Dray Tek

Vigor2830 Series

ADSL2+ Security Firewall



Quick Start Guide

Vigor2830 Series ADSL2/2+ Security Firewall Quick Start Guide

Version: 2.1

Firmware Version: V3.6.3

Date: 30/11/2012

Copyright Information

Copyright Declarations

Copyright 2012 All rights reserved. This publication contains information that is protected by copyright. No part may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language without written permission from the copyright holders.

Trademarks

The following trademarks are used in this document:

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

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 be authorized and qualified personnel. Do not try to open or repair the router yourself.
- Do not place the router in a damp or humid place, e.g. a bathroom.
- 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 tore-store the product to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be offered solely at our discretion. This warranty will not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions. The warranty does not cover the bundled or licensed software of other vendors. Defects which do not significantly affect the usability of the product will not be covered by the warranty. We reserve the right to revise the manual and online documentation and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

Be a Registered Owner

Firmware & Tools Updates

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

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: Vigor2830 Series Router

DrayTek Corp. declares that Vigor2830 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.

Please visit http://www.draytek.com/user/SupportDLRTTECE.php



This product is designed for the DSL, 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.



Table of Contents

1. Introduction	1
1.1 Panel Explanation	2
1.1.1 For Vigor2830 1.1.2 For Vigor2830n / Vigor2830n-plus 1.1.3 For Vigor2830Vn/ Vigor2830Vn-plus	4
1.2 Package Content	8
2. Installing Your Router	9
2.1 Hardware Installation	9
2.2 Printer Installation	10
3. Configuring Web Pages	15
3.1 Accessing Web Page	15
3.2 Basic Configuration	17
3.3 Wireless Configuration	23
3.3.1 Basic Wireless LAN Concept	24
4. Trouble Shooting	29
4.1 Checking If the Hardware Status Is OK or Not	29
4.2 Checking If the Network Connection Settings on Your Computer Is OK or Not	30
4.3 Pinging the Router from Your Computer	33
4.4 Checking If the ISP Settings are OK or Not	34
4.5 Backing to Factory Default Setting If Necessary	35
4.6 Contacting Your Dealer	36

1. Introduction

Vigor2830 series is an ADSL2+ 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, 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 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.

In addition, Vigor2830 series supports USB interface for connecting USB printer to share printer or USB storage device for sharing files. Vigor2830 series provides two-level management to simplify the configuration of network connection. The user operation allows user accessing into WEB interface via simple configuration. However, if users want to have advanced configurations, they can access into WEB interface through administration operation.



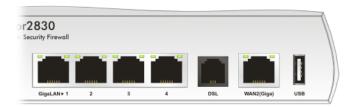
1.1 Panel Explanation

1.1.1 For Vigor2830



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 Filte 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).	
DSL		On	The router is ready to access Internet through DSL link.	
		Blinking	Slowly: The DSL connection is ready. Quickly: The connection is training.	
WAN2		On	The WAN2 connection is ready.	
		Blinking	It will blink while transmitting data.	
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 Conne	ctor			
	Left LED	On	The port is connected.	
GigaLAN	(Green)	Off	The port is disconnected.	
1/2/3/4		Blinking	The data is transmitting.	
	Right LED	On	The port is connected with 1000Mbps.	
	(Green)	Off	The port is disconnected with 10/100Mbps when left LED is on.	
	Left LED	On	The port is connected.	
WAN2 (Giga)	(Green)	Off	The port is disconnected.	
		Blinking	The data is transmitting.	
	Right LED	On	The port is connected with 1000Mbps.	
	(Green)	Off	The port is disconnected with 10/100Mbps when left LED is on.	

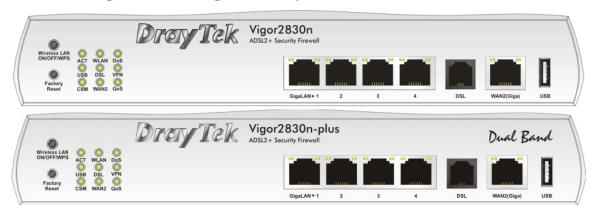






Interface	Description
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
GigaLAN (1-4)	Connecters for local network devices.
DSL	Connecter for accessing the Internet through ADSL2/2+.
WAN2(Giga)	Connecter for remote network devices.
USB	Connecter for a USB device (for 3G USB Modem or printer).
PWR	Connecter for a power adapter.
ON/OFF	Power Switch.

1.1.2 For Vigor2830n / Vigor2830n-plus



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 Fi 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. ACT and WLAN LEDs blink quickly and simultaneously when WPS is working, and will return to normal condition after two minutes. (You need to setup WPS within 2 minutes.)	
DSL		On	The router is ready to access Internet through DSL link.	
		Blinking	Slowly: The DSL connection is ready. Quickly: The connection is training.	
WAN2		On	The WAN2 connection is ready.	
		Blinking	It will blink while transmitting data.	
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 Conne	ctor			
	Left LED	On	The port is connected.	
GigaLAN	(Green)	Off	The port is disconnected.	
1/2/3/4		Blinking	The data is transmitting.	
	Right LED	On	The port is connected with 1000Mbps.	
	(Green)	Off	The port is disconnected with 10/100Mbps when left LED is on.	
	Left LED	On	The port is connected.	
WAN2 (Giga)	(Green)	Off	The port is disconnected.	
		Blinking	The data is transmitting.	
	Right LED	On	The port is connected with 1000Mbps.	
	(Green)	Off	The port is disconnected with 10/100Mbps when left LED is on.	







Interface	Description
Wireless LAN	Press "Wireless LAN ON/OFF/WPS" button once to wait for client device
ON/OFF/WPS	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 network devices.
DSL	Connecter for accessing the Internet through ADSL2/2+.
WAN2(Giga)	Connecter for remote network devices.
USB	Connecter for a USB device (for 3G USB Modem or printer).
PWR	Connecter for a power adapter.
ON/OFF	Power Switch.



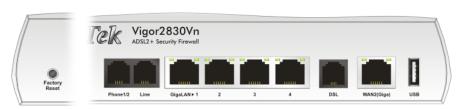
1.1.3 For Vigor2830Vn/ Vigor2830Vn-plus





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 F 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. ACT and WLAN LEDs blink quickly and simultaneously when WPS is working, and will return to normal condition after two minutes. (You need to setup WPS within 2 minutes.)	
DSL		On	The router is ready to access Internet through DSL link.	
		Blinking	Slowly: The DSL connection is ready. Quickly: The connection is training.	
WAN2		On	The WAN2 connection is ready.	
		Blinking	It will blink while transmitting data.	
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 Connec	ctor			
	Left LED	On	The port is connected.	
GigaLAN	(Green)	Off	The port is disconnected.	
1/2/3/4		Blinking	The data is transmitting.	
	Right LED	On	The port is connected with 1000Mbps.	
	(Green)	Off	The port is connected with 10/100Mbps when left LED is on.	
	Left LED	On	The port is connected.	
WAN2 (Giga)	(Green)	Off	The port is disconnected.	
		Blinking	The data is transmitting.	

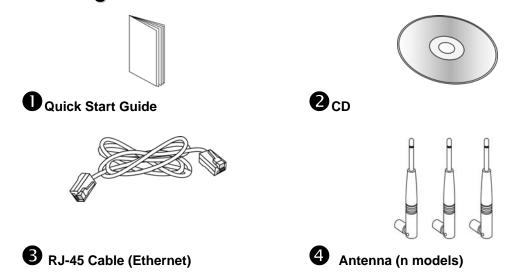
Right LED	On	The port is connected with 1000Mbps.
(Green)	Off	The port is connected with 10/100Mbps when left LED is on.



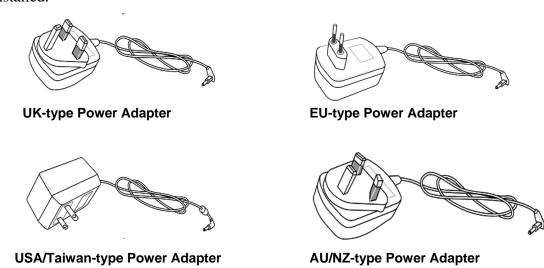


Interface	Description		
Wireless LAN	Press "Wireless LAN ON/OFF/WPS" button once to wait for client device		
ON/OFF/WPS	making network connection through WPS.		
	Press "Wireless LAN ON/OFF/WPS" button twice to enable (WLAN LED on)		
	or disable (WLAN LED off) wireless connection.		
Factory Reset	Restore 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	Connecter for analog phone(s).		
Line	Connector for PSTN life line.		
GigaLAN (1-4)	Connecters for local network devices.		
DSL	Connecter for accessing the Internet through ADSL2/2+.		
WAN2(Giga)	Connecter for remote network devices.		
USB	Connecter for a USB device (for 3G USB Modem or printer).		
PWR	Connecter for a power adapter.		
ON/OFF	Power Switch.		

1.2 Package Content



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



^{*} The maximum power consumption is 20 Watt.

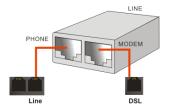
2. Installing Your Router

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

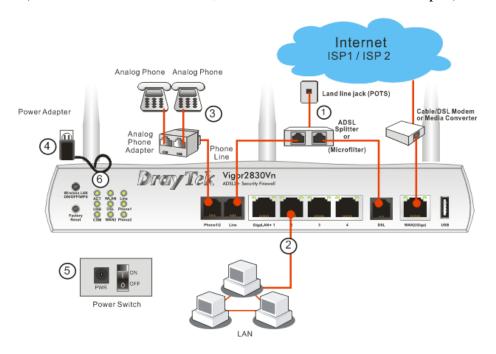
Before starting to configure the router, you have to connect your devices correctly.

1. Connect the ADSL interface to the external ADSL splitter with an ADSL line cable for all models. For Vigor2830Vn, also connect Line interface to external ADSL splitter.



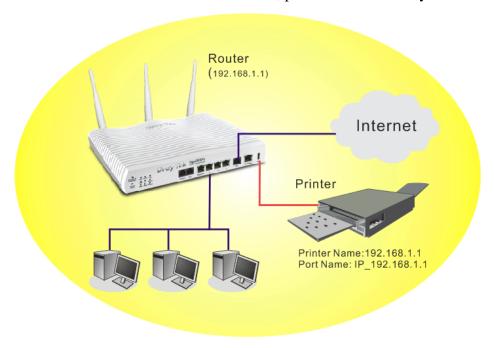
- 2. Connect one end of an Ethernet cable (RJ-45) to one of the **LAN** ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer.
- 3. Connect the telephone set with phone lines (for using VoIP function). For the model without phone ports, skip this step.
- 4. 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.)



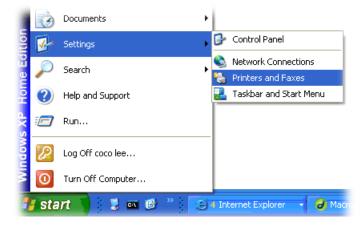
2.2 Printer Installation

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-> Printers 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.



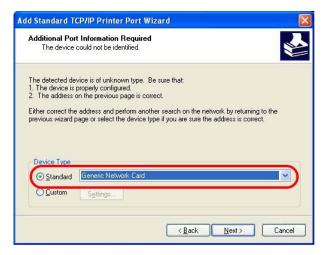
5. In this dialog, choose **Create a new port Type of port** and use the drop down list to select **Standard TCP/IP Port**. Click **Next**.



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.



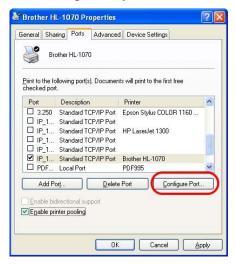
8. Then, in the following dialog, click **Finish**.



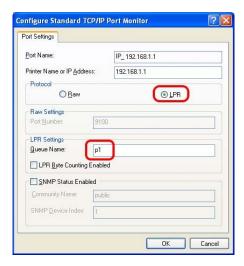
9. Now, your system will ask you to choose right name of the printer that you installed onto the router. Such step can make correct driver loaded onto your PC. When you finish the selection, click **Next**.



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 **FAQ/Application Notes**; find out the link of **Printer Server** and click it; then click the **What types of printers are compatible with Vigor router?** link.



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.

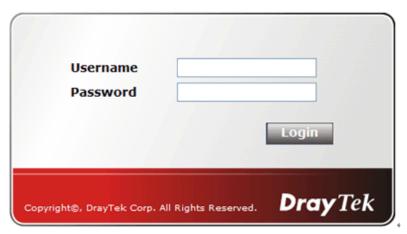
3.1 Accessing Web Page

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



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

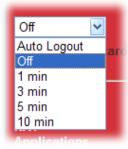
4. Now, the **Main Screen** will appear.





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

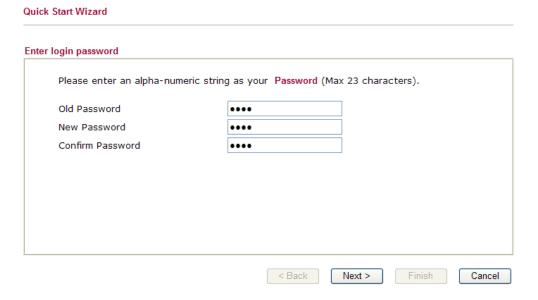
5. The web page can be logged out according to the chosen condition. The default setting is **Auto Logout**, which means the web configuration system will logout after five minutes without any operation. Change the setting for your necessity.



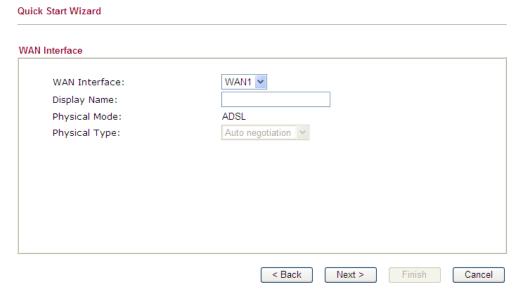
3.2 Basic Configuration

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. Click Quick Start Wizard.
- 2. Enter the login password on the field of **New Password** and retype it on the field of **Confirm Password**. Then click **Next** to continue.



3. 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.

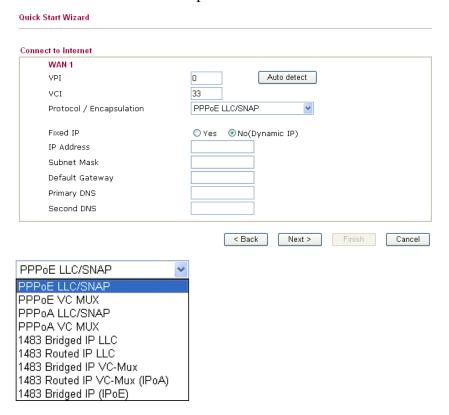


WAN1, WAN2 and WAN3 will bring up different configuration page. Refer to the following for detailed information.

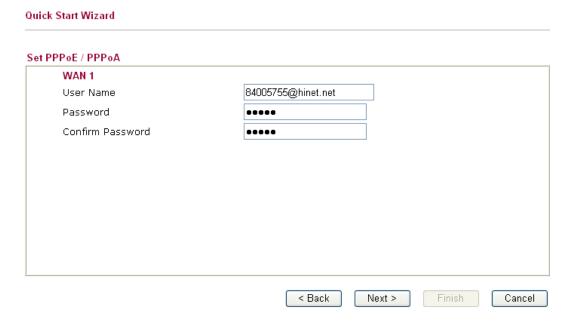


For WAN1

Choose WAN1 and click **Next** to display the following page. 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/PPPoA: if you click PPPoE or PPPoA as the protocol, please manually enter the Username/Password provided by your ISP. Then click **Next**.



1483 Bridged IP /1483 Routed IP: if you choose 1483 Bridged IP / 1483 Routed IP as the protocol, you will get the following page. Please type in the IP address information originally provided by your ISP. Then click **Next** for next step.

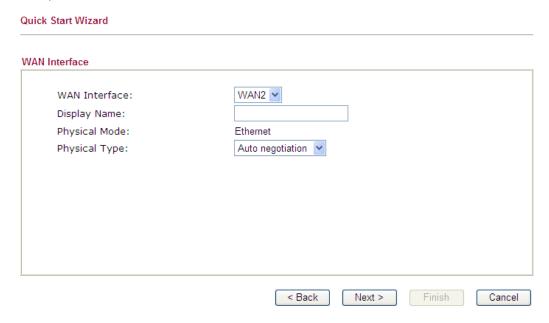
nnect to Internet	
WAN 1	
VPI	O Auto detect
VCI	33
Protocol / Encapsulation	1483 Routed IP LLC
Fixed IP	○ Yes ● No(Dynamic IP)
IP Address	
Subnet Mask	
Default Gateway	
Primary DNS	168.95.1.1
Second DNS	168.95.1.10

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.

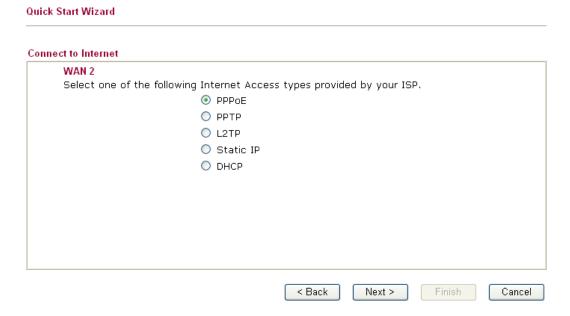
Quick Start Wizard Please confirm your settings: WAN Interface: WAN1 Physical Mode: ADSL Physical Type: Auto negotiation VPI: VCI: 33 Protocol / Encapsulation: 1483 Route LLC Fixed IP: No Primary DNS: 168.95.1.1 Secondary DNS: 168.95.1.10 Finish < Back Next > Cancel

For WAN2

If you choose WAN2, you have to choose physical mode and specify physical type. Then, click **Next**.



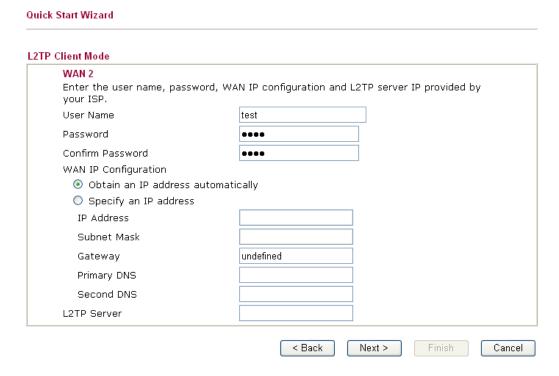
On the next page as shown below, please select the appropriate Internet access type according to the information from your ISP. For example, you should select PPPoE mode if the ISP provides you PPPoE interface. Then click **Next** for next step.



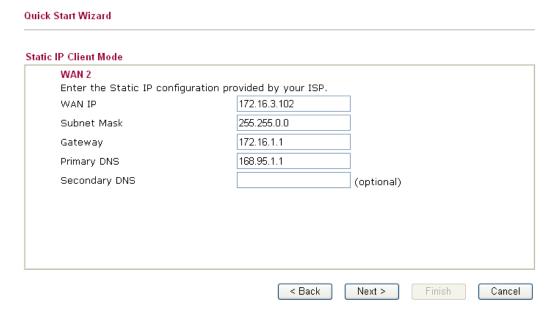
PPPoE: if you click PPPoE as the protocol, please manually enter the Username/Password provided by your ISP. Then click **Next**.



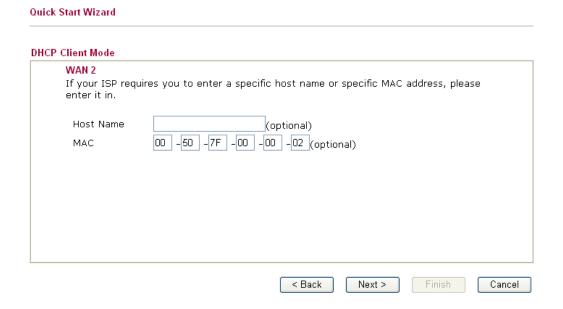
PPTP/L2TP: if you click PPTP/L2TP, you will get the following page. Please type in all the information originally provided by your ISP. Then click **Next** for next step.



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.



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



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.



3.3 Wireless Configuration



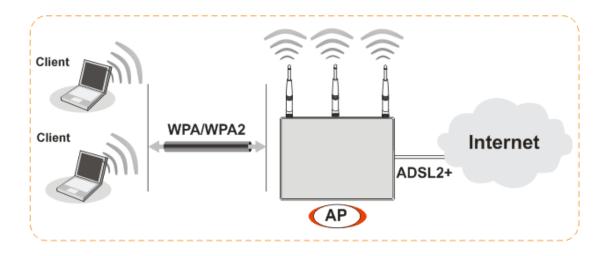
For the user of Vigor2830, please skip this section.

For operating Vigor2830n 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.)

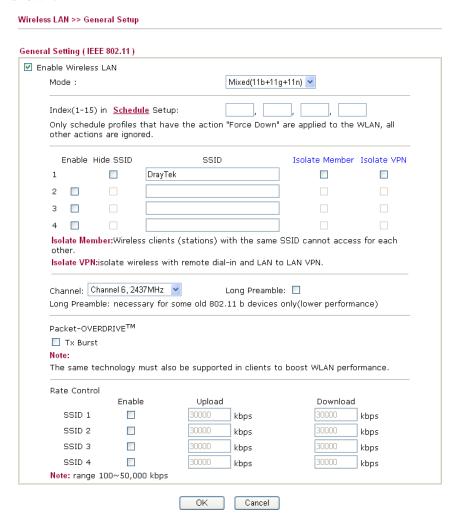
3.3.1 Basic Wireless LAN Concept

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.



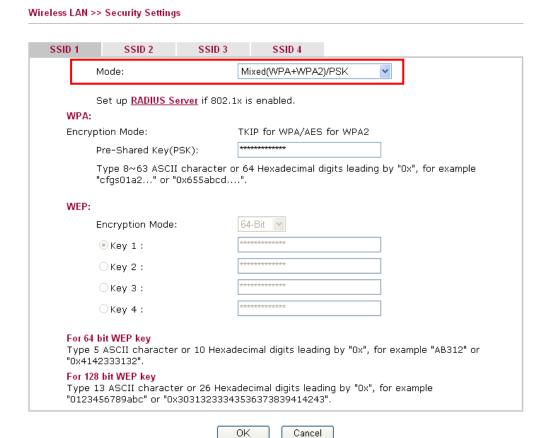
- 2. Check **Enable Wireless LAN** to enable the wireless function.
- 3. At present, the router can connect to IEEE802.11b, IEEE802.11g and IEEE802.11n stations simultaneously. Simply choose Mixed (11b+11g+11n) mode.
- 4. Type in the name of the **SSID**. The default name for SSID is **DrayTek**. We 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.
- 5. Click **OK** to save settings.

3.3.3 Security Settings

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.

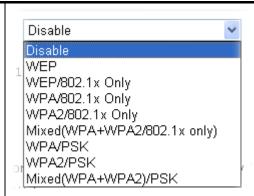


1. On the **Wireless LAN** group, select **Security.**



Available settings are explained as follows:

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



Note: You should also set **RADIUS Server** simultaneously if 802.1x mode is selected.

Disable - Turn off the encryption mechanism.

WEP-Accepts only WEP clients and the encryption key should be entered in WEP Key.

WEP/802.1x Only - Accepts only WEP clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.

WPA/802.1x Only- Accepts only WPA clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.

WPA2/802.1x Only- Accepts only WPA2 clients and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.

Mixed (WPA+WPA2/802.1x only) - Accepts WPA and WPA2 clients simultaneously and the encryption key is obtained dynamically from RADIUS server with 802.1X protocol.

WPA/PSK-Accepts only WPA clients and the encryption key should be entered in PSK.

WPA2/PSK-Accepts only WPA2 clients and the encryption key should be entered in PSK.

Mixed (WPA+ WPA2)/PSK - Accepts WPA and WPA2 clients simultaneously and the encryption key should be entered in PSK.

WPA

The WPA encrypts each frame transmitted from the radio using the key, which either PSK (Pre-Shared Key) entered manually in this field below or automatically negotiated via 802.1x authentication. Either 8~63 ASCII characters, such as 012345678(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde...").

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

Pre-Shared Key (PSK) - Either **8~63** ASCII characters, such as 012345678...(or 64 Hexadecimal

	digits leading by 0x, such as "0x321253abcde").				
WEP	64-Bit - For 64 bits WEP key, either 5 ASCII characters, such as 12345 (or 10 hexadecimal digitals leading by 0x, such as 0x4142434445.) 128-Bit - For 128 bits WEP key, either 13 ASCII characters, such as ABCDEFGHIJKLM (or 26 hexadecimal digits leading by 0x, such as 0x4142434445464748494A4B4C4D).				
	Encryption Mode:	64-Bit 64-Bit 128-Bit			
	All wireless devices must support the same WEP encryption bit size and have the same key. Four keys can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Check the key you wish to use.				

2. Click **OK** to save settings.

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

This page is left blank.

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 stilled 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**.

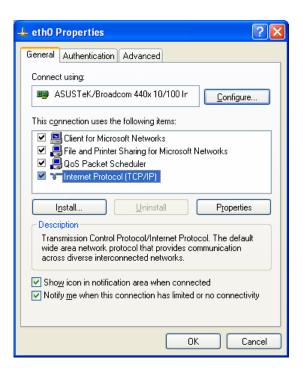
1. Go to **Control Panel** and then double-click on **Network Connections.**



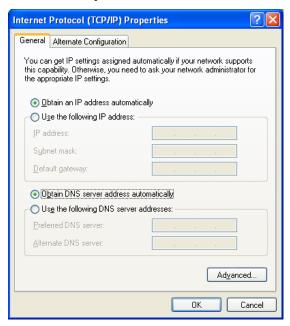
2. Right-click on **Local Area Connection** and click on **Properties**.



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

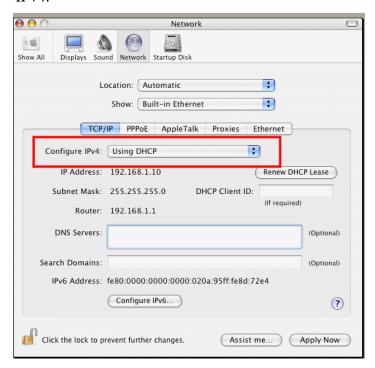


4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.



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/7). The DOS command dialog will appear.

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

D:\Documents and Settings\fae\ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time\lambda Ins ITL=255

Ping statistics for 192.168.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:

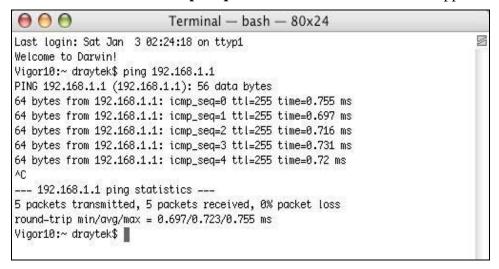
Minimum = \textit{Oms}, Maximum = \textit{Oms}, Average = \textit{Oms}

D:\Documents and Settings\fae\rangle_
```

- 3. Type **ping 192.168.1.1** and press [Enter]. If the link is OK, the line of "**Reply from 192.168.1.1:bytes=32 time<1ms TTL=255**" will appear.
- 4. If the line does not appear, please check the IP address setting of your computer.

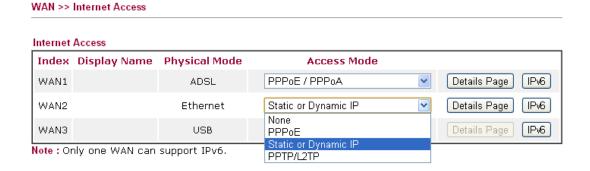
For Mac OS (Terminal)

- 1. Double click on the current used Mac OS on the desktop.
- 2. Open the **Application** folder and get into **Utilities**.
- 3. Double click **Terminal**. The Terminal window will appear.
- 4. Type **ping 192.168.1.1** and press [Enter]. If the link is OK, the line of "64 bytes from 192.168.1.1: icmp_seq=0 ttl=255 time=xxxx ms" will appear.



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/WAN3 to review the settings that you configured previously.



4.5 Backing to Factory Default Setting If Necessary

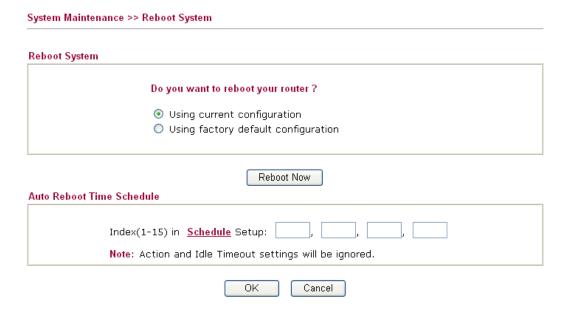
Sometimes, a wrong connection can be improved by returning to the default settings. Try to reset the router by software or hardware. only.



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

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.



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.