

USER MANUAL

DIR-120

VERSION 1.0



D-Link[®]

WIRED

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About This User's Guide

This user's guide provides instructions on how to install the DIR-120 Ethernet Broadband Router and use it to connect a computer or Ethernet LAN to the Internet.

Before You Start

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.

Overview

The procedure to install the Router can be described in general terms in the following steps:

1. Gather information and equipment needed to install the device. Before you begin the actual installation make sure you have all the necessary information and equipment.
2. Install the hardware, that is, connect the cables (Ethernet and telephone) to the device and connect the power adapter.
3. Check the IP settings on your computer and change them if necessary so the computer can access the web-based software built into the Router.
4. Use the web-based management software to configure the device to suit the requirements of your ISP account.

Packing List

Open the shipping carton and carefully remove all items. In addition to this Manual, ascertain that you have:

- DIR-120 Ethernet Broadband Router
- Power Adapter
- Ethernet Cable
- Quick Installation Guide
- Manual on CD



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

If any of the above items are missing, please contact your reseller.

NOTE: Using a power supply with a different voltage rating will damage and void the warranty for this product

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 (User Name and Password) is required. For others, various parameters that control and define the Internet connection will be required.

Internet Connection

The DIR-120 is intended for use with a broadband device such as an ADSL, DSL or cable (CATV) modem. The physical connection to the Internet must first be established through a broadband device, typically this should be set up as an invisible bridge.

Operating Systems

The DIR-120 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, and Windows XP.

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 5.0, Netscape Navigator® version 4.7, 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.

Installation Information

Print this page and record the listed information here in case you have to re-configure your WAN connection in the future or reset the device configuration settings.

Information you will need from your Internet service provider:		
Username	This is the Username that is used to log on to your Internet service provider's network. It is commonly in the form – user@isp.com.	Record your info here.
Password	This is the Password that is used, in conjunction with the Username above, to log on to your Internet provider's network.	
Internet Connection Type	This is the method that your ISP uses to send and receive data between the Internet and your computer.	
Information you will need about your DIR-120 Ethernet Broadband Router:		
Username	This is the Username you will be prompted to enter when you access the DIR-120 configuration screens using a Web browser. The default Username is admin.	Record your info here.
Password	This is the Password you will be prompted to enter when you access the DIR-120's configuration windows using a Web browser. There is no initial Password.	
LAN IP address for the DIR-120	This is the IP address you will enter into the Address field of your Web browser to access the DIR-120's configuration windows using a Web Browser. The default IP address is 192.168.0.1.	
LAN Subnet Mask for the DIR-120	This is the subnet mask used by the DIR-120, and will be used throughout your LAN. The default subnet mask is 255.255.255.0.	
Information you will need about your LAN or computer:		
DHCP Client status	Your DIR-120 Broadband Router is configured, by default, to be a DHCP server. This means that it can assign an IP address, subnet mask, and a default gateway address to computers on your LAN. The range of IP addresses the DIR-120 will assign are from 192.168.0.100 to 192.168.0.199. Your computer (or computers) needs to be configured to Obtain an IP address automatically (that is, they need to be configured as DHCP clients.)	Record your info here.

Introduction

This section provides a brief description of the Router, its associated technologies and a list of Router features.

Router Description and Operation

The D-Link DIR-120 Ethernet Broadband Router is designed to provide connectivity for your private Ethernet LAN plus one USB connected printer, to share an Internet connection via a broadband technology. The broadband connection may be in any common form including DSL or cable modems.

The Router is easy to install and use and take just a few minutes to set up. . The D-Link DIR-120 also incorporates many advanced features, typically found in more expensive routers. After completing the steps outlined in the **Quick Installation Guide** (included in your package) you will have the ability to share a single Internet connection as well as sharing information and resources such as files and printers.

The DIR-120 is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into an existing network.

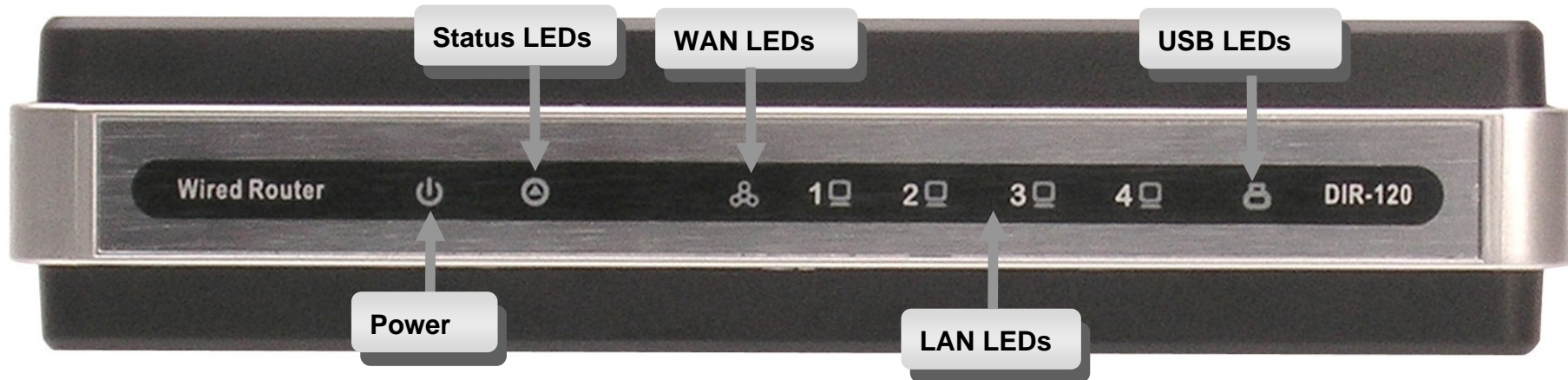
Router Features

The D-Link DIR-120 Broadband Router provides the following features:

- **Broadband Connection Sharing** - Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection.
- **Ethernet Switch** - Allows sharing of an Internet connection with multiple computers and devices.
- **USB port** – The USB 1.1 port is intended for printer sharing. *Note: The printer must support LPR protocol.*
- **VPN Supported** - Supports multiple and concurrent IPsec and PPTP pass-through sessions, so multiple users behind the DIR-120 can access corporate networks through various VPN clients more securely.
- **Advanced Firewall, MAC Filtering, and WebSite Filtering Features** - The Web-based user interface displays a number of advanced network management features including:
 - **Web-Based Management** - DIR-120 is configurable through any network computer's web browser using Netscape or Internet Explorer.
 - **Port Forwarding Supported** - Enables you to expose WWW, FTP and other services on your LAN to be accessible to Internet users.
 - **Special Application Supported** - Special applications requiring multiple connections, like Internet gaming, video conferencing, Internet telephony and so on. The DIR-120 can sense the application type and open a multi-port tunnel for it.
 - **DMZ Host Supported** - Allows a networked computer to be fully exposed to the Internet. This function is used when the Special Application feature is insufficient to allow an application to function correctly.

Front Panel

Place the Router in a location that permits an easy view of the LED indicators on the front panel.

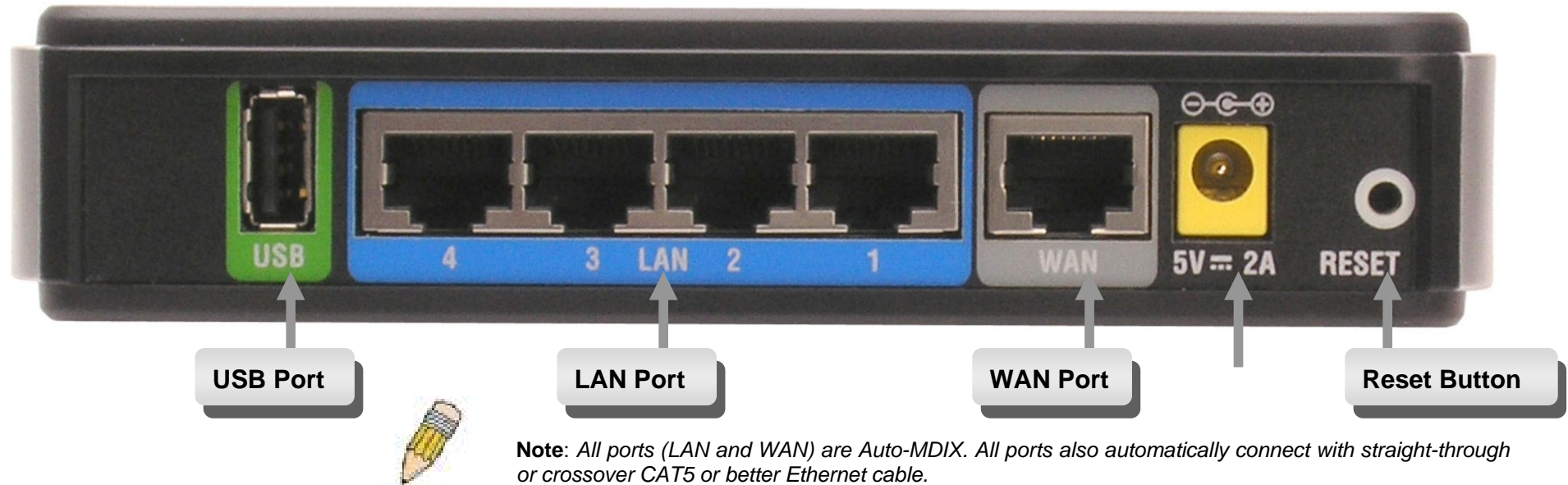


The LED indicators on the front panel include the **Power**, **Status**, **WAN**, and **LAN** for the Ethernet ports.

Power	Steady green light indicates the unit is powered on.
Status	This lights steady green when the device is first powered on, then blinks green when the system status is normal, that is, when the device is functioning properly. A prolonged steady green light indicates a problem.
WAN	Lights steady green when the WAN (Internet) connection is established and blinks green when there is activity on the WAN port.
LAN	Lights steady green when the LAN (Ethernet) connection is established and blinks green when there is activity on the corresponding LAN port.
USB (printer)	Lights steady green when the USB connection to a printer is established and blinks green when there is activity on the USB port.

Rear Panel

Connect the AC power adapter cord and network cables on the rear panel. The power switch and reset button are also located on the back of the device.



USB Port	The USB port can be used to share a printer. The printer must support the LPR protocol.
LAN Ports (1 – 4)	Use CAT5 or better Ethernet cabling with standard RJ-45 connectors to connect computers, switches, hubs, wireless access points or any Ethernet networking device. Use the LAN LED indicators on the front panel to check the Ethernet connection
WAN Port	This port is where the user is to connect the Ethernet cable from an outside source that is taking the connection from your local ISP.
Power Adapter	This is where the user will connect the power adapter, the other end of which will be connected to a power outlet.
Reset Button	Pressing this button will restore the DIR-120 to its factory default settings.

Connecting the Router

The Router provides the connection between two networks, a private Ethernet LAN and the public Internet (WAN). Choose a location for the Router where Ethernet devices can be connected to the LAN ports and the WAN port can be connected to the cable modem or DSL modem that provides the broadband Internet connection.

The Router, and all electrical devices should be protected from dust, water, moisture and heat. Make sure network cables, power adapters and power cords are placed safely out of the way so they do not create a tripping hazard. As with any electrical appliance, observe common sense safety procedures.

Place the Router on a shelf, desktop, or other stable platform. Ideally you should be able to view the LED indicators on the front panel.

Connect Router to Ethernet LAN

The Router can be connected to computers or other Ethernet devices using the four Ethernet LAN ports 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 capable of operating at speeds between 10~100Mbps, be sure that the device has auto-negotiation (NWay) enabled for the connecting port. Use standard CAT5 or better Ethernet cable with RJ-45 connectors. The Ethernet LAN ports are auto MDI-II/MDI-X so you can use straight-through or crossover Ethernet cabling.

The rules governing Ethernet cable lengths apply to the LAN to Router connection. Be sure the Ethernet cables connected to the LAN ports do not exceed 100 meters in length.

Power On Router

To power on the Router:

1. Insert the AC Power Adapter cord into the power receptacle located on the rear panel of the Router and plug the adapter into a suitable nearby power source. See the back panel illustration above to view the power receptacle.
2. The Power LED indicator will immediately light green and remain lit. The Status LED should light steady green initially and begin to blink after a few seconds.
3. If you have the Router connected to your network you can look at the Ethernet Link/Act LED indicators to make sure they have valid connections. The Router will attempt to establish the WAN connection, if the WAN line is connected and the connection is properly configured this should light up after several seconds.



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

Reset

To reset the system settings to factory defaults, please follow these steps:

1. Leave the device powered on, do not disconnect the power.
2. Press the reset button and hold (use a paper-clip). See the back panel illustration above to view the location of the reset button.
3. Keep the button pressed about 10 seconds.
4. Release the button.

The DIR-120 will then automatically reboot itself. Upon restarting the Router will load the factory default configuration settings including the default IP address 192.168.0.1 a subnet mask 255.255.255.0 and the DHCP server active.

Basic Router Configuration

The first time you setup the Router it is recommended that you configure the WAN connection using a single computer making sure that both the computer and the Router are not connected to the LAN. Once the WAN connection is functioning properly, you may continue to make changes to Router configuration including IP settings and DHCP setup. This chapter is concerned mainly with using your computer to configure the WAN connection. Instructions are also provided for basic Wireless LAN configuration. The following chapter describes how to set up the advanced features of the Router.

Configuration Summary

1. **Connect to the Router** To configure various settings used by the Router for Internet and Wireless LAN access it is first necessary to access the Router's management HTML-based interface. This is done using an ordinary web browser. Your computer must be able to "see" the Router before it can manage it using a browser. If the Router is in the same "neighborhood" or subnet as the Router, you should be able to access the management software. Therefore, you must first make sure your computer has IP settings that place it in the same subnet as the Router. 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 DHCP server will automatically enable your computer to use a browser to manage the Router. Appendix B, Configuring IP Settings on Your Computer, describes how to change the IP configuration for a computer running a Windows operating system to be a DHCP client. If you are running another operating system, make sure your computer is configured as a DHCP client so it can automatically obtain IP settings from the Router. Some operating systems will automatically select the best IP settings. Consult the user manual for the operating system (OS) if you are unsure.
2. **Configure the Internet (WAN) Connection** Most users will be able to complete this process using the **Setup Wizard**. The Setup Wizard can be launched once you have successfully connected with the Router's management software. There are different methods used to establish the WAN connection to the ISP's network and ultimately to the Internet. Your service provider should provide all the information needed to configure the WAN connection for Internet access.

Configuring IP Settings on Your Computer

In order to configure your system to receive IP settings from the Router it must first have the TCP/IP protocol installed. If you have an Ethernet port on your computer, it probably already has TCP/IP protocol installed. See Appendix B for instruction on how to configure Windows computers to be DHCP clients.

For computers running non-Windows operating systems, follow the instructions for your OS that configure the system to receive an IP address from the Router, that is, configure the system to be a DHCP client.

For computers using manually configured IP settings, make sure the IP address is on the same subnet as the Router. The computer should use an IP address in the range 192.168.0.2 to 192.168.0.254 with a subnet mask of 255.255.255.0.

Accessing the Configuration Manager

Now that your computer's IP settings allow it to communicate with the Router, you can access the configuration software.

To use the web-based management software, launch a suitable web browser and direct it to the IP address of the Router. Type in **http://** followed by the default IP address, **192.168.0.1** in the address bar of the browser. The URL in the address bar should read: **http://192.168.0.1**. Once entered, the user will be prompted to enter the username and password to access the Configuration Manager, as show below. A new window will appear and you will be prompted for a user name and password to access the web-based manager.



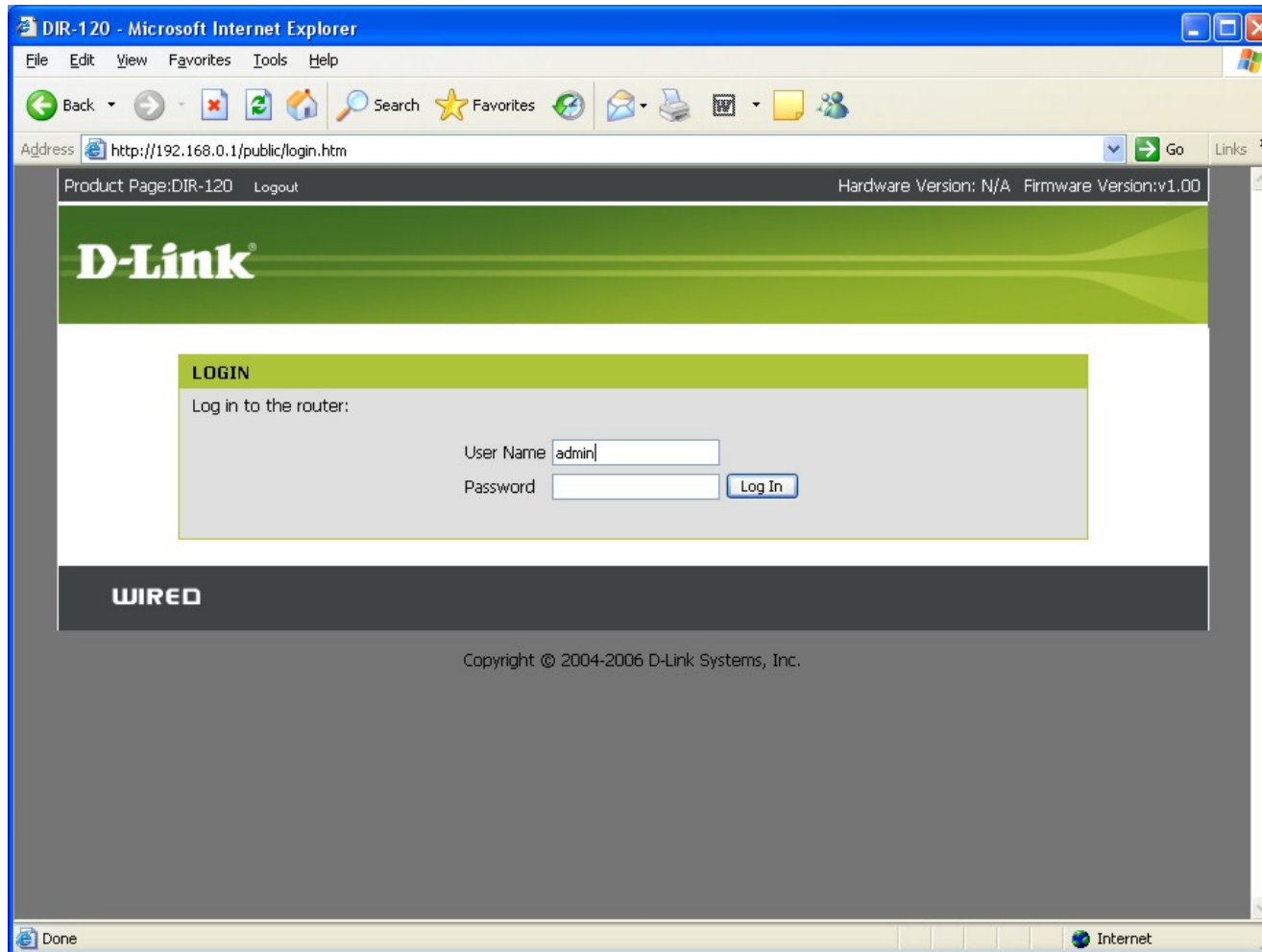
NOTE: *The wrong proxy server settings on your browser can prevent connection to the web manager. If you are having trouble connecting to the web interface of the Router, configure the proxy settings to bypass the proxy server or disable use of proxy servers and try to connect again.*

To check proxy setting for Windows Internet Explorer:

1. In Windows, click on the **Start** button, go to **Settings** and choose **Control Panel**.
2. In the **Control Panel** window, double-click on the **Internet Options** icon. (Alternatively you can access this **Internet Options** menu using the **Tools** pull-down menu in Internet Explorer.)
3. Click the **Connections** tab and click on the **LAN Settings** button.
4. Verify that the "Use proxy server" option is NOT checked. If it is checked, click in the checked box to deselect the option and click OK.

Login

Use the default user name “admin” and no password for first time setup. You should change the web-based manager access user name and password once you have verified that a connection can be established. The user name and password allows any PC within the same subnet as the Router to access the web-based manger.



Login menu

Web Manager

The Web Manager used for configuration uses directories to organize the various menus used to configure and monitor the Router. The first page that appears after logging in presents the Internet menu in the Setup menu directory.

The screenshot displays the D-Link Web Manager interface for the DIR-120 router. At the top, the D-Link logo is visible. Below it, a navigation bar contains tabs for 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The 'SETUP' tab is selected, leading to the 'INTERNET CONNECTION' menu. On the left side, there is a sidebar with a 'Language' dropdown menu set to 'English'. The main content area is titled 'INTERNET CONNECTION' and contains the following sections:

- INTERNET CONNECTION WIZARD**: A section with a 'Setup Wizard' button. A callout box points to this button with the text: "Click to launch **Setup Wizard** for Internet connection."
- MANUAL INTERNET CONNECTION OPTIONS**: A section with a 'Manual Configure' button.

Additional callouts include:

- A red box at the top right pointing to the 'SETUP', 'ADVANCED', 'TOOLS', and 'SUPPORT' tabs with the text: "Click to access menu directories: **Setup, Advanced, Tools and Support.**"
- A cyan box on the left pointing to the 'Language' dropdown with the text: "Select language used for web interface".

Internet Connection menu

Most users will be able to configure their Internet connection using the Setup Wizard. Click the **Setup Wizard** button on the first menu that appears after logging in to access the Setup Wizard. For printer setup, click the **Printer Setup** link and use the **Printer Setup Wizard** to configure the Router's USB printer connection. See **Printer Setup** for details.

Configure Internet Connection with the Setup Wizard

To use the **Setup Wizard**, open the **Setup** menu directory (the first page you see after logging in), and click the **SetupWizard** button to go to the Wizard menu.

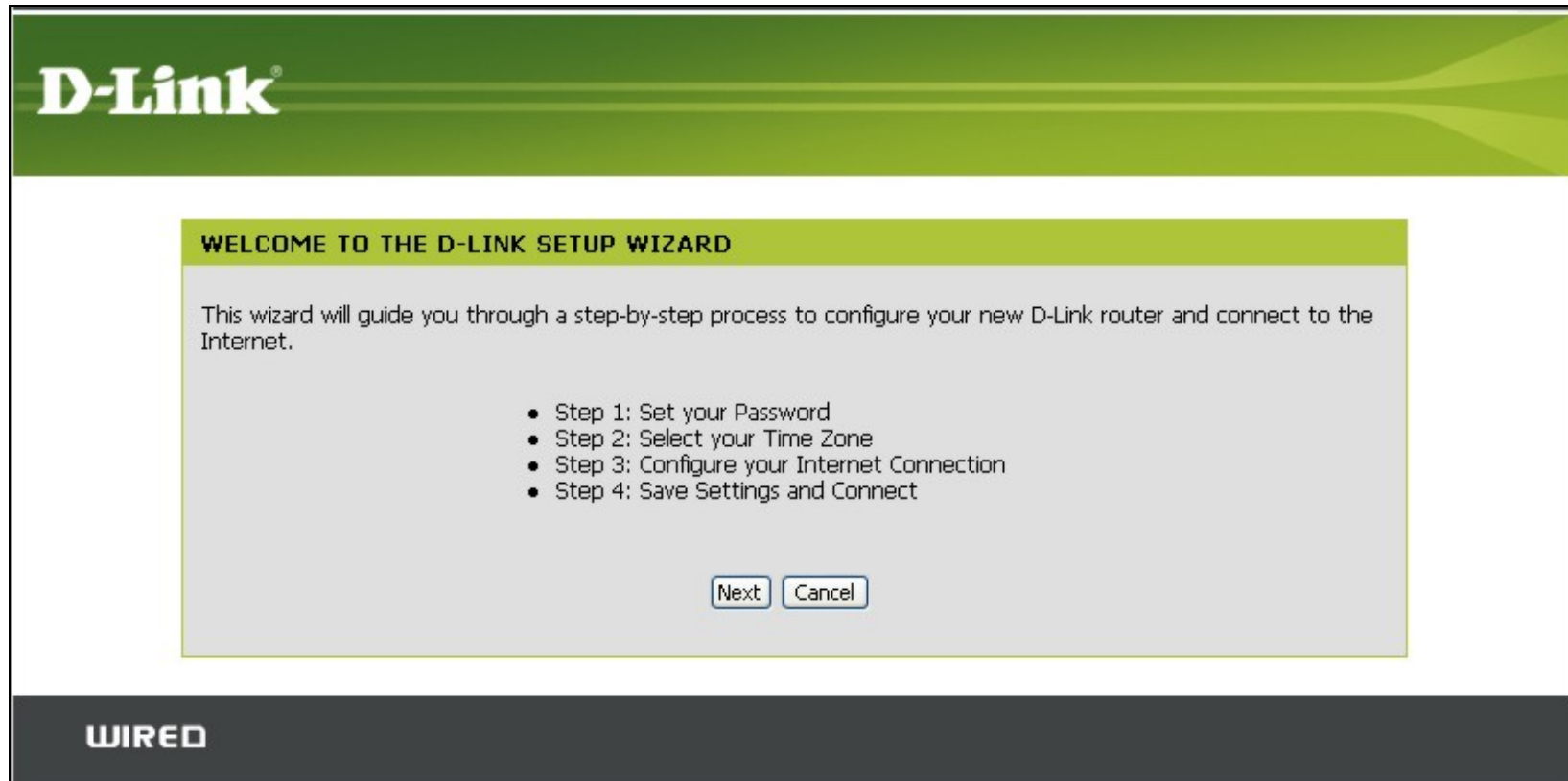


Wizard menu

Click the **Launch Internet Connection Setup Wizard** button to begin configuration on the Internet connection.

Setup Wizard – Welcome

The initial dialog box summarizes the setup process. Click the **Next** button to proceed. You may stop using the Setup Wizard at any time by clicking the **Cancel** button. If you exit the wizard you will return to the Internet Connection menu page without saving any of the settings changed during the process.



Setup Wizard welcome menu

Setup Wizard – Step 1

Type a new **Password** used for system administration in the space provided and the same password again in the **Confirm Password** space. This will be the new system password used to login. Remember that this password is case sensitive so it must be typed exactly as you are typing it here when you want to access the web manager. The user cannot change the system User Name used for login, **admin**. Click the **Next** button to proceed, click the **Prev** button to see the previous wizard menu.

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STEP 1: SET YOUR PASSWORD

By default, your new D-Link Router does not have a password configured for administrator access to the Web-based configuration pages. To secure your new networking device, please set and verify a password below:

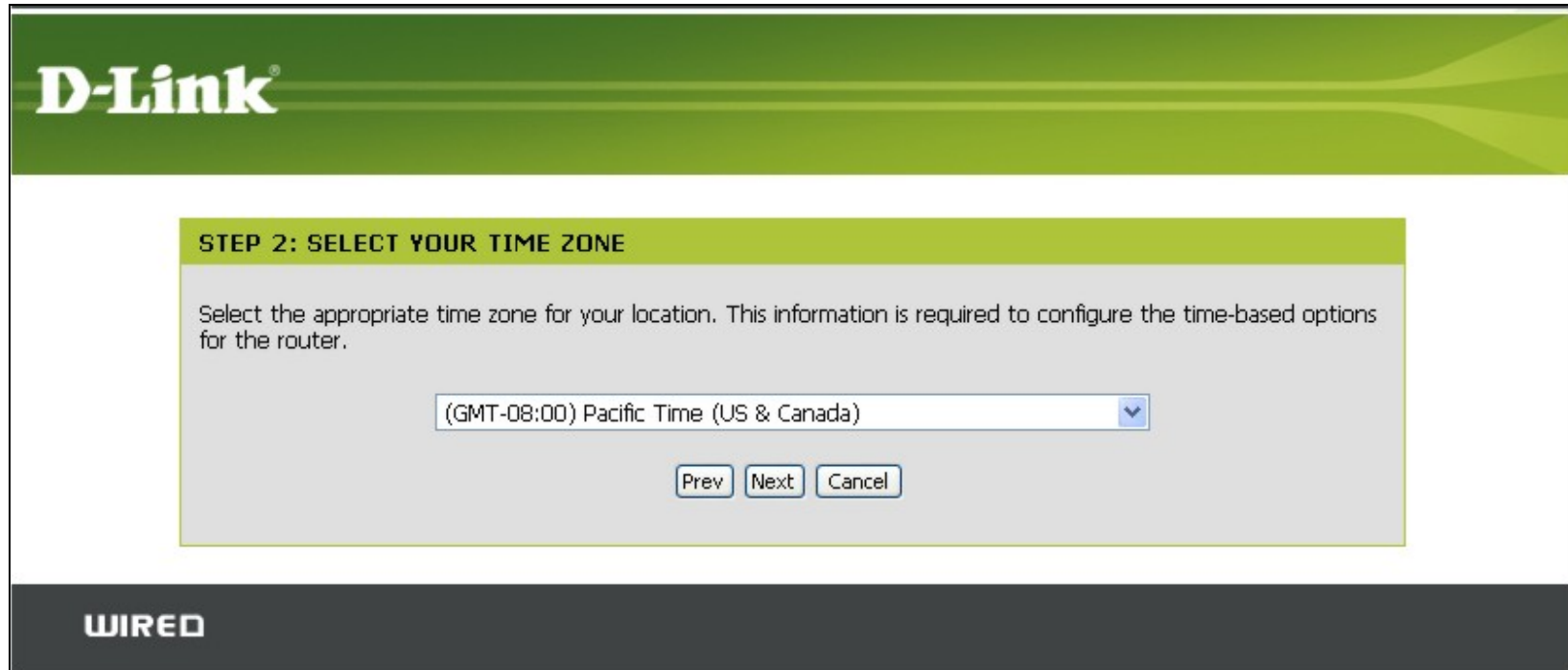
Password:

Confirm Password:

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Setup Wizard – Step 2

Choose the time zone you are in from the pull-down menu and click **Next**. This sets the system time used for the Router. If you wish to return to the previous menu during the setup process, click the **Prev** button.



The screenshot displays the D-Link Setup Wizard interface. At the top left is the D-Link logo. The main content area is titled "STEP 2: SELECT YOUR TIME ZONE" and contains the instruction: "Select the appropriate time zone for your location. This information is required to configure the time-based options for the router." Below this text is a dropdown menu showing "(GMT-08:00) Pacific Time (US & Canada)". At the bottom of the main content area are three buttons: "Prev", "Next", and "Cancel". A dark grey bar at the bottom of the screen contains the word "WIRED" in white capital letters.

Setup Wizard – Step 3

Choose the Internet connection type from the list of options presented in the Setup Wizard. Select the connection type appropriate for your service and click the **Next** button.

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STEP 3: CONFIGURE YOUR INTERNET CONNECTION

Please select the Internet connection type below:

- DHCP Connection (Dynamic IP Address)**
Choose this if your Internet connection automatically provides you with an IP Address. Most Cable Modems use this type of connection.
- Username / Password Connection (PPPoE)**
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this connection type of connection.
- Username / Password Connection (PPTP)**
Choose this option if you use Dial-Up Networking connection type of connection.
- Username / Password Connection (L2TP)**
Choose this option if you use Dial-Up Networking connection type of connection.
- Username / Password Connection (Bigpond)**
For some particular Internet service providers such as Australia region where is used this connection type of connection.
- Static IP Address Connection**
Choose this option if your Internet Service Provider provided you with IP Address information that has to be manually configured.

Prev Next Cancel

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Setup Wizard – Configure PPPoE Connection

For PPPoE connections, select the **Address Mode** Dynamic IP or Static IP, type in the **Username** and **Password** used to identify and verify your account to the ISP. Retype the password again and if necessary, type a **Service Name** or domain name. For Static IP address mode, type the IP Address assigned to your account. Your ISP should provide this IP address along with other account information. Click **Next** to continue.

SET USERNAME AND PASSWORD CONNECTION (PPPOE)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. If you do not have this information, please contact your ISP.

Address Mode: Dynamic IP Static IP

User Name:

Password:

Confirm Password:

Service Name: (Optional)

Note: You may also need to provide a Service Name. If you do not have or know this information, please contact your ISP.

SET USERNAME AND PASSWORD CONNECTION (PPPOE)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. If you do not have this information, please contact your ISP.

Address Mode: Dynamic IP Static IP

IP Address:

User Name:

Password:

Confirm Password:

Service Name: (Optional)

Note: You may also need to provide a Service Name. If you do not have or know this information, please contact your ISP.

PPPoE Connection Settings

Address Mode	This determines how an IP address is assigned to the Internet connection. Choose Dynamic IP if the PPPoE Internet connection is assigned automatically (and might change). Choose Static IP if the PPPoE Internet connection is a single IP address that will not change. The ISP should give this IP address to you.
User Name	The PPPoE user name used to establish the identity of your ISP account. Typically this is in the form user1234@isp.com - some users may be allowed to select a personalized user name for their account.
Password	Enter the password used to verify the identity of your account. Your ISP may have provided this to you or you might have chosen a personalized password that is easy to remember. The password is case-sensitive, so type the characters exactly as given to you.
Retype Password	Retype the password exactly as entered in the previous field.
Service Name	Enter the Service Name provided by your ISP if necessary (optional).

Setup Wizard – Configure Dynamic IP Address Connection

For Dynamic IP Address connections, you may want to copy the MAC address of your Ethernet adapter to the Router. Some ISPs use the unique MAC address of your computer’s Ethernet adapter for identification and for IP address assignment (DHCP) when you first access their network. This can prevent the Router (which has a different MAC address) from being allowed access to the ISP’s network (and the Internet). To clone the MAC address of your computer’s Ethernet adapter, click the **Clone MAC Address** button. Click **Next** to continue.

DHCP CONNECTION (DYNAMIC IP ADDRESS)

To set up this connection, please make sure that you are connected to the D-Link Router with the PC that was originally connected to your broadband connection. If you are, then click the Clone MAC button to copy your computer’s MAC Address to the D-Link Router.

MAC Address: - - - - - (Optional)

Host Name:

Note: You may also need to provide a Host Name. If you do not have or know this information, please contact your ISP.

DHCP Connection Settings

Host Name	The Host Name is optional but may be required by some ISPs.
MAC	If you clone the MAC address of your computer to the Router, the MAC address will appear here. This will be the MAC address recorded by the ISP’s server when the connection is initiated.
Clone MAC Address	The default MAC address is set to the Internet’s physical interface MAC address on the Broadband Router. You can use the “Clone Your PC’s MAC Address” button to copy the MAC address your computer’s Ethernet Card to the Router.

Setup Wizard – Configure Static IP Address Connection

For Static IP Address connection types, you must type in the **IP Address**, **Subnet Mask**, **Gateway Address**, **Primary DNS Address** and **Secondary DNS Address** (optional). Your ISP should provide this information to you. Click **Next** to continue.

SET STATIC IP ADDRESS CONNECTION

To set up this connection you will need to have a complete list of IP information provided by your Internet Service Provider. If you have a Static IP connection and do not have this information, please contact your ISP.

IP Address:

Subnet Mask:

Gateway Address:

Primary DNS Address:

Secondary DNS Address:

Static IP Connection Settings

IP Address	The public or global IP address provided by your ISP.
Subnet Mask	The Subnet Mask used for the Internet. This should also be provided by your ISP
Gateway Address	The IP address of the gateway router owned by your ISP. Your ISP should provide this IP address.
Primary DNS Address	The primary DNS (Domain Name Server) IP address provided by your ISP
Secondary DNS Address	This is an optional DNS Address entry to be used if the primary DNS Fails.

Setup Wizard – Configure PPTP Client Connection

The Router supports Point-to-Point Tunneling Protocol (PPTP) for the Internet connection. PPTP is also used for Virtual Private Networks (VPN). Some ISPs use PPTP to establish a client-to-server connection to their network, and ultimately to the Internet. If your Internet connection comes through a PPTP client connection to a server owned by your ISP, the IP settings and user account information must be pre-configured on the remote server before network access is granted.

To configure the PPTP client connection, enter the IP and account information for the Router. Your ISP will give this information to you if you are establishing a PPTP connection to the ISP. First chose the **Address Mode** for the PPTP connection. Static IP address mode requires IP address information to be entered.

For Dynamic IP Address Mode, enter the **PPTP Server IP Address**, this is the IP address of the ISP server. The PPTP **User Name** information is used to identify the PPTP client. The case-sensitive PPTP **Password** is used to verify the identity of the PPTP client. Type the password a second time in **Confirm Password**.

For **Static IP** Address Mode, enter the **PPTP IP Address** and **PPTP Subnet Mask** for the local PPTP Client connection. This will be the IP address for the PPTP client and all other devices connecting through the DIR-120. The **Server IP** address is the IP address of the ISP server. Under most circumstances, you will also need to enter a **PPTP Gateway** IP address. The PPTP **User Name** information is used to identify the PPTP client. The case-sensitive PPTP **Password** is used to verify the identity of the PPTP client. Type the password a second time in **Confirm Password**.

SET USERNAME AND PASSWORD CONNECTION (PPTP)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need PPTP IP adress. If you do not have this information, please contact your ISP.

Address Mode: Dynamic IP Static IP

PPTP IP Address:

PPTP Subnet Mask:

PPTP Gateway IP Address:

**PPTP Server IP Address
(may be same as gateway):**

User Name:

Password:

Confirm Password:



NOTE: *The broadband device used for your Cable or ADSL network connection must support PPTP pass-through so the VPN session can be established.*

Click **Next** to continue.

Setup Wizard – Configure PPTP Client Connection

The Router supports Point-to-Point Tunneling Protocol (L2TP) for the Internet connection. L2TP is also used for Virtual Private Networks (VPN). Some ISPs use L2TP to establish a client-to-server connection to their network, and ultimately to the Internet. If your Internet connection comes through a L2TP client connection to a server owned by your ISP, the IP settings and user account information must be pre-configured on the remote server before network access is granted.

To configure the L2TP client connection, enter the IP and account information for the Router. Your ISP will give this information to you if you are establishing a L2TP connection to the ISP. First chose the **Address Mode** for the L2TP connection. Static IP address mode requires IP address information to be entered.

For Dynamic IP Address Mode, enter the **L2TP Server IP Address**, this is the IP address of the ISP server. The L2TP **User Name** information is used to identify the L2TP client. The case-sensitive L2TP **Password** is used to verify the identity of the L2TP client. Type the password a second time in **Confirm Password**.

For **Static IP** Address Mode, enter the **L2TP IP Address** and **L2TP Subnet Mask** for the local L2TP Client connection. This will be the IP address for the L2TP client and all other devices connecting through the DIR-120. The **Server IP** address is the IP address of the ISP server. Under most circumstances, you will also need to enter a **L2TP Gateway** IP address. The L2TP **User Name** information is used to identify the L2TP client. The case-sensitive L2TP **Password** is used to verify the identity of the L2TP client. Type the password a second time in **Confirm Password**.

SET USERNAME AND PASSWORD CONNECTION (L2TP)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need L2TP IP adress. If you do not have this information, please contact your ISP.

Address Mode: Dynamic IP Static IP

L2TP IP Address:

L2TP Subnet Mask:

L2TP Gateway IP Address:

L2TP Server IP Address (may be same as gateway):

User Name:

Password:

Confirm Password:



NOTE: *The broadband device used for your Cable or ADSL network connection must support PPTP pass-through so the VPN session can be established.*

Click **Next** to continue.

Setup Wizard – Configure Big Pond Connection

This selection is for users having Big Pond Cable as their ISP. Enter the account information, as provided to you by your ISP.

SET USERNAME AND PASSWORD CONNECTION (BIGPOND)

To set up this connection you will need to have a Username and Password from your Internet Service Provider. You also need BigPond IP address. If you do not have this information, please contact your ISP.

Auth Server:

Bigpond User Name:

Password:

Confirm Password:

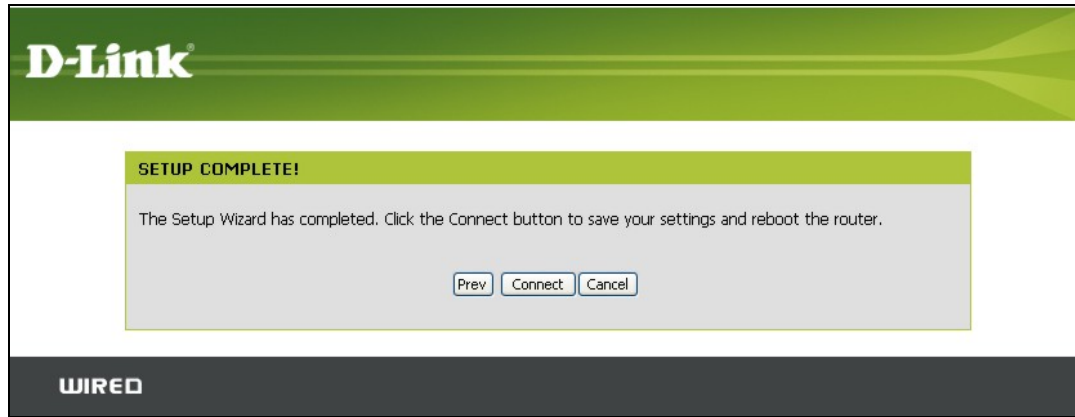
Click **Next** to continue.

Big Pond Connection Settings

Auth Server	Enter the name of the Authentication Server as provided to you by BigPond.
BigPond User Name	The account name of the account that has been assigned to you by BigPond.
BigPond Password	The password of the account that was supplied to you by BigPond.
BigPond Verify Password	Retype the password that was entered in the BigPond Password field. Ensure that these two passwords are identical or an error will occur.

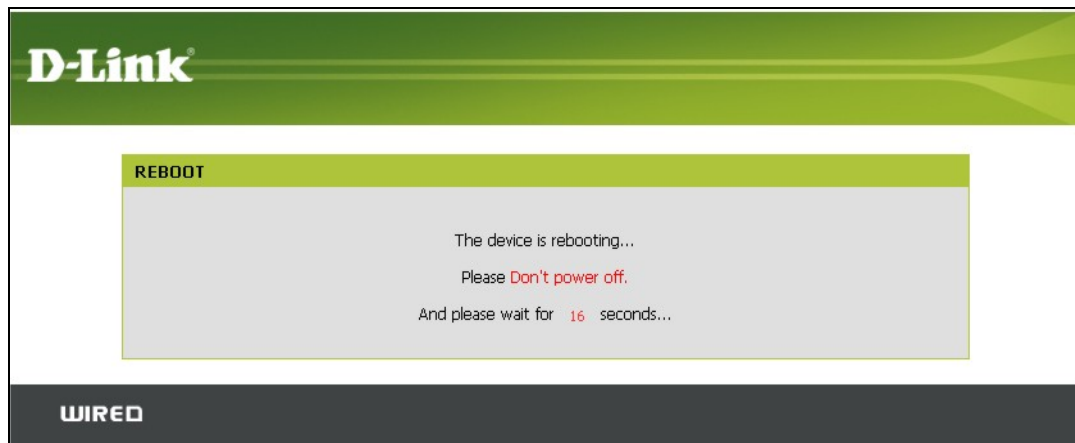
Setup Wizard – Complete Setup

Finally you can confirm that the setup process is completed. If you are satisfied that you have entered all the necessary information correctly, click the **Connect** button to save the new configuration settings and restart the Router. If you need to change settings from a previous menu, click the **Back** button.



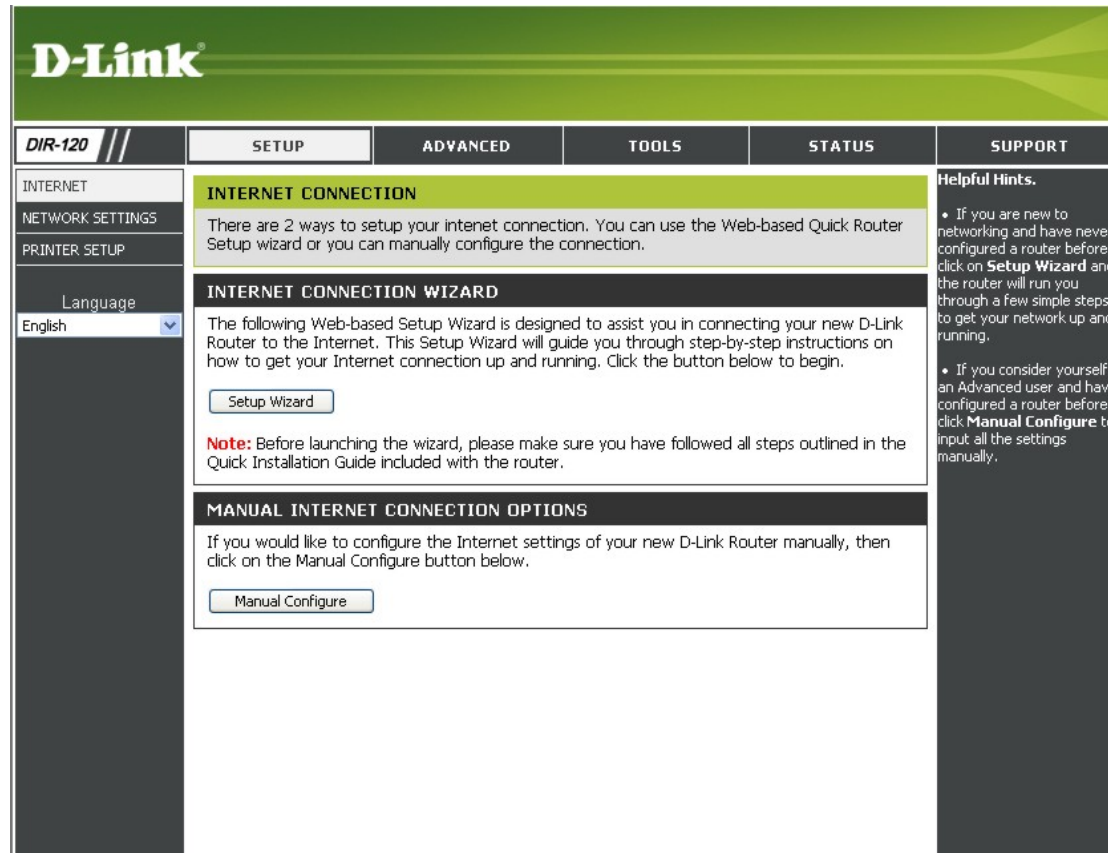
DO NOT TURN THE ROUTER OFF WHILE IT IS RESTARTING.

While the Router is rebooting a message appears in the web page informing you that the Router is restarting. When it has completed the restart, the Status menu will be displayed, it should not be necessary to login.



Configure Internet Connection Manually

To configure the Router’s basic Internet configuration settings without running the Setup Wizard, click the **Internet** menu link in the left hand panel of the Setup menu directory, then click the Manual Configuration button under the heading “Manual Internet Connection Options”.



Setup – Internet menu

Click the **Manual Configure** button to access **Internet** connection menus. Each connection type has a different Internet connection menu. Follow the instruction for the type of connection used for your ADSL Internet connection.

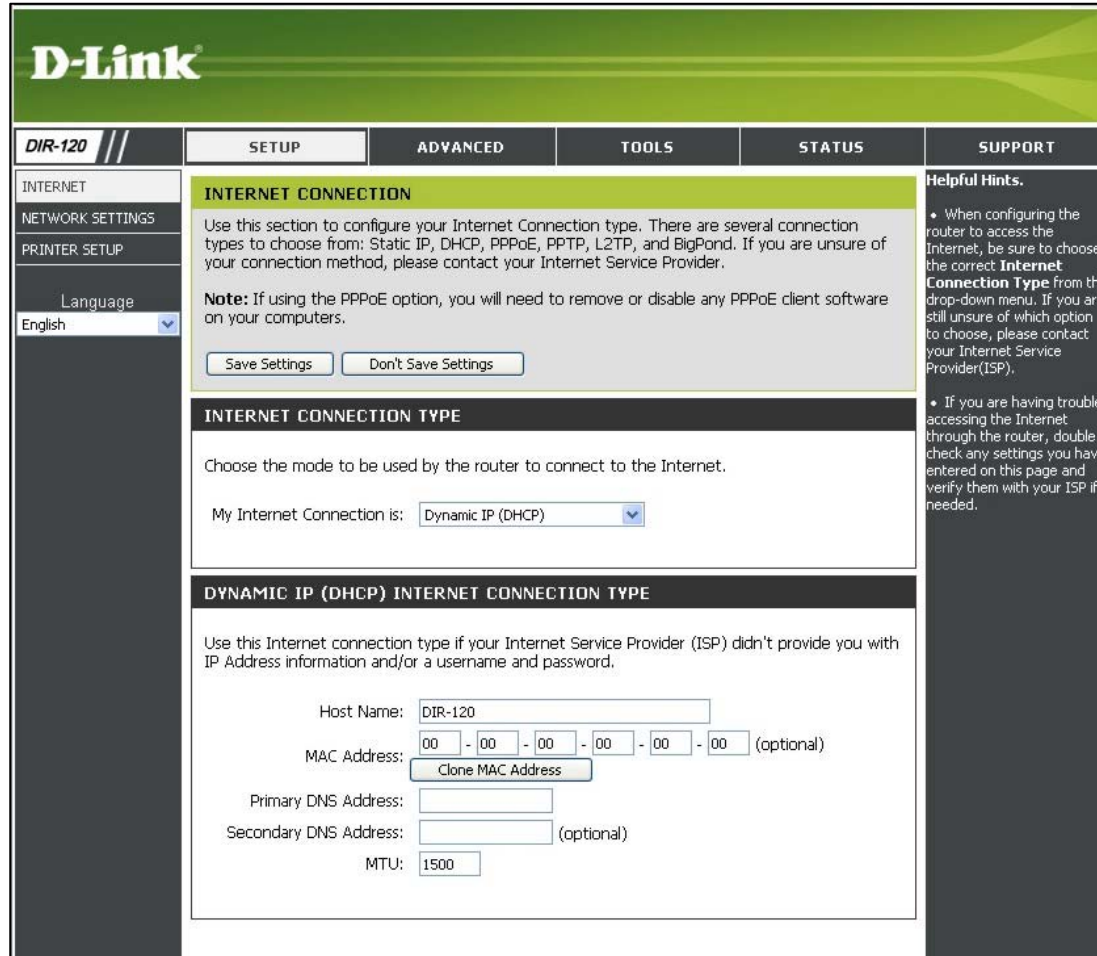
Select Internet Connection Type

The default Internet Connection menu displays the Dynamic IP (DHCP) Internet Connection Type menu. To select another connection type, use the pull-down **My Internet Connection is:** menu to select the connection type you wish to configure. The menu configuration parameters in the display will change according to the connection option you choose. The available Internet connection types are:

- Static IP
- Dynamic IP (DHCP)
- PPPoE (Username / Password)
- PPTP (Username / Password)
- L2TP (Username / Password)
- BigPond (Australia)

Each connection type is discussed in its own section below.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.



Default Internet Connection menu (Dynamic IP)

Dynamic IP (DHCP) Internet Connection

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.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.

DYNAMIC IP (DHCP) INTERNET CONNECTION TYPE

Use this Internet connection type if your Internet Service Provider (ISP) didn't provide you with IP Address information and/or a username and password.

Host Name:

MAC Address: - - - - - (optional)

Primary DNS Address:

Secondary DNS Address: (optional)

MTU:

Dynamic IP Internet Connection configuration menu

Host Name	Enter the Host Name provided if necessary (optional).
MAC Address / Clone MAC Address	This field will instruct the user to enter the Media Access Control (MAC) address of the Ethernet Card of your computer, if instructed to do so by your ISP. To quickly accomplish this, click the Clone MAC Address button, which will automatically copy the MAC address of your Ethernet card and enter it into the space provided, which will replace the MAC address of the router.
MTU	The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1492 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic throughput.
Primary DNS Address	This entry is for the IP address of your primary domain name server, which should also be provided to you by your ISP. The router will first try the Primary DNS Address to resolve a website's URL IP address. If this IP address fails, the router will then try the Secondary DNS Address .
Secondary DNS Address	The IP address of the secondary domain name server will be used to resolve a website's URL IP address if the Primary DNS Address fails. The information in this field should also be provided by your ISP.

Static IP Internet Connection

Your ISP should provide IP settings information needed for your public IP address and other settings using the Static IP connection type.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.

STATIC IP ADDRESS INTERNET CONNECTION TYPE

Enter the static address information provided by your Internet Service Provider (ISP).

IP Address: (assigned by your ISP)

Subnet Mask:

ISP Gateway Address:

MAC Address: - - - - - (optional)

Primary DNS Address:

Secondary DNS Address: (optional)

MTU:

Static IP Internet Connection configuration menu

IP Address	Type in the public or global IP address provided by your ISP.
Subnet Mask	Type the Subnet Mask used for the public network interface.
ISP Gateway Address	Type the IP address of the gateway router (normally) owned by your ISP.
MAC Address / Clone MAC Address	<p>MAC Address - If you clone the MAC address of your computer to the Router, the MAC address will appear here. This will be the MAC address presented to the ISP's server when the connection is initiated.</p> <p>Clone MAC Address - The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the "Clone MAC Address" button to copy the MAC address your computer's Ethernet Card to the Router.</p>
Primary DNS Address/ Secondary DNS Address	Type in the IP address of the primary DNS and secondary server.

PPPoE

PPP or Point-to-Point protocol is a standard method of establishing a network connection/session between networked devices. Different forms of PPP include PPPoA and PPPoE (discussed below) involve an authentication process that requires a username and password to gain access to the network. PPPoE (PPP over Ethernet), as described in RFC 2516, is a method of using PPP through the Ethernet network.

To configure the connection for PPPoE, perform the steps listed below. Some of the settings do not need to be changed the first time the device is set up, but can be changed later if you choose. The information that is to be provided in this window must be given to you by your ISP and must be carefully configured. Any small discrepancy will send the wrong message to your ISP's server and inhibit your connection.

There are two ways to configure the PPOE connection on the router, one is for a **Dynamic PPPoE** configuration, which means the router will implement some settings automatically through DHCP, such as the router's IP address and the default gateway. The other is through a **Static PPPoE** connection, in which the user must configure the IP address and the DNS addresses automatically.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.

PPPOE

Enter the information provided by your Internet Service Provider (ISP).

Dynamic PPPoE Static PPPoE

User Name:

Password:

Confirm Password:

Service Name: (optional)

IP Address:

MAC Address: - - - - - (optional)

Clone MAC Address

Primary DNS Address:

Secondary DNS Address: (optional)

Maximum Idle Time: Minutes

MTU:

Connect mode select: Always-on Manual Connect-on demand

PPPoE Internet Connection configuration menu

The table below describes the PPPoE Internet Connection menu settings.

User Name	The user name supplied to you by your ISP.
Password	The password supplied to you by your ISP.
Retype Password	Retype the password entered in the Password field.
Service Name	Enter the service name supplied to you by your ISP, if required.
IP Address	Enter the IP address given to you by your ISP. This field is only to be completed if the Static PPPoE button is selected.
MAC Address	This field requires the user to enter the Media Access Control (MAC) address of the Ethernet Card of your computer, if instructed to do so by your ISP. To quickly accomplish this, click the Clone MAC Address button, which will automatically copy the MAC address of your Ethernet card and enter it into the space provided, which will replace the MAC address of the router.
Primary DNS Address	This entry is for the IP address of your primary domain name server, which should also be provided to you by your ISP. The router will first try the Primary DNS Address to resolve a website's URL IP address. If this IP address fails, the router will then try the Secondary DNS Address. This field is only to be completed if the Static PPPoE button is selected.
Secondary DNS Address	The IP address of the secondary domain name server will be used to resolve a website's URL IP address if the Primary DNS Address fails. The information in this field should also be provided by your ISP and is only to be completed if the Static PPPoE button is selected.
Maximum Idle Time	A value of 0 means that the PPP connection will remain connected. If your network account is billed according to the amount of time the Router is actually connected to the Internet, enter an appropriate Idle Time value (in seconds). This will disconnect the Router after the WAN connection has been idle for the amount of time specified. The default value = 5.
MTU	This field refers to the Maximum Transfer Unit, which is the maximum size of a packet, in bytes, that will be accepted by the router. The default setting is 1500 bytes. This field should not be altered unless instructed by your ISP.
Connect Mode Select	This function, with Connect-on-demand selected, will allow the router to connect any workstation on your LAN to the Internet upon request. If this function is set at Always-on , no request from the workstation will be needed to connect to the Internet. If Manual is selected, it will be necessary for the workstation on the LAN to manually connect to the Internet through this router.

PPTP

If your ISP is using PPTP to provide your Internet connection, the ISP will give you the necessary information to configure the Router.

There are two ways to enable the router to become a PPTP client, one is through assigning the router an IP address dynamically, which means that the DHCP protocol will be implemented by the Router to automatically configure the IP settings. The user may input the IP settings manually by choosing the Static IP option above the configuring area.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.

PPTP

Enter the information provided by your Internet Service Provider (ISP).

Dynamic IP Static IP

Server IP/Name:

PPTP Account:

PPTP Password:

PPTP Confirm Password:

Maximum Idle Time: Minutes

MTU:

Connect mode select: Always-on Manual Connect-on demand

PPTP Internet Connection configuration menu

DIR-120 Ethernet Broadband Router

To configure the router to be a PPTP client, complete the following fields and click the **Save Settings** button.

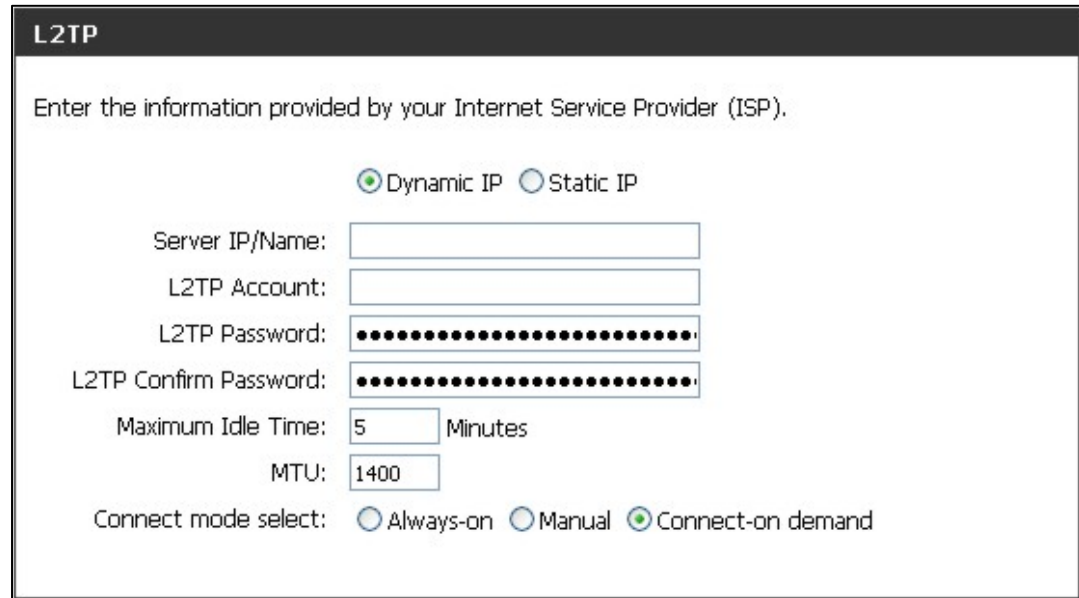
IP Address	Type the IP address supplied by your ISP.
Subnet Mask	Type the Subnet mask supplied by your ISP.
Gateway	The gateway IP address is used provide access to resources outside your IP Subnet or ISP's network. Type the gateway IP address given to you by your ISP.
DNS	This entry is for the IP address of your primary domain name server, which should also be provided to you by your ISP.
Server IP/Name	Enter the Server IP address for this protocol into this field. This is the IP address of the server computer that will be used, along with your computer, to create the Virtual Private Network. This field must be completed for both the Dynamic IP and Static IP options
PPTP Account	Enter the PPTP account name, provided to you by your ISP, here.
PPTP Password	Enter your password for this PPTP account here, as stated to you by your ISP.
PPTP Confirm Password	Retype the password entered in the PPTP Password field.
Maximum Idle Time	A value of 0 in this field means that the PPTP connection will remain connected. If your network account is billed according to the amount of time the Router is actually connected to the Internet, enter an appropriate Idle Time value (in seconds). This will disconnect the Router after the WAN connection has been idle for the amount of time specified. The default value = 5.
MTU	This field refers to the Maximum Transfer Unit, which is the maximum size of a packet, in bytes, that will be accepted by the router. The default setting is 1500 bytes. This field should not be altered unless instructed by your ISP.
Connect Mode Select	This function, with Connect-on-demand selected, will allow the router to connect any workstation on your LAN to the Internet upon request. If this function is set at Always-on , no request from the workstation will be needed to connect to the Internet. If Manual is selected, it will be necessary for the workstation on the LAN to manually connect to the Internet through this router.

L2TP

If your ISP is using L2TP to provide your Internet connection, the ISP will give you the necessary information to configure the Router.

There are two ways to enable the router to become a L2TP client, one is through assigning the router an IP address dynamically, which means that the DHCP protocol will be implemented by the Router to automatically configure the IP settings. The user may input the IP settings manually by choosing the Static IP option above the configuring area.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.



L2TP

Enter the information provided by your Internet Service Provider (ISP).

Dynamic IP Static IP

Server IP/Name:

L2TP Account:

L2TP Password:

L2TP Confirm Password:

Maximum Idle Time: Minutes

MTU:

Connect mode select: Always-on Manual Connect-on demand

L2TP Internet Connection configuration menu

DIR-120 Ethernet Broadband Router

To configure the router to be a L2TP client, complete the following fields and click the **Save Settings** button.

IP Address	Type the IP address supplied by your ISP.
Subnet Mask	Type the Subnet mask supplied by your ISP.
Gateway	The gateway IP address is used provide access to resources outside your IP Subnet or ISP's network. Type the gateway IP address given to you by your ISP.
DNS	This entry is for the IP address of your primary domain name server, which should also be provided to you by your ISP.
Server IP/Name	Enter the Server IP address for this protocol into this field. This is the IP address of the server computer that will be used, along with your computer, to create the Virtual Private Network. This field must be completed for both the Dynamic IP and Static IP options
L2TP Account	Enter the L2TP account name, provided to you by your ISP, here.
L2TP Password	Enter your password for this L2TP account here, as stated to you by your ISP.
L2TP Confirm Password	Retype the password entered in the L2TP Password field.
Maximum Idle Time	A value of 0 in this field means that the L2TP connection will remain connected. If your network account is billed according to the amount of time the Router is actually connected to the Internet, enter an appropriate Idle Time value (in seconds). This will disconnect the Router after the WAN connection has been idle for the amount of time specified. The default value = 5.
MTU	This field refers to the Maximum Transfer Unit, which is the maximum size of a packet, in bytes, that will be accepted by the router. The default setting is 1500 bytes. This field should not be altered unless instructed by your ISP.
Connect Mode Select	This function, with Connect-on-demand selected, will allow the router to connect any workstation on your LAN to the Internet upon request. If this function is set at Always-on , no request from the workstation will be needed to connect to the Internet. If Manual is selected, it will be necessary for the workstation on the LAN to manually connect to the Internet through this router.

L2TP

If your ISP is using L2TP to provide your Internet connection, the ISP will give you the necessary information to configure the Router.

There are two ways to enable the router to become a L2TP client, one is through assigning the router an IP address dynamically, which means that the DHCP protocol will be implemented by the Router to automatically configure the IP settings. The user may input the IP settings manually by choosing the Static IP option above the configuring area.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.

BIGPOND

Enter the information provided by your Internet Service Provider (ISP).

User Name:

Password:

Confirm Password:

Auth Server:

Login Server IP/Name: (optional)

MAC Address: (optional)

BigPond Internet Connection configuration menu

User Name	The user name supplied to you by your ISP.
Password	The password supplied to you by your ISP.
Confirm Password	Retype the password entered in the Password field.
Auth Server	Toggle the Authentication Server between <i>sm-server</i> and <i>dce-server</i> .
Login Server IP/Name	Enter the IP address given to you by your ISP. This field is optional.
MAC Address	This field requires the user to enter the Media Access Control (MAC) address of the Ethernet Card of your computer, if instructed to do so by your ISP. To quickly accomplish this, click the Clone MAC Address button, which will automatically copy the MAC address of your Ethernet card and enter it into the space provided, which will replace the MAC address of the router.

Network (LAN IP) Settings

Use this window to configure Router Settings and DHCP Server Settings. When you are finished, click the **Save Settings** button at the top of the window.

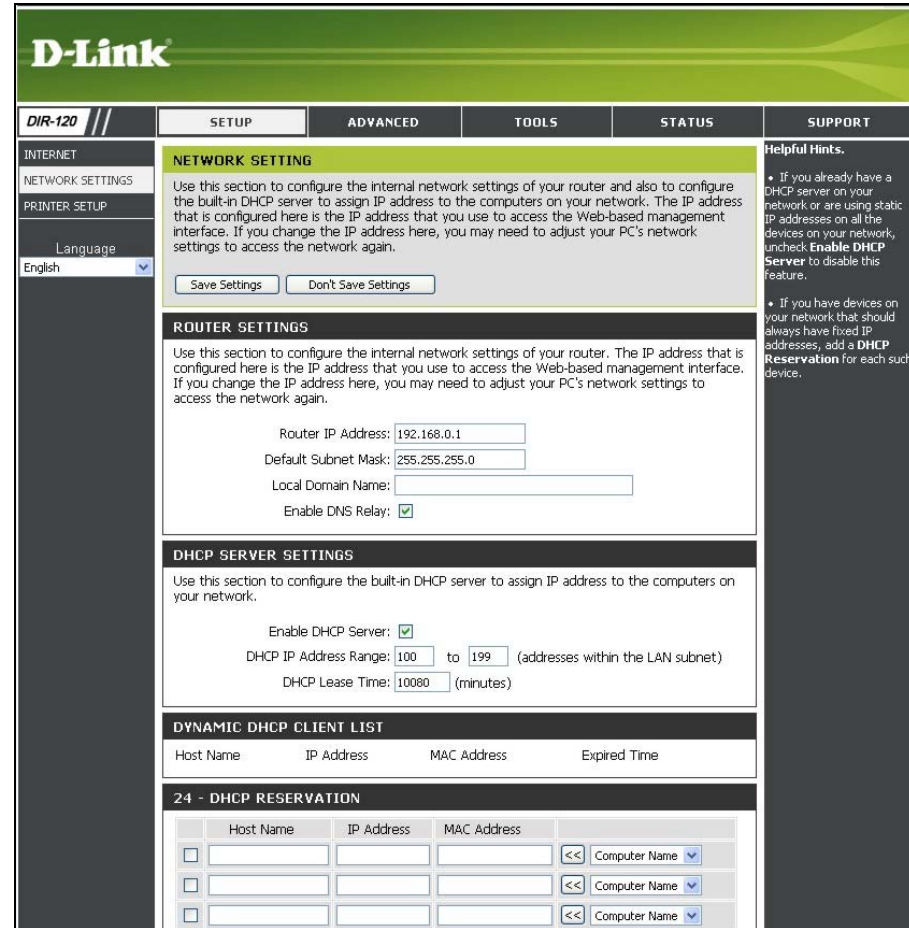
Use the Network Settings menu to configure the LAN IP settings, DHCP server status and DHCP static IP addresses for the LAN. Any active DHCP clients are listed here.

After configuration of Internet and local network IP settings is complete, click the **Save Settings** button to save the configuration changes made and reboot the Router.

Router Settings

This section is used to configure the internal network settings of the Router. This IP address is private to your internal network and cannot be seen on the Internet. The default **Router IP Address** is 192.168.0.1 and the **Default Subnet Mask** is 255.255.255.0. The **Local Domain Name** is for the local Domain set on your network, if you have given it a name previously. This field is for your personal use and unnecessary for proper configuration of this window.

In addition, the Router can be configured to relay DNS from your ISP or another available service to workstations on your LAN. When **Enable DNS Relay** is checked, the Router will accept DNS requests from hosts on the LAN and forward them to the ISP (or alternative) DNS servers. Alternatively, you may also disable the DNS relay and configure hosts on your LAN to use DNS servers directly. Most users who are using the Router for DHCP service on the LAN and are using DNS servers on the ISP's network, will leave DNS relay enabled.



Network Setting menu

DHCP Server Settings

Dynamic Host Configuration Protocol (DHCP) allows the gateway to automatically obtain the IP address from a DHCP server on the service provider'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. If DHCP is not enabled on the Router, it is necessary for the user to assign a static IP address to each computer on your LAN.

To set up DHCP for your LAN, first enable the Router as a DHCP server by clicking the **Enable DHCP Server** radio button in the window above. The next step is to set a range of IP addresses that you wish to allot to the devices on your LAN by entering a starting and ending number of addresses within the LAN subnet in the **DHCP IP Address Range**. This may be in a range from 2 to 254 (192.168.0.2 – 192.168.0.254). Computers on your LAN will have an IP address within this range then automatically assigned to them. Finally, choose the **DHCP Lease Time**, which is the time the Server will set for devices using DHCP to re-request an IP Address. Clients authorized for DHCP will be listed in the Dynamic DHCP Client List near the bottom of the window. Click **Save Settings** to implement information set in this table. The DHCP Server is enabled by default.

DHCP may also be statically configured as well. This method allows the router to assign the same IP address information to a specific computer on the network, defined by its MAC address. This computer will get the same DHCP implemented IP address information every time the computer is turned on and this IP address will be specific to that computer's IP address on the local network. No other computer can be assigned this address. This is useful for computers on the LAN that are hosting applications such as HTTP or FTP. First, the user must enter the **Host Name** and the **IP Address** for that computer in the spaces provided. Next, the user must enter the **MAC Address** of the computer in the space provided. Click **Save Settings** to implement these static settings.

DHCP SERVER SETTINGS				
Use this section to configure the built-in DHCP server to assign IP address to the computers on your network.				
Enable DHCP Server: <input checked="" type="checkbox"/>				
DHCP IP Address Range: <input type="text" value="100"/> to <input type="text" value="199"/> (addresses within the LAN subnet)				
DHCP Lease Time: <input type="text" value="10080"/> (minutes)				
DYNAMIC DHCP CLIENT LIST				
Host Name	IP Address	MAC Address	Expired Time	
20 - DHCP RESERVATION				
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<< Computer Name v
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<< Computer Name v
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<< Computer Name v
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<< Computer Name v
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<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<< Computer Name v

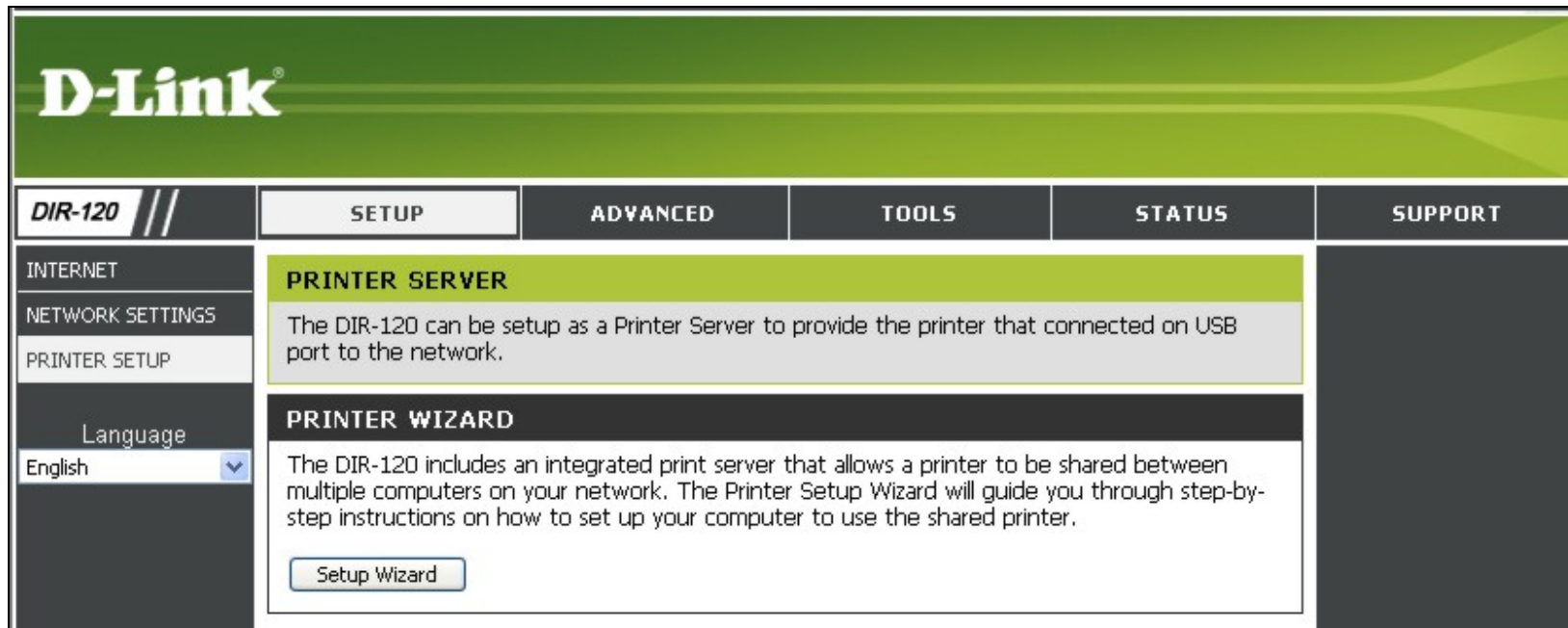
DHCP Settings for LAN configuration menu

Printer Setup

Use the Printer Setup Wizard to configure the Router's USB Printer connection. To establish the connection to a USB equipped printer, click the Printer Setup link to view the Printer Setup Wizard launch menu. Follow the instructions below to install the printer driver on your computer. Some printers, especially very recent release printers, might require the Printer CD-ROM containing the printer driver that came with the printer. This procedure must be followed by any computer that will use the printer.

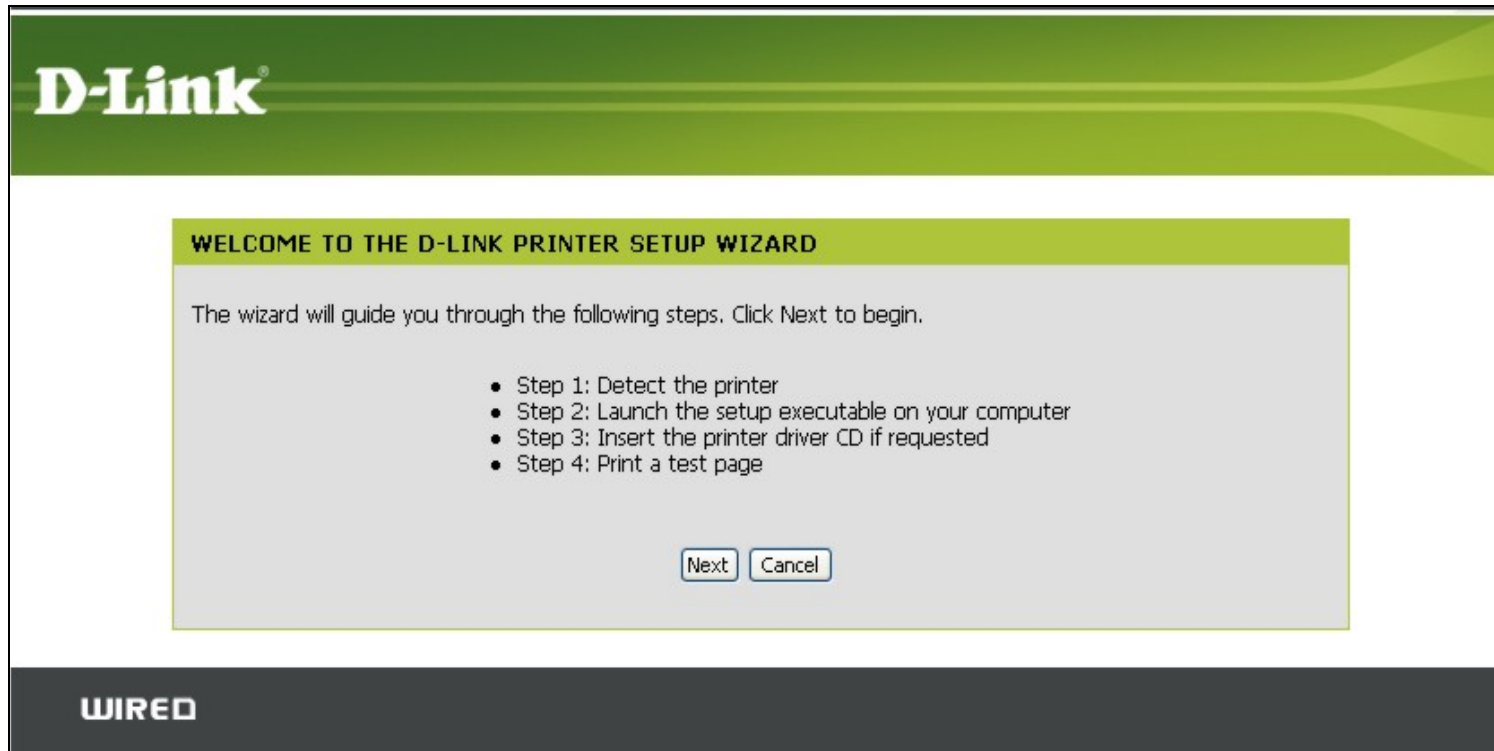
To use a printer connected to the USB printer port on the DIR-120:

1. Have the CD-ROM with the printer driver available, it might be needed for the installation.
2. Power on the printer; follow the instructions included with the printer to plug in the power cable and turn the power on.
3. Complete the USB connection from the DIR-120 USB to the USB port on the printer. Check the LED indicator on the DIR-120 front panel for the USB connection to make sure a physical connection is established.
4. From the Printer Setup menu, click the Setup Wizard button to launch the Printer Setup Wizard.

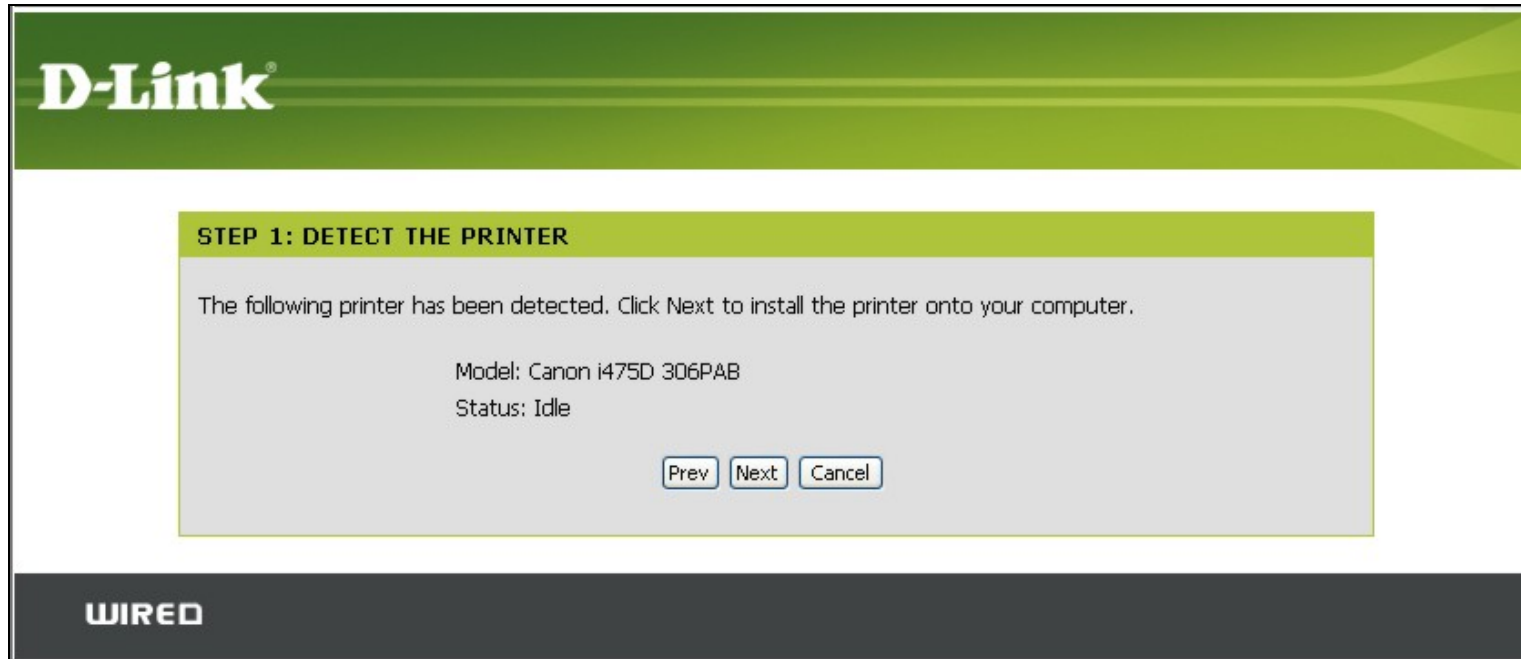


Printer Setup Wizard launch menu

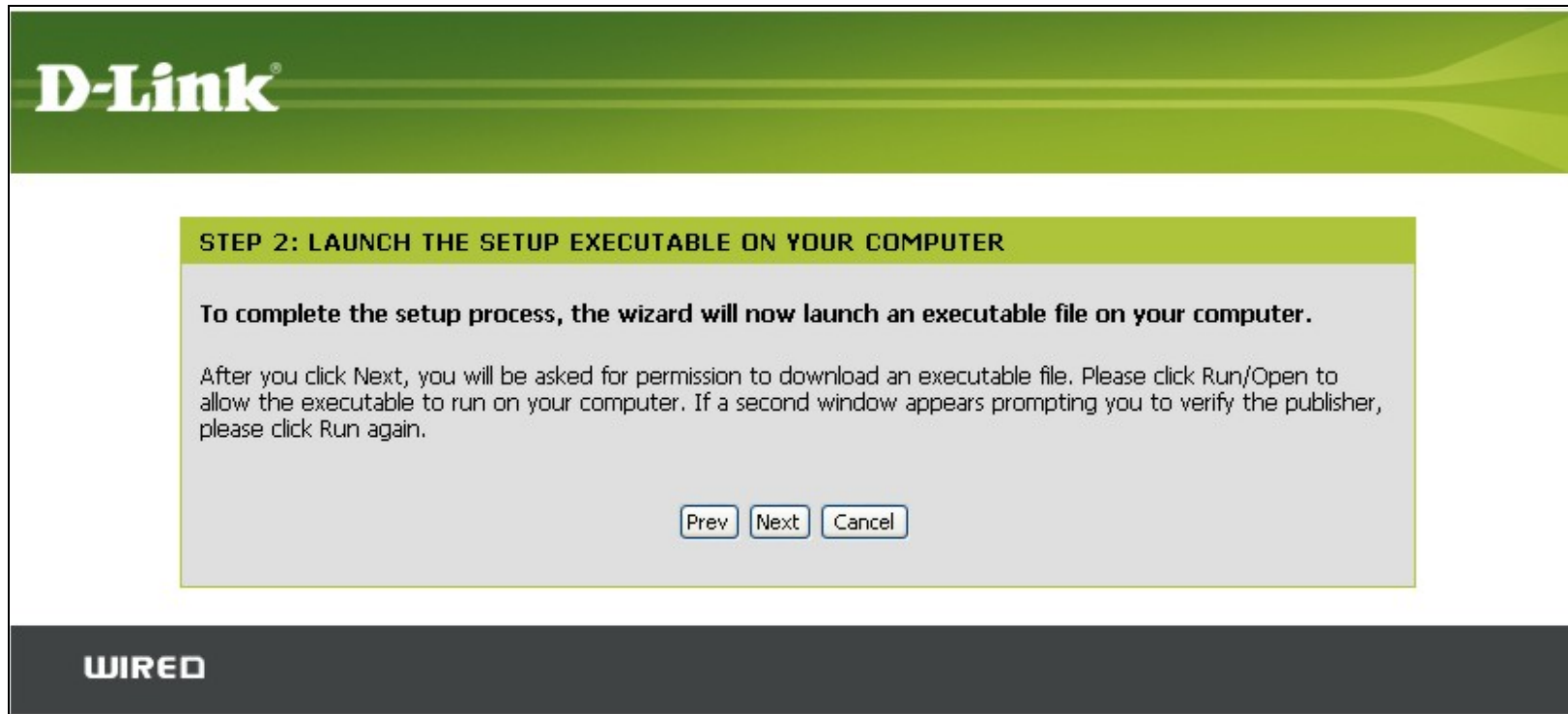
5. The first Printer Setup Wizard menu lists the steps used for installation. Click the **Next** button to detect the printer.



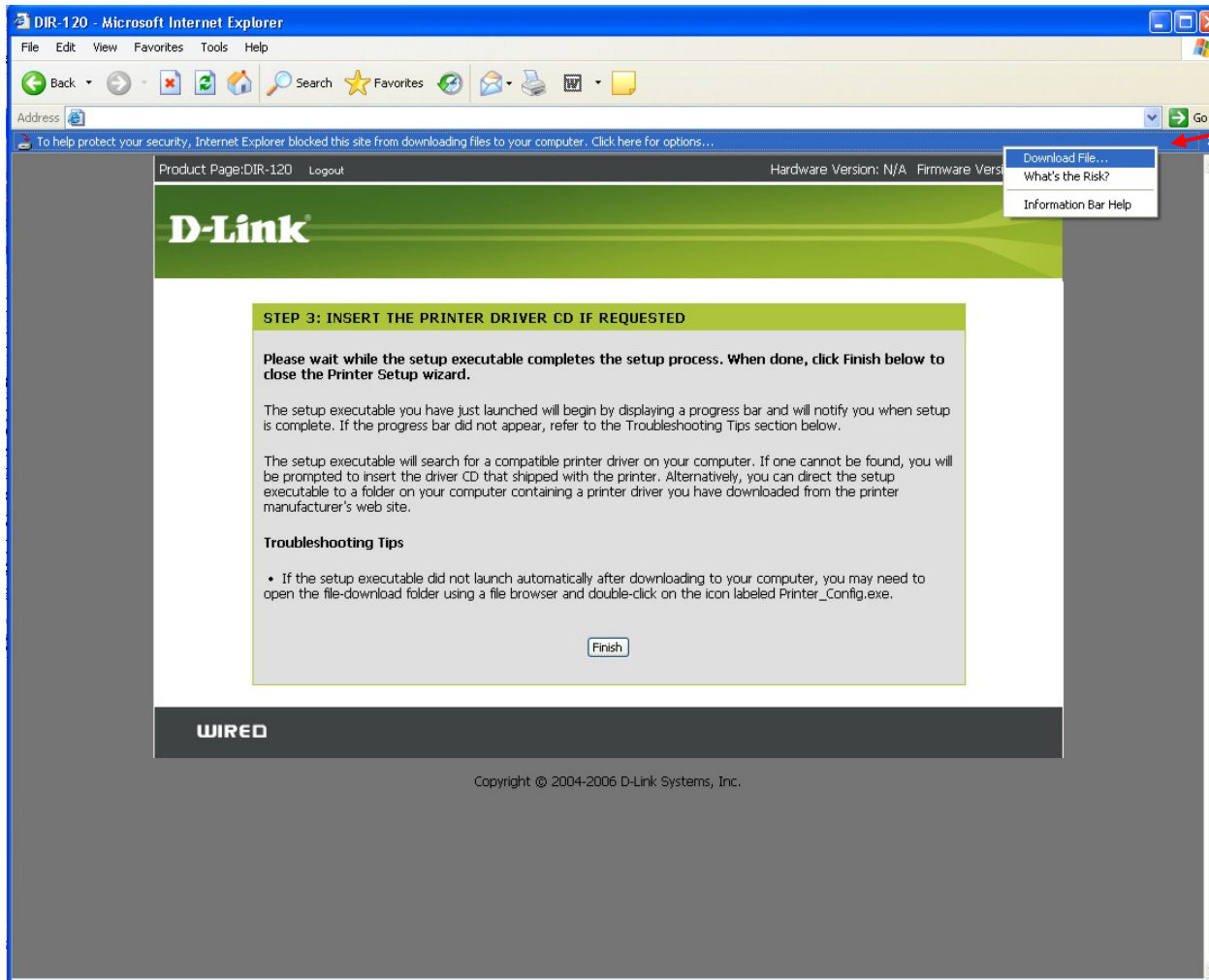
6. The printer should be detected immediately. The model name will be displayed if detected. If no printer is detected a warning tells you the printer installation cannot be completed. Check the cable connections and make sure the printer is powered on. Click Next if a printer is detected.



7. It is now necessary to install the correct printer driver on your computer. Click the **Next** button to launch the file.



8. A setup will launch or attempt to launch on your computer. Often the browser settings prevent the file from launching until permission is granted. This file must be executed to install the printer driver. In Windows Internet Explorer permission can be granted to launch downloaded application. See the example from Windows Internet Explorer as seen in XP below. If asked to insert the CD-ROM containing the printer driver, insert the CD-ROM in the CD-ROM drive of your computer and install the printer driver according to the instructions for the printer.

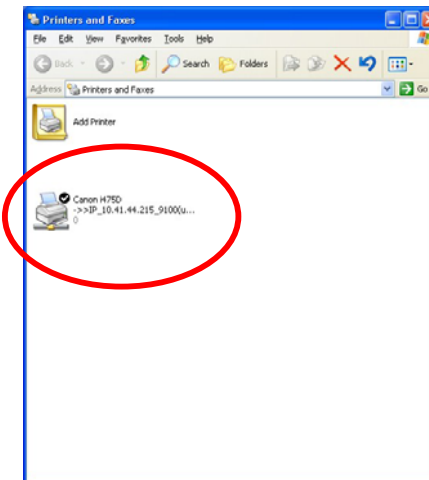


Click security bar and select **Download File** option if IE security is preventing download.

Click the bar below the address bar in Windows Internet Explorer and Download File. The printer driver will be installed on your computer. If asked, insert the printer CD-ROM.

Click **Finish** when the setup file has finished.

The printer will now be displayed in the **Printers and Faxes** folder in Windows.



Advanced Configuration

The **Advanced** directory tab offers seven configuration menus, **Port Forwarding**, **Application Rules**, **Access Control**, **Website Filter**, **Firewall Settings**, **Advanced Network**, and **QoS Engine**. Click the corresponding link in the left panel of the window. Port Forwarding is the first menu listed and the first to appear when accessing the Advanced directory.

The screenshot shows the D-Link DIR-120 Advanced Configuration web interface. The top navigation bar includes 'DIR-120', 'SETUP', 'ADVANCED', 'TOOLS', 'STATUS', and 'SUPPORT'. The left sidebar lists configuration menus: PORT FORWARDING, APPLICATION RULES, ACCESS CONTROL, WEBSITE FILTER, FIREWALL SETTINGS, ROUTING, ADVANCED NETWORK, and QOS ENGINE. The 'Language' dropdown is set to 'English'.

The main content area is titled 'ADVANCE PORT FORWARDING RULES'. It contains a descriptive paragraph: 'The Port Forwarding option is used to open a single port or a range of ports through your firewall and redirect data through those ports to a single PC on your network.' Below this are 'Save Settings' and 'Don't Save Settings' buttons.

A table titled '24 - ADVANCE PORT FORWARDING RULES' is displayed with the following columns: Name, Application Name, IP Address, Computer Name, Public Port, Private Port, and Traffic Type. The table contains five rows, each with a checkbox in the Name column. The Application Name and Computer Name columns contain dropdown menus with '<<' and '>>' symbols. The Public and Private Port columns contain input fields with a tilde '~' between them. The Traffic Type column contains a dropdown menu with 'Any' selected.

On the right side, there is a 'Helpful Hints.' section with three bullet points:

- Check the **Application Name** drop-down menu for a list of pre-defined applications that you can select from. If you select one of the pre-defined applications, click the arrow button next to the drop-down menu to fill out the appropriate fields.
- You can select your computer from the list of DHCP clients in the **Computer Name** drop-down menu, or enter the IP address manually of the computer you would like to open the specified port to.
- This feature allows you to open a range of ports to a computer on your network. To do so, enter the first port in the range you would like to open in the **Start** field and last port of the range in the **End** field.
- To open a single port using this feature, simply enter the same number in both the **Start** and **End** fields.

Advanced menu links – Port Forwarding menu

Port Forwarding

To view the following window, click on the **Advanced** tab at the top of the window and then click the **Port Forwarding** button to the left. This window will allow remote users access to various services outside of their LAN through a public IP address, such as FTP (File Transfer Protocol) or HTTPS (Secure Web). After configuring the Router for these features, the Router will redirect these external services to an appropriate server on the users LAN. The Router has 13 pre-configured external services already set, but the user may add alternate services using the window above. The Port Forwarding Rules listed in the following window are:

- **FTP – File Transfer Protocol**, used to transfer large files over the Internet
- **HTTP – HyperText Transfer Protocol**, the basic protocol of the World Wide Web
- **HTTPS – HyperText Transfer Protocol Secure**, the basic protocol of the World Wide Web with added security provided by the Secure Shell feature (SSH)
- **DNS – Domain Name Server**, a server that translates website addresses into IP addresses
- **SMTP – Simple Mail Transfer Protocol**, used to transmit e-mail messages between parties
- **POP3 – Post Office Protocol version 3**, used to retrieve e-mail from a mail server
- **Telnet – A terminal emulation program** used for remote configuration
- **IP Sec – IP Security**, used for a secure transfer of information over the network. If one end of the transmission is using IPSec, so must the other end
- **PPTP – Point to Point Tunneling Protocol**, used to transfer information securely between VPNs (Virtual Private Routers)
- **NetMeeting – An application** that allows teleconferences over the Internet
- **DCS-1000 – A D-Link internet camera** used for security monitoring
- **DCS-2000/DCS-5300 – A D-Link internet camera** used for security monitoring
- **i2eye – A D-Link Broadband VideoPhone** used for video conferencing

These external services may be modified by clicking the corresponding checkbox. Though there are seven fields available to configure the Port Forwarding Rules, in most cases, only the IP address will be needed for implementation. For more information on configuring Port Forwarding Rules, otherwise known as Virtual Servers, see the window below, along with a brief explanation of the fields to be configured.

PORT FORWARDING RULES

The Port Forwarding option is used to open a single port or a range of ports through your firewall and redirect data through those ports to a single PC on your network.

24 - PORT FORWARDING RULES

	Name	Port	Traffic Type
<input type="checkbox"/>	Name: <input type="text"/> << Application Name >> IP Address: <input type="text"/> << Computer Name >>	Public Port: <input type="text"/> ~ <input type="text"/> Private Port: <input type="text"/> ~ <input type="text"/>	Any >>
<input type="checkbox"/>	Name: <input type="text"/> << Application Name >> IP Address: <input type="text"/> << Computer Name >>	Public Port: <input type="text"/> ~ <input type="text"/> Private Port: <input type="text"/> ~ <input type="text"/>	Any >>
<input type="checkbox"/>	Name: <input type="text"/> << Application Name >> IP Address: <input type="text"/> << Computer Name >>	Public Port: <input type="text"/> ~ <input type="text"/> Private Port: <input type="text"/> ~ <input type="text"/>	Any >>
<input type="checkbox"/>	Name: <input type="text"/> << Application Name >> IP Address: <input type="text"/> << Computer Name >>	Public Port: <input type="text"/> ~ <input type="text"/> Private Port: <input type="text"/> ~ <input type="text"/>	Any >>
<input type="checkbox"/>	Name: <input type="text"/> << Application Name >> IP Address: <input type="text"/> << Computer Name >>	Public Port: <input type="text"/> ~ <input type="text"/> Private Port: <input type="text"/> ~ <input type="text"/>	Any >>

Port Forwarding Rules menu

To enable an already existing Port Forwarding Rule, click on its corresponding checkbox and configure the appropriate fields listed below. To configure other Port Forwarding Rules for the Router, configure the following fields and click the **Save Settings** button at the top of the window.

Application Rules

This window is used to configure applications that require multiple connections, such as Internet Telephony, video conferencing, and Internet gaming. The following window lists six Special Applications that commonly use more than one connection. To configure one of these applications, tick its corresponding checkbox and then modify the fields listed below the following figure. The user may add a new application by modifying the fields listed and then clicking the **Save Settings** button at the top of the window.

APPLICATION RULES

The Application Rules option is used to open single or multiple ports in your firewall when the router senses data sent to the Internet on an outgoing "Trigger" port or port range. Special Applications rules apply to all computers on your internal network.

24 - APPLICATION RULES

				Port	Traffic Type
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼
<input type="checkbox"/>	<input type="text"/>	<< Application Name >>		Trigger <input type="text"/>	Any ▼
				Firewall <input type="text"/>	Any ▼

Application Rule menu

Access Control

Access Control, or MAC filtering, is a basic security measure that should be used on any network that is exposed to a security risk. A packet filter system examines data packets and scrutinizes them in order to control network access. Filtering rules determine whether packets are passed through the Router from either side of the gateway. The rules are created and controlled by the network administrator and can be precisely defined. These rules are used to block access to the LAN from outside the network and/or to deny access to the WAN from within the network. The Router uses filtering rules to examine data packet headers for specific information. Packets passing through the Router that do not meet the criteria specified by the rule set are dropped.

Effective implementation of packet filtering requires detailed knowledge of network services and communication protocols. An overly complicated filtering scheme can adversely affect the Router's performance, while an inadequate set of rules may needlessly compromise security.

This Router has two configurable methods for filtering and thus two ways of filtering packets received, **MAC Filters** and **Website Filter** (which is explained in the next section).

MAC Filters

All computers are uniquely identified by their MAC (Media Access Control) address. The following window will allow users to deny computers access to the Internet or only allow certain computers access to the Internet, based on their MAC address. To access this window, click the **Advanced** tab along the top of the configuration window, then the **Access Control** tab to the left hand side.

To configure MAC filters, manually enter a MAC address to be filtered by ticking its corresponding checkbox and then configuring the desired fields on the window above. Select *Turn MAC Filtering OFF*, *Turn MAC Filtering ON and ALLOW computers listed to access the network*, and *Turn MAC Filtering ON and DENY computers listed to access the network* from the drop-down menu. When you are finished, click the **Save Settings** button at the top of the window.

MAC FILTERING

The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/Internet access.

24 - MAC FILTERING RULES

Configure MAC Filtering below:

Turn MAC Filtering OFF ▼

MAC Address		DHCP Client List	Schedule		
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear
<input type="text"/>	<<	Computer Name ▼	Always On ▼	Add New	Clear

AC Filtering menu

Website Filter

The Website Filter feature filters URLs. A URL is a specially formatted text string that uniquely defines an Internet website. This window will allow users to block computers on the LAN from accessing certain URLs. This may be accomplished by simply entering the URL to be blocked in the **Website URL Address** field. The three options available for configuring Website Filtering from the drop-down menu on the window below are: *Turn Website Filtering OFF*, *Turn Website Filtering ON and ALLOW computers access to ONLY these sites*, and *Turn Website Filtering ON and DENY computers access to ONLY these sites*. When you are finished, click the **Save Settings** button at the top of the window.

To access this window, click the **Advanced** tab along the top of the configuration window, then the **Website Filter** tab to the left hand side.

WEBSITE FILTERING RULES

The Website Filter option allows you to set-up a list of Websites that the users on your network will either be allowed or denied access to.

24 - WEBSITE FILTERING RULES

Configure Website Filtering below:

Turn Website Filtering OFF

Website URL	Website URL
<input type="text" value="www.badwebsite.com"/>	<input type="text"/>
<input type="text" value="www.stuffyoudontneedtobuy.com"/>	<input type="text"/>
<input type="text" value="www.OMG.com"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Website Filtering Rules menu

Firewall Settings

The DIR-120 Broadband Router comes equipped with a firewall. This configuration window allows the Router to enforce specific predefined policies intended to protect against certain common types of attacks. To configure the Router's firewall, click the **Advanced** tab at the top of the window and then the **Firewall Settings** tab to the left.

Stateful Packet Inspection (SPI) is a type of firewall that protects your network against hacker attacks by analyzing packets to ensure that only authorized packets will be allowed to enter your network. To enable this function, tick the **Enable SPI** checkbox.

A DoS "denial-of-service" attack is characterized by an explicit attempt by attackers to prevent legitimate users of a service from using that service. Examples include: attempts to "flood" a network, thereby preventing legitimate network traffic, attempts to disrupt connections between two machines, thereby preventing access to a service, attempts to prevent a particular individual from accessing a service, or, attempts to disrupt service to a specific system or person. To enable this function, tick the **Enable DoS Prevention** checkbox.

DMZ Host

Firewalls may conflict with certain interactive applications such as video conferencing or playing Internet video games. For these applications, a firewall bypass can be set up using a DMZ IP address. The DMZ IP address is a "visible" address and does not benefit from the full protection of the firewall function. Therefore it is advisable that other security precautions be enabled to protect the other computers and devices on the LAN. It may be wise to use isolate the device with the DMZ IP address from the rest of the LAN.

For example, if you want to use video conferencing and still use a firewall, you can use the DMZ IP address function. In this case, you must have a PC or server through which video conferencing will take place. The IP address of this PC or server will then be the DMZ IP address. You can designate the server's IP address as the DMZ by typing in the IP address in the **DMZ IP Address** space provided and then enabling its status by ticking the **Enable DMZ Host** checkbox. Click the **Save Settings** button at the top of the window when you are finished.

Firewall Rules

To configure rules for the firewall, modify the following fields and click the **Save Settings** button at the top of the window to set the rule in the Routers memory. Newly configured firewall rules will be displayed in the **Firewall Rules List** at the bottom of the window.

FIREWALL SETTINGS

Firewall Rules can be used to allow or deny traffic from passing through the DIR-120.

FIREWALL SETTING

Enable SPI:
 Enable DoS Prevention:

DMZ HOST

The DMZ (Demilitarized Zone) option provides you with an option to set a single computer on your network outside of the router. If you have a computer that cannot run Internet applications successfully from behind the router, then you can place the computer into the DMZ for unrestricted Internet access.

Note: Putting a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.

Enable DMZ Host:
 DMZ IP Address:

FIREWALL RULES

Enabled
 Disabled

Name

Action Allow Deny

Interface Start IP Address End IP Address Protocol Port Range

Source LAN

Dest WAN TCP

Schedule Always On

FIREWALL RULES LIST

Action	Name	Source	Dest	Protocol,Port

Firewall Settings menu

Advanced Network

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, 802.11b/g wireless, Firmware, phone line and power line networking can support UPnP. To enable UPnP, tick the **Enable UPnP** checkbox.

WAN Ping

This feature allow users to either allow or block a Ping test from outside computers looking to check the connectivity of your device. This is usually attempted by hackers trying to access your router or computer from a remote device on the WAN side of the connection. Tick the **Enable WAN Ping Respond** checkbox to allow WAN pingging of your device.

WAN Port Speed

This section allows the user to set the wire speed over which the router will transmit packets. The user has three options:

- *10Mbps* – Selecting this option from the drop-down menu will set the wire speed at 10 megabytes per second.
- *100Mbps* – Selecting this option from the drop-down menu will set the wire speed at 100 megabytes per second.
- *10/100 Mbps Auto* – Selecting this option from the drop-down menu will allow the wire speed to be automatically set by the Router depending on the wire speed available at any given time.

Gaming Mode

Gaming mode opens TCP/UDP ports used by many common games. To take advantage of this feature, tick the **Enable Gaming mode** checkbox.

Multicast Streams

Multicast streams will allow servers from the Internet to broadcast their multicast content to other PCs on your LAN. Tick the **Enable Multicast Streams** checkbox to use this feature. Most users will want to enable this.

NETWORK SETTINGS :
If you are not familiar with these Advanced Network settings, please read the help section before attempting to enable or disable them. <div style="text-align: center;"> <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/> </div>
UPNP
Universal Plug and Play (UPnP) supports peer-to-peer Plug and Play functionality for network devices. Enable UPnP: <input checked="" type="checkbox"/>
WAN PING
If you enable this feature, the WAN port of your router will respond to ping requests from the Internet that are sent to the WAN IP Address. Enable WAN Ping Respond: <input checked="" type="checkbox"/>
WAN PORT SPEED
10/100Mbps Auto <input type="button" value="v"/>
GAMING MODE
If you are having difficulties playing some online games - please enable this mode. Enable Gaming Mode: <input type="checkbox"/>
MULTICAST STREAMS
Enable Multicast Streams: <input type="checkbox"/>

Advanced Network menu

QoS Engine

Upstream Bandwidth

Use the **QoS WAN Upstream Bandwidth** drop-down menu to adjust the upstream bandwidth setting. Please contact your ISP for more information before changing this setting.

QoS

This feature allows you to improve your VoIP voice quality or stream by prioritizing it over other network traffic such as FTP or Web. To use QoS on the Router, tick the **Lag eliminated (VoIP, Streaming)** checkbox. Uplink bandwidth can be configured manually with the **Manual Uplink Speed** pull-down menu; or select the **Automatic Uplink Speed** option to allow the Router to select the best speed. Click the **Save Settings** button at the top of the window when you are finished.

QOS(QUALITY OF SERVICE)

Use this section to configure D-Link's QoS Engine. This QoS Engine improves your VoIP voice quality or streaming by ensuring that your VoIP or streaming traffic is prioritized over other network traffic, such as FTP or Web. For best performance, please tick the "lag eliminated" option to automatically set the priority for your applications.

UPLINK BANDWIDTH

Automatic Uplink Speed:

Measured Uplink Speed: N/A

Manual Uplink Speed:

Please contact with your Internet Service Provider to make sure your xDSL or cable uplink bandwidth, the accurately uplink bandwidth setting is allowed QoS engine operates smoothly and efficiency.

QOS

Lag eliminated (VoIP, Streaming)

QoS (Quality of Service) menu

Tools

The Tools tab allows you to set up basic maintenance features on the Router. The windows available under this tab include **Admin**, **Time**, **System**, **Firmware**, **Dynamic DNS**, **System Check**, **Schedules**, and **Log Settings**.

D-Link					
DIR-120	SETUP	ADVANCED	TOOLS	STATUS	SUPPORT
ADMIN	ADMINISTRATOR SETTINGS Administrators can access the router's management interface and change their login password. <input type="button" value="Save Settings"/> <input type="button" value="Don't Save Settings"/>				Helpful Hints. <ul style="list-style-type: none"> For security reasons, recommended that you change the Login Name and Password for the Administrator and User accounts. Be sure to write down the new Login Name and Passwords to avoid having to reset the router the event that they are forgotten. Enabling Remote Management allows you or others to change the router configuration from computer on the Internet. Choose a port to open for remote management.
TIME	ADMINISTRATOR (THE DEFAULT LOGIN NAME IS "ADMIN") Login Name: <input type="text" value="admin"/> New Password: <input type="password" value="....."/> Confirm Password: <input type="password" value="....."/>				
SYSTEM	REMOTE MANAGEMENT Enable Remote Management: <input type="checkbox"/> Port: <input type="text" value="8080"/>				
FIRMWARE					
DYNAMIC DNS					
SYSTEM CHECK					
SCHEDULES					
LOG SETTINGS					
Language					
English					

Tools directory – Administrator Settings menu

Admin

This window allows you to configure a new password for the Router. There is only one administrator account that can access the DIR-120's web management interface. To change the password, enter the password into the **New Password** field and repeat the password in the **Confirm Password** field. Click **Save Settings** to set your new password.

This window will also allow the user to enable remote management of the device from a remote computer. To configure this function, click **Enable Remote Management** under the **Remote Management** heading and then choose the corresponding port number of that computer by using the pull-down menu. Click **Save Settings** to set these configurations into the memory of the Router.

The screenshot shows the 'ADMINISTRATOR SETTINGS' section of the router's web interface. It features a green header with the title 'ADMINISTRATOR SETTINGS'. Below the header, a grey box contains the text 'Administrators can access the router's management interface and change their login password.' and two buttons: 'Save Settings' and 'Don't Save Settings'. The next section, titled 'ADMINISTRATOR (THE DEFAULT LOGIN NAME IS "ADMIN")', contains three input fields: 'Login Name' with the value 'admin', 'New Password' with masked characters, and 'Confirm Password' with masked characters. The final section, titled 'REMOTE MANAGEMENT', includes a checkbox for 'Enable Remote Management' which is currently unchecked, and a 'Port' dropdown menu set to '8080'.

Administrator Settings menu

Time

The system time is the time used by the DIR-120 for scheduling services. You can configure, update, and maintain the time on the internal system clock.

To configure system time on the Router, determine the method used to maintain time. If you wish to use a network time server, click to select the **Automatically synchronize with Internet server** option, and type in the IP address or URL of an NTP Server Address.

Select **Time Zone** and choose **Enable Daylight Saving** settings where appropriate.

Alternatively, you can manually configure the system time by clicking **Synch. your computer's time settings** button. Doing this will set the Router's system time to the same time on the computer you are using.

TIME

Time Configuration

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

TIME CONFIGURATION

Time: **2006/10/5 14:23:7**

Time Zone: (GMT-08:00) Pacific Time (US & Canada) ▼

Enable Daylight Saving:

AUTOMATIC TIME CONFIGURATION

Automatically synchronize with Internet time server

Server: ntp1.dlink.com

synchronizing.....

SET THE DATE AND TIME MANUALLY

Year	2006 ▼	Month	Oct ▼	Day	5 ▼
Hour	14 ▼	Minute	22 ▼	Second	55 ▼

Time menu

System

The current system settings can be saved as a file onto the local hard drive by clicking the **Save** button. The saved file or any other saved setting file can be loaded back on the Router. To reload a system settings file, click on **Browse** to browse the local hard drive and locate the system file to be used. You may also reset the Router back to factory settings by clicking on **Restore Device**. In addition, the user can click **Reboot** to restart the Router.

The screenshot shows a web interface for the 'SYSTEM SETTINGS' menu. At the top, there is a green header with the text 'SYSTEM SETTINGS'. Below this is a grey box containing the text: 'The current system settings can be saved as a file on to the local hard drive. The saved file or any other saved setting file created by device can be uploaded into the unit.' Below the grey box is a dark grey header with the text 'SYSTEM SETTINGS'. The main content area contains four rows of controls: 1. 'Save Settings To Local Hard Drive:' followed by a 'Save' button. 2. 'Load Settings From Local Hard Drive:' followed by a text input field and a 'Browse...' button. 3. 'Restore To Factory Default Settings:' followed by a 'Restore Device' button. 4. 'Reboots the Device:' followed by a 'Reboot' button.

System Settings menu

Firmware

You can upgrade the firmware of the Router at this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to browse the local hard driver and locate the firmware to be used for the update. Please check the D-Link support site for firmware updates at D-Link Technical support website of your country.

In order to keep pace with changes in standards and technology, the DIR-120 allows you to easily update the embedded firmware. You may obtain the latest version of the DIR-120 firmware by logging onto the D-Link web site at www.dlink.com. If you are connected to the Internet, you can access the D-Link web site by clicking on **Check Now**. The **Firmware Upgrade** window lists the version of the firmware the Router is currently using. If you would like to update, follow the instructions given on the D-Link web site firmware update page to download the new firmware. You can then use the DIR-120 Firmware Upgrade Utility included with the Router to transfer the new firmware to the Router. Once you have downloaded the new firmware to your computer, use the **Browse** button to find where it is located on your computer, or if you know the path of the file, enter it into the space provided. Click **Update Now** to begin the download. After the new firmware has been successfully downloaded into your Router, restart the device to let the changes take effect.

The screenshot shows a web interface for firmware upgrade. It has a green header 'FIRMWARE UPGRADE', a grey text area with instructions and a link, a dark grey header 'CURRENT FIRMWARE INFO', a white box with version and date information, a 'Check Now' button, another dark grey header 'UPGRADE SETTING', and a white box with an 'Update:' label, a text input field, a 'Browse...' button, and an 'Update Now' button.

Firmware Upgrade menu

Dynamic DNS

The DIR-120 supports DDNS or Dynamic Domain Name Service. Dynamic DNS allows a dynamic public IP address to be associated with a static host name in any of the many domains, allowing access to a specific host from various locations on the Internet. With this function enabled, remote access to a host will be allowed by clicking a URL hyperlink in the following form: *hostname.dydns.org*. Because many ISPs assign public IP addresses using DHCP, it can be difficult to locate a specific host on the LAN using the standard DNS. For example, if you are running a public web server or VPN server on your LAN, DDNS ensures that the host can be located from the Internet if the public IP address changes. DDNS requires that an account be set up with one of the supported DDNS servers.

D-Link offers a free DDNS service. If you are interested in using D-Link's DDNS service, click the hyperlink to www.DLinkDDNS.com to sign up.

To implement Dynamic DNS, first tick the **Enable DDNS** checkbox in the window above, then choose the **Server Address** from the list in the pull-down menu. Next, enter the **Host Name** of the LAN to be accessed, and the **Username** and **Password** for the DDNS account. Click the **Save Settings** button to save changes made. Use the **DDNS Account Testing** button to make sure the DDNS service is functioning.

DYNAMIC DNS

The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server, etc...) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your game server no matter what your IP address is.

[Sign up for D-Link's Free DDNS service at www.DLinkDDNS.com.](http://www.DLinkDDNS.com)

DDNS SETTINGS

Enable DDNS:

Server Address: DynDns.org(Free) ▼

Host Name:

Username:

Password:

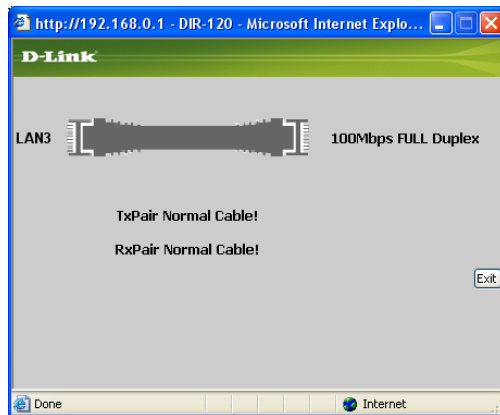
Dynamic DNS menu

System Check

This window aids the user in maintaining and enhancing the functionality of the router. It includes settings for **VCT Info** and **Ping Test**.

VCT Info

The Virtual Cable Tester section allows every Ethernet port on the Router to be tested. This will aid the user in troubleshooting various problems that may occur with the functionality of the Router. Click the **More Info** button next to the port you want to test to open the following pop-up window:



Ping Test

The Ping Test section allows you to ping any IP address from the Router to test connectivity to the address. To Ping a device, enter the IP address of the device that you wish to ping into the **Host Name or IP Address** field and click **Ping** to start the Ping mechanism. The results of the Ping will be shown under the **Ping Result** heading.

FAST ETHERNET VIRTUAL CABLE TESTER(VCT)

Cable Test is advanced feature that integrates a LAN cable tester on every Ethernet port on the router.

VCT INFO

Ports	Link Status		
WAN		10Mbps FULL Duplex	More Info
LAN1		100Mbps FULL Duplex	More Info
LAN2		Disconnected	More Info
LAN3		100Mbps FULL Duplex	More Info
LAN4		Disconnected	More Info

PING TEST

Ping Test is used to send "Ping" packets to test if a computer is on the Internet.

Host Name or IP Address: [Ping](#)

PING RESULT

Fast Ethernet Virtual Cable Tester (VCT) menu

Schedules

This window is used to create implementation schedules for **Firewall Settings** rules. This is the same menu accessed using the **Make New Schedule** button in the Rules menu of the Firewall Settings page.

Complete the **Add Schedule Rule** settings on the window above and then click the **Save Settings** button at the top of the window.

SCHEDULES

The Schedule configuration option is used to manage schedule rules for various firewall and parental control features.

ADD SCHEDULE RULE

Name :

Day(s) : All Week
 to

All Day - 24 hrs :

Start Time : : (hour:minute, 12 hour time)

End Time : : (hour:minute, 12 hour time)

SCHEDULE RULES LIST

Name	Day(s)	Time Frame	
workweek	Mon~Fri	6:30~20:30	

Schedules menu

Log Settings

The system log displays chronological event log data, including System Activity, Debug Information, Attacks, Dropped Packets, and Notice. Check the desired category of Log Type in the bottom half of the window above and then click the **Save** button and follow the prompts to save the file.

Alerts can be sent to an email account. Use the Send By Mail settings to configure Email account information. Click the **Send Me Now** button to email alerts to a previously configured email account.

The screenshot shows the 'LOG SETTINGS' menu with the following sections:

- LOG SETTINGS**: A green header bar.
- Logs can be saved by sending it to an admin email address.**: A text box with two buttons: 'Save Settings' and 'Don't Save Settings'.
- SAVE LOG FILE**: A dark header bar with a text box 'Save Log File To Local Hard Drive' and a 'Save' button.
- LOG TYPE**: A dark header bar with a table of log categories and checkboxes:

Log Type	<input checked="" type="checkbox"/> System Activity
	<input type="checkbox"/> Debug Information
	<input checked="" type="checkbox"/> Attacks
	<input checked="" type="checkbox"/> Dropped Packets
	<input checked="" type="checkbox"/> Notice
- SEND BY MAIL**: A dark header bar with a form for email configuration:

Email Address	<input type="text"/>	<input type="button" value="Send Mail Now"/>
Email Subject	<input type="text"/>	
Email From:		
Sender Email Address	<input type="text"/>	
SMTP Server / IP Address	<input type="text"/>	
User Name	<input type="text"/>	
Password	<input type="text"/>	
Confirm Password	<input type="text"/>	
- SYSLOG SETTING**: A dark header bar with a form for Syslog configuration:

Enable Syslog	<input type="checkbox"/>
Syslog Server / IP Address	<input type="text"/>

Log Settings menu

Status

The **Status** tab will allow users to check information about the Router, including **Device Info**, **Log**, **Stats**, and **Active Session**.

The screenshot shows the D-Link DIR-120 web interface. At the top is the D-Link logo. Below it is a navigation bar with tabs: DIR-120, HOME, ADVANCED, TOOLS, STATUS (selected), and SUPPORT. On the left is a sidebar menu with options: DEVICE INFO (selected), LOG, STATS, ACTIVE SESSION, and LAN COMPUTER. The main content area is titled 'DEVICE INFO' and contains the following sections:

- Device Information:** A text box stating, "All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here."
- GENERAL:** Displays the current time as "2006/10/5 15:33:40" and the firmware version as "v1.00 Tue Aug 29 21:43:40 CST 2006".
- WAN:** Shows network details for the WAN interface:
 - MAC Address: 00:13:46:F1:CC:8D
 - Connection: PPPoE Disconnected (with 'Connect' and 'Disconnect' buttons)
 - IP Address: 0.0.0.0
 - Subnet Mask: 0.0.0.0
 - Default Gateway: 0.0.0.0
 - DNS: 0.0.0.0
- LAN:** Shows network details for the LAN interface:
 - MAC Address: 00:13:46:F1:CC:8C
 - IP Address: 192.168.0.1
 - Subnet Mask: 255.255.255.0
 - DHCP Server: Enabled
- PRINTER SERVER INFORMATION:** A table with three columns: Queue Name, Printer Name, and Printer Server Status.

Status directory – Device Information menu

Device Info

This window, located under the **Status** tab will allow users to view information regarding the settings of the Router, both on the LAN side and WAN side of the connection. Printer queue information is displayed under Printer Server Information.

DEVICE INFO		
Device Information		
All of your Internet and network connection details are displayed on this page. The firmware version is also displayed here.		
GENERAL		
Time: 2006/10/5 14:33:1		
Firmware Version: v1.00 Tue Aug 29 21:43:40 CST 2006		
WAN		
MAC Address: 00:13:46:F1:CC:8D		
Connection: Static IP		
IP Address: 10.41.44.85		
Subnet Mask: 255.0.0.0		
Default Gateway: 10.1.1.254		
DNS: 172.19.10.35		
172.19.10.40		
LAN		
MAC Address: 00:13:46:F1:CC:8C		
IP Address: 192.168.0.1		
Subnet Mask: 255.255.255.0		
DHCP Server: Enabled		
PRINTER SERVER INFORMATION		
Queue Name	Printer Name	Printer Server Status

Device Info menu

Log

This window allows users to view events occurring within the router by time and date, and also view the source and destination of the event. The user may use the **First Page**, **Last Page**, **Previous** and **Next** buttons to scroll through the log events listed in the window. To clear the log events, click **Clear**.

Click the **Link to Log Settings** button to change the **Log Settings**.

VIEW LOG

View Log displays the activities occurring on the DIR-120.

LOG FILES

First Page Last Page Previous Next Clear Refresh

Link To Log Settings

Page 1 of 1

Time	Message
Dec 31 16:00:10	DHCP disconnected
Dec 31 16:00:07	syslogd started ! Log on system activity,attack,drop packet,notice.

View Log menu

Stats

This window will allow users to view transmitted and received packets occurring on the Router. To refresh the window, click **Refresh**. To restart the packet count, click **Reset**.

TRAFFIC STATISTICS :

Traffic Statistics display Receive and Transmit packets passing through the DIR-120.

Refresh Reset

	Receive	Transmit
WAN	134462Packets	4305Packets
LAN	3482Packets	3609Packets

Traffic Statistics menu

Active Session

This window displays the Source and Destination packets passing through the Router. To refresh the window, click the **Refresh** button.

The screenshot shows a web interface for the 'Active Session' menu. It has a green header with the text 'ACTIVE SESSION'. Below the header, there is a grey box containing the text 'Active Session display Source and Destination packets passing through the DIR-120.' and a 'Refresh' button. Underneath is a dark grey section titled 'NAPT SESSION' which displays 'TCP Session: 0', 'UDP Session: 0', and 'Total: 0'. At the bottom is another dark grey section titled 'NAPT ACTIVE SESSION' which contains a table with three columns: 'IP Address', 'TCP Session', and 'UDP Session'.

Active Session menu

LAN Computer (DHCP Client) List

Click the LAN computer link to view DHCP clients currently connected.

The screenshot shows a web interface for the 'Dynamic DHCP Client List'. It has a green header with the text 'DYNAMIC DHCP CLIENT LIST'. Below the header, there is a grey box containing the text 'Dynamic DHCP client computers connected to the unit will have their information displayed in the Dynamic DHCP Client Table.' Underneath is a dark grey section titled 'LAN COMPUTER' which contains a table with three columns: 'IP Address', 'Name (if any)', and 'MAC Address'.

DHCP Client list

Support

This tab will give basic information referring to various windows located in the Router. To view a specific section, click on its hyperlinked name. A new window of information will appear.

SUPPORT MENU

Home

- [Internet](#)
- [Network settings](#)

Advanced

- [Port Forwarding](#)
- [Application Rules](#)
- [Access Control](#)
- [Website Filter](#)
- [Firewall Settings](#)
- [Advanced Network](#)
- [QoS Engine](#)

Tools

- [Admin](#)
- [Time](#)
- [System](#)
- [Firmware Upgrade](#)
- [DDNS](#)
- [System Check](#)
- [Schedules](#)
- [Log Settings](#)

Status

- [Device Info](#)
- [Log](#)
- [Stats](#)
- [Active Session](#)

Support Menu menu

Appendix A

Technical Specifications

Standards

IEEE 802.3 10Base-T Ethernet
IEEE 802.3u 100Base-TX Fast Ethernet
IEEE 802.3 Nway Auto-Negotiation

VPN Pass Through/Multi-Sessions

PPTP
L2TP
IPSec

Device Management

Web-Based – requires at least Microsoft Internet Explorer v5 or later,
Netscape Navigator v4 or later, or other Java-enabled browsers.

Media Access Control

CMSA/CA with ACK

LEDS

Power
Status
WAN
Local Network – 10/100

Operating Temperature

32°F to 113°F (0°C to 45°C)

Humidity

95% maximum (non-condensing)

Power Input

External power Supply
DC 5V, 1.2A

Dimensions

L = 5.83in (148mm)
W = 4.5in (114mm)
H = 1.26in (32mm)

Weight

0.51 lbs (230g)

Appendix B

Configuring IP Settings on Your Computer

In order to configure your system to receive IP settings from the Router it must first have the TCP/IP protocol installed. If you have an Ethernet port on your computer, it probably already has TCP/IP protocol installed. If you are using Windows XP the TCP/IP is enabled by default for standard installations. Below is an illustrated example of how to configure a Windows XP system to automatically obtain IP settings from the Router. Following this example is a step-by-step description of the procedures used on the other Windows operating systems to first check if the TCP/IP protocol has been installed; if it is not, instructions are provided for installing it. Once the protocol has been installed you can configure the system to receive IP settings from the Router.

For computers running non-Windows operating systems, follow the instructions for your OS that configure the system to receive an IP address from the Router, that is, configure the system to be a DHCP client.



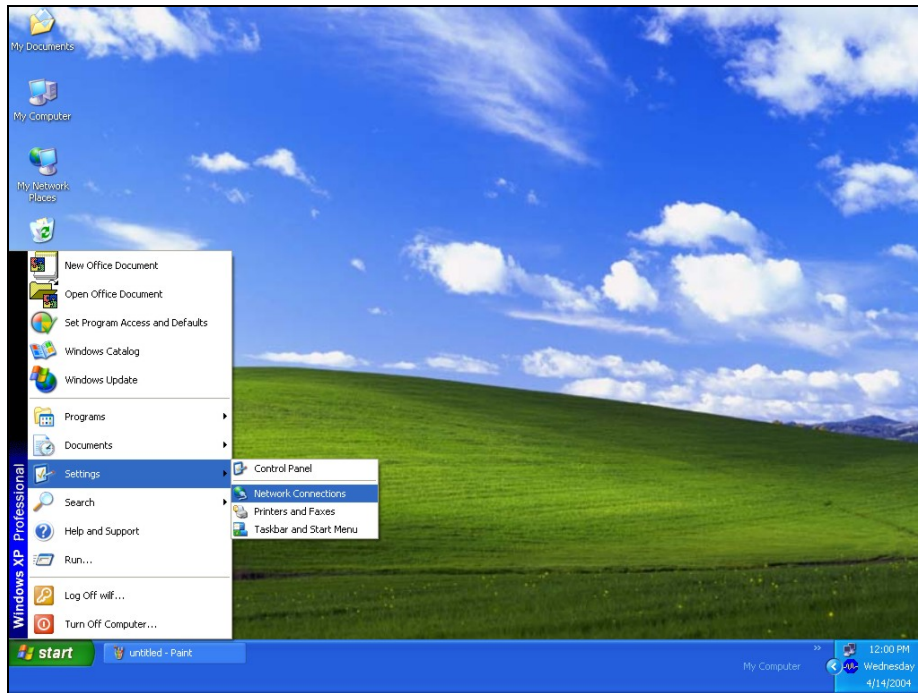
Note

If you are using this Router to provide Internet access for more than one computer, you can use these instructions later to change the IP settings for the other computers. However, you cannot use the same IP address since every computer must have its own IP address that is unique on the local network.

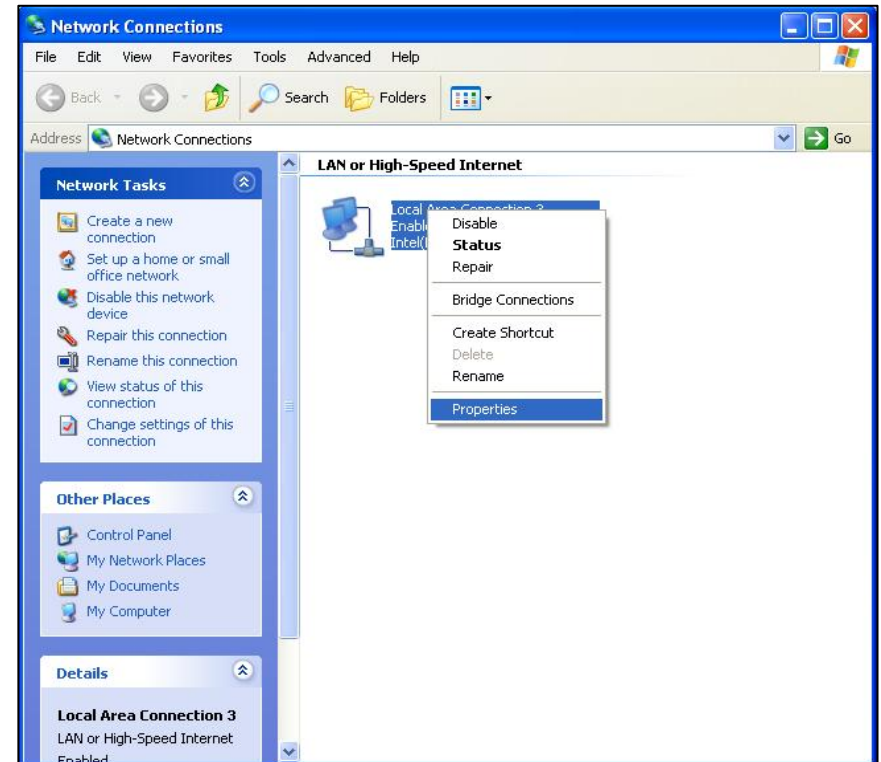
Configure Windows XP for DHCP

Use the following steps to configure a computer running Windows XP to be a DHCP client.

1. From the **Start** menu on your desktop, go to **Settings**, then click on **Network Connections**.

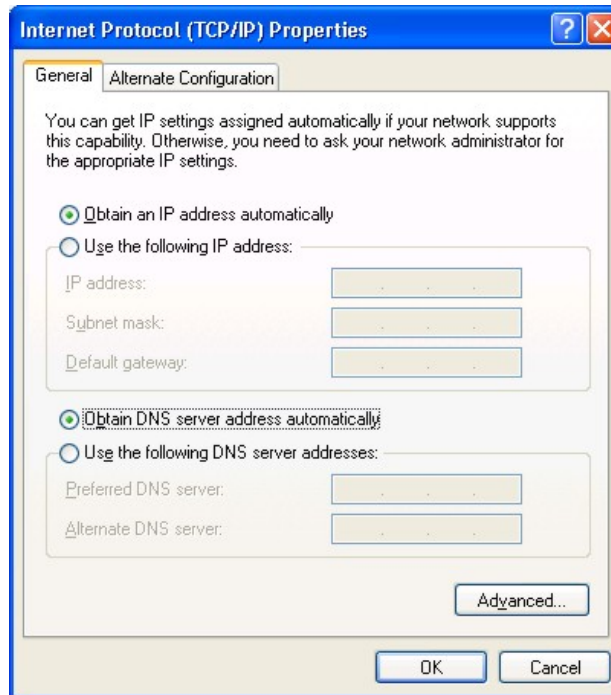


2. In the **Network Connections** window, right-click on **LAN (Local Area Connection)**, then click **Properties**.

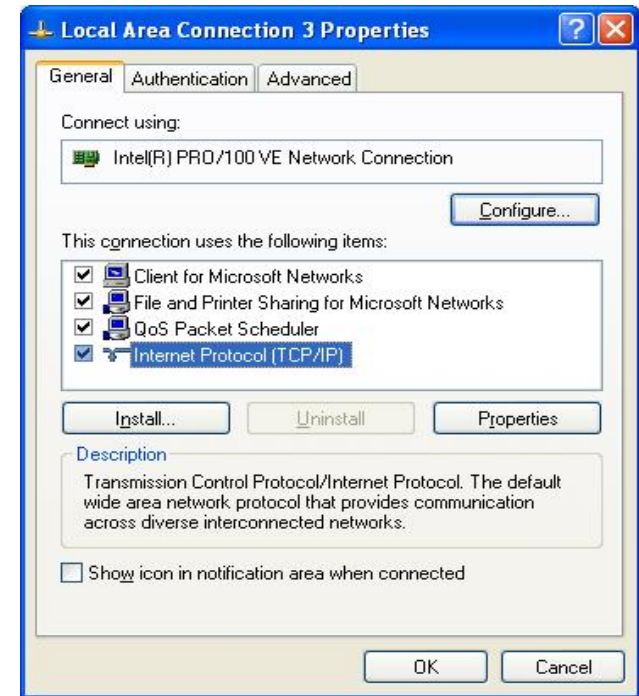


In the **General** tab of the **Local Area Connection Properties** menu, highlight **Internet Protocol (TCP/IP)** under “This connection uses the following items:” by clicking on it once. Click on the **Properties** button.

1. Select “Obtain an IP address automatically” by clicking once in the circle. Click the **OK** button.



Your computer is now ready to



use the Router’s DHCP server.

Windows 2000

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then select **Properties**.
4. The **Local Area Connection Properties** dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled, skip ahead to *Configure Windows 2000 for DHCP*.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click **Install**.
6. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add**.
7. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click **OK**.
8. You may be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.
9. If prompted, click **OK** to restart your computer with the new settings.

Configure Windows 2000 for DHCP

1. In the Control Panel, double-click the **Network and Dial-up Connections** icon.
2. In **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then select **Properties**.
3. In the **Local Area Connection Properties** dialog box, select **Internet Protocol (TCP/IP)**, and then click **Properties**.
4. In the **Internet Protocol (TCP/IP) Properties** dialog box, click the button labeled **Obtain an IP address automatically**.
5. Double-click **OK** to confirm and save your changes, and then close the Control Panel.

Your computer is now ready to use the Router's DHCP server.

Windows 95 and Windows 98

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**. Double-click the **Network** icon.
2. The **Network** dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled, skip to *Configure IP Information Windows 95, 98*.
3. If TCP/IP does not display as an installed component, click **Add**. The **Select Network Component Type** dialog box displays.
4. Select **Protocol**, and then click **Add**. The **Select Network Protocol** dialog box displays.
5. Click on **Microsoft** in the Manufacturers list box, and then click **TCP/IP** in the Network Protocols list box.
6. Click **OK** to return to the Network dialog box, and then click **OK** again. You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
7. Click **OK** to restart the PC and complete the TCP/IP installation.

Configure Windows 95 and Windows 98 for DHCP

1. Open the **Control Panel** window, and then click the **Network** icon.
2. Select the network component labeled TCP/IP, and then click **Properties**.
3. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
4. In the **TCP/IP Properties** dialog box, click the **IP Address** tab.
5. Click the **Obtain an IP address automatically** option.
6. Double-click **OK** to confirm and save your changes. You will be prompted to restart Windows.
7. Click **Yes**.

When it has restarted, your computer is ready to use the Router's DHCP server.

Windows ME

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click the **Network** icon, and then select **Properties**.

4. The **Network Properties** dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip ahead to *Configure Windows ME for DHCP*.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click **Add**.
6. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add**.
7. Select **Microsoft** in the Manufacturers box.
8. Select **Internet Protocol (TCP/IP)** in the Network Protocols list, and then click **OK**.
9. You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.
10. If prompted, click **OK** to restart your computer with the new settings.

Configure Windows ME for DHCP

1. In the **Control Panel**, double-click the **Network and Dial-up Connections** icon.
2. In the **Network and Dial-up Connections** window, right-click the **Network** icon, and then select **Properties**.
3. In the **Network Properties** dialog box, select **TCP/IP**, and then click **Properties**.
4. In the **TCP/IP Settings** dialog box, click the **Obtain an IP address automatically** option.
5. Double-click **OK** twice to confirm and save your changes, and then close the Control Panel.

Your computer is now ready to use the Router's DHCP server.

Windows NT 4.0 Workstations

First, check for the IP protocol and, if necessary, install it:

1. In the **Windows NT** task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. In the **Control Panel** window, double-click the **Network** icon.
3. In the **Network** dialog box, click the **Protocols** tab.
4. The **Protocols** tab displays a list of currently installed network protocols. If the list includes TCP/IP, then the protocol has already been enabled. Skip to "Configure IP Information"
5. If TCP/IP does not display as an installed component, click **Add**.
6. In the **Select Network Protocol** dialog box, select **TCP/IP**, and then click **OK**. You may be prompted to install files from your Windows NT installation CD or other media. Follow the instructions to install the files.

7. After all files are installed, a window displays to inform you that a TCP/IP service called DHCP can be set up to dynamically assign IP information.
8. Click **Yes** to continue, and then click **OK** if prompted to restart your computer.

Configure Windows NT 4.0 for DHCP

1. Open the **Control Panel** window, and then double-click the **Network** icon.
2. In the **Network** dialog box, click the **Protocols** tab.
3. In the **Protocols** tab, select **TCP/IP**, and then click **Properties**.
4. In the **Microsoft TCP/IP Properties** dialog box, click the **Obtain an IP address automatically** option.
5. Click **OK** twice to confirm and save your changes, and then close the Control Panel.

Your computer is now ready to use the Router's DHCP server.

Contacting Technical Support

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

If you require product support, we encourage you to browse our FAQ section on the Web Site before contacting the Support line. We have many FAQ's which we hope will provide you a speedy resolution for your problem.

For Customers within The United Kingdom & Ireland:

D-Link UK & Ireland Technical Support over the Internet:

<http://www.dlink.co.uk>

<ftp://ftp.dlink.co.uk>

D-Link UK & Ireland Technical Support over the Telephone:

08456 12 0003 (United Kingdom)

+1890 886 899 (Ireland)

Lines Open

8.00am-10.00pm Mon-Fri

10.00am-7.00pm Sat & Sun