

# USER MANUAL

DSL-2640R

VERSION 1.0



# FCC Notices

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.

**CAUTION:** Change or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

## **RF exposure warning:**

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

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## Package Contents

- DSL-2640R Wireless G ADSL2+ Modem Router
- Power Adapter
- CD-ROM with User Manual
- One twisted-pair telephone cable used for ADSL connection
- One straight-through Ethernet cable
- One Quick Installation Guide

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



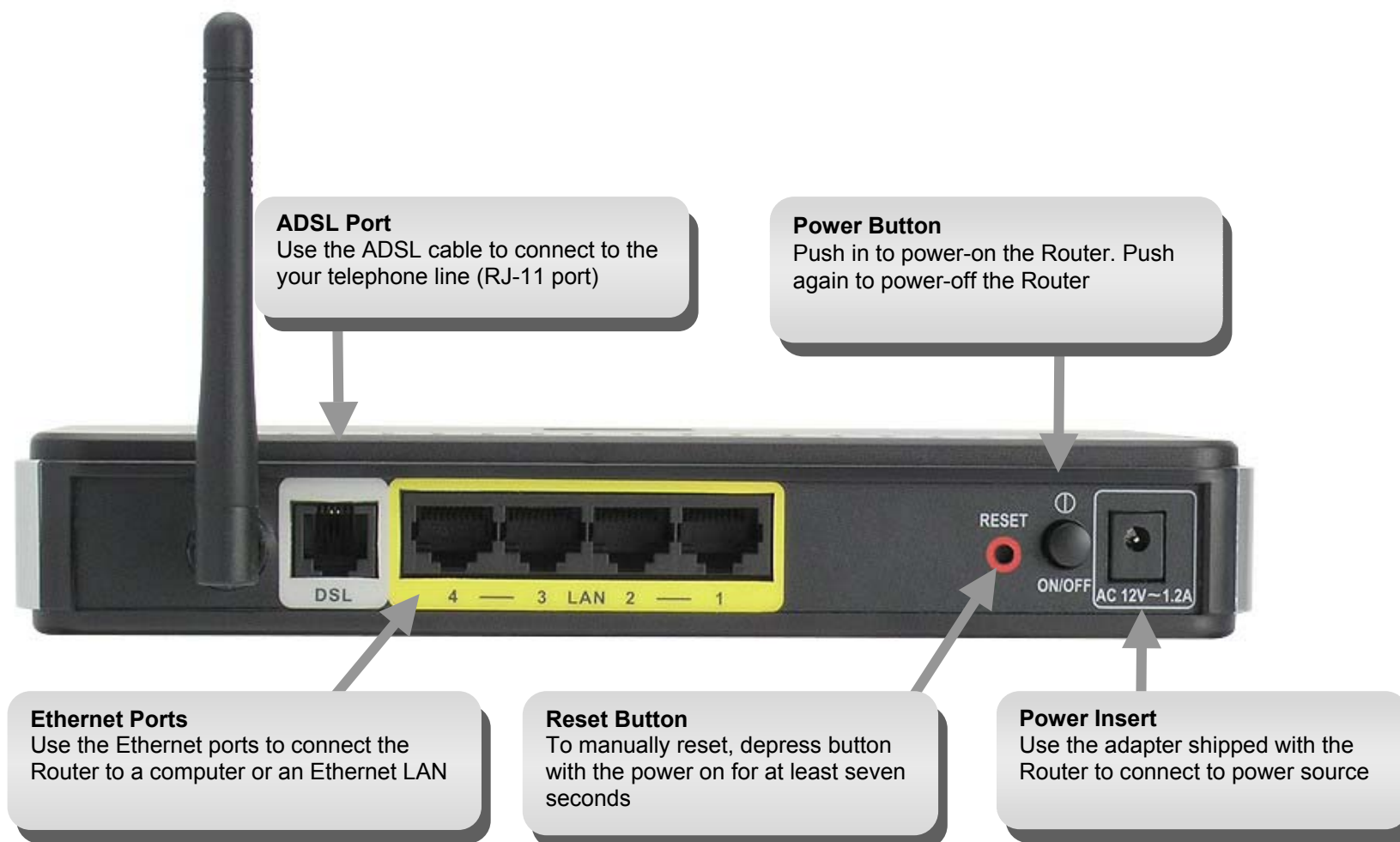
## System Requirements

- ADSL Internet service
- Computer with:
  - 200MHz Processor
  - 64MB Memory
  - CD-ROM Drive
  - Ethernet Adapter with TCP/IP Protocol Installed
  - Internet Explorer v6 or later, FireFox v1.5
  - Computer with Windows 2000, Windows XP, or Windows Vista
- D-Link Click n' Connect Utility

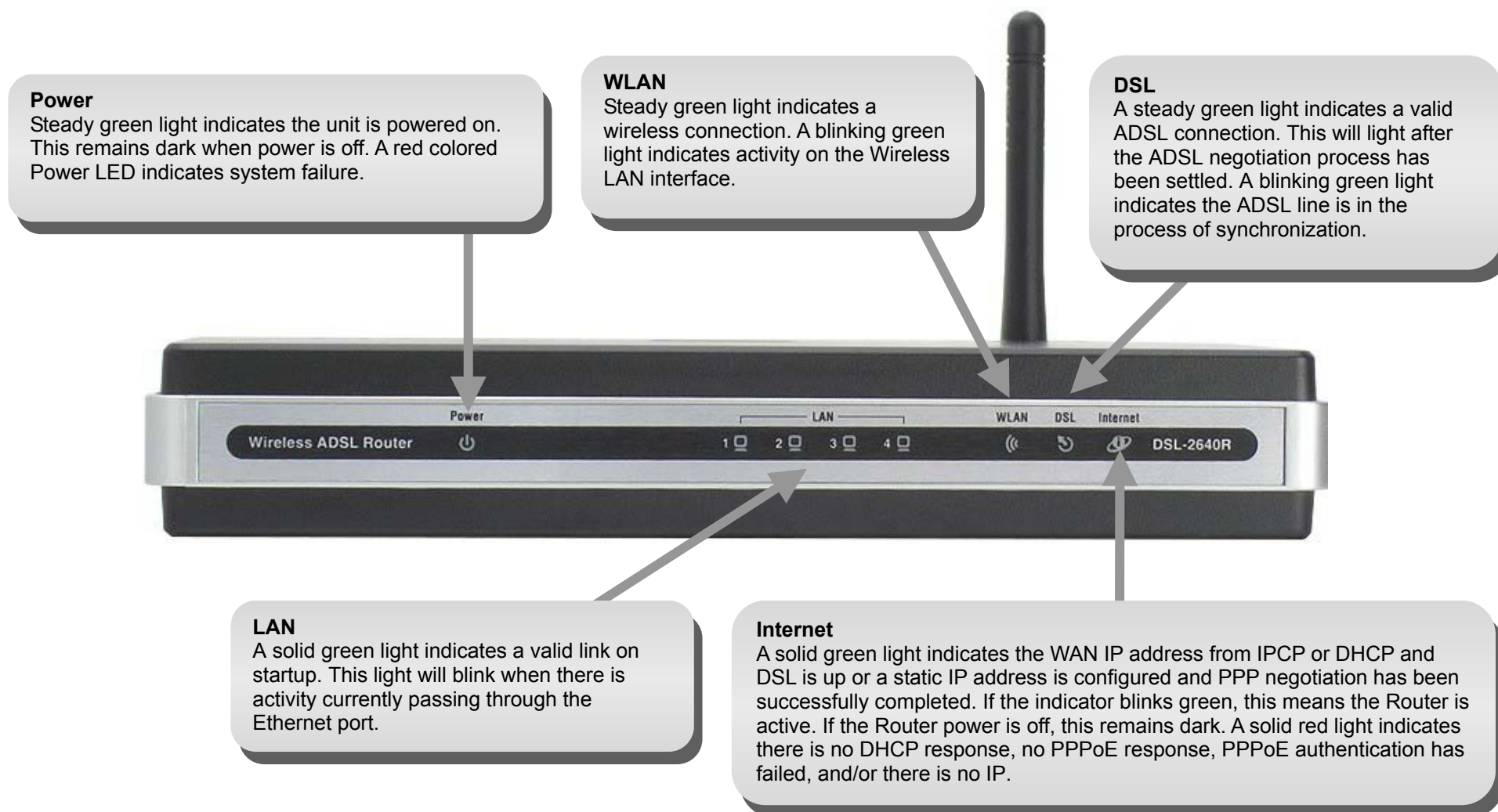
## Features

- **PPP (Point-to-Point Protocol) Security** – The DSL-2640R Wireless G ADSL2+ Modem Router supports PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol) for PPP connections. The Router also supports MSCHAP.
- **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-2640R 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.
- **TCP/IP (Transfer Control Protocol/Internet Protocol)** – The DSL-2640R supports TCP/IP protocol, the language used for the Internet. It is compatible with access servers manufactured by major vendors.
- **RIP-1/RIP-2** – The DSL-2640R supports both RIP-1 and RIP-2 exchanges with other routers. Using both versions lets the Router to communicate with all RIP enabled devices.
- **Static Routing** – This allows you to select a data path to a particular network destination that will remain in the routing table and never “age out”. If you wish to define a specific route that will always be used for data traffic from your LAN to a specific destination within your LAN (for example to another router or a server) or outside your network (to an ISP defined default gateway for instance).
- **Default Routing** – This allows you to choose a default path for incoming data packets for which the destination address is unknown. This is particularly useful when/if the Router functions as the sole connection to the Internet.
- **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.
- **Full Network Management** – The DSL-2640R incorporates SNMP (Simple Network Management Protocol) support for web-based management and text-based network management.
- **Easy Installation** – The DSL-2640R 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.

## Hardware Overview Connections



## LEDs Indicators



# Installation

This section will walk you through the installation process. Placement of the Wireless ADSL Router is very important. Do not place the Router in an enclosed area such as a closet, cabinet, or in the attic or garage. Place the Wireless ADSL Router in a location where it can be easily connected to Ethernet devices, the telephone line as well as to a power source.

## 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-2640R 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, and Windows Vista.

### 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.

### **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 as 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.

### **Wireless LAN**

Computers using the Wireless network can access the Internet or use the embedded 802.11g wireless access point. Wireless workstations must have an 802.11g or 802.11b wireless network card installed to use the Wireless ADSL Router. In addition the workstations must be configured to operate on the same channel and SSID as the Wireless ADSL Router. If wireless security is used, the wireless workstations must be properly configured for the security settings used.

## Information you will need from your ADSL service provider

### **Username**

This is the Username used to log on to your ADSL service provider's network. 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 / Connection Type**

These settings describe the method your ADSL 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):

- PPPoE/PPPoA (PPPoE LLC, PPPoE VC-Mux, PPPoA LLC or PPPoA VC-Mux)
- Dynamic IP Address (1483 Bridged IP LLC, 1483 Bridged IP VC-Mux)
- Static IP Address (1483 Bridged IP LLC, 1483 Bridged IP VC-Mux, 1483 Routed IP LLC(IPoA) or 1483 Routed IP VC-Mux)
- Bridge Mode (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 (Auto Synch-Up) used for the Router automatically detects all types of ADSL, ADSL2, and ADSL2+ modulation.

### **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 will need about DSL-2640R

### **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.

### **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-2640R**

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-2640R**

This is the subnet mask used by the DSL-2640R, 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-2640R to this Ethernet port using an Ethernet cable. You can also use the Ethernet ports on the DSL-2640R to connect to other computer or Ethernet devices.

### DHCP Client status

Your DSL-2640R 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-2640R will assign are from 192.168.1.5 to 192.168.1.32. 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 you 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-2640R.

## Device Installation

The Wireless ADSL Router maintains three separate interfaces, an ADSL, an Ethernet, and a Wireless LAN interface. Place the Wireless ADSL Router in a location where it can be easily connected to Ethernet devices, the telephone line as well as to a power source.

The Router can be placed on a shelf or desktop, ideally 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. Connect the power adapter to the **Power Input** (12V AC 1.2A) on the back panel of the Wireless ADSL Router and plug the other end of the power adapter to a wall outlet or power strip.
2. Push the **Power Button** toggle the power on.
3. The **Power** LED on the front panel will shine bright green to indicate the device is powered on.
4. If the Ethernet port is connected to a working device, check the **LAN** LED indicator to make sure the connection is valid. The Wireless ADSL Router will attempt to establish the ADSL connection, if the ADSL line is connected and the Wireless ADSL Router is properly configured the **ADSL** LED will light up after several seconds. If this is the first time installing the device, some settings may need to be changed before the Wireless ADSL 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. Ensure the Router is powered on.
2. Press and hold the reset button on the back of the device for approximately 6 to 8 seconds.
3. This process should take around 1 to 2 minutes.

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 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 10/100BASE-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 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 cable. 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 10/100BASE-TX Ethernet adapter card (NIC) installed on a PC using the Ethernet cable provided.

### Wireless Connection to Router

The Router's embedded 802.11g wireless access point should be configured to suit the local wireless network. All 802.11g or 802.11b devices that associate with the Router's wireless access point must have the same SSID and channel. If wireless security is used, the wireless clients must be configured with the correct security information to use the Router. More information on configuring the wireless settings is found later in this manual.

# Setup

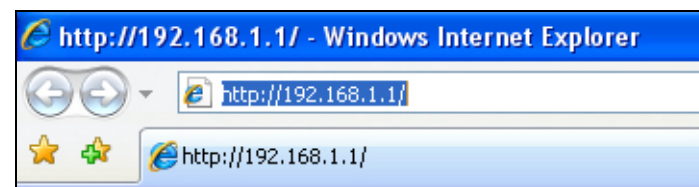
This section will show you how to set up and configure your new D-Link Router using the Web-based configuration utility.

## 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.



# Configure the Router

When you successfully connect to the web manager, the main **Status** menu displays a summary of the current state of the Ethernet LAN and WAN networks. This menu can be accessed at any time using the **Status** hyperlink. All configuration and management of the Router is done using the web-based management interface pictured in the example. To access the various configuration menus, open the directories listed in the left panel of the menu, **Interface Setup**, **Advanced Setup**, **Access Management**, **Maintenance**, and **Status**.





# Interface Setup

To configure the Router's basic Internet and LAN configuration settings, click on the **Interface Setup** link in the Wireless ADSL Router's opening page. This window is also used to configure the Router for multiple virtual connections (Multiple PVCs).

Use the **Virtual Circuit** drop-down menu to display up to eight configurable profiles for the Internet interface. If you do not intend to use more than a single virtual connection (most users), you can use the default setting (*PVC0*). If you are using multiple connections, use the **Virtual Circuit** drop-down menu to access the **Interface Setup** window for each desired connection. To change the settings for any profile in the list, use the **Virtual Circuit** drop-down menu to display individual profiles or click the **PVCs Summary** button to display the following summary of all the profiles for the Internet interface.

ATM VCs List - Windows Internet Explorer

http://192.168.1.1/basic/home\_pvclist.htm

D-Link®

Service Information Summary

#	Active	VPI	VCI	ENCAP	Mux	IP Address	Status
PVC0	Yes	0	35	PPPoE	LLC	Dynamic	Idle
PVC1	-	-	-	-	-	-	-
PVC2	No	0	35	RFC 1483	LLC	-	N/A
PVC3	No	0	36	RFC 1483	LLC	-	N/A
PVC4	No	0	37	RFC 1483	LLC	-	N/A
PVC5	No	0	38	RFC 1483	LLC	-	N/A
PVC6	No	0	39	RFC 1483	LLC	-	N/A
PVC7	No	0	40	RFC 1483	LLC	-	N/A

Done

Internet

100%

D-Link®

DSL-2640R

Interface

Interface Setup

Advanced Setup

Access Management

Maintenance

Status

Internet

LAN

Wireless

ATM VC

Virtual Circuit : PVC0

PVCs Summary

Status : ☒ Activated ☐ Deactivated

VPI : 0 (range: 0-255)

VCI : 35 (range: 1-65535)

ATM QoS : UBR

PCR : 0 cells/second

SCR : 0 cells/second

MBS : 0 cells

Encapsulation

ISP : ☐ Dynamic IP Address ☐ Static IP Address ☒ PPPoA/PPPoE ☐ Bridge Mode

PPPoE/PPPoA

ServiceName :

Username : Username

Password :

Encapsulation : PPPoE LLC

Bridge Interface : ☒ Activated ☐ Deactivated

Connection Setting

Connection : ☒ Always On (Recommended) ☐ Connect On-Demand (Close if idle for 0 minutes) ☐ Connect Manually

TCP MSS Option : TCP MSS(0:default) 0 bytes

IP Address

Get IP Address : ☐ Static ☒ Dynamic

Static IP Address : 0.0.0.0

IP Subnet Mask : 0.0.0.0

Gateway : 0.0.0.0

NAT : Enable

Default Route : ☒ Yes ☐ No

TCP MTU Option : TCP MTU(0:default) 0 bytes

Dynamic Route : RIP1 Direction None

Multicast : Disabled

MAC Spoofing : ☐ Enabled ☒ Disabled 00:00:00:00:00:00

SAVE

# PPPoE/PPPoA

Follow the instructions to configure the Router to use a PPPoA or PPPoE for the Internet connection. Make sure you have all the necessary information before you configure the Internet (WAN) connection.

To set up a PPPoE or PPPoA connection:

1. Click the **PPPoA/PPPoE** radio button under **ISP** in the **Encapsulation** section.
2. Most users will not need to change ATM settings in the **ATM VC** section. If this is the first time you are setting up the ADSL connection it is recommended that you leave the **ATM QoS** type and associated Cell Rate settings at the default values until you have established the connection and verified that your ISP supports ATM for your ADSL account. However, if you are instructed to change the **VPI** or **VCI** values, type in the values assigned for your account. Leave the **Virtual Circuit** and **Status** settings at the defaults (*Pcv0* and *Activated*) values for now. These can be used later if you are configuring multiple virtual circuits for your ADSL service.
3. Most users will not need to change **QoS** settings. If this is the first time you are setting up the ADSL connection it is recommended that you leave the settings at the default values until you have established the connection. Please see the table on ATM QoS in the next section of this manual for further information.
4. In the **PPPoE/PPPoA** section, type the **Username** and **Password** used for your ADSL account. A typical User Name will be in the form [user1234@isp.co.uk](#). Your ISP may assign the Password to you or you may have selected it when you set up the account with your ISP.
5. Choose the **Encapsulation** setting from the pull-down menu. This defines the encapsulation method used for your ADSL service. The available options are *PPPoE LLC*, *PPPoE VC-Mux*, *PPPoA LLC*, and *PPPoA VC-Mux*. If you have not been provided specific information for this section, leave the default setting.
6. Activate or Deactivate the **Bridge Interface**.  
Select the correct **Connection** value in the **Connection Setting** section. If your account is time-based, that is, if your connection fees are based on the amount of time the Router is actively connected to the Internet, select the Connect On-Demand option and enter an appropriate idle timeout in the entry field provided. If your account is billed with a flat fee regardless of how much time the Router is connected, select the Always On option. This will maintain the PPP session as long as the Router is powered on.

Encapsulation

PPPoE/PPPoA

Connection Setting

IP Address

ISP :  
☐ Dynamic IP Address  
☐ Static IP Address  
☒ PPPoA/PPPoE  
☐ Bridge Mode

Servicename :  
Username :  
Password :  
Encapsulation : PPPoE LLC  
Bridge Interface : ☒ Activated ☐ Deactivated

Connection :  
☒ Always On (Recommended)  
☐ Connect On-Demand (Close if idle for 0 minutes)  
☐ Connect Manually  
TCP MSS Option : TCP MSS(0:default) 0 bytes

Get IP Address : ☐ Static ☒ Dynamic  
Static IP Address : 0.0.0.0  
IP Subnet Mask : 0.0.0.0  
Gateway : 0.0.0.0  
NAT : Enable  
Default Route : ☒ Yes ☐ No  
TCP MTU Option : TCP MTU(0:default) 0 bytes  
Dynamic Route : RIP1 Direction None  
Multicast : Disabled  
MAC Spoofing : ☐ Enabled ☒ Disabled  
00:00:00:00:00:00

SAVE

7. The **TCP MSS** option can be used when excessive fragmentation of packets effect download speeds. Enter a value for the Maximum Segment Size to avoid fragmenting TCP packets
8. Typically the globally IP settings (i.e. IP address for the WAN interface) for a PPPoA or PPPoA connection will use Dynamic IP assignment from the ISP. Some accounts may be assigned a specific global IP address. If you have been give an IP address for you PPPoE/PPPoA connection, select the **Static** option from the **Get IP Address** pull-down menu and enter the **Static IP Address**, **IP Subnet Mask**, and **Gateway** information.
9. **NAT** should remain *Enabled*. If you disable NAT, you will not be able to use more than one computer for Internet connections. NAT is *Enabled* and *Disabled* system-wide, therefore if you are using multiple virtual connections, NAT will disabled on all connections.
10. Turn on the **Default Route** feature if you want to use the Router as the default route to the Internet for your LAN. Whenever a computer on the LAN attempts to access the Internet, the Router becomes the Internet gateway to the computer. If you have an alternative route for Internet traffic you may turn this off without effecting the Router's connection.
11. Leave the **TCP MTU Option** value at the default setting unless you have specific reasons to change this.
12. Select the desired **Dynamic Route** from *RIP1*, *RIP2-B*, or *RIP2-M*. Next, set the **Direction** to *Both*, *IN Only*, *OUT Only*, or *None*.
13. The **Multicast** feature is *Disabled* by default. Toggle between *IGMP v1* and *IGMP v2*.

When you are satisfied that all the Internet settings are configured correctly, click on the **SAVE** button.

When PPPoE or PPPoA is used, the Router becomes the PPP client, that is, all the software needed to establish and maintain the connection is located on the Router. ISPs frequently require PPP client software to be installed on workstations. If any computers have PPP client software installed on them, this software must be removed or at least disabled before the computers are able to connect to the Internet through the Router. If you are required to provide a User Name and Password every time you access the Internet, your computer may have PPP client software installed on it.

## Dynamic IP Address

A Dynamic IP Address connection configures the Router to automatically obtain its global IP address from a DHCP server on the ISP's network. The service provider assigns a global IP address from a pool of addresses available to the service provider. Typically the IP address assigned has a long lease time, so it will likely be the same address each time the Router requests an IP address.

To configure a Dynamic IP Address WAN connection, follow these steps:

1. Click the **Dynamic IP Address** radio button under **ISP** in the **Encapsulation** section. This defines both the connection protocol and encapsulation method used for your ADSL service. The available options are *1483 Bridged IP LLC* and *1483 Bridged IP VC-Mux*. If you have not been provided specific information for the Connection Type setting, leave the default setting.
2. If you are instructed to change the **VPI** or **VCI** values, type in the values assigned for your account.
3. The **Bridge Interface** feature is activated by default.
4. Turn on the **Default Route** feature if you want to use the Router as the default route to the Internet for your LAN. Whenever a computer on the LAN attempts to access the Internet, the Router becomes the Internet gateway to the computer. If you have an alternative route for Internet traffic you may turn this off without effecting the Router's connection.
5. Leave the **TCP MTU Option** value at the default setting unless you have specific reasons to change this.
6. Select the desired **Dynamic Route** from *RIP1*, *RIP2-B*, or *RIP2-M*. Next, set the **Direction** to *Both*, *IN Only*, *OUT Only*, or *None*.
7. The **Multicast** feature is *Disabled* by default. Toggle between *IGMP v1* and *IGMP v2*.
8. When you are satisfied that all the Internet settings are configured correctly, click on the **SAVE** button.

## Static IP Address

When the Router is configured to use Static IP Address assignment for the Internet (WAN) connection, you must manually assign a global IP Address, Subnet Mask and Gateway IP Address used for the WAN connection. Follow the instruction below to configure the Router to use Static IP Address assignment for the WAN connection.

To configure a Static IP type connection for the WAN, follow these steps:

1. Click the **Static IP Address** radio button under **ISP** in the **Encapsulation** section.
2. The settings in the **ATM VC** section at the top of the window should not be changed unless you have been instructed to change them. However, if you are instructed to change the **VPI** or **VCI** values, type in the values assigned for your account. Leave the **Virtual Circuit** and **Status** settings at the defaults (*Pcv0* and *Activated*) values for now. This can be used later if you are configuring multiple virtual circuits for your ADSL service.
3. Most users will not need to change **QoS** settings. If this is the first time you are setting up the ADSL connection it is recommended that you leave the settings at the default values until you have established the connection. Please see the table on ATM QoS that directly follows the PPPoA/PPPoE section of this manual for further information.
4. In the **Static IP** section, choose the **Encapsulation** setting from the pull-down menu. This defines the encapsulation method used for your ADSL service. The available options are *1483 Bridged IP LLC*, *1483 Bridged IP VC-Mux*, *1483 Routed IP LLC (IPoA)*, and *1483 Routed IP VC-Mux*. If you have not been provided specific information for this section, leave the default setting.
5. Change the **Static IP Address**, **IP Subnet Mask**, and **Gateway** IP address as instructed by your ISP. These are the global IP settings for the Internet (WAN) interface. This is the “visible” IP address of your account. Your ISP should have provided these IP settings to you.
6. **NAT** should remain enabled. If you disable NAT, you will not be able to use more than one computer for Internet connections. NAT is enabled and disabled system-wide, therefore if you are using multiple virtual connections, NAT will be disabled on all connections.
7. Turn on the **Default Route** feature if you want to use the Router as the default route to the Internet for your LAN. Whenever a computer on the LAN attempts to access the Internet, the Router becomes the Internet gateway to the computer. If you have an alternative route for Internet traffic you may turn this off without effecting the Router’s connection.
8. Leave the **TCP MTU Option** value at the default setting unless you have specific reasons to change this.
9. Select the desired **Dynamic Route** from *RIP1*, *RIP2-B*, or *RIP2-M*. Next, set the **Direction** to *Both*, *IN Only*, *OUT Only*, or *None*.
10. The **Multicast** feature is *Disabled* by default. Toggle between *IGMP v1* and *IGMP v2*.
11. When you are satisfied that all the Internet settings are configured correctly, click on the **SAVE** button.

# Bridge Mode

For Bridged connections it will be necessary for most users to install additional software on any computer that will the Router for Internet access. The additional software is used for the purpose of identifying and verifying your account, and then granting Internet access to the computer requesting the connection. The connection software requires the user to enter the User Name and Password for the ISP account. This information is stored on the computer, not in the Router. Follow the instructions below to configure a Bridged connection for the Internet interface.

1. Click the **Bridge Mode** radio button under **ISP** in the **Encapsulation** section.
2. The settings in the **ATM VC** section at the top of the window should not be changed unless you have been instructed to change them. However, if you are instructed to change the **VPI** or **VCI** values, type in the values assigned for your account. Leave the **Virtual Circuit** and **Status** settings at the defaults (*Pcv0* and *Activated*) values for now. This can be used later if you are configuring multiple virtual circuits for your ADSL service.
3. Most users will not need to change **QoS** settings. If this is the first time you are setting up the ADSL connection, it is recommended that you leave the settings at the default values until you have established the connection. Please see the table on ATM QoS that directly follows the PPPoA/PPPoE section of this manual for further information.
4. In the **Bridge Mode** section, choose the **Encapsulation** setting from the pull-down menu. This defines the encapsulation method used for your ADSL service. The available options are *1483 Bridged IP LLC* and *1483 Bridged IP VC-Mux*. If you have not been provided specific information for this section, leave the default setting.
5. When you are satisfied that all the Internet settings are configured correctly, click on the **SAVE** button.

Encapsulation	ISP : <input type="radio"/> Dynamic IP Address <input type="radio"/> Static IP Address <input type="radio"/> PPPoA/PPPoE <input checked="" type="radio"/> Bridge Mode
Bridge Mode	Encapsulation : 1483 Bridged IP LLC ▼
<div>SAVEDELETE</div>	

# LAN Setup

To access the **LAN** window, click the **LAN** button in the **Interface Setup** directory. 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 configure the LAN IP address, type in the desired values and click the **SAVE** button. Your web browser should automatically be redirected to the new IP address. You will be asked to login to the Router's web manager again.

The DHCP server is enabled by default for the Router's Ethernet LAN interface. DHCP service will supply IP settings to workstations configured to automatically obtain IP settings that are connected to the Router through the Ethernet port. When the Router is used for DHCP it becomes the default gateway for DHCP client connected to it. Keep in mind that if you change the IP address of the Router the range of IP addresses in the pool used for DHCP on the LAN will also be changed. The IP address pool can be up to 253 IP addresses.

The three options for DHCP service are as follows:

- Use the Router as a DHCP server for your LAN.
- Disable DHCP service and manually configure IP settings for workstations.
- Use DHCP service provided by your ISP.

Interface	Interface Setup	Advanced Setup	Access Management	Maintenance	Status
	Internet	LAN	Wireless		
Router Local IP					
<div>Main IP Address : 192.168.1.1</div> <div>Main Subnet Mask : 255.255.255.0</div> <div>Alias IP Address : 10.1.1.1</div> <div>Alias Subnet Mask : 255.0.0.0</div> <div>Dynamic Route : RIP2-B Direction None</div> <div>Multicast : IGMP v2</div> <div>IGMP Snoop : Disabled Enabled</div>					
DHCP					
DHCP Server					
<div>DHCP : Disabled Enabled Relay</div> <div>Starting IP Address : 192.168.1.2 <span>Current Pool Summary</span></div> <div>IP Pool Count : 32</div> <div>Lease Time : 259200 seconds (0 sets to default value of 259200)</div>					
DNS					
<div>DNS Relay : Use User Discovered DNS Server Only</div> <div>Primary DNS Server : 200.204.0.10</div> <div>Secondary DNS Server : 200.204.0.138</div>					
<div>SAVE CANCEL</div>					

## Use the Router for DHCP

To use the built-in DHCP server, click the DHCP radio button to **Enabled** if it has not already selected. The IP Address Pool settings can be adjusted. The **Starting IP Address** is the lowest available IP address (default = 192.168.1.2). If you change the IP address of the Router, this will change automatically to be 1 more than the IP address of the Router. Type in the **Lease Time** in the entry field provided. This is the amount of time in seconds that a workstation is allowed to reserve an IP address in the pool if the workstation is disconnected from the network or powered off.

You may also configure DNS settings for the LAN when using the Router in DHCP mode. Toggle the **DNS Relay** setting to *Use User Discovered DNS Server Only* from *Use Auto Discovered DNS Server Only* and enter the IP addresses for the **Primary DNS Server** and **Secondary DNS Server** in the field provided. The manually configured DNS settings will be supplied to clients that are configured to request them from the Router.

## Disable the DHCP Server

To disable DHCP, select the **Disabled** option and click on the **SAVE** button. Choosing this option requires that workstations on the local network must be configured manually or use another DHCP server to obtain IP settings.

If you configure IP settings manually, make sure to use IP addresses in the subnet of the Router. You will need to use the Router's IP address as the Default Gateway for workstations in order to provide Internet access.

## Use DHCP Relay

To use DHCP service from your ISP or another DHCP server, select the **Relay** option and type the **DHCP Server IP for Relay Agent** address in the space provided. Click **SAVE** to begin DHCP relay from the ISP.



# Wireless Setup

The two essential settings for wireless LAN operation are the SSID and Channel Number. The SSID (Service Set Identifier) is used to identify a group of wireless LAN components. The SSID can be broadcast in order to allow properly configured wireless stations to learn the SSID and join the group.

Wireless LAN is enabled by default on the Router. If the wireless access point has been previously disabled you can enable 802.11g Wireless LAN operation by selecting the **Activated** option for **Wireless LAN** and continue to configure basic settings. Click the **SAVE** button to begin wireless LAN function with the settings as configured. It is not necessary to reboot the Router.

Interface	Interface Setup	Advanced Setup	Access Management	Maintenance	Status
	Internet	LAN	Wireless		
Access Point Settings					
Access Point : <input checked="" type="radio"/> Activated <input type="radio"/> Deactivated					
Channel : EGYPT 06 Current Channel: 6					
Beacon Interval : 100 (range: 20~1000)					
RTS/CTS Threshold : 2347 (range: 1500~2347)					
Fragmentation Threshold : 2346 (range: 256~2346, even numbers only)					
DTIM : 1 (range: 1~255)					
802.11 b/g : 802.11b+g					
Multiple SSIDs Settings					
SSID Index : 1					
SSID : WLAN_45					
Broadcast SSID : <input checked="" type="radio"/> Yes <input type="radio"/> No					
Authentication Type : WEP-128Bits					
WEP					
WEP 64-bits For each key, please enter either (1) 5 characters excluding symbols, or (2) 10 characters ranging from 0~9, a, b, c, d, e, f.					
WEP 128-bits For each key, please enter either (1) 13 characters excluding symbols, or (2) 26 characters ranging from 0~9, a, b, c, d, e, f.					
<input checked="" type="radio"/> Key#1 : D00aabb012345					
<input type="radio"/> Key#2 :					
<input type="radio"/> Key#3 :					
<input type="radio"/> Key#4 :					
Wireless MAC Address Filter					
Active : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated					
Action : Allow Association the follow Wireless LAN station(s) association.					
Mac Address #1 : 00:00:00:00:00:00					
Mac Address #2 : 00:00:00:00:00:00					
Mac Address #3 : 00:00:00:00:00:00					
Mac Address #4 : 00:00:00:00:00:00					
Mac Address #5 : 00:00:00:00:00:00					
Mac Address #6 : 00:00:00:00:00:00					
Mac Address #7 : 00:00:00:00:00:00					
Mac Address #8 : 00:00:00:00:00:00					
SAVE CANCEL					

# Basic Wireless

**To disable the wireless interface:** click in the **Deactivated** option next to **Access Point:** and click the **SAVE** button. This will immediately disable the wireless access point; it is not necessary to restart the access point to make this change.

**If the wireless interface has been disabled:** click in the **Activated** option next to **Access Point:** and click the **SAVE** button. This will immediately disable the wireless access point; it is not necessary to restart the access point to make this change.

The **SSID** can be changed to suit your wireless network. Remember that any wireless device using the access point must have the same SSID and use the same channel. The SSID can be a continuous character string (i.e. no spaces) of up to 16 characters in length. The **Channel ID:** may be changed to channels that are available in your region. Channels available for wireless LAN communication are subject to regional and national regulation. Click the **SAVE** button to save any change to the Channel.

## Wireless Security

The wireless security features are used to limit access to the device or to encrypt data and shared information. The available standardized security for wireless LAN includes WEP and WPA Wireless security is configured with the **Wireless Settings** menu located in the **Home** directory.

In the Wireless Settings menu, select the type of security you want to configure. The menu will change to present the settings specific to the method being configured. The Router's wireless security options include three levels of WEP encryption and WPA with a user configured Pre Shared Key (PSK).

Configure the wireless security arrangement to suit your 802.11g environment and click the **SAVE** button. The settings will go into effect immediately. There is no need to restart the access point.

The table below provides a summary of the settings in the Wireless Settings menu.

Access Point Settings

Access Point : ☒ Activated ☐ Deactivated

Channel : EGYPT 06 Current Channel: 6

Beacon Interval : 100 (range: 20~1000)

RTS/CTS Threshold : 2347 (range: 1500~2347)

Fragmentation Threshold : 2346 (range: 256~2346, even numbers only)

DTIM : 1 (range: 1~255)

802.11 b/g : 802.11b+g

Multiple SSIDs Settings

SSID Index : 1

SSID : WLAN\_45

Broadcast SSID : ☒ Yes ☐ No

Authentication Type : Disabled

Wireless MAC Address Filter

**Note:** Before enabling any security function for wireless operation, you may want to test the Router's access point first to verify that wireless workstations can associate with it and use it for Internet access.

# WEP Encryption

WEP (Wireless Encryption Protocol or Wired Equivalent Privacy) 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. Decryption of the data contained in each packet can only be done if the both the receiver and transmitter have the correct key.

By default authentication is disabled on the access point. To enable **WEP**, select the **WEP-64Bits** or **WEP-128Bits** option, configure the WEP Encryption Keys as desired and click the **SAVE** button. The encryption key setup is described below.

## Encryption Keys

WEP Keys may be configured using **Hex** or **ASCII** characters. There are two levels of encryption available, each level requires a different number of characters. Select **Hex** or **ASCII** from the **Key Type** drop-down menu. Hex or Hexadecimal digits are defined as the numerical digits 0 – 9 and the letters A – F (upper and lower case are recognized as the same digit). ASCII characters include numbers and letters but no spaces. An upper case ASCII character is NOT recognized as the same lower case character, and therefore must be configured exactly as typed for all wireless nodes using the access point. The length of the key depends on the level of encryption used. Select the **Key Length** from the drop-down menu. The available key lengths are 64 or 128-bit encryption. In the spaces provided, type in **Key 1**, **Key 2**, **Key 3** and **Key 4**. The length of the character string used of the keys depends on the level (Key Length) of encryption selected. Only one key can be active. The active key is selected by clicking the radio button for the key you want to use. Click the **SAVE** button when you have configured WEP as desired to put the changes into effect.

Multiple SSIDs Settings	SSID Index : 1 SSID : WLAN_45 Broadcast SSID : <input checked="" type="radio"/> Yes <input type="radio"/> No Authentication Type : WEP-64Bits
WEP	<div>WEP 64-bits For each key, please enter either (1) 5 characters excluding symbols, or (2) 10 characters ranging from 0~9, a, b, c, d, e, f.</div> <div>WEP 128-bits For each key, please enter either (1) 13 characters excluding symbols, or (2) 26 characters ranging from 0~9, a, b, c, d, e, f.</div> <div><input checked="" type="radio"/> Key#1 : D00aa</div> <div><input type="radio"/> Key#2 : </div> <div><input type="radio"/> Key#3 : </div> <div><input type="radio"/> Key#4 : </div>
Wireless MAC Address Filter	

# WPA Settings

WPA uses an encryption method combined with an authentication procedure that requires an acceptance of a pre-configured password. WPA or Wireless Protection Access is an improved standard of wireless security. The ROUTER also supports two common encryption types TKIP and AES.

To configure WPA settings, select the **Authentication Type** option **WPA-PSK** to use **TKIP** encryption or select **WPA2-PSK** to use **AES** encryption. The encryption algorithm **TKIP** (Temporal Key Integrity Protocol) uses per packet key generation (based on WEP), while **AES** (Advanced Encryption Standard) is a block- based encryption method. Both methods require entry of a pre-shared key to allow association. Type a password from 8 to 64 characters long in the **Pre-Shared Key** field.

## Wireless MAC Address Filter

MAC address device filtering on the wireless LAN can be activated and configured to allow exclusive association or deny association with the access point.

To use MAC address filtering, click to select the **Activated** option and specify the MAC addresses allowed or denied association in the entry fields provided. Up to 8 MAC addresses can be added to the list. Select the action to be performed on the MAC addresses in the list. Choose **Allow Association** to allow association to only the MAC address listed. This option will filter or deny association to any device not listed. Alternatively the **Deny Association** option will deny association to only the MAC addresses listed.

Click **SAVE** to apply and save the new filtering rules. MAC address filtering can be **Deactivated** at any time, the MAC addresses in the list remain until they are deleted by the administrator. A MAC address on the list can be removed by highlighting it with cursor, pressing the Delete key on your keyboard and pressing **SAVE**.

Multiple SSIDs Settings	SSID Index : 1 SSID : WLAN_45 Broadcast SSID : <input checked="" type="radio"/> Yes <input type="radio"/> No Authentication Type : WPA-PSK
WPA-PSK	Encryption : TKIP Pre-Shared Key : (8~63 characters)
Wireless MAC Address Filter	

Wireless MAC Address Filter	Active : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated Action : Allow Association the follow Wireless LAN station(s) association. Mac Address #1 : 00:00:00:00:00:00 Mac Address #2 : 00:00:00:00:00:00 Mac Address #3 : 00:00:00:00:00:00 Mac Address #4 : 00:00:00:00:00:00 Mac Address #5 : 00:00:00:00:00:00 Mac Address #6 : 00:00:00:00:00:00 Mac Address #7 : 00:00:00:00:00:00 Mac Address #8 : 00:00:00:00:00:00 <div>SAVE CANCEL</div>
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# Advanced Setup

The **Advanced Setup** folder contains windows for Routing, NAT and ADSL.

## Firewall

This menu allows the Router to enforce specific policies intended to protect the private network against certain types of attacks.

To enable the firewall feature, select the **Enabled** option and click **SAVE**.

To enable the Stateful Packet Inspection feature, select the **Enabled** option and click **SAVE**.

D-Link<sup>®</sup> DSL-2640R

Advanced Setup

Firewall : ☐ Enabled ☒ Disabled

SPI : ☐ Enabled ☒ Disabled

(WARNING: If You enabled SPI, all traffics initiated from WAN would be blocked, including DMZ, Virtual Server, and ACL WAN side.)

SAVE CANCEL

## Routing

Use Static Routing to specify a route used for data traffic within your Ethernet LAN or to route data on the WAN. This specifies that all packets destined for a particular network or subnet use a predetermined gateway.

To add a static route to a specific destination IP on the local network, click the **ADD ROUTE** button to view the setup window.

Advanced Setup

Routing Table List

#	Dest IP	Mask	Gateway IP	Metric	Device	Use	Edit	Drop
1	192.168.1.0	24	192.168.1.1	1	enet0	523		
2	10.0.0.0	8	10.1.1.1	1	enet0	4731		
3	default	0	Node1	2	Idle	21825		

ADD ROUTE

To add a static route to a specific destination IP on the local network, enter a **Destination IP Address**, select a suitable **IP Subnet Mask**, and type in the **Gateway IP Address**. Click **SAVE** to enter the new static route in the table below. The route becomes active immediately upon creation. The **Metric** field determines the number of hops or routers that will be allowed to route traffic.

Advanced	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	
	Firewall	Routing	NAT	QoS	VLAN	ADSL
Static Route						
<div>Destination IP Address : <input type="text" value="0.0.0.0"/></div> <div>IP Subnet Mask : <input type="text" value="0.0.0.0"/></div> <div>Gateway IP Address : <input checked="" type="radio"/> 0.0.0.0 <input type="radio"/> PVC0 <input type="text" value="0.0.0.0"/></div> <div>Metric : <input type="text" value="0"/></div> <div>Announced in RIP : <input type="text" value="Yes"/></div> <div>SAVEDELETEBACKCANCEL</div>						

## NAT

The Router features include policy-based Network Address Translation (NAT) for greater flexibility and control of NAT functions. The user can customize port mapping for a single global IP address or full feature NAT support for mapping multiple global IP addresses to servers or clients on the LAN. Single User Account (SUA) NAT is enabled by default. Using the default settings, NAT will function for Routed connections without any additional configuration. NAT is disabled automatically when the device is operating in pure Bridge mode. To customize NAT settings for IP address mapping, use the **NAT** window located in the **Advanced Setup** directory.

Advanced	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	
	Firewall	Routing	NAT	QoS	VLAN	ADSL
NAT						
<div>Virtual Circuit : <input type="text" value="PVC0"/></div> <div>NAT Status : Activated</div> <div>Number of IPs : <input checked="" type="radio"/> Single <input type="radio"/> Multiple</div> <div><input checked="" type="radio"/> DMZ</div> <div><input type="radio"/> Virtual Server</div>						

Note that if the NAT Status in the window above indicates “Deactivated,” the user must first activate NAT on the **Internet** menu. Click **SAVE** and the window above will appear. The IP Address Mapping (for Multiple IP Service) link only appears when the Multiple option is selected under Number of IPs.

Advanced	Interface Setup	Advanced Setup	Access Management	Maintenance	Status
	Firewall	Routing	NAT	QoS	VLAN

NAT

Virtual Circuit : PVC0

NAT Status : Activated

Number of IPs : ☐ Single ☒ Multiple

DMZ

Virtual Server

IP Address Mapping (for Multiple IP Service)

DMZ

Since some applications are not compatible with NAT, the Router supports use of a DMZ IP address for a single host on the LAN. This IP address is not protected by NAT and will therefore be visible to agents on the Internet with the right type of software. Keep in mind that any client PC in the DMZ will be exposed to various types of security risks. If you use the DMZ, take measures (such as client-based virus protection) to protect the remaining client PCs on your LAN from possible contamination through the DMZ.

To designate a DMZ IP address, select the **Enabled** radio button, type in the **DMZ Host P Address** of the server or device on your LAN, and click the **SAVE** button. To remove DMZ status from the designated IP address, select the **Disabled** radio button and click **SAVE**. It will be necessary to save the settings and reboot the Router before the DMZ is activated.

Advanced	Interface Setup	Advanced Setup	Access Management	Maintenance	Status
	Firewall	Routing	NAT	QoS	VLAN

DMZ

DMZ setting for : PVC0 - Multiple IP Account

DMZ : ☐ Enabled ☒ Disabled

DMZ Host IP Address : 0.0.0.0

SAVE

BACK

Virtual Server

To customize inbound port mapping of NAT for a Single User Account using one global IP address, select the **Single** option under **Number of IPs** and click the **Virtual Server** link.

By default, NAT will map all ports according to the traditional IP NAT protocol. However, the user may opt to map specific ports or a range of ports to a specified IP address on the LAN. It is also possible to map all ports to a specified LAN IP address. You will use this same window if you are using NAT for a multiple number of IPs.

To specify NAT mapping, type in the port or range of ports used for mapping in the **Start Port Number** and **End Port Number** columns and enter the LAN **Local IP Address** of the server or system used for the selected ports. To map a single port, type the port number in both Start and End port entry fields. Click the **SAVE** button to apply the NAT port mapping and save the settings.

Advanced

Interface Setup

Advanced Setup

Access Management

Maintenance

Status

Firewall

Routing

NAT

QoS

VLAN

ADSL

Virtual Server

Virtual Server for : PVC0 - Multiple IP Account

Rule Index : 1

Application : -

Protocol : ALL

Start Port Number : 0

End Port Number : 0

Local IP Address : 0.0.0.0

Virtual Server Listing

Rule	Application	Protocol	Start Port	End Port	Local IP Address
1	-	-	0	0	0.0.0.0
2	-	-	0	0	0.0.0.0
3	-	-	0	0	0.0.0.0
4	-	-	0	0	0.0.0.0
5	-	-	0	0	0.0.0.0
6	-	-	0	0	0.0.0.0
7	-	-	0	0	0.0.0.0
8	-	-	0	0	0.0.0.0
9	-	-	0	0	0.0.0.0
10	-	-	0	0	0.0.0.0
11	-	-	0	0	0.0.0.0
12	-	-	0	0	0.0.0.0
13	-	-	0	0	0.0.0.0
14	-	-	0	0	0.0.0.0
15	-	-	0	0	0.0.0.0
16	-	-	0	0	0.0.0.0

SAVEDELETEBACKCANCEL



IP Address Mapping

The Router allows the user to setup policies used for inbound or outbound port mapping to one or multiple global IP addresses. This may be desirable on networks that maintain multiple global IP addresses, multiple virtual connections or where servers on the network must respond to connection requests from the WAN. To configure the mapping rules, select the select the **Multiple** option under **Number of IPs** on the **NAT** menu and click the **IP Address Mapping (for Multiple IP Service)** link.

To edit a rule, use the **Rule Index** drop-down menu. One you have made the desired changes, click the **SAVE** button.

Advanced

Interface Setup

Advanced Setup

Access Management

Maintenance

Status

Firewall

Routing

NAT

QoS

VLAN

ADSL

IP Address Mapping

Address Mapping Rule : PVC0

Rule Index : 1

Rule Type : One-to-One

Local Start IP : 0.0.0.0

Local End IP : N/A

Public Start IP : 0.0.0.0 (0.0.0.0 for modem's WAN IP)

Public End IP : N/A

Address Mapping List

Rule	Type	Local Start IP	Local End IP	Public Start IP	Public End IP
1	-	...	...	...	...
2	-	...	...	...	...
3	-	...	...	...	...
4	-	...	...	...	...
5	-	...	...	...	...
6	-	...	...	...	...
7	-	...	...	...	...
8	-	...	...	...	...

SAVE

DELETE

BACK

CANCEL

Rule Types:  
One-to-One

Many-to-One

Many-toMany Overload  
Many-to-Many No Overload

**Server**  
Use this for mapping a single global IP address to a single private internal IP address. In this case, IP mapping is done for both inbound and outbound traffic.

This is essentially the same as SUA NAT. Multiple private internal IP addresses are mapped to a single global IP address. Mapping occurs for outbound traffic.

In this case, IP mapping is done for outbound traffic from multiple private internal IP addresses to a shared pool of multiple global IP addresses. IP mapping is also done for outbound traffic from multiple private internal IP addresses to a pool of global IP addresses, however each internal IP address will connect to a single global IP address from the pool. In other words each available global IP address is allowed connection to only one internal IP address at a time.

# QoS

Quality of Service or QoS assigns a priority level to data packets to make sure time sensitive network applications operate smoothly with minimal delay. QoS enables applications such as VoIP (voice-over Internet Protocol) or video conferencing to function well on networks that may have multiple simultaneous transmissions of many types of data. Since much of the traffic is not significantly affected by slight transmission delay, QoS is used to give preference to traffic that is affected by delay. QoS implementation on the Router instead uses four queues that can be mapped to and assigned priority. QoS protocols supported on the Router include IEEE 802.1p, Differentiated Services Code Point (DiffServ) weighted scheduling, IP Type of Service (IP ToS) as well as application specific and VLAN Group QoS mapping. To implement QoS on the Router, select the preferred protocol used for QoS and map the priority scheduling used to the four queues used on the Router. To enable QoS, select the **QoS: Activated** option, and select the type of QoS mapping used. Use Queue #1 for the lowest priority traffic, and Queue #4 for the highest priority traffic.

Advanced

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Quality of Service

Rule

QoS: ☐ Activated ☒ Deactivated

Summary: 

QoS Settings Summary

Rule Index: 

1

Active: ☐ Activated ☒ Deactivated

Application:

Physical Ports: 

☐

☐

☐

☐

☐

WLANEnet1Enet2Enet3Enet4

Destination MAC:

IP:

Mask:

Port Range:  ~

Source MAC:

IP:

Mask:

Port Range:  ~

Protocol ID:

Vlan ID Range:  ~

IPP/DS Field: ☐ IPP/TOS ☒ DSCP

IP Precedence Range:  ~

Type of Service:

DSCP Range:  ~  (Value Range: 0 ~ 63)

802.1p:  ~

Action

IPP/DS Field: ☐ IPP/TOS ☒ DSCP

IP Precedence Remarking:

Type of Service Remarking:

DSCP Remarking:  (Value Range: 0 ~ 63)

802.1p Remarking:  ~

Queue #:

ADD

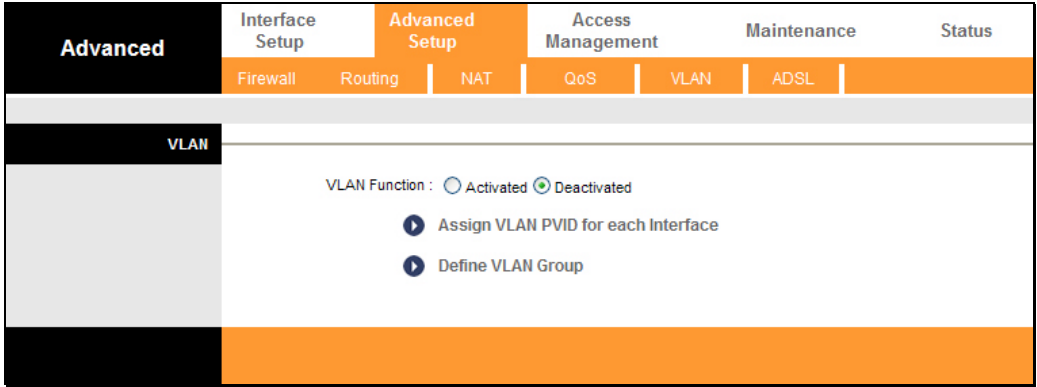
DELETE

CANCEL

802.1p	To implement QoS mapping for IEEE 802.1p priority, select the Activated option and configure mapping for the 8 priority levels defined by 802.1p priority. 802.1p user priority 0 is the lowest priority while 7 is the highest.
IP QoS	<div>To implement QoS mapping for IP QoS, select the Activated option and configure mapping for one of two types of IP QoS, IP ToS (Type of Service) or DiffServ:</div> <div><div><div>▪ IP ToS assigns 0 for the lowest priority and 7 for the highest.</div><div>▪ DiffServ uses 64 levels with 0 being the lowest, 63 the highest. DiffServ QoS mapping requires mapping for all 64 levels. If a level is not mapped a popup box informs the user that the level has not been assigned.</div></div></div>
Application QoS	To implement Application QoS mapping, select the Activated option and configure queue assignment for applications. The default applications mapping for voice and video applications set the highest priority for voice and second highest for video. The queue assignment and RTP port ranges may be changed if desired. Queues may also be assigned for IGMP packets and general data packets (i.e. all other traffic).
VLAN Group QoS	To implement VLAN Group QoS mapping, select the Activated option and configure mapping for VLAN groups using the VLAN group identification number (VID) for queue mapping. This can be used together with VLAN assignment for different virtual connections (PVCs) for QoS mapping to the PVCs. See below for more information on how VLANs can be used on the Router.

## VLAN

The Router supports port-based VLANs to segment the Ethernet LAN and/or map 802.1Q VLAN groups to different PVCs. VLANs are grouped according to physical Ethernet port or by PVC for users running multiple connections on the WAN. To use VLANs select the **Activated** option, then open a separate menu to **Assign VLAN PVID for Each Interface**. When multiple connections are used on the WAN, this is especially useful to assign VLAN user groups to specified PVCs. The **Define VLAN Group** menu is used to set up VLAN user groups and implement VLAN tagging.



Assign PVID

Enter the desired PVID values in the menu and then click the **SAVE** button. PVIDs assignment can be used to create port-based VLANs for any of the four Ethernet ports; or use the PVID to map VLANs to separate PVCs. The eight PVCs are labeled ATM VC # 1, VC # 2 and so on up to VC # 7 for the purpose of VLAN to PVC mapping.

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VLAN Group Setting

VLAN Index : 1

Active : ☒ Yes ☐ No

VLAN ID : 1 (Decimal)

Tagged

☐

☐

☐

☐

☐

☐

☐

ATM VCs : 

Port #

☒

☒

☒

☒

☒

☒

☒

Tagged

☐

☐

☐

☐

Ethernet : 

Port #

☒

☒

☒

☒

Tagged

☐

Wireless LAN : 

Port #

☒

VLAN Group Summary

Group	Active	ID	VLAN Group Ports	VLAN Tagged Ports
1	Yes	1	e1,e2,e3,e4,w0,p0,p1,p2,p3,p4,p5,p6,p7	

p.pvc, e.ethernet, and w.wlan

SAVE

DELETE

CANCEL

VLAN

To define a VLAN group, click **Define VLAN Group** in the **VLAN** menu to access the **VLAN Group Setting** menu.  
Make the desired VLAN Group assignment and tagging settings in the window above and then click the **SAVE** button.  
Up to eight VLAN groups may be created. Click to select the **Ethernet Port** and **ATM VCs Port** for each VLAN member port. Any port may be specified as **Tagged**.

Packets that are tagged (are carrying the 802.1Q VID information) can be transmitted from one 802.1Q compliant network device to another with the VLAN information intact. This allows 802.1Q VLANs to span network devices (and indeed, the entire network, if all network devices are 802.1Q compliant).

Select the **Tagged** option to enable tagging for the port. Ports with tagging enabled will put the VID number, priority and other VLAN information into the header of all packets that flow into and out of it. If a packet has previously been tagged, the port will not alter the packet, thus keeping the VLAN information intact. Other 802.1Q compliant devices on the network to make packet-forwarding decisions can then use the VLAN information in the tag.

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VLAN Group Setting

VLAN Index : 1

Active : ☒ Yes ☐ No

VLAN ID : 1 (Decimal)

Tagged

☐

☐

☐

☐

☐

☐

☐

☐

ATM VCs : 

Port # ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒

0 1 2 3 4 5 6 7

Tagged

☐

☐

☐

☐

Ethernet : 

Port # ☒ ☒ ☒ ☒

1 2 3 4

Tagged

☐

Wireless LAN : 

Port # ☒

0

VLAN Group Summary

Group	Active	ID	VLAN Group Ports	VLAN Tagged Ports
1	Yes	1	e1,e2,e3,e4,w0,p0,p1,p2,p3,p4,p5,p6,p7	

p.pvc, e.ethernet, and w.wlan

SAVE

DELETE

CANCEL

# ADSL

This menu allows the user to set the configuration for ADSL protocols. For most ADSL accounts the default settings will work. This configuration works with all ADSL implementations. If you have been given instructions to change the **ADSL Mode** or **ADSL Type**, select the desired option from the drop-down menus and click the **SAVE** button.

Advanced	Interface Setup	Advanced Setup		Access Management		Maintenance	Status
	Firewall	Routing	NAT	QoS	VLAN	ADSL	
ADSL	<div>ADSL Mode : Auto Sync-Up</div> <div>ADSL Type : ANNEX A</div>						
<div>SAVE</div>							

# Access Management

The **Access Management** directory contains links for the ACL, Filter, SNMP, UPnP, DDNS, and CWMP menus.

## ACL

**ACL**  
Access Control on the Router is an IP-based and/or application-based filtering mechanism used for security and efficiency.

Add rules to the list that specify IP address or IP address range. For each rule, a network application can be specified. The Interface effected can be specific to the LAN, WAN or Both.

Click the **SAVE** button to apply and save the new rule. Each rule must be indexed and can be **Active** or not while remaining on the list. The entire Access Control List can be **Activated** or **Deactivated** without change the list.

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DSL-2640R

Access Management

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ACL

Filter

SNMP

UPnP

DDNS

CWMP

Access Control Setup

Access Control Editing

Access Control Listing

ACL : ☐ Activated ☒ Deactivated

ACL Rule Index : 1

Active : ☐ Yes ☒ No

Secure IP Address : 0.0.0.0 ~ 0.0.0.0 (0.0.0.0 ~ 0.0.0.0 means all IPs)

Application : Web

Interface : Both

Index	Active	Secure IP Address	Application	Interface
-------	--------	-------------------	-------------	-----------

SAVE

DELETE

CANCEL

# Filter

### Filter Menus

The filtering functions on the Router are based on IP address, MAC address, URL or common network applications. Choose the type of filtering to configure and enter the criteria appropriate for that type of filtering. Each menu presents settings specific to the type. IP and MAC based filtering rules can be applied sequentially so that each rule has the option of forwarding packets that do not match the rule, or going to the next rule on the list for further scrutiny.

### IP/MAC Based Filter

IP and MAC based filters are indexed by rule set and again by individual rule in the set. Choose IP or MAC based filtering options and click the **SAVE** button to add the new rule to the list. To remove a rule set from the list, select it and click on the **Delete** button. The **Rule Unmatched** option determines whether to **Forward** a packet or go to **Next** rule on the list. Each set applies the rules in the set sequentially in the order they are listed (or indexed).

Access Management

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ACL

Filter

SNMP

UPnP

DDNS

CWMP

Filter

Filter Type

Filter Type Selection : IP / MAC Filter

IP / MAC Filter Set Editing

IP / MAC Filter Set Index : 1

Interface : PVC1

Direction : Both

IP / MAC Filter Rule Editing

IP / MAC Filter Rule Index : 1

Rule Type : IP

Active : ☐ Yes ☒ No

Source IP Address : (0.0.0.0 means Don't care)

Subnet Mask :

Port Number : 0 (0 means Don't care)

Destination IP Address : (0.0.0.0 means Don't care)

Subnet Mask :

Port Number : 0 (0 means Don't care)

Protocol : TCP

Rule Unmatched : Forward

IP / MAC Filter Listing

IP / MAC Filter Set Index 1

Interface PVC1

Direction Both

#	Active	Src Address/Mask	Dest IP/Mask	Src Port	Dest Port	Protocol	Unmatched
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-

SAVE

DELETE

CANCEL



Application Filter

The Application Filter is a simple filter that drops all incoming packets for the selected applications from the Internet.

Choose the applications to **Allow** or **Deny** from those listed and click the **SAVE** button to apply and save the application filtering rule. The application filter can be **Activated** or **Deactivated** at any time without changing the selected options.

Access Management	Interface Setup	Advanced Setup		Access Management		Maintenance	Status
	ACL	Filter	SNMP	UPnP	DDNS	CWMP	
Filter							
Filter Type							
Filter Type Selection : Application Filter							
Application Filter Editing							
Application Filter : Activated Deactivated							
ICQ : Allow Deny							
MSN : Allow Deny							
YMSG : Allow Deny							
Real Audio/Video : Allow Deny							
SAVE CANCEL							

The **URL Filter** will deny access to any URL entered in the list. Up to 16 URLs can be specified. The URL Filter can be **Active** or not without changing the entries on the list.

Select an index number for a new URL to be added to the list, type the URL and click the **SAVE** button to add it to the list. Remove a URL from the list by choosing the index number for the URL to be removed and clicking on the **Delete** button.

Access Management

Interface SetupAdvanced SetupAccess ManagementMaintenanceStatus

ACLFilterSNMPUPnPDDNSCWMP

Filter

Filter Type

Filter Type Selection : URL Filter

URL Filter Editing

Active : Yes No

URL Index : 1

URL :

URL Filter Listing

Index	URL
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

SAVEDELETECANCEL

# SNMP

**SNMP**  
Simple Network Management Protocol is a standard for internetwork and intranetwork management.

Enter the desired information in the **Get Community** and **Set Community** fields and then click the **SAVE** button when you are finished with your SNMP settings.

Access Management	Interface Setup	Advanced Setup		Access Management		Maintenance	Status
	ACL	Filter	SNMP	UPnP	DDNS	CWMP	
SNMP	<div>Get Community : public</div> <div>Set Community : public</div>						
<div>SAVE</div>							

# UPnP

**UPnP**  
UPnP supports zero-configuration networking and automatic discovery for many types of networked devices. When enabled, it allows other devices that support UPnP to dynamically join a network, obtain an IP address, convey its capabilities, and learn about the presence and capabilities of other devices. DHCP and DNS service can also be used if available on the network. UPnP also allows supported devices to leave a network automatically without adverse effects to the device or other devices on the network.  
Diverse networking media including Ethernet, Firewire, phone line, and power line networking can support UPnP.

To enable UPnP for any available connection, click **Activated**, and click the **SAVE** button. You can also opt to allow user to make configuration changes through UPnP by selecting **Activated** under the **Auto-configured** setting.

Access Management	Interface Setup	Advanced Setup		Access Management		Maintenance	Status
	ACL	Filter	SNMP	UPnP	DDNS	CWMP	
Universal Plug & Play	<div>UPnP : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated</div> <div>Auto-configured : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated (by UPnP-enabled Application)</div>						
<div>SAVE</div>							

# DDNS

## DDNS

The Router supports Dynamic Domain Name Service or Dynamic DNS. Dynamic DNS is used for account that may not have a permanent fixed global IP address for servers or other resources that are accessed through the Internet. It allows the user to alias a dynamic IP address to a fixed host name.

To configure Dynamic DNS:

- 1. Click the **Activated** box to select it.
- 2. Enter the full host and domain name used for your Dynamic DNS under **My Host Name**.
- 3. This is used to redirect e-mails arriving at your Dynamic DNS service provider's address to an alternative e-mail account. Type in the **E-Mail Address** that will receive the forwarded e-mails.
- 4. Type in the **Username** for your Dynamic DNS account.
- 5. Type in the **Password** for your Dynamic DNS account.
- 6. The **Wildcard support** option may be selected to allow for variations on your public URL address to be used, for example if upper case letters are typed in the URL.
- 7. Click the **SAVE** button to activate the Dynamic DNS settings.

Access Management	Interface Setup	Advanced Setup	Access Management	Maintenance	Status	
	ACL	Filter	SNMP	UPnP	DDNS	CWMP

Dynamic DNS

Dynamic DNS : ☐ Activated ☒ Deactivated

Service Provider : www.dyndns.org

My Host Name :

E-mail Address :

Username :

Password :

Wildcard support : ☐ Yes ☒ No

SAVE

# CWMP

## CWMP

CPE WAN Management Protocol (CWMP) allows technicians to connect to the customer’s device doing management and configurations.

To enable the CWMP feature:

- 1. Click the **Activated** radio button in **CWMP**.
- 2. Enter the IP address, User Name and Password of the remote device under Login ACS.
- 3. Enter the Path, Port User Name and Password under Connection Request.
- 4. Click the **Acteivated** radio button in **Periodic Inform** and inter the period of time in Interval to enable the feature.
- 5. Click the **SAVE** button to activate the CWMP feature.

Access Management	Interface Setup	Advanced Setup	Access Management		Maintenance	Status
	ACL	Filter	SNMP	UPnP	DDNS	CWMP
CWMP Setup						
Login ACS	CWMP : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated					
	URL : <input type="text"/>					
	User Name : <input type="text"/>					
Connection Request	Password : <input type="text"/>					
	Path : <input type="text"/>					
	Port : <input type="text"/>					
Periodic Inform	UserName : <input type="text"/>					
	Password : <input type="text"/>					
	Periodic Inform : <input type="radio"/> Activated <input checked="" type="radio"/> Deactivated					
Interval : <input type="text"/>						
<div>SAVECANCEL</div>						

# Maintenance

The **Maintenance** folder contains windows for Administration, Time Zone, Firmware, SysRestart, and Diagnostics.

## Administration

### Administration

To create a new password, type the new password in the **New Password** field and then retype it in the **Confirm Password** field.

The Username (admin) used to access the Router's management software cannot be changed by the user.

The screenshot shows the D-Link DSL-2640R web interface. At the top, the D-Link logo is on the left and 'DSL-2640R' is on the right. Below the logo is a navigation bar with tabs: 'Maintenance' (selected), 'Interface Setup', 'Advanced Setup', 'Access Management', and 'Status'. Under the 'Maintenance' tab, there are sub-tabs: 'Administration' (selected), 'Time Zone', 'Firmware', 'SysRestart', and 'Diagnostics'. The main content area is titled 'Administrator' and contains the following fields: 'Username : admin', 'New Password :', and 'Confirm Password :'. At the bottom right of the form are 'SAVE' and 'CANCEL' buttons.

## Time Zone

Time Zone

The Router provides a number of options to maintain current date and time.

To configure system time on the Router, select the method used to maintain time. If you wish to use a network timeserver, select the method used from the **Synchronize time with** radio buttons and type in the IP address of the **NTP Server Address**. Select **Time Zone** and choose **Daylight Saving** settings where appropriate. Alternatively, you can manually configure the system time by clicking **Manually** in the **Synchronize time with** section and then type in the **Date** and **Time** in the spaces provided. Click the **SAVE** button to set the system time.

Maintenance	Interface Setup	Advanced Setup	Access Management		Maintenance	Status
	Administration	Time Zone	Firmware	SysRestart	Diagnostics	
Time Zone						
Current Date/Time : 01/01/2000 05:38:46						
Time Synchronization						
Synchronize time with : <input checked="" type="radio"/> NTP Server automatically						
<input type="radio"/> PC's Clock						
<input type="radio"/> Manually						
Time Zone : (GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London						
Daylight Saving : <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled						
NTP Server Address : 0.0.0.0 (0.0.0.0: Default Value)						
SAVE CANCEL						


Maintenance	Interface Setup	Advanced Setup	Access Management		Maintenance	Status
	Administration	Time Zone	Firmware	SysRestart	Diagnostics	
Time Zone						
Current Date/Time : 05/15/2008 17:22:54						
Time Synchronization						
Synchronize time with : <input type="radio"/> NTP Server automatically						
<input type="radio"/> PC's Clock						
<input checked="" type="radio"/> Manually						
Date : 5 / 15 / 2008 (Month/Date/Year)						
Time : 17 : 22 : 54 (hour:min:sec)						
SAVE CANCEL						

Firmware Update

**Firmware**

Use this window to load the latest firmware for the device.

To upgrade firmware, type in the name and path of the file or click on the **Browse** button to search for the file. Click the **UPGRADE** button to begin copying the file. The file will load and restart the Router automatically.

Maintenance	Interface Setup	Advanced Setup	Access Management	Maintenance	Status
	Administration	Time Zone	Firmware	SysRestart	Diagnostics
Firmware/Romfile Upgrade					
	Current Firmware Version : 2.11.25.0(RE0.C2B)3.9.4.5				
	New Firmware Location :		<input type="text"/> <input data-bbox="1798 376 1879 395" type="button" value="Browse..."/>		
	New Romfile Location :		<input type="text"/> <input data-bbox="1798 403 1879 422" type="button" value="Browse..."/>		
	Romfile Backup :		<input data-bbox="1554 430 1697 450" type="button" value="ROMFILE SAVE"/>		
	Status :  It might take several minutes, don't power off it during upgrading. Device will restart after the upgrade.				
	<input data-bbox="1554 587 1646 606" type="button" value="UPGRADE"/>				

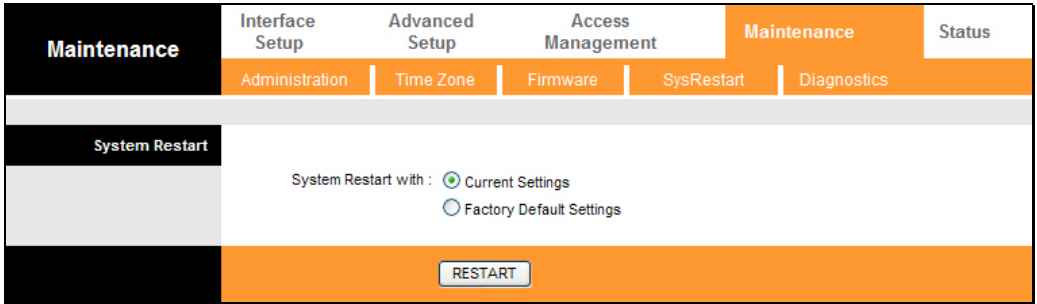


# Reset/Restart System

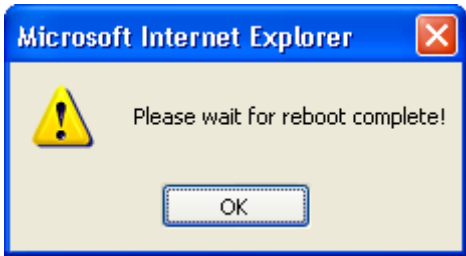
### SysRestart

To reset the Router to its factory default settings, click the **SysRestart** button in the **Maintenance** menu. Select the **Factory Default Settings** radio button under **System Restart with** and click **RESTART**.

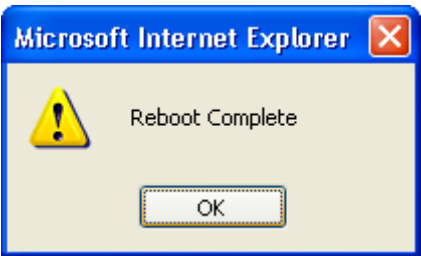
To perform a simple reboot, select System Restart with Current Settings and click **RESTART**.



You will be prompted to wait for the reboot to complete.



Click **OK** to proceed. The Router will reset with the factory default settings including IP settings and administrator password. When it is finished, the following prompt will appear:



# Diagnostics

Diagnostics

This window is used to test connectivity of the Router. The diagnostic features execute a series of tests of your system software and hardware connections. Use these when working with your ISP to troubleshoot problems.

Maintenance	Interface Setup	Advanced Setup	Access Management		Maintenance	Status
	Administration	Time Zone	Firmware	SysRestart	Diagnostics	
Diagnostic Test						
	Virtual Circuit: PVC0					
	>> Testing Ethernet LAN connection ... PASS					
	>> Testing ADSL Synchronization . PASS					
	>> Testing ATM OAM segment ping ... PASS					
	>> Testing ATM OAM end to end ping ... PASS					
	>> Ping Primary Domain Name Server . PASS					
	>> Ping www.yahoo.com ... PASS					

# Status

The **Status** directory contains Device Info, System Log, and Statistics displays.

## Device Info

This display window is used to view Device, LAN, WAN, and ADSL information.

D-Link®

DSL-2640R

Status

Interface Setup

Advanced Setup

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Status

Device Info

System Log

Statistics

Device Information

Firmware Version : 2.11.25.0(RE0.C2B)3.9.4.5  
MAC Address : 00:aa:bb:01:23:45

LAN

IP Address : 192.168.1.1  
Subnet Mask : 255.255.255.0  
DHCP Server : Enabled

WAN

Virtual Circuit : PVC0  
Status : Not Connected  
Connection Type : PPPoE  
IP Address : 0.0.0.0  
Subnet Mask : 0.0.0.0  
Default Gateway : 0.0.0.0  
DNS Server : 0.0.0.0  
NAT : Enabled

ADSL

ADSL Firmware Version : FwVer:3.9.4.5\_A\_TC3085 HwVer:T14.F7\_3.0  
Line State : Down  
Modulation : N/A  
Annex Mode : N/A

Downstream

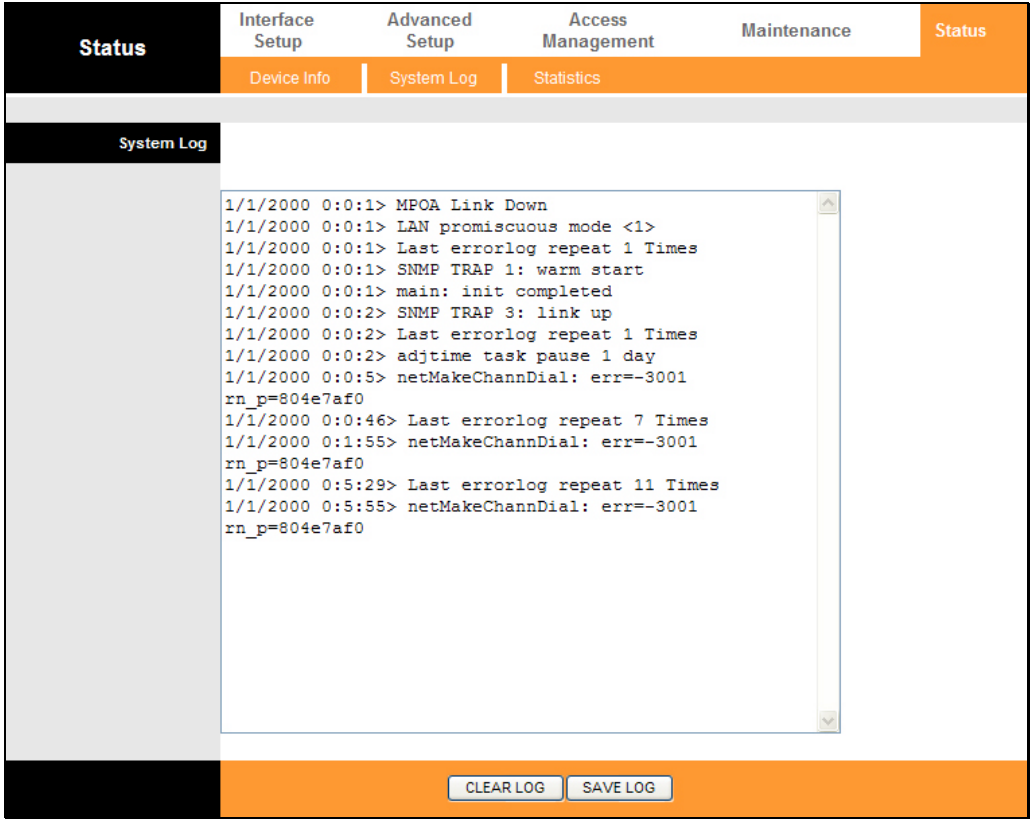
Upstream

SNR Margin : N/A N/A db  
Line Attenuation : N/A N/A db  
Data Rate : N/A N/A kbps

# System Log

This window displays chronological event log data. Use the navigation buttons to view or scroll log pages.

You may also save a simple text file containing the log to your computer. Click the **SAVE LOG** button and follow the prompts to save the file.



# Statistics

Use the **Traffic Statistics** window to monitor traffic on the Ethernet, Wireless or ADSL connection. Select the interface for which you want to view packet statistics and the information will appear below.

Status

Interface SetupAdvanced SetupAccess ManagementMaintenanceStatus

Device InfoSystem LogStatistics

Traffic Statistics

Interface : ☒ Ethernet ☐ ADSL ☐ WLAN

Transmit Statistics		Receive Statistics	
Transmit Frames	173	Receive Frames	181
Transmit Multicast Frames	50	Receive Multicast Frames	81
Transmit total Bytes	84953	Receive total Bytes	28132
Transmit Collision	0	Receive CRC Errors	0
Transmit Error Frames	0	Receive Under-size Frames	0

REFRESH

# Troubleshooting

This chapter provides solutions to problems that might occur during the installation and operation of the DSL-2640R. 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. How do I configure my DSL-2640R Router without the CD-ROM, or check my Wireless Network Name (SSID) and Wireless Encryption Key?**

- Connect your PC to the Router using an Ethernet cable.
- Open a web browser and enter the address <http://192.168.1.1>
- The default username is '**admin**' and the default password is '**admin**'.
- If you have changed the password and cannot remember it, you will need to reset the Router to the factory default setting (see question 2), which will set the password back to '**admin**'.

**2. How do I reset my Router to the factory default settings?**

- Ensure the Router is powered on.
- Press and hold the reset button on the back of the device for approximately 6 to 8 seconds.
- This process should take around 30 seconds to complete.

**Note:** Resetting the Router to the factory default settings will erase the current configuration settings. To reconfigure your settings, login to the Router as outlined in question 1 to configure the Router.

**3. How do I add a new wireless client or PC if I have forgotten my Wireless Network Name (SSID) or Wireless Encryption Key?**

- For every PC that needs to connect to the router wirelessly, you will need to ensure you use the same Wireless Network Name (SSID) and encryption key as the DSL router has.
- Use the web based user interface (as described in question 1 above) to check or choose your wireless settings.
- Make sure you take a note of the settings so that you can enter them into each wirelessly connected PC.

**4. What can I do if my Router is not working correctly?**

There are a few quick steps you can take to try and resolve any issues:

- Follow the directions in Question 2 to reset the Router.
- Check that all the cables are firmly connected at both ends.
- Check the LED's on the front of the router. The Power, WLAN, DSL and Internet LED should be on. One or more of the LAN LED should flash.
- Please ensure that the settings in the Web-based configuration manager, e.g. ISP username and password, are the same as the settings that have been provided by your ISP.

**5. Why can't I get an Internet connection?**

For ADSL ISP users, please contact your ISP to make sure the service has been enabled/connected by your ISP and that your ISP username and password are correct.

# 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.

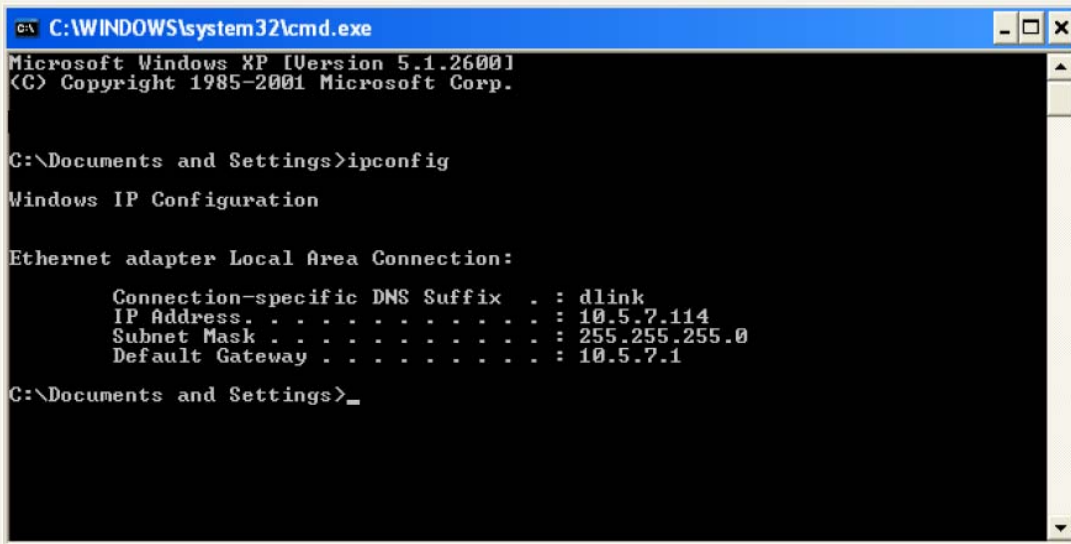
Click on **Start > Run**. In the run box type **cmd** and click on the **OK**.

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.

A screenshot of a Windows XP command prompt window. The title bar reads "C:\WINDOWS\system32\cmd.exe". The window content shows the Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp. prompt. The user has entered "C:\Documents and Settings>ipconfig". The output shows "Windows IP Configuration" and "Ethernet adapter Local Area Connection:". Below this, it lists: "Connection-specific DNS Suffix . : dlink", "IP Address. . . . . : 10.5.7.114", "Subnet Mask . . . . . : 255.255.255.0", and "Default Gateway . . . . . : 10.5.7.1". The prompt "C:\Documents and Settings>\_" is visible at the bottom.

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : dlink
    IP Address. . . . .               : 10.5.7.114
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 10.5.7.1

C:\Documents and 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

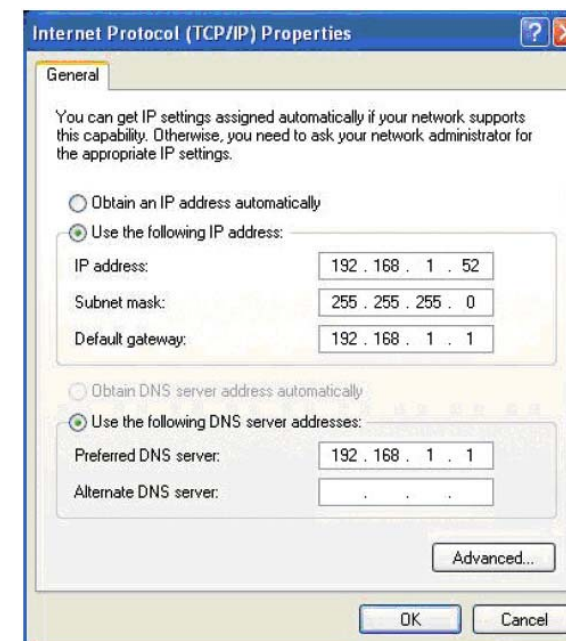
Click on the **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: If the router's LAN IP address is 192.168.1.1, make your IP address 192.168.1.X where X is a number between 2 and 254. 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 (192.168.1.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.1.1). 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.





# Technical Specifications

## ADSL Standards

- ANSI T1.413 Issue 2
- ITU G.992.1 (G.dmt) Annex A
- ITU G.992.2 (G.lite) Annex A
- ITU G.994.1 (G.hs)

## ADSL2 Standards

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

## ADSL2+ Standards

- ITU G.992.5 Annex A

## 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 Transfer Rate

- G.dmt full rate downstream: up to 8 Mbps / upstream: up to 1 Mbps
- G.lite: ADSL downstream up to 1.5 Mbps / upstream up to 512 Kbps
- G.dmt.bis full rate downstream: up to 12 Mbps / upstream: up to 12 Mbps
- ADSL2+ full rate downstream: up to 24 Mbps / upstream: up to 1 Mbps

## Wireless Transfer Rates

- IEEE 802.11b: 11, 5.5, 2, and 1Mbps
- IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps

## Media Interface

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

## Default Settings

**IP Settings:** IP Address 192.168.1.1 Netmask 255.255.255.0

**User Name:** admin **Password:** admin

**DHCP Server:** Enabled