

Vigor2900V series Quick Installation Guide

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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 be authorized and qualified personnel. Do not try to open or repair the router yourself.
- Do not place the router in a damp or humid place, e.g. a bathroom.
- The router should be used in a sheltered area, within a temperature range of +5 to +40 Celsius.
- Do not expose the router to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.
- 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 three (3) 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.

European Community

Hereby, we declare that the router is in compliance with the essential requirements and other relevant provisions of R&TTE Directive 99/5/EC. The Vigor 2900VG/VGi is designed for the WLAN 2.4Ghz network throughout EC region, Switzerland, and the restrictions of France.

Be a Registered Owner

Web registration is preferred. You can register your Vigor router via <http://www.draytek.com/>. Alternatively, fill in the registration card and mail it to the address found on the reverse side of the card.

Firmware & Tools Updates

Due to the continuous evolution of DrayTek ADSL & Router 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/>



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1. Introduction



1.1 Brief Overview

	<i>Vigor2900V</i>	<i>Vigor2900VG</i>	<i>Vigor2900VGi</i>	<i>Vigor2900Vi</i>
Broadband Router	*	*	*	*
VoIP	*	*	*	*
Wireless AP	-	*	*	-
ISDN Backup	-	-	*	*

The Vigor2900V series router, an Internet access solution for your LAN, which provides you the shared web surfing and countless value-added features, such as Firewall / Security, VPN, VoIP, USB interface printer server support, and 802.11g Wireless LAN(up to 54Mbps for Vigor2900VG/VGi only). These are all in a reliable one-box solution.

1.2 Highlights

VoIP

- G.168 Line Echo-cancellation
- Gain Control
- Jitter Buffer (125ms)
- Voice Codec: G.711 A/u law, G.726, G.723.1, G.729 A/B, VAD/CNG
- Tone Generation and Detection: DTMF, Dial, Busy, Ring Back, Call Progress
- Protocol: SIP, MGCP, RTP/RTCP (Note: The first stage will implement SIP only, the other protocols will be included later.)

Wireless Access Point (Vigor2900VG/VGi only)

- 802.11g support (54Mbps data rate)
- Backward compatible with 802.11b device
- Wireless security:
 - .Secure VPN over WLAN
 - .WPA Support
 - .802.1x User Authentication
 - .64/128 bits WEP wireless encryption
 - .Client MAC-address locking
 - .SSID stealth

WAN

- One 10/100M Base-TX port with a RJ-45 connector
- DHCP client for cable service
- Static IP address assignment for fixed IP networks
- PPPoE/PPTP client for ADSL service

LAN

- 4 port 10/100 Base-TX Ethernet switch with VLAN
- DHCP server for IP assignment (up to 253 users)
- DNS cache and proxy
- NAT (Network Address Translation)
- Virtual server via port redirection or open port
- Port-based rate throttling capability
- Routing support: RIPv2, Static Route

Printer Server

- One USB port connector
- Built-in LPD printer server
- Provide Win98/98SE/ME LPR printer driver
- Compatible with Win2000/XP/MacOS 9/MacOS X built-in LPR printer driver

Firewall

- Stateful Packet Inspection
- Selectable DoS/DDoS protection
- IP address anti-spoofing
- User-configurable packet filtering
- NAT/PAT with Port Forwarding/Redirection & DMZ
- E-mail alerting mechanism

Virtual Private Network (VPN)

- Up to 32 simultaneous VPN tunnels
- Dial-in or dial-out, LAN-to-LAN or Teleworker-to-LAN
- Protocol support for PPTP, IPSec, L2TP, L2TP over IPSec
- AES, MPPE, and hardware-based DES/3DES Encryption
- Authentication support for MD5 and SHA-1
- IKE key management
- Interoperable with other leading 3rd party vendor VPN devices or software

Flexible URL Content Filtering

- Preclude web surfing from using directly IP address
- URL blocking by user-defined keywords
- Java/ActiveX/cookies/proxy blocking
- Executable/compressed/multimedia files blocking
- Time schedule support

Bandwidth Management facilities

- Class-based bandwidth guarantee by user-defined traffic categories
- Provision of inbound/outbound bandwidth control
- Support of eight priority-levels
- Support of DiffServ-Codepoint marking

Application Support

- Windows Messenger, Yahoo Messenger, MSN Messenger V6.0, NetMeeting, ICQ2001b/2002a, most online gaming, and other multimedia applications
- UPnP protocol support

Router Management

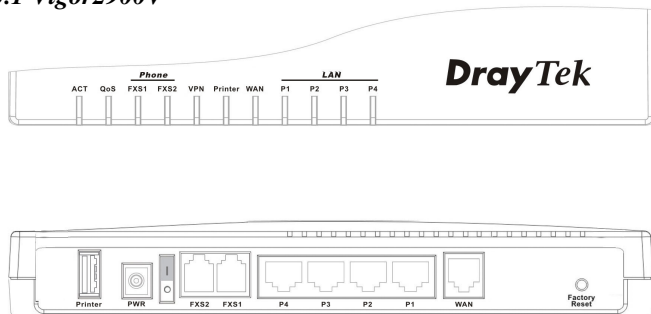
- Web-based User Interface
- Command line interface (Telnet)
- Telnet remote access support
- SNMP agent with MIB-II
- Built-in diagnostic tools
- Remote firmware upgrade
- Quick Start Wizard
- Syslog Monitoring

ISDN Facilities

- Compatible with Euro ISDN
- Automatic ISDN backup
- Support for 64/128kbps (multilink-PPP)
- Bandwidth on demand (automatically switches between 64kbps and 128kbps)
- LAN-to-LAN connectivity
- Remote Activation

1.3 Front Panel LEDs and Rear Panel Interfaces

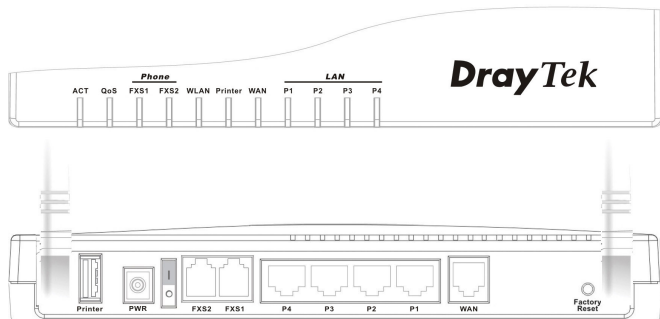
1.3.1 Vigor2900V



LED Indicators	Status	Descriptions
ACT (Activity)	blinking	The router is powered on and running properly.
QoS	on	The QoS function is active.
Phone (FXS1,FXS2)	on	The phone is off hook (the handset of phone is picked up).
	blinking	A phone call is incoming
VPN	on	The VPN function is active.
Printer	on	The USB interface printer is ready.
WAN	orange	A normal 10Mbps WAN link is ready.
	green	A normal 100Mbps WAN link is ready.
	blinking	Ethernet packets are transmitting.
LAN (P1, P2, P3, P4)	orange	A normal 10Mbps connection is through its corresponding port.
	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.

Rear Panels	Descriptions
Printer	Connect to the USB printer.
PWR	Connect the included power adapter to the power outlet.
FXS1, FXS2	Connect to the analog phone for VoIP communication.
P1, P2, P3, P4	Connect to the local networked devices.
WAN	Connect the cable/DSL modem to access the Internet.
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 the ACT LED begins to blink rapidly, release the button. Then the router will restart with the factory default configuration.

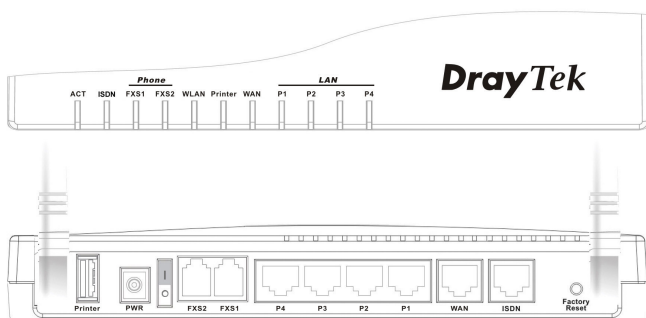
1.3.2 Vigor2900VG



LED Indicators	Status	Descriptions
ACT (Activity)	blinking	The router is powered on and running properly.
QoS	on	The QoS function is active.
Phone (FXS1,FXS2)	on	The phone is off hook (the handset of phone is picked up).
	blinking	A phone call is incoming
WLAN	on	The Wireless LAN function is enabled.
	blinking	Data packets are transmitting over Wireless LAN.
Printer	on	The USB interface printer is ready.
WAN	orange	A normal 10Mbps WAN link is ready.
	green	A normal 100Mbps WAN link is ready.
	blinking	Ethernet packets are transmitting.
LAN (P1, P2, P3, P4)	orange	A normal 10Mbps connection is through its corresponding port.
	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.

Rear Panels	Descriptions
Printer	Connect to the USB printer.
PWR	Connect the included power adapter to the power outlet.
FXS1, FXS2	Connect to the analog phone for VoIP communication.
P1, P2, P3, P4	Connect to the local networked devices.
WAN	Connect the cable/DSL modem to access the Internet.
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 the ACT LED begins to blink rapidly, release the button. Then the router will restart with the factory default configuration.

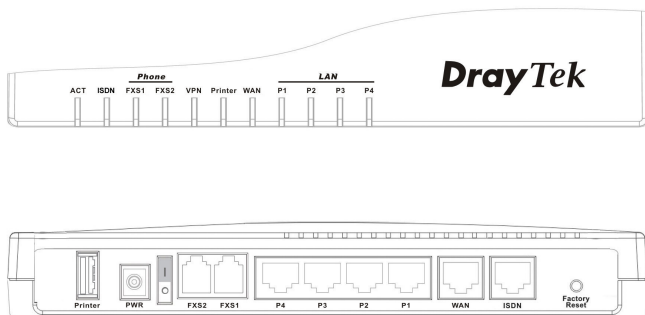
1.3.3 Vigor2900VGi



LED Indicators	Status	Descriptions
ACT (Activity)	blinking	The router is powered on and running properly.
ISDN	on	The ISDN network is correctly setup.
	blinking	A successful remote connection on the ISDN BRI B1/B2 channel.
Phone (FXS1,FXS2)	on	The phone is off hook (the handset of phone is picked up).
	blinking	A phone call is incoming.
WLAN	on	The Wireless LAN function is enabled.
	blinking	Data packets are transmitting over Wireless LAN.
Printer	on	The USB interface printer is ready.
WAN	orange	A normal 10Mbps WAN link is ready.
	green	A normal 100Mbps WAN link is ready.
	blinking	Ethernet packets are transmitting.
LAN (P1, P2, P3, P4)	orange	A normal 10Mbps connection is through its corresponding port.
	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.

Rear Panels	Descriptions
Printer	Connect to the USB printer.
PWR	Connect the included power adapter to the power outlet.
FXS1, FXS2	Connect to the analog phone for VoIP communication.
P1, P2, P3, P4	Connect to the local networked devices.
WAN	Connect the cable/DSL modem to access the Internet.
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 the ACT LED begins to blink rapidly, release the button. Then the router will restart with the factory default configuration.

1.3.4 Vigor2900Vi



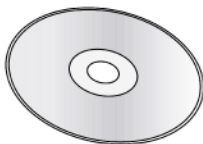
LED Indicators	Status	Descriptions
ACT (Activity)	blinking	The router is powered on and running properly.
	on	The ISDN network is correctly setup.
ISDN	blinking	A successful remote connection on the ISDN BRI B1/B2 channel.
	on	The phone is off hook (the handset of phone is picked up).
Phone (FXS1,FXS2)	blinking	A phone call is incoming.
	on	The VPN tunnel is launched.
Printer	on	The USB interface printer is ready.
WAN	orange	A normal 10Mbps WAN link is ready.
	green	A normal 100Mbps WAN link is ready.
	blinking	Ethernet packets are transmitting.
LAN (P1, P2, P3, P4)	orange	A normal 10Mbps connection is through its corresponding port.
	green	A normal 100Mbps connection is through its corresponding port.
	blinking	Ethernet packets are transmitting.

Rear Panels	Descriptions
Printer	Connect to the USB printer.
PWR	Connect the included power adapter to the power outlet.
FXS1, FXS2	Connect to the analog phone for VoIP communication.
P1, P2, P3, P4	Connect to the local networked devices.
WAN	Connect the cable/DSL modem to access the Internet.
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 the ACT LED begins to blink rapidly, release the button. Then the router will restart with the factory default configuration.

1.4 Package Contains



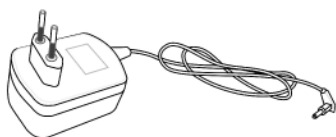
Manual



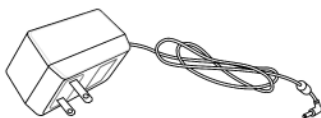
CD



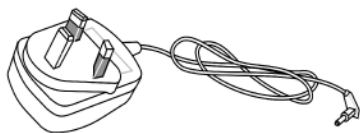
UK-type power adapter



EU-type power adapter



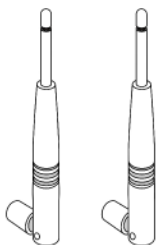
USA/Taiwan-type power adapter



AU/NZ-type power



RJ-45(Ethernet)



**Antennas for V2900VG/
VGi only**

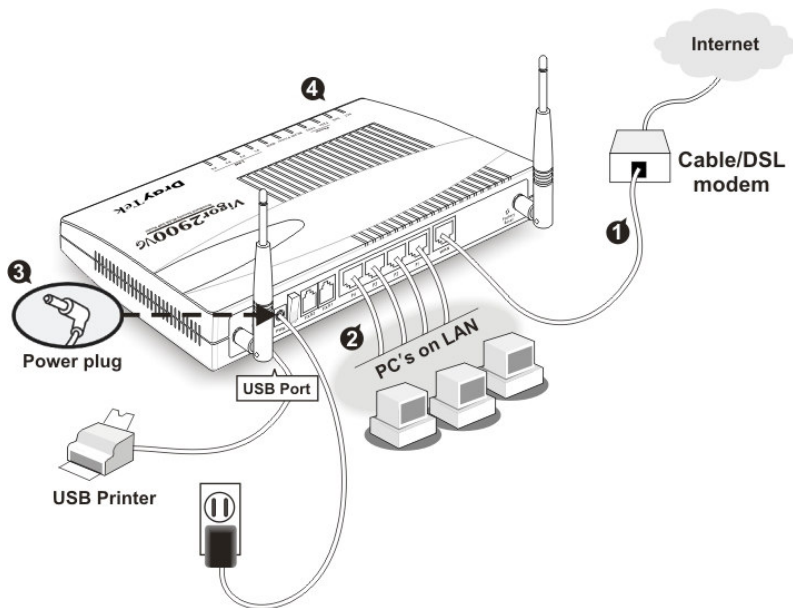
2. Quick Install Your Vigor2900V series Router

2.1 Hardware Installation

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

1. Connect the WAN interface to the external ADSL/Cable modem with a RJ-45 cable.
2. Connect one port of 4-port switch to your computer with a RJ-45 cable.
3. Connect the attached power adapter to the power port.
4. Check the ACT and WAN, LAN LEDs to assure network connections. (For detailed LED status explanation please refer to section 1.3)

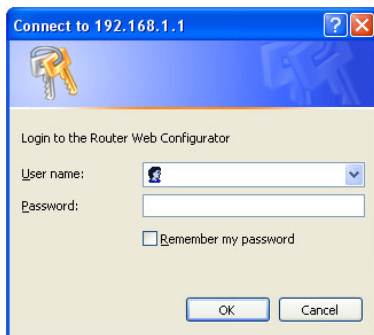
Connection scenario is shown as below:



Caution Each of the FXS ports can be connected to an analog phone only. Do not connect the FXS ports to the telephone wall jack. This connection might damage your router.

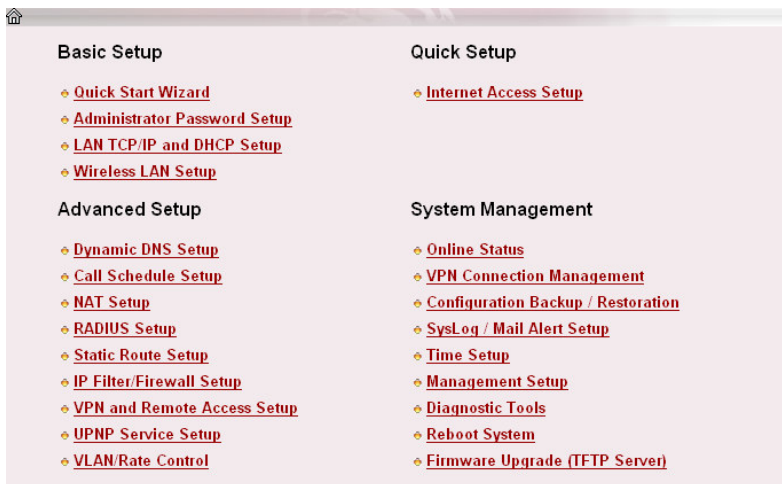
2.2 Configure Your Router via Quick Start Wizard

Step1 Open the web browser on a PC which is connected to the router and then link to the gateway IP address of the router (the default setting is **192.168.1.1**). Once your Connection (**http://192.168.1.1**) is successful, a pop-up window will open to ask for username and password. Leave the default null value and press **OK** to continue.



(Note: If you fail in access to the web configuration, please refer to section 5 “Trouble Shooting”)

Step2 The **Main Menu** will appear after completing the last step. Click **Quick Start Wizard** item in “Basic Setup” Group.(The following figure is in the instance of Vigor2900VG)



Step3 Now Quick Start Wizard is launched on. Enter login password. Then click **Next** to continue.

The screenshot shows the 'Enter login password' step of the Internet Wizard. The 'Steps' list on the left includes: 1. Enter login password (highlighted), 2. Select Time Zone, 3. Connect to the Internet, and 4. Summary. The main area contains a message: 'There is no default password. For security, please choose a set of number or character (maximum 23 characters) as your password and enter it into the Password box.' Below this are two text input fields: 'New Password' and 'Retye New Password' (note the typo). At the bottom are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Step4 Select the appropriate time zone for your location. Then click **Next** to continue.

The screenshot shows the 'Select Time Zone' step of the Internet Wizard. The 'Steps' list on the left includes: 1. Enter login password, 2. Select Time Zone (highlighted), 3. Connect to the Internet, and 4. Summary. The main area contains a message: 'Select the appropriate time zone for your location.' Below this is a dropdown menu showing '(GMT) Greenwich Mean Time : Dublin'. At the bottom are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Step5 Select the appropriate connection type to connect to your ISP. Then click **Next** to continue.

The screenshot shows the 'Connect to the Internet' step of the Internet Wizard. The 'Steps' list on the left includes: 1. Enter login password, 2. Select Time Zone, 3. Connect to the Internet (highlighted), and 4. Summary. The main area contains a message: 'Select one of the following internet Access type provided by your ISP. If you are not sure which one you should choose, please contact your ISP to get these information in detail.' Below this are four radio button options: 'PPPoE' (selected), 'PPTP', 'Static IP', and 'DHCP'. At the bottom are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

a. PPPoE

Enter the username and password provided by your ISP. Then click **Next** to go to **Setp6**.

The screenshot shows the 'Internet Wizard - Microsoft Internet Explorer' window. On the left, the 'Steps' pane lists: 1. Enter login password, 2. Select Time Zone, 3. **Connect to the Internet** (with sub-option - PPPoE), and 4. Summary. The main area is titled 'Connect to the Internet' and contains the instruction: 'Enter the user name and password provided by your ISP.' Below this are input fields for 'User Name', 'Password', and 'Retype Password'. Under 'Connection Type', the 'Always On' radio button is unselected, and the 'Dial On Demand' radio button is selected. An 'Idle Timeout' field is set to '180'. At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

b. PPTP

Fill out all the information originally provided by your ISP. Then click **Next** to go to **Setp6**.

The screenshot shows the 'Internet Wizard - Microsoft Internet Explorer' window. The 'Steps' pane is the same as in the PPPoE step. The main area is titled 'Connect to the Internet' with the instruction: 'Enter the user name, password, WAN IP configurations and PPTP server IP provided by your ISP.' It includes input fields for 'User Name', 'Password', and 'Retype Password'. Under 'WAN IP Configurations', the 'Obtain an IP address automatically' radio button is selected. Below this are input fields for 'IP Address' (172, 16, 3, 131), 'Subnet Mask' (255, 255, 255, 0), and 'PPTP Server IP' (four empty fields). At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

c. Static IP

Enter the IP address information originally provided by your ISP. Then click **Next** to go to **Setp6**.

The screenshot shows the 'Internet Wizard - Microsoft Internet Explorer' window. The 'Steps' pane is the same as in the previous steps. The main area is titled 'Connect to the Internet' with the instruction: 'Enter the Static IP configuration provided by your ISP.' It includes input fields for 'WAN IP' (172, 16, 3, 150), 'Subnet Mask' (255, 255, 255, 0), 'Gateway' (172, 16, 3, 1), 'Primary DNS' (four empty fields), and 'Secondary DNS' (four empty fields) with an '(optional)' label. At the bottom are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

d. DHCP

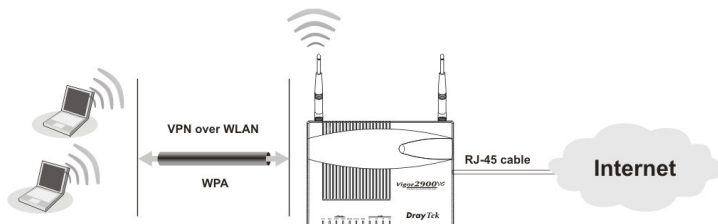
If your ISP requires you to enter a specific host name or specific MAC address, please enter it in. Then click **Next** to go to **Setp6**.

The screenshot shows the 'Internet Wizard - Microsoft Internet Explorer' window. The 'Steps' pane on the left lists: 1. Enter login password, 2. Select Time Zone, 3. Connect to the Internet (highlighted), and 4. Summary. The 'Connect to the Internet' pane contains the following text: 'If your ISP require you to enter a specific host name or specific MAC address, please enter it in. The **Clone MAC Address** button is used to copy the MAC address of your Ethernet adapter to the Vigor2900.' Below this text are input fields for 'Host Name' (optional) and 'MAC (optional)'. The MAC field is segmented into six boxes containing '00', '50', '7F', '21', 'A0', and '3F'. A 'Clone MAC Address' button is located below the MAC field. At the bottom of the window are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Step6 This screen appears to indicate that your setup is complete. Click **Finish** and then restart the router. Afterward, you will enjoy surfing on the Internet.

The screenshot shows the 'Internet Wizard - Microsoft Internet Explorer' window at the 'Summary' step. The 'Steps' pane on the left lists: 1. Enter login password, 2. Select Time Zone, 3. Connect to the Internet, and 4. Summary (highlighted). The 'Summary' pane contains the text: 'Please find your settings :', followed by 'Internet Access : DHCP' and 'Time Zone : (GMT) Greenwich Mean Time : Dublin'. Below this, it says: 'Click **Back** to modify changes if necessary. Otherwise, click **Finish** to save the current settings and restart the Vigor2900.' At the bottom of the window are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

3. Wireless LAN settings



This section will guide you how to operate the capabilities of Wireless LAN on the router. Use the following setup links on the configuration **Main Menu** to setup Wireless LAN functions.

Basic Setup > Wireless LAN Setup

The screenshot shows the 'Basic Setup > Wireless LAN Setup' page. It has a breadcrumb trail at the top: 'Basic Setup > Wireless LAN Setup'. The page is divided into two sections: 'Wireless LAN Information' and 'Detailed Settings'. Under 'Wireless LAN Information', the 'MAC Address' is '00-0c-76-71-07-77' and the 'Frequency Domain' is 'Europe'. Under 'Detailed Settings', there are three links: 'General Settings', 'Security Settings', and 'Access Control'.

The Frequency Domain is set as Europe and the MAC address is shown as above. (The default value of Frequency Domain was set by factory depends on the reselling region.)

3.1 General Settings

Click **General Settings** to configure the Service Set Identifier (SSID) and wireless channel.

The screenshot shows the 'Basic Setup > Wireless LAN Setup > General Settings' page. It has a breadcrumb trail at the top: 'Basic Setup > Wireless LAN Setup > General Settings'. The page title is 'General Setting (IEEE 802.11)'. There are several settings: 'Enable Wireless LAN' is checked; 'Mode' is set to 'Mixed(11b+11g)'; 'Scheduler (1-15)' has four empty input boxes; 'SSID' is set to 'DrayTek'; 'Channel' is set to 'Channel 6, 2437MHz'; and 'Hide SSID' is unchecked. At the bottom, there are 'Cancel' and 'OK' buttons. A note at the bottom explains the SSID, Hide SSID, and Channel settings.

-
1. **Enable Wireless LAN:** Check the box to enable wireless function.
 2. **Mode:** Select an appropriate wireless mode.
 - **Mixed (11b+11g):** The radio can support both IEEE802.11b and IEEE802.11g protocols simultaneously.
 - **11g-only:** The radio only supports IEEE802.11g protocol.
 - **11b-only:** The radio only supports IEEE802.11b protocol.
 3. **Scheduler:** Set the wireless LAN to work at some time interval only. You may choose up to 4 schedules from the 15 schedules which are defined under **Advanced Setup > Call Schedule Setup**. Please refer to the detailed manual on the attached CD. The default setting is always working.
 4. **SSID and Channel:** The default SSID is “default”. We suggest you change it to a particular name. In this case, SSID was changed to “DrayTek”.
 - **SSID (Service Set Identifier):** It is used to name the wireless LAN, and must be the same content in client PC/notebook wireless card(s). SSID can be any text numbers or various special characters.
 - **Channel:** A wireless channel for the router. The default channel is 6. You can change it to more appropriate one if the selected channel is under serious interference.
 5. **Hide SSID:** Check it to prevent from wireless sniffing and make it harder for unauthorized clients to join your wireless LAN.
 6. Click **OK** to save settings.

3.2 Security Settings

Click **Security Settings** to configure the security options.

Basic Setup > Wireless LAN Setup > Security Settings

Security Settings

Mode:

Set up **RADIUS Server** if 802.1x is enabled.

WPA:

Encryption Mode:

Pre-Shared Key(PSK)

Type 8~63 ASCII character or 64 Hexadecimal digits leading by "0x", for example "rfgs01a2..." or "0x655abcd..."

WEP:

Encryption Mode:

Use

☒ 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 "0x414233132".

For 128 bit WEP key
Type 13 ASCII character or 26 Hexadecimal digits leading by "0x", for example "0123456789abc" or "0x30313233343536373839414243".

1. **Mode:** Select an appropriate encryption to improve the security and privacy of your wireless data packets.
 - **Disable:** Turn off the encryption mechanism.
 - **WEP Only:** 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 got dynamically through 802.1x.
 - **WEP or WPA/PSK:** Accepts WEP and WPA clients simultaneously and the encryption key should be entered in WEP Key and PSK respectively.
 - **WEP/802.1x or WPA/802.1x:** Accepts WEP and WPA clients simultaneously and the encryption key is got dynamically through 802.1x.
 - **WPA/PSK Only:** Accepts only WPA clients and the encryption key should be entered in PSK.
 - **WPA/802.1x Only:** Accepts only WPA clients and the encryption key is got dynamically through 802.1x.

NOTE: You should also set RADIUS Server simultaneously if **WEP/802.1x** or **WPA/802.1x** , **WEP/802.1x Only** or **WPA/802.1x Only** mode is selected.

2. WPA Encryption:

-The WPA encrypts each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel or a key got dynamically through 802.1x.

Pre-Shared Key (PSK): Either 8~63 ASCII characters or 64 Hexadecimal digits leading by 0x can be entered. For example “0123456789ABCD....” or “0x321253abcde.....”.

3. WEP Encryption:

- **64-Bit:** For 64bits WEP key, either 5 ASCII characters or 10 hexadecimal digitals leading by 0x can be entered. For example, **ABCDE** or **0x4142434445**.
- **128-Bit:** For 128bits WEP key, either 13 ASCII characters or 26 hexadecimal digits leading by 0x can be entered. For example, **ABCDEFGHJKLM** or **0x4142434445464748494A4B4C4D**.

NOTE: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that 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. Click the circle under **Use** next to the key you wish to use.

4. Click OK to save settings.

3.3 Access Control

For additional security, **Access Control** allows restricting the network access to a list of pre-determined network clients.

Access Control

☐ Enable Access Control

Index	MAC Address
1	AA : AA : AA : AA : AA : AA

MAC Address :
[] : [] : [] : [] : [] : []

☐ Must Use VPN over WLAN

Add Remove Edit Cancel

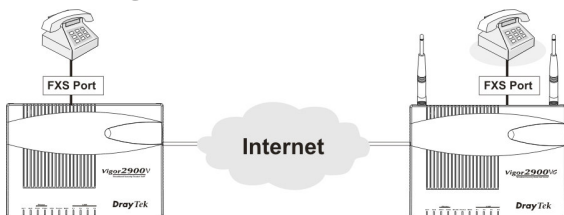
VPN server IP address for WLAN [] . [] . [] . []

Note :
Add or remove the wireless user's MAC address to accept or deny the access to the network.

Clear All OK

- 1. Enable Access Control:** Check the box to turn the function on.
 - 2. MAC Address:** Specify MAC Address which could be added on, removed from or edited from the access list above.
 - 3. Clean All:** Clean all of configured MAC address on the list.
- OK:** Save the access control list.

4. VoIP Settings



Caution Each of the FXS ports can be connected to an analog phone only. Do not connect the FXS ports to the telephone wall jack. This connection might damage your router.

This section explains the capabilities of VoIP on the router. Use the following setup links on the configuration **Main Menu** to setup VoIP functions.

Advanced Setup > VoIP Setup



4.1 DialPlan Setup

Click **DialPlan Setup**, you can setup speed dial phone book up to sixty entries.

DialPlan Configuration					<< Back
Index	Phone number	Name	IP Address / Domain	Status	
1.	12	63065	fwd.pulver.com	v	
2.	11	89721287	snom.info	v	
3.	10	sophia.hsieh	iptel.org	v	
4.		kevin.yu	iptel.org	v	
5.	614	spider	151.38.167.148	v	
6.	12	123	203.69.175.20	v	
7.	222	GY	203.219.147.170	v	
8.	223	DV	203.219.99.194	v	
9.				x	
10.				x	
11.				x	
12.				x	
..				x	

Click each index number to edit fields.

Index No. 1 << Back

☒ Enable

Phone Number :

Name :

IP Address / Domain :

OK

Enable

To enable this entry for mapping phone number when you dial the keypad on the phone.

Phone Number

Speed dial number you can choose any number from 0-9 and *.

Name

This field can fill with name (when using SIP protocol) or number. The number or name you filled must be the same as called party's setting.

IP Address / Domain

You can enter either IP address or domain name.

Example 1:

If Tom gives you a SIP URL as **sip:63065@fwd.pulver.com** then you can input the number just as the previous figure, except you can change any number in the Phone Number field.

Example 2:

If Aaron gives you a sip url as **sip:aaron@203.69.175.19** then you can enter the DialPlan as:

Phone Number:	1234 (any number you like)
Name:	aaron
IP Address / Domain:	203.69.175.19

Example 3:

If Calvin give you an IP address 203.69.175.16 only, and it is not in your DialPlan, you still can use keypad on the phone to dial as
#203*69*175*19#

4.2 SIP Related Function Setup

SIP << Back

SIP Port : 5060
Registrar : fwd.pulver.com

Ports Setting

Port 1 <input checked="" type="checkbox"/> Use Registrar Name : 56984 Password : Expiry Time : 1 hour	Port 2 <input type="checkbox"/> Use Registrar Name : p1 Password : Expiry Time : 10 mins
--	---

Cancel OK

- | | |
|---------------------|---|
| SIP Port | The port number is used to send/receive SIP message for building a session. While the default value is 5060, you can change it to other number. However, this situation needs other party to change simultaneously to the same number. |
| Registrar | You can enter domain name or IP address of SIP Registrar server. For example, iptel.org or 195.37.77.101 is identical. You have to apply an account of SIP Registrar server before you can use it. However, it is not necessary to use sip registrar server function in order to use VoIP function. |
| Use Register | check this box then you can use register function to register your Vigor with an SIP registrar server. |
| Name | You can enter a name or a number in this field. This field is the name part of SIP url. |
| Password | Enter the password when you use a SIP registrar server which needs password. |
| Expire Time | The time duration that SIP registrar server keeps your registration record. Before the time expired, Vigor will issue another register message to registrar server again. |
-

4.3 Calling Scenario

4.3.1 Peer-to-peer calling

There are two people, say Kevin and Aaron. They both have Vigor2900V series router in hand, so here's their settings in order to call each other.

Kevin's IP address is: 214.61.172.53

Aaron's IP address is: 203.69.175.19

A. Kevin's setting

A-1 DialPlan Setup index 1

Phone Number: 1234

(any number you like)

Name: aaron

IP Address / Domain:

203.69.175.19

A-2 SIP Related Functions Setup

SIP Port: 5060

Registrar:

(leave blank, don't fill any thing)

Port 1:

Use Register: (leave blank)

Name: kevin

Password:

(leave blank, don't fill any thing)

Expiry Time: use default value

A-3 CODEC/RTP/DTMF Setup

Use default value.

B. Aaron's setting

B-1 DialPlan Setup index 1

Phone Number: 123

(any number you like)

Name: kevin

IP Address / Domain:

214.61.172.53

B-2 SIP Related Functions Setup

SIP Port: 5060

Registrar:

(leave blank, don't fill any thing)

Port 1:

Use Register: (leave blank)

Name: aaron

Password: (leave blank, don't fill any thing)

Expiry Time: use default value

B-3 CODEC/RTP/DTMF Setup

Use default value.

C. Now, when Kevin wants to call Aaron, he picks up the phone and dials **1234**.

D. When Aaron wants to call Kevin, he picks up the phone and dials **123**

4.3.2 Calling via SIP proxy

Here's the scenario that two people call each other via sip proxy; this is a good way to calling when they use dynamic public IP addresses. Again, here's the setting for each other:

Kevin's sip url is: **sip:kevinyu@iptel.org**

Irene's sip url is: **sip:irene@iptel.org**

A. Kevin's setting

A-1 DialPlan index 1

Phone Number: 611

(any number you like)

Name: irene

IP Address / Domain: iptel.org

A-2 SIP Related Functions Setup

SIP Port: 5060

Registrar: iptel.org

Port 1:

Use Register: (checked)

Name:kevinyu

Password: *****

(enter the password)

Expiry Time: use default value

A-3 CODEC/RTP/DTMF Setup

Use default value.

B. Irene's setting

B-1 DialPlan index 1

Phone Number: 217

(any number you like)

Name: kevinyu

IP Address / Domain: iptel.org

B-2 SIP Related Functions Setup

SIP Port: 5060

Registrar:iptel.org

Port 1:

Use Register: (checked)

Name: irene

Password:*****

(enter the password)

Expiry Time: use default value

B-3 CODEC/RTP/DTMF Setup

Use default value.

C. Now, when Kevin wants to call Irene, he picks up the phone and dial **611**.

D. When Irene wants to call Kevin, she picks up the phone and dials **217**

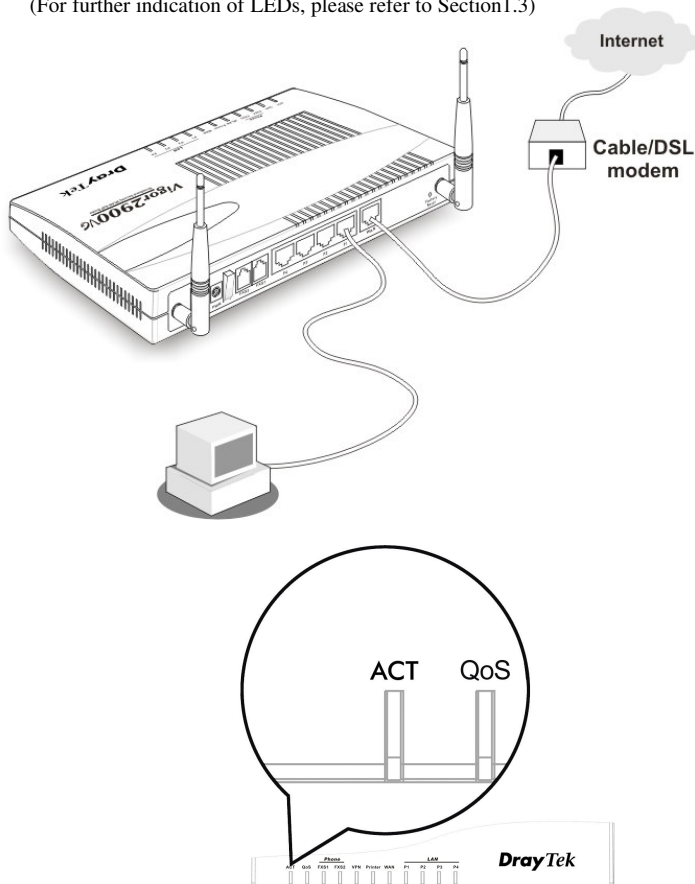
5. Trouble Shooting

This section will guide you how to shoot troubles on abnormal situations. Please follow the order of subsections as below to check your installation.

5.1 Is the Hardware Status OK?

1. Check that if the power line and WAN/LAN cable are connected correctly.
2. Turn on the router, check if the **ACT LED** blink once per second, and the correspondent **LAN LED** is bright.

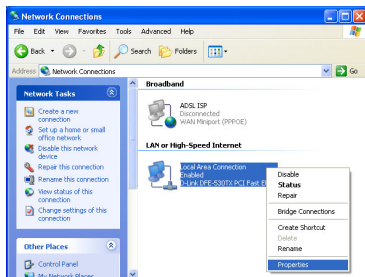
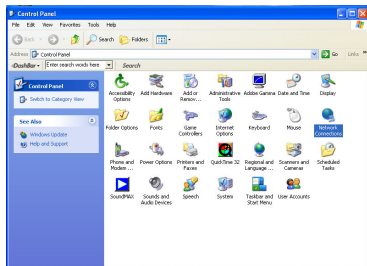
(For further indication of LEDs, please refer to Section 1.3)



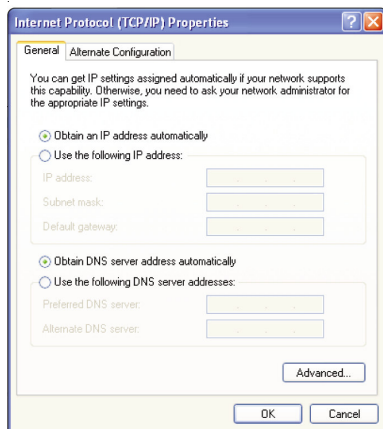
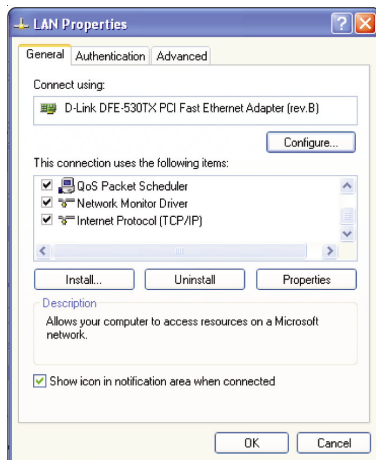
5.2 Are the Network Connection Settings on Your PC OK?

The following example is based on Windows XP case, regarding the other OS examples, please refer to the similar steps or 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 on **Internet Protocol (TCP/IP)** and then click **Properties**.
4. Select **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

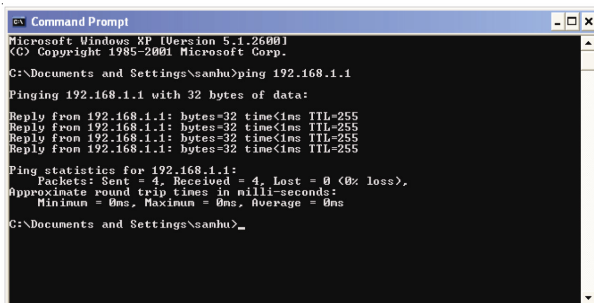


5.3 Can You Ping the Router from PC?

The default gateway IP of the router is 192.168.1.1. Please check that if you can ping the router correctly.

A. 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).
3. Type **ping 192.168.1.1** and press [Enter]



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

C:\Documents and Settings\sanhua>ping 192.168.1.1

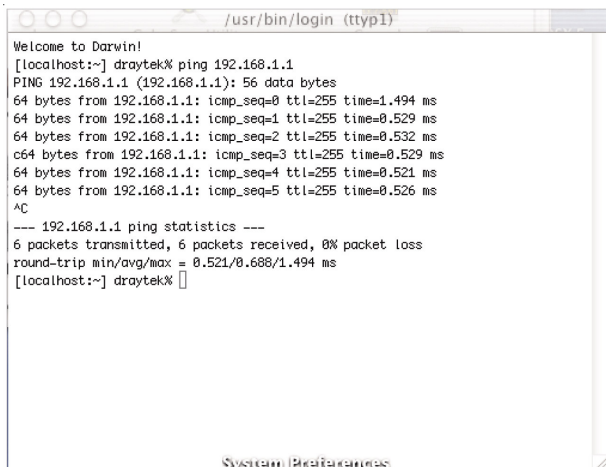
Pinging 192.168.1.1 with 32 bytes of data:

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

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

B. For Mac (Terminal)



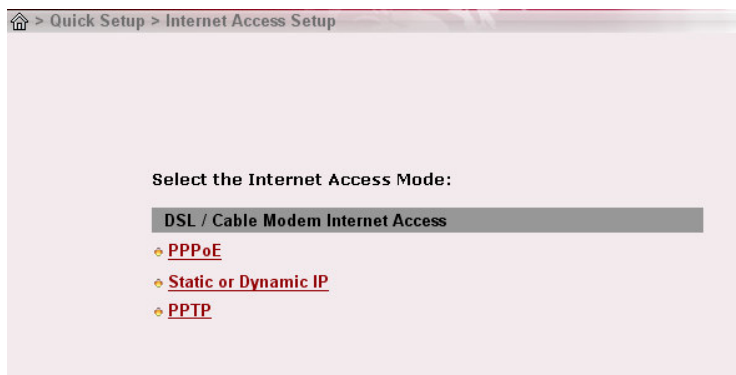
```
/usr/bin/login (tty1)

Welcome to Darwin!
[localhost:~] 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=1.494 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=255 time=0.529 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=255 time=0.532 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=255 time=0.529 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=255 time=0.521 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=255 time=0.526 ms
^C
--- 192.168.1.1 ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 0.521/0.688/1.494 ms
[localhost:~] draytek%
```

The important thing is that the computer receives a reply from 192.168.1.1. If not, please check the IP address of your PC. We suggest you set the network connection as get IP automatically. (Please refer to section 5.2)

5.4 Are the ISP Settings OK?

1. Enter the web configuration UI to check your ISP settings (please refer to section 2.2 setp1).
2. Click **Internet Access Setup** item in the “Quick Setup” group and then the UI will switch to the following window.



Internet Access Setup

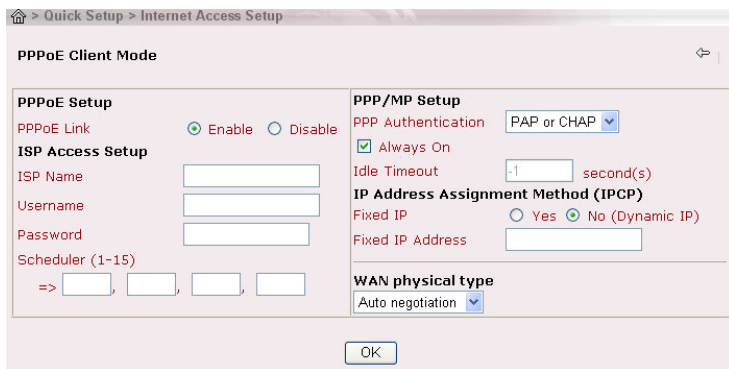
Select the Internet Access Mode:

DSL / Cable Modem Internet Access

- ✦ PPPoE
- ✦ Static or Dynamic IP
- ✦ PPTP

A. For PPPoE Users

1. Check that if the **Enable** option is selected.
2. Check that if the **Username** and **Password** are entered correct value given by your ISP.



PPPoE Client Mode

PPPoE Setup PPPoE Link <input checked="" type="radio"/> Enable <input type="radio"/> Disable ISP Access Setup ISP Name <input type="text"/> Username <input type="text"/> Password <input type="text"/> Scheduler (1-15) => <input type="text"/> , <input type="text"/> , <input type="text"/> , <input type="text"/>	PPP/MP Setup PPP Authentication <input type="text" value="PAP or CHAP"/> <input checked="" type="checkbox"/> Always On Idle Timeout <input type="text" value="-1"/> second(s) IP Address Assignment Method (IPCP) Fixed IP <input type="radio"/> Yes <input checked="" type="radio"/> No (Dynamic IP) Fixed IP Address <input type="text"/> WAN physical type Auto negotiation <input type="text"/>
--	--

OK

B. For Static or Dynamic Users

1. Check that if the **Enable** option is selected.
2. Check that if **WAN IP Network Settings** is set appropriately. If you select “Specify an IP address”, **IP Address**, **Subnet Mask**, and **Gateway IP Address** have to be entered the correct value.

The screenshot shows the 'Static or Dynamic IP (DHCP Client)' configuration window. It is divided into two main sections: 'Access Control' and 'WAN IP Network Settings'. In the 'Access Control' section, 'Broadband Access' is set to 'Enable'. Under 'Keep WAN Connection', 'Enable PING to keep alive' is unchecked, and 'PING to the IP' is set to '0.0.0.0'. 'PING Interval' is set to '0' minutes. 'WAN physical type' is set to 'Auto negotiation'. 'RIP Protocol' is set to 'Enable RIP'. In the 'WAN IP Network Settings' section, 'Obtain an IP address automatically' is selected. Fields for 'Router Name' and 'Domain Name' are present. A note indicates that these are required for some ISPs. 'Default MAC Address' is selected, and the 'MAC Address' is shown as '00 : 50 : 7F : 23 : 0C : 8A'. There is a 'WAN IP Alias' button. Below this, 'Specify an IP address' is unselected, and fields for 'IP Address', 'Subnet Mask', and 'Gateway IP Address' are provided but empty. An 'OK' button is at the bottom.

C. For PPTP Users

1. Check that if the **Enable** option is selected.
2. Check that if **PPTP Server**, **Username**, **Password** is entered the correct value given by your ISP.
3. Check that if **LAN2/WAN IP Network Settings** is set appropriately. If you select “Specify an IP address”, **IP Address** and **Subnet Mask** have to be entered the correct value.

The screenshot shows the 'PPTP Client Mode' configuration window. It is divided into two main sections: 'PPTP Setup' and 'PPTP Setup'. In the 'PPTP Setup' section, 'PPTP Link' is set to 'Disable'. 'PPTP Server' is set to '0.0.0.0'. Under 'ISP Access Setup', fields for 'ISP Name', 'Username', and 'Password' are provided. 'Scheduler (1-15)' is set to '=>'. In the 'PPTP Setup' section, 'PPP Authentication' is set to 'PAP or CHAP'. 'Always On' is checked. 'Idle Timeout' is set to '-1' seconds. 'IP Address Assignment Method (IPCP)' is set to 'No (Dynamic IP)'. 'Fixed IP' is set to 'Yes'. 'Fixed IP Address' is provided. In the 'LAN2/WAN IP Network Settings' section, 'Obtain an IP address automatically' is selected. 'Specify an IP address' is unselected. Fields for 'IP Address' and 'Subnet Mask' are provided but empty. 'WAN physical type' is set to 'Auto negotiation'. An 'OK' button is at the bottom.

5.5 Report to ISP and Dealer for Further Technical Support

1. If the router settings are correct at all, and the router still does not connect, please contact your ISP technical support representative to help you for configuration.
2. If the router does not work correctly, please contact your dealer for help. For any further questions, please send e-mail to support@draytek.com

www.draytek.com

Tel: 886-3-5972727

Fax: 886-3-5972121

Email: support@draytek.com

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