p>Type the password for FTP/Samba users for accessing FTP server. Later, you can open FTP client software and type the password specified here for accessing into USB storage disk.</p>
Confirm Password	<p>Type the password again to make confirmation.</p>
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>

You can click  to open the following dialog to add any new folder which can be specified as the Home Folder.



Access Rule

It determines the authority for such profile. Any user, who uses such profile for accessing into USB storage disk, must follow the rule specified here.

File – Check the items (Read, Write and Delete) for such profile.

Directory –Check the items (List, Create and Remove) for such profile.

Before you click **OK**, you have to insert a USB storage disk into the USB interface of the Vigor router. Otherwise, you cannot save the configuration.

3.15.3 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.

3.15.4 USB Disk Status

This page is to monitor the status for the users who accessing into FTP or Samba server (USB storage disk) via the Vigor router. 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 Disk Status](#)



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.

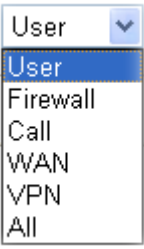
3.15.5 Syslog Explorer

Such page provides real-time syslog and displays the information on the screen.

For Web Syslog

[USB Application >> 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. 
Display Mode	There are two modes for you to choose.

	<div style="border: 1px solid black; padding: 2px;"> <div style="border-bottom: 1px solid black; padding: 2px;">Stop record when fulls ▼</div> <div style="padding: 2px;">Stop record when fulls</div> <div style="padding: 2px;">Always record the new event</div> </div> <p>Stop record when fulls – when the capacity of syslog is full, the system will stop recording.</p> <p>Always record the new event – only the newest events will be recorded by the system.</p>
Time	Display the time of the event occurred.
Message	Display the information for each event.

For USB Syslog

This page displays the syslog recorded on the USB storage disk.

[USB Application >> Syslog Explorer](#)

Web Syslog
USB Syslog

Folder: n/a	File: n/a	Page: n/a	Log Type: n/a
Time	Log Type	Message	

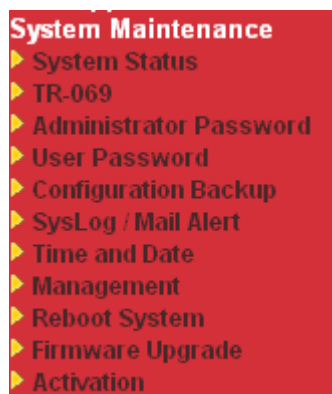
Available settings are explained as follows:

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.

3.16 System Maintenance

For the system setup, there are several items that you have to know the way of configuration: Status, Administrator Password, Configuration Backup, Syslog, Time setup, Reboot System, Firmware Upgrade.

Below shows the menu items for System Maintenance.



3.16.1 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 : Vigor2850i
 Firmware Version : 3.6.2_RC1
 Build Date/Time : Feb 24 2012 16:55:30

LAN					
	MAC Address	IP Address	Subnet Mask	DHCP Server	DNS
LAN1	00-1D-AA-00-00-00	192.168.1.1	255.255.255.0	Yes	168.95.1.1
LAN2	00-1D-AA-00-00-00	192.168.2.1	255.255.255.0	Yes	168.95.1.1
LAN3	00-1D-AA-00-00-00	192.168.3.1	255.255.255.0	Yes	168.95.1.1
LAN4	00-1D-AA-00-00-00	192.168.4.1	255.255.255.0	Yes	168.95.1.1
IP Routed Subnet	00-1D-AA-00-00-00	192.168.0.1	255.255.255.0	Yes	168.95.1.1

WAN					
	Link Status	MAC Address	Connection	IP Address	Default Gateway
WAN1	Disconnected	00-1D-AA-00-00-01	PPPoE	---	---
WAN2	Connected	00-1D-AA-00-00-02	Static IP	172.16.3.103	172.16.1.1
WAN3	Disconnected	00-1D-AA-00-00-03	---	---	---

IPv6			
	Address	Scope	Internet Access Mode
LAN	FE80::21D:AAFF:FE00:0/64	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	MAC Address - Display the MAC address of the LAN Interface. IP Address - Display the IP address of the LAN interface. Subnet Mask - Display the subnet mask address of the LAN interface. DHCP Server - Display the current status of DHCP server of the LAN interface DNS - Display the assigned IP address of the primary DNS.
Wireless LAN	MAC Address - Display the MAC address of the wireless LAN. Frequency Domain - It can be Europe (13 usable channels), USA (11 usable channels) etc. The available channels supported by the wireless products in different countries are various. Firmware Version - It indicates information about equipped WLAN miniPCi card. This also helps to provide availability of some features that are bound with some WLAN miniPCi. SSID - Display the SSID of the router.
WAN	Link Status - Display current connection status. MAC Address - Display the MAC address of the WAN Interface. Connection - Display the connection type. IP Address - Display the IP address of the WAN interface. Default Gateway - Display the assigned IP address of the default gateway.
VoIP	Profile - Display the VoIP profile for the phone port. In/Out - Display the number of incoming /outgoing phone call.

3.16.2 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.

ACS and CPE Settings

ACS Server On	Internet ▾
ACS Server	
URL	<input type="text"/>
Username	<input type="text"/>
Password	<input type="password"/>
CPE Client	
<input type="radio"/> Enable	<input checked="" type="radio"/> Disable
URL	<input type="text" value="http://172.16.3.102:8069/cwm/CRN.html"/>
Port	<input type="text" value="8069"/>
Username	<input type="text" value="vigor"/>
Password	<input type="password" value="••••••"/>

Periodic Inform Settings

<input type="radio"/> Disable	<input checked="" type="radio"/> Enable
Interval Time	<input type="text" value="900"/> second(s)

STUN Settings

<input checked="" type="radio"/> Disable	<input type="radio"/> Enable
Server IP	<input type="text"/>
Server Port	<input type="text" value="3478"/>
Minimum Keep Alive Period	<input type="text" value="60"/> second(s)
Maximum Keep Alive Period	<input type="text" value="-1"/> second(s)

Available settings are explained as follows:

Item	Description
ACS Server On	Choose the interface for the router connecting to ACS server.
ACS Server	URL/Username/Password – Such data must be typed according to the ACS (Auto Configuration Server) you want to link. Please refer to Auto Configuration Server user’s manual for detailed information.
CPE Client	Such information is useful for Auto Configuration Server. Enable/Disable – Allow/Deny the CPE Client to connect with Auto Configuration Server. Port – Sometimes, port conflict might be occurred. To solve such problem, you might change port number for CPE.
Periodic Inform Settings	The default setting is Enable . Please set interval time or schedule time for the router to send notification to CPE. Or click Disable to close the mechanism of notification.
STUN Settings	The default is Disable . If you click Enable , please type the

relational settings listed below:

Server IP – Type the IP address of the STUN server.

Server Port – Type the port number of the STUN server.

Minimum Keep Alive Period – If STUN is enabled, the CPE must send binding request to the server for the purpose of maintaining the binding in the Gateway. Please type a number as the minimum period. The default setting is “60 seconds”.

Maximum Keep Alive Period – If STUN is enabled, the CPE must send binding request to the server for the purpose of maintaining the binding in the Gateway. Please type a number as the maximum period. A value of “-1” indicates that no maximum period is specified.

3.16.3 Administrator Password

This page allows you to set new password.

[System Maintenance >> Administrator Password Setup](#)

Administrator Password

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

OK

Available settings are explained as follows:

Item	Description
Old Password	Type in the old password. The factory default setting for password is “ admin ”.
New Password	Type in new password in this field.
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 configurator again.

3.16.4 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

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

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

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 configurator with the password typed here for simple web configuration. The settings on simple web configurator will be different with full web configurator accessed by using the administrator password.
Password	Type in new password in this field.
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 configurator again.

3.16.5 Login Customization

System Maintenance >> Login Customization

Login Customization

Login Background URL	<input type="text"/>	(63 char max.)
Login Description	<input type="text"/>	(31 char max.)

OK Cancel

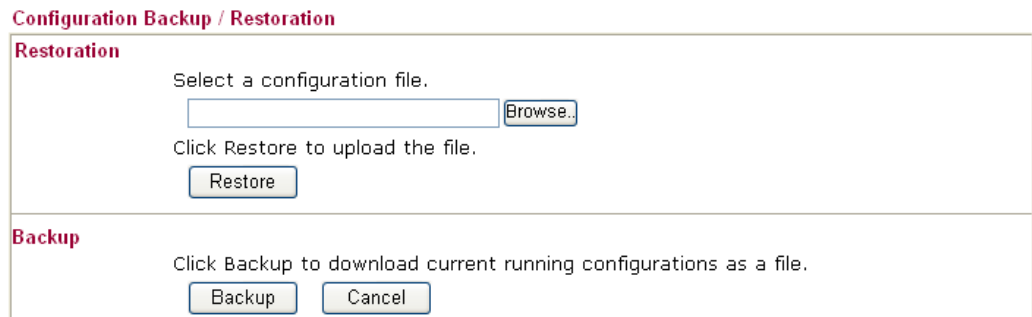
3.16.6 Configuration Backup

Backup the Configuration

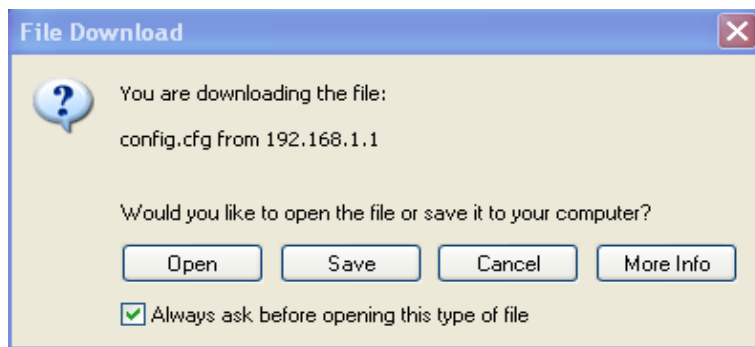
Follow the steps below to backup your configuration.

1. Go to **System Maintenance >> Configuration Backup**. The following windows will be popped-up, as shown below.

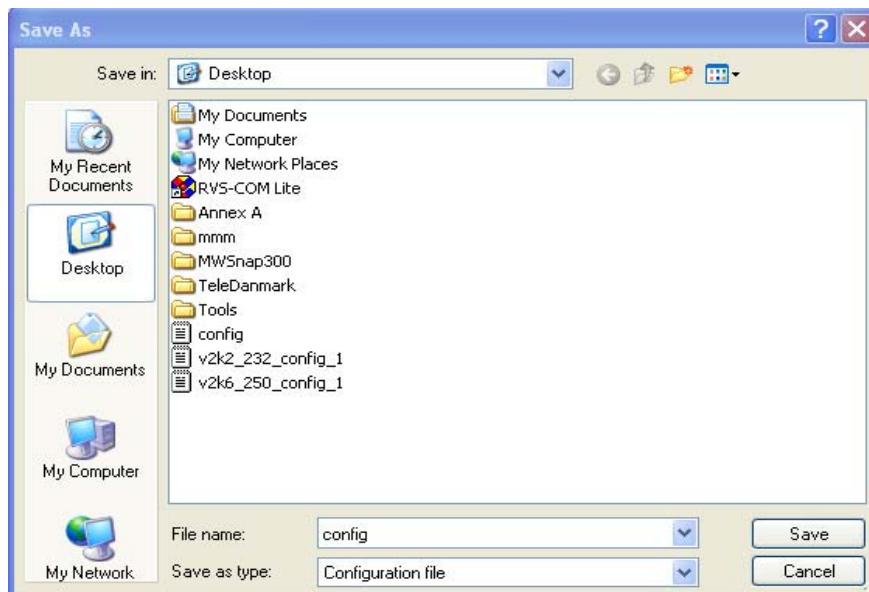
System Maintenance >> Configuration Backup



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.

System Maintenance >> Configuration Backup

Configuration Backup / Restoration

Restoration Select a configuration file. <input type="text"/> <input type="button" value="Browse.."/> Click Restore to upload the file. <input type="button" value="Restore"/>
Backup Click Backup to download current running configurations as a file. <input type="button" value="Backup"/> <input type="button" value="Cancel"/>

2. Click **Browse** 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.

3.16.7 Syslog/Mail Alert

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

[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"/></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"/> Call 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"/> Authentication</p> <p>User Name <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"/> IM-P2P</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:

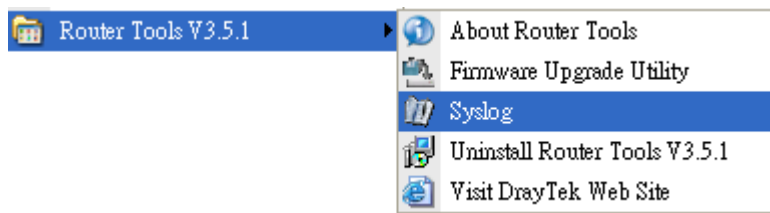
Item	Description
SysLog Access Setup	<p>Enable - Check Enable to activate function of syslog.</p> <p>Syslog Save to – Check Syslog Server to save the log to Syslog server.</p> <p>Check USB Disk to save the log to the attached USB storage disk.</p>
Router Name	<p>Display the name for such router configured 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</p>

	Syslog.
AlertLog Setup	<p>Check “Enable” to activate function of alert log.</p> <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 - The IP address 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>Authentication - Check this box to activate this function while using e-mail application.</p> <p>User Name - Type the user name for authentication.</p> <p>Password - Type the password for authentication.</p> <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.

3.16.8 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: 2010 Apr 2 Fri 9 : 1 : 58 Inquire Time

Time Setup

Use Browser Time
 Use Internet Time Client
 Server IP Address: pool.ntp.org
 Time Zone: (GMT) Greenwich Mean Time : Dublin
 Enable Daylight Saving:
 Automatically Update Interval: 30 min

OK Cancel

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 Protocol	Select a time protocol.
Server IP Address	Type the IP address of the time server.
Time Zone	Select the time zone where the router is located.
Enable Daylight Saving	Check the box to enable the daylight saving. Such feature is available for certain area.
Automatically Update Interval	Select a time interval for updating from the NTP server.

Click **OK** to save these settings.

3.16.9 Management

This page allows you to manage the settings for access control, access list, port setup, and SNMP setup. For example, as to management access control, the port number is used to send/receive SIP message for building a session.

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"/> Management 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 type="checkbox"/> SSH Server <input checked="" type="checkbox"/> Disable PING from the Internet Access List <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"/>	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) SSH Port <input type="text" value="22"/> (Default: 22) SNMP Setup <input type="checkbox"/> Enable SNMP Agent Get Community <input type="text" value="public"/> Set Community <input type="text" value="private"/> Manager Host IP <input type="text"/> Trap Community <input type="text" value="public"/> Notification Host IP <input type="text"/> Trap Timeout <input type="text" value="10"/> seconds
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"/>											
<input type="button" value="OK"/>													

Available settings are explained as follows:

Item	Description
Router Name	Type in the router name provided by ISP.
Management 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	<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 Defined 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> <p>Enable SNMP Agent - Check it to enable this function.</p> <p>Get Community - Set the name for getting community by typing a proper character. The default setting is public.</p> <p>Set Community - Set community by typing a proper name. The default setting is private.</p> <p>Manager Host IP - Set one host as the manager to execute SNMP function. Please type in IP address to specify certain host.</p> <p>Trap Community - Set trap community by typing a proper name. The default setting is public.</p> <p>Notification Host IP - Set the IP address of the host that will receive the trap community.</p> <p>Trap Timeout - The default setting is 10 seconds.</p>
------------------------------	--

For IPv6

System Maintenance >> Management

IPv4 Management Setup	IPv6 Management Setup
<p>Management Access Control</p> <p>Allow management from the Internet</p> <p><input type="checkbox"/> Telnet Server (Port : 23)</p> <p><input type="checkbox"/> HTTP Server (Port : 80)</p> <p><input type="checkbox"/> Enable PING from the Internet</p> <hr/> <p>Access List</p> <p>List IPv6 Address / Prefix Length</p> <p>1. <input type="text"/> / <input type="text" value="128"/></p> <p>2. <input type="text"/> / <input type="text" value="128"/></p> <p>3. <input type="text"/> / <input type="text" value="128"/></p> <p>Note : Telnt / Http server port is the same as IPv4.</p> <p style="text-align: center;"><input type="button" value="OK"/></p>	

Available settings are explained as follows:

Item	Description
Management Access Control	<p>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>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.</p>
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.

3.16.10 Reboot System

The Web Configurator 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.

3.16.11 Firmware Upgrade

Before upgrading your router firmware, you need to install the Router Tools. The **Firmware Upgrade Utility** is included in the tools. The following web page will guide you to upgrade firmware by using an example. Note that this example is running over Windows OS (Operating System).

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](ftp://DrayTek.com).

Click **System Maintenance>> Firmware Upgrade** to launch the Firmware Upgrade Utility.

System Maintenance >> Firmware Upgrade

Web Firmware Upgrade

Select a firmware file.

Click Upgrade to upload the file.

TFTP Firmware Upgrade from LAN

Current Firmware Version: 3.6.2_RC1


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 ?

Click **OK**. The following screen will appear. Please execute the firmware upgrade utility first.

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.

For the detailed information about firmware update, please go to Chapter 5.

3.16.12 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

```
WebFilter, service not activate 2010-08-16 07:58:36
```

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: right;"> Activate via interface : auto-selected ▾ <div style="border: 1px solid gray; padding: 2px; display: inline-block;"> auto-selected WAN 1 WAN 2 WAN 3 </div> </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 : auto-selected ▼

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, 2000-01-
01 00:00:24
```

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.

OK Cancel

3.17 Diagnostics

Diagnostic Tools provide a useful way to **view** or **diagnose** the status of your Vigor router.

Below shows the menu items for Diagnostics.



3.17.1 Dial-out Triggering

Click **Diagnostics** and click **Dial-out Trigger** to open the web page. The internet connection (e.g., PPPoE) is triggered by a package sending from the source IP address.

Diagnostics >> Dial-out Triggering

Dial-out Triggered Packet Header

| [Refresh](#) |

HEX Format:

00 00 00 00 00 00 00-00 00 00 00 00 00-00 00

00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
 00 00 00 00 00 00 00 00 00-00 00 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.

3.17.2 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		
* 0.0.0.0/ 0.0.0.0	via 172.16.1.1	WAN2
C~ 192.168.1.0/ 255.255.255.0	directly connected	LAN1
C 172.16.0.0/ 255.255.0.0	directly connected	WAN2

[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.

3.17.3 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

Ethernet ARP Cache Table | [Clear](#) | [Refresh](#) |

IP Address	MAC Address	Netbios Name	Interface
192.168.1.10	E0-CB-4E-DA-48-79	CARRIE-0C7CB251	LAN1

Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

3.17.4 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	State
FF02::2	33-33-00-00-00-02	LAN	CONNECTED
FF02::1:3	33-33-00-01-00-03	LAN	CONNECTED
FE80::3D5E:E74:8751:A44B	e8-9d-87-87-69-2f	LAN	STALE
FF02::1:FF51:A44B	33-33-ff-51-a4-4b	LAN	CONNECTED
FE80::250:7FFF:FEC9:1E79	00-50-7f-c9-1e-79	LAN	STALE
FE80::250:7FFF:FEC8:4305	00-50-7f-c8-43-05	LAN	STALE
FF02::1	33-33-00-00-00-01	LAN	CONNECTED
FF02::1	00-00-00-00-00-00	USB2	CONNECTED
FF02::1:2	00-00-00-00-00-00	USB2	CONNECTED
FE80::9D5C:CA86:5428:3CA7	00-26-2d-fe-63-4f	LAN	STALE
FF02::1:FF0A:673C	33-33-ff-0a-67-3c	LAN	CONNECTED
FE80::213:CEFF:FE0A:673C	00-13-ce-0a-67-3c	LAN	STALE
FF02::1:FFB0:B00C	33-33-ff-b0-b0-0c	LAN	CONNECTED
FE80::90:1A00:242:AD52	00-00-00-00-00-00	USB2	CONNECTED
FF02::16	33-33-00-00-00-16	LAN	CONNECTED

Available settings are explained as follows:

Item	Description
Refresh	Click it to reload the page.

3.17.5 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	10:10:54.970	carrie-0c7cb251	
2	192.168.1.1	00-1D-AA-00-00-00			

[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.

3.17.6 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.

3.17.7 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 "Unspecified".

Ping through:

Ping to: IP Address:

Result | [Clear](#) |

[Diagnostics >> Ping Diagnosis](#)

Ping Diagnosis

IPV4 IPV6

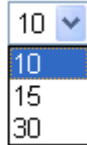
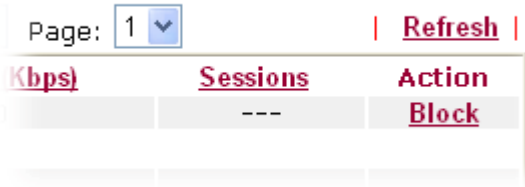

Ping IPv6 Address:

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

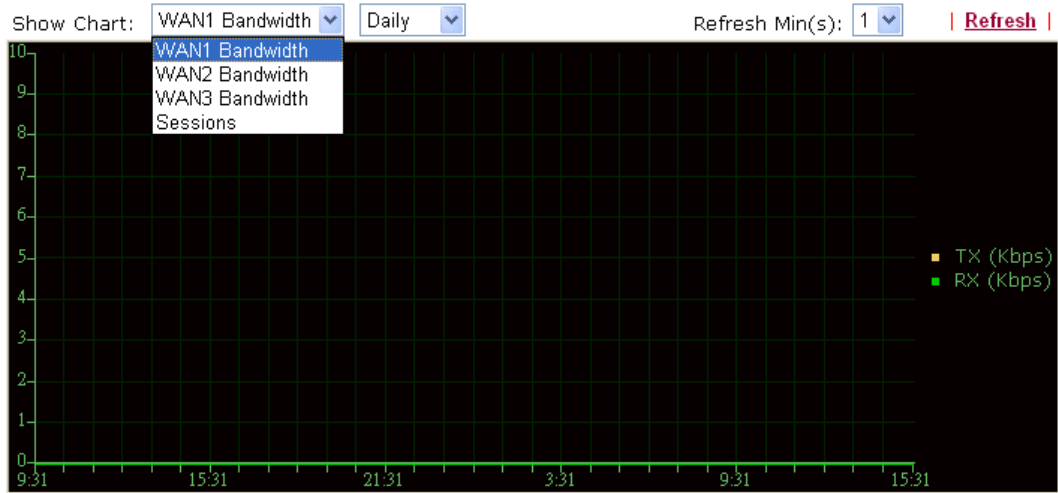
Available settings are explained as follows:

Item	Description
Enable Data Flow Monitor	Check this box to enable this function.
Refresh Seconds	Use the drop down list to choose the time interval of refreshing data flow that will be done by the system automatically. Refresh Seconds: 
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>

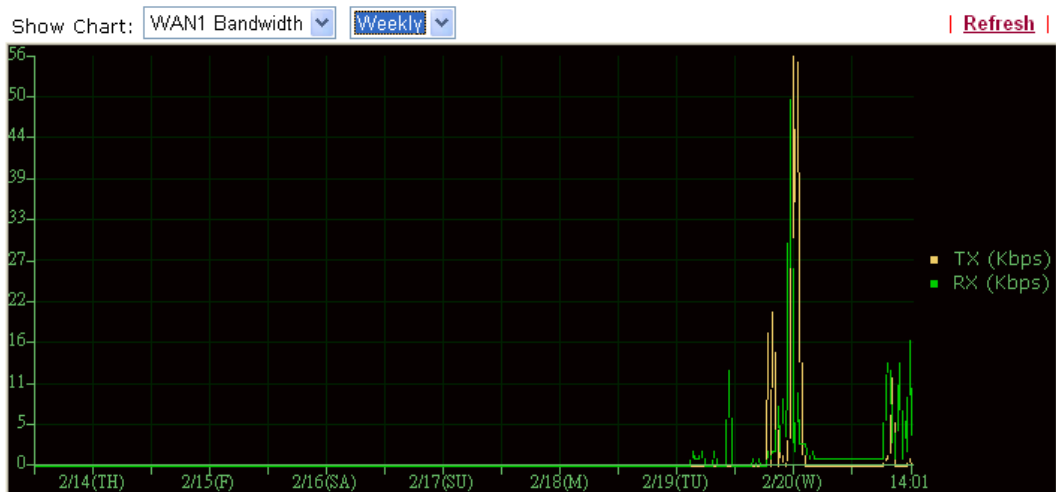
3.17.9 Traffic Graph

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 **Refresh** to renew the graph at any time.

Diagnostics >> Traffic Graph



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.

3.17.10 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.

3.17.11 Web Firewall Syslog

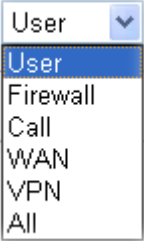
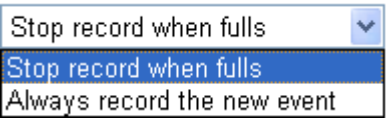
Such page provides real-time syslog and displays the information on the screen.

For Web Syslog

This page displays the time and message for User/Firewall/call/WAN/VPN settings. You can check **Enable Web Syslog**, specify the type of Syslog and choose the display mode you want. Later, the event of Syslog with specified type will be shown for your reference.

[USB Application >> 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. 
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.

For USB Syslog

This page displays the syslog recorded on the USB storage disk.

[USB Application >> Syslog Explorer](#)

Web Syslog	USB Syslog
----------------------------	----------------------------

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.

3.17.12 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 >> TSPC Status](#)

WAN1	WAN2	WAN3	Refresh
TSPC Enabled			
TSPC Connection Status			
Local Endpoint v4 Address :	1.169.155.138		
Local Endpoint v6 Address :	2001:05c0:1400:000b:0000:0000:0000:b527		
Router DNS name :	vigor2850.broker.freenet6.net		
Remote Endpoint v4 Address :	81.171.72.11		
Remote Endpoint v6 Address :	2001:05c0:1400:000b:0000:0000:0000:b526		
Tspc Prefix :	2001:05c0:1513:5900:0000:0000:0000:0000		
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.

3.18 External Devices

This page allows you to enable or disable the function of detecting external devices.

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 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.

4

Application and Examples

4.1 How to configure settings for IPv6 Service in Vigor2850

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 Vigor2850, 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 Vigor2850, there are five connection types to be chosen: PPP, TSPC, AICCU, DHCPv6 Client and Static IPv6.

1. Access into the web configurator of Vigor2850. 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

Index	Display Name	Physical Mode	Access Mode	
WAN1		ADSL / VDSL	PPPoE / PPPoA	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
<p>Internet Access Mode</p> <p>Connection Type: Offline <input type="button" value="OK"/></p>			

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
<p><input checked="" type="radio"/> Enable <input type="radio"/> Disable</p> <p>ISP Access Setup</p> <p>Username: 73768635@hinet.net Password: ●●●●●●</p> <p>Index(1-15) in Schedule Setup: => [] , [] , [] , []</p> <p>WAN Connection Detection</p> <p>Mode: ARP Detect Ping IP: [] TTL: []</p> <p>PPP/MP Setup</p> <p>PPP Authentication: PAP or CHAP Idle Timeout: -1 second(s)</p> <p>IP Address Assignment Method (IPCP)</p> <p><input type="button" value="WAN IP Alias"/></p> <p>Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP) Fixed IP Address: []</p> <p><input checked="" type="radio"/> Default MAC Address <input type="radio"/> Specify a MAC Address MAC Address: [00] [50] [7F] [EA] [7E] [E2]</p> <p><input type="button" value="OK"/> <input type="button" value="Cancel"/></p>			

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
<p>Internet Access Mode</p> <p>Connection Type: PPP</p> <p>Note : IPv4 WAN setting should be PPPoE client.</p> <p><input type="button" value="OK"/> <input type="button" value="Cancel"/></p>			

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: 0:5:35			
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	2096	2721			
WAN 1 Status >> Dial PPPoA					
Enable	Line	Name	Mode	Up Time	
Yes	VDSL		PPPoA	00:00:00	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
---	---	0	0	0	0
Message [PPP Shutdown]					
WAN 2 Status >> Drop PPPoE					
Enable	Line	Name	Mode	Up Time	
Yes	Ethernet		PPPoE	0:05:23	
IP	GW IP	TX Packets	TX Rate(Bps)	RX Packets	RX Rate(Bps)
111.251.162.33	168.95.98.254	736	29	610	78

Online Status

Physical Connection		System Uptime: 0:3:39			
IPv4		IPv6			
LAN Status					
IP Address					
2001:8010:7280:101:250:7FFF:FEEA:7EE0/64 (Global)					
FE80::250:7FFF:FEEA:7EE0/64 (Link)					
TX Packets	RX Packets	TX Bytes	RX Bytes		
8	4	768	328		
WAN2 IPv6 Status >> Drop PPP					
Enable	Mode	Up Time			
Yes	PPP	0:03:07			
IP	Gateway IP				
2001:8010:7280:101:250:7FFF:FEEA:7EE2/128 (Global)	FE80::90:1A00:41A3:4F3F				
FE80::50:7FFF:FEEA:7EE2/128 (Link)					
DNS IP					
2001:8000:168::1					
2001:8000:168::2					
TX Packets	RX Packets	TX Bytes	RX Bytes		
7	5	544	726		

- **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	
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: 0:12:11

IPv4		IPv6	
LAN Status			
IP Address			
2406:A000:F008:3400:250:7FFF:FEEA:7EE0/64 (Global)			
FE80::250:7FFF:FEEA:7EE0/64 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
53	246	4742	51618
WAN2 IPv6 Status			
Enable	Mode	Up Time	
Yes	TSPC	0:11:30	
IP		Gateway IP	
2406:A000:F0FF:FFFE::4807/128 (Global)		---	
FE80::76A0:5932/128 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
54	239	5432	32527

- **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			
Username		JCR3-SIXXS	
Password		●●●●●●	
Confirm Password		●●●●●●	
Tunnel Broker		tic.sixxs.net	
Subnet Prefix		2001:4DD0:FF00:8805::2 / 64	
<div style="display: flex; justify-content: center; gap: 20px;"> OK Cancel </div>			

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: 3:59:17

IPv4	IPv6
LAN Status	
IP Address	
2001:4DD0:FF00:8805:250:7FFF:FEEA:7EE0/64 (Global)	
FE80::250:7FFF:FEEA:7EE0/64 (Link)	
TX Packets	RX Packets
275	824
TX Bytes	RX Bytes
26402	91147
WAN2 IPv6 Status	
Enable	Mode
Yes	AICCU
IP	Up Time
2001:4DD0:FF00:805::2/64 (Global)	3:58:58
FE80::4CD0:FF00:805:2/64 (Link)	
TX Packets	RX Packets
11	2585
TX Bytes	RX Bytes
744	428661

- **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)		3636	
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: 0:21:38

IPv4		IPv6	
LAN Status			
IP Address			
2001:B010:7300:701:250:7FFF:FEEA:7EE0/64 (Global)			
FE80::250:7FFF:FEEA:7EE0/64 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
32	111	3176	15656
WAN2 IPv6 Status >> Drop PPP			
Enable	Mode	Up Time	
Yes	DHCPv6 Client	0:00:28	
IP		Gateway IP	
2001:B010:7300:701:250:7FFF:FEEA:7EE2/128 (Global)		FE80::90:1A00:242:AD52	
FE80::50:7FFF:FEEA:7EE2/128 (Link)			
DNS IP			
2001:B000:168::1			
2001:B000:168::2			
TX Packets	RX Packets	TX Bytes	RX Bytes
7	3	544	506

- **Static IPv6**

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

WAN >> Internet Access

WAN 2

PPPoE	Static or Dynamic IP	PPTP/L2TP	IPv6
Internet Access Mode			
Connection Type		Static IPv6	
Static IPv6 Address configuration			
IPv6 Address		Prefix Length	
2001:B010:7300:701:250:7FFF:FEEA:7EE0		64	
		Add Delete	
Current IPv6 Address Table			
Index	IPv6 Address/Prefix Length	Scope	
1	2001:B010:7300:701:250:7FFF:FEEA:7EE0/64	Global	
2	FE80::250:7FFF:FEEA:7EF2/64	Link	
Static IPv6 Gateway configuration			
IPv6 Gateway Address		FE80::90:1A00:242:AD52	
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: 0:21:38

IPv4	IPv6		
LAN Status			
IP Address			
2001:B010:7300:701:250:7FFF:FEEA:7EE0/64 (Global)			
FE80::250:7FFF:FEEA:7EE0/64 (Link)			
TX Packets	RX Packets	TX Bytes	RX Bytes
32	111	3176	15656
WAN2 IPv6 Status >> Drop PPP			
Enable	Mode	Up Time	
Yes	Static IPv6	0:00:28	
IP		Gateway IP	
2001:B010:7300:701:250:7FFF:FEEA:7EE2/128 (Global)		FE80::90:1A00:242:AD52	
FE80::50:7FFF:FEEA:7EE2/128 (Link)			
DNS IP			
2001:8000:168::1			
2001:8000:168::2			
TX Packets	RX Packets	TX Bytes	RX Bytes
7	3	544	506

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 configurator of Viogr2850. Open **LAN>> General Setup**. Click the **IPv6** button.

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

LAN >> General 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

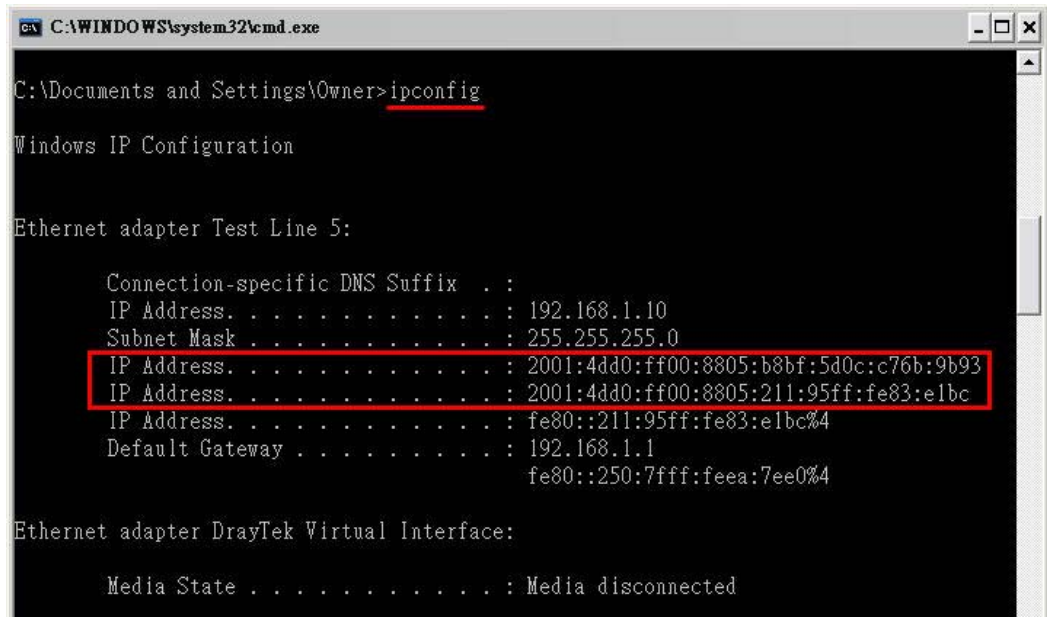
Index	IPv6 Address/Prefix Length	Scope
1	2001:4DD0:FF00:8805:250:7FFF:FEEA:7EE0/64	Global
2	FE80::250:7FFF:FEEA:7EE0/64	Link

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:

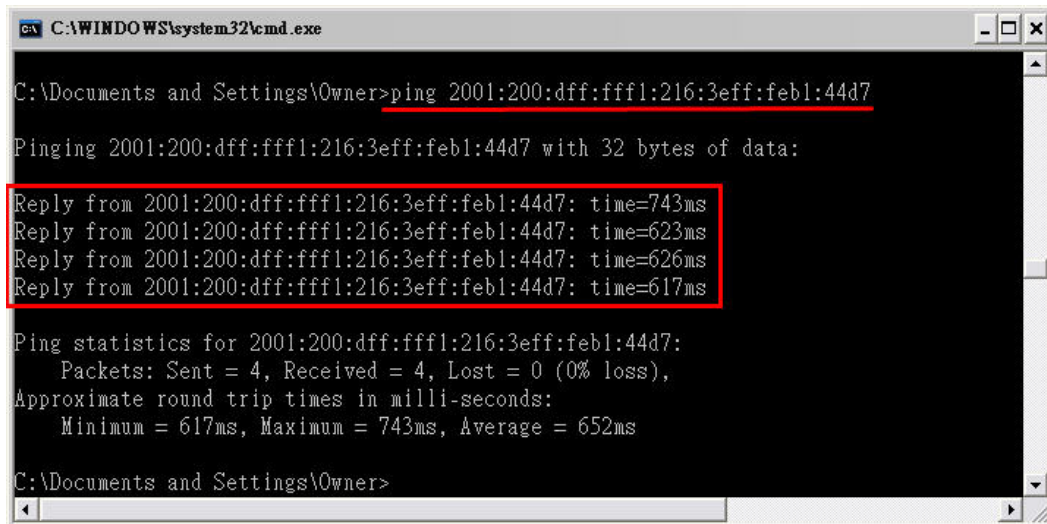
    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.1.10
    Subnet Mask . . . . .             : 255.255.255.0
    IP Address. . . . .               : 2001:4dd0:ff00:8805:b8bf:5d0c:c76b:9b93
    IP Address. . . . .               : 2001:4dd0:ff00:8805:211:95ff:fe83:e1bc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

4.2 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 SAMBA server or FTP server.

Samba 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 Samba service.

USB Application >> USB General Settings

USB General Settings

General Settings	
Simultaneous FTP Connections	5 (Maximum 6)
Default Charset	Default
Samba Service Settings(Network Neighborhood)	
<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
Access Mode	
<input checked="" type="radio"/> LAN Only <input type="radio"/> LAN And WAN	
NetBios Name Service	
Workgroup Name	WORKGROUP
Host Name	Vigor

Note: 1. If Charset is set to "default", 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/Samba User account. Here we add a new account "user1" and assign authorities "Read", "Write" and "List" to it.

USB Application >> USB User Management

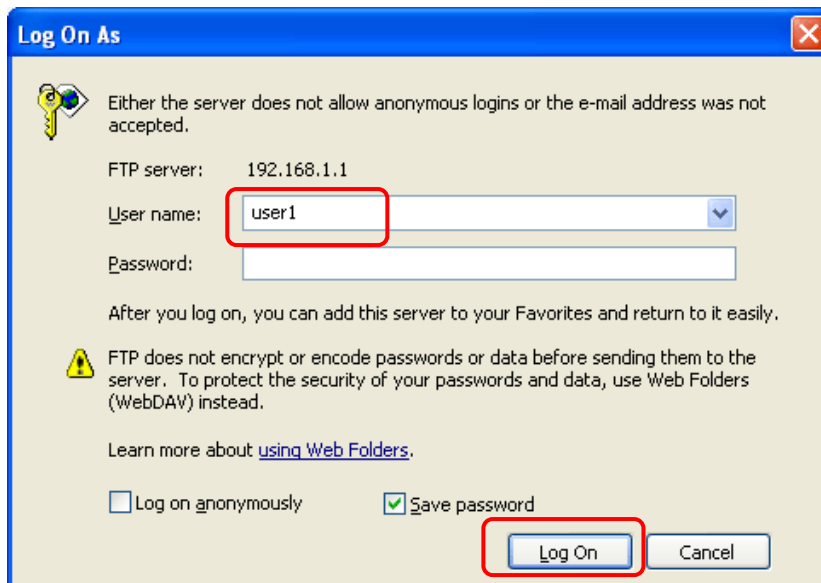
Profile Index: 1

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.

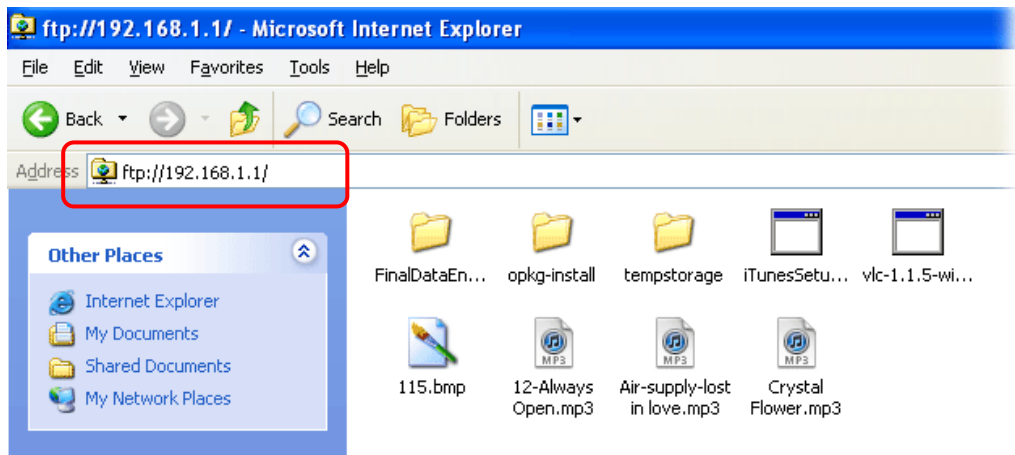
FTP does not encrypt or encode passwords or data before sending them to the server. To protect the security of your passwords and data, use Web Folders (WebDAV) instead.

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**
 Write Protect Status: **No**
 Disk Capacity: 2009 MB
 Free Capacity: 1610 MB [Refresh](#)

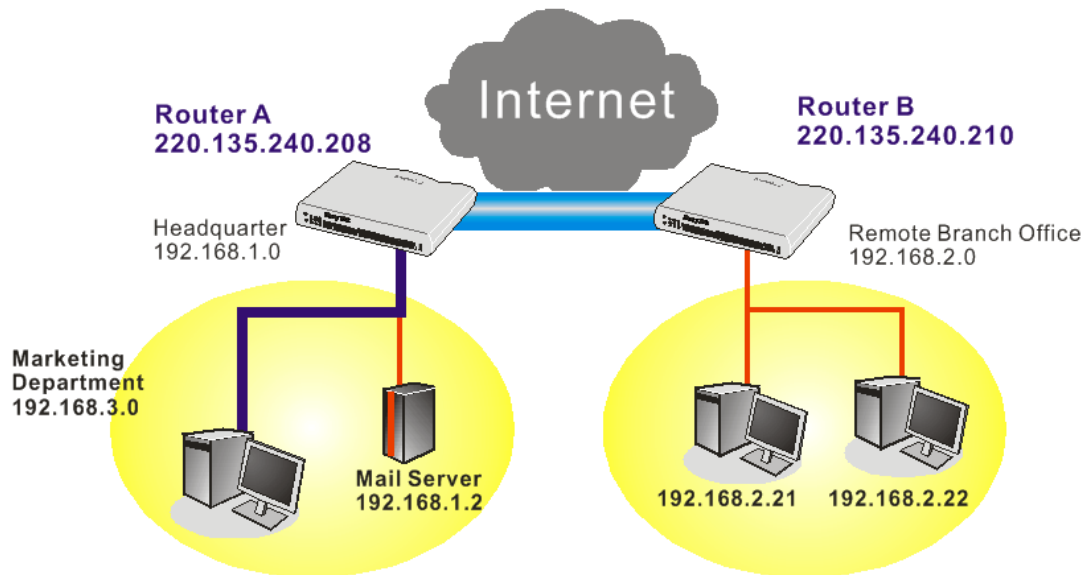
USB Disk Users Connected | [Refresh](#) |

Index	Service	IP Address(Port)	Username	
1.	FTP	192.168.1.10(1963)	user1	<input type="button" value="Drop"/>

Now, users in LAN of Vigor2710 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**.

4.3 Create a LAN-to-LAN Connection Between Remote Office and Headquarter

The most common case is that you may want to connect to network securely, such as the remote branch office and headquarter. According to the network structure as shown in the below illustration, you may follow the steps to create a LAN-to-LAN profile. These two networks (LANs) should NOT have the same network address.



Settings in Router A in headquarter:

1. Go to **VPN and Remote Access** and select **Remote Access Control** to enable the necessary VPN service and click **OK**.
2. Then,
For using **PPP** based services, such as PPTP, L2TP, you have to set general settings in **PPP General Setup**.

VPN and Remote Access >> PPP General Setup

PPP General Setup	
PPP/MP Protocol	
Dial-In PPP Authentication	PAP or CHAP
Dial-In PPP Encryption (MPPE)	Optional MPPE
Mutual Authentication (PAP)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Username	<input type="text"/>
Password	<input type="text"/>
IP Address Assignment for Dial-In Users (When DHCP Disable set)	
Assigned IP range	192.168.1.200

OK

For using **IPSec**-based service, such as IPSec or L2TP with IPSec Policy, you have to set general settings in **IPSec General Setup**, such as the pre-shared key that both parties have known.

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	<input type="text" value="•••••"/>
Confirm Pre-Shared Key	<input type="text" value="•••••"/>
IPSec Security Method	
<input checked="" type="checkbox"/> Medium (AH)	Data will be authentic, but will not be encrypted.
High (ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES	Data will be encrypted and authentic.

3. Go to **LAN-to-LAN**. Click on one index number to edit a profile.
4. Set **Common Settings** as shown below. You should enable both of VPN connections because any one of the parties may start the VPN connection.

VPN and Remote Access >> LAN to LAN

Profile Index : 1

1. Common Settings

Profile Name <input type="text" value="Branch 1"/>	Call Direction <input checked="" type="radio"/> Both <input type="radio"/> Dial-Out <input type="radio"/> Dial-in
<input type="checkbox"/> Enable this profile	<input type="checkbox"/> Always on
VPN Dial-Out Through <input type="text" value="WAN1 First"/> ▼	Idle Timeout <input type="text" value="300"/> second(s)
Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block	<input type="checkbox"/> Enable PING to keep alive
	PING to the IP <input type="text"/>

- Set **Dial-Out Settings** as shown below to dial to connect to Router B aggressively with the selected Dial-Out method.

If an **IPSec-based** service is selected, you should further specify the remote peer IP Address, IKE Authentication Method and IPSec Security Method for this Dial-Out connection.

2. Dial-Out Settings

<p>Type of Server I am calling</p> <p> <input type="radio"/> PPTP <input checked="" type="radio"/> IPSec Tunnel <input type="radio"/> L2TP with IPSec Policy None </p> <p>Dial Number for ISDN or Server IP/Host Name for VPN. (such as 5551234, draytek.com or 123.45.67.89)</p> <p><input type="text" value="220.135.240.210"/></p>	<p>Link Type 64k bps</p> <p>Username <input data-bbox="1189 510 1412 539" type="text" value="???"/></p> <p>Password <input data-bbox="1189 551 1398 580" type="text"/></p> <p>PPP Authentication PAP/CHAP</p> <p>VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off</p> <hr/> <p>IKE Authentication Method</p> <p> <input checked="" type="radio"/> Pre-Shared Key <input type="radio"/> Digital Signature(X.509) </p> <p>IKE Pre-Shared Key <input data-bbox="1189 757 1398 786" type="text"/></p> <p>None</p> <hr/> <p>IPSec Security Method</p> <p> <input checked="" type="radio"/> Medium(AH) <input type="radio"/> High(ESP) DES without Authentication </p> <p><input type="button" value="Advanced"/></p> <hr/> <p>Index(1-15) in Schedule Setup:</p> <p><input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/></p>
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If a **PPP-based service** is selected, you should further specify the remote peer IP Address, Username, Password, PPP Authentication and VJ Compression for this Dial-Out connection.

2. Dial-Out Settings

<p>Type of Server I am calling</p> <p> <input checked="" type="radio"/> PPTP <input type="radio"/> IPSec Tunnel <input type="radio"/> L2TP with IPSec Policy None </p> <p>Dial Number for ISDN or Server IP/Host Name for VPN. (such as 5551234, draytek.com or 123.45.67.89)</p> <p><input type="text" value="220.135.240.210"/></p>	<p>Link Type 64k bps</p> <p>Username <input data-bbox="1189 1413 1404 1442" type="text" value="draytek"/></p> <p>Password <input data-bbox="1189 1453 1388 1482" type="text" value="●●●●"/></p> <p>PPP Authentication PAP/CHAP</p> <p>VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off</p> <hr/> <p>IKE Authentication Method</p> <p> <input checked="" type="radio"/> Pre-Shared Key <input type="radio"/> Digital Signature(X.509) </p> <p>IKE Pre-Shared Key <input data-bbox="1189 1653 1388 1682" type="text"/></p> <p>None</p> <hr/> <p>IPSec Security Method</p> <p> <input checked="" type="radio"/> Medium(AH) <input type="radio"/> High(ESP) DES without Authentication </p> <p><input type="button" value="Advanced"/></p> <hr/> <p>Index(1-15) in Schedule Setup:</p> <p><input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/></p>
---	--

6. Set **Dial-In settings** to as shown below to allow Router B dial-in to build VPN connection.

If an **IPSec-based** service is selected, you may further specify the remote peer IP Address, IKE Authentication Method and IPSec Security Method for this Dial-In connection. Otherwise, it will apply the settings defined in **IPSec General Setup** above.

3. Dial-In Settings

<p>Allowed Dial-In Type</p> <p><input type="checkbox"/> PPTP</p> <p><input checked="" type="checkbox"/> IPSec Tunnel</p> <p><input type="checkbox"/> L2TP with IPSec Policy None</p>	<p>Username <input data-bbox="1182 495 1412 526" type="text" value="???"/></p> <p>Password <input data-bbox="1182 539 1398 571" type="text"/></p> <p>VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off</p>
<p><input checked="" type="checkbox"/> Specify Remote VPN Gateway</p> <p>Peer VPN Server IP</p> <p><input data-bbox="400 750 627 781" type="text" value="220.135.240.210"/></p> <p>or Peer ID <input data-bbox="507 795 732 826" type="text"/></p>	<p>IKE Authentication Method</p> <p><input checked="" type="checkbox"/> Pre-Shared Key</p> <p>IKE Pre-Shared Key <input data-bbox="1182 705 1398 736" type="text"/></p> <p><input type="checkbox"/> Digital Signature(X.509)</p> <p>None</p>
	<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>

If a **PPP-based service** is selected, you should further specify the remote peer IP Address, Username, Password, and VJ Compression for this Dial-In connection.

3. Dial-In Settings

<p>Allowed Dial-In Type</p> <p><input checked="" type="checkbox"/> PPTP</p> <p><input type="checkbox"/> IPSec Tunnel</p> <p><input type="checkbox"/> L2TP with IPSec Policy None</p>	<p>Username <input data-bbox="1182 1167 1412 1198" type="text" value="draytek"/></p> <p>Password <input data-bbox="1182 1211 1398 1243" type="text" value="*****"/></p> <p>VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off</p>
<p><input checked="" type="checkbox"/> Specify Remote VPN Gateway</p> <p>Peer VPN Server IP</p> <p><input data-bbox="400 1422 627 1453" type="text" value="220.135.240.210"/></p> <p>or Peer ID <input data-bbox="507 1467 732 1498" type="text"/></p>	<p>IKE Authentication Method</p> <p><input checked="" type="checkbox"/> Pre-Shared Key</p> <p>IKE Pre-Shared Key <input data-bbox="1182 1377 1398 1408" type="text"/></p> <p><input type="checkbox"/> Digital Signature(X.509)</p> <p>None</p>
	<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>

- At last, set the remote network IP/subnet in **TCP/IP Network Settings** so that Router A can direct the packets destined to the remote network to Router B via the VPN connection.

4. TCP/IP Network Settings

My WAN IP	<input type="text" value="0.0.0.0"/>	RIP Direction	<input type="button" value="Disable"/>
Remote Gateway IP	<input type="text" value="0.0.0.0"/>	From first subnet to remote network, you have to do	
Remote Network IP	<input type="text" value="192.168.2.0"/>	<input type="button" value="Route"/>	
Remote Network Mask	<input type="text" value="255.255.255.0"/>	<input type="checkbox"/> Change default route to this VPN tunnel (Only single WAN supports this)	
Local Network IP	<input type="text" value="192.168.1.1"/>		
Local Network Mask	<input type="text" value="255.255.255.0"/>		
	<input type="button" value="More"/>		

Settings in Router B in the remote office:

- Go to **VPN and Remote Access** and select **Remote Access Control** to enable the necessary VPN service and click **OK**.
- Then, for using **PPP based** services, such as PPTP, L2TP, you have to set general settings in **PPP General Setup**.

VPN and Remote Access >> PPP General Setup

PPP General Setup

PPP/MP Protocol Dial-In PPP Authentication <input type="button" value="PAP or CHAP"/> Dial-In PPP Encryption (MPPE) <input type="button" value="Optional MPPE"/> Mutual Authentication (PAP) <input type="radio"/> Yes <input checked="" type="radio"/> No Username <input type="text"/> Password <input type="text"/>	IP Address Assignment for Dial-In Users (When DHCP Disable set) Assigned IP range <input type="text" value="192.168.2.200"/>
--	--

For using **IPSec-based** service, such as IPSec or L2TP with IPSec Policy, you have to set general settings in **IPSec General Setup**, such as the pre-shared key that both parties have known.

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	<input type="text" value="....."/>
Confirm Pre-Shared Key	<input type="text" value="....."/>
IPSec Security Method	
<input checked="" type="checkbox"/> Medium (AH)	Data will be authentic, but will not be encrypted.
High (ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES	Data will be encrypted and authentic.

- Go to **LAN-to-LAN**. Click on one index number to edit a profile.
- Set **Common Settings** as shown below. You should enable both of VPN connections because any one of the parties may start the VPN connection.

VPN and Remote Access >> LAN to LAN

Profile Index : 1

1. Common Settings

Profile Name <input type="text" value="Branch 1"/>	Call Direction <input checked="" type="radio"/> Both <input type="radio"/> Dial-Out <input type="radio"/> Dial-in
<input type="checkbox"/> Enable this profile	<input type="checkbox"/> Always on
VPN Dial-Out Through <input type="text" value="WAN1 First"/>	Idle Timeout <input type="text" value="300"/> second(s)
Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block	<input type="checkbox"/> Enable PING to keep alive
	PING to the IP <input type="text"/>

- Set **Dial-Out Settings** as shown below to dial to connect to Router B aggressively with the selected Dial-Out method.

If an **IPSec-based** service is selected, you should further specify the remote peer IP Address, IKE Authentication Method and IPSec Security Method for this Dial-Out connection.

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 <input type="text" value="None"/></p> <p>Dial Number for ISDN or Server IP/Host Name for VPN. (such as 5551234, draytek.com or 123.45.67.89)</p> <input type="text" value="220.135.240.208"/>	<p>Link Type <input type="text" value="64k bps"/></p> <p>Username <input type="text" value="???"/> Password <input type="text"/></p> <p>PPP Authentication <input type="text" value="PAP/CHAP"/></p> <p>VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off</p> <p>IKE Authentication Method</p> <p><input checked="" type="radio"/> Pre-Shared Key</p> <p>IKE Pre-Shared Key <input type="text"/></p> <p><input type="radio"/> Digital Signature(X.509)</p> <p><input type="text" value="None"/></p> <p>IPSec Security Method</p> <p><input checked="" type="radio"/> Medium(AH)</p> <p><input type="radio"/> High(ESP) <input type="text" value="DES without Authentication"/></p> <p><input type="button" value="Advanced"/></p> <p>Index(1-15) in Schedule Setup:</p> <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>
--	---

If a **PPP-based** service is selected, you should further specify the remote peer IP Address, Username, Password, PPP Authentication and VJ Compression for this Dial-Out connection.

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 None		Link Type 64k bps Username draytek Password •••• PPP Authentication PAP/CHAP VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off
Dial Number for ISDN or Server IP/Host Name for VPN. (such as 5551234, draytek.com or 123.45.67.89) <input type="text" value="220.135.240.208"/>		IKE Authentication Method <input checked="" type="radio"/> Pre-Shared Key <input type="radio"/> Digital Signature(X.509) None
		IPsec Security Method <input checked="" type="radio"/> Medium(AH) <input type="radio"/> High(ESP) 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"/>

- Set **Dial-In settings** to as shown below to allow Router A dial-in to build VPN connection.

If an **IPsec-based** service is selected, you may further specify the remote peer IP Address, IKE Authentication Method and IPsec Security Method for this Dial-In connection. Otherwise, it will apply the settings defined in **IPsec General Setup** above.

3. Dial-In Settings

Allowed Dial-In Type <input type="checkbox"/> PPTP <input checked="" type="checkbox"/> IPsec Tunnel <input type="checkbox"/> L2TP with IPsec Policy None		Username ??? Password VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off
<input checked="" type="checkbox"/> Specify Remote VPN Gateway Peer VPN Server IP <input type="text" value="220.135.240.208"/> or Peer ID <input type="text"/>		IKE Authentication Method <input checked="" type="checkbox"/> Pre-Shared Key <input type="checkbox"/> Digital Signature(X.509) None
		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

If a **PPP-based** service is selected, you should further specify the remote peer IP Address, Username, Password, and VJ Compression for this Dial-In connection.

3. Dial-In Settings

Allowed Dial-In Type <input checked="" type="checkbox"/> PPTP <input type="checkbox"/> IPsec Tunnel <input type="checkbox"/> L2TP with IPsec Policy None		Username <input type="text" value="draytek"/> Password <input type="password" value="••••••"/> VJ Compression <input checked="" type="radio"/> On <input type="radio"/> Off
<input checked="" type="checkbox"/> Specify Remote VPN Gateway Peer VPN Server IP <input type="text" value="220.135.240.208"/> or Peer ID <input type="text"/>		IKE Authentication Method <input checked="" type="checkbox"/> Pre-Shared Key IKE Pre-Shared Key <input type="text"/> <input type="checkbox"/> Digital Signature(X.509) None
		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

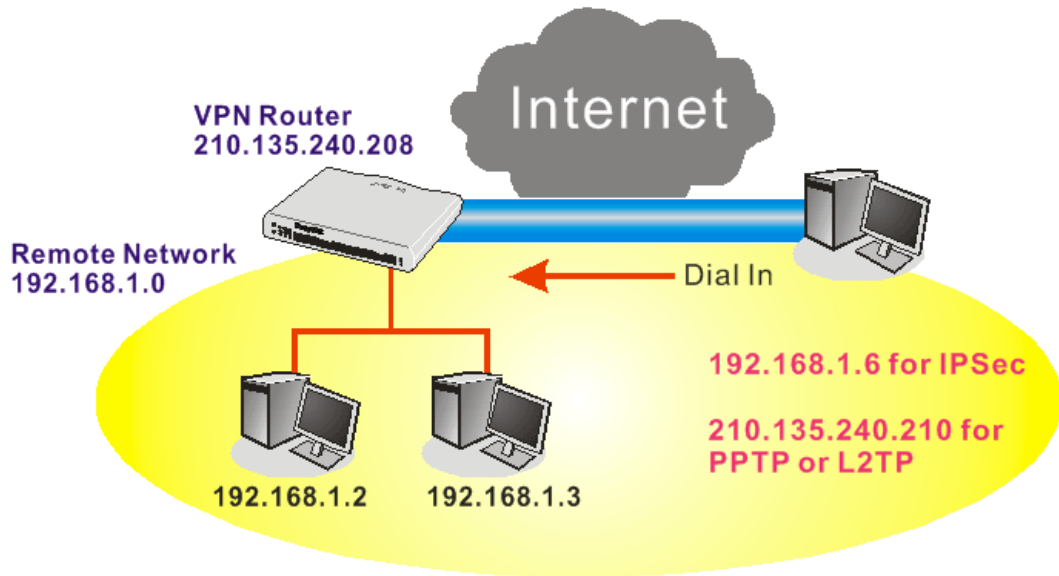
- At last, set the remote network IP/subnet in **TCP/IP Network Settings** so that Router B can direct the packets destined to the remote network to Router A via the VPN connection.

4. TCP/IP Network Settings

My WAN IP	<input type="text" value="0.0.0.0"/>	RIP Direction	Disable
Remote Gateway IP	<input type="text" value="0.0.0.0"/>	From first subnet to remote network, you have to do	
Remote Network IP	<input type="text" value="192.168.1.0"/>	Route	
Remote Network Mask	<input type="text" value="255.255.255.0"/>	<input type="checkbox"/> Change default route to this VPN tunnel (Only single WAN supports this)	
Local Network IP	<input type="text" value="192.168.1.1"/>		
Local Network Mask	<input type="text" value="255.255.255.0"/>		
	<input type="button" value="More"/>		

4.4 Create a Remote Dial-in User Connection Between the Teleworker and Headquarter

The other common case is that you, as a teleworker, may want to connect to the enterprise network securely. According to the network structure as shown in the below illustration, you may follow the steps to create a Remote User Profile and install Smart VPN Client on the remote host.



Settings in VPN Router in the enterprise office:

1. Go to **VPN and Remote Access** and select **Remote Access Control** to enable the necessary VPN service and click **OK**.
2. Then, for using PPP based services, such as PPTP, L2TP, you have to set general settings in **PPP General Setup**.

VPN and Remote Access >> PPP General Setup

PPP General Setup	
PPP/MP Protocol	
Dial-In PPP Authentication	<input type="text" value="PAP or CHAP"/>
Dial-In PPP Encryption (MPPE)	<input type="text" value="Optional MPPE"/>
Mutual Authentication (PAP)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Username	<input type="text"/>
Password	<input type="text"/>
IP Address Assignment for Dial-In Users (When DHCP Disable set)	
Assigned IP range	<input type="text" value="192.168.1.200"/>

OK

For using IPsec-based service, such as IPsec or L2TP with IPsec Policy, you have to set general settings in **IKE/IPsec General Setup**, such as the pre-shared key that both parties have known.

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	
<input checked="" type="checkbox"/> Medium (AH)	Data will be authentic, but will not be encrypted.
High (ESP) <input checked="" type="checkbox"/> DES <input checked="" type="checkbox"/> 3DES <input checked="" type="checkbox"/> AES	Data will be encrypted and authentic.

3. Go to **Remote Dial-In User**. Click on one index number to edit a profile.
4. Set **Dial-In** settings to as shown below to allow the remote user dial-in to build VPN connection.

If an *IPSec-based* service is selected, you may further specify the remote peer IP Address, IKE Authentication Method and IPSec Security Method for this Dial-In connection. Otherwise, it will apply the settings defined in **IPSec General Setup** above.

VPN and Remote Access >> Remote Dial-in User

Index No. 1

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 <input type="text"/>
Allowed Dial-In Type <input type="checkbox"/> PPTP <input checked="" type="checkbox"/> IPSec Tunnel <input type="checkbox"/> L2TP with IPSec Policy <input type="text" value="None"/> <input type="checkbox"/> Specify Remote Node Remote Client IP or Peer ISDN Number <input type="text"/> or Peer ID <input type="text"/> Netbios Naming Packet <input checked="" type="radio"/> Pass <input type="radio"/> Block	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"/> 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"/>

If a **PPP-based** service is selected, you should further specify the remote peer IP Address, Username, Password, and VJ Compression for this Dial-In connection.

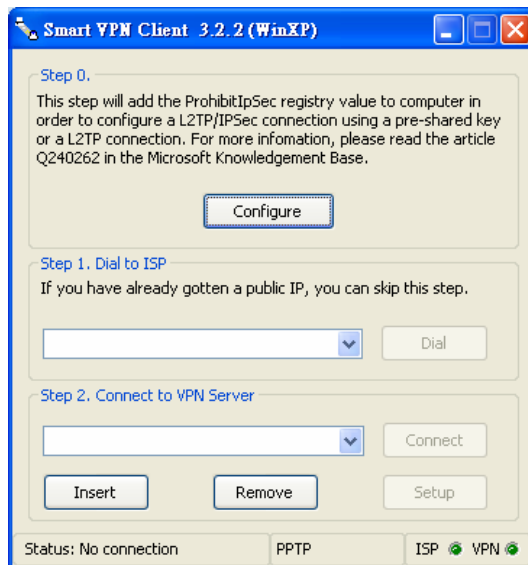
VPN and Remote Access >> Remote Dial-in User

Index No. 1

<p>User account and Authentication</p> <input type="checkbox"/> Enable this account Idle Timeout: <input type="text" value="300"/> second(s)		Username: <input type="text" value="???"/> Password: <input type="password"/>
<p>Allowed Dial-In Type</p> <input checked="" type="checkbox"/> PPTP <input type="checkbox"/> IPSec Tunnel <input type="checkbox"/> L2TP with IPSec Policy: <input type="text" value="None"/>		<p>IKE Authentication Method</p> <input checked="" type="checkbox"/> Pre-Shared Key IKE Pre-Shared Key: <input type="password"/> <input type="checkbox"/> Digital Signature(X.509) <input type="text" value="None"/>
<input type="checkbox"/> Specify Remote Node Remote Client IP or Peer ISDN Number: <input type="text"/> or Peer ID: <input type="text"/> Netbios Naming Packet: <input checked="" type="radio"/> Pass <input type="radio"/> Block		<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 Local ID (optional): <input type="text"/>

Settings in the remote host:

- For Win98/ME, you may use "Dial-up Networking" to create the PPTP tunnel to Vigor router. For Win2000/XP, please use "Network and Dial-up connections" or "Smart VPN Client", complimentary software to help you create PPTP, L2TP, and L2TP over IPSec tunnel. You can find it in CD-ROM in the package or go to www.DrayTek.com download center. Install as instructed.
- After successful installation, for the first time user, you should click on the **Step 0. Configure** button. Reboot the host.

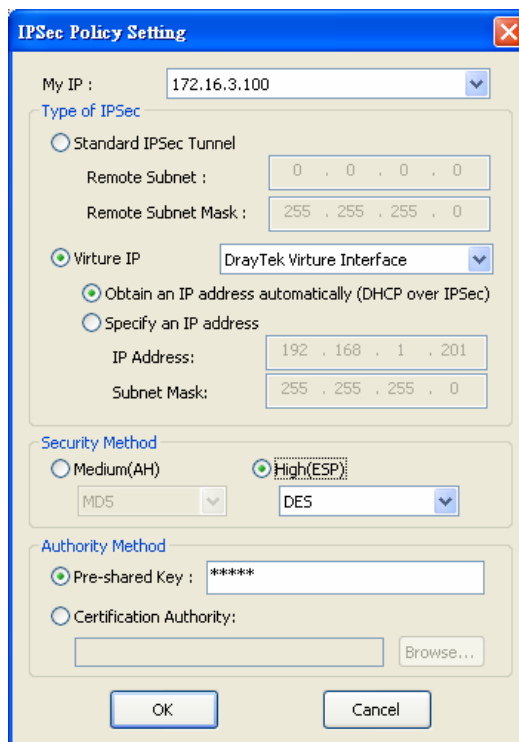


- In **Step 2. Connect to VPN Server**, click **Insert** button to add a new entry.

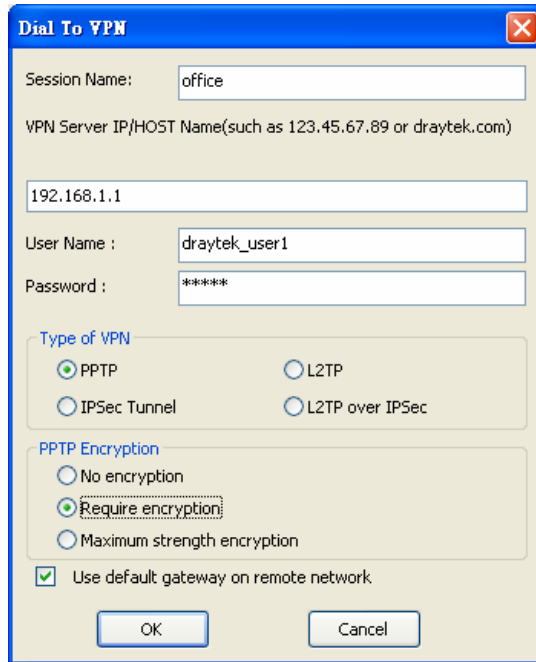
If an IPSec-based service is selected as shown below,



You may further specify the method you use to get IP, the security method, and authentication method. If the Pre-Shared Key is selected, it should be consistent with the one set in VPN router.



If a PPP-based service is selected, you should further specify the remote VPN server IP address, Username, Password, and encryption method. The User Name and Password should be consistent with the one set up in the VPN router. To use default gateway on remote network means that all the packets of remote host will be directed to VPN server then forwarded to Internet. This will make the remote host seem to be working in the enterprise network.



4. Click **Connect** button to build connection. When the connection is successful, you will find a green light on the right down corner.

4.5 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 VPN 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	Enable	--Kbps/--Kbps	Outbound	25%	25%	25%	25%	Inactive	Status	Setup
WAN2	Enable	10000Kbps/10000Kbps	Outbound	25%	25%	25%	25%	Inactive	Status	Setup
WAN3	Disable	10000Kbps/10000Kbps		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 OUT ▾

WAN Inbound Bandwidth	▾
WAN Outbound Bandwidth	▾
Index	Class Name

- Set Inbound/Outbound bandwidth.

Bandwidth Management >> Quality of Service

WAN2 General Setup

Enable the QoS Control BOTH ▾

WAN Inbound Bandwidth	<input type="text" value="10000"/> Kbps
WAN Outbound Bandwidth	<input type="text" value="10000"/> Kbps

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.

Bandwidth Management >> Quality of Service

Class Index #1

Name

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	<input type="radio"/> Inactive	Any	Any	ANY	undefined

- For this index, the user will set reserved bandwidth (e.g., 25%) for **E-mail** using protocol POP3 and SMTP.

[Bandwidth Management >> Quality of Service](#)

WAN2 General Setup

Enable the QoS Control BOTH

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

NO	Status	Local Address	Remote Address	DiffServ CodePoint	Service Type
1	Active	Any	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	--Kbps/--Kbps	Outbound	25%	25%	25%	25%	Inactive	Status Setup
WAN2	Enable	10000Kbps/10000Kbps	Both	25%	25%	25%	25%	Active	Status Setup
WAN3	Disable	10000Kbps/10000Kbps		25%	25%	25%	25%	Inactive	Status Setup

Class Rule

Index	Name	Rule	Service Type
Class 1	E-mail	Edit	
Class 2	HTTPS	Edit	Edit
Class 3		Edit	

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

Bandwidth Management >> Quality of Service

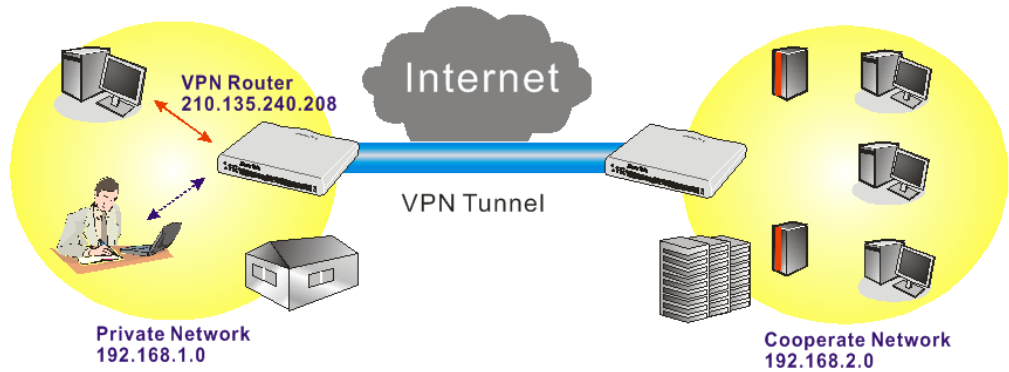
WAN2 General Setup

Enable the QoS Control BOTH

WAN Inbound Bandwidth	<input type="text" value="10000"/>	Kbps
WAN Outbound Bandwidth	<input type="text" value="10000"/>	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"/> %
<input checked="" type="checkbox"/> Enable UDP Bandwidth Control		Limited_bandwidth Ratio <input type="text" value="25"/> %
<input type="checkbox"/> Outbound TCP ACK Prioritize		

OK Clear Cancel

- 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** to open a new window.

Bandwidth Management >> Quality of Service

Class Index #3

Name

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

Add Edit Delete

OK Cancel

11. Click **Add** to open the following window. Check the **ACT** box, first.

Bandwidth Management >> Quality of Service

Rule Edit

<input checked="" type="checkbox"/> ACT		
Local Address	<input type="text" value="Any"/>	<input type="button" value="Edit"/>
Remote Address	<input type="text" value="Any"/>	<input type="button" value="Edit"/>
DiffServ CodePoint	<input type="text" value="IP precedence 4"/>	<input type="button" value="v"/>
Service Type	<input type="text" value="SYSLOG(UDP:514)"/>	<input type="button" value="v"/>

Note: Please choose/setup the Service Type first.

12. Then click **Edit** of **Local Address** to set a worker's subnet address. Click **Edit** of **Remote Address** to set headquarter's IP address. Leave other fields and click **OK**.

4.6 Upgrade Firmware for Your Router

Using Firmware Upgrade Utility

Before upgrading your router firmware, you need to install the Router Tools. The **Firmware Upgrade Utility** is included in the tools.

1. Go to www.DrayTek.com.
2. Access into **Support >> Downloads**. Please find out **Firmware** menu and click it. Search the model you have and click on it to download the newly update firmware for your router.

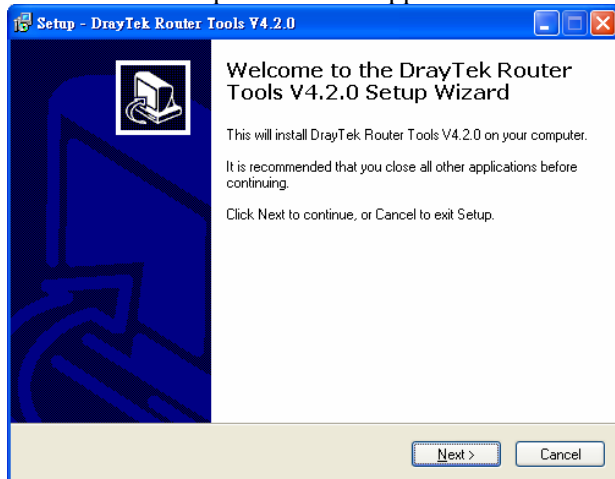
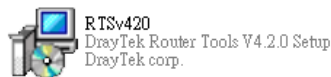
Model Name	Firmware Version	Release Date
Vigor120 series	3.2.2.1	26/06/2009
Vigor2100 series	2.6.2	26/02/2008
Vigor2104 series	2.5.7.3	13/02/2008
Vigor2110 series	3.3.0	25/06/2009
Vigor2200/X/W/E	2.3.11	22/09/2004
Vigor2200Eplus	2.5.7	18/02/2009
Vigor2200USB	2.3.10	16/03/2005

3. Access into **Support >> Downloads**. Please find out **Utility** menu and click it.

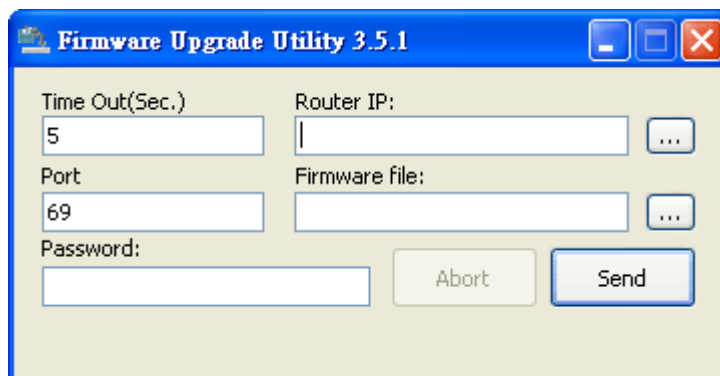
Tools Name	Release Date	Version	OS	Support Model
Router Tools	2009/06/18	4.2.0	MS-Windows	All Modules
Syslog Tools	2009/06/18	4.2.0	MS-Windows XP MS-Vista	All Modules
VigorPro Alert Notice Tools	2009/06/03	1.1.0 (Multi-language)	MS-Windows XP MS-Vista	VigorPro 100 series VigorPro 5500 series VigorPro 5510 series VigorPro 5300 series
Smart VPN Client	2009/05/25	3.6.3 (Multi-language)	MS-Windows XP MS-Vista	All Modules
Smart Monitor	2009/03/25	2.0	MS-Windows XP	Vigor2950 series VigorPro 5510 series

4. Click on the link of **Router Tools** to download the file. After downloading the files, please decompressed the file onto your host.

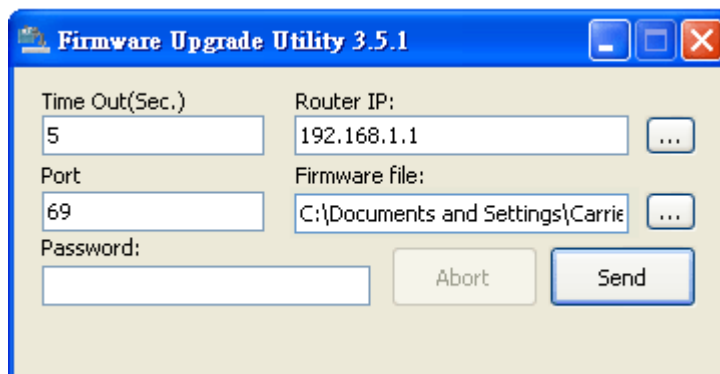
5. Double click on the icon of router tool. The setup wizard will appear.



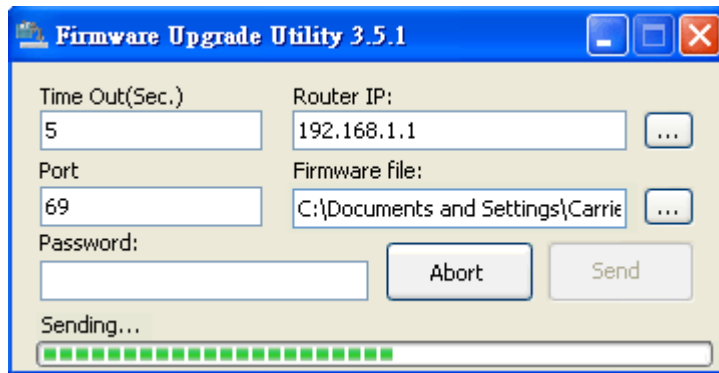
6. Follow the onscreen instructions to install the tool. Finally, click **Finish** to end the installation.
7. From the **Start** menu, open **Programs** and choose **Router Tools XXX >> Firmware Upgrade Utility**.



8. Type in your router IP, usually **192.168.1.1**.
9. Click the button to the right side of Firmware file typing box. Locate the files that you download from the company web sites. You will find out two files with different extension names, **xxxx.all** (keep the old custom settings) and **xxxx.rst** (reset all the custom settings to default settings). Choose any one of them that you need.



10. Click **Send**.



11. Now the firmware update is finished.

Using Web Page

The web page also can guide you to upgrade firmware. Note that this example is running over Windows OS (Operating System).

1. 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.
2. Click **System Maintenance>> Firmware Upgrade**.

System Maintenance >> Firmware Upgrade

Web Firmware Upgrade

Select a firmware file.

Click Upgrade to upload the file.

TFTP Firmware Upgrade from LAN

Current Firmware Version: 3.3.6_RC4

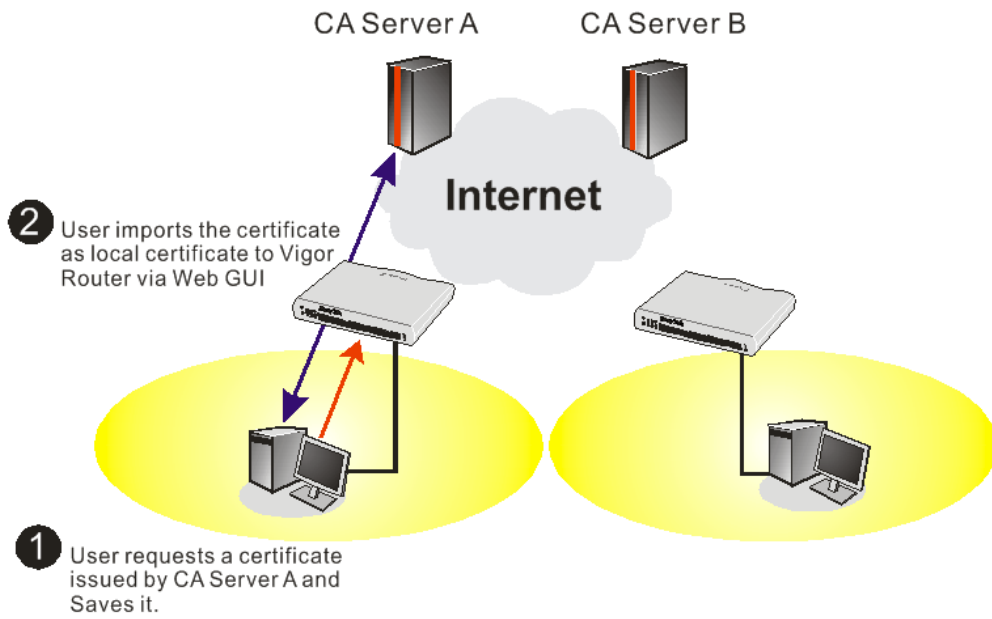
Firmware Upgrade Procedures:

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 ?

3. Select a firmware file by clicking **Browse**.
4. Click **Upgrade** to perform the firmware upgrade.

4.7 Request a certificate from a CA server on Windows CA Server



1. Go to **Certificate Management** and choose **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

- You can click **GENERATE** button to start to edit a certificate request. Enter the information in the certificate request.

Certificate Management >> Local Certificate

Generate Certificate Request

Subject Alternative Name

Type: Domain Name

Domain Name: draytek.com

Subject Name

Country (C): TW

State (ST):

Location (L):

Organization (O): Draytek

Organization Unit (OU):

Common Name (CN):

Email (E): press@draytek.com

Key Type: RSA

Key Size: 1024 Bit

- Copy and save the X509 Local Certificate Request as a text file and save it for later use.

Certificate Management >> Local Certificate

X509 Local Certificate Configuration

Name	Subject	Status	Modify
Local	/C=TW/O=Draytek/emailAddress...	Requesting	<input type="button" value="View"/> <input type="button" value="Delete"/>

X509 Local Certificate Request

```

-----BEGIN CERTIFICATE REQUEST-----
MIIBqjCCARMAQAwQTElMAkGA1UEBhMCVFcxEDAOBgNVBaoTB0RyYX10ZWxIDAE
BgkqhkiG9w0BCQEWEXByZXRyYX10ZWx1Y29tMIGfMA0GCSqGSIb3DQEBBQUA
A4GNADCBiQKBgQDPioahu/gfQaYB1ce5OERSDFWknIdHb1o1kt9cTdlUDaFk6e8d
3wDeQytoV1LBJz2IDF0xjX6ip7ev187twwTsg4lg26Qk/rGhuVTKd9j6P1crnkP7
du84t23tWBdMD4W5c8VmsyDjShLhjdXVYPWpNKVlrOT2RZjkRMAHEWpVpwIDAQA
oCkwJwYJKoZIhvcNAQkOMRowGDAWBgNVHREEDzANggtkcmF5dGVrLmNvbi5ANBgkq
hkiG9w0BAQUFAAOBgQAsBRUGt4W1hH9N6/HwToem1tHQbcwjXvg/t7kF1zTJiHh
uRLq4CiE16nV4hHRytcx2pE26sMar3gRREr86Ro08JxOI45560xCZ/N1Gh9VQ9I1
I9FqkjJNihp4TCjecSNNZjmQo5WU+Bce8TG+SCBCyejqu/fo/BJQFajB7Gv1w==
-----END CERTIFICATE REQUEST-----

```

- Connect to CA server via web browser. Follow the instruction to submit the request. Below we take a Windows 2000 CA server for example. Select **Request a Certificate**.

Microsoft Certificate Services -- vigor Home

Welcome

You use this web site to request a certificate for your web browser, e-mail client, or other secure program. Once you acquire a certificate, you will be able to securely identify yourself to other people over the web, sign your e-mail messages, encrypt your e-mail messages, and more depending upon the type of certificate you request.

Select a task:

- Retrieve the CA certificate or certificate revocation list
- Request a certificate
- Check on a pending certificate

Select **Advanced request**.

Microsoft Certificate Services -- vigor Home

Choose Request Type

Please select the type of request you would like to make:

User certificate request

Advanced request

[Next >](#)

Select **Submit a certificate request a base64 encoded PKCS #10 file or a renewal request using a base64 encoded PKCS #7 file**

Microsoft Certificate Services -- vigor Home

Advanced Certificate Requests

You can request a certificate for yourself, another user, or a computer using one of the following methods. Note that the policy of the certification authority (CA) will determine the certificates that you can obtain.

Submit a certificate request to this CA using a form.

Submit a certificate request using a base64 encoded PKCS #10 file or a renewal request using a base64 encoded PKCS #7 file.

Request a certificate for a smart card on behalf of another user using the Smart Card Enrollment Station.
You must have an enrollment agent certificate to submit a request for another user.

[Next >](#)

Import the X509 Local Certificate Request text file. Select **Router (Offline request)** or **IPSec (Offline request)** below.

Microsoft Certificate Services -- vigor Home

Submit A Saved Request

Paste a base64 encoded PKCS #10 certificate request or PKCS #7 renewal request generated by an external application (such as a web server) into the request field to submit the request to the certification authority (CA).

Saved Request:

```
-----BEGIN CERTIFICATE REQUEST-----
MIIBqjCCARCAQAwQTELHAKGA1UEBhMCVFcxEEDAQ
BgkqhkiG9w0BCQEWEYBzZXNzQGRyYX10ZU9uY29t
A4GNADCB1QKBgQDQYB7mmZFfFhN9/ IeQnG03Xk++
hX4b89cUF9d1oACGG1M/tcBoekdcZdPFFvIXcP3
x/G0A7CTv0/fQzpxroCw1JTjLSjS0/Bn9v50951G
-----END CERTIFICATE REQUEST-----
```

[Browse for a file to insert.](#)

Certificate Template: Administrator

Additional Attributes: Authenticated Session, Basic EFS, EFS Recovery Agent, User, **IPSEC (Offline request)**, **Router (Offline request)**, Subordinate Certification Authority, Web Server

[Submit >](#)

Then you have done the request and the server now issues you a certificate. Select **Base 64 encoded certificate** and **Download CA certificate**. Now you should get a certificate (.cer file) and save it.

- Back to Vigor router, go to **Local Certificate**. Click **IMPORT** button and browse the file to import the certificate (.cer file) into Vigor router. When finished, click refresh and you will find the below window showing “-----BEGIN CERTIFICATE-----.....”

Certificate Management >> Local Certificate

X509 Local Certificate Configuration

Name	Subject	Status	Modify
Local	/C=TW/O=Draytek/emailAddress...	Not Valid Yet	<input type="button" value="View"/> <input type="button" value="Delete"/>

X509 Local Certificate Request

```

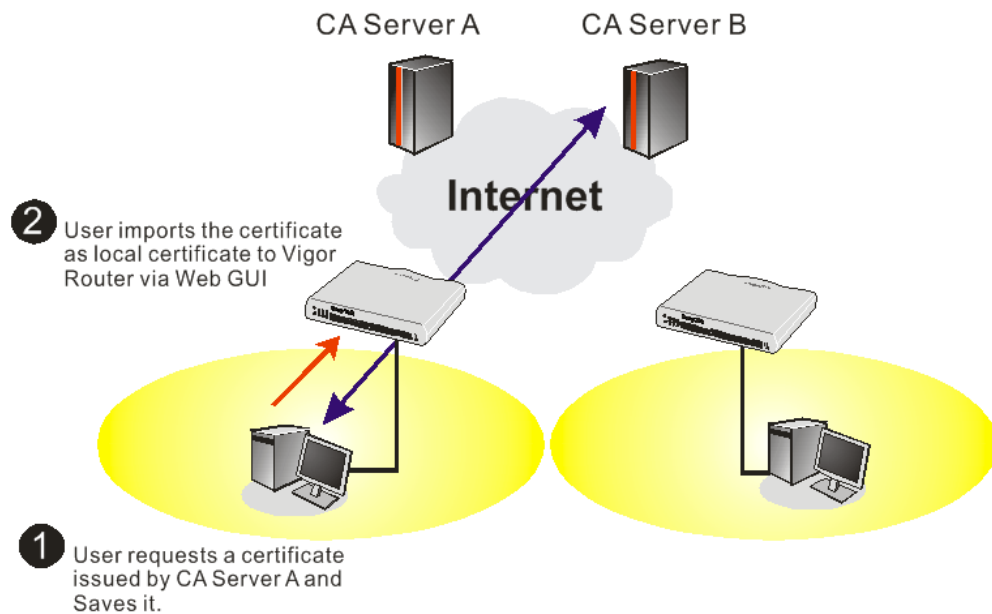
-----BEGIN CERTIFICATE REQUEST-----
MIIBqjCCARMC&QAwQTElMAkGA1UEBhMCVFcxEDAoBgNVBAoTBORyYX10ZWsxIDAe
BgkqhkiG9wOBCQEWEYXByZXNzQGRyYX10ZWsuY29tMIGfMAOGCSqGSIb3DQEBAQUA
A4GNADCBiQKBgQDPioahu/gfQaYB1ce5OERSDfWknIdHb1o1kt9cTdlUDaFk6s8d
3wDeQytoV1LBjz2IDF0xjX6ip7ev187twwTsg4lgZ6Qk/rGhuVTKd9j6P1crnkP7
du84t23tWBdMD4W5c8VmSyDjShLhjdXVYPWpNKVlrOT2RZjkrMaHEWpVpwIDAQAB
oCkwJwYJKoZIhvcNAQkOMRowGD&AWBgNVHREEdzANGgtkcmF5dGVrLmNvbTANBgkq
hk1G9wOBAQUFAA0BgQAuSBRUGt4W1hH9N6/HwToem1tHQbcwjXvg/t7Kf1zTJiHh
uRLq4CiEi6nV4hMRytcxZpEZ6sMarSgRREr86Ro08JxOI45560xCZ/N1Gh9VQ9I1
I9FqkjJNihp4TCjecSNNZjmQo5WU+Bce8TG+SCBCyejqu/fo/AJQFajB7Gviw==
-----END CERTIFICATE REQUEST-----

```

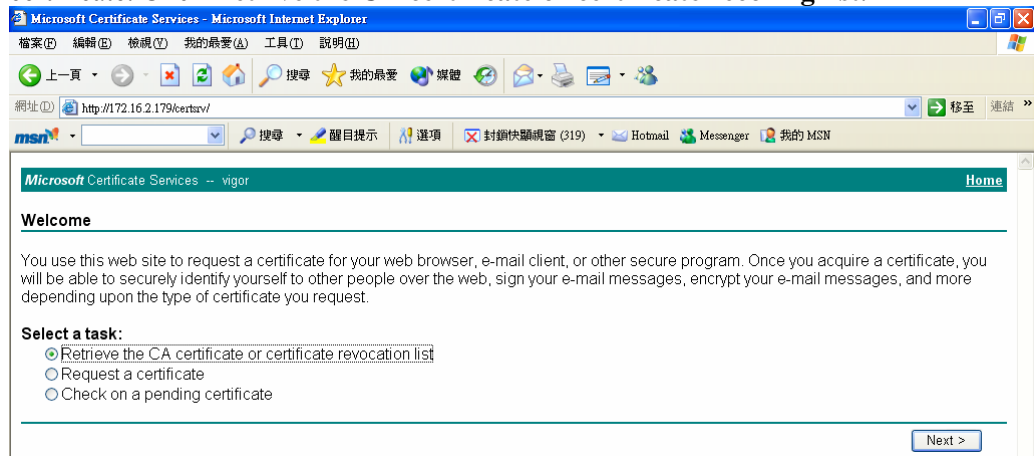
- You may review the detail information of the certificate by clicking **View** button.

Name :	Local
Issuer :	/C=US/CN=vigor
Subject :	/emailAddress=press@draytek.com/C=TW/O=Draytek
Subject Alternative Name :	DNS: draytek.com
Valid From :	Aug 30 23:08:43 2005 GMT
Valid To :	Aug 30 23:17:47 2007 GMT

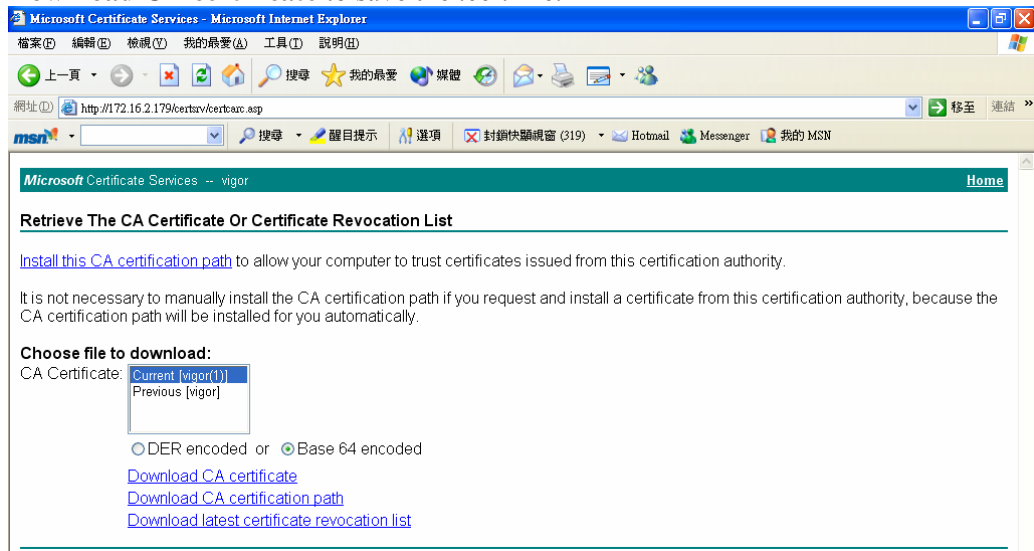
4.8 Request a CA Certificate and Set as Trusted on Windows CA Server



1. Use web browser connecting to the CA server that you would like to retrieve its CA certificate. Click **Retrieve the CA certificate or certificate recoring list.**



2. In **Choose file to download**, click CA Certificate **Current** and **Base 64 encoded**, and **Download CA certificate** to save the .cer. file.



3. Back to Vigor router, go to **Trusted CA Certificate**. Click **IMPORT** button and browse the file to import the certificate (.cer file) into Vigor router. When finished, click refresh and you will find the below illustration.

Certificate Management >> Trusted CA Certificate

X509 Trusted CA Certificate Configuration

Name	Subject	Status	Modify	
Trusted CA-1	/C=US/CN=vigor	Not Yet Valid	<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"/>

4. You may review the detail information of the certificate by clicking **View** button.

Name :	Trusted CA-1
Issuer :	/C=US/CN=vigor
Subject :	/C=US/CN=vigor
Subject Alternative Name :	DNS:draytek.com
Valid From :	Aug 30 23:08:43 2005 GMT
Valid To :	Aug 30 23:17:47 2007 GMT

Note: Before setting certificate configuration, please go to **System Maintenance >> Time and Date** to reset current time of the router first.

4.9 Creating 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.

4.9.1 Creating 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 **Activate**
[Status:Not Activated]

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.	

Or

Click **System Maintenance>>Activation** to open the following page.

System Maintenance >> Activation Activate via interface : auto-selected

Web-Filter License **Activate**
[Status:Not Activated]

Authentication Message

```
Activated Wiz, Authenticate is continuously, connect to the server, 2000-01-01
00:04:55
```

2. Click the **Activate** link. A login page for MyVigor web site will pop up automatically.



Please take a moment to register.
Membership Registration entitles you to upgrade firmware for your purchased product and receive news about upcoming products and services!

LOGIN

UserName :

Password :

Auth Code : 

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

[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 your account.

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?

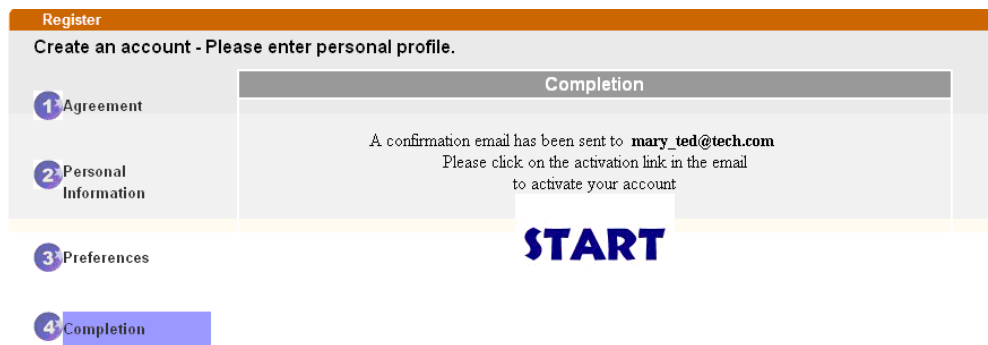
What kind of anti-virus do you use?

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.



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

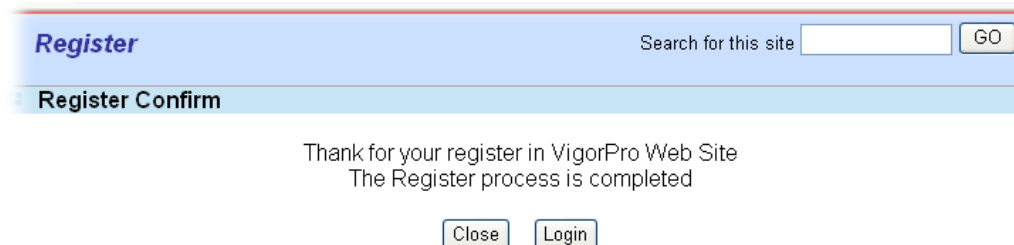
***** This is an automated message from myvigor.draytek.com. *****

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**.



- When you see the following page, please type in the account and password (that you just created) in the fields of **UserName** and **Password**.

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.

4.9.2 Creating an Account via MyVigor Web Site

- Access into <http://myvigor.draytek.com>. Find the line of **Not registered yet?**. Then, click the link **Click here!** to access into next page.

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 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 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:* Password

(4 ~ 20 characters : Do not set the same as the username.)

Confirm Password:* Password

Personal Information

First Name:* Mary

Last Name:* Ted

Company Name: Tech Ltd.

Email Address:* mary_ted@tech.com

Please note that a valid E-mail address is required to receive the Subscription Code. You will need this code to activate your account.

Tel: 0 -

Country:* SWITZERLAND

Career:* Supervisor

<< Back Continue >>

4. Choose proper selection for your computer and click **Continue**.

Register

Create an account - Please enter personal profile.

1 Agreement

2 Personal Information

3 Preferences

4 Completion

How did you find out about this website? Internet

What kind of anti-virus do you use? AntiVir

I would like to subscribe to the MyVigor e-letter.

I would like to receive DrayTek product news.

Please select the mail server for receiving the verification mail. Global Server

<< Back Continue >>

5. Now you have created an account successfully. Click START.

Register
Create an account - Please enter personal profile.

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

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

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

Thank you (**Mary**) for creating an account.

Please click on the activation link below to activate your account

Link : [Activate my Account](#)

7. Click the **Activate my Account** link to enable the account that you created. The following screen will be shown to verify the register process is finished. Please click **Login**.

Register Search for this site

Register Confirm

The Confirm message of New Owner(Mary) maybe timeout
Please try again or contact to draytek.com

Close 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.

This page is left blank.

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

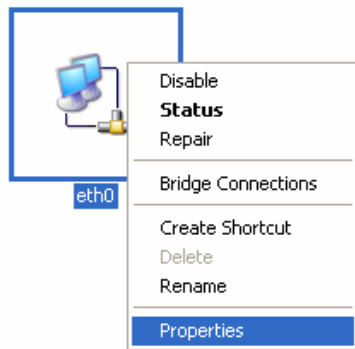


The example is based on Windows XP. As to the examples for other operation systems, please refer to the similar steps or find support notes in www.DrayTek.com.

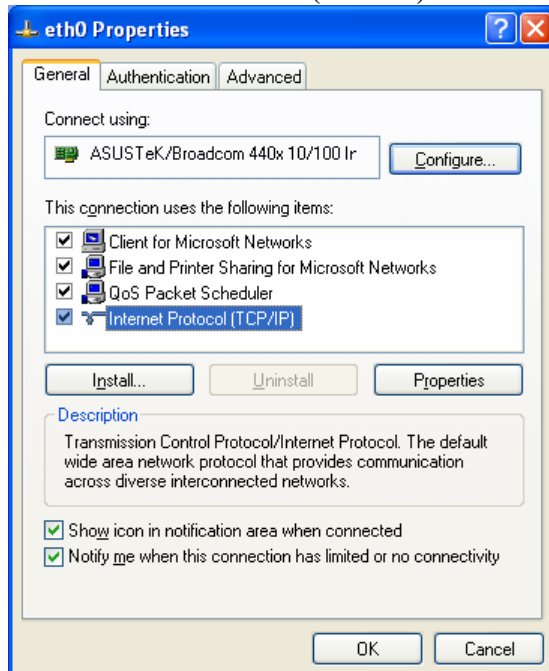
1. Go to **Control Panel** and then double-click on **Network Connections**.



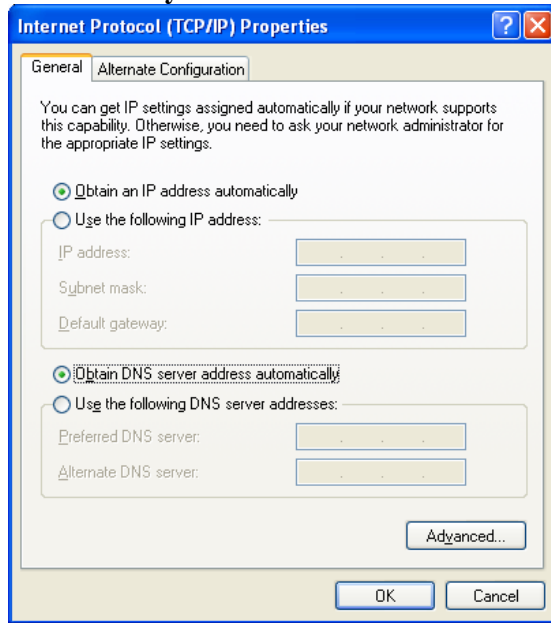
2. Right-click on **Local Area Connection** and click on **Properties**.



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

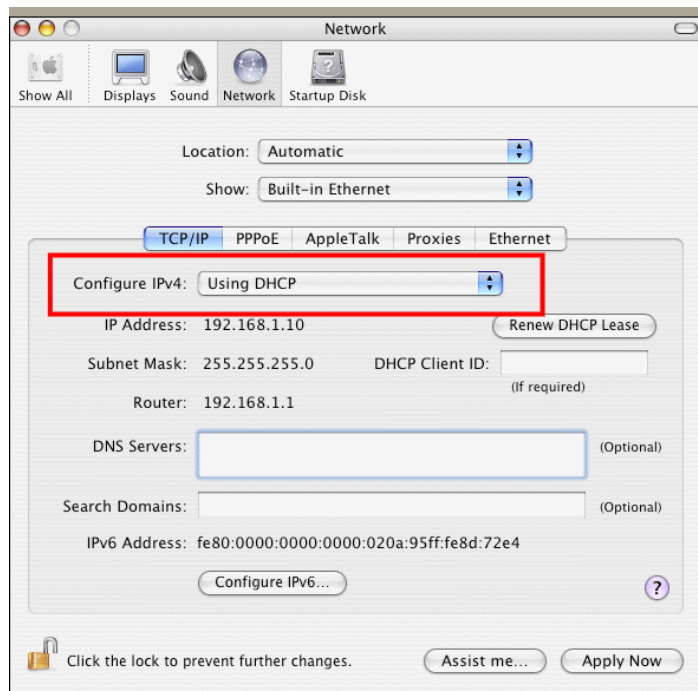


4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.



For Mac OS

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



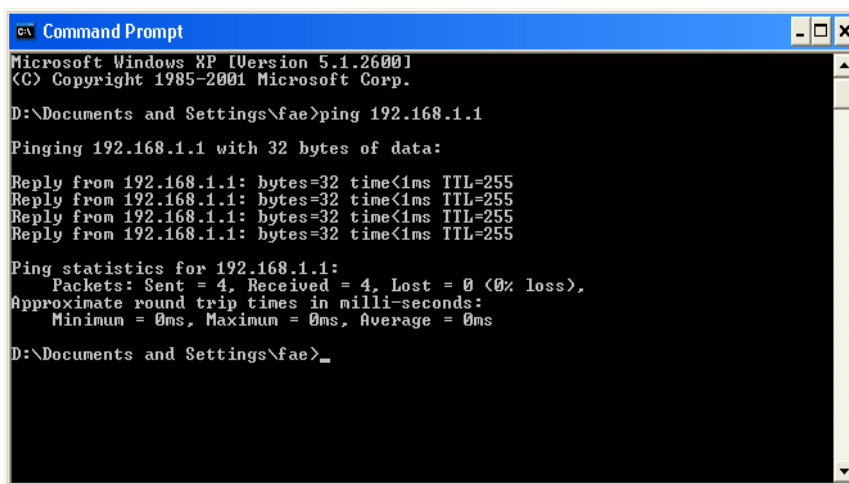
5.3 Pinging the Router from Your Computer

The default gateway IP address of the router is 192.168.1.1. For some reason, you might need to use “ping” command to check the link status of the router. **The most important thing is that the computer will receive a reply from 192.168.1.1.** If not, please check the IP address of your computer. We suggest you setting the network connection as **get IP automatically**. (Please refer to the section 6.2)

Please follow the steps below to ping the router correctly.

For Windows

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



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

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

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

D:\Documents and Settings\fae>_
```

3. Type ping 192.168.1.1 and press [Enter]. If the link is OK, the line of “**Reply from 192.168.1.1:bytes=32 time<1ms TTL=255**” will appear.
4. If the line does not appear, please check the IP address setting of your computer.

For MacOs (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/WAN2 to review the settings that you configured previously.

WAN >> Internet Access

Internet Access			
Index	Display Name	Physical Mode	Access Mode
WAN1		ADSL	PPPoE / PPPoA <input type="button" value="Details Page"/>
WAN2		Ethernet	Static or Dynamic IP <input type="button" value="Details Page"/>
WAN3		USB	None <input type="button" value="Details Page"/>

5.5 Problems for 3G Network Connection

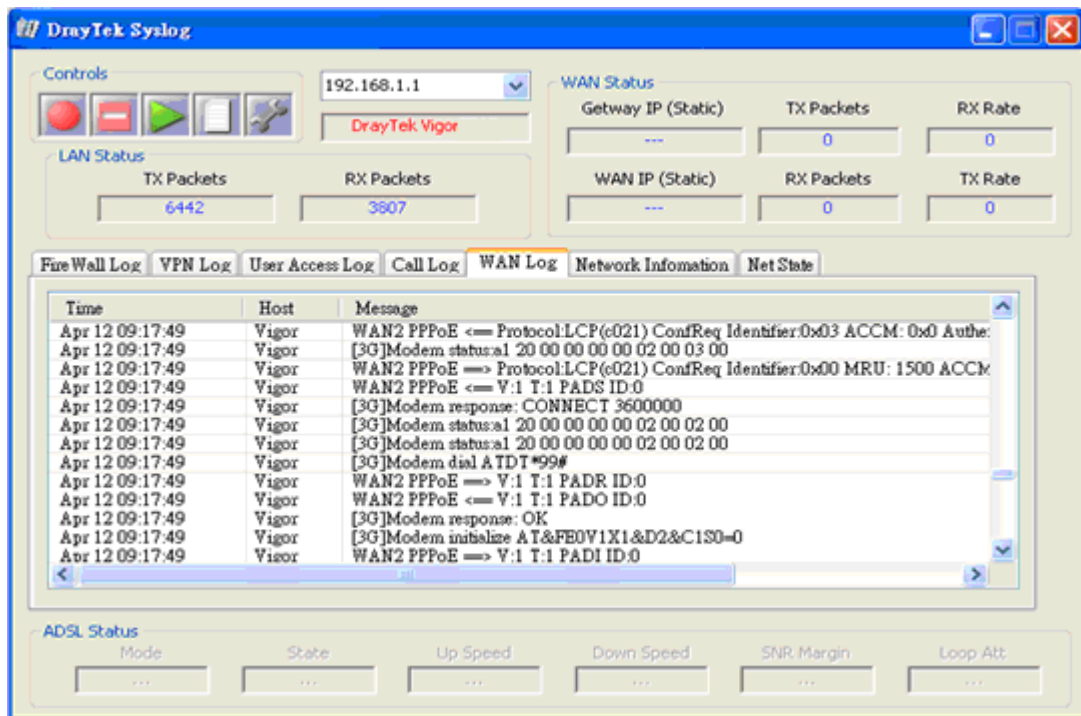
When you have trouble in using 3G network transmission, please check the following:

Check if USB LED lights on or off

You have to wait about 15 seconds after inserting 3G USB Modem into your Vigor2850. 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 Vigor2850.

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 Vigor2850. 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. The password of factory default is null.

Software Reset

You can reset the router to factory default via Web page. Such function is available in **Admin Mode** only.

Go to **System Maintenance** and choose **Reboot System** on the web page. The following screen will appear. Choose **Using factory default configuration** and click **Reboot Now**. After few seconds, the router will return all the settings to the factory settings.

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: , , ,

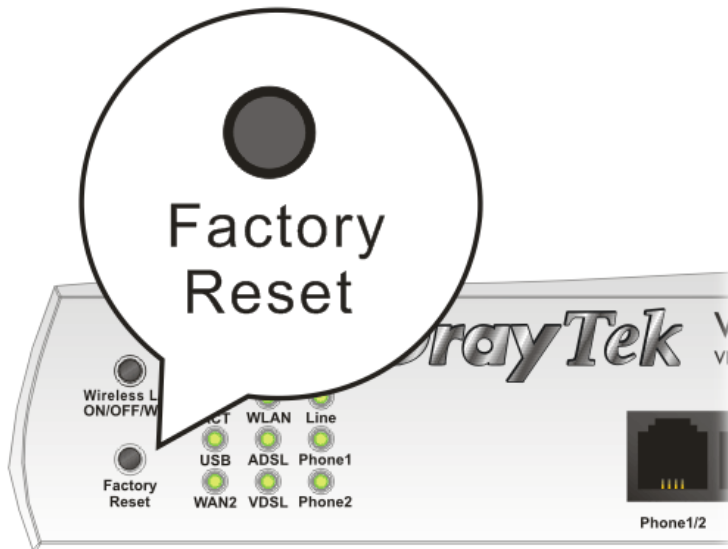
Note: Action and Idle Timeout settings will be ignored.

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 Your Dealer

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.