D-Link®

Version 1.0 | 06/18/2013

User Manual

Dual Band Wireless AC1200 Gigabit ADSL2+ Router

DSL-2880AL

Table of Contents

Package Contents

- DSL-2880AL Dual Band Wireless AC1200 Gigabit ADSL2+ Router
- 4 Internal Antennae
- Power Adapter
- CD-ROM with Installation Wizard, User Manual, and Special Offers
- One twisted-pair telephone cable used for ADSL connection
- One straight-through 8P8C RJ-45 Ethernet cable
- One Quick Installation Guide

Note: Using a power supply with a different voltage rating than the one included within the package will cause damage and void the warranty for this product.

System Requirements

1. ADSL Internet service
   Computer with:
   - 200MHz Processor
   - 64MB Memory
   - CD-ROM Drive
   - Ethernet Adapter with TCP/IP Protocol Installed
   - Windows 8/7/vista/XP/2000z
   - MAC OS
   - Internet Explorer v6 or later, FireFox v1.5

2. DCC (D-Link Click's Connect) Utility
   Computer with:
   - MS Windows - Win7/Vista/XP/2000

Introduction

HIGH-SPEED WAN (ADSL2/2+ or Gigabit Ethernet WAN) INTERNET CONNECTION
Latest ADSL2/2+ standards provide Internet transmission of up to 24Mbps downstream, 2.7Mbps upstream. Gigabit Ethernet WAN offers you plenty of bandwidth once you decide to employ Ethernet WAN to connect front end bridge modem.

HIGH-PERFORMANCE WIRELESS
Embedded 802.11ac* technology for high-speed wireless connection, complete compatibility with 802.11a/b/g/n wireless devices

TOTAL SECURITY
Firewall protection from Internet attacks, user access control, WPA/WPA2 wireless security.

ULTIMATE INTERNET CONNECTION
The DSL-2880AL ADSL2+ router is a versatile, high-performance remote router for home and the small office. With integrated ADSL2/2+ supporting up to 24Mbps download and 2.7Mbps upload speed, Gigabit Ethernet WAN Port, firewall protection, Quality of Service (QoS), 802.11ac wireless LAN and 4 Gigabit Ethernet LAN switch ports, this router provides all the functions that a home or small office needs to establish a secure and high-speed remote link to the outside world.

ULTIMATE WIRELESS CONNECTION WITH MAXIMUM SECURITY
This router provides maximize wireless performance by connecting this router to computer interfaces and stay connected from virtually anywhere at home and in the office. The router can be used with 802.11a/b/g/n/ac wireless networks to enable significantly improved reception. It supports WPA/WPA2 and WEP for flexible user access security and data encryption methods.

FIREWALL PROTECTION & QoS
Security features prevents unauthorized access to the home and office network, be it from the wireless devices or from the Internet. The router provides firewall security using Stateful Packet Inspection (SPI) and hacker attack logging for Denial of Service (DoS) attack protection. SPI inspects the contents of all incoming packet headers before deciding what packets are allowed to pass through. Router access control is provided with packet filtering based on port and source/destination MAC/IP addresses. For Quality of Service (QoS), the router supports multiple priority queues to enable a group of home or office users to experience the benefit of smooth network connection of inbound and outbound data without concern of traffic congestion. This QoS support allows users to enjoy high ADSL transmission for applications such as VoIP and streaming multimedia over the Internet.

*Maximum wireless signal rate derived from IEEE standard 802.11ac specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

Features

- **Faster Wireless Networking** - The DSL-2880AL router provides up to 866Mbps* wireless connection with other 802.11ac wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio.

- **Compatible with 802.11a, 802.11b, 802.11g, 802.11n and 802.11ac* Devices -** The DSL-2880AL series router is still fully compatible with the IEEE 802.11a, b, g, n and ac standards. Thus it can connect with existing 802.11a, b, g, n and ac* PCI, USB and Card-bus adapters.

- **DHCP Support** - Dynamic Host Configuration Protocol automatically and dynamically assigns all LAN IP settings to each host on your network. This eliminates the need to reconfigure every host whenever changes in network topology occur.

- **Network Address Translation (NAT)** - For small office environments, the DSL-2880AL allows multiple users on the LAN to access the Internet concurrently through a single Internet account. This provides Internet access to everyone in the office for the price of a single user. NAT improves network security in effect by hiding the private network behind one global and visible IP address. NAT address mapping can also be used to link two IP domains via a LAN-to-LAN connection.

- **Precise ATM Traffic Shaping** - Traffic shaping is a method of controlling the flow rate of ATM data cells. This function helps to establish the Quality of Service for ATM data transfer.

- **High Performance WAN** - Very high rates of data transfer are possible with the Router. Up to 24Mbps downstream bit rate over DSL interface by using the G.dmt standard (ADSL2+). Gigabit Ethernet WAN offers you plenty of bandwidth once you decide to employ Ethernet WAN to connect front end bridge modem with Ethernet LAN port.

- **Full Network Management** - The DSL-2880AL incorporates SNMP (Simple Network Management Protocol) support for web-based management and text-based network management via Telnet connection.

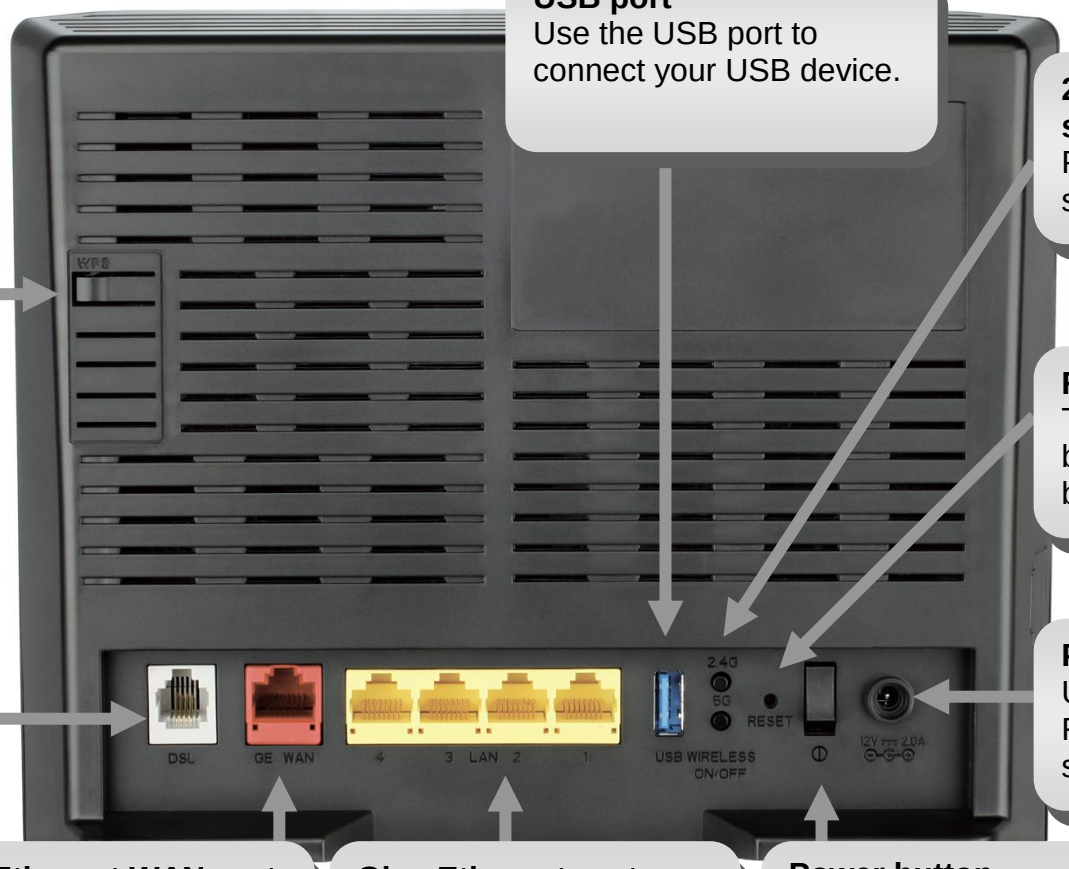
- **Easy Installation** - The DSL-2880AL uses a web-based graphical user interface program for convenient management access and easy set up. Any common web browser software can be used to manage the Router.

- **USB Support**- The DSL-2880AL provides USB port for easy sharing files and printers. The DSL-2880AL supports USB storage device sharing files through SAMBA file server, FTP server, Web file server and in addition also supports sharing USB printer server to network members (Remark: The client computers are required to install additional software utility named D-Link Link'n Print.). Besides sharing function, the DSL-2880AL also supports connect to internet by USB 3G modem.

- **IPv6 Connection Support** – For IPv6 connection, the DSL-2880AL provides several connection types: Link-local, Static IPv6, DHCPv6, Stateless Auto-configuration, PPPoE, IPv6 in IPv4 Tunnel and 6to4.

*Maximum wireless signal rate derived from IEEE standard 802.11ac specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

Hardware Overview – Connections



USB port
Use the USB port to connect your USB device.

2.4G & 5G Wireless On/Off switch button
Please press and hold on for 3 seconds to turn on/turn off.

WPS H/W Push button
To pair-up the wireless device which also support WPS feature

Reset button
To manually reset, depress button with the power on for between ten and fifteen seconds

ADSL port
Use the ADSL cable to connect to the your telephone line (RJ-11 port)

Power insert
Use the adapter shipped with the Router to connect to power source

Giga Ethernet WAN port
To connect the Router to front end Bridge Modem device Ethernet LAN

Giga Ethernet ports
To connect the Router to your Ethernet LAN or Ethernet devices

Power button
Push in to power-on the Router. Push again to power-off the Router

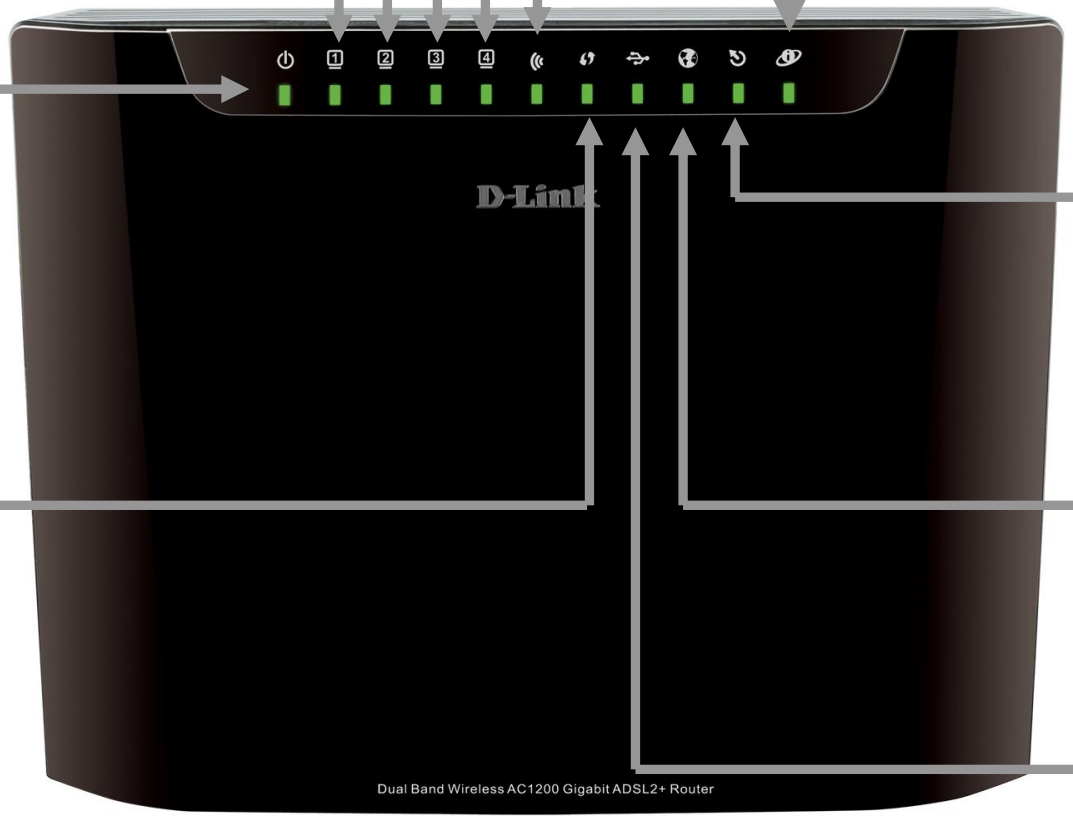
Hardware Overview – LED Indication

Ethernet LAN
A solid Green light indicates a valid link on startup at 1000Mbps. A solid Amber light indicates a valid link on startup at 100Mbps. These lights blink when there is activity currently passing through the Ethernet port.

WLAN
Steady Green light indicates 2.4G wireless connection. Steady Amber indicates 5G wireless connection. Blinking light indicates WLAN activity.

Internet
Steady Green light indicates a successful Internet connection. Steady Red light indicates failed Internet connection. Dark if no WAN protocol is configured.

Power
Steady Green light indicates the unit is powered on. When the device is powered off, this remains dark.



DSL
Steady Green light indicates a valid ADSL connection. This will light after the ADSL negotiation process has been settled. A blinking Green light indicates activity on the WAN (ADSL) interface.

WPS
Dark indicates ready for new WPS connection. Blinking indicates WPS process is triggered and waiting for another WPS device joining. Steady Blue light indicates connection is successfully established between the router and the client. The LED will remain in solid Blue for 5 seconds.

Ethernet WAN
A solid Green light indicates a valid link on startup at 1000Mbps. A solid Amber light indicates a valid link on startup at 100Mbps. A solid Green + Amber light indicates link rate is 10Mbps.This light blinks when there is activity currently passing through the Ethernet port.

USB
Steady Green light indicates a successful USB connection. Dark if no USB device is plugged.

Installation

This section will walk you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in the attic or garage.

Before you Begin

Please read and make sure you understand all the prerequisites for proper installation of your new Router. Have all the necessary information and equipment on hand before beginning the installation.

Installation Notes

In order to establish a connection to the Internet it will be necessary to provide information to the Router that will be stored in its memory. For some users, only their account information (Username and Password) is required. For others, various parameters that control and define the Internet connection will be required. You can print out the two pages below and use the tables to list this information. This way you have a hard copy of all the information needed to setup the Router. If it is necessary to reconfigure the device, all the necessary information can be easily accessed. Be sure to keep this information safe and private.

Low Pass Filters
Since ADSL and telephone services share the same copper wiring to carry their respective signals, a filtering mechanism may be necessary to avoid mutual interference. A low pass filter device can be installed for each telephone that shares the line with the ADSL line. These filters are easy to install passive devices that connect to the ADSL device and/or telephone using standard telephone cable. Ask your service provider for more information about the use of low pass filters with your installation.

Operating Systems
The DSL-2880AL uses an HTML-based web interface for setup and management. The web configuration manager may be accessed using any operating system capable of running web browser software, including Windows 98 SE, Windows ME, Windows 2000, Windows XP, Windows 7, and Windows 8.

Web Browser
Any common web browser can be used to configure the Router using the web configuration management software. The program is designed to work best with more recently released browsers such as Opera, Microsoft Internet Explorer® version 6.0, Netscape Navigator® version 6.2.3, or later versions. The web browser must have JavaScript enabled. JavaScript is enabled by default on many browsers. Make sure JavaScript has not been disabled by other software (such as virus protection or web user security packages) that may be running on your computer.

Ethernet Port (NIC Adapter)
Any computer that uses the Router must be able to connect to it through the Ethernet port on the Router. This connection is an Ethernet connection and therefore requires that your computer be equipped with an Ethernet port as well. Most notebook computers are now sold with an Ethernet port already installed. Likewise, most fully assembled desktop computers come with an Ethernet NIC adapter as standard equipment. If your computer does not have an Ethernet port, you must install an Ethernet NIC adapter before you can use the Router. If you must install an adapter, follow the installation instructions that come with the Ethernet NIC adapter.

802.11 Wireless LAN Configuration

All the 802.11 wireless LAN settings may be configured on a single page using the web-based manager. For basic wireless communication you need to decide what channel to use and what SSID to assign. These two settings must be the same for any wireless workstations or other wireless access point that communicate with the DSL-2880AL through the wireless interface.

Security for wireless communication can be accomplished in a number of ways. DSL-2880AL supports WPA (Wi-Fi Protected Access), WPA2, and mixed WPA/WPA2. Wireless access can also be controlled by selecting MAC addresses that are allowed to associate with the device. Please read the section on Wireless Configuration.

Additional Software

It may be necessary to install software on your computer that enables the computer to access the Internet. Additional software must be installed if you are using the device a simple bridge. For a bridged connection, the information needed to make and maintain the Internet connection is stored on another computer or gateway device, not in the Router itself.

If your ADSL service is delivered through a PPPoE or PPPoA connection, the information needed to establish and maintain the Internet connection can be stored in the Router. In this case, it is not necessary to install software on your computer. It may however be necessary to change some settings in the device, including account information used to identify and verify the connection.

All connections to the Internet require a unique global IP address. For bridged connections, the global IP settings must reside in a TCP/IP enabled device on the LAN side of the bridge, such as a PC, a server, a gateway device such as a router or similar firewall hardware. The IP address can be assigned in a number of ways. Your network service provider will give you instructions about any additional connection software or NIC configuration that may be required.

Information you need from the Internet service provider

Username
This is the Username used to log on to your ADSL service provider's network. It is commonly in the form user@isp.com.au or user@isp.co.nz Your ADSL service provider uses this to identify your account.

Password
This is the Password used, in conjunction with the Username above, to log on to your ADSL service provider's network. This is used to verify the identity of your account.

WAN Setting / WAN Media Type / Connection Type
These settings describe the method your Internet service provider uses to transport data between the Internet and your computer. Most users will use the default settings. You may need to specify one of the following WAN Setting and Connection Type configurations (Connection Type settings listed in parenthesis):

- WAN Media Type (RJ-11 for DSL digital subscriber line or RJ-45 Ethernet for connecting your device to a VDSL bridge modem or a optical network unit, also known as ONU)
- PPPoE / PPPoA (PPPoE LLC, PPPoA LLC or PPPoA VC-Mux)
- Bridge Mode (1483 Bridged IP LLC or 1483 Bridged IP VC Mux)
- IPoA / MER (Static IP Address) (Bridged IP LLC, 1483 Bridged IP VC Mux, 1483 Routed IP LLC, 1483 Routed IP VC-Mux or IPoA)
- MER (Dynamic IP Address) (1483 Bridged IP LLC or 1483 Bridged IP VC-Mux)

Modulation Type
ADSL uses various standardized modulation techniques to transmit data over the allotted signal frequencies. Some users may need to change the type of modulation used for their service. The default DSL modulation (ADSL2+ Multi-Mode) used for the Router automatically detects all types of ADSL, ADSL2, and ADSL2+ modulation. However, if you are instructed to specify the modulation type used for the Router, you may choose among the numerous options available on the Modulation Type drop-down menu on the ADSL Configuration window (Advanced > ADSL)

Security Protocol
This is the method your ADSL service provider will use to verify your Username and Password when you log on to their network. Your Router supports the PAP and CHAP protocols.

VPI

Most users will not be required to change this setting. The Virtual Path Identifier (VPI) is used in conjunction with the Virtual Channel Identifier (VCI) to identify the data path between your ADSL service provider's network and your computer. If you are setting up the Router for multiple virtual connections, you will need to configure the VPI and VCI as instructed by your ADSL service provider for the additional connections. This setting can be changed in the WAN Settings window of the web management interface.

VCI

Most users will not be required to change this setting. The Virtual Channel Identifier (VCI) used in conjunction with the VPI to identify the data path between your ADSL service provider's network and your computer. If you are setting up the Router for multiple virtual connections, you will need to configure the VPI and VCI as instructed by your ADSL service provider for the additional connections. This setting can be changed in the WAN Settings window of the web management interface.

Information you need to know about DSL-2880AL

System Administrator Username
This is the Username needed access the Router's management interface. When you attempt to connect to the device through a web browser you will be prompted to enter this Username. The default Username for the Router is "admin." The user cannot change this.

System Administrator Password
This is the Password you will be prompted to enter when you access the Router's management interface. The default Password is "admin." The user may change this.

LAN IP addresses for the DSL-2880AL
This is the IP address you will enter into the Address field of your web browser to access the Router's configuration graphical user interface (GUI) using a web browser. The default IP address is 192.168.1.1. This may be changed to suit any IP address scheme the user desires. This address will be the base IP address used for DHCP service on the LAN when DHCP is enabled.

LAN Subnet Mask for the DSL-2880AL
This is the subnet mask used by the DSL-2880AL, and will be used throughout your LAN. The default subnet mask is 255.255.255.0. This can be changed later.

Information you will need about your LAN or computer:

Ethernet NIC
If your computer has an Ethernet NIC, you can connect the DSL-2880AL to this Ethernet port using an Ethernet cable. You can also use the Ethernet ports on the DSL-2880AL to connect to other computer or Ethernet devices.

DHCP Client Status
Your DSL-2880AL ADSL Router is configured, by default, to be a DHCP server. This means that it can assign an IP address, subnet mask, and a default gateway address to computers on your LAN. The default range of IP addresses the DSL-2880AL will assign are from 192.168.1.2 to 192.168.1.254. Your computer (or computers) needs to be configured to Obtain an IP address automatically (that is, they need to be configured as DHCP clients.)

It is recommended that your collect and record this information here, or in some other secure place, in case you have to re-configure your ADSL connection in the future.

Once you have the above information, you are ready to setup and configure your DSL-2880AL Wireless ADSL Router.

Wireless Installation Considerations

DSL-2880AL lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

Device Installation

DSL-2880AL Daul Band 802.11ac Wireless ADSL2+ Gigabit Ethernet Router maintains four separate interfaces, an Ethernet LAN, a wireless LAN, an Ethernet WAN and an ADSL Internet (WAN) connection. Carefully consider the Router's location suitable for connectivity for your Ethernet and wireless devices. You must have a functioning broadband connection via a bridge device such as a Cable or ADSL modem in order to use the Router's WAN function.

Place the Router in a location where it can be connected to the various devices as well as to a power source. The Router should not be located where it will be exposed to moisture, direct sunlight or excessive heat. Make sure the cables and power cord are placed safely out of the way so they do not create a tripping hazard. As with any electrical appliance, observe common sense safety procedures.
The Router can be placed on a shelf, desktop, or other stable platform. If possible, you should be able to see the LED indicators on the front if you need to view them for troubleshooting.

Power on Router

The Router must be used with the power adapter included with the device.

1. Insert the AC Power Adapter cord into the power receptacle located on the rear panel of the Router and plug the adapter into a suitable nearby power source.
2. Push down the Power button, and you should see the Power LED indicator light up and remain lit.
3. If the Ethernet port is connected to a working device, check the Ethernet Link/Act LED indicators to make sure the connection is valid. The Router will attempt to establish the ADSL connection, if the ADSL line is connected and the Router is properly configured this should light up after several seconds. If this is the first time installing the device, some settings may need to be changed before the Router can establish a connection.

Factory Reset Button

The Router may be reset to the original factory default settings by using a ballpoint or paperclip to gently push down the reset button in the following sequence:

1. Press and hold the reset button (the button just beside power button) while the device is powered off.
2. Turn on the power.
3. Wait for 10~15 seconds and then release the reset button.
4. To power off and power on again to make device boot-up in normal state

Remember that this will wipe out any settings stored in flash memory including user account information and LAN IP settings. The device settings will be restored to the factory default IP address **192.168.1.1** and the subnet mask is **255.255.255.0**, the default management Username is "admin" and the default Password is "admin."

Network Connections

Connect to ADSL Line

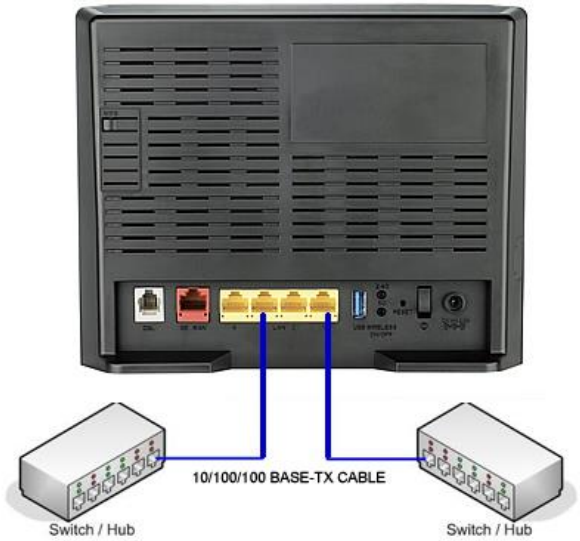
Use the ADSL cable included with the Router to connect it to a telephone wall socket or receptacle. Plug one end of the cable into the ADSL port (RJ-11 receptacle) on the rear panel of the Router and insert the other end into the RJ-11 wall socket. If you are using a low pass filter device, follow the instructions included with the device or given to you by your service provider. The ADSL connection represents the WAN interface, the connection to the Internet. It is the physical link to the service provider's network backbone and ultimately to the Internet.

Connect Router to Ethernet

The Router may be connected to a single computer or Ethernet device through the 10BASE-TX Ethernet port on the rear panel. Any connection to an Ethernet concentrating device such as a switch or hub must operate at a speed of 10/100/1000 Mbps only. When connecting the Router to any Ethernet device that is capable of operating at speeds higher than 10Mbps, be sure that the device has auto-negotiation (NWay) enabled for the connecting port. Use standard twisted-pair cable with RJ-45 connectors. The RJ-45 port on the Router is a crossed port (MDI-X). Follow standard Ethernet guidelines when deciding what type of cable to use to make this connection. When connecting the Router directly to a PC or server use a normal straight-through cable. You should use a crossed cable when connecting the Router to a normal (MDI-X) port on a switch or hub. Use a normal straight-through cable when connecting it to an uplink (MDI-II) port on a hub or switch. The rules governing Ethernet cable lengths apply to the LAN to Router connection. Be sure that the cable connecting the LAN to the Router does not exceed 100 meters.

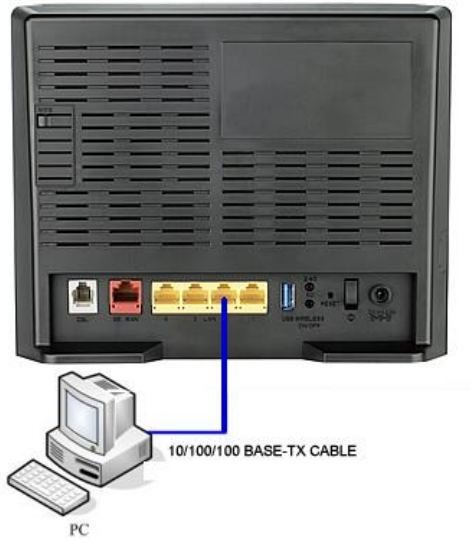
Hub or Switch to Router Connection

Connect the Router to an uplink port (MDI-II) on an Ethernet hub or switch with a straight-through 8P8C RJ-45 Ethernet cable as shown in this diagram. If you wish to reserve the uplink port on the switch or hub for another device, connect to any on the other MDI-X ports (1x, 2x, etc.) with a crossed cable.



Computer to Router Connection

You can connect the Router directly to a 10/100/1000 BASE-TX Ethernet adapter card (NIC) installed on a PC using the straight-through 8P8C RJ-45 Ethernet cable provided as shown in this diagram.



Configuration

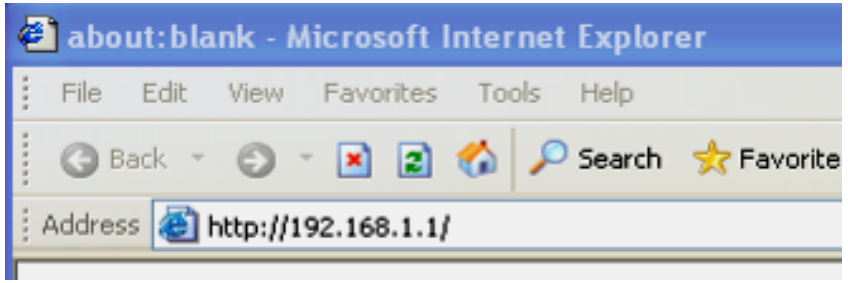
This section will show you how to configure your new D-Link wireless router using the web-based configuration utility.

Web-based Configuration Utility

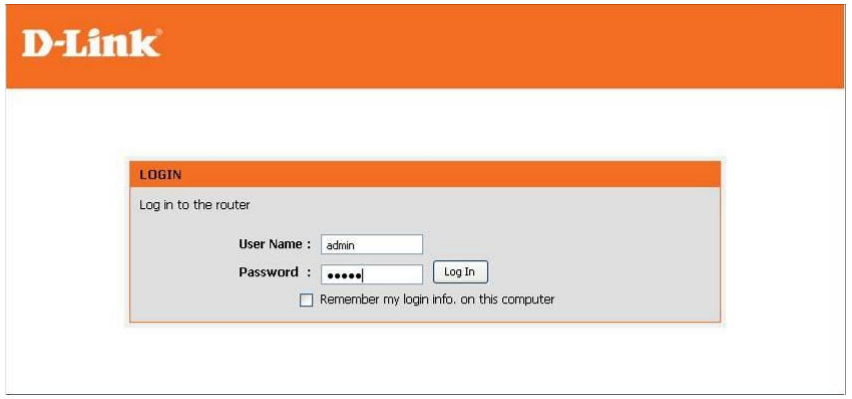
Connect to the Router

To configure the WAN connection used by the Router it is first necessary to communicate with the Router through its management interface, which is HTML-based and can be accessed using a web browser. The easiest way to make sure your computer has the correct IP settings is to configure it to use the DHCP server in the Router. The next section describes how to change the IP configuration for a computer running a Windows operating system to be a DHCP client.

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (192.168.1.1).



Type **"admin**" for the User Name and "**admin**" in the Password field. If you get a **Page Cannot be Displayed** error, please refer to the **Troubleshooting** section for assistance.



SETUP

This chapter is concerned with using your computer to configure the WAN connection. The following chapter describes the various windows used to configure and monitor the Router including how to change IP settings and DHCP server setup.

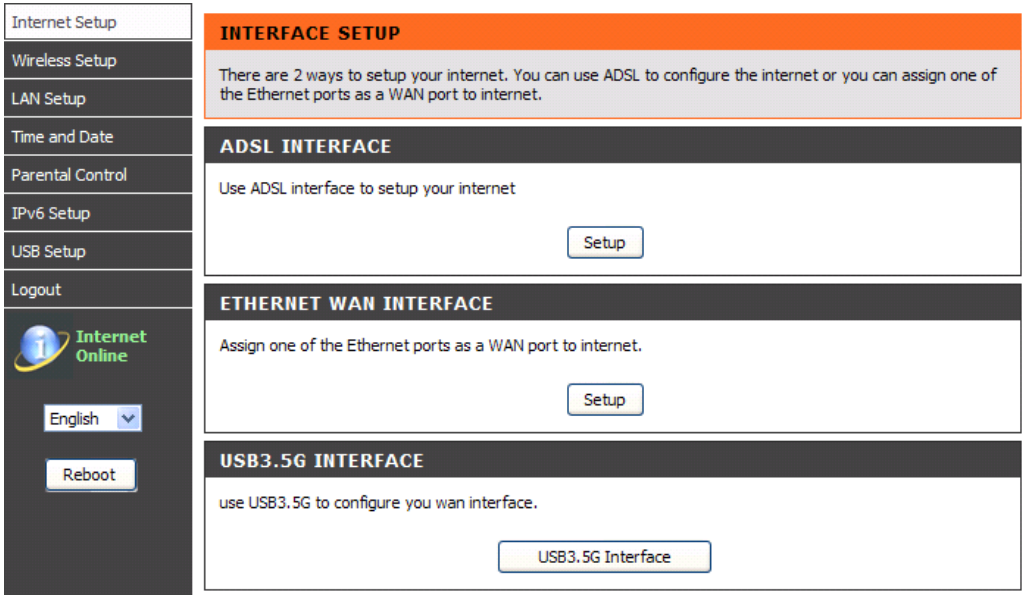
INTERNET SETUP

To access the **INTERNET SETUP** (WAN) settings window, click on the **Internet Setup** button in the **SETUP** directory in this page:

INTERFACE SETUP:

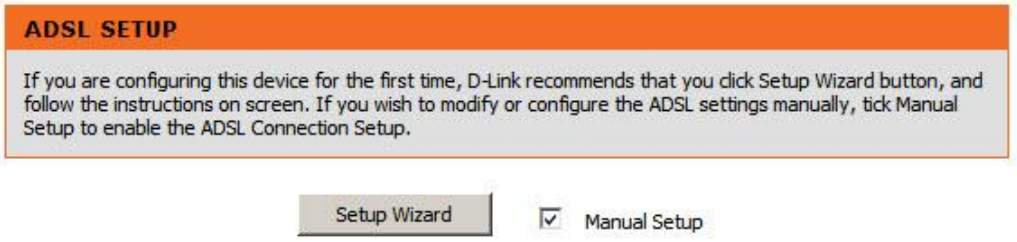
ADSL INTERFACE
Click on the **Setup** button located over ADSL INTERFACE if you want to configure ADSL Interface WAN.

ETH INTERFACE
Click on the **Setup** button located over ETHERNET WAN INTERFACE if you want to configure Ethernet WAN.



ADSL WAN SETUP

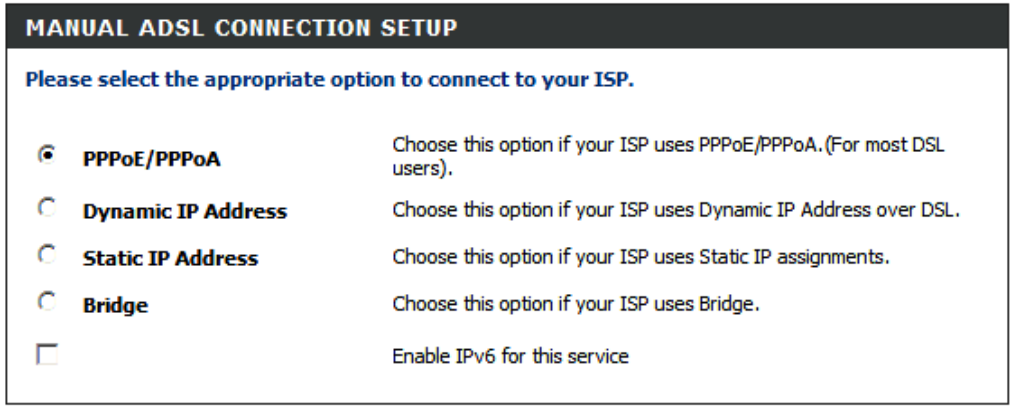
Check **Manual Setup** box to configuring Internet connection manually or you can click on **Setup Wizard** button to configuring router step-by-step.



MANUAL ADSL CONNECTION SETUP

Please select the connection type for your internet connection.

If your Internet service supported IPv6, you can click **Enable IPv6 for this service** to setup IPv6 in this connection



For PPPoE/PPPoA INTERNET CONNECTION TYPE:

Type in the **Username** and **Password** (and PPPoE **Service Name**, if required by your ISP).

Choose **PPPoE LLC/Snap-Bridging**, **PPPoE VC-mux**, **PPPoA LLC/encapsulation** and **PPPoA VC-mux** in drop-down menu.

You can use Static IPv4 Address check box and type **Static IP.**

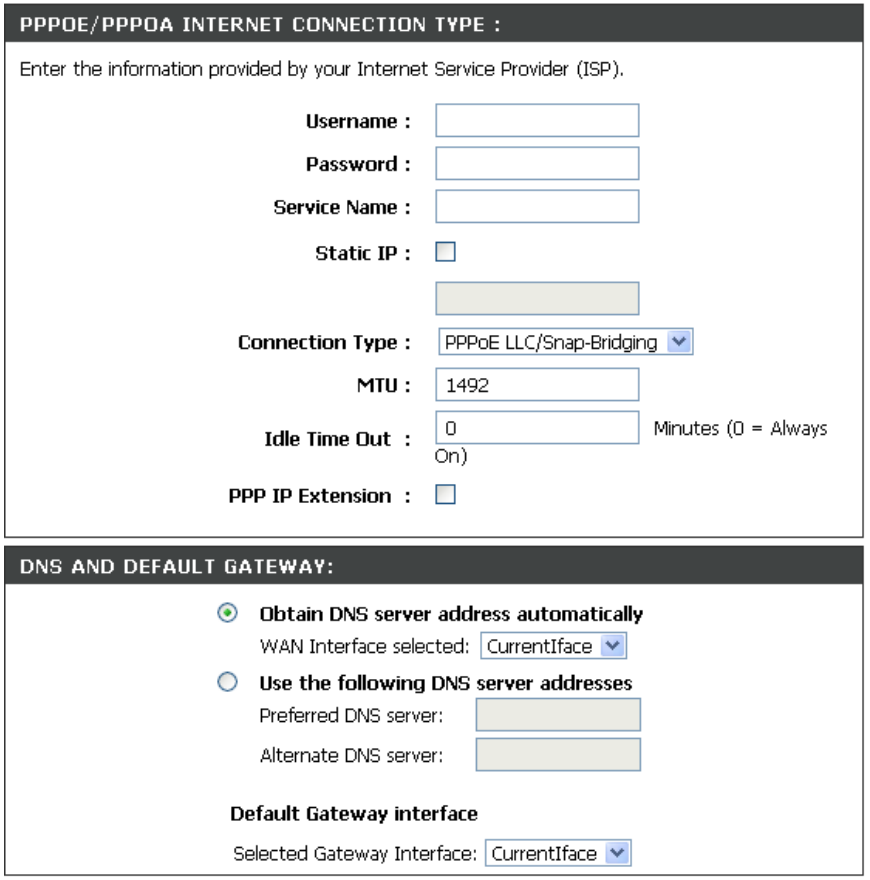
Set **MTU** value which you want but should be less than 1492.

PPP IP Extension: Router passes the obtained IP address to the local PC and acts as a bridge only modem.

DNS AND DEFAULT GATEWAY

Select **Obtain DNS server address automatically** to get DNS from your ISP.

Or Select **Use the following DNS server addresses** to specify the DNS server IPs in the **Preferred DNS server** and **Alternate DNS server.**



IPv6 DNS AND DEFAULT GATEWAY

Select **Obtain IPv6 DNS server address automatically** to get DNS from your ISP.

Or Select **Use the following IPv6 DNS server addresses** to type the DNS IPs in the **Preferred DNS server** and **Alternate DNS server.**

Select **Default IPv6 Gateway Interface** in drop-down menu

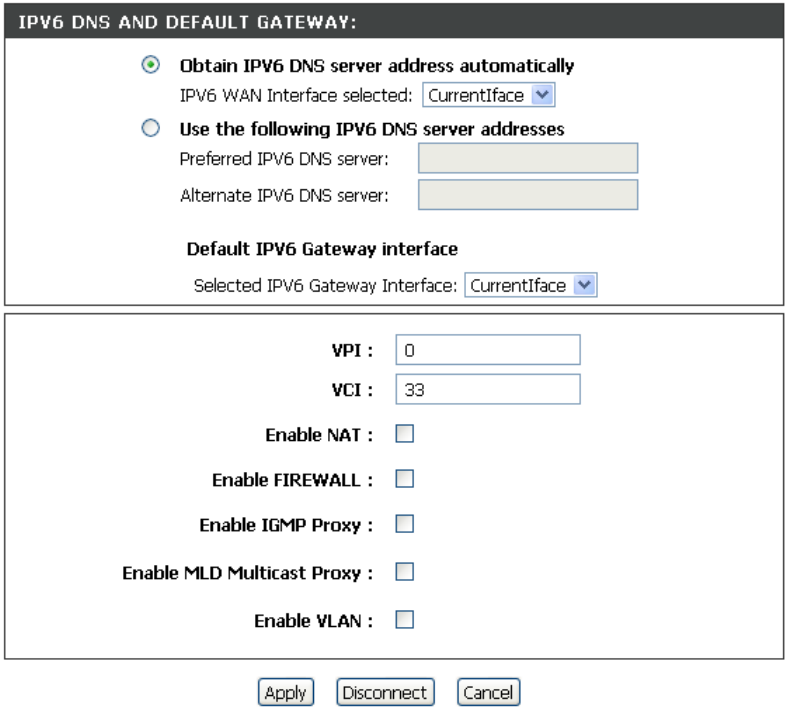
Set **VPI**/**VC**I, enable the **Enable NAT**

Enable the **Enable Firewall** when you want to have the basic filter function, for example, ICMP ping to DSL-2880AL.

Enable the **Enable IGMP Multicast Proxy** to send IGMP query packets to the IPTV clients.

Enable VLAN and type the **VLAN ID (0-4095)** which your ISP assigns.

Click on the **Apply** button to apply setting.



For DYNAMIC IP ADDRESS INTERNET CONNECTION TYPE:

Type **Host Name** and select **Connection Type** in drop-down menu

DNS AND DEFAULT GATEWAY

Select **Obtain DNS server address automatically** to get DNS from your ISP.

Or Select **Use the following DNS server addresses** to type the DNS IP in the **Preferred DNS server** and **Alternate DNS server.**

IPv6 DNS AND DEFAULT GATEWAY

Select **Obtain IPv6 DNS server address automatically** to get DNS from your ISP.

Or Select **Use the following IPv6 DNS server addresses** to type the DNS IPs in the **Preferred DNS server** and **Alternate DNS server.**

Select **Default IPv6 Gateway Interface** in drop-down menu

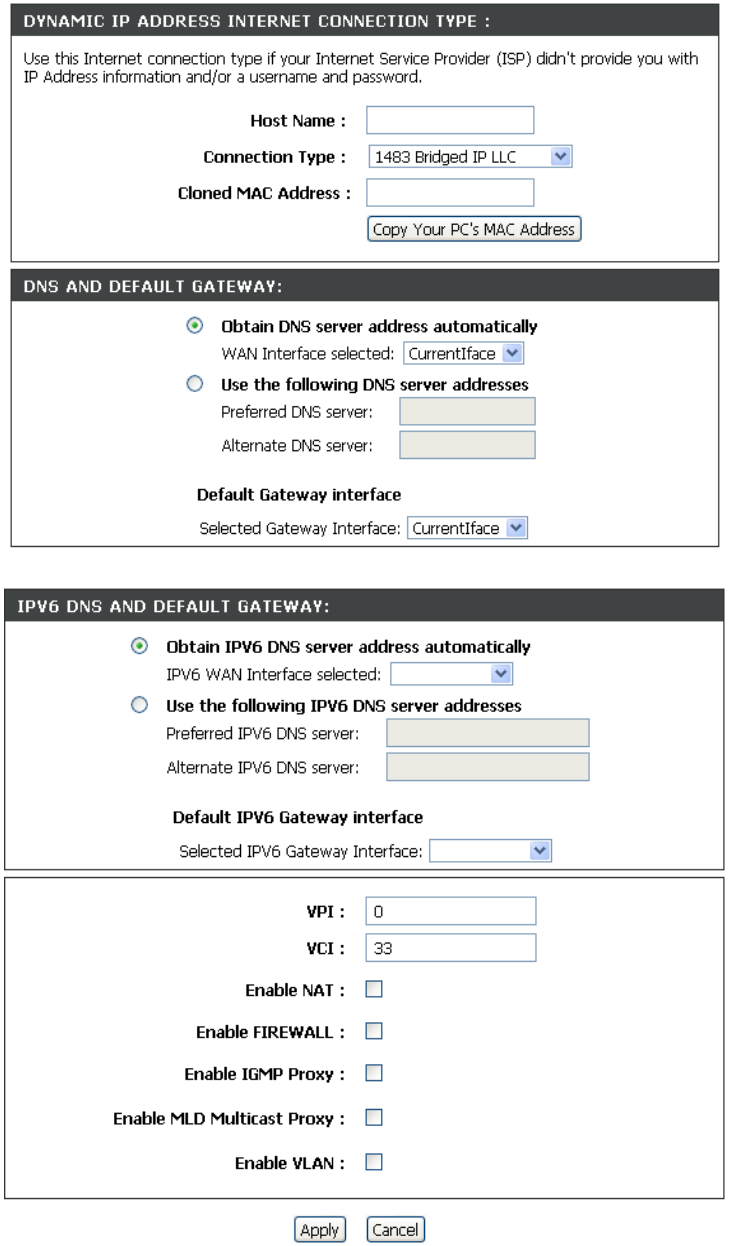
Set **VPI/VCI**, enable the **Enable NAT**.

Enable the **Enable Firewall** when you want to have the basic filter function, for example, ICMP ping to DSL-2880AL.

Enable the **Enable IGMP Multicast Proxy** to send IGMP query packets to the IPTV clients.

Enable VLAN and type the **VLAN ID (0-4095)** which your ISP assigns.

Click on the **Apply** button to apply setting.



For STATIC IP ADDRESS INTERNET CONNECTION TYPE

Type **IP Address**, **Subnet Mask**, **Default Gateway**, and **select Connection** in drop-down menu.

These information should be provided from your Internet Service Provider (ISP)

STATIC IPv6 ADDRESS INTERNET CONNECTION TYPE

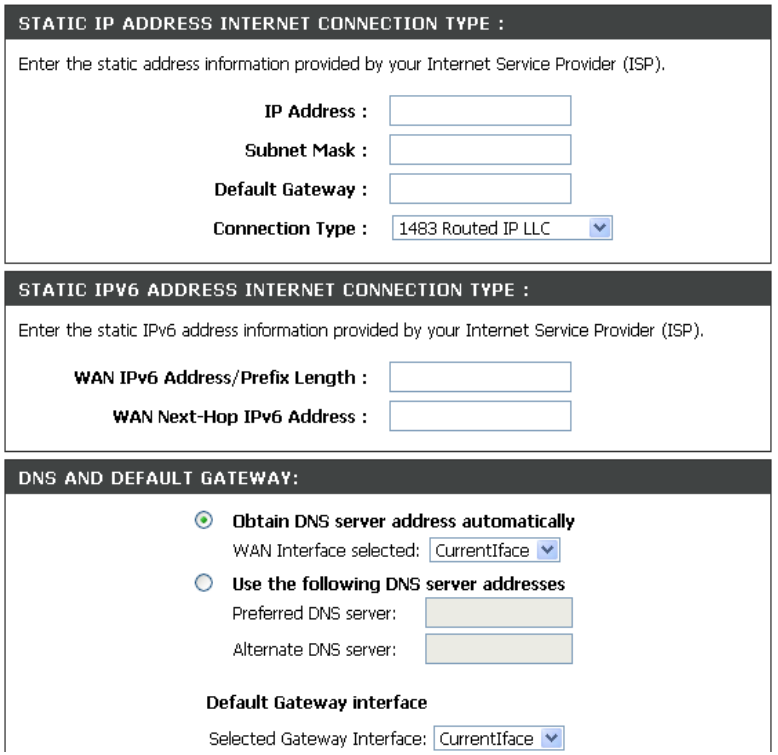
Type **WAN IPv6 Address/Prefix Length** and **WAN Next-Hop IPv6 Address**

These information should be provided from your Internet Service Provider (ISP)

DNS AND DEFAULT GATEWAY

Select **Obtain DNS server address automatically** to get DNS from your ISP.

Or Select **Use the following DNS server addresses** to type the DNS IP in the **Preferred DNS server** and **Alternate DNS server.**



IPv6 DNS AND DEFAULT GATEWAY

Select **Obtain IPv6 DNS server address automatically** to get DNS from your ISP.

Or Select **Use the following IPv6 DNS server addresses** to type the DNS IPs in the **Preferred DNS server** and **Alternate DNS server.**

Select **Default IPv6 Gateway Interface** in drop-down menu

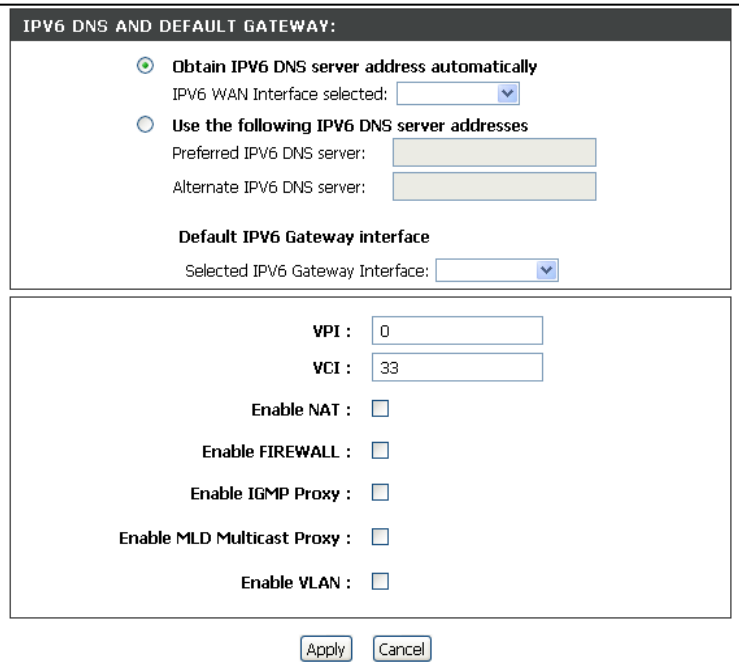
Set **VPI/VCI**, enable the **Enable NAT**.

Enable the **Enable Firewall** when you want to have the basic filter function, for example, ICMP ping to DSL-2880AL.

Enable the **Enable IGMP Multicast Proxy** to send IGMP query packets to the IPTV clients.

Enable VLAN and type the **VLAN ID (0-4095)** which your ISP assigns.

Click on the **Apply** button to apply setting.



For BRIDGE CONNECTION TYPE

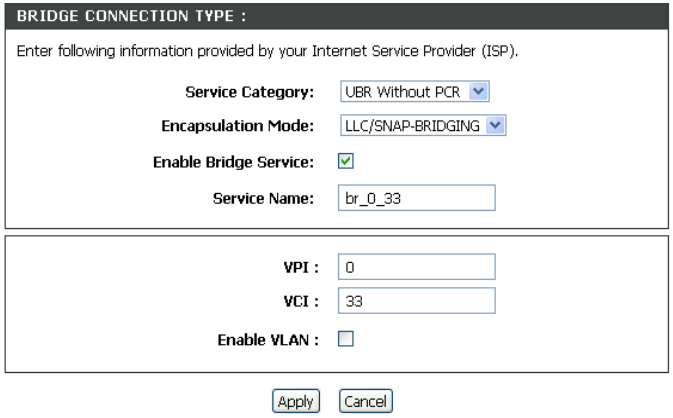
Select **Service Category, Encapsulation Mode** in drop-down menu.

Check **Enable Bridge Service** box and type **Service Name**.

Set **VPI/VCI**,

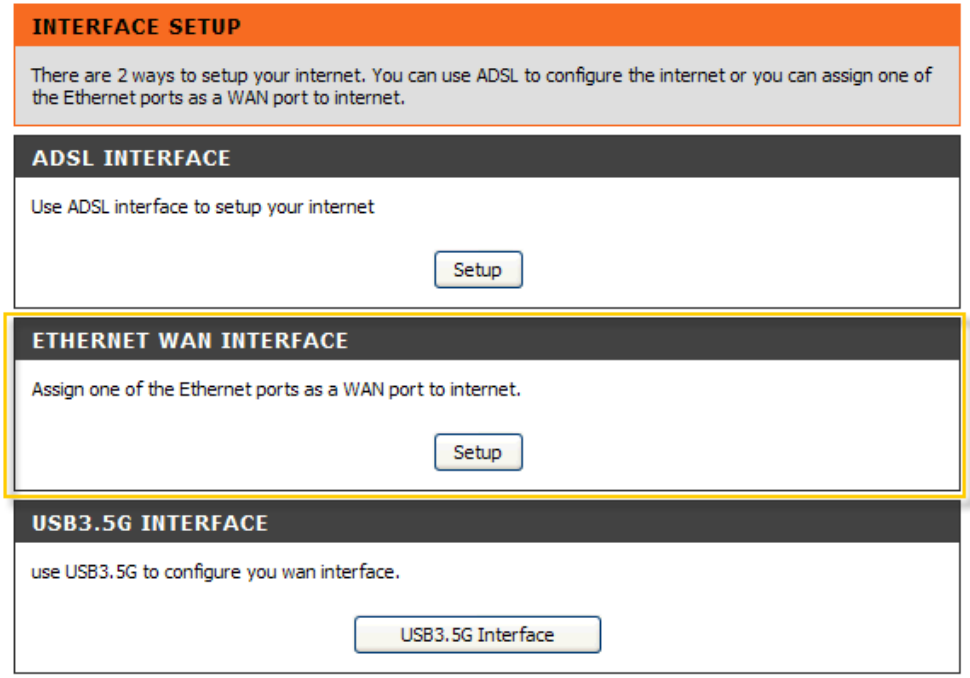
Enable VLAN and type the **VLAN ID (0-4095)** which your ISP assigns.

Click on the **Apply** button to apply setting.



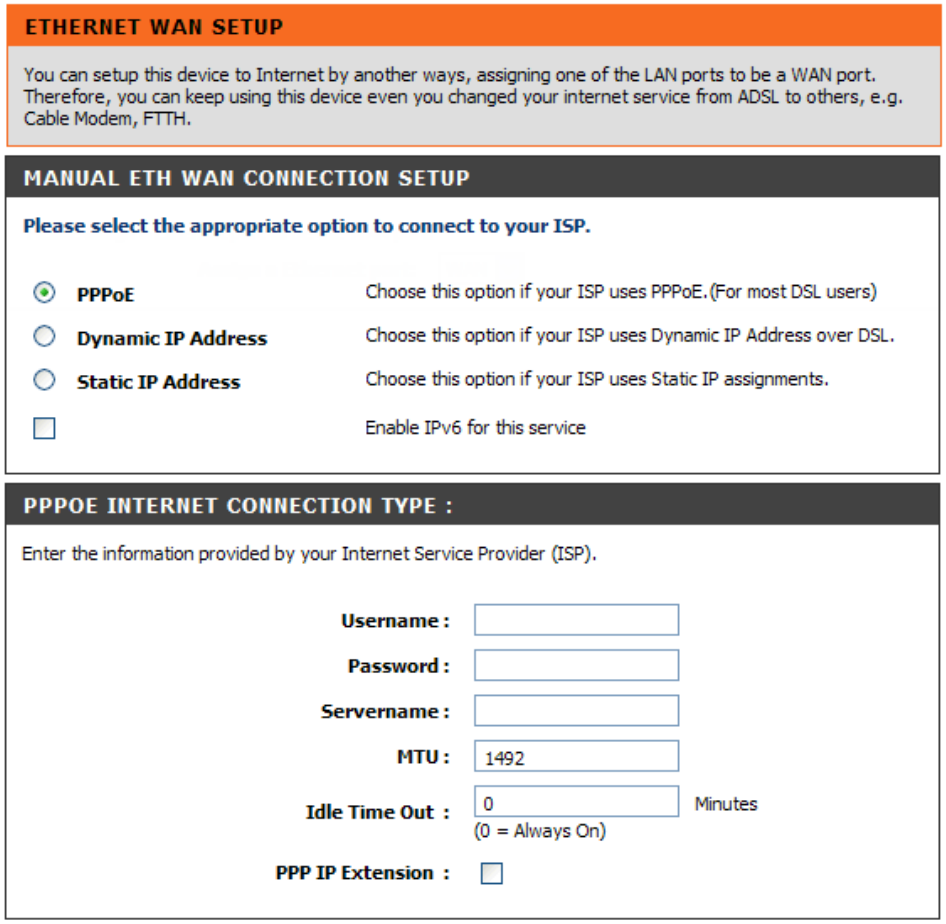
ETHNET WAN SETUP

To click Setup button from ETHERNET WAN INTERFACE to initiate Ether WAN configuration.



MANUAL ETH WAN CONNECTION SETUP

This section is same as previous **MANUAL ADSL CONNECTION SETUP** section. Here you pick up the connection type, enter access authorization information, DNS server



WIRELESS SETUP

Use this section to configure the wireless settings for your D-Link router. Please note that changes made in this section will also need to be duplicated onto your wireless clients and PC.

To access the **WIRELESS** (WLAN) settings window, click on the **Wireless Setup** button in the **SETUP tab**.

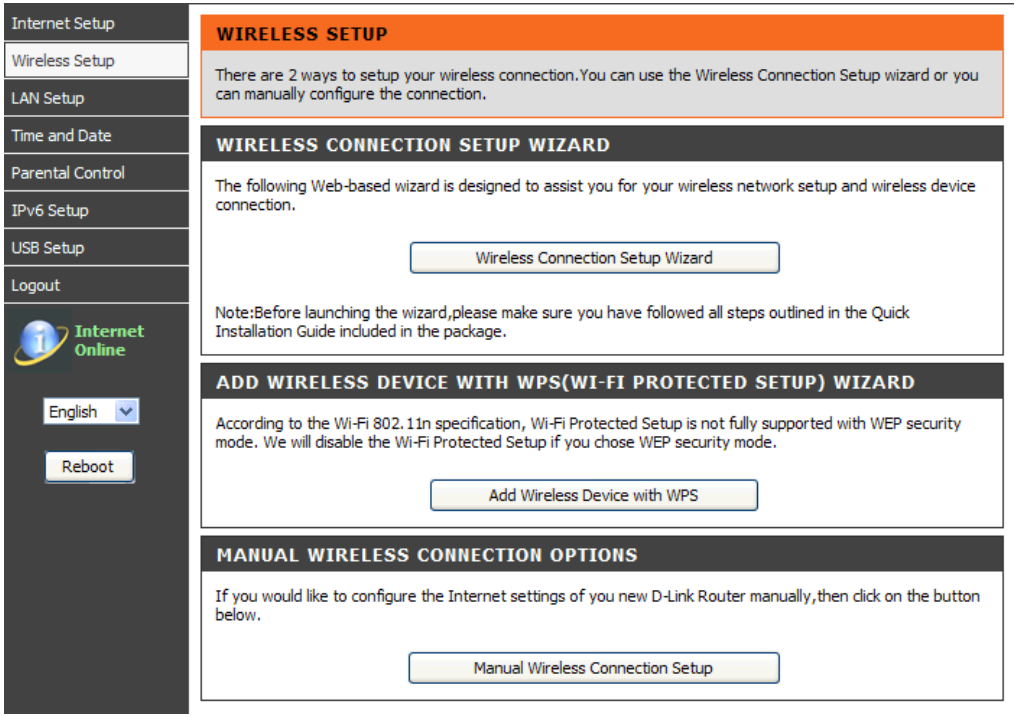
Wireless Network Setting

Click on the **Wireless Connection Setup Wizard** button to setup the wireless connection in an easy way. It will use Web-based Wizard to assist you in connecting to your new D-Link Systems Wireless Router.

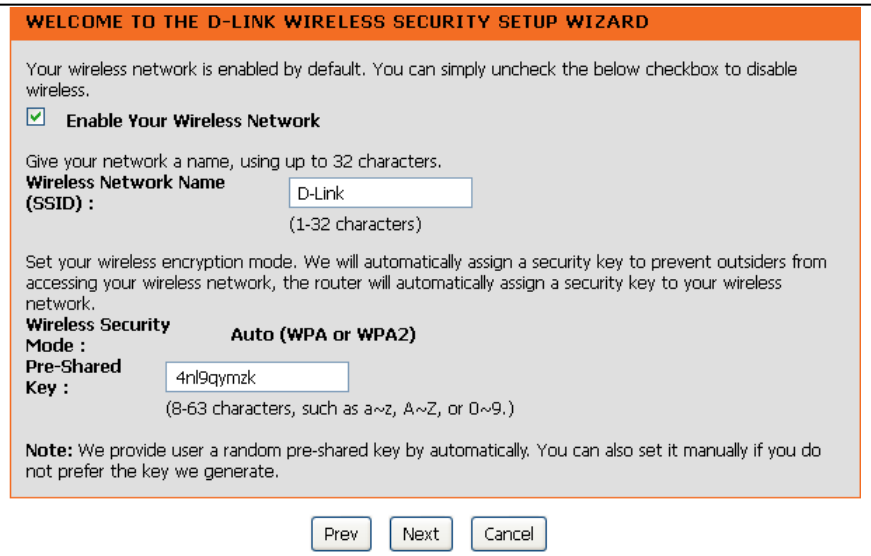
Note: Before launching the wizard, please make sure you have followed all steps outlined in the Quick Installation Guide included in the package.

Click on the **Add Wireless Device with WPS** button. This wizard is designed to assist you in connecting your wireless device to your router with WPS. It will guide you through step-by-step instructions on how to get your wireless device connected.

If you would like to configure the Wireless settings of you new D-Link Router manually, then click on the **Manual Wireless Connection Setup** button.



Welcome to the D-Link Wireless Security Setup Wizard

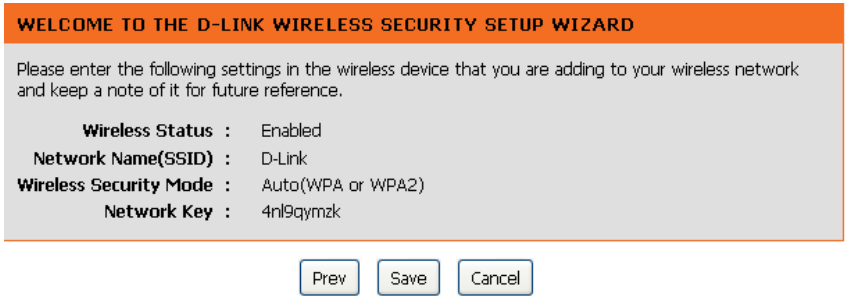


Enable Your Wireless Network Your wireless network is enabled by default. You can simply uncheck the below checkbox to disable wireless

Network Name (SSID) identifies members of the Service Set. Accept the default name or change it to something else. If the default SSID is changed, all the previous connected wireless devices on the wireless network must reconfigure their wireless connection setting as the AP setting change will not apply to the client automatically.

Manually assign a network key You can also set it manually if you do not prefer the key we generate. Type a string (8-63 characters, such as a~z, A~Z, or 0~9.) on the **Pre-Shared** key.

Click **Next** button to go to the next page.
Click **Cancel** button to return to the main menu of Wireless Setup page.



Check your wireless network setting.

Click **Save** button to apply your setting.
Click **Prev** button to pre-page to modify your setting.
Click **Cancel** button to cancel your setting.

Add Wireless Device with WPS

The wizard shows the option to setup WPS by **Auto** or **Manual**.
Auto -- Select this option if your wireless device supports WPS(Wi-Fi Protected Setup)
Manual -- Select this option to display the current wireless settings for you to configure the wireless device manually.

Click **Next** button to go to the next page.
Click **Cancel** button to return to the main menu of Wireless Setup page.

Add Wireless Device with WPS (Automatically)
This page allows you to select PIN or PBC to use WPS method.

PIN -- Enter the PIN code from your wireless device and click the below **Connect** button to start the handshaking.

PBC-- Please press the **Connect** button and hold on for 3 seconds on your wireless device and presses the **Connect** button below within 120 seconds to start the handshaking.

Click **Prev** to go back to previous page.

Add Wireless Device with WPS (WI-FI PROTECTED SETUP) WIZARD

This page will count down the timer and please start WPS on the wireless device you are adding in time.

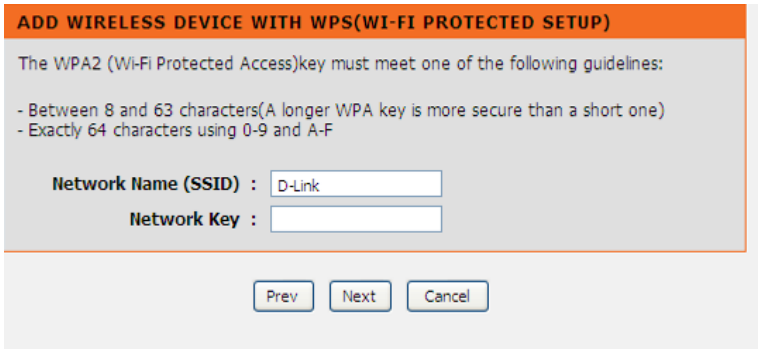
Add Wireless Device with WPS (Manually)

This screen shows the information for the SSID, Wireless Security Mode , the Network key and allow you to modify the current setting, if you select **Auto** in the previous page, you won't see this page and please refer to next column.

Please type network name on the **Network Name SSID.**

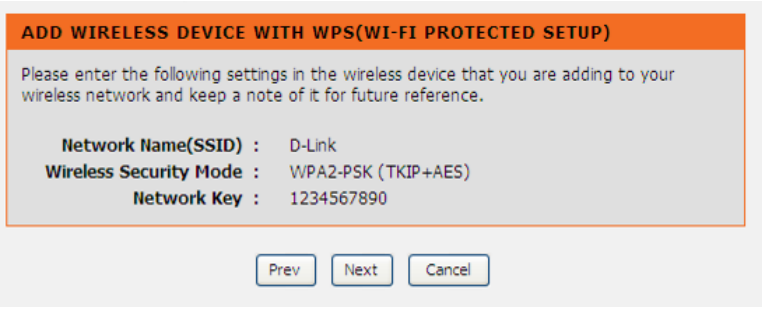
Please type network key on the **Network Key**

Click **OK** button to process the next page.



Add Wireless Device with WPS (WI-FI PROTECTED SETUP)

Finally it will show all the configurations. You can check if it is exact, please click the **Next** button.



Manual WIRELESS Connection Setup SETTINGS

DSL-2880AL comes with 2 physical wireless interfaces (known 2.4GHz and 5GHz).

Click on the **Enable Wireless** box to activate the wireless interface. You can use the **Add New** button to create a schedule and apply to the wireless interface. (Remark: To have scheduler operate properly, please ensure you have activated NTP BEFORE you create a new schedule.)

The **SSID** identifies members of the Service Set. Accept the default name or change it to something you desire. Every time you change the SSID, all the previous connected wireless client(s) will lost connection. In order to get the wireless connection back, all the wireless client(s) MUST re-associate to the new SSID again.

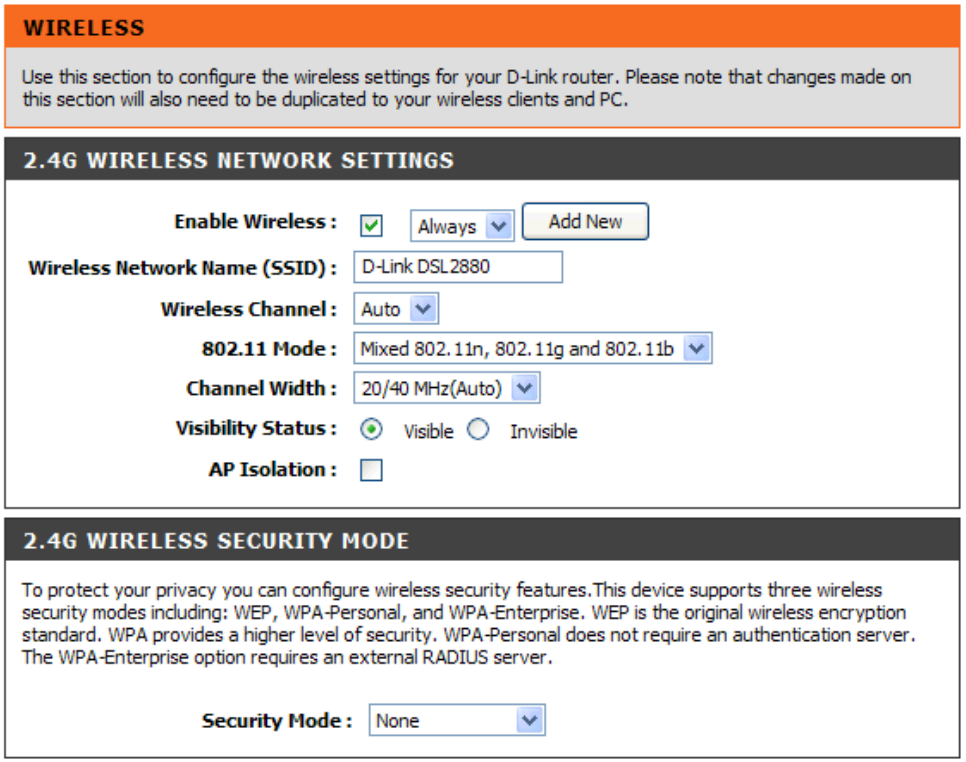
How to configure wireless channel?

Enable Auto Channel Scan so that the router can select the best possible channel for your wireless network to operate on.

The **Wireless Channel** which allows you to specify the wireless channel of your access point employs. We would strongly recommend you to leave the setting as AUTO to prevent wireless interference.

Note: Amount of wireless channel available may various in different countries due to difference in regulation.

Suggestion from configuring 802.11 mode
Select **802.11 Mixed Mode** if you are not sure which type of wireless client may associate to this wireless interface or specify the desired wireless mode to employ.



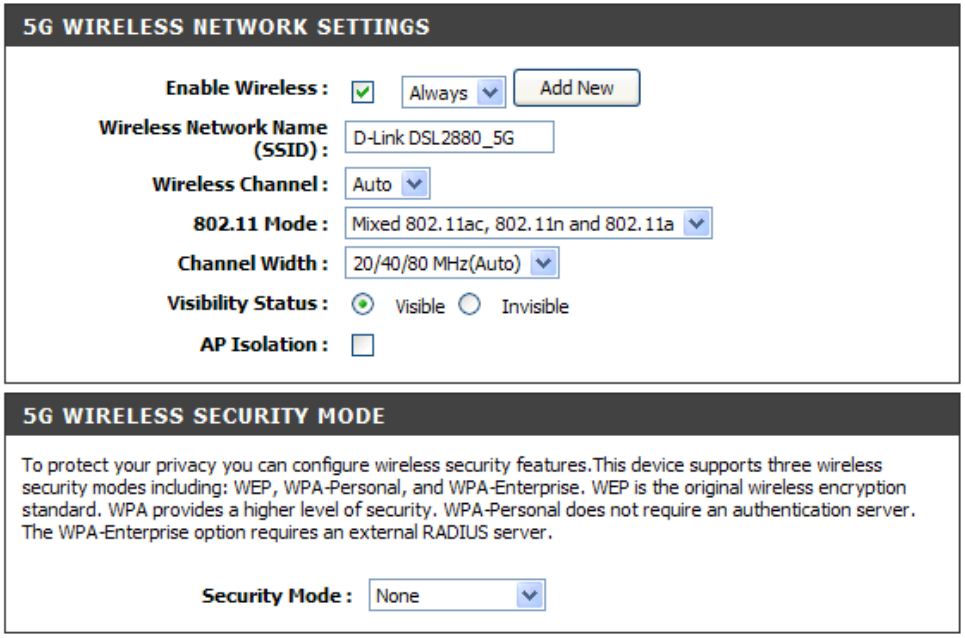
Channel Bandwidth

2.4G Wireless Interface
With 2.4G interface, you can choose 20MHz (up to 150Mbps) or Auto 20/40MHz to achieve maximum performance of 300Mbps (at 40MHz)*

Remark: When 20/40MHz is employed, wireless AP will dynamically scan the wireless channel condition. An additional wireless channel will be employed and bandwidth will therefore double up - ONLY when there is no wireless interference detected. The better performance the more bandwidth is required.

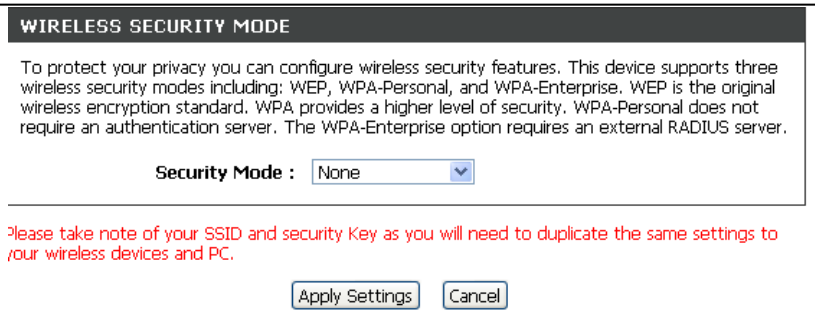
5G Wireless Interface
With 5G interface, you can choose 20MHz, 20/40 MHz or 20/40/80 MHz (Auto). Similar to 2.4G interface, better performance may achieve if you select 20/40 MHz (up to 400Mbps at 40MHz) or 20/40/80 MHz Auto mode (up to 866Mbps at 80MHz).

Visibility Status
Choose Visible or Invisible to decide if you want to have the SSID hidden for better security.



WIRELESS SECURITY Mode

To protect your privacy you can configure wireless security features. This device supports three wireless security modes including: **WEP**, **WPA**, **WPA2**, **Auto (WPA or WPA2)**. WEP is the original wireless encryption standard. WPA provides a higher level of security. WPA-Personal does not require an authentication server. The WPA-Enterprise option requires an external RADIUS server.



WIRELESS SECURITY MODE – WEP

WEP (Wireless Encryption Protocol) encryption can be enabled for security and privacy. WEP encrypts the data portion of each frame transmitted from the wireless adapter using one of the predefined keys. The router offers 64 or 128 bit encryption with four keys available.

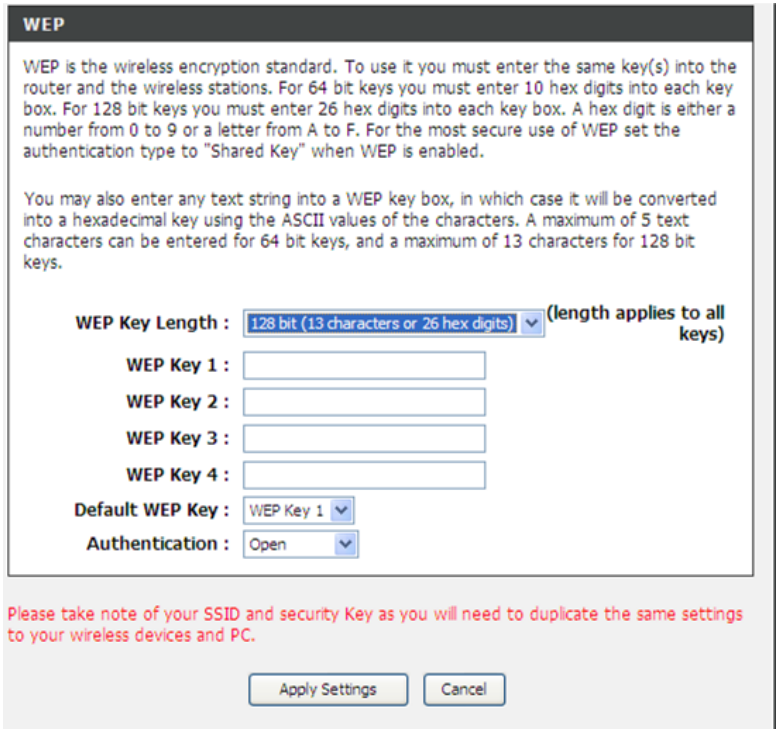
Select **WEP Key Length** from the drop-down menu. (**128 bit** is stronger than **64 bit**)

Specify the encryption key from the **Current Network Key** drop-down menu.

Enter the key into the **WEP Key** field 1~4. (Key length is outlined at the bottom of the window.)

Select **Authentication** type from the drop-down menu. (**Shared** is better than **Open**)

Click on the **Apply Settings** button to apply settings.



WIRELESS SECURITY MODE – WPA-Personal

Use **WPA** or **WPA2** mode to achieve a balance of strong security and best compatibility. This mode uses WPA for legacy clients while maintaining higher security with stations that are WPA2 capable. Also the strongest cipher that the client supports will be used. For best security, use **WPA2** mode. This mode uses AES (CCMP) cipher and legacy stations are not allowed access with WPA security. For maximum compatibility, use **WPA**. This mode uses TKIP cipher. Some gaming and legacy devices work only in this mode.

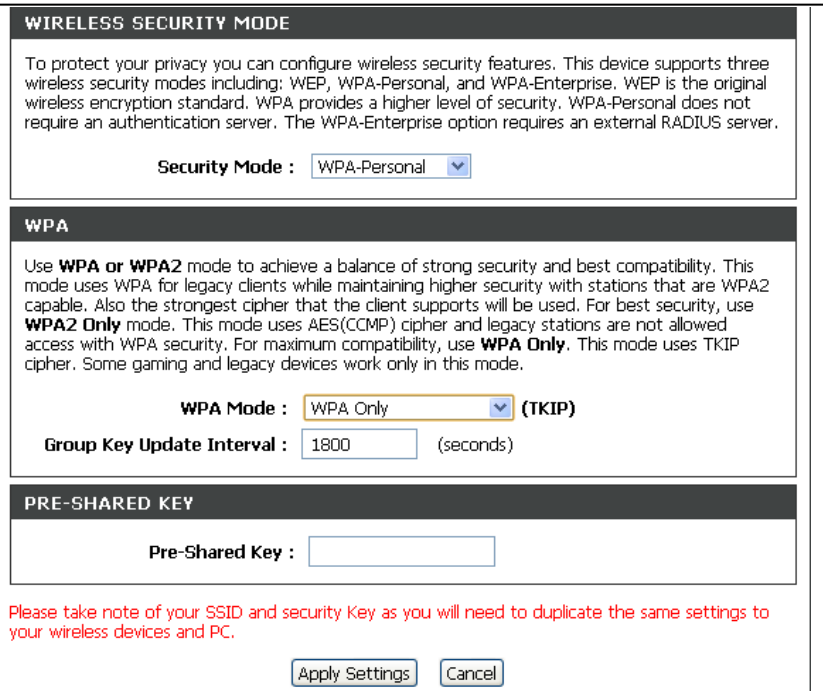
Choose **WPA** / **WPA2** / **Auto(WPA or WPA2)** on the **WPA Mode**

Type the value seconds on the **Group Key Update Interval.** The default value is 1800.

WPA / WPA2 -PSK (Personal)

Type the string on the **Pre-Shared Key**

Click the **Apply Settings** button to save the configuration.

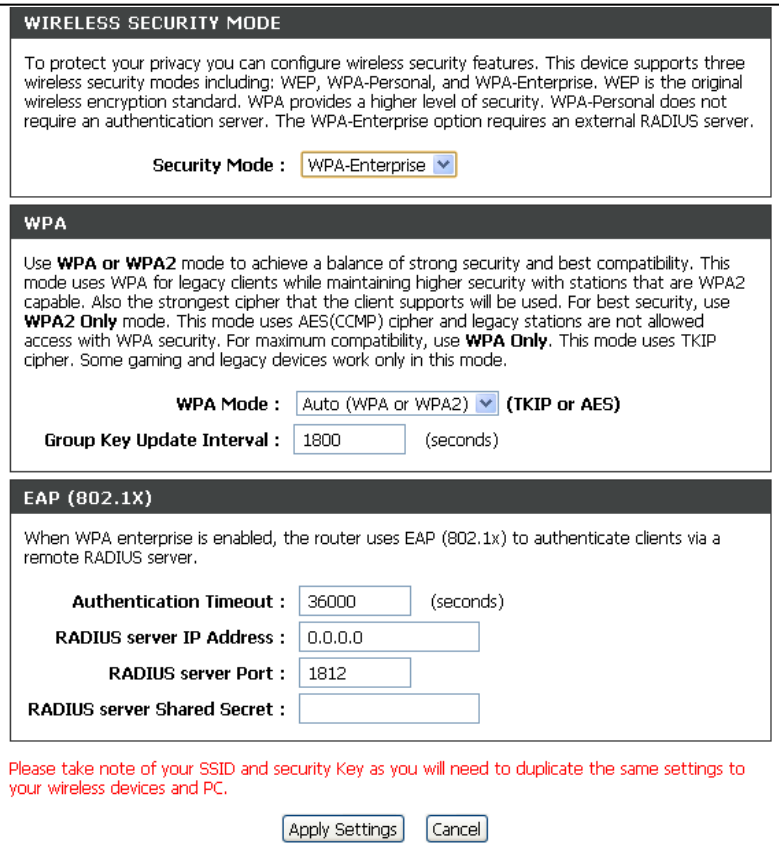


WPA / WPA2 (Enterprise)

Some network-security experts now recommend that wireless networks use 802.1X security measures to overcome some weaknesses in standard WEP applications. A RADIUS server is used to authenticate all potential users. .

Enter your RADIUS server data: **IP Address, Port,** and **Key**.

Click on the **Apply Settings** button to apply settings.



LAN SETUP

You can configure the LAN IP address to suit your preference. Many users will find it convenient to use the default settings together with DHCP service to manage the IP settings for their private network. The IP address of the Router is the base address used for DHCP. In order to use the Router for DHCP on your LAN, the IP address pool used for DHCP must be compatible with the IP address of the Router. The IP addresses available in the DHCP IP address pool will change automatically if you change the IP address of the Router.

To access the **Local Network** setting window, click on the **Local Network** button in the **SETUP tab**.

ROUTER SETTINGS

To change the **Router IP Address** or **Subnet Mask**, type in the desired values.

DHCP SERVER SETTINGS (OPTIONAL)

The **Enable DHCP Server** is selected by default for the Router's Ethernet LAN interface.

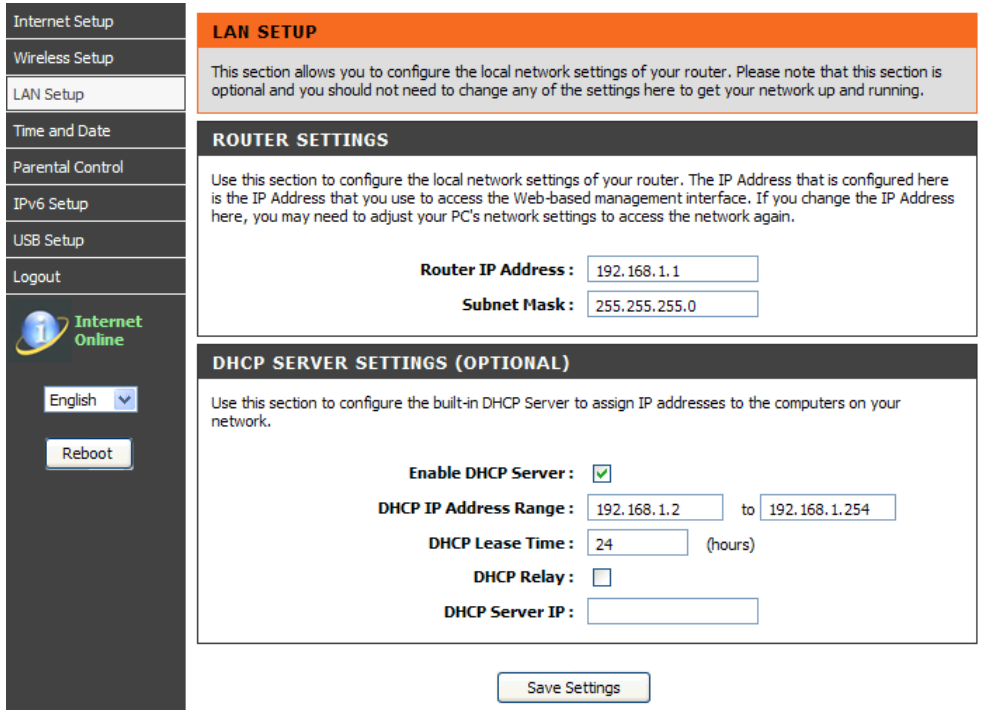
Set the **DHCP IP Address Range** and the default is from **192.168.1.2** to **192.168.1.254**. The IP address pool can be up to 253 IP addresses.

Set the value hours on the **DHCP Lease Time**

If you don't want DSL-2880AL to be the DHCP server, you can enable

DHCP relay to pass the DHCP discover packets of the clients to another DHCP server.

Please set the DHCP server IP address on the **DHCP Server IP Address**



ADD/EDIT DHCP RESERVATION (OPTIONAL)

Select the **Enable** to let you reserve the **IP Address** for the designated PC with the configured **MAC Address**.

Computer Name is user defined meaningful host name which can help you recognize each PC connecting to the device.

Clicking on the **Copy Your PC's MAC Address** button to copy the MAC address from the PC you are currently browsing this device management web page.

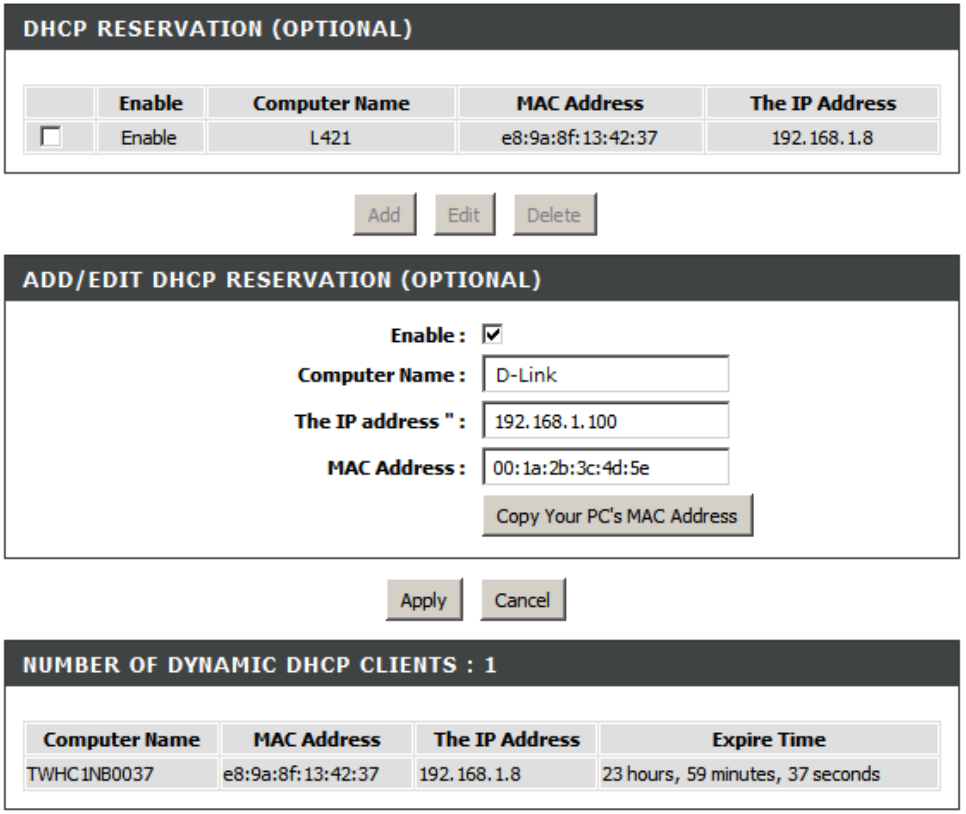
Click on the **Apply button** to save the new created DHCP Reservation entry

DHCP RESERVATIONS LIST

After saved the DHCP reservation, the **DHCP RESERVATIONS LIST** will list the configuration.

The **NUMBER OF DYNAMIC DHCP CLIENTS** shows amount of DHCP clients (PC or Laptop) connected to the router currently.

Click on the **Save Settings** button.



TIME AND DATE

The **Time and Date** configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed.

To access the **TIME** setting window, click on the **Time and Date** button in the **SETUP tab**

TIME SETTING:

Check the **Automatically synchronize with Internet time servers**

Select specific time server to use from the **First NTP time server and Second NTP time server** specific NTP server name.

TIME CONFIGURATION:

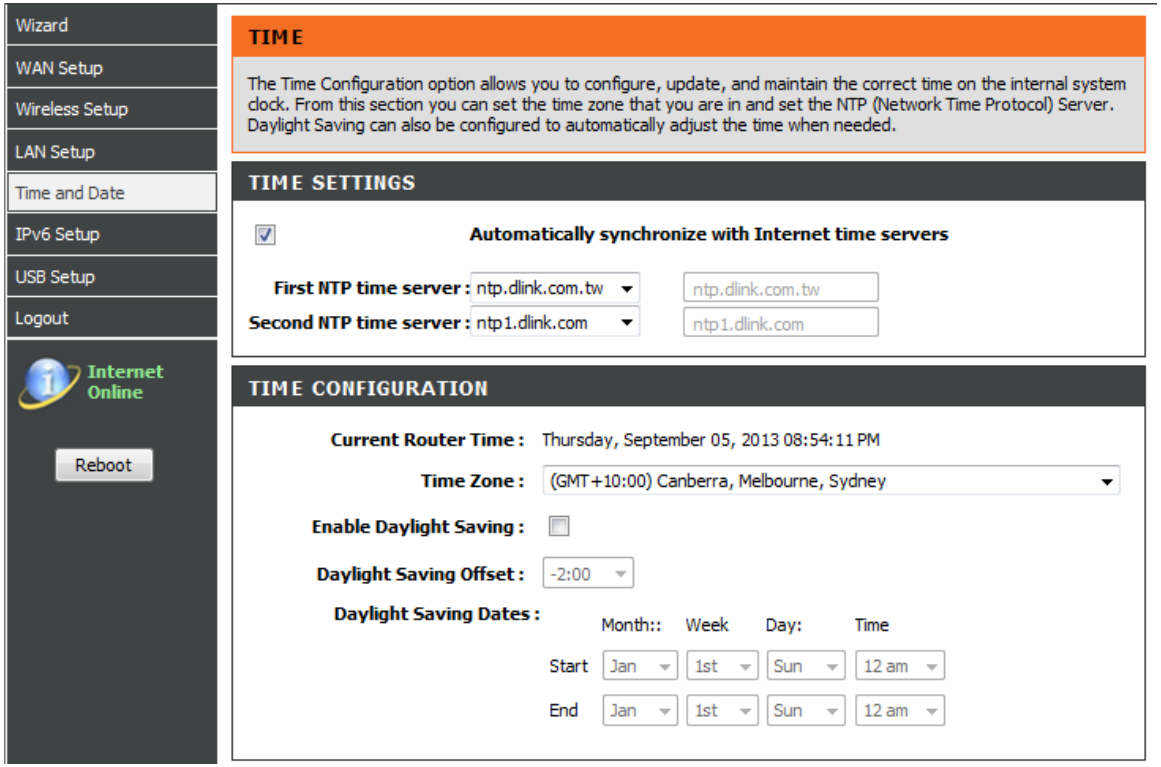
Select your operating time zone from the **Time Zone** drop-down menu.

If you need to use the daylight saving, just choose the **Enable Daylight Saving**. Daylight saving is a period from late Spring to early Fall.

Set how many hours to change the time for Daylight saving Offset.

Configure Daylight Saving Dates,
Daylight Saving time starts in the most parts of the **United States** on the second Sunday of March. Each time zone in the United States starts Daylight Saving time at 2 A.M. Thus, in the United States you must use **March**, **Second**, **Sunday**, at **2:00 A.M.**

Daylight Saving time starts in the **European Union** on the last Sunday of March. Thus, in European Union, you must select **March**, **Last**, **Sunday**. The time must depend on your country's time zone. For example, In Germany you must type 2 because



Germany's time zone is 1 hour ahead of GMT or UTC (GMT+1). Thus, in Germany you must use **March**, **Last**, **Sunday**, at **1:00 A.M.**

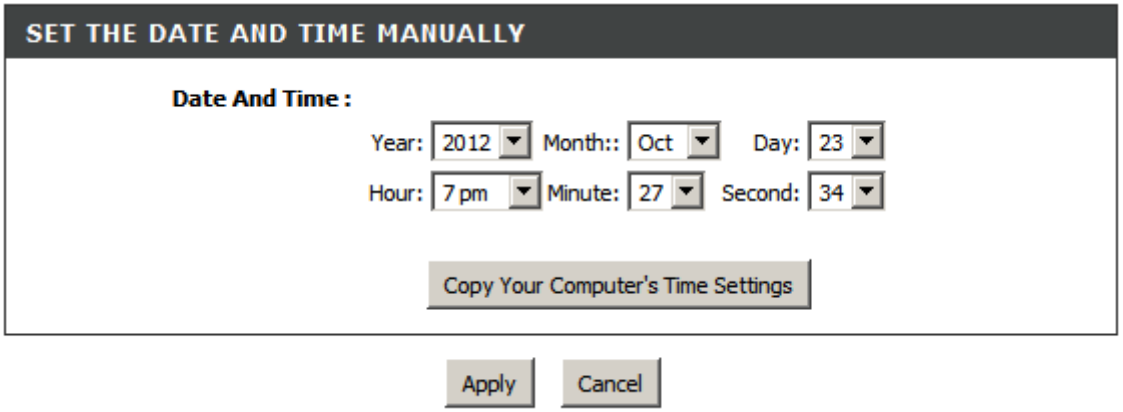
Daylight Saving time ends in the most parts of the United States on the First Sunday of November. Each time zone in the United States must use Daylight Saving time at 2:00 A.M. Thus, in the United States you must set **November**, **First**, **Sunday**, at **2:00 A.M**.

Daylight Saving time ends in the European Union on the Last Sunday of October. For instance, in Germany you must type 2 because Germany's time zone is 1 hour ahead of GMT (GMT+1). Thus, in Germany you must use **March**, **Last**, **Sunday**, at **1:00 A.M.**

SET THE DATE AND TIME MANAULLY

You can also use the **Copy Your Computer's Time Settings** to synchronize the Date and Time to your local PC. Or, you also can adjust **Year/Month/Day/Hour/Minute/Second** manually.

Please click the **Apply** button to save the configuration.



IPv6

The **IPv6** configuration option allows you configure IPv6 internet connection. You can configure follow **IPv6 Internet Connection Setup Wizard** utilize or **Manually Ipv6 Internet Connection Setup**.

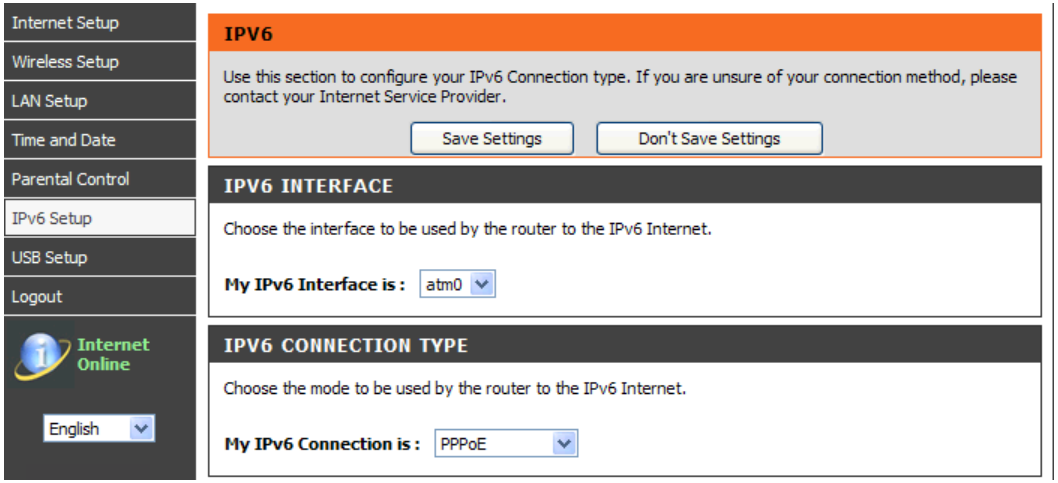
To access the **IPv6** setting window, click on the **IPv6** button in the **SETUP tab**

Manual IPv6 Internet Connection Setup
Use this section to configure your IPv6 Connection type. If you are unsure of your connection method, please contact your Internet Service Provider.

IPv6 INTERFACE
Choose the IPv6 Interface in the drop-down menu.

IPv6 CONNECTION TYPE
Choose the IPv6 internet connection type from the drop-down menu:

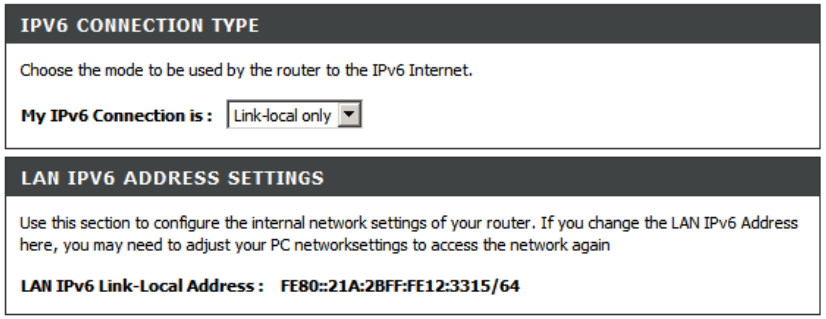
- **Link-local only**
- **Static IPv6**
- **Autoconfiguration (SLAAC/DHCPv6)**
- **PPPoE**
- **DS-Lite**



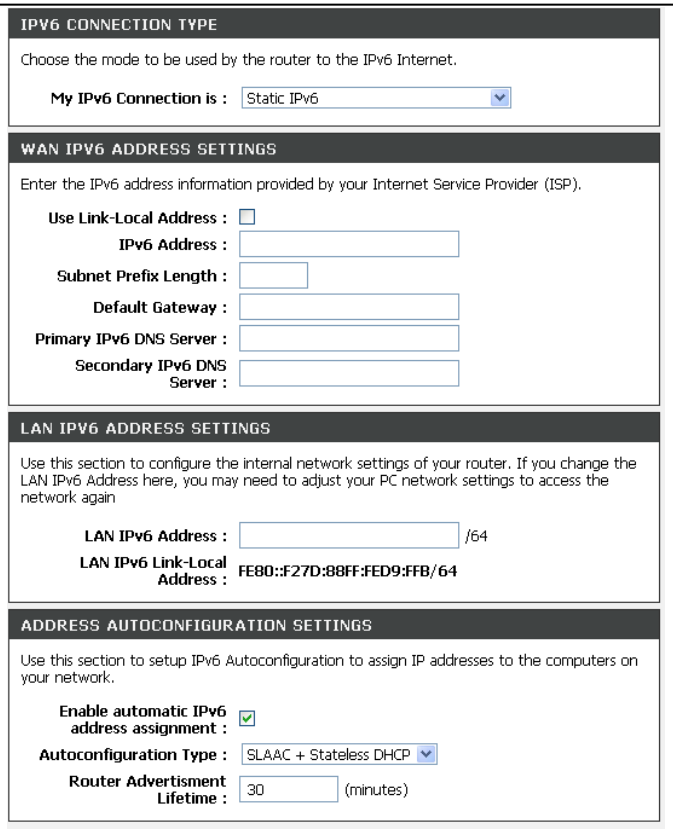
IPv6 Connection Type: Link-local only

LAN IPv6 ADDRESS SETTING

Link-local only is communication with in internal network. The **LAN IPv6 Link-local Address** is used as default setting.



IPv6 Connection Type: Static IPv6



WAN IPv6 ADDRESS SETTINGS

You can check **Use Link-Local Address box** to Link-local only, or type the WAN **IPv6 Address** and **Subnet Prefix Length**.

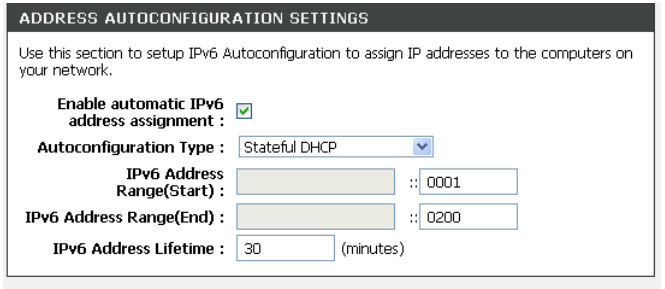
Type **Default Gateway**, **Primary IPv6 DNS server** and **Secondary IPv6 DNS server**.

These information provided by your Internet Service Provider (ISP)

LAN IPv6 ADDRESS SETTINGS

Configure the internal network settings of your router. You can change the **LAN IPv6 Address**.

ADDRESS AUTOCONFIGURATION SETTINGS

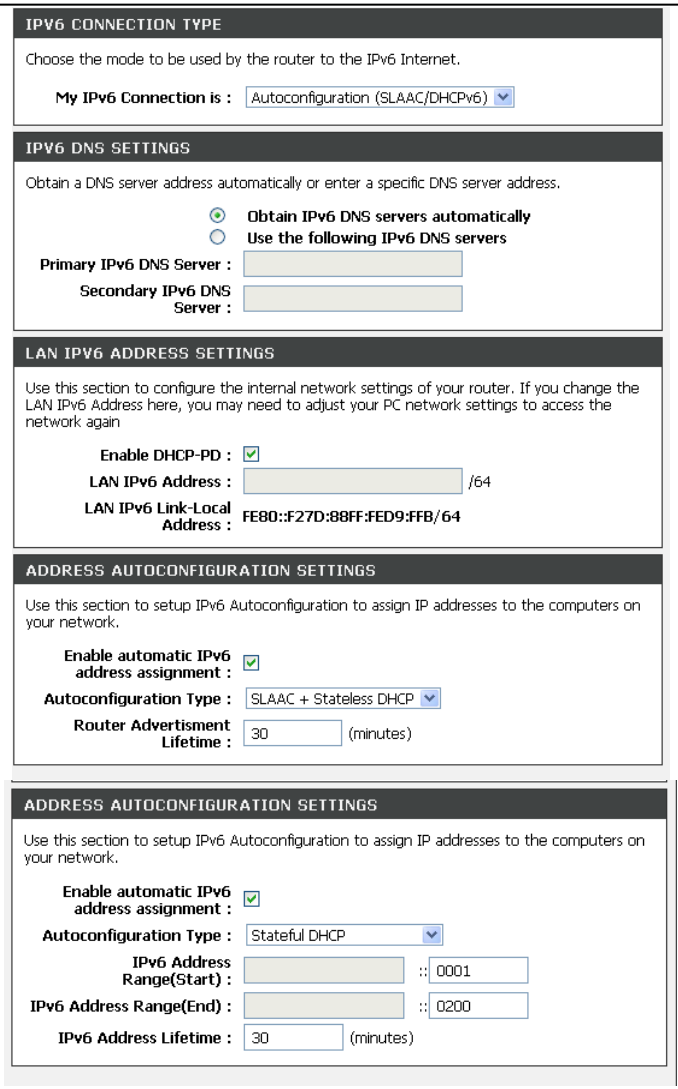


SLAAC+Stateless DHCP to set computers on Router network obtained IPv6 address by stateless DHCP.

SLAAC+RDNSS to set computers on Router network obtained IPv6 address by RDNSS

Stateful DHCP to set computers on Router network obtained IPv6 address by Stateful DHCP, you need type the IPv6 Address Range (Start and End)

IPv6 Connection Type: Autoconfiguration (SLAAC/DHCPv6)



IPv6 DNS SETTING

Choose Obtain IPv6 DNS servers automatically or type **Primary IPv6 DNS server** and **Secondary IPv6 DNS server**.

LAN IPv6 ADDRESS SETTINGS

Enable DHCP-PD to used Prefix Delegation assigned IPv6 Prefix. Or you can change the **LAN IPv6 Address**.

ADDRESS AUTOCONFIGURATION SETTINGS

SLAAC+Stateless DHCP to set computers on Router network obtained IPv6 address by stateless DHCP.

SLAAC+RDNSS to set computers on Router network obtained IPv6 address by RDNSS

Stateful DHCP to set computers on Router network obtained IPv6 address by Stateful DHCP, you need type the IPv6 Address Range (Start and End)

IPv6 Connection Type: PPPoE

PPPoE session set **Share with IPv4**

At **Address Mode** if you choose **Dynamic IP**, router will obtained WAN IPv6 address by Dynamically or you can set static IPv6 address in **Static IP Address/Prefix Length** to router.

Type **User Name**, **Password**, **Verify Password**, **Service Name**(if necessarily),

Reconnect Mode set to **Always on**, set MTU value which you want but should be less than 1492 on the **MTU**

These information provided by your Internet Service Provider (ISP)

IPv6 DNS SETTING

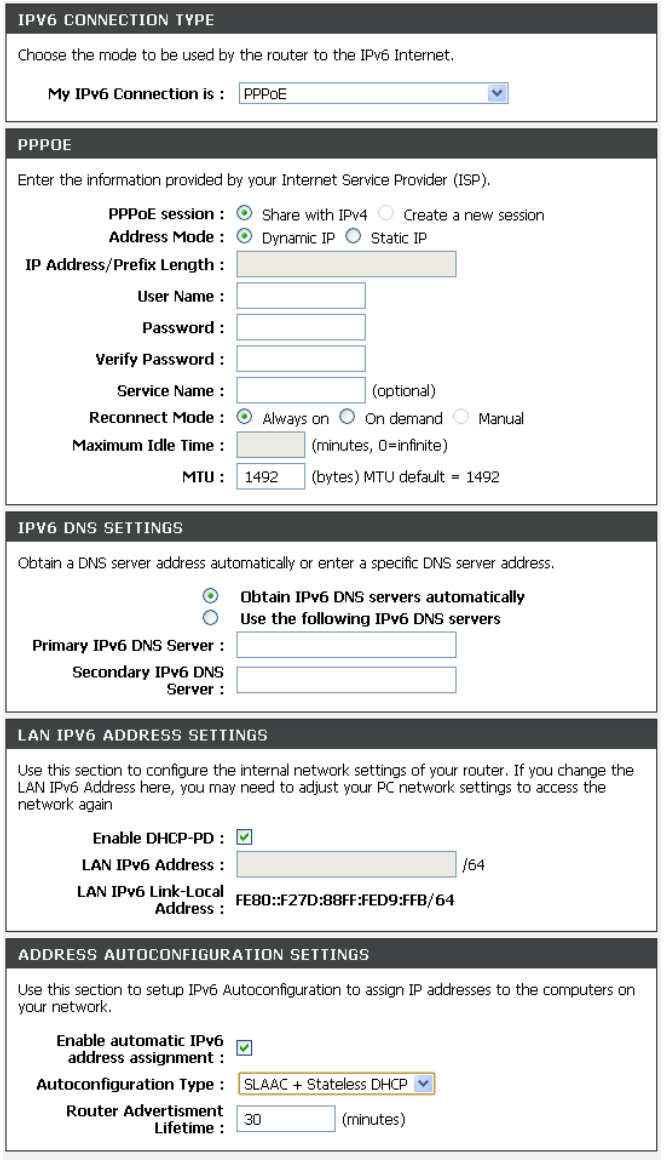
Choose Obtain IPv6 DNS servers automatically or type **Primary IPv6 DNS server** and **Secondary IPv6 DNS server**.

LAN IPv6 ADDRESS SETTINGS

Enable DHCP-PD to use Prefix Delegation assigned IPv6 Prefix. Or you can change the **LAN IPv6 Address**.

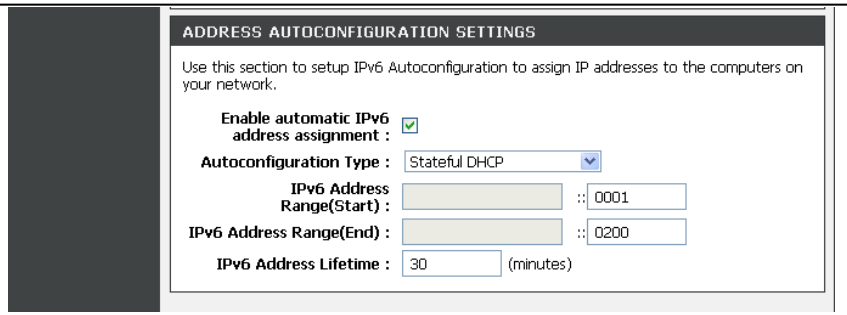
ADDRESS AUTOCONFIGURATION SETTINGS

SLAAC+Stateless DHCP to set computers on Router network obtained IPv6 address by stateless DHCP.



SLAAC+RDNSS to set computers on Router network obtained IPv6 address by RDNSS

Stateful DHCP to set computers on Router network obtained IPv6 address by Stateful DHCP, you need type the IPv6 Address Range (Start and End)

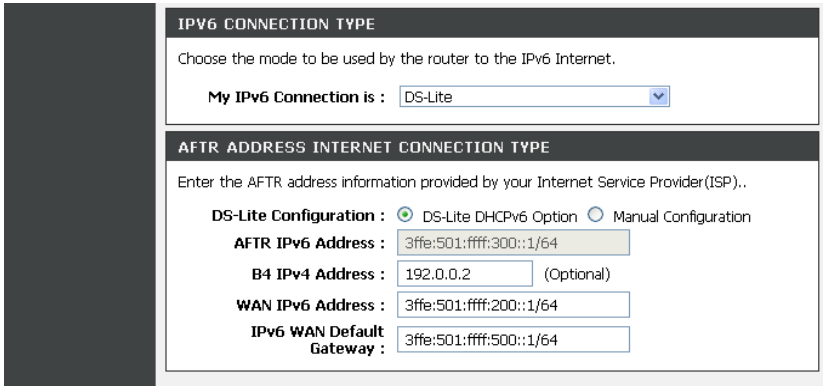


IPv6 Connection Type: DS-Lite

Choose **DS-Lite DHCPv6 Option**, If you choose **Manual Configuration**, need type the **AFTR IPv6 Address**.

Type **B4 IPv4 Address** (if necessarily)

Type **WAN IPv6 Address** and **IPv6 WAN Default Gateway**.



USB SETUP

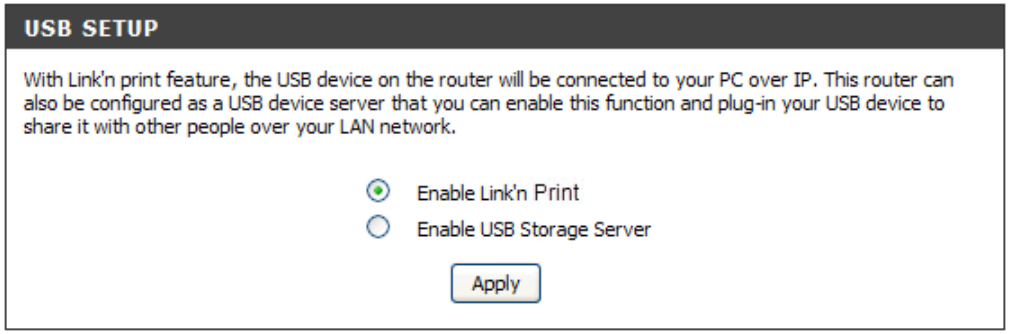
The DSL router comes with a USB 2.0 interface which you can connect a USB printer, a USB storage device (e.g. USB disk / USB external Hard Disk) or a USB 3G modem.

To configure the USB Device on the router, click USB Setup in the SETUP tab. Router can be configured as a USB network file server when you plug-in a USB Storage device. Router can be configured as a USB Printer server when you plug- in a USB Printer device. Router can connect to Internet via 3G network when you plug-in a USB 3G USB Modem.

To access the **USB SETUP** setting window, click on the **USB SETUP** button in the **SETUP tab**

USB NETWORK PRINTER SERVER

D-Link Link'n Print allows you to share your USB printer as a network printer server to all the connected local hosts.
(Note: Link'n Print Printer Server is an USB printer server which requires users install a client utility in the computer before the user is able to send a print job to the router.)



To activate **USB Network Printer Server** feature, you have to tick **Enable Link'n Print Printer Server** in the USB Setup page and press **Apply** button,

Please refer to the Link'n Print Utility Manual which is shown as Appendix–F **D-Link Link'n Print** and as well install the client computer utility by using the install CD comes with this product package.

USB STORAGE FILE SERVER

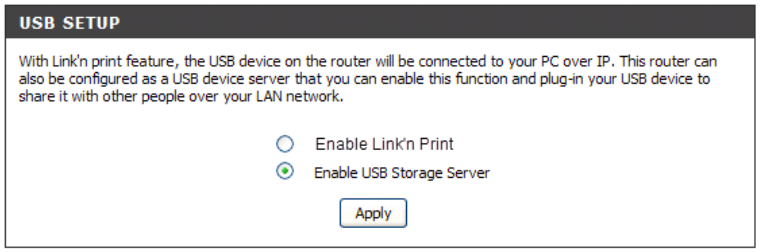
USB Storage Server allows you to share your USB storage device to all the connected local hosts.

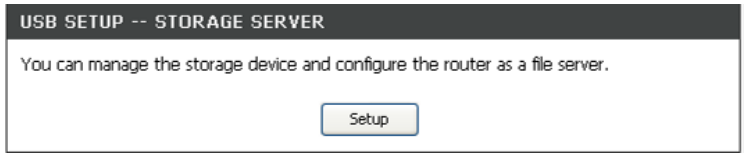
First connect your USB Storage device to the **USB** port. Then enter the data below.

To configure USB port to USB Storage server setting, choose **Enable USB Storage Server** in the USB Setup page and press **Apply** button,

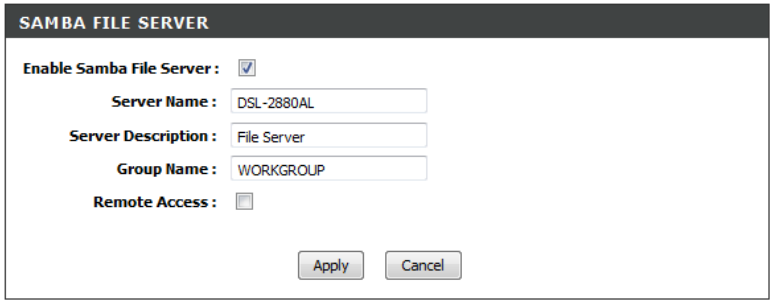
To setup USB Storage Server, press **Setup** button in **STORAGE SETUP** window enter the server configuration page

USB DEVICE STATUS can check the USB Device Status and press **Status Refresh** button to refresh the status.
Press **Safely Remove Device** button to safely remove device.





SAMBA FILE SERVER

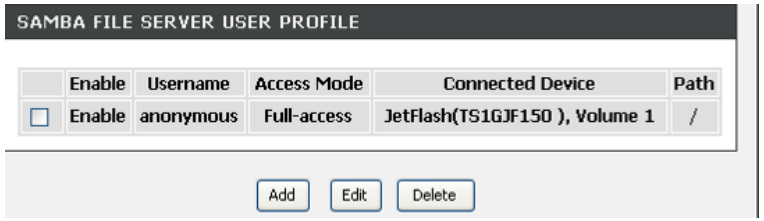


Enable **SAMBA FILE SERVER** to configure USB Storage Device as a SAMBA File server.

Setup the **Server Name**, **Server Description** and **Group Name** of file server.

You can remote access when the **Remote Access** was hooked.

You can check **Add**, **Edit** and **Delete** the user in the **SAMBA FILE SERVER USER PROFILE**.



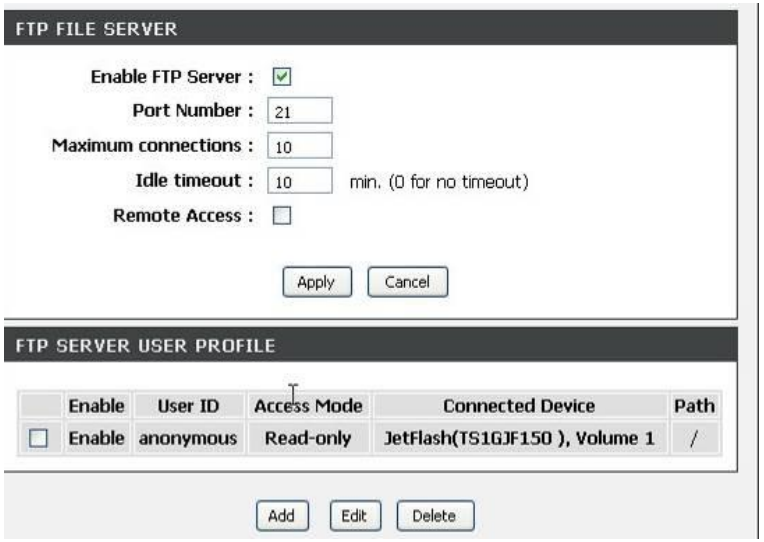
FTP FILE SERVER

Enable **FTP SERVER** to configure USB Storage Device as a FTP file server.

Setup the **Port Name**, **Maximum connection**, and **Idle timeout** of FTP file server.

You can remote access when the **Remote Access** was hooked.

You can check **Add**, **Edit** and **Delete** the user in the **FTP SERVER USER PROFILE**.



WEB FILE SERVER

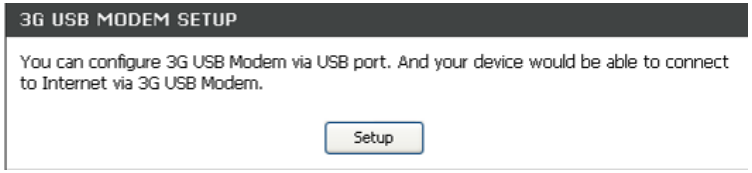
Tick **Enable Web Server** to configure USB Storage Device as a web based file server.

Click the Browse to choose a folder for **Path**, and type **Port Number** of WEB file server.

You can remote access when the **Remote Access** was hooked.

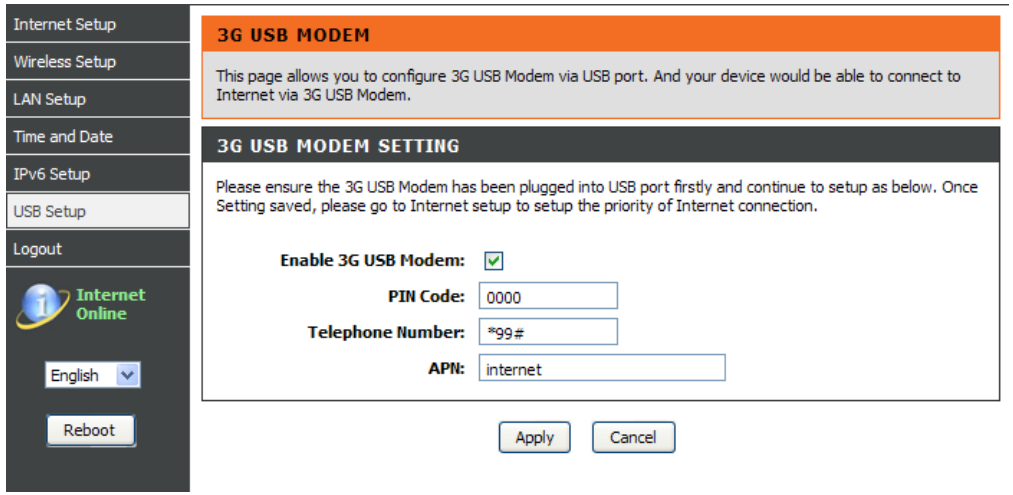
3G USB MODEM SETUP

Click **Setup** button in **3G USB MODEM SETUP** window to configure 3G USB MODEM



Enable the **Enable 3G USB Modem**

Type the **PIN Code**, **Telephone Number** (known the dial up phone number) and **APN,** which provide by your 3G ISP.



ADVANCED

This chapter includes the more advanced features used for network management and security as well as administrative tools to manage the router, view status and other information used to examine performance and for troubleshooting.

PORT FORWARDING

Use the **PORT FORWARDING** window to open ports in your router and re-direct data through those ports to a single PC on your network (WAN-to-LAN traffic). The Port Forwarding function allows remote users to access services on your LAN such as FTP for file transfers or SMTP and POP3 for e-mail. The DSL-2880AL will accept remote requests for these services at your Global IP Address, using the specified TCP or UDP protocol and port number, and then redirect these requests to the server on your LAN with the LAN IP address you specify. Remember that the specified Private IP Address must be within the useable range of the subnet occupied by the Router.

To access the **PORT FORWARDING** settings window, click on the **PORT FORWARDING** button in the **ADVANCED tab**

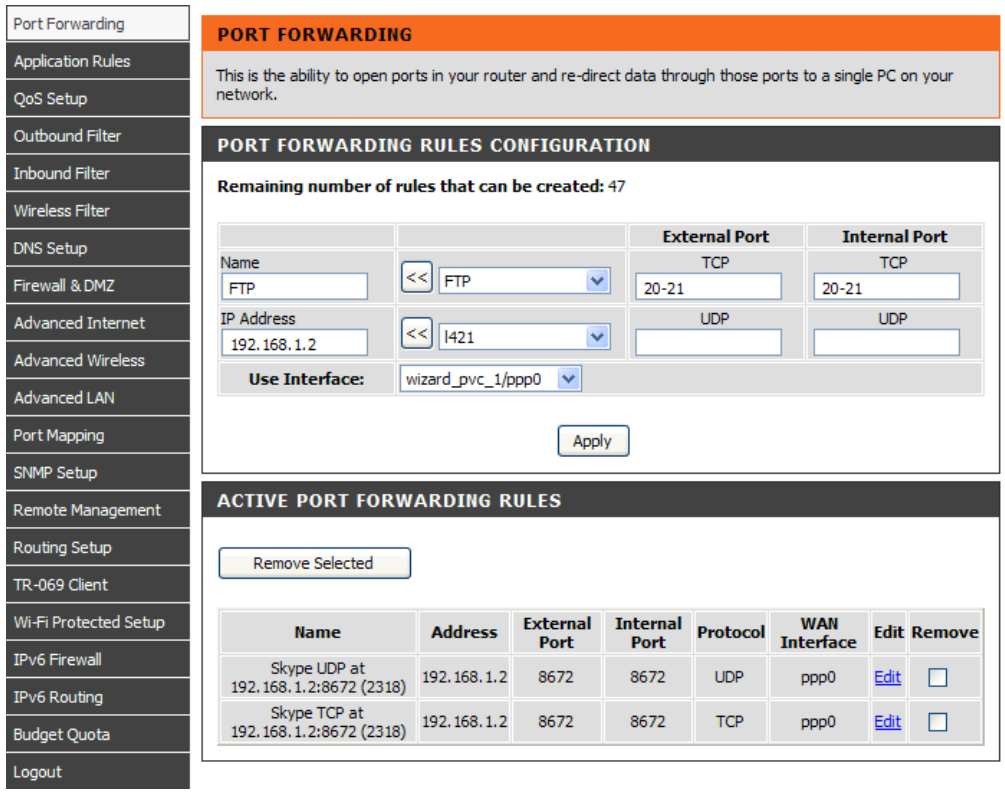
PORT FORWARDING RULES CONFIGURATION

Select an application type, e.g. FTP, from the **Application Name** drop-down menu for a pre-defined application to speed up configuration or type an application name manually in the **Name** input box in order to define your own application.

Select a name from the **Computer Name** drop-down menu or type an IP address in the **IP address** input box to appoint the PC to receive the forwarded packets.

The **External Port** shows the ports opened for remote users in the WAN side of the router. The **TCP/UDP** means the protocol type of the opened ports.

The **Internal Port** shows the ports opened in the PC with the appointed **IP Address**. The **TCP/UDP** means the protocol type of the opened ports.



APPLICATION RULES CONFIGURATION

Some applications such as games, video conferencing and remote access applications require specific ports on the Router's firewall to be opened for the applications to pass through.

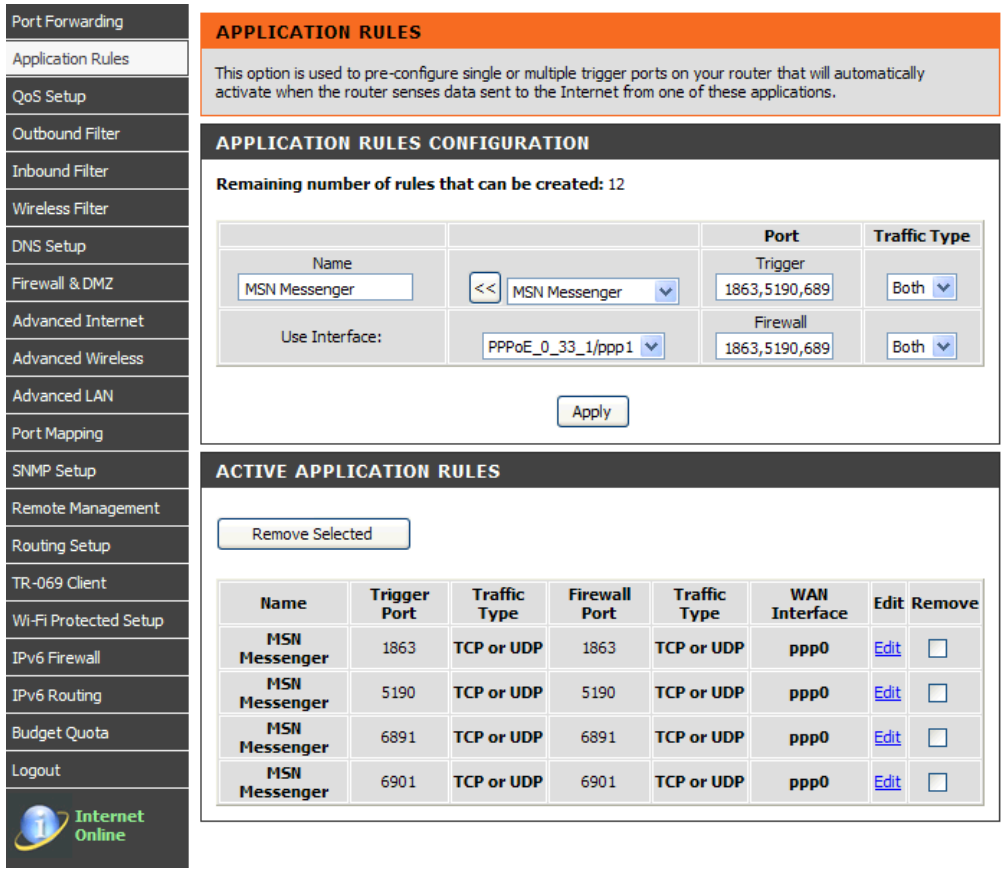
To access **APPLICATION RULES** setting windows, click on the **APPLICATION RULES** button in the **ADVANCED tab**

APPLICATION RULES

Select a name from the **Application Name** drop-down menu for a pre-configured application or type a name in the **Name** input box to define your own application.

It will appear the Trigger and Firewall ports after you choose the application name by the drop-down menu.

Choose the Use Interface and click the **Add/Apply** button to save the configuration, and then it will be added in the list.



QOS SETUP

Quality of Service Setup can be used to improve data flow for different applications by prioritizing the network traffic based on selected criteria.

To access the **QOS SETUP** settings window, click on the **QOS SETUP** button in the **ADVANCED tab**

QOS SETUP

You have to define the service ports. For example,

VoIP(RTP) is from 700(**Start Port**) to 900(**End Port**)
H.323 is 1720
FTP is from 20(**Start Port**) to 21(**End Port**)
MSN massager is from 1863(**Start Port**) to 1864(**End Port**)

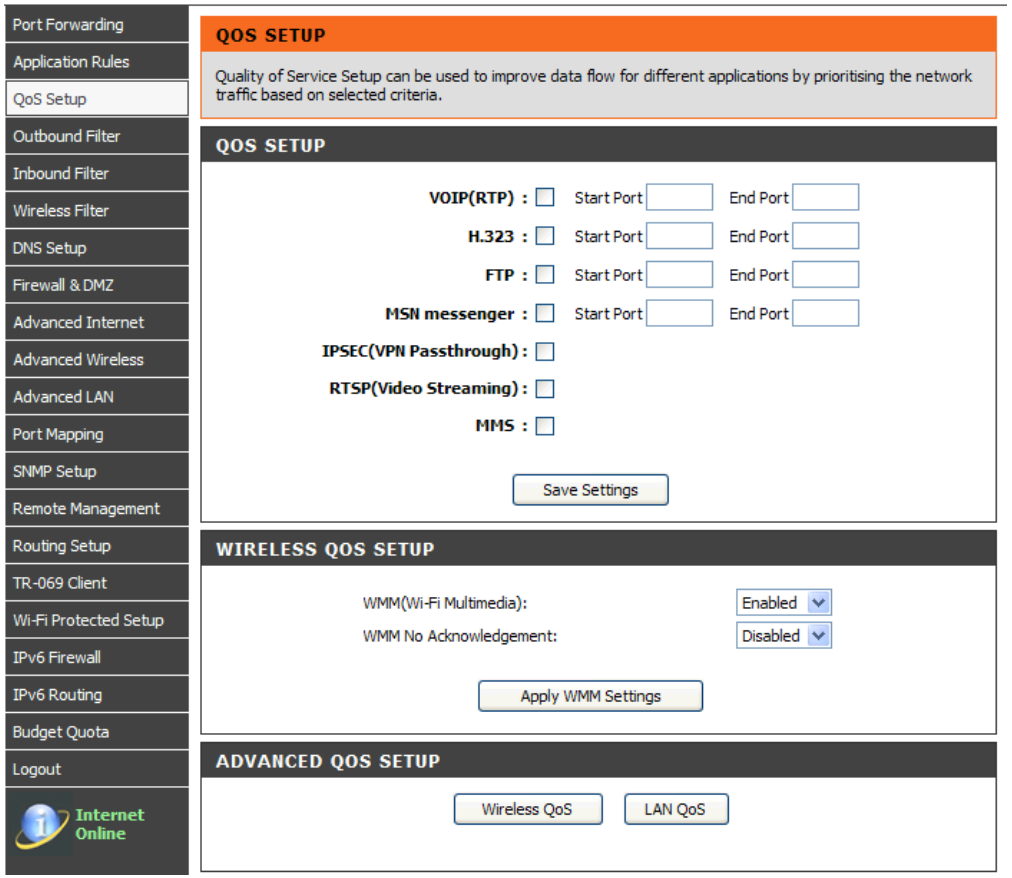
WIRELESS QOS SETUP

You can choose **Enable** or **Disable** to decide if the data has the WMM on the **WMM(Wi-Fi Multimedia)**

WMM No Acknowledge means that the receiver doesn't have to send back the Acknowledge packet.

ADVANCED QoS Setup

Click the **Wireless QoS** button to set wireless data priority.
Click the **LAN QoS** button to set Ethernet data priority.

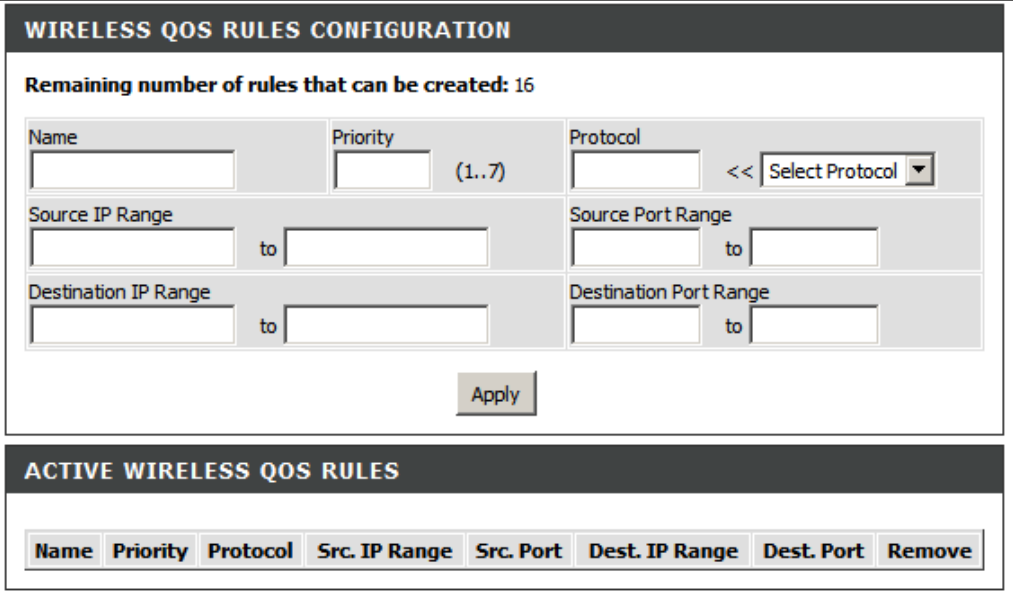


WIRELESS QOS RULES CONFIGURATION

Type the policy name on the **Name,** set the priority value on the **Priority.**

Select the **Protocol**, ANY, ICMP, TCP and UDP.
Set the **Source IP Range** and the **Destination IP Range**.
Set the **Source Port Range** and the **Destination Port Range**.

Click the **Add/Apply** button to add the policy to the list.

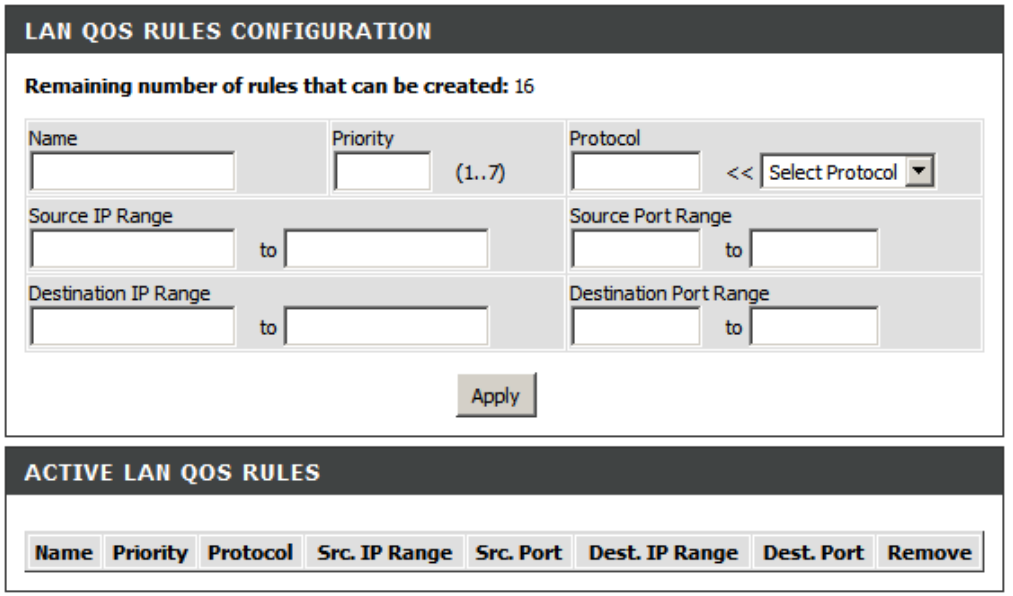


LAN QOS RULES CONFIGURATION

Type the policy name on the **Name,** set the priority value on the **Priority**

Select the **Protocol**, ANY, ICMP, TCP and UDP.
Set the **Source IP Range** and the **Destination IP Range**.
Set the **Source Port Range** and the **Destination Port Range**.

Click the **Add/Apply** button to add the policy to the list



OUTBOUND FILTER

By default, all outgoing IP traffic from the LAN is not restricted. The Outbound Filter allows you to create a filter rule to block outgoing IP traffic by specifying a filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect.

To access the **OUTBOUND FILTER** settings window, click on the **OUTBOUND FILTER** button in the **ADVANCED tab**

ADD OUTBOUND IP FILTER

To create the new policy and fill in the **filter name**.

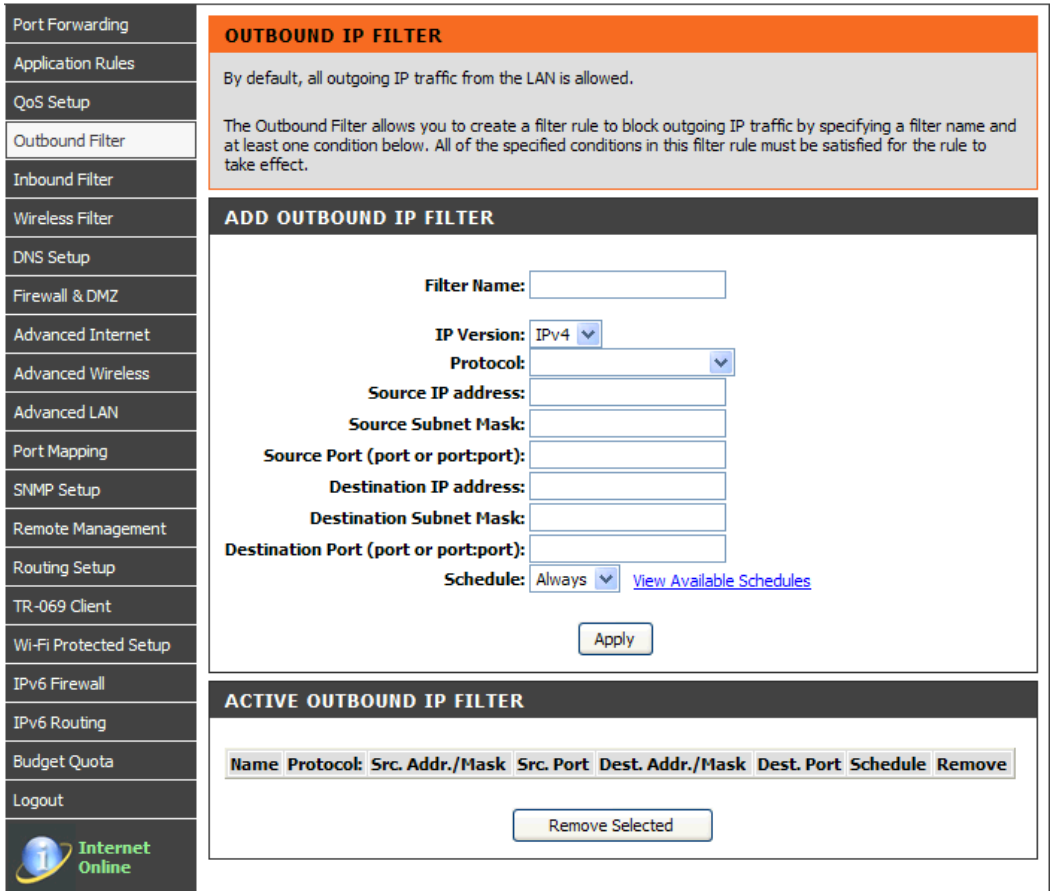
Choose ICMP, TCP/UDP, TCP or UDP on the **Protocol**.

Type **Source IP address**, **Source Subnet Mask** and **Source Port** (can be single port or port range in “start port::end port” syntax)

Type **Destination IP address**, **Destination Subnet Mask** and **Destination Port** (can be single port or port range in “start port::end port” syntax)

Set the policy schedule on the Schedule, Always or never, or **View Available Schedules**

Please click **Add/Apply** button to add the policy in the list.



INBOUND FILTER

Remark: Inbound filter feature MUST work in conjunction with firewall feature.

In order to use the inbound filter feature, you will have to create the filter policy reflecting to application scenario. Only the packet which can satisfy the filter policy will able to pass through the inbound filter without been blocked.

WAN to LAN Access – Inbound filter restrict WAN side remote node to access device itself or any node located within device LAN side. It's commonly used to prevent unsecure remote access – a typical example is to employ inbound filter to allow trusted WAN side remote peer to access LAN side file sharing resource like FTP service. The inbound filter feature over this device will behave as a *white list filter*. Unless the incoming packet which can satisfy the filter policy, any other incoming IP traffic that does not originate from the internal network will be blocked by the firewall.

LAN to WAN Internet Access – Inbound filter will not block WAN to LAN traffic which is initiated from LAN side internet application, e.g. web browsing, sending/receiving email and file transferring.

To access the **INBOUND FILTER** settings window, click on the **INBOUND FILTER** button in the **ADVANCED tab**

ADD INBOUND IP FILTER

To create the new policy and fill in the **filter name**.

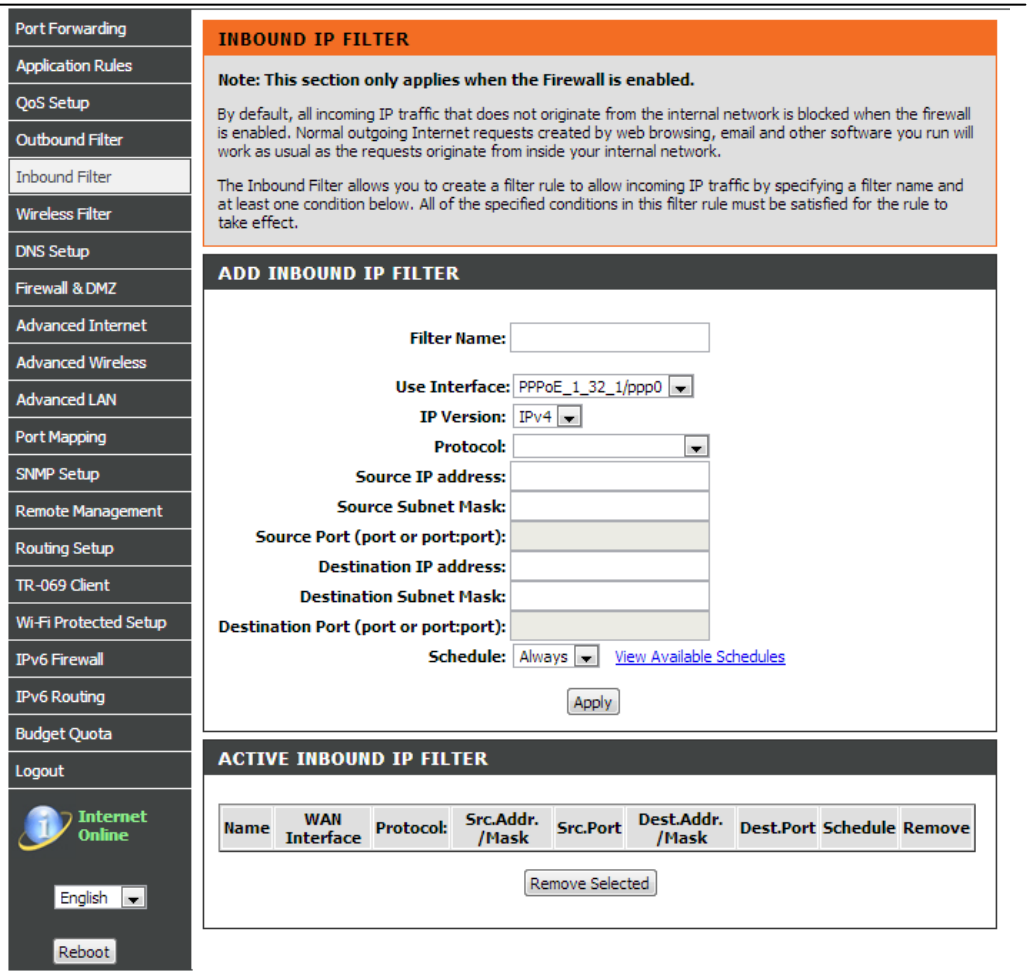
To pick up ICMP, TCP/UDP, TCP or UDP from **Protocol**.

To type in **Source IP address**, **Source Subnet Mask** and **Source Port** (can be single port or port range in “start port::end port” syntax)

Type **Destination IP address**, **Destination Subnet Mask** and **Destination Port** (can be single port or port range in “start port::end port” syntax)

Set the policy schedule on the Schedule, Always or never, or **View Available Schedules**

Please click **Add/Apply** button to add the policy in the list.



WIRELESS FILTER

This feature can let you add a policy to deny or allow WLAN devices connected to the router

To access the **WIRELESS FILTER** settings window, click on the **WIRELESS FILTER** button in the **ADVANCED tab**

WIRELESS FILTER POLICY

You can choose the Disable/ Allow All/ Deny All of **Wireless Filter Policy.**
Disable: You don't want to launch the feature.

Allow All: Support WLAN devices make connection, except the mac address which is added in the filter table.

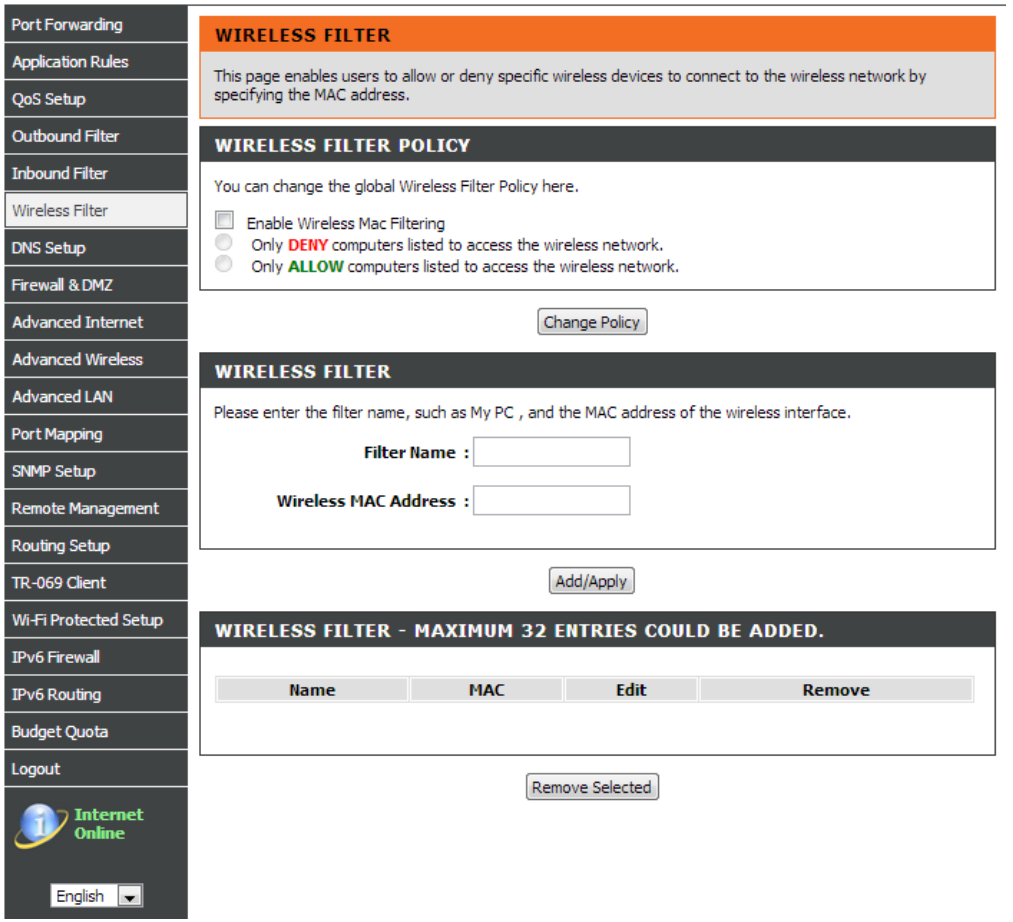
Deny All: Support deny all WLAN devices make connection, except the mac address which is added in the filter table.

WIRELESS FILTER

Type filter name on the **FILTER NAME**
Type wireless MAC address on the **Wireless MAC Address**

WIRELESS FILTER - MAXIMUM 32 ENTRIES CAN BE ADDED.

Please click the Add/Apply button to add the policy in the list.



DNS SETUP

The DNS feature is designed for resolving the DNS host name into IPs. Unless you want the router query the specific DNS servers; otherwise, you can leave the setting as obtain DNS server address automatically.

The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (for example: www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your game server and your friends don't mind what your IP address is, and then just type the DDNS name to reach. You can subscribe the free D-Link DDNS service from https://www.dlinkddns.com.

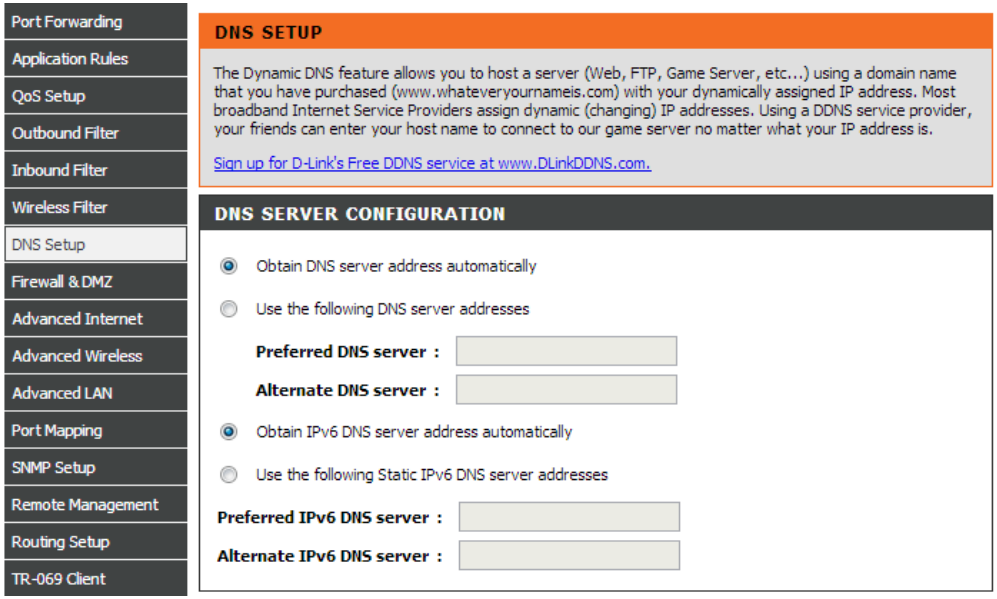
To access the **DNS** setting window, click on the **DNS** button under the **ADVANCED** tab.

DNS SERVER CONFIGURATION

If you are using the Router for DHCP service on the LAN and are using DNS servers on the ISP's network, check **Obtain DNS server address automatically** box.

If you have DNS IP addresses provided by your ISP, enter these IP addresses in the available entry fields for the **Primary DNS Server** and the **Secondary DNS Server**.

If IPv6 Internet connection service was enabled, you can check **obtain IPv6 DNS server address automatically** box. Or your can enter **Primary IPv6 DNS Server** and the **Secondary IPv6 DNS Server**.



DDNS CONFIGURATION

Please enable the **Enable Dynamic DNS** if you want to use DDNS.

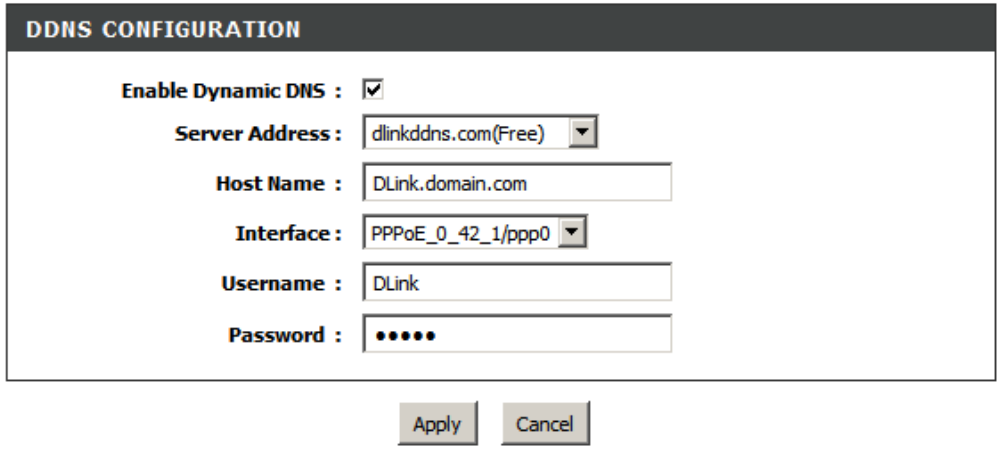
Choose which DDNS web site to use on the **Server Address**.

Type which Host name which you registered with your DDNS service provider. on the **Host Name**.

Please choose which interface name to use on the **Interface**.

Type the username/password on the **username/password** for your DDNS account.

After configure the DNS settings as desired, click on the **Apply Setting** button to apply settings.



FIREWALL & DMZ

The router already provides a simple firewall by virtue of the way NAT works. By default NAT does not respond to unsolicited incoming requests on any port, thereby making your WAN invisible to Internet cyber attackers.

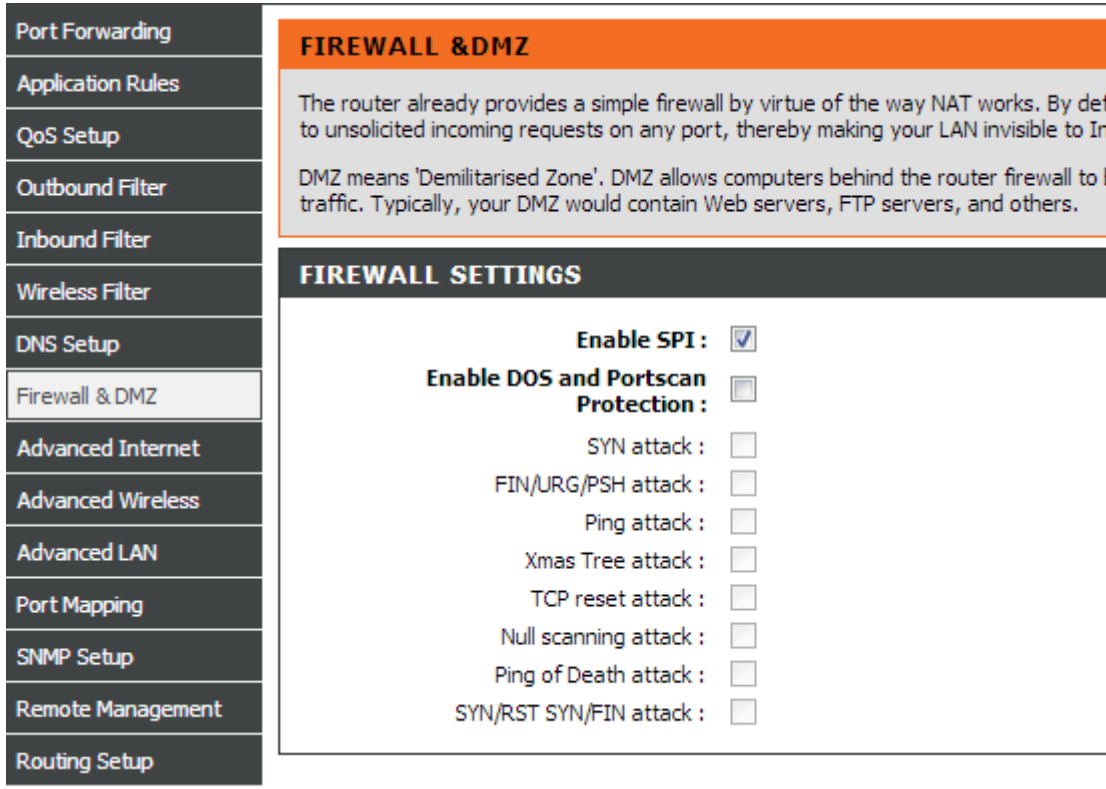
DMZ means 'De Militarized Zone'. DMZ allows computers behind the router firewall to be accessible to Internet traffic. Typically, your DMZ would contain Web servers, FTP servers, and others.

To access the **Firewall & DMZ** setting window, click on the **Firewall & DMZ** button under the **ADVANCED** tab

Firewall SETTING

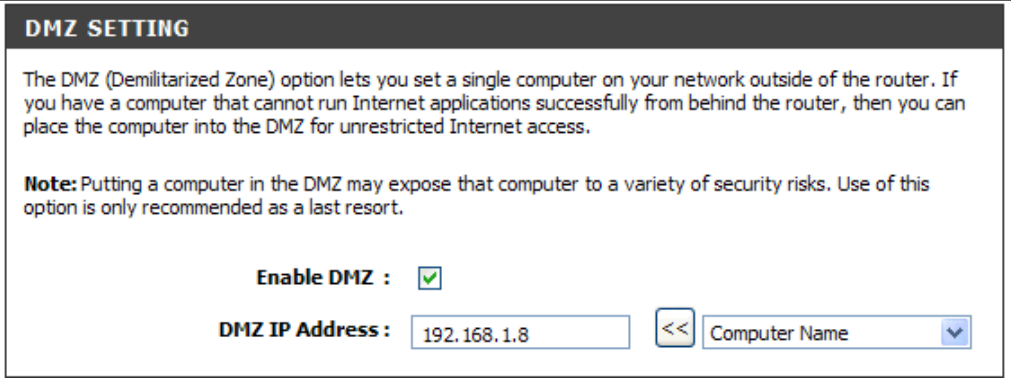
Check the **Enable SPI** box

Check the **Enable DOS and Portscan Protection** box, you can Choose the below attack firewall setting:
SYN attack,
FIN/URG/PSH attack,
Ping attack,
Xmas Tree attack,
TCP reset attack,
Null scanning attack,
Ping of Death attack,
SYN/RST SYN/FIN attack.



DMZ Setting

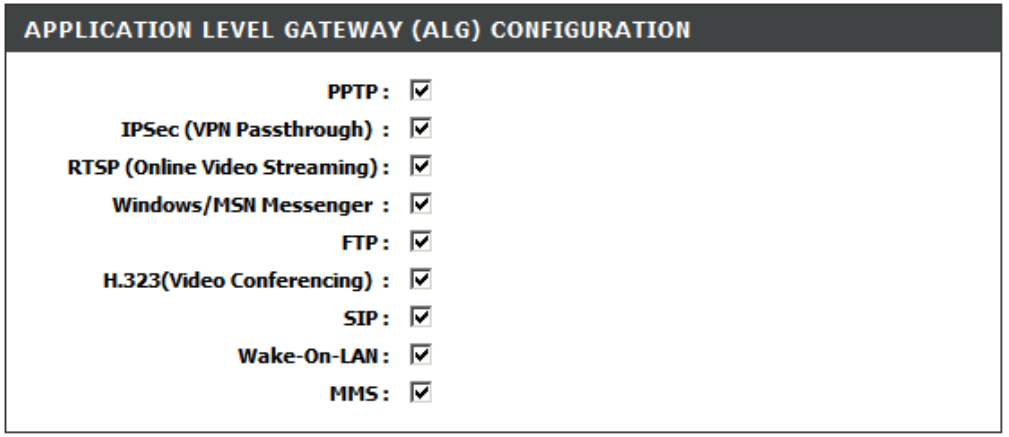
Please tick the **Enable DMZ** and type the DMZ computer IP on the **DMZ IP Address** or you also can choose the DMZ host from the drop-down menu instead of type in IP manually.



Application Level Gateway (ALG) Configuration

Please choose the following ALG to enable:

- **PPTP (VPN Passthrough)**
- **IPSec (VPN Passthrough)**
- **RTSP(Online Video Streaming)**
- **Windows/MSN Messenger**
- **FTP**
- **H.323(Video Conferencing)**
- **SIP**
- **Wake-On-LAN**
- **MMS**



ADVANCED INTERNET

The Multiple PVC Settings allow you to Add (up to 8 PVC in total), Delete or Edit multiple PVCs connection for advanced ADSL service.

The Advanced ADSL settings allow you to choose which ADSL modulation settings your modem router will support. D-Link does not recommend you to change these settings unless directed to do so by your ISP.

To access the **ADVANCED INTERNET** setting window, click on the **ADVANCED INTERNET** button under the **ADVANCED** tab

Multiple PVC Settings

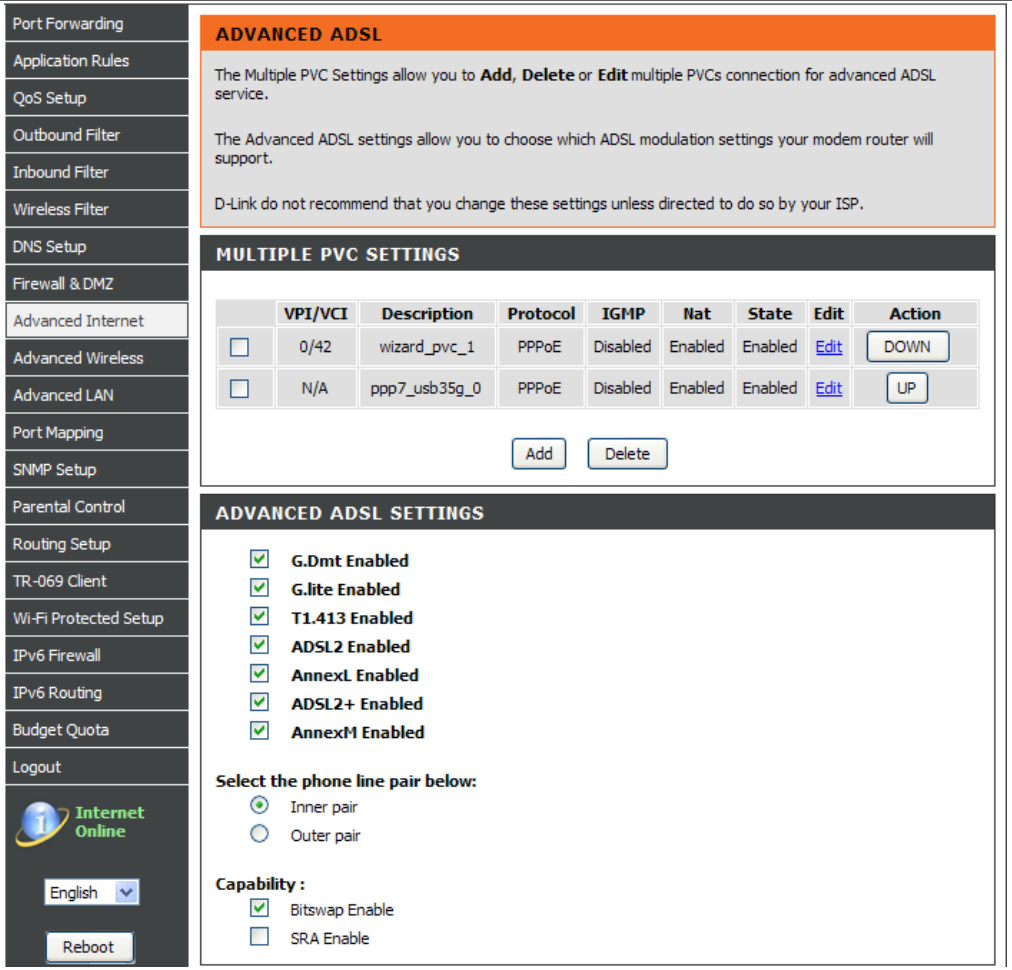
Please click the **Add** / **delete** button to add / delete the multiple PVC. And the following step same as pre internet setup.

Advanced ADSL Settings

Please select following ADSL profile to link.
G.Dmt, **G.lite**, **T1.413**, **ADSL2**, **AnnexL**, **ADSL2+**, **Annex M (available only on Annex A model)**

Please choose the **Inner pair** or **Outer pair** on the Select the phone line pair below.

Please select to enable **Bitswap** and **SRA** on the Capability.



ADVANCED WIRELESS

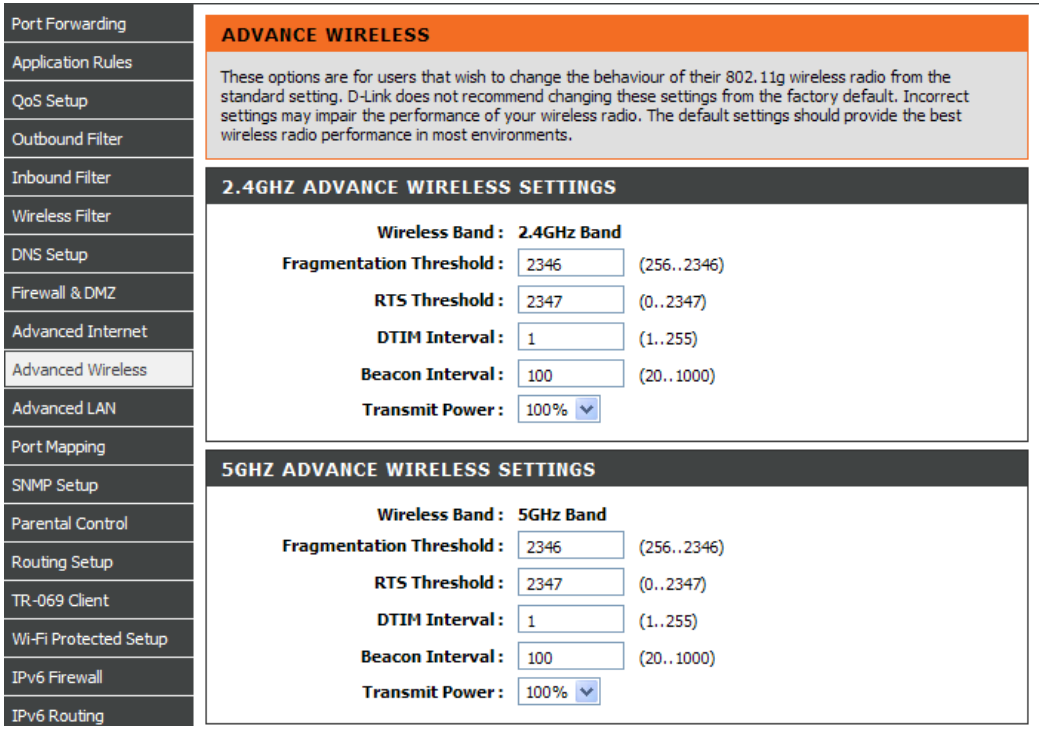
These options are for users that wish to change the behavior of their wireless radio from the standard setting. D-Link does not recommend changing these settings from the factory default. Incorrect settings may impair the performance of your wireless radio. The default settings should provide the best wireless radio performance in most environments.

To access the **Advanced Wireless** setting window, click on the **Advanced Wireless** button in the **ADVANCED tab**

Advanced WIRELESS Settings

If you need to change the default behavior,

Please type the value on the **Fragmentation Threshold**
Please type the value on the **RTS Threshold**
Please type the value on the **DTIM Interval**
Please type the value on the **Beacon Interval**
Please choose 20%, 40%, 60%, 80% and 100% on the **Transmit Power**.



GUEST WIRELESS SETTING

Guest wireless domain, only available on 2.4GHz interface, is an isolated zone from device LAN and main SSID domain.

Please enable the **Enable Wireless Guest Network**

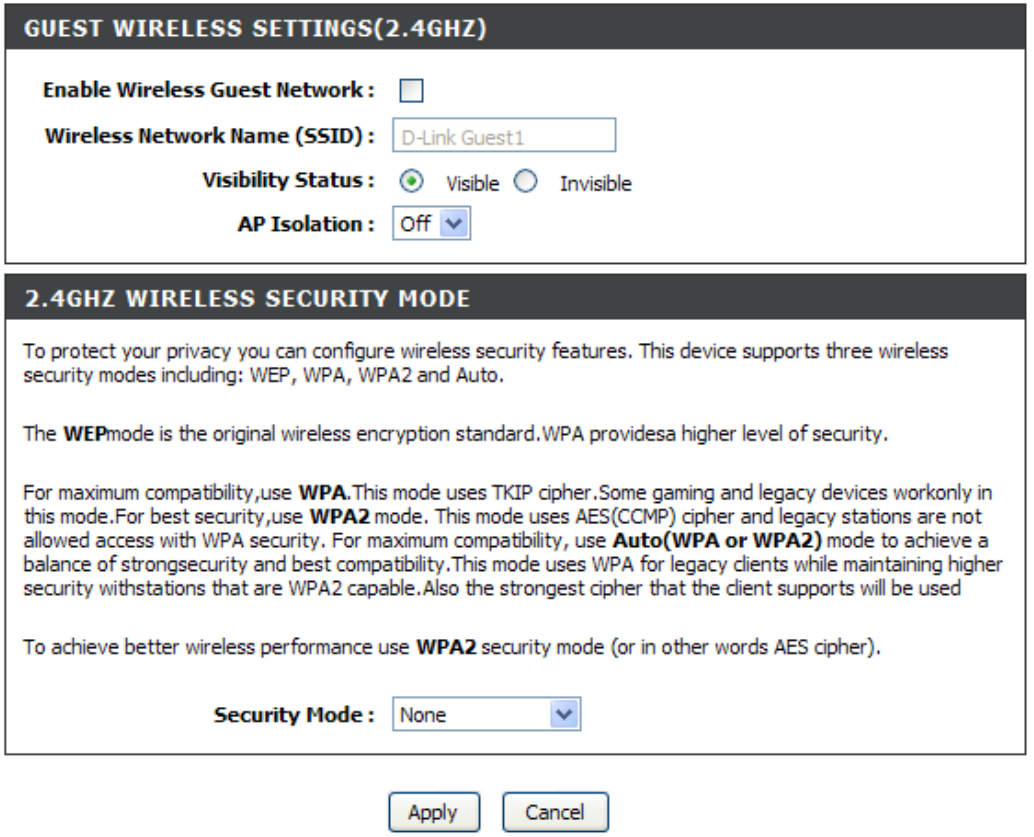
Type SSID on the **Wireless Network Name**

Please choose Visible or **Invisible** on the **Visibility** Status

Please select Off/On on the **AP Isolation**.

GUEST WIRELESS SECURITY

By default guest wireless domain is not applied with any security. To offer security mechanism, please select the encryption methodology and input pre-share key.



ADVANCED LAN

These options are for users that wish to change the LAN settings. D-Link does not recommend changing these settings from factory default. Changing these settings may affect the behavior of your network.

To access the **Advanced LAN** setting window, click on the **Advanced LAN** button in the **ADVANCED tab**

UPnP

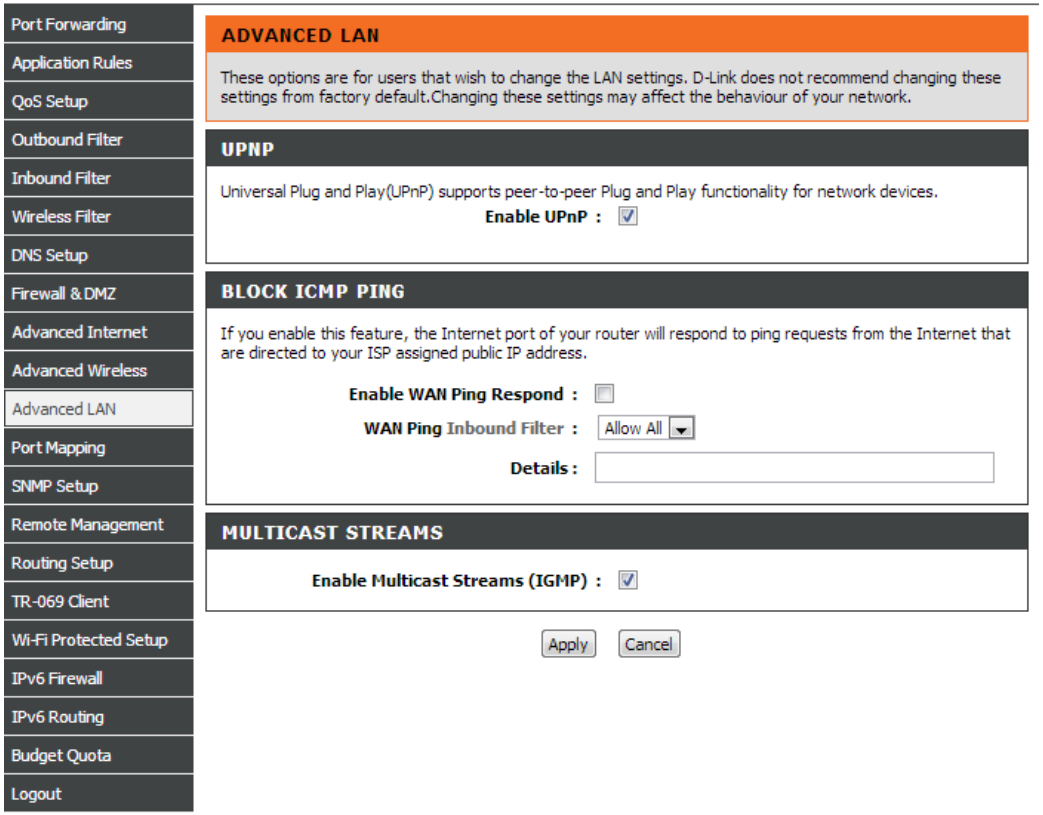
Please select the **Enable UPnP** when you want to have Universal Plug and Play (UPnP) supports peer-to-peer Plug and Play functionality for network devices.

Block ICMP Ping

Enable the WAN Ping Respond on the **Enable WAN Ping Respond**. Please select **Allow All** or **Deny All** on the WAN Ping Inbound Filter and you can also type a string on the **Details** to describe the action.

Multicast Streams

Please enable the **Enable Multicast Streams (IGMP)** to let IGMP stream can pass through DSL-2880AL.



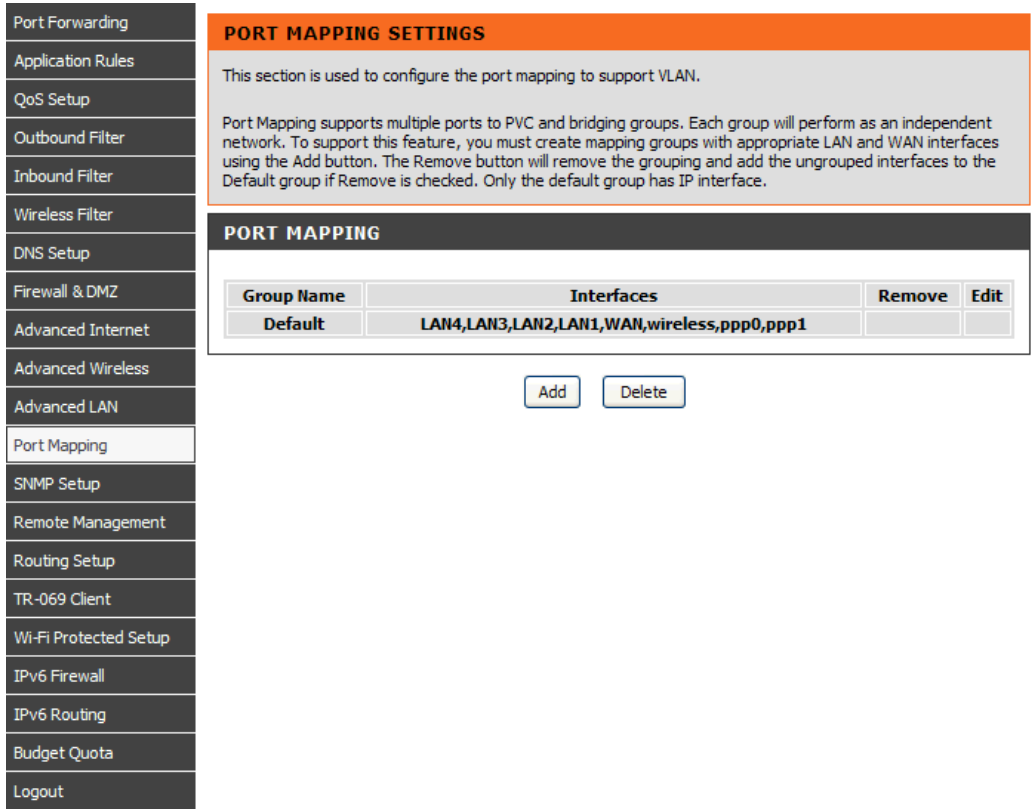
PORT MAPPING

Port Mapping supports multiple ports to PVC and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the Add button. The Remove button will remove the grouping and add the ungrouped interfaces to the Default group if Remove is checked. Only the default group has IP interface.

To access the **Port Mapping** setting window, click on the **Port Mapping** button in the **ADVANCED tab**

PORT MAPPING

Click **Add** button to add Port Mapping rule.



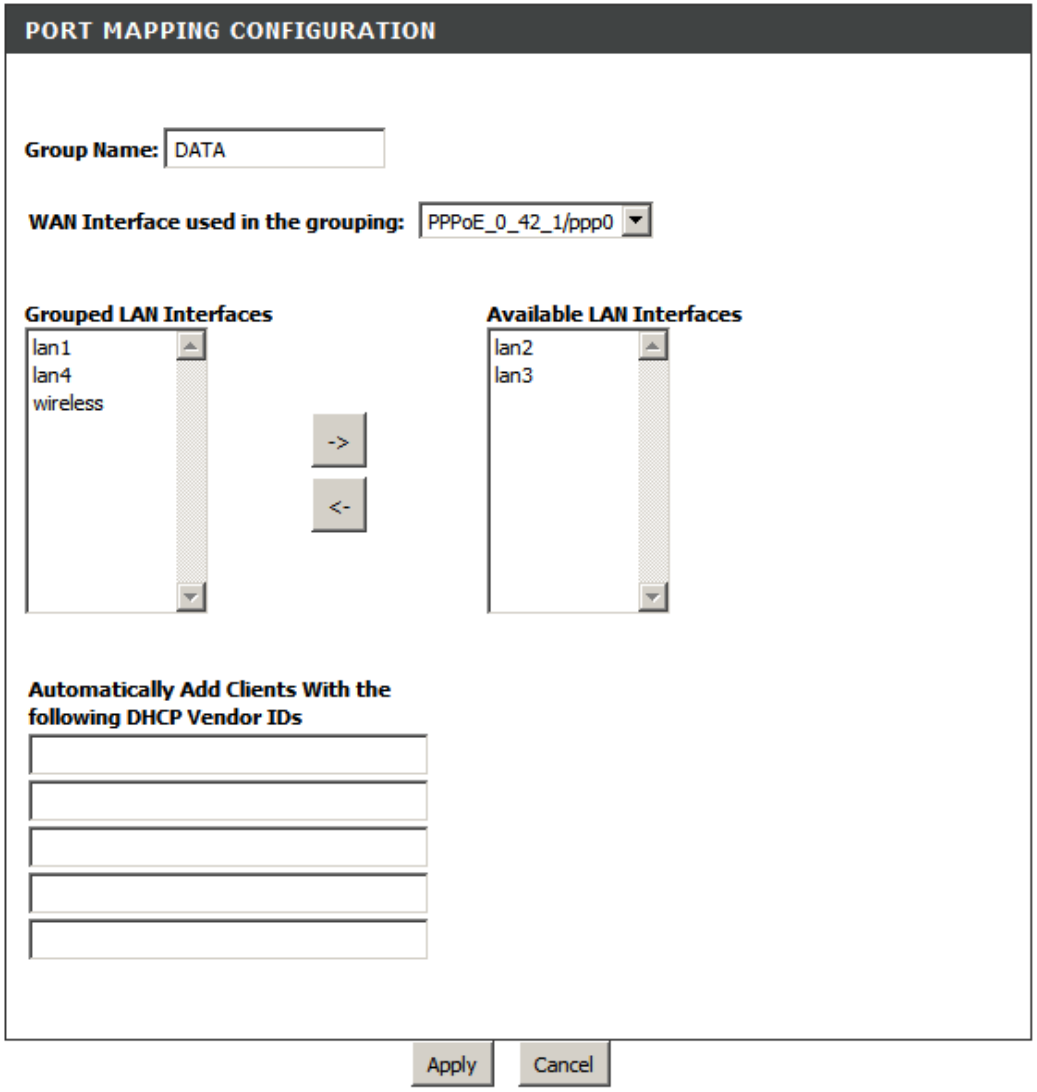
PORT MAPPING CONFUGURATION

Type **Group Name** and select **WAN Interface used in the grouping** in drop-down menu

Choose **Grouped LAN Interface** from **Available LAN Interfaces.**

Type DHCP vendor IDs in the **Automatically Add Clients With the following DHCP Vendor IDs** for auto add clients.

Click on the **Apply** Button to save the setting.



SNMP SETUP

Simple Network Management Protocol (SNMP) allows a management application to retrieve statistics and status from the SNMP agent in this device. Select the desired values and click "Apply" to configure the SNMP options.

To access the **SNMP SETUP** setting window, click on the **SNMP SETUP** button in the ADVANCED tab

SNMP CONFIGURATION

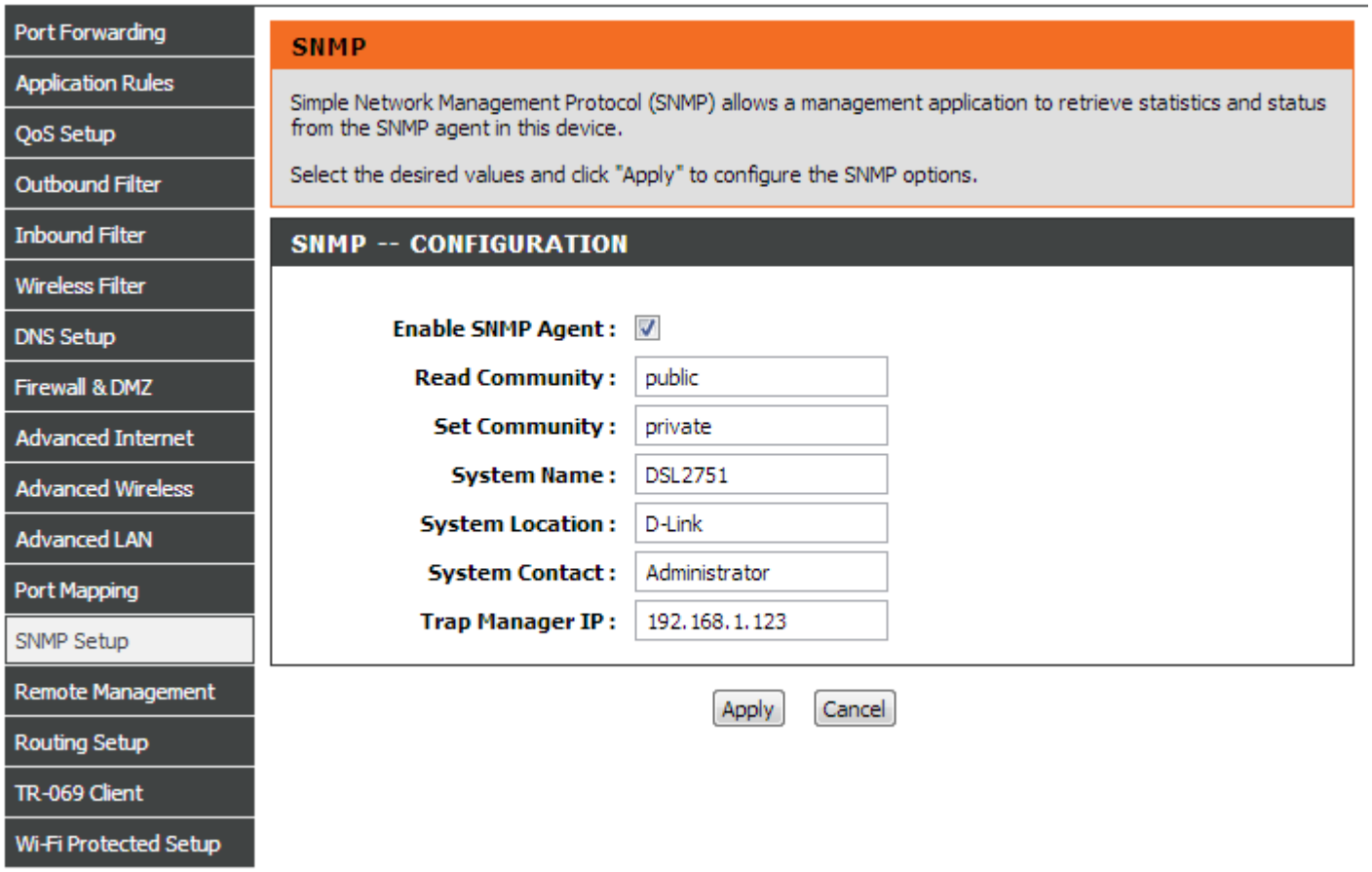
Please tick **Enable the SNMP Agent**

Please type the **Read Community**, **Set Community** to match with the SNMP query.

Please type **System Name**, **System Location** and **System Contact** to describe the DSL-2880AL's related information.

Please type the trap IP on the **Trap Manager IP**

Please click the **Apply** button to save the setting.



PARENTAL CONTROL

Parental Control provides two useful tools for restricting Internet access. Block Websites allows you to quickly create a list of all web sites that you wish to stop users from accessing. Time Restrictions allows you to control when clients connected to Router are allowed to access the Internet.

To access **PARENTAL CONTROL** setting windows, click on the **PARENTAL CONTROL** button in the **ADVANCED** tab

BLOCK WEBSITES SCHEDULING

To type the **Website** URL which you want to block.

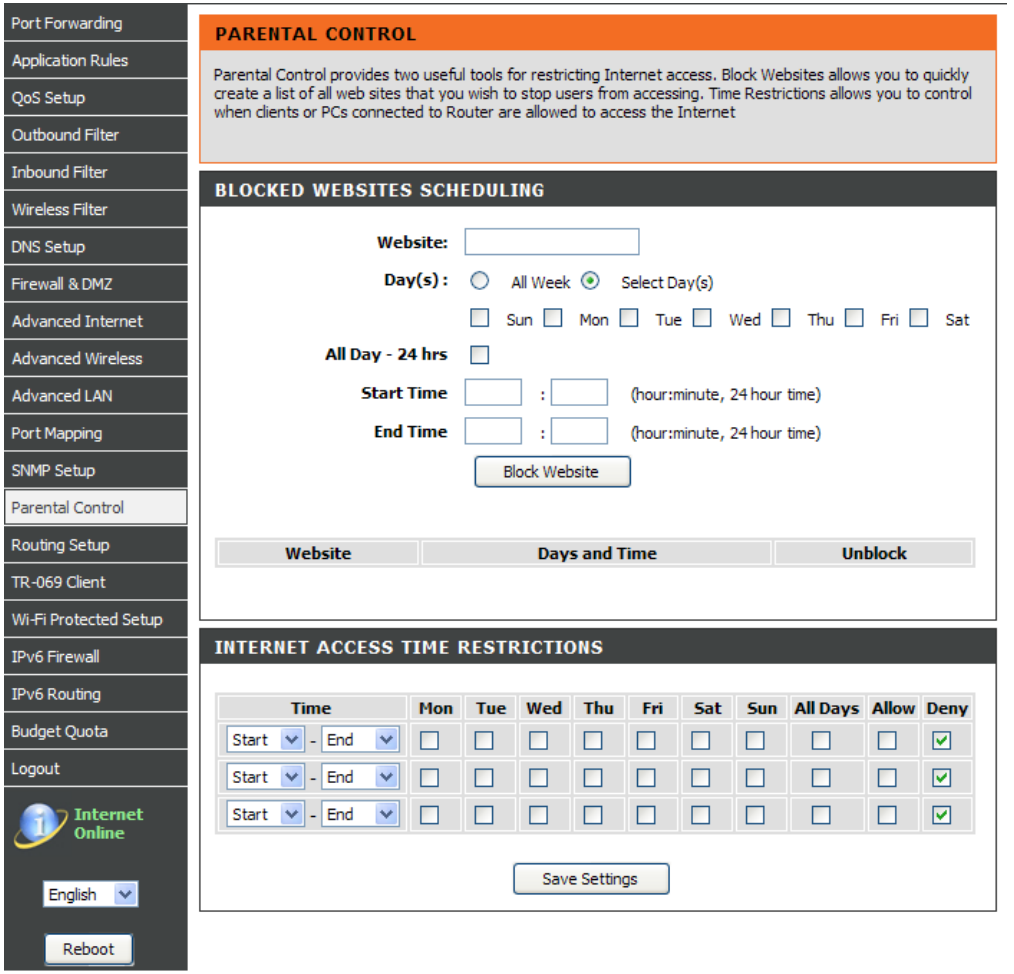
To specify Blocked Days as **All Week** or specific **Days**.

To specify Blocked Hour **All DAY-24hrs** or specific **Start Time** to **End Time.**

Click on the **Block Website** button to add web site block rule.

INTERNET ACCESS TIME RESTRICTIONS

Check the **Start Time** to **End Time** and **days** for Internet Access Restriction **Allow** or **Deny**.



ROUTING SETUP

Over the Routing Setup page, you can configure static routing policies or RIP protocol settings.

To access the **Routing** setting window, click on the **Routing** button under the **ADVANCED** tab.

Routing -- Static Route

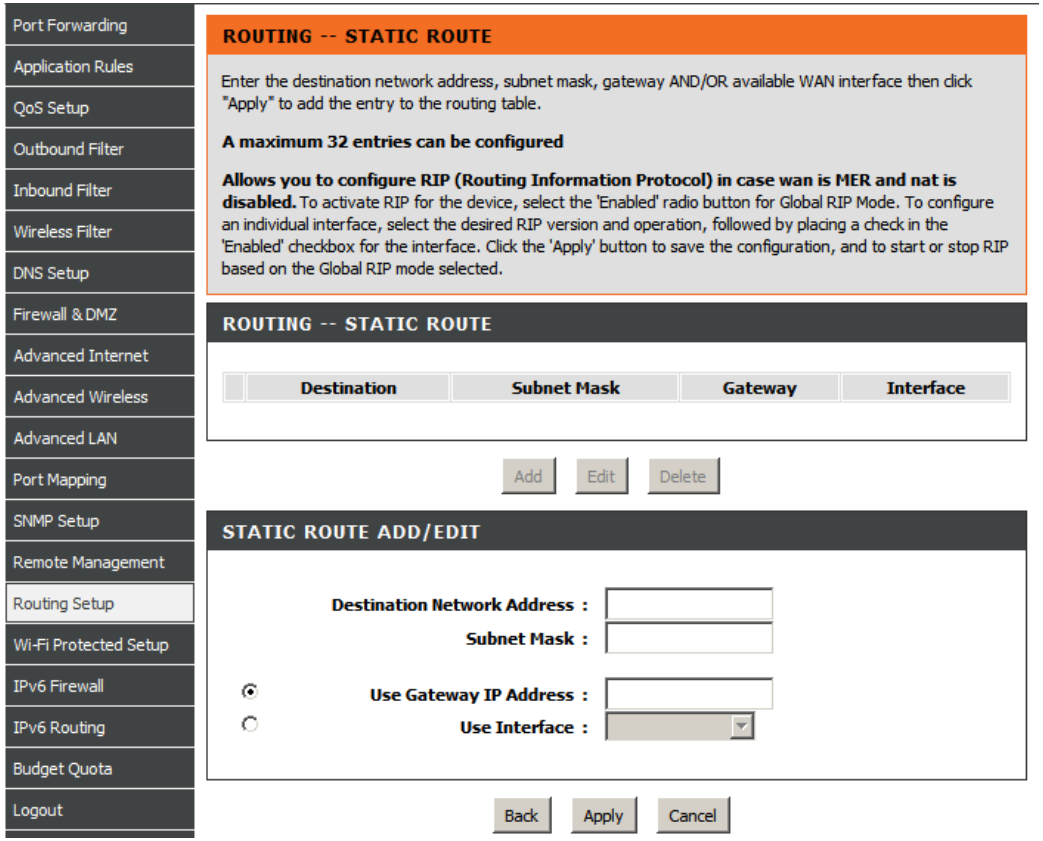
Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Apply" to add the entry to the routing table. A maximum 32 entries can be configured

Please click the **Add** or **Edit** button to set a static routing policy in the list.

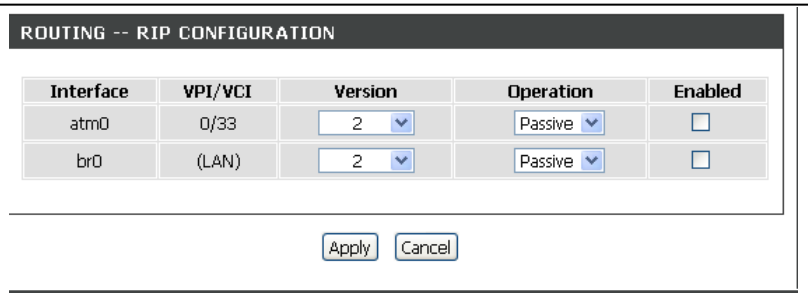
Please type the **Destination Network Address** and **Subnet Mask**.

Please choose type **Use the Gateway IP**, **Use the IPv4 interface** or **Use the IPv6 interface** to be the routing interface.

Click the **Apply** the button to save the configuration.



Routing -- RIP Configuration



Allows you to configure RIP (Routing Information Protocol). To activate RIP for the device, select the 'Enabled' radio button for Global RIP Mode. To configure an individual interface, select the desired RIP version and operation, followed by placing a check in the 'Enabled' checkbox for the interface. Click the 'Apply' button to save the configuration, and to start or stop RIP based on the Global RIP mode selected.

Please choose the **Version** and **Operation**, and then decide to **Enable** or not.

Wi-Fi PROTECTED SETUP

Wi-Fi Protected Setup (also known as WPS) is a standard designed to pair up a new joined client devices to a AP network by using a PIN or hardware push button. In order to pair up AP and wireless client, you have to ensure both AP and client devices must support Wi-Fi Protected Setup.

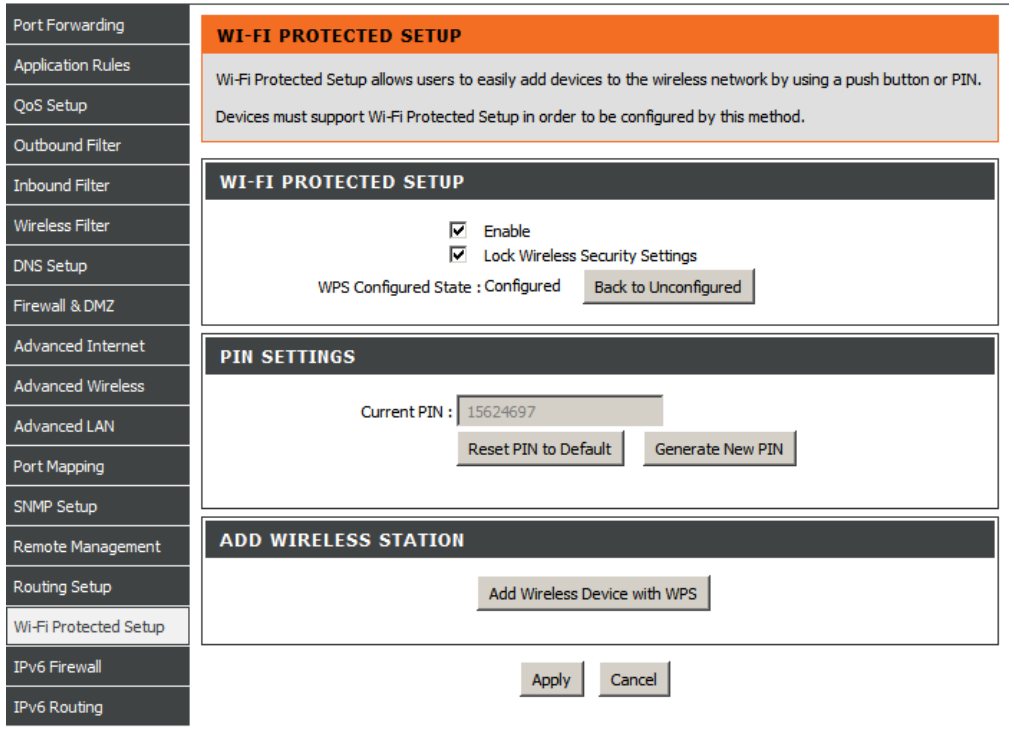
To access the **WI-FI PROTECTED SETUP** window, click on the **WI-FI Protected Setup** button under the **ADVANCED** tab.

Wi-Fi Protected Setup

Please select to **Enable** or **Lock** Wireless Security Settings

PIN Settings: Choose to click the **Reset PIN to Default** button or **Generate New PIN** button to show the PIN on the Current PIN.

ADD WIRELESS STATION: Please click the **Add Wireless Device** with WPS button to set the WPS.



IPV6 FIREWALL

The Firewall settings section is an advance feature used to allow or deny traffic from passing through the device. It works in the same way as ip filters with additional settings. You can create more detail rules for the device.

To access the **IPv6 Firewall** setting window, click on the **IPv6 Firewall** button in the **ADVANCE** table

ACTIVE FIREWALL RULES

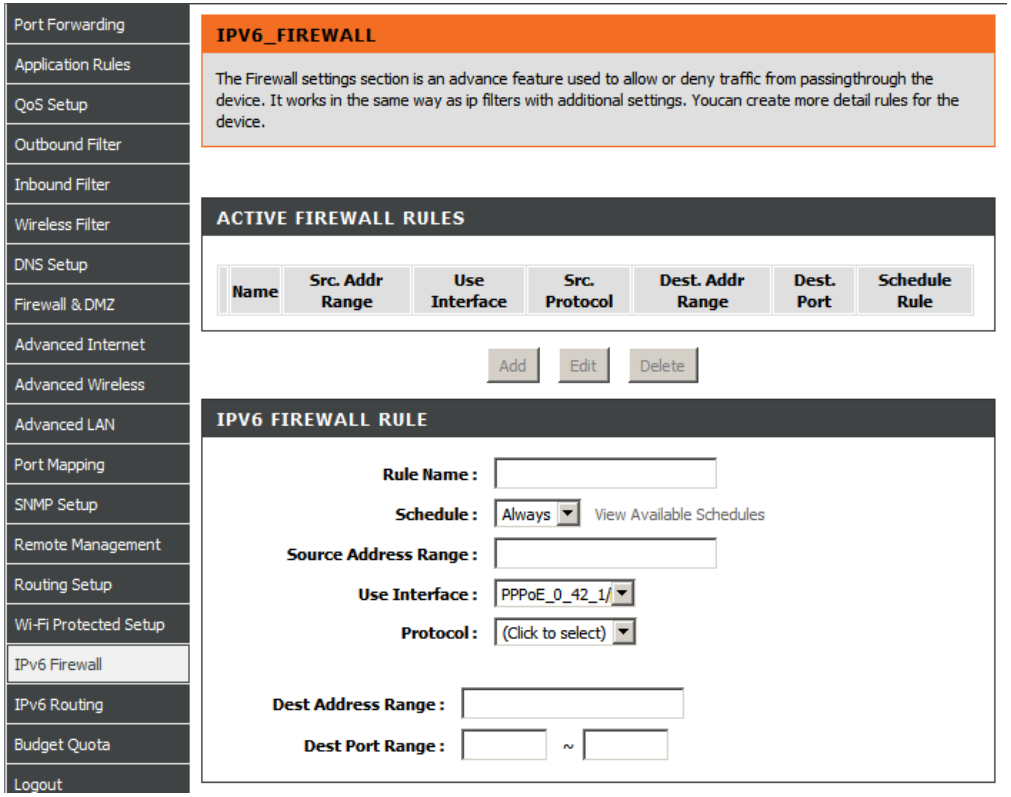
Click **Add** button to add Firewall Rules.

IPV6 FIREWALL RULE

Type **Rule Name**, select **Schedule** (Schedule Rule can be set as following).

Type **Source Address Range**, select **Use Interface** and **Protocol** in drop-down menu.

Type **Dest Address Range**, **Dest Port Range** and select **Use Interface** in drop-down menu.



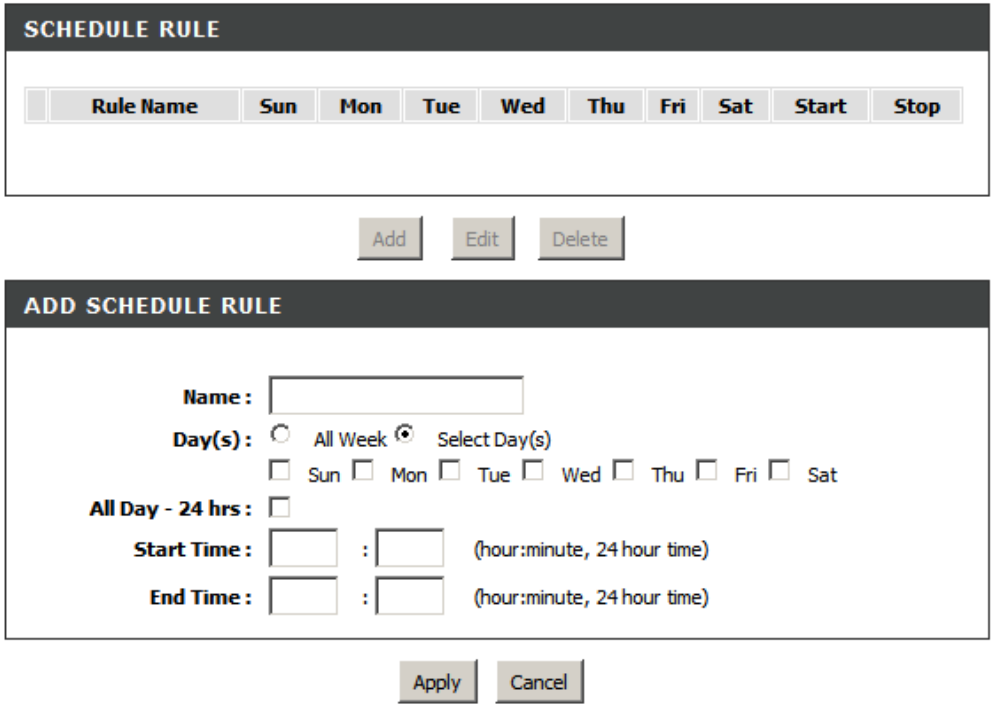
SCHEDULE RULE

Click **Add** button to add a new schedule.

ADD SCHEDULE RULE

Type **Name** for this rule and select **Day(s)**, you can sele **All Week** or **select Day(s).**

Check **All Day-24hr** or set **Start time** to **End Time**



IPV6 ROUTING

This Routing page allows you to specify custom routes that determine how data is moved around your network. A maximum 20 entries can be configured

To access the **IPv6 Routing** setting window, click on the **IPv6 Routing** button in the **ADVANCE** table

STATIC IPV6 ROUTES

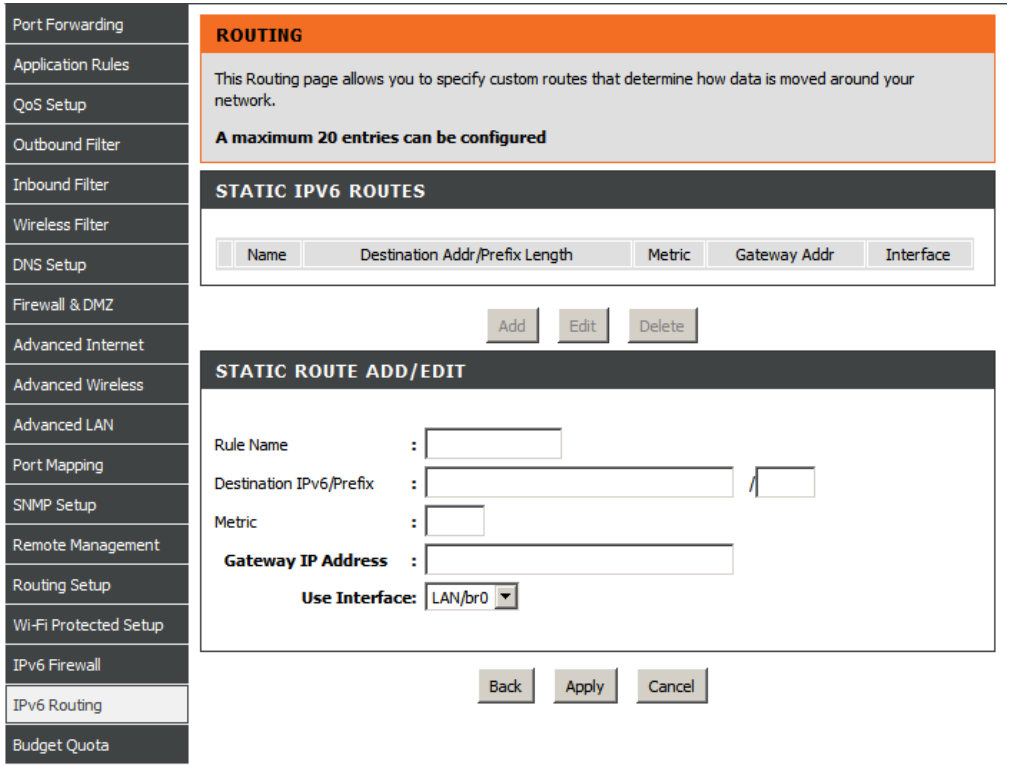
Click **Add** button to add **Rules**.

STATIC ROUTE ADD/EDIT

Type **Rule/Name** for this rule.

Type **Destination IPv6/Prefix**, **Metric** and **Gate way IP Address**.

Select **Use Interface** in drop-down menu.



BUDGET QUOTA

Budget Quota is a traffic meter feature offers

- Traffic quota metering on the user specified interface over the user defined period
- Traffic quota metering in different direction (both ingress and egress direction)
- Interface locking down in order to prevent traffic over flow.

Budget Quota is designed mainly for user who subscribe non flat rate internet access plan. To prevent download traffic over monthly quota, user can specify the WAN interface and download traffic quota.

Budget Quota

To access the **Budget Quota** window, click on the **Budget Quota** button under the **ADVANCED** tab.

Please tick **Enable Limitation Quota** to activate Budget Quota

Select interface to limit the data transmission quota.

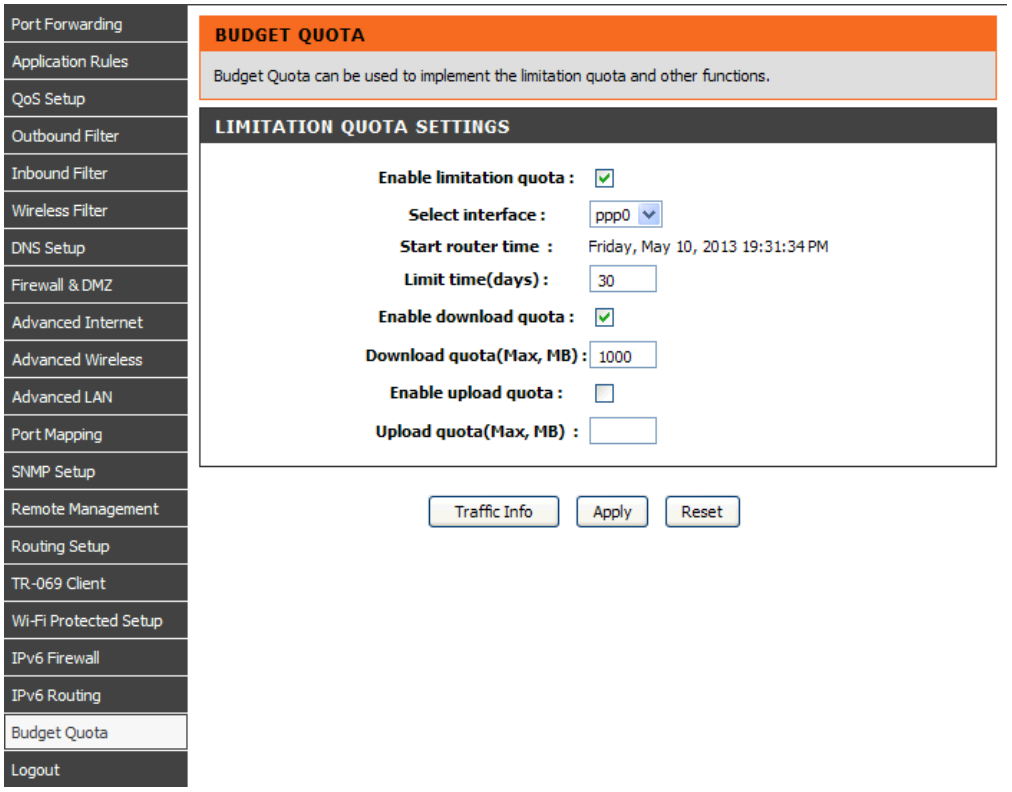
Set meter duration over **Limit time(days)**

Check **Enable Download quota** and set **Download quota(Max, GB)**

Check **Enable Upload quota** and set **Upload quota(Max, GB)**

Remark:

- Before you activated Budget Quota, you MUST activate NTP and have device sytem time adjusted accurately
- Before you configure Budgt Quota, please have your WAN inteface connected (otherwise, the WAN interface will not show over the Budget Quota interface option)



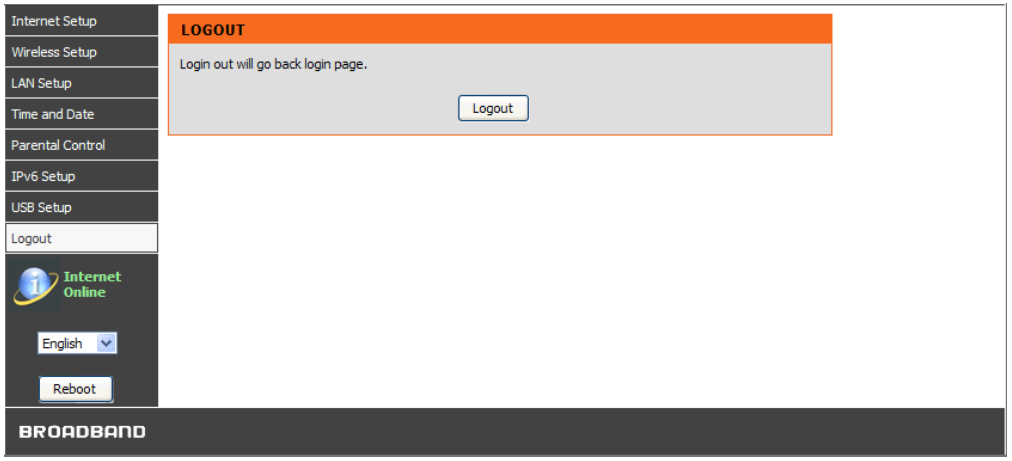
LOGOUT

The **LOGOUT** page enables you to logout of management GUI and as well closes the browser.

To access the **LOGOUT** setting window, click on the **Logout** button in the **SETUP** tab

LOGOUT

Click on the **Logout** button to logout of the router configuration settings and close the web browser.



MAINTENANCE

Click on the **MAINTENANCE** tab to reveal the window buttons for various functions located in this directory.

PASSWORD

The factory default password of this router is 'admin'. To help secure your network, D-Link recommends that you should choose a new password.

To access the **PASSWORD** setting window, click on the **PASSWORD** button in the **MAINTENACE** tab

PASSWORD

Set Password (optional)

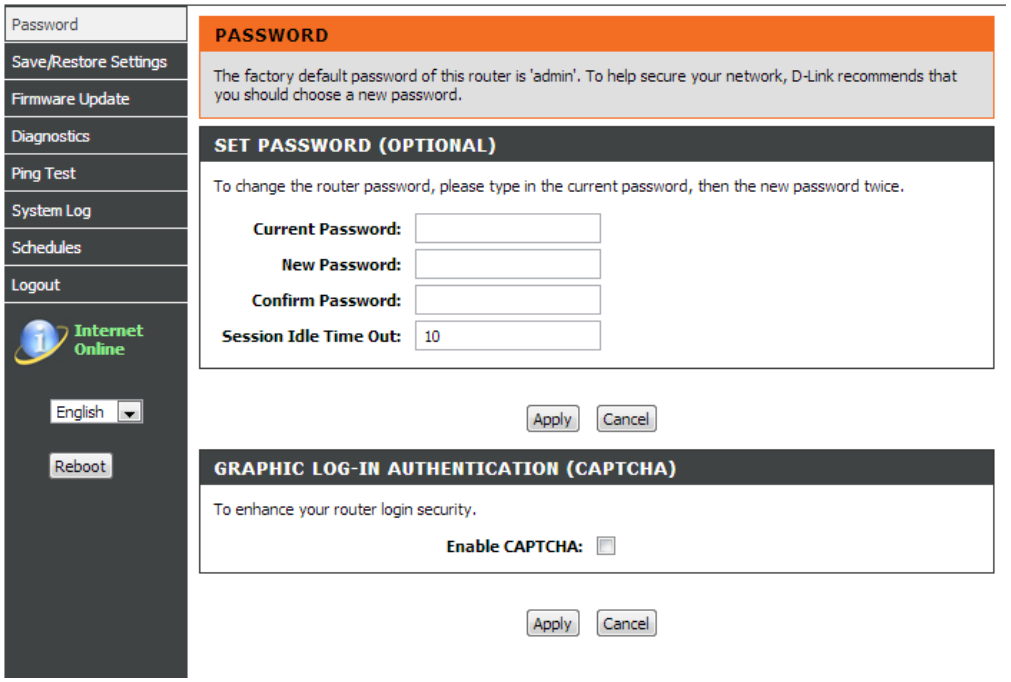
Please type the **Current Password**, **New Password**, **Confirm Password** and the **Idle Time Out**.

Please click the **Apply** Settings button to save the settings.

GRAPHIC LOG-IN AUTHENTICATION (CAPTCHA)

To enhance your router login security, you can **enable CAPTCHA**.

Please click the **Apply** Settings button to save the configuration.



SAVE/RESTORE SETTINGS

The device firmware offers you configuration backup feature which you can backup the configuration settings as a plan text file and store on your computer hard drive. You also have the option to restore configuration settings, or reset the device configuration back to manufactory default settings.

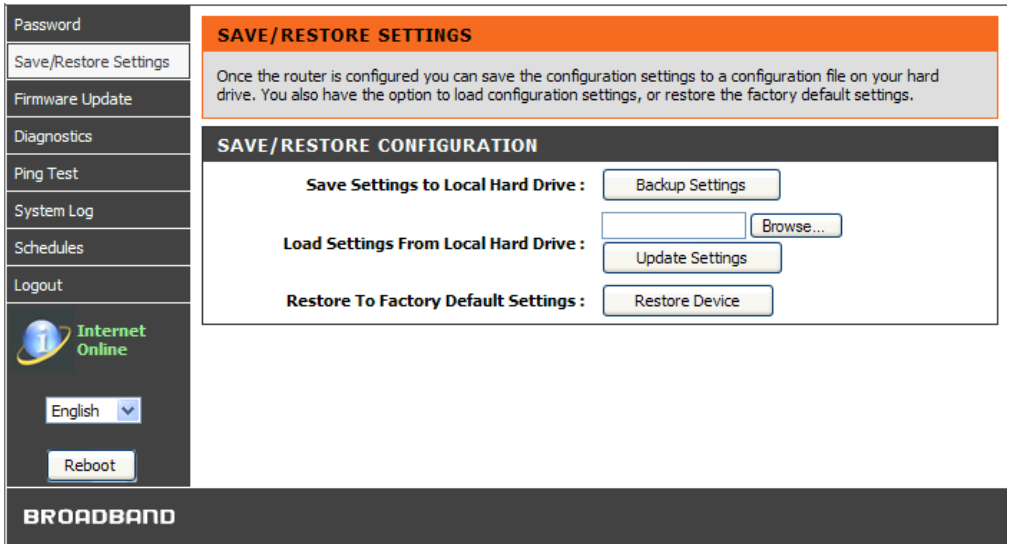
To access the **Save/Restore Configuration** setting window, click on the **Save/Restore Configuration** button in the **MAINTENACE** tab

Save/Restore Configuration

Please click the **Save** button on the Save Settings to Local Hard Drive.

Please click **Browse** button to choose the configurations file and then click the **Update Settings** button to upload.

If necessary, please click the **Restore** Device button to have the default settings.



FIRMWARE UPDATE

Use the FIRMWARE UPGRADE window to load the latest firmware for the device. Note that the device configuration settings may return to the factory default settings, so make sure you first save the configuration settings with the SAVE/RESTORE SETTINGS window described above.

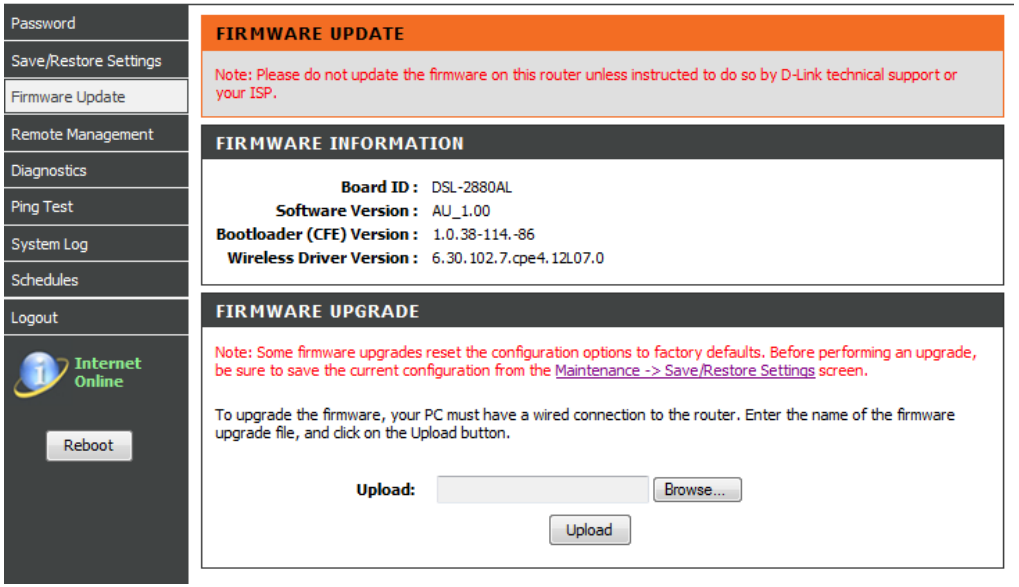
To access the **FIRMWARE UPGRADE** setting window, click on the **Firmware Update** button under the **MAINTENANCE** tab.

FIRMWARE UPDATE

To upgrade firmware, click on the **Browse** button to search for the firmware file and then click the **Upload** button to begin copying the file.

The Router will load the file and restart automatically.

WARNING: Please DO NOT power off the router during the time device upgrading the firmware image as it may damage the hardware.



REMOTE MANAGEMENT

This section allows you to enable/disable remote access to the router from the Internet. Advanced access control allows you to configure access via specific services. Most users will not need to change any of these settings.

To access the **REMOTE MANAGEMENT** setting window, click on the **REMOTE MANAGEMENT** button in the **MAINTENANCE** tab

REMOTE MANAGEMENT SETTINGS

Please enable the **ENABLE Remote Management**

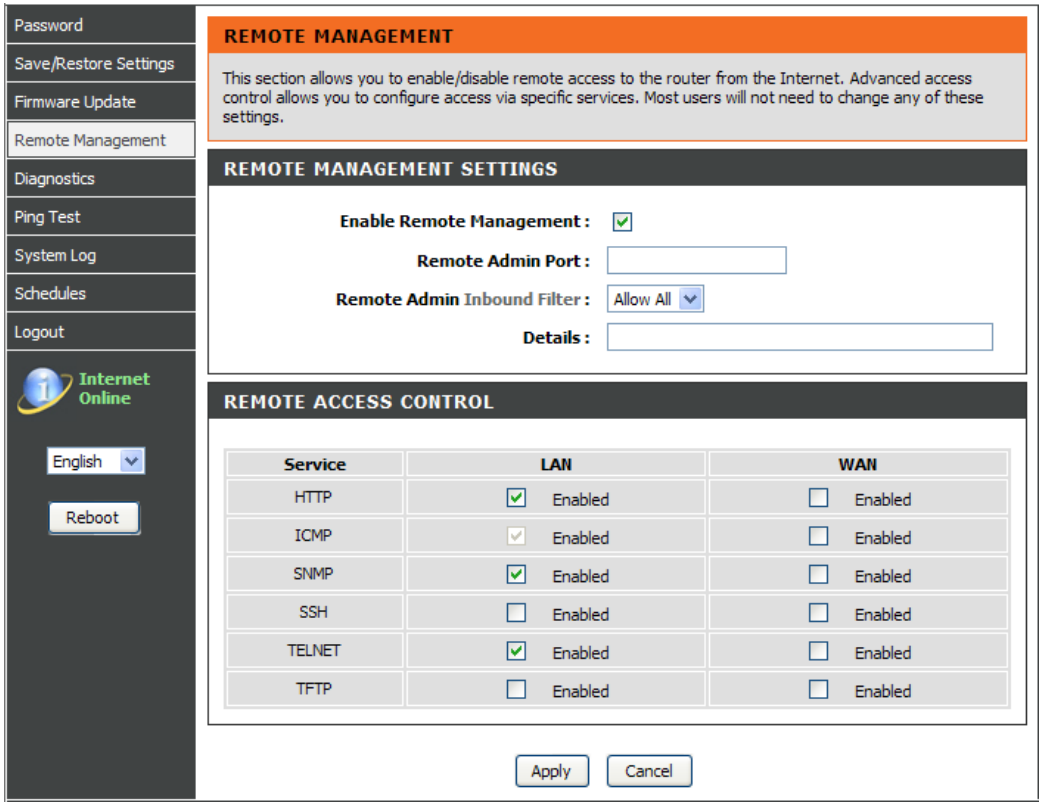
Please specify the HTTP remote access port number which you want to replace the standard service port 80.

Please select **Allow All** or **Deny All** on the Remote Admin Inbound Filter

Please type a string to describe the action on the **Details**.

REMOTE ACCESS CONTROL

To tick the specific Service(s) which you wish to enable over the device LAN interface or the device WAN interface



DIAGNOSTICS

Your router is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Return Diagnostics Tests" at the bottom of this page to make sure fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.

To access the **Diagnostics** setting window, click on the **Diagnostics** button under the **MAINTENANCE** tab.

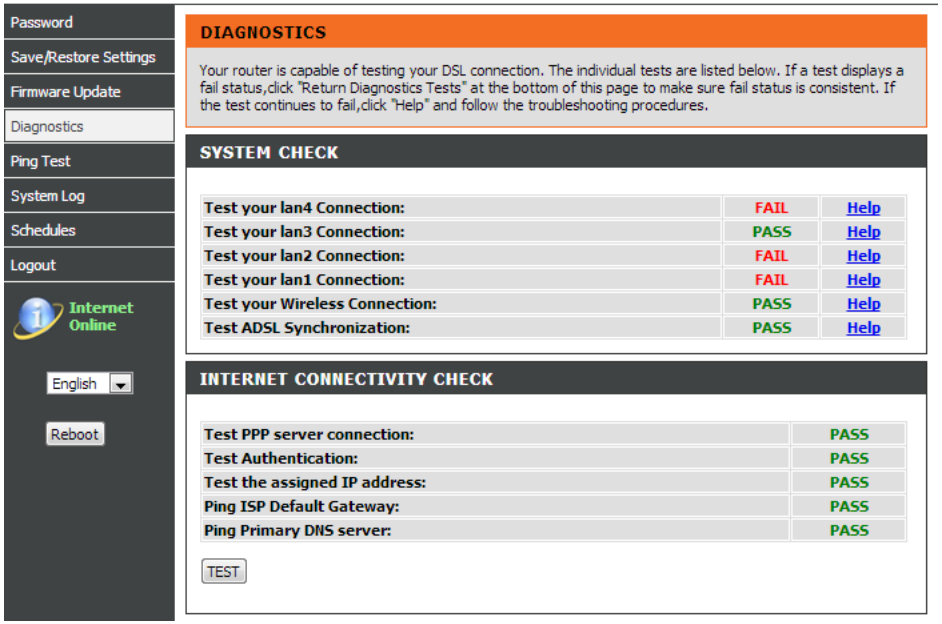
System check

There are Test your eth0/eth1/eth2/eth3 Connection, Test your Wireless Connection and Test ADSL Synchronization and they will show PASS or FAIL

INTERNET CONNECTIVITY Check

There are Ping ISP Default Gateway/ Primary DNS server and they will show PASS or FAIL

Please click the **Test** button to Diagnostic the above test items.



PING TEST

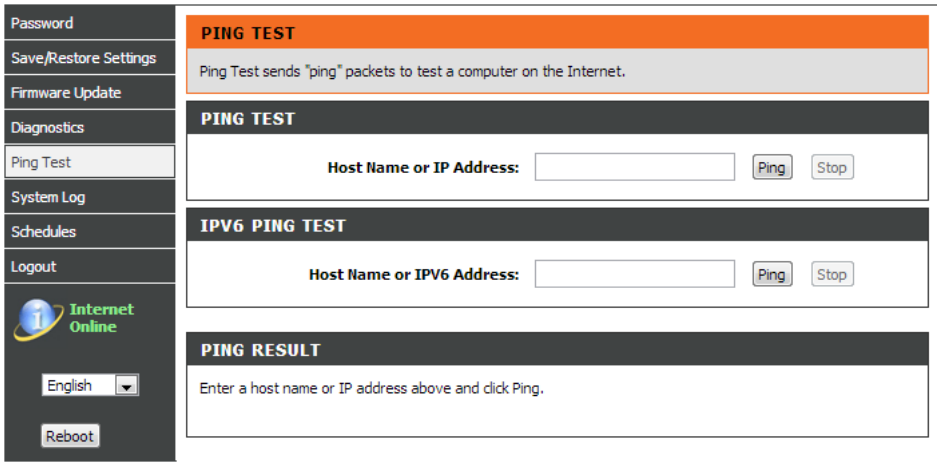
The tests on this page can be used to verify whether or not your router is working correctly. If you have rerun the tests and consulted the help file and you are still experiencing difficulties,

To access the **Ping test** setting window, click on the **Ping test Diagnostics** button under the **MAINTENANCE** tab.

PING TEST
You can type **Host Name or IP Address** and click **Ping** button

IPv6 PING TEST
You can type Host Name or IPv6 Address and click **Ping** button

PING RESULT
When you click **Sto**p button, the ping results will show in **PING RESULT** windows



SYSTEM LOG

The system Log allows you to configure local, remote and email logging, and to view the logs that have been created.

To access the **SYSTEM LOG** setting window, click on the **System Log** button under the **MAINTENANCE** tab.

Remote Log Setting

Check **Log Enable** box:

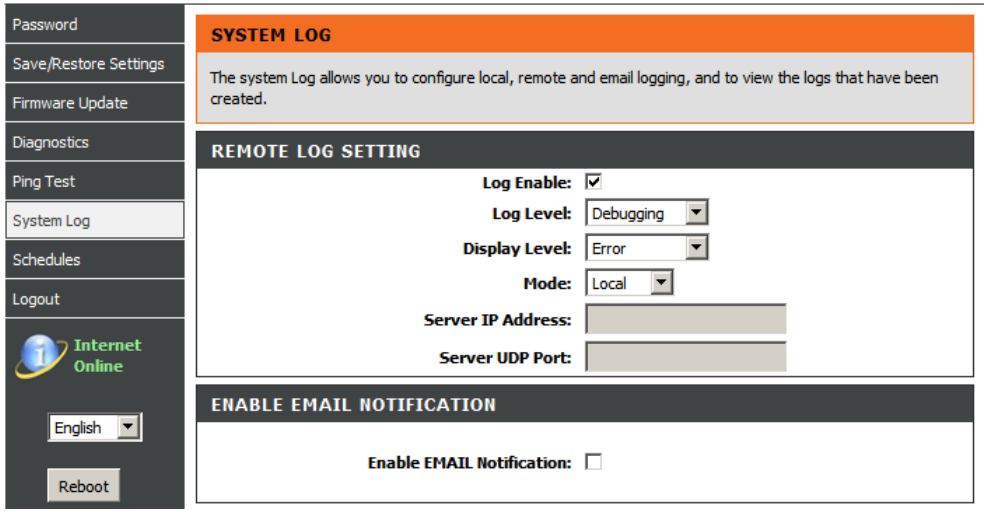
Log Level: All events above or equal to the selected level will be logged.

Display Level: All logged events above or equal to the selected level will be displayed.

Mode: Display mode of system log. Local: Display on local host only

Server IP Address: IP address of the remote system log server

Server UDP Port: UDP port number of the remote system log server



ENABLE EMAIL NOTIFICATION

Please enable. If any logs occur, the system will send mail to the mail address you set.

EMAIL SETTINGS

Please input the **From MAIL Address**, **To MAIL Address** and S**MTP Server Address**.

Please Enable the **Enable Authentication** and then set the **Account Name**, **Account Password** and **Verity Password** if the outgoing mail server requires authentication for relay.

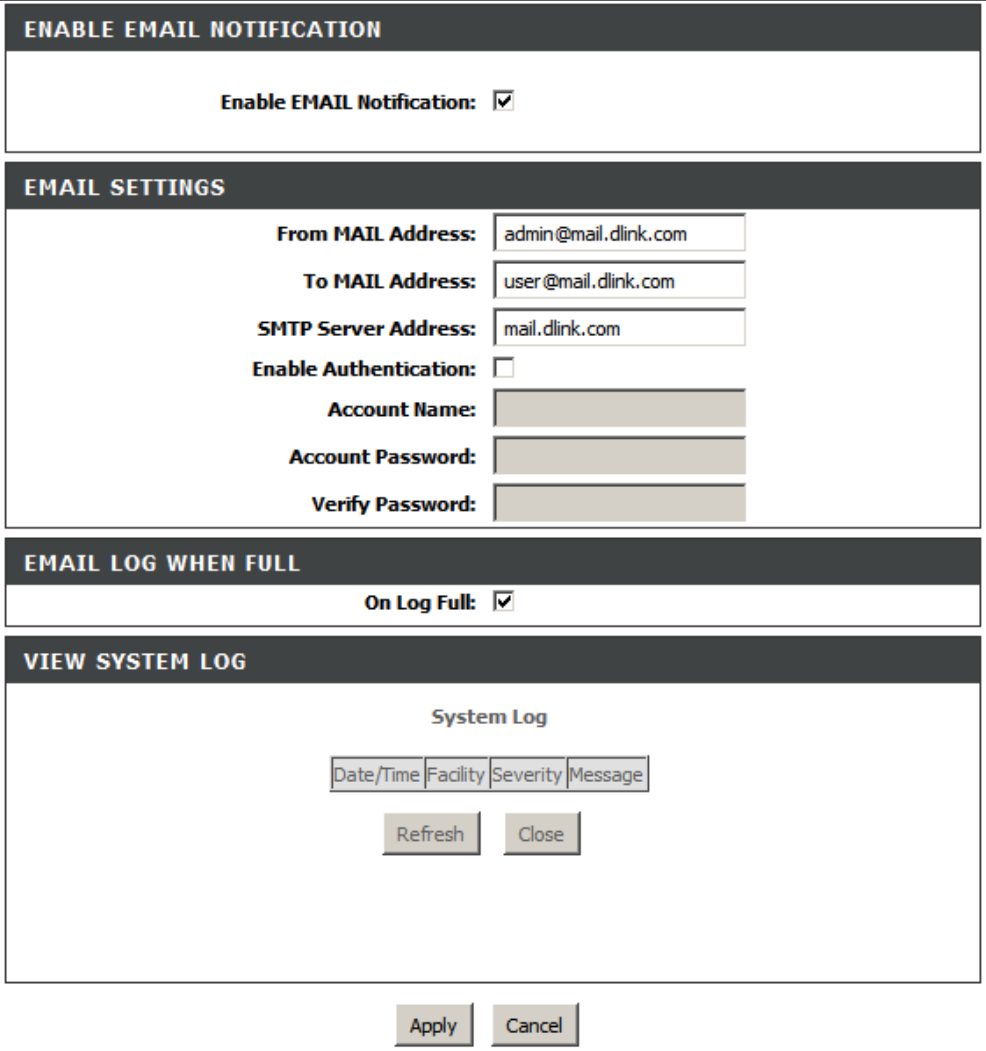
EMAIL LOG WHEN FULL

Please Enable the **On Log Full**. When the log file is full, the system will send mail to the mail address you set.

View System Log

The system will show logs in the list by Date/Time, Facility, Severity and Message.

Please click the **Apply Settings** button to save the configuration.



SCHEDULE

Schedule allows you to create scheduling rules to be applied for your firewall. Maximum of 16 entries

To access the **SCHEDULE RULE** setting window, click on the **SCHEDULE RULE** button under the **MAINTENANCE** tab.

SCHEDULE RULE

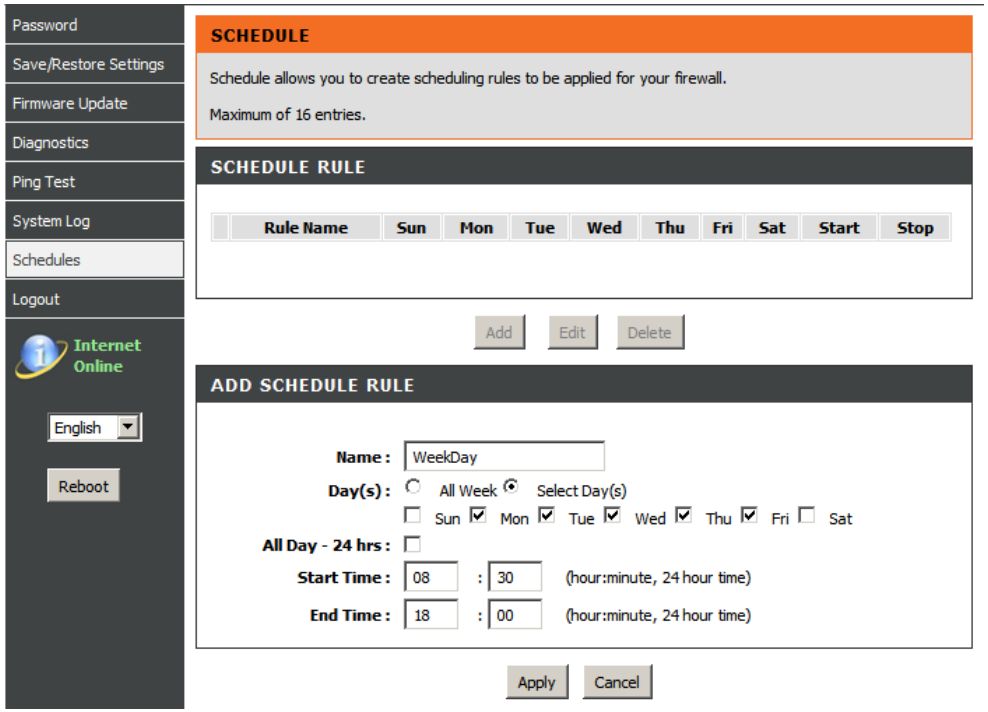
Press **Add** / **Edit** / **Delete** button to modify your **SCHEDULE RULE** list.

ADD SCHEDULE RULE

Type **Name** for your schedule.

Select **Day(s)** or **ALL Day-24hrs** to active your firewall and type **Star Time** to **End Time**.

Click the **Apply** the button to save the configuration.



STATUS

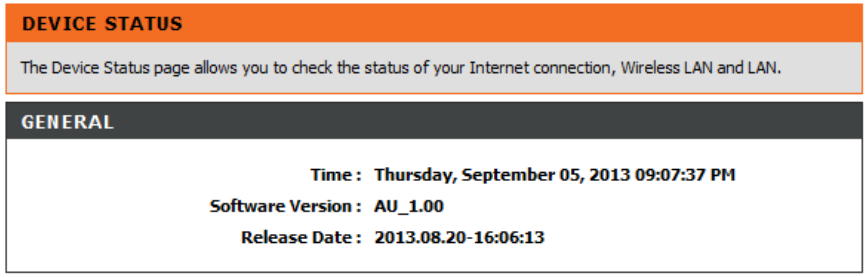
Click on the **STATUS** tab to reveal the window buttons for various functions located in this directory. The **DEVICE STATUS** window is the first item in the **STATUS** directory. Use these windows to view system information and monitor performance.

DEVICE INFO

The **Device Info** page displays a summary overview of your router status, including: Device software version and summary of your Internet configuration (both wireless and Ethernet status).

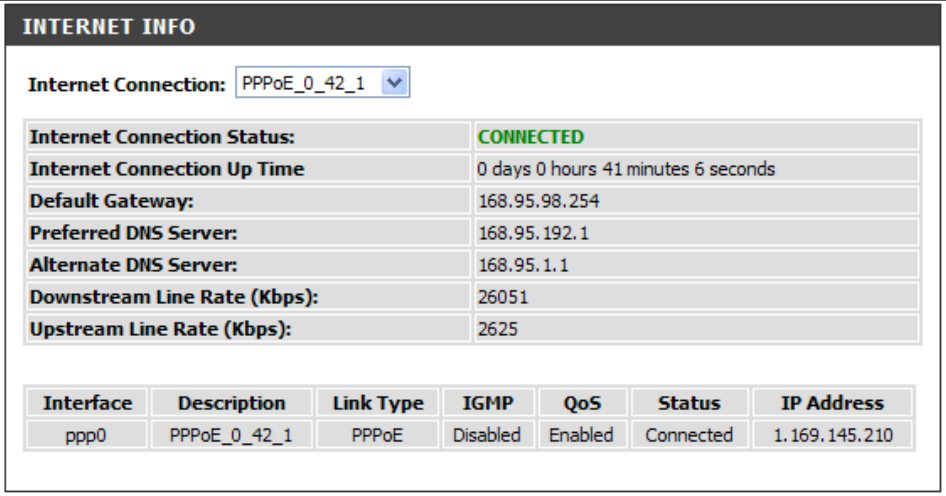
To access the **DEVICE INFO** setting window, click on the **Device Info** button in the **STATUS** tab.

This window displays current **SYSTEM INFO**, **INTERNET INFO**, **WIRELESS INFO** and **LOCAL NETWORK INFO**.



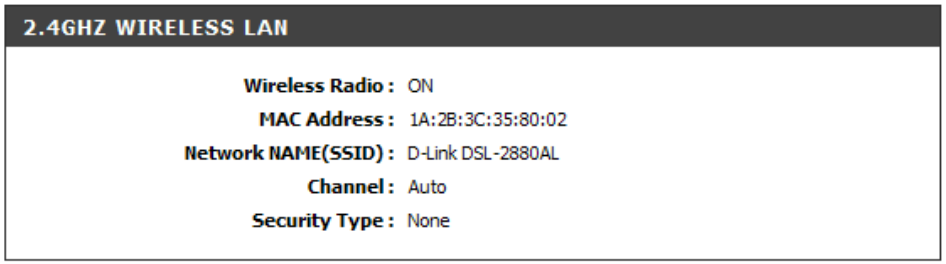
INTERNET INFO

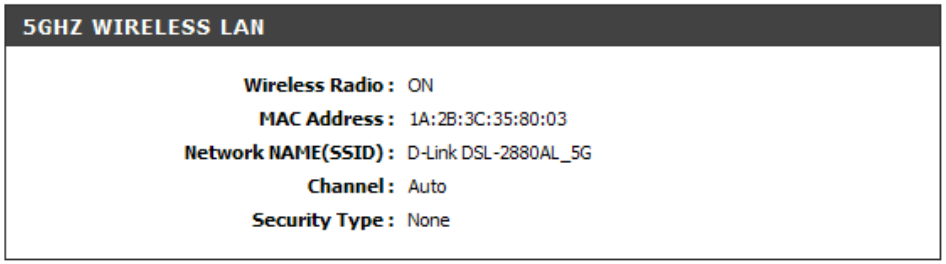
This window displays WAN information including IP address, Mask, Default Gateway, Primary/Secondary DNS Server.



WIRELESS LAN

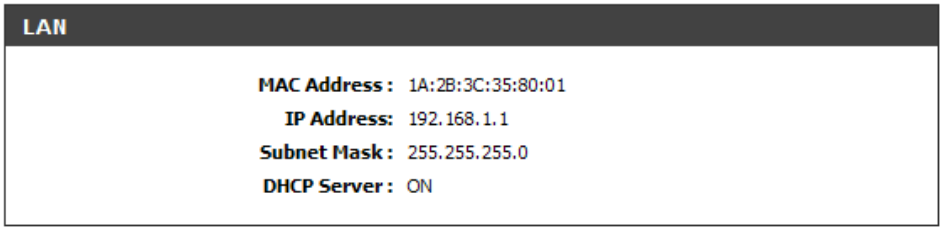
This session displays the 2.4GHz and the 5GHz wireless interface On/Off status, SSID names, wireless channel selected and security mode currently employed.





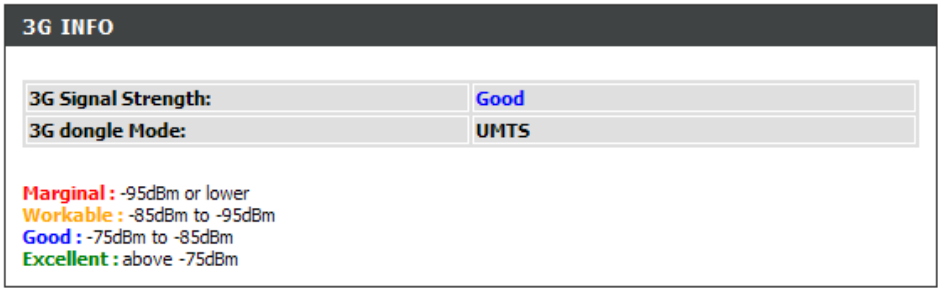
LOCAL NETWORK INFO

This window displays LAN information including MAC, IP address, Mask, and DHCP Server.



USB 3G DONGLE INFO

This session show you USB 3G dongle signal strength and as well the operation mode. When 3G internet connection is dropped unexpectedly, you can check here to find out whether the root cause is related to poor signal strength.



CONNECTED CLIENTS

This feature shows all the client devices and computers currently associated wirelessly or connected over Ethernet LAN.

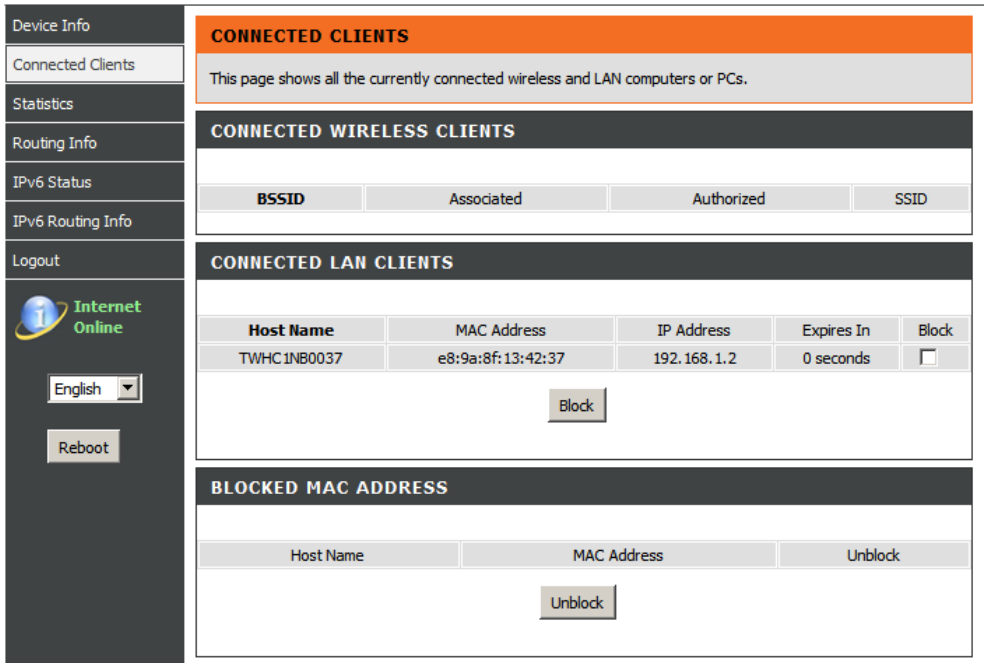
To access the Wireless clients setting window, click on the **Connected Clients** button in the **STATUS** tab.

CONNECTED WIRELESS CLIENTS
This window displays authenticated wireless stations and their status.

CONNECTED LAN CLIENTS

This window displays all the entities which link to the LAN interface successfully.

You can choose to block which entities and click the **Block** button



STATISTICS

This information reflects the current status of your router.

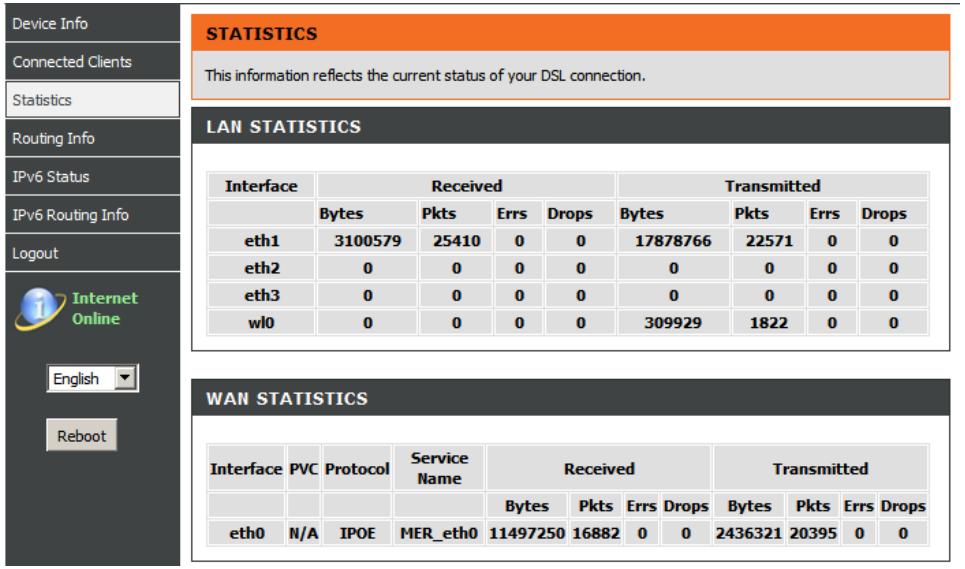
To access the **STATISICS** window, click on the Logs button in the **STATISICS** tab.

WAN STATISTICS

This window displays all the **Receiver** and **Transmitted** packet status on the WAN interface.

LAN STATISTICS

This window displays all the **Receiver** and **Transmitted** packet status on the LAN interface.

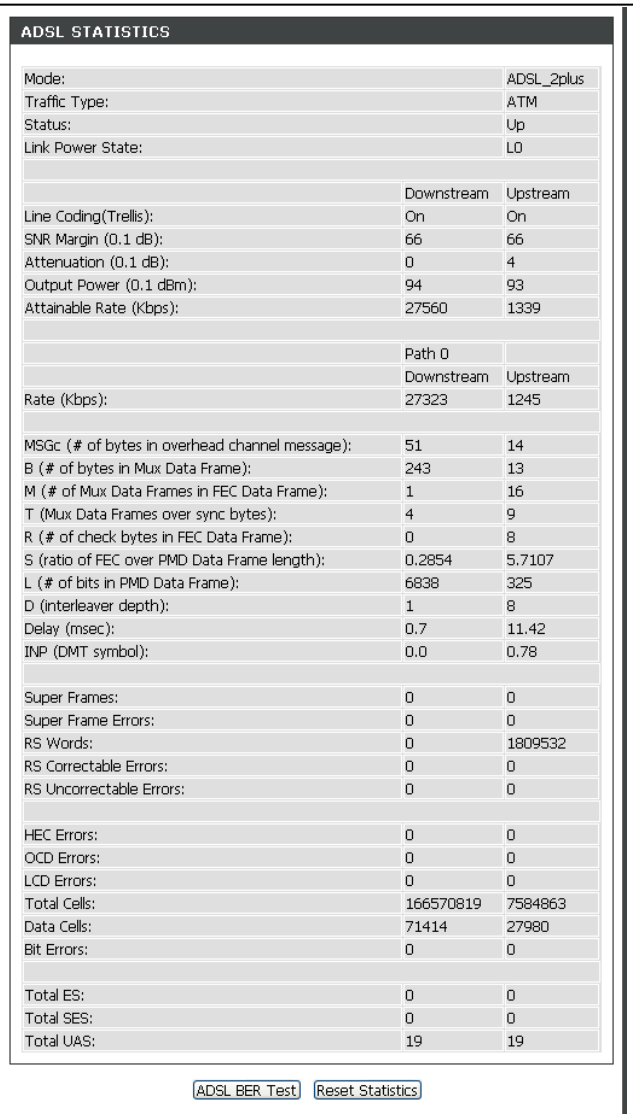


ADSL STATISTICS

This window displays all the **ADSL status**

You can click the **ADSL BER Test** button to test the ADSL connection.

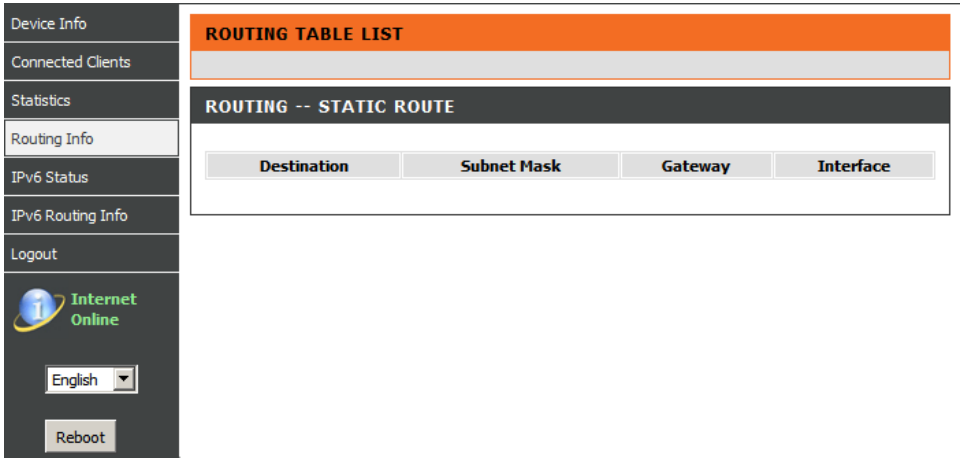
You can click the **Reset Statistics** button to set all statistics to recount.



ROUTING INFO

To access the **ROUTE INFO** setting window, click on the **ROUTE INFO** button under the **STATUS** tab.

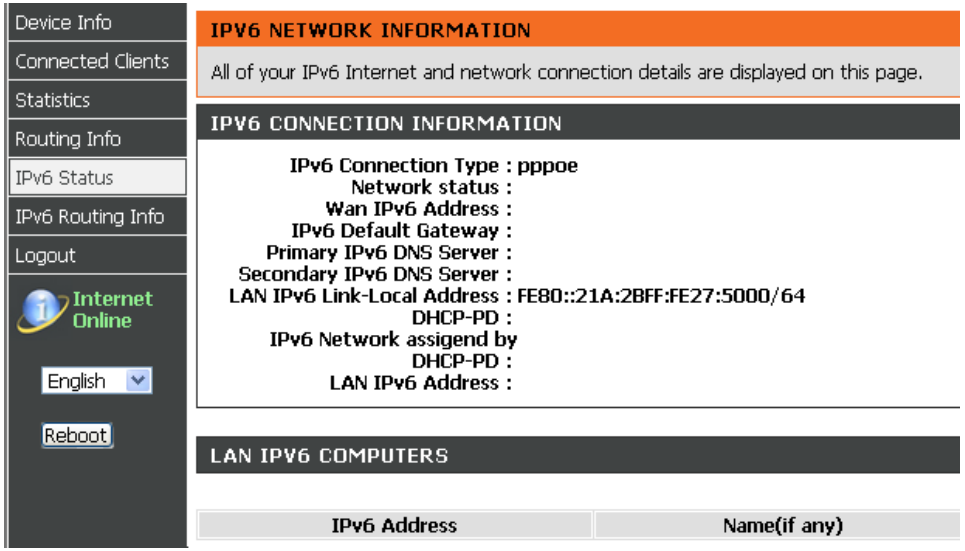
The Route Info section displays route information showing the IP addresses of the destination, gateway, and subnet mask as well as other route information



IPv6 STATUS

To access the **IPv6 Status** setting window, click on the **IPv6 Status** button under the **STATUS** tab.

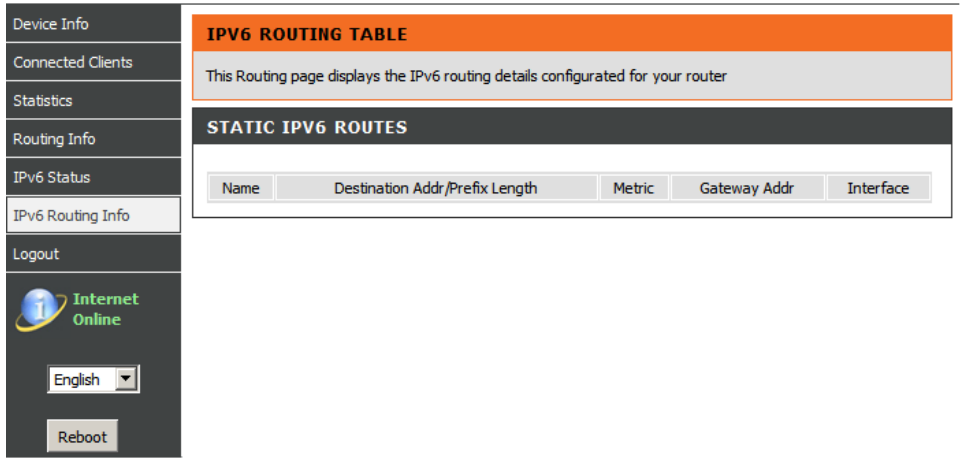
All of your IPv6 Internet and network connection details are displayed on this page.



IPv6 ROUTING INFO

To access the **IPv6 Routing Info** setting window, click on the **IPv6 Routing Info** button under the **STATUS** tab.

This Routing page displays the IPv6 routing policies currently configured on your router.



Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DSL-2880AL. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link router (192.168.1.1 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself.
Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 6.0 or higher
  - Firefox 1.5 or higher

- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.
-

- Configure your Internet settings:
  - Go to **Start > Settings > Control Panel**. Double-click on the **Internet Options** Icon. From the **Security** tab, click on the button to restore the settings to their defaults.
  - Click on the **Connection** tab and set the dial-up option to Never Dial a Connection. Click on the LAN Settings button. Make sure nothing is checked. Click on the **OK**.
  - Go to the **Advanced** tab and click on the button to restore these settings to their defaults. Click on the **OK** button three times.
  - Close your web browser (if open) and open it.

- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for the web management.

- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process.

Wait about 30 seconds to access the router. The default IP address is 192.168.1.1. When logging in, type in the default User Name “admin,” and the default Password “admin” then click on the OK button to access the web-based manager.

APPENDIX

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

What is Wireless?
Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

Why D-Link Wireless?
D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

How does wireless work?
Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)
In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)
Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away. Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?
Wireless technology as become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home
- Gives everyone at home broadband access
- Surf the web, check email, instant message, download multimedia files.
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office
- Stay on top of everything at home as you would at the office
- Remotely access your office network from home
- Share the Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?
Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips
Here are a few things to keep in mind, when you install a wireless network.

Centralize your router or Access Point
Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference
Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security
Don't let you next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA security feature on the router. Refer to product manual for detail information on how to set it up.

Wireless Modes
There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more D-Link wireless network adapters.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

Networking Basics

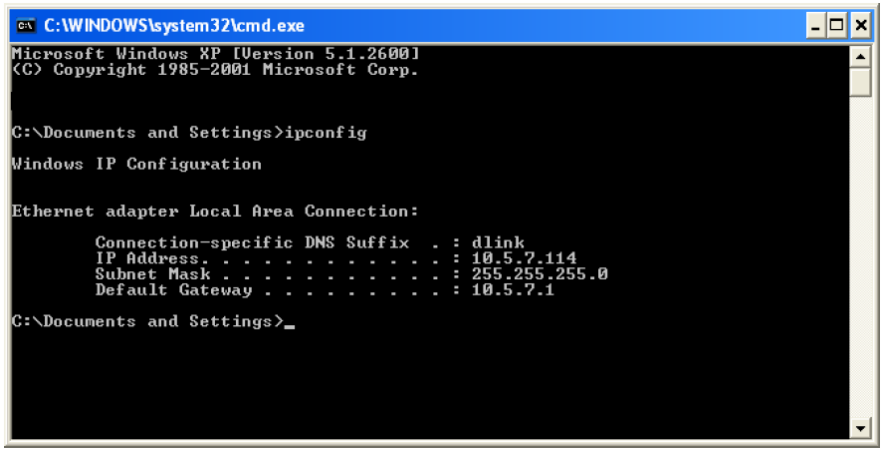
Check your IP address

After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type **cmd** and click on the **OK**.

At the prompt, type **ipconfig** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.



If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.

Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1
Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.
Windows® 2000 - From the desktop, right-click on the **My Network Places** > **Properties**.

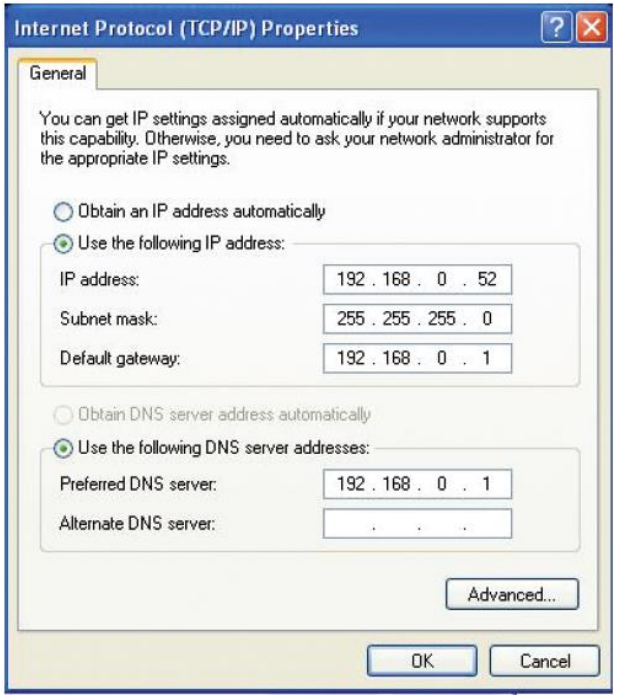
Step 2
Right-click on the **Local Area Connection** which represents your D-Link network adapter and select **Properties**.

Step 3
Highlight **Internet Protocol (TCP/IP)** and click on the **Properties**.

Step 4
Click on the **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.
Example: If the router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

Step 5
Click on the **OK** twice to save your settings.



FCC Caution

Statement：

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 must accept any interference received, including interference that may cause undesired operation.

Class B:

FEDERAL COMMUNICATIONS 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 or more 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.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

IC Caution

English:

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Française:

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210. Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Contacting Technical Support

You can find software updates and user documentation on the D-Link websites.

If you require product support, we encourage you to browse our FAQ section on the Web Site before contacting the Support line.

We have many FAQ’s which we hope will provide you a speedy resolution for your problem.

D-Link Link’n Print

Introduction

D-Link Link’n Print allows you to share USB devices such as external storage drives and multifunction printers with other users across your network by simply connecting the device to select D-Link routers. This allows you to use an external storage drive or printer located across your network as if it were connected to your local PC.

System Requirements

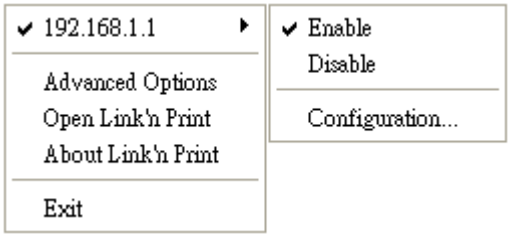
- Microsoft® Windows
- 2000 / 2003 / XP / Vista / 7 / 8 (32-bit / 64-bit)
- Pentium 3 800MHz or better
- 256MB RAM or higher
- CD-ROM drive
- A compatible D-Link router

Installation

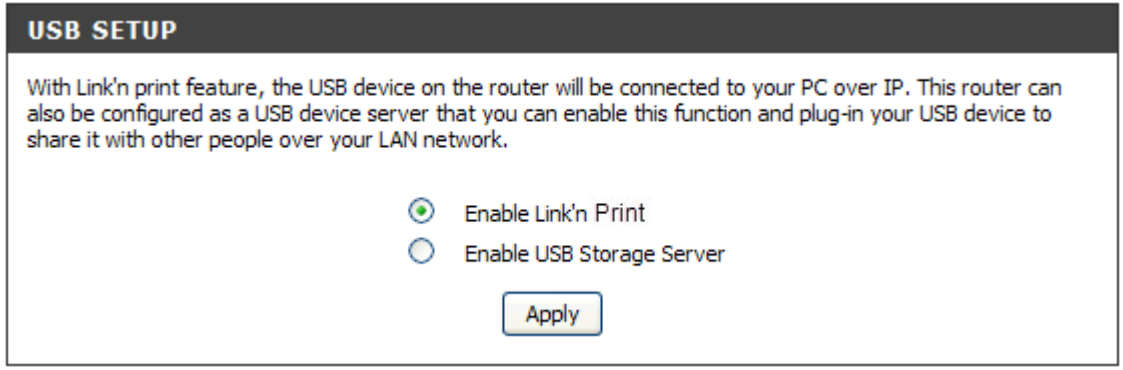
1. Insert the CD-ROM into your computer.
2. Follow the on-screen instructions.
3. The icon should appear in the System Tray at the lower-right corner on the desktop and a new Icon should be created on the desktop.

Set up the D-Link Router

1. Connect the D-Link Router to the network.
2. Power on the D-Link Router.
3. Double-click on the icon to open the D-Link D-Link Link'n Print.
4. Right-click on in the System Tray at the lower-right corner on your Windows Desktop. To click on "Configuration…" and a pops up window will display the D-Link Router management GUI.



5. To logon the device management GUI and navigate to USB setup page.
6. To select "Enable Link'n Print " and following by click "Apply" button.

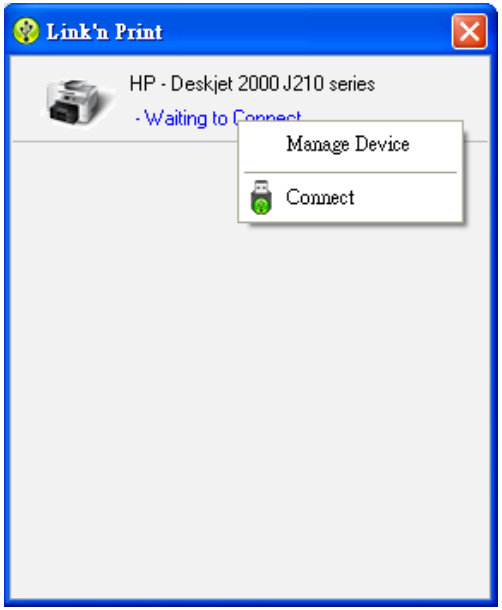


7. The icon in the Windows System Tray should change to an icon.

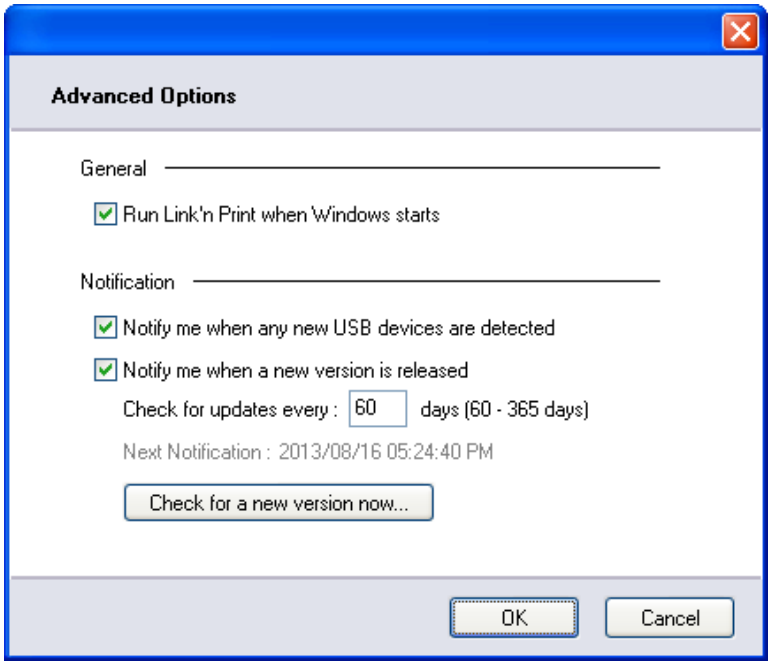
Connect USB Devices to the D-Link Router

The D-Link Link'n Print automatically detects for each connected USB device. A window will pop up for each detected USB device.

1. Right-click on the  icon.
2. Click on Open D-Link Link'n Print.
3. The D-Link Link'n Print displays the connected USB devices on the network. To click "Connect" to have the USB device connected.

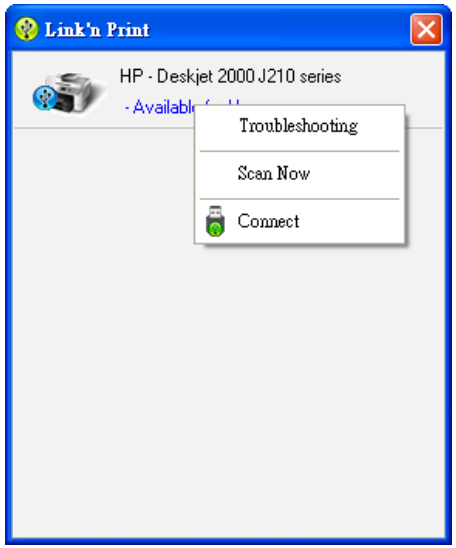


4. Advanced Options can be set by clicking on Advanced Options.

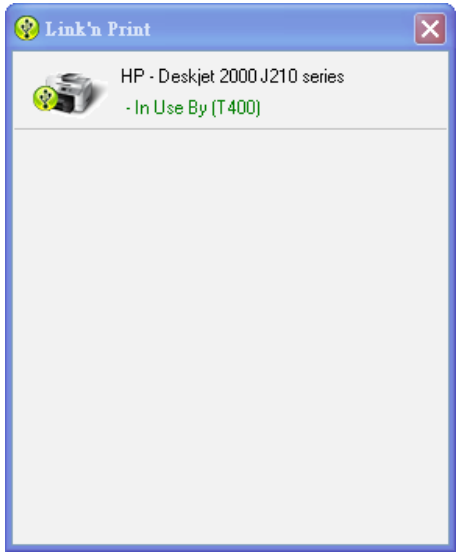


Virtually Connect and Disconnect a USB Device

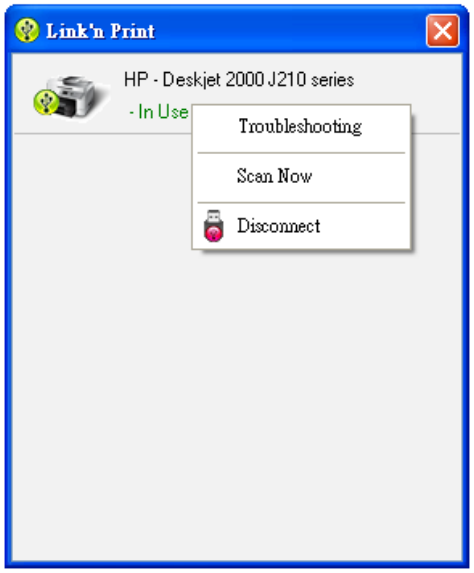
1. Move the cursor to Waiting to Connect and click on **Connect** to virtually connect a USB device.



2. The D-Link Link'n Print displays which user is virtually connecting this USB device.

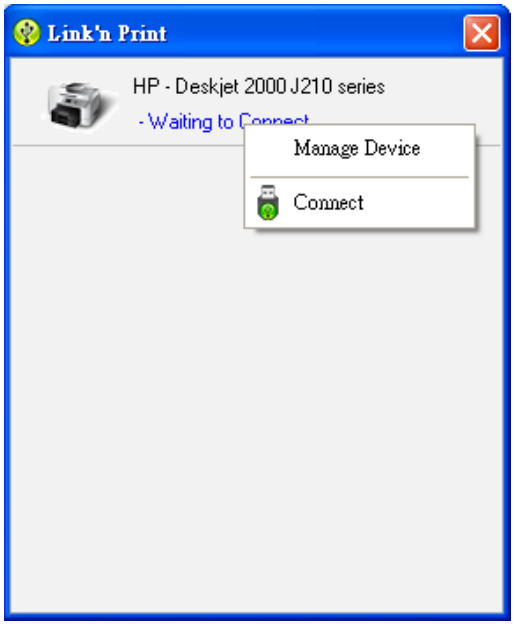


3. Move the cursor to In Use By (Owner) and click on **Disconnect** to virtually disconnect the USB device.

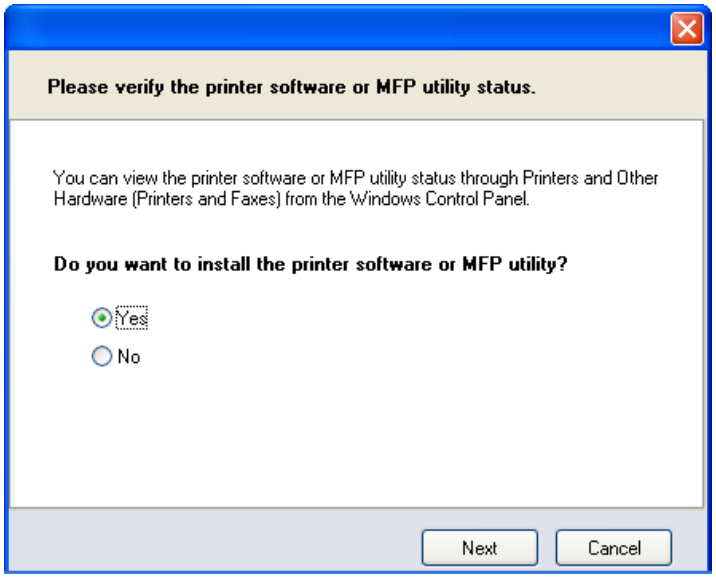


When the USB Device is a Multifunction Printer

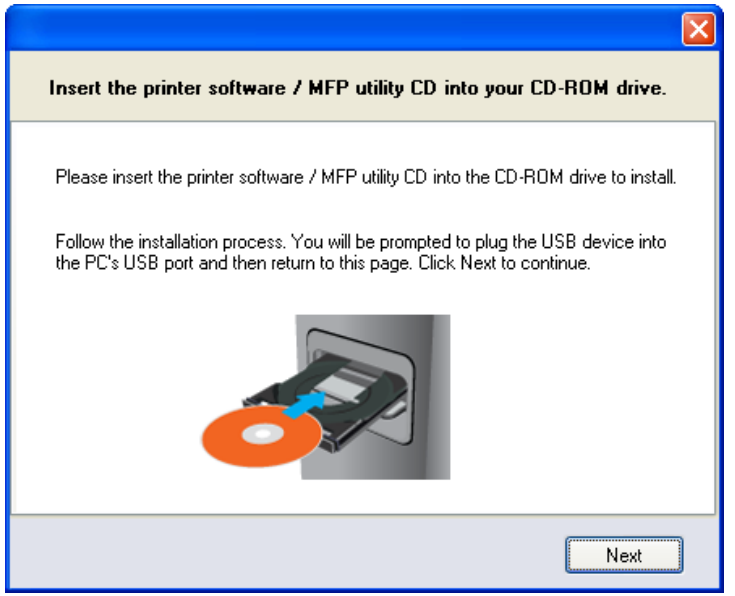
1. Move the cursor to Waiting to Connect and click on **Manage Device**.



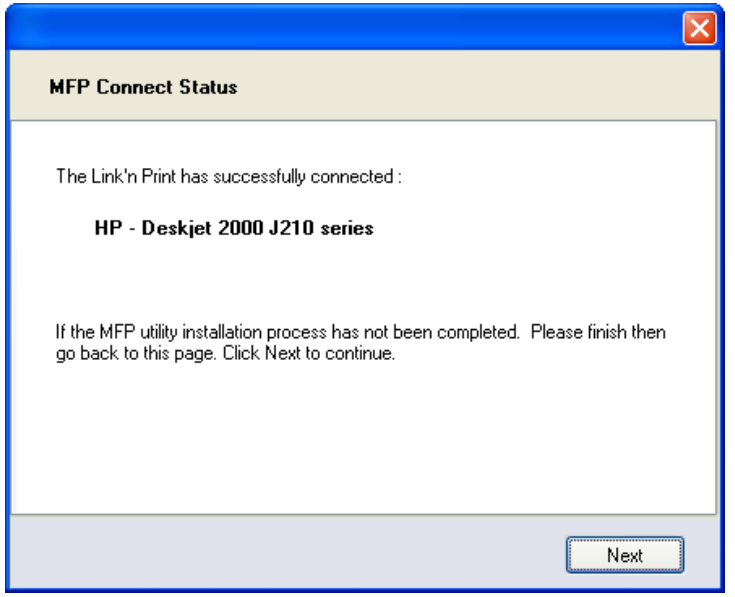
2. Click **Yes** on the question "Do you want to install the printer software or MFP utility?"



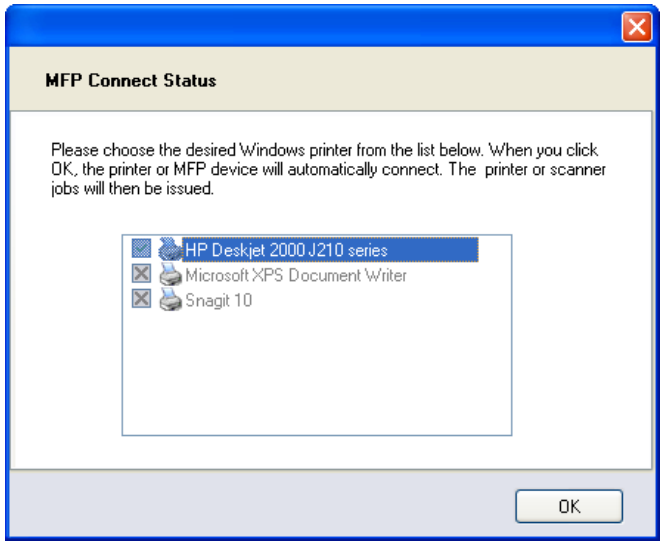
3. Insert the CD-ROM of the multifunction printer and follow the instructions to install the multifunction printer's driver. When the installation process prompts you to connect the multifunction printer to your PC, click **Next**.



4. The D-Link Link'n Print virtually connects to this multifunction printer. Click **Next**

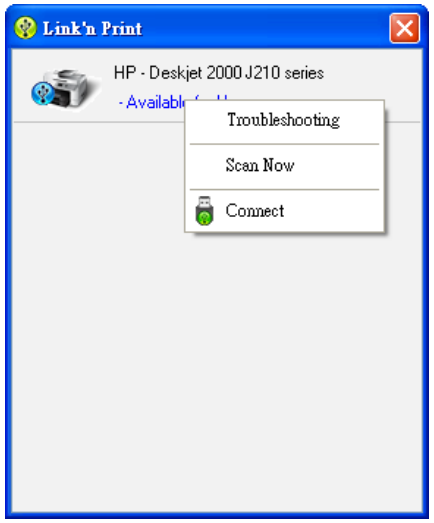


5. Choose the printer driver that you want D-Link Link'n Print to auto-connect when you print.



When You Want to Scan

1. Move the cursor to Available for Use and click on **Scan** Now.



Technical Specifications

ADSL Standards

- ANSI T1.413 Issue 2
- ITU G.992.1 (G.dmt) AnnexA
- ITU G.992.2 (G.lite) Annex A

ADSL2 Standards

- ITU G.992.3 (G.dmt.bis) Annex A
- ITU G.992.4 (G.lite.bis) Annex A

ADSL2+ Standards

- ITU G.992.5 Annex A
- ITU G.992.5 Annex M

Protocols

- IEEE 802.1d Spanning Tree
- TCP/UDP
- ARP
- RARP
- ICMP
- RFC1058 RIP v1
- RFC1213 SNMP v1 & v2c
- RFC1334 PAP
- RFC1389 RIP v2
- RFC1577 Classical IP over ATM
- RFC1483/2684 Multiprotocol Encapsulation over ATM Adaptation Layer 5 (AAL5)
- RFC1661 Point to Point Protocol
- RFC1994 CHAP
- RFC2131 DHCP Client / DHCP Server
- RFC2364 PPP over ATM
- RFC2516 PPP over Ethernet

Data Rate

ADSL

- G.dmt: full rate downstream: up to 8 Mbps / upstream: up to 1 Mbps
- G.lite: downstream up to 1.5 Mbps / upstream up to 512 Kbps

ADSL2

- G.dmt.bis full rate downstream: up to 12 Mbps / upstream: up to 1 Mbps

ADSL 2+

- Full rate downstream: up to 24 Mbps / upstream: up to 1 Mbps
- Full rate downstream: up to 24 Mbps / upstream: up to 3 Mbps (Annex M)

Media Interface

- ADSL interface: RJ-11 connector for connection to 24/26 AWG twisted pair telephone line
- Giga Ethernet WAN interface: RJ-45 port for 10/100/1000 BASE-T Ethernet connection
- LAN interface: RJ-45 ports for 10/100/1000 BASE-T Ethernet connection

WIRELESS LAN

- 802.11ac/b/g/n standards
- Wireless speed:
  2.4GHz: up to 300Mbps (802.11n)
  5GHz: up to 866Mbps * (802.11ac; 2-antenna AP, 2-antenna STA, 80MHz)
- Frequency range:
  2.4GHz: 2.412 GHz to 2.472G Hz
  5GHz: 5.150 GHz to 5.725 GHz
- Antennas: 2 internal antennas.
- WEP data encryption
- WPA/WPA2 (Wi-Fi Protected Access) security
- Multiple SSID
- 802.11e Wireless QoS (WMM/WME)
- MAC address-based access control

* Maximum wireless signal rate derived from IEEE Standard 802.11ac specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.