

DrayTek

Vigor2920/2920n

Dual-WAN Security Router



Quick Start Guide

V1.0

Vigor2920 Series Dual-WAN Security Router Quick Start Guide

Version: 1.0

Date: 06/10/2009

Copyright Information

Copyright Declarations

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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.
- Do not stack the routers.
- The router should be used in a sheltered area, within a temperature range of +5 to +40 Celsius.
- Do not expose the router to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.
- Do not deploy the cable for LAN connection outdoor to prevent electronic shock hazards.
- Keep the package out of reach of children.
- When you want to dispose of the router, please follow local regulations on conservation of the environment.

Warranty

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

Be a Registered Owner

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

Firmware & Tools Updates

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

<http://www.draytek.com>

European Community Declarations

Manufacturer: DrayTek Corp.

Address: No. 26, Fu Shing Road, HuKou County, HsinChu Industrial Park, Hsin-Chu, Taiwan 303

Product: Vigor2920 Series Router

DrayTek Corp. declares that Vigor2920 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/EEC 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/EEC by complying with the requirements set forth in EN60950-1.

Regulatory Information

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class 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.

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



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

Table of Contents

1. Introduction.....	1
1.1 Panel Explanation	2
1.1.1 For Vigor2920	2
1.1.2 For Vigor2920n	4
1.2 Package Content.....	6
2. Installing Your Router.....	7
2.1 Hardware Installation.....	7
2.2 Printer Installation.....	8
3. Configuring Web Pages	13
3.1 Accessing Web Page	13
3.2 Basic Configuration	14
3.3 Wireless Configuration	19
3.3.1 Basic Wireless LAN Concept	19
3.3.2 General Setup	19
3.3.3 Security Settings	20
4. Trouble Shooting	23
4.1 Checking If the Hardware Status Is OK or Not.....	23
4.2 Checking If the Network Connection Settings on Your Computer Is OK or Not	24
4.3 Pinging the Router from Your Computer	26
4.4 Checking If the ISP Settings are OK or Not.....	27
4.5 Backing to Factory Default Setting If Necessary.....	29
4.6 Contacting Your Dealer	30

1. Introduction

Vigor2920 series, a firewall broadband router with dual-WAN interface, can connect to xDSL/cable/VDSL2/Ethernet FTTx. The gigabit 2nd WAN and 4-port gigabit LAN switch facilitates unified communication applications in business CO/remote site to handle large data from subscribed fatter pipe. The state-of-art routing feature, VPN security, and Dual-WAN provide integrated benefits for professional users and small offices.

Vigor2920 series provides policy-based load-balance, fail-over and BOD (Bandwidth on Demand), also it integrates IP layer QoS, NAT session/bandwidth management to help users control works well with large bandwidth.

By adopting hardware-based VPN platform, hardware encryption of AES/DES/3DS and hardware key hash of SHA-1/MD5, the router increases the performance of VPN greatly, and offers several protocols (such as IPSec/PPTP/L2TP) with up to 100 VPN tunnels.

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

1.1 Panel Explanation

1.1.1 For Vigor2920

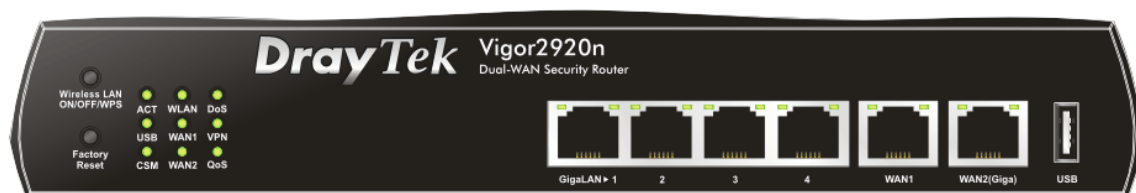


LED	Status	Explanation	
ACT (Activity)	Blinking	The router is powered on and running normally.	
	Off	The router is powered off.	
USB	On	USB device is connected and ready for use.	
	Blinking	The data is transmitting.	
CSM	On	The profile(s) of CSM (Content Security Management) for IM/P2P, URL/Web Content Filter application can be enabled from Firewall >>General Setup . (Such profile must be established under CSM menu).	
WCF	On	The Web Content Filter is active. (It is enabled from Firewall >> General Setup).	
WAN1/2	On	The WAN1 or WAN2 connection is ready.	
	Blinking	It will blink while transmitting data.	
DoS	On	The DoS/DDoS function is active.	
	Blinking	It will blink while deleting an attack.	
VPN	On	The VPN tunnel is active.	
QoS	On	The QoS function is active.	
<i>LED on Connector</i>			
WAN 1/2 (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 disconnected with 100Mbps.
		Blinking	The data is transmitting.
GigaLAN 1/2/3/4	Left LED (Green)	On	The port is connected.
		Off	The port is disconnected.
		Blinking	The data is transmitting.
	Right LED (Green)	On	The port is connected with 1000Mbps.
		Off	The port is disconnected with 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 (1-4)	Connecters for local networked devices.
WAN1/WAN2(Giga)	Connecters for remote networked devices.
USB	Connector for Mobile HDD, 3G Modem or printer.
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.1.2 For Vigor2920n



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.
CSM	On	The profile(s) of CSM (Content Security Management) for IM/P2P, URL/Web Content Filter application can be enabled from Firewall >>General Setup . (Such profile must be established under CSM menu).
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.)
WAN1/2	On	The WAN1 or WAN2 connection is ready.
	Blinking	It will blink while transmitting data.
DoS	On	The DoS/DDoS function is active.
	Blinking	It will blink while deleting an attack.
VPN	On	The VPN tunnel is active.
QoS	On	The QoS function is active.

LED on Connector

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

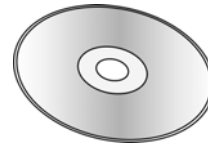


Interface	Description
Wireless LAN ON/OFF/WPS	Press "Wireless LAN ON/OFF/WPS" button once to wait for client device making network connection through WPS. Press "Wireless LAN ON/OFF/WPS" button twice to enable (WLAN LED on) or disable (WLAN LED off) wireless connection.
Factory Reset	Restore the default 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 (1-4)	Connecters for local networked devices.
WAN1/WAN2(Giga)	Connecters for remote networked devices.
USB	Connector for Mobile HDD, 3G Modem or printer.
PWR	Connector for a power adapter.
ON/OFF	Power Switch.

1.2 Package Content



1 Quick Start Guide



2 CD

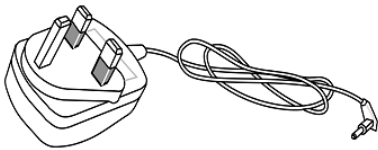


3 RJ-45 Cable (Ethernet)

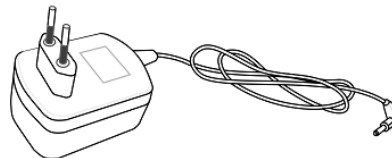


4 RJ-45 to RJ-45 Cable for S models

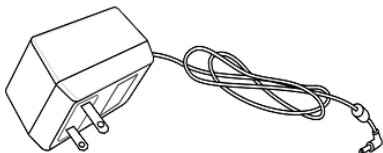
5 The type of the power adapter depends on the country that the router will be installed:



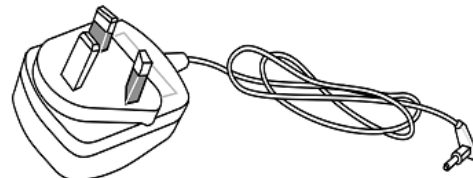
UK-type Power Adapter



EU-type Power Adapter



USA/Taiwan-type Power Adapter



AU/NZ-type Power Adapter

* The maximum power consumption is *20 Watt*.

2. Installing Your Router

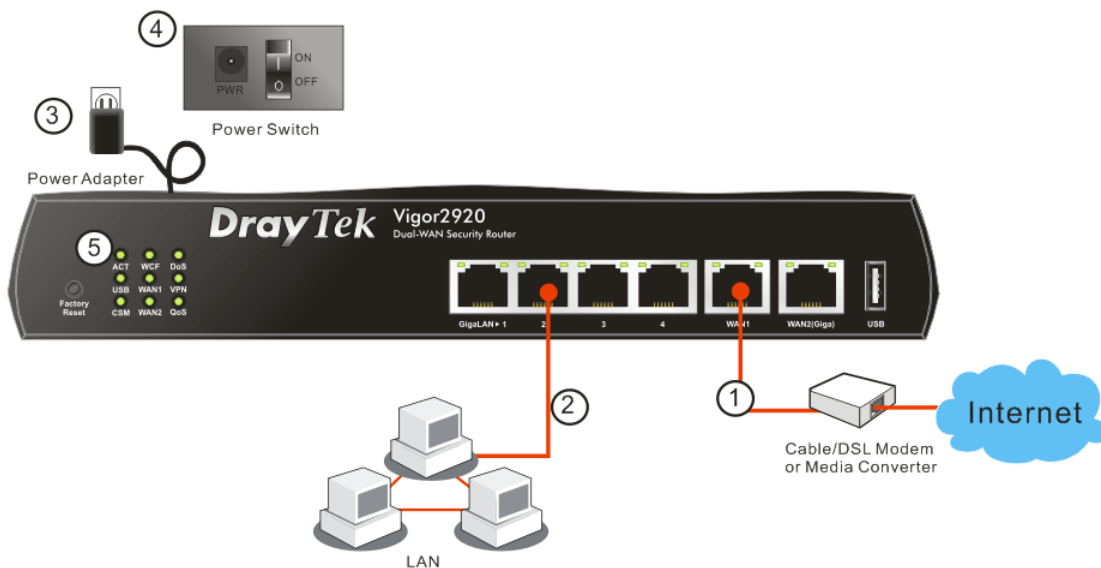
This section will guide you to install the router through hardware connection and configure the router's settings through web browser.

2.1 Hardware Installation

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

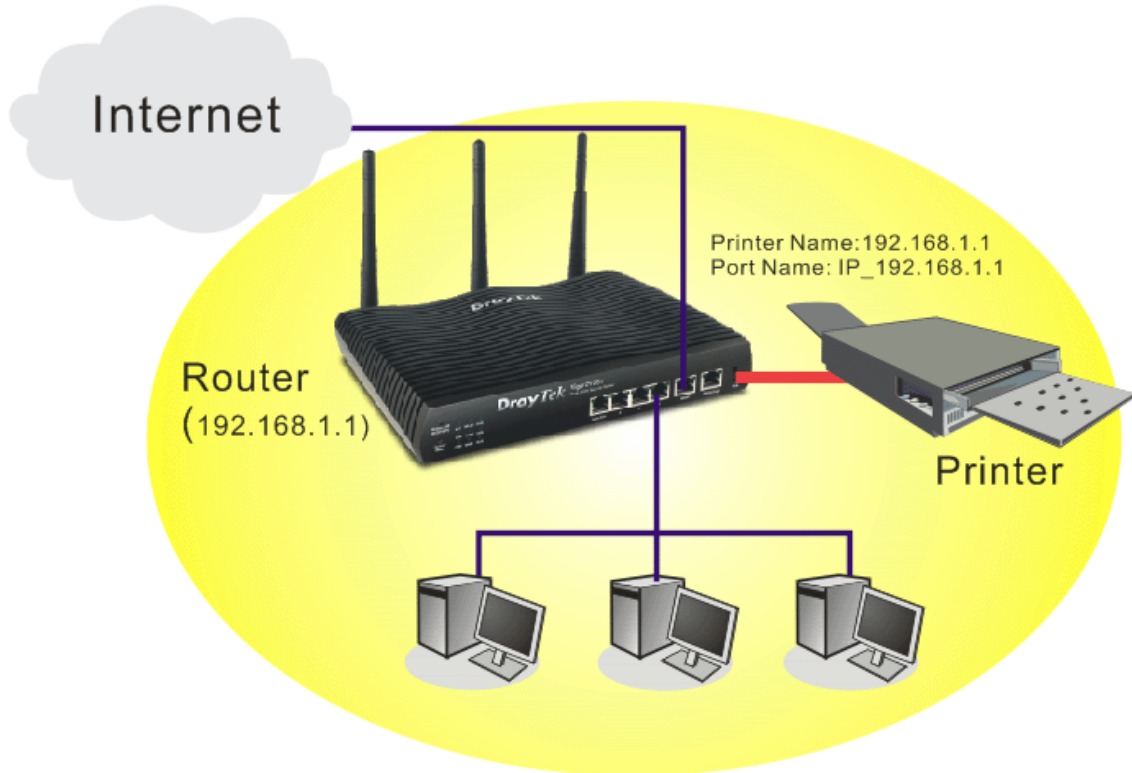
1. Connect the cable Modem/DSL Modem/Media Converter to any WAN port of router with Ethernet cable (RJ-45).
2. Connect one end of an Ethernet cable (RJ-45) to one of the **LAN** ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer.
3. Connect one end of the power adapter to the router's power port on the rear panel, and the other side into a wall outlet.
4. Power on the device by pressing down the power switch on the rear panel.
5. The system starts to initiate. After completing the system test, the **ACT** LED will light up and start blinking.

(For the detailed information of LED status, please refer to section 1.1.)



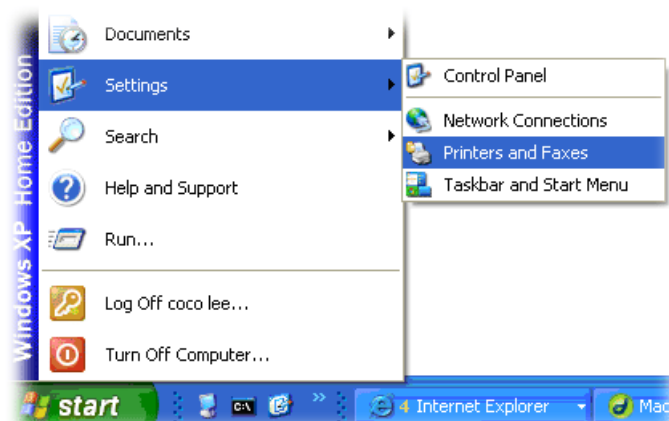
2.2 Printer Installation

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.

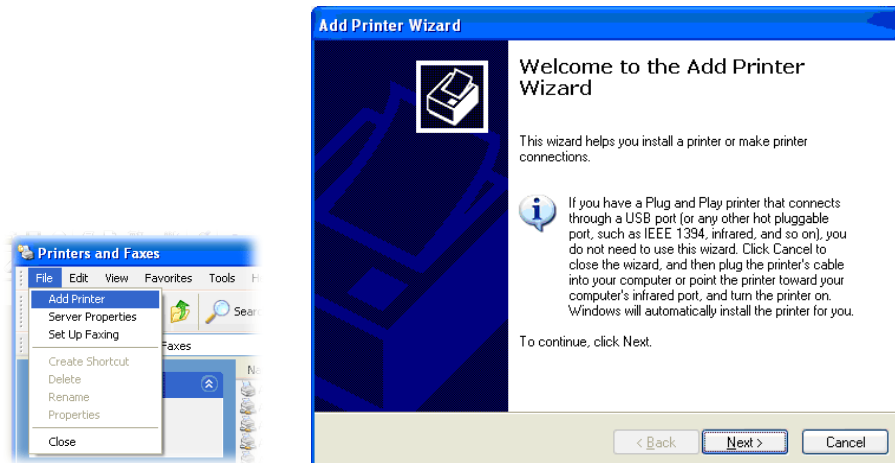


Before using it, please follow the steps below to configure settings for connected computers (or wireless clients).

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



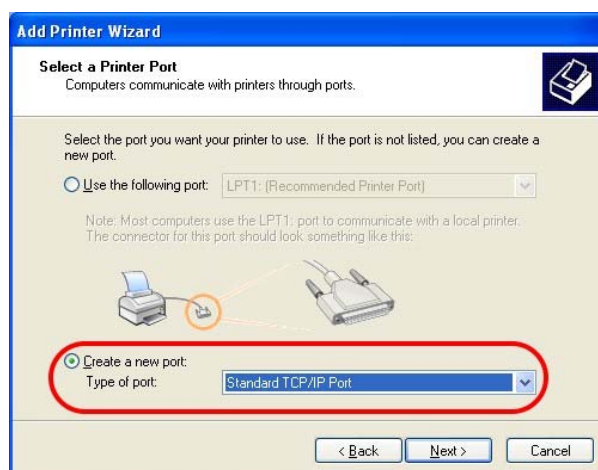
3. Open **File->Add a New Computer**. A welcome dialog will appear. Please click **Next**.



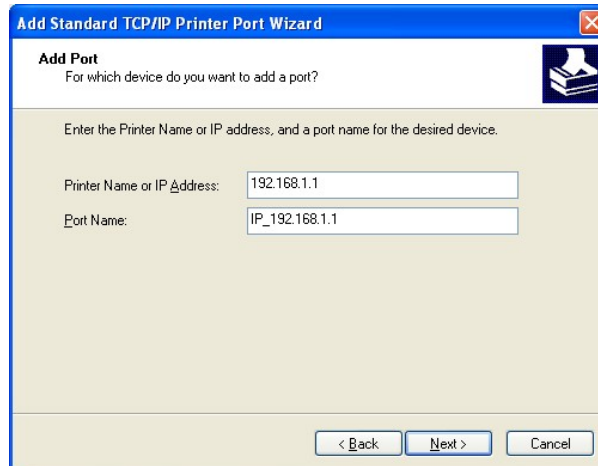
4. Click **Local printer attached to this computer** and click **Next**.



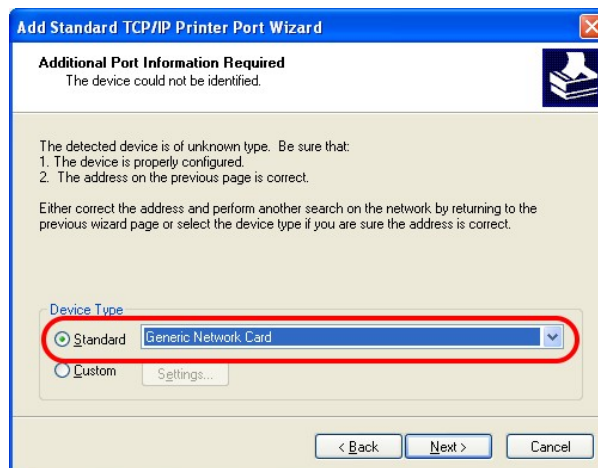
5. In this dialog, choose **Create a new port Type of port** and use the drop down list to select **Standard TCP/IP Port**. Click **Next**.



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**.



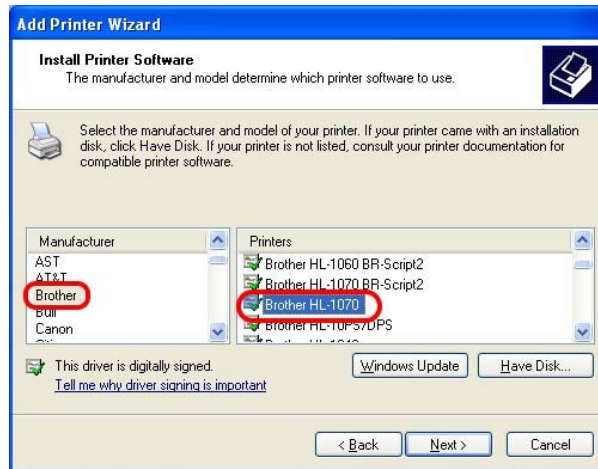
7. Click **Standard** and choose **Generic Network Card**.



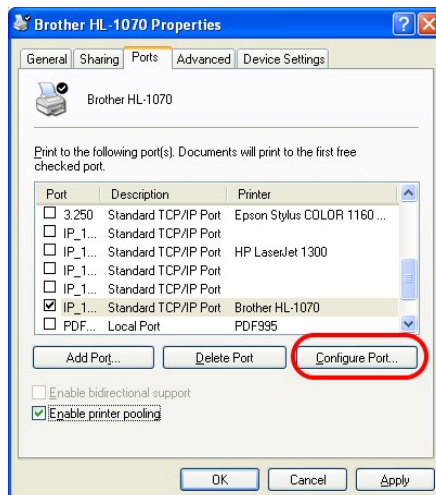
8. Then, in the following dialog, click **Finish**.



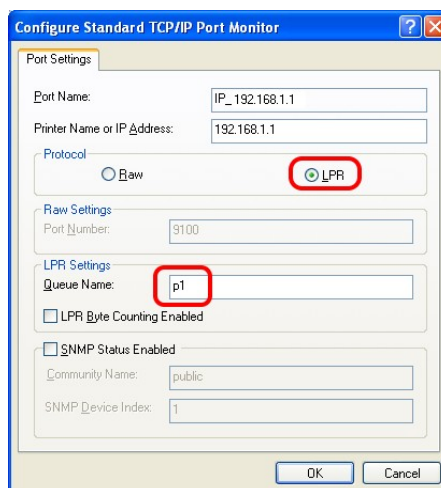
- Now, your system will ask you to choose right name of the printer that you installed onto the router. Such step can make correct driver loaded onto your PC. When you finish the selection, click **Next**.



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



- 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 UPR 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; then click the **What types of printers are compatible with Vigor router?** link.

Home > Support > FAQ

FAQ - Basic

01. What are the differences among these firmware file formats ?
02. How could I get the telnet command for routers ?
03. How can I backup/restore my configuration settings ?
04. How do I reset/clear the router's password ?
05. How to bring back my router to its default value ?
06. How do I tell the type of my Vigor Router is AnnexA or AnnexB? (For ADSL model only)
07. Ways for firmware upgrade.
08. Why is SNMP removed in firmware 2.3.6 and above for Vigor2200 Series routers?
09. I failed to upgrade Vigor Router's firmware from my Mac machine constantly, what should I do?
10. How to upgrade firmware of Vigor Router remotely ?

FAQ

- Basic
- Advanced
- VPN
- DHCP
- Wireless
- VoIP
- QoS
- ISDN
- Firewall / IP Filter
- Printer Server
- USB ISDN TA
- USB

FAQ - Printer Server

01. How do I configure LPR printing on Windows2000/XP ?
02. How do I configure LPR printing on Windows98/Me ?
03. How do I configure LPR printing on Linux boxes ?
04. Why there are some strange print-out when I try to print my documents through Vigor210 4P / 2300's print server?
05. What types of printers are compatible with Vigor router?
06. What are the limitations in the USB Printer Port of Vigor Router ?
07. What is the printing buffer size of Vigor Router ?
08. How do I configure LPR printing on Mac OSX ?
09. How do I configure LPR printing on My Windows Vista ?

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

3. Configuring Web Pages

To access Internet, please finish basic configuration after completing the hardware installation.

3.1 Accessing Web Page

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



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

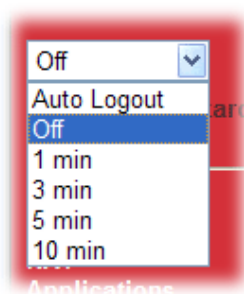
2. Open a web browser on your PC and type **http://192.168.1.1**. The following window will be open to ask for username and password.

3. For user mode, do not type any word on the window and click **Login** for the simple web pages for configuration. Yet, for admin mode, please type “admin/admin” on Username/Password and click **Login** for full configuration.



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

4. 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 five minutes without any operation. Change the setting for your necessity.



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

3.2 Basic Configuration

The **Quick Start Wizard** is designed for you to easily set up your router for Internet access. You can directly access the **Quick Start Wizard** via Web Configurator.

1. Open a web browser on your PC and type **http://192.168.1.1**. The system will ask you to type username/password. The displayed web pages will change according to the username and password typed. Here we take **simple web pages** for example. So, do not type any word on the window and click **Login**.



Notice: For advanced configuration (admin mode), please refer to User's Guide for more detailed information.

2. Now, the **Main Screen** for user operation will appear. Click **Quick Start Wizard**.

Vigor2920/2920n
Dual-WAN Security Router

DrayTek

Auto Logout
Quick Start Wizard
Online Status

WAN
LAN
NAT
Applications
VoIP
ISDN
Wireless LAN
USB Application
System Maintenance
Diagnostics

Logout
All Rights Reserved.

System Status

Model Name : Vigor 2920 Series
Firmware Version : 3.3.2_RC1b
Build Date/Time : Sep 2 2009 20:43:53

LAN	
MAC Address	: 00-50-7F-00-00-00
1st IP Address	: 192.168.1.1
1st Subnet Mask	: 255.255.255.0
DHCP Server	: Yes
DNS	: 194.109.6.66

WAN 1	
Link Status	: Disconnected
MAC Address	: 00-50-7F-00-00-01
Connection	: ---
IP Address	: ---
Default Gateway	: ---

VoIP			
Port	Profile	Reg.	In/Out
Phone1		No	0/0
ISDN		No	0/0

WAN 2	
Link Status	: Disconnected
MAC Address	: 00-50-7F-00-00-02
Connection	: ---
IP Address	: ---
Default Gateway	: ---

Wireless LAN	
MAC Address	: 00-50-7F-00-00-00
Frequency Domain	: Europe
Firmware Version	: 1.8.1.0
SSID	: DrayTek

Note: The home page will change slightly in accordance with the router you have.

3. Enter the login password on the field of **New Password** and retype it on the field of **Confirm Password**. Then click **Next** to continue.

Quick Start Wizard

Enter login password

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

Old Password

New Password

Confirm Password

< Back Next > Finish Cancel

- On the next page as shown below, please select the WAN interface that you use. Choose **Auto negotiation** as the physical type for your router. Then click **Next** for next step.

Quick Start Wizard

WAN Interface

WAN Interface:

Display Name:

Physical Mode:

Physical Type:

- Auto negotiation
- 10M half duplex
- 10M full duplex
- 100M half duplex
- 100M full duplex

- 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.

Quick Start Wizard

Connect to Internet

WAN 1

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

- PPPoE
- PPTP
- L2TP
- Static IP
- DHCP

PPPoE: if you click PPPoE as the protocol, please manually enter the Username/Password provided by your ISP. Then click **Next**.

Quick Start Wizard

PPPoE Client Mode

WAN 1
Enter the user name and password provided by your ISP.

User Name	<input type="text" value="84005755@hinet.net"/>
Password	<input type="password" value="••••••••"/>
Confirm Password	<input type="password" value="••••••••"/>

PPTP/L2TP: if you click PPTP/L2TP, you will get the following page. Please type in all the information originally provided by your ISP. Then click **Next** for next step.

Quick Start Wizard

PPTP Client Mode

WAN 1
Enter the user name, password, WAN IP configuration and PPTP server IP provided by your ISP.

User Name	<input type="text"/>
Password	<input type="password"/>
Confirm Password	<input type="password"/>
WAN IP Configuration	
<input type="radio"/> Obtain an IP address automatically	
<input checked="" type="radio"/> Specify an IP address	
IP Address	<input type="text" value="172.16.3.229"/>
Subnet Mask	<input type="text" value="255.255.0.0"/>
PPTP Server	<input type="text"/>

Static IP: if you click Static IP, you will get the following page. Please type in the IP address information originally provided by your ISP. Then click **Next** for next step.

Quick Start Wizard

Static IP Client Mode

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

WAN IP	<input type="text" value="172.16.3.229"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="172.16.3.1"/>
Primary DNS	<input type="text" value="168.95.1.1"/>
Secondary DNS	<input type="text"/> (optional)

DHCP: if you click DHCP, you will get the following page. Simply click **Next** to continue.

Quick Start Wizard

DHCP Client Mode

WAN 1
If your ISP require you to enter a specific host name or specific MAC address, please enter it in.

Host Name	<input type="text"/> (optional)
MAC	<input type="text" value="00"/> <input type="text" value="-50"/> <input type="text" value="-7F"/> <input type="text" value="-00"/> <input type="text" value="-00"/> <input type="text" value="-01"/> (optional)

6. Now you can see the following screen. It indicates that the setup is complete. Different types of connection modes will have different summary. Click **Finish** and then restart the router. Afterward, you will enjoy surfing on the Internet.

Quick Start Wizard

Please confirm your settings:

WAN Interface:	WAN1
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.

3.3 Wireless Configuration



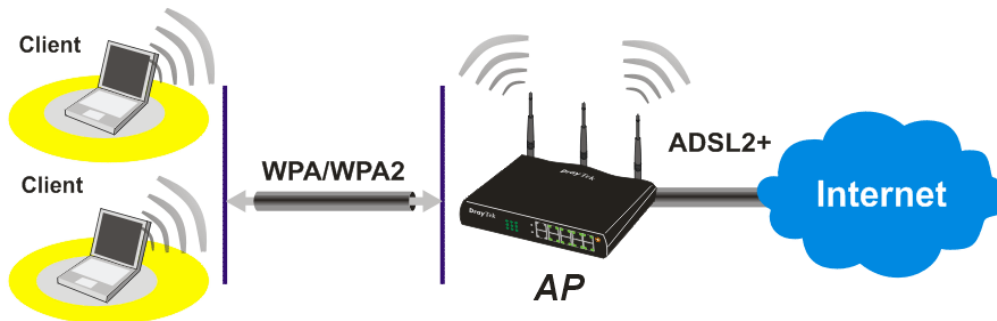
For the user of Vigor2920, please skip this section.

For operating Vigor2920n well, it is necessary for you to set the wireless LAN settings for using wireless function. Please read the following section carefully for configuring the settings for this router.

(The default value of Frequency Domain was set by factory depends on the reselling region.)

3.3.1 Basic Wireless LAN Concept

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 (clients) will share the same Internet connection with other wired hosts via Vigor wireless router.



3.3.2 General Setup

1. On the **Wireless LAN** group, select **General Setup**. The following page will be shown.

Wireless LAN >> General Setup

General Setting (IEEE 802.11)

<input checked="" type="checkbox"/> Enable Wireless LAN
Mode : Mixed(11b+11g+11n) ▾
SSID: DrayTek
Channel : Channel 6, 2437MHz ▾
Packet-OVERDRIVE™ <input type="checkbox"/> Tx Burst
Note: The same technology must also be supported in clients to boost WLAN performance.
<input type="checkbox"/> Hide SSID <input type="checkbox"/> Long Preamble
Hide SSID: prevent SSID from being scanned. Long Preamble: necessary for some older 802.11b devices only (lowers performance).

OK Cancel

2. Check **Enable Wireless LAN** to enable the wireless function.

- At present, the router can connect to IEEE802.11b, IEEE802.11g and IEEE802.11n stations simultaneously. Simply choose Mixed (11b+11g+11n) mode.
- Type in the name of the **SSID**. The default name for SSID is **DrayTek**. We suggest you change it to a particular name for your necessity.

SSID (service set identifier) It is used to name the wireless LAN for this router, and it must have the same content in client PC/notebook wireless card(s). SSID can be any text numbers or various special characters.

Channel It is a wireless channel for the router. The default channel is 6. You can change it to an appropriate one if the selected channel is under serious interference.

3.3.3 Security Settings

- On the **Wireless LAN** group, select **Security**.

Wireless LAN >> Security Settings

Security Settings

Mode: Disable

WPA: Disable

Encryption Mode: WEP

Pre-Shared Key(PSK): WPA/PSK

WPA2/PSK

Mixed(WPA+WPA2)/PSK

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

WEP:

Encryption Mode: 64-Bit

Key 1 :

Key 2 :

Key 3 :

Key 4 :

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".

- Select an appropriate encryption mode to improve the security and privacy of your wireless data packets.

Disable

Disable

WEP

WPA/PSK

WPA2/PSK

Mixed(WPA+WPA2)/PSK

Disable Turn off the encryption mechanism. For the security of your router, please select any one of the encryption

mode here.

WEP	Accepts only WEP clients and the encryption key should be entered in WEP Key.
WPA/PSK	Accepts only WPA clients and the encryption key should be entered in PSK.
WPA2/PSK	Accepts only WPA2 clients and the encryption key should be entered in PSK.
Mixed (WPA+WPA2)/PSK	Accepts WPA and WPA2 clients, and the encryption key should be entered in PSK..

3. For **WPA** encryption, type in 8~63 ASCII characters or 64 Hexadecimal digits leading by 0x, for example "0123456789ABCD...." or "0x321253abcde....." on the field of **Pre-Shared Key (PSK)**. WPA encrypts each frame transmitted from the radio using the Pre-Shared Key (PSK) which entered from this panel.
4. As to **WEP** encryption, select 64-bit or 128-bit as the encryption mode. For 64bits WEP key, type in 5 ASCII characters or 10 hexadecimal digitals leading by 0x, for example, ABCDE or 0x4142434445. And for 128bits WEP key, type in 13 ASCII characters or 26 hexadecimal digits leading by 0x, for example, ABCDEFGHIJKLM or 0x4142434445464748494A4B4C4D. Only one WEP key can be selected and allows user to type in the characters.
5. Click **OK** to save settings.

Be aware that for the communication, all wireless devices must support the same encryption bit length and share the same key. If WEP mode is selected, only one of four preset keys can be selected at one time.

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4. 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.

4.1 Checking If the Hardware Status Is OK or Not

Follow the steps below to verify the hardware status.

1. Check the power line and LAN cable connections. Refer to “**2.1 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 “**2.1 Hardware Installation**” to execute the hardware installation again. And then, try again.

4.2 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

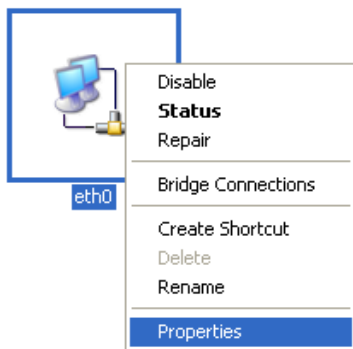


The example is based on Windows XP. As to the examples for other operation systems, please refer to the similar steps or find support notes in www.draytek.com.

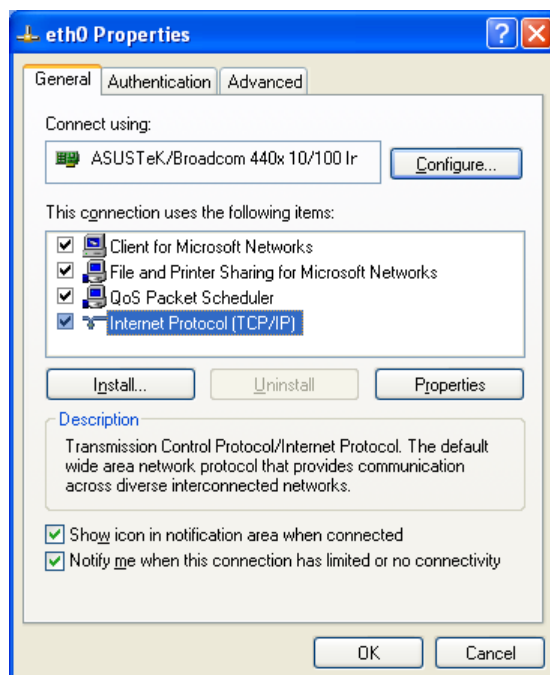
1. Go to **Control Panel** and then double-click on **Network Connections**.



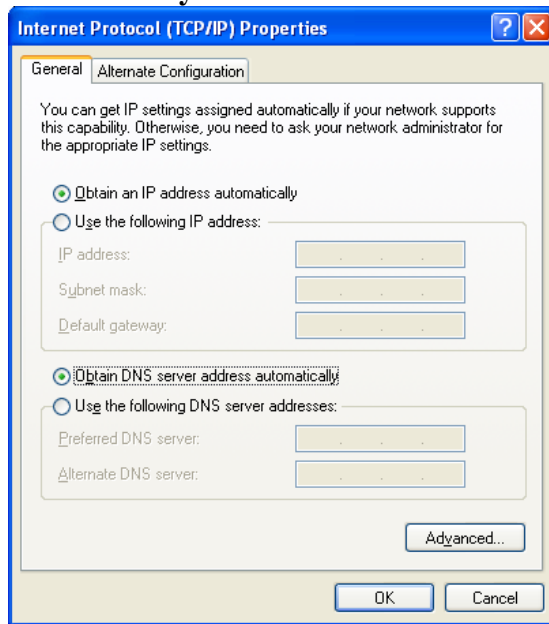
2. Right-click on **Local Area Connection** and click on **Properties**.



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

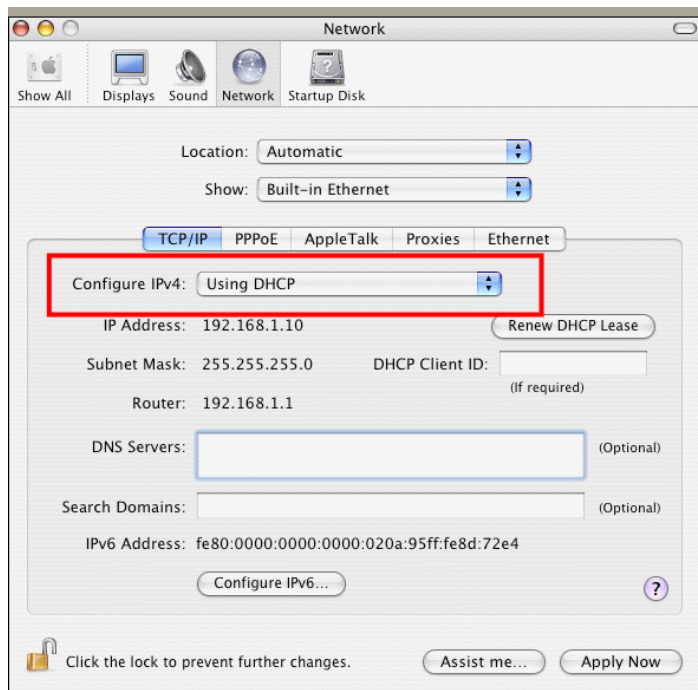


4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.



For MacOs

1. Double click on the current used MacOs 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.



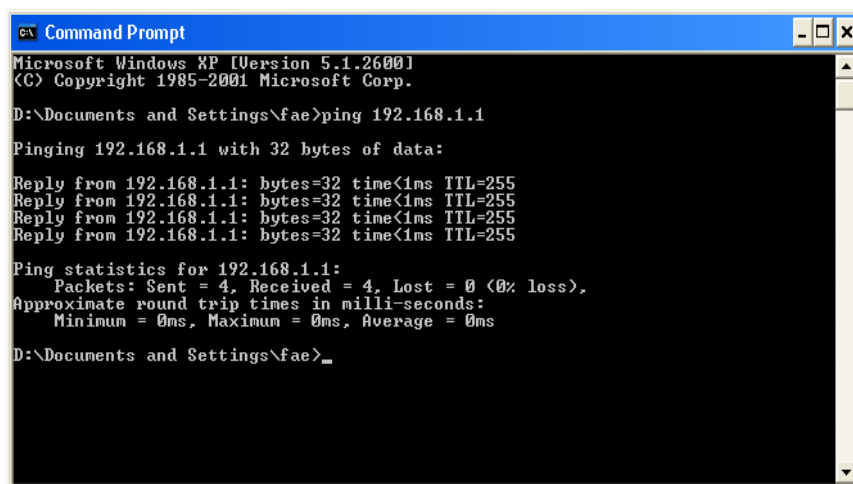
4.3 Pinging the Router from Your Computer

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 4.2)

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.



```
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 ttty1
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$ █

```

4.4 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		Ethernet	None	Details Page
WAN2		Ethernet	None	Details Page

The 'Access Mode' dropdown menu is open, showing the following options: None, PPPoE, Static or Dynamic IP, and PPTP/L2TP.

For PPPoE Users

1. Check if the **Enable** option is selected.
2. Check if **Username** and **Password** are entered with correct values that you **got from your ISP**.

WAN >> Internet Access

WAN 1

PPPoE Client Mode <input checked="" type="radio"/> Enable <input type="radio"/> Disable	PPP/MP Setup PPP Authentication: PAP or CHAP Idle Timeout: -1 second(s)
ISP Access Setup Username: <input type="text"/> Password: <input type="text"/> Index(1-15) in Schedule Setup: => <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>	IP Address Assignment Method (IPCP) <input type="button" value="WAN IP Alias"/> Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP) Fixed IP Address: <input type="text"/>
ISDN Dial Backup Setup Dial Backup Mode: None	<input checked="" type="radio"/> Default MAC Address <input type="radio"/> Specify a MAC Address MAC Address: 00 .50 .7F .00 .00 .01
WAN Connection Detection Mode: ARP Detect Ping IP: <input type="text"/> TTL: <input type="text"/>	
MTU 1442 (Max:1492)	

OK Cancel

For Static Users

1. Check if the **Enable** option for Broadband Access is selected.

WAN >> Internet Access

WAN 1

Static or Dynamic IP (DHCP Client) <input checked="" type="radio"/> Enable <input type="radio"/> Disable	WAN IP Network Settings <input type="button" value="WAN IP Alias"/> <input type="radio"/> Obtain an IP address automatically Router Name: <input type="text"/> * Domain Name: <input type="text"/> * *: Required for some ISPs <input checked="" type="radio"/> Specify an IP address IP Address: 172.16.3.229 Subnet Mask: 255.255.0.0 Gateway IP Address: 172.16.3.4
ISDN Dial Backup Setup Dial Backup Mode: None	DNS Server IP Address Primary IP Address: <input type="text"/> Secondary IP Address: <input type="text"/>
Keep WAN Connection <input type="checkbox"/> Enable PING to keep alive PING to the IP: <input type="text"/> PING Interval: 0 minute(s)	<input checked="" type="radio"/> Default MAC Address <input type="radio"/> Specify a MAC Address MAC Address: 00 .50 .7F .00 .00 .01
WAN Connection Detection Mode: ARP Detect Ping IP: <input type="text"/> TTL: <input type="text"/>	
MTU 1442 (Max:1500)	
RIP Protocol <input type="checkbox"/> Enable RIP	

OK Cancel

2. Check if **WAN IP Network Settings** is set appropriately.
3. Check if **IP Address, Subnet Mask and Gateway** are set correctly (must identify with the values from your ISP) if you choose **Specify an IP address**.

For PPTP/L2TP Users

1. Check if the **Enable PPTP/L2TP** option is selected.

WAN >> Internet Access

WAN 1

<p>PPTP/L2TP Client Mode</p> <p><input checked="" type="radio"/> Enable PPTP <input type="radio"/> Enable L2TP <input type="radio"/> Disable</p> <p>Server Address <input type="text" value="10.0.0.138"/></p> <p>Specify Gateway IP Address <input type="text"/></p>	<p>PPP Setup</p> <p>PPP Authentication <input type="text" value="PAP or CHAP"/></p> <p>Idle Timeout <input type="text" value="-1"/> second(s)</p> <p>IP Address Assignment Method (IPCP) <input type="text" value="WAN IP Alias"/></p> <p>Fixed IP: <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP)</p> <p>Fixed IP Address <input type="text"/></p> <p>WAN IP Network Settings</p> <p><input type="radio"/> Obtain an IP address automatically</p> <p><input checked="" type="radio"/> Specify an IP address</p> <p>IP Address <input type="text" value="10.0.0.150"/></p> <p>Subnet Mask <input type="text" value="255.0.0.0"/></p>
<p>ISP Access Setup</p> <p>Username <input type="text"/></p> <p>Password <input type="text"/></p> <p>Index(1-15) in Schedule Setup: => <input type="text"/>, <input type="text"/>, <input type="text"/>, <input type="text"/></p> <p>ISDN Dial Backup Setup</p> <p>Dial Backup Mode <input type="text" value="None"/></p> <p>MTU <input type="text" value="1442"/> (Max:1460)</p>	

2. Check if **Server Address, Username, Password and WAN IP address** are set correctly (must identify with the values from your ISP).

4.5 Backing to Factory Default Setting If Necessary

Sometimes, a wrong connection can be improved by returning to the default settings. Try to reset the router by software or hardware. only.



Warning: After pressing **factory default setting**, you will loose all settings you did before. Make sure you have recorded all useful settings before you pressing. The password of factory default is null.

Software Reset

You can reset the router to factory default via Web page. Such function is available in **Admin Mode** only.

Go to **System Maintenance** and choose **Reboot System** on the web page. The following screen will appear. Choose **Using factory default configuration** and click **OK**. 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

OK

Hardware Reset

While the router is running (ACT LED blinking), press the **RST** 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.

4.6 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.