

D-Link DWL-AB520

2.4/5GHz Wireless PCI Adapter

Manual

Rev. 0209016

D-Link®

Contents

Package Contents	1
Introduction	1
Wireless Basics	1
Getting Started	1
Using the Configuration Utility	1
Troubleshooting	2
Networking Basics	2
Technical Specifications	5
Limited Warranty and Registration	6

Package Contents



Contents of Package:

- D-Link DWL-AB520 2.4/5GHz Wireless PCI Adapter
- Manual and Drivers on CD
- Quick Installation Guide (printed)

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

System Requirements:

- A desktop computer with an available 32-bit PCI Card slot
- Windows XP, Windows 2000, Windows ME, or Windows 98 SE
- At least 32 MB of memory and a 300 MHz processor or higher
-

Introduction

The D-Link DWL-AB520 Wireless PCI Adapter is an advanced IEEE 802.11a/b compatible, high performance, wireless adapter that supports data transfer speeds of up to 108 Mbps in **Turbo Mode**.

It is an ideal way to connect your laptop computer to a Wireless Local Area Network (WLAN.) After completing the steps outlined in the Quick Install Guide (included in your package) you will have the ability to share information and resources, such as files and printers, and take full advantage of a “connected” environment for work or play! Please take a look at our **Getting Started** section in this manual. You will see several options for setting up a network using the DWL-AB520.

The DWL-AB520 comes with software drivers for the most popular Microsoft Windows operating systems and can be integrated into a larger network, running Windows XP, Windows 2000, Windows ME, Windows 98SE, in either Ad Hoc mode (without an Access Point) or Infrastructure mode (with an Access Point.)

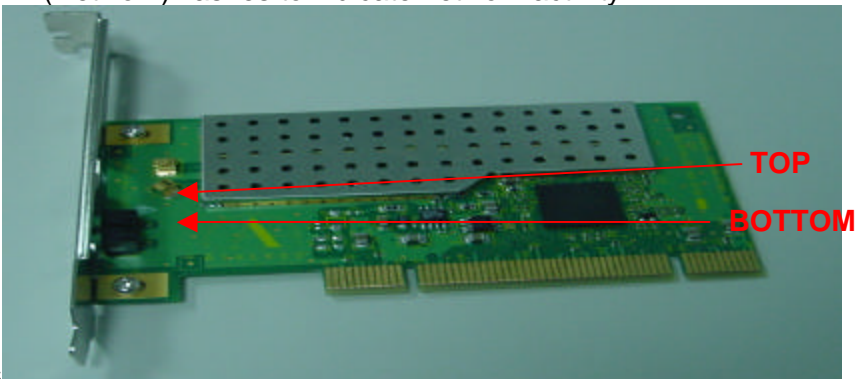
This manual provides a quick introduction to wireless technology and its application as it relates to networking. Take a moment to read through this manual and get acquainted with wireless technology.

Product Features

- Adheres to 802.11a/b standard in providing high data wireless transfer rates of up to 54 Mbps. Capable of providing data rates of up to 108 Mbps in **Turbo Mode**.
- Orthogonal Frequency Division Multiplexing (OFDM) – a new technique for transmitting high-speed data over a radio wave.
- Maximum reliability, throughput and connectivity with automatic data rate switching.
- Supports Wired Equivalent Privacy (WEP) data encryption at 64/128/152-bit encryption with dynamic key exchange for security.
- Supports infrastructure networks via Access Point and Ad-Hoc networks via peer-to-peer communication.
- Built-in dual diversity antenna for reduced interference in a multi-path environment.
- Requires an available 32-bit PCI Card slot that is PCI 2.2 compliant.
- User-friendly configuration and diagnostic utilities.

LED

LED stands for **light-emitting diode**. The **DWL-AB520 Wireless PCI Adapter** has two LEDs, as shown below. When the computer is ON, the adapter is inserted properly, and there is activity on the network, both LEDs flash in unison. The **BOTTOM LED (POWER)** flashes to indicate that the adapter is inserted properly into a computer that is ON. The **TOP LED (Network)** flashes to indicate network activity.



LEDs

Antenna

The **DWL-AB520 Wireless PCI Adapter** has two mode for external antenna and internal antenna. As below:

For external antenna: (Please refer to the figure 1)

1. Remover the back cover of the computer
2. Install the DWL-AB520 PCI Adapter carefully and firmly into an available CPI slot.
3. Pass the wireless antenna through the hole on the back panel
4. Secure the screw and replace the computer cover
5. Put the antenna into the antenna stand

For internal antenna, the installation instruction as follows and performed by D-Link authorized OEM company at factory. (Please refer the figure 2 and 3)

1. Remove the back cover of the computer.
2. Install the DWL-AB520 PCI Adapter carefully and firmly into an available PCI slot.
3. The internal antenna should be installed on the front panel of the computer by D-Link authorized OEM company at factory.
4. Find the internal antenna plug in the computer chassis.
5. Insert this internal antenna plug carefully and firmly into the receptacle on the DWL-AB520 PCI Adapter.
6. Replace the computer's cover.

Warning: This internal antenna is not allowed to be installed by the end user.



Figure 1: External Antenna



Figure 2: Two Types of Internal Antennas

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home or business. Strictly adhering to IEEE 802.11a/b, the D-Link wireless family of products will allow you to access the data you want, when and where you want it. No longer will you be limited to one location or forced to run new wiring through your home or office. You will be able to enjoy the freedom that wireless networking delivers.

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

Wireless users can use the same network applications they use on an Ethernet LAN. Wireless adapter cards used on laptop and desktop systems, support the same protocols as Ethernet adapter cards. For most users, there is no noticeable functional difference between a wired Ethernet desktop computer and a wireless computer equipped with a wireless adapter other than the added benefit of the ability to roam within the wireless-cell. Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Access Point (AP) is a device used to provide this link.

People use wireless LAN technology for many different purposes.

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Ad-hoc management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs - WLANs are easy to set up, manage, change and relocate. Networks that frequently change, both physically and logically, can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical. Furthermore, IEEE standardization mandates interoperability of all WLAN devices that conform to the 802.11a/b set of standards.

Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

Wireless Basics *(continued)*

Installation Flexibility - Wireless technology allows the network to go where wires cannot go.

Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

Scalability - Wireless LAN systems can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users that allow roaming over a broad area.

Wireless Basics *(continued)*

Installation Considerations

Designed to go up to 1650 feet (~500 meters), D-Link DWL-AB520 lets you access your network with your computer from virtually anywhere you want. Keep in mind, however, that the number and thickness of walls, ceilings or other objects that the wireless signals must pass thru may limit range. Typical ranges vary depending on the types of materials and background RF noise in your home or business. The key to maximizing range is to follow these basic principles:

1. Keep the number of walls and ceilings between the Access Point and your receiving device to a minimum - Each wall or ceiling can reduce your D-Link Wireless product's range from 3-90 feet (1-30 meters.) For some businesses or for a large residential home deployment, it may be beneficial to have more than one access point with overlapping coverage.
2. Be aware of the direct line between Access Points and computers with wireless adapters - A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Try to make sure

that the Access Points and Adapters are positioned so that the signal will travel straight through a wall or ceiling for better reception.

3. Building Materials make a difference - A solid metal door or aluminum studs may have a negative effect on range. Try to position Access Points, and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
4. Make sure that the antenna is positioned for best reception by using the software signal strength tools included with your product.
5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

Wireless Basics *(continued)*

For the average residence, range should not be a problem. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the computers with wireless adapters that will be connected. Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strong as desired.

Using radio frequency (RF) technology, WLANs (Wireless Local Area Networks) transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

Getting Started

To begin, select the type of wireless network you will be building. We will discuss the following types of networks in this section:

1. ***A Home Internet Network with A Residential Gateway/Router***
2. ***A Home Internet Network with Multiple IP Addresses***
3. ***An Ad Hoc Network***
4. ***An Ad Hoc Network with Internet Sharing***

Please select, from the four types of networks described above, the type of network that is appropriate for your needs. Please follow the instructions in the corresponding section that follows.

1. A Home Internet Network with A Residential Gateway/Router

(Network administrators with Dynamic IPs can also follow these instructions.)

If you have two or more computers (laptops or desktops) and want to share files, printers, and Internet access using a DHCP-capable Residential Gateway/Router – or - if you want to connect to an Ethernet network that uses Dynamic (DHCP) IP addresses, then follow the instructions on the next page. When it is complete, your network may look similar to this:

DHCP stands for Dynamic Host Configuration Protocol. It is a protocol for assigning dynamic IP addresses "automatically." With a DHCP-capable gateway, there is no need to manually assign an IP address.



1. A Home Internet Network with A Residential Gateway/Router (continued)

(Requirements: A Residential Gateway/Router connected with an Ethernet (CAT5) cable to an 802.11a/b Access Point such as the DWL-5000AP.)

This type of installation requires that you provide a dynamic IP address for each computer on your network. You will need a DHCP-capable Residential Gateway/Router for your network.

To complete the installation, please follow these steps:

1. Connect the **Router/Gateway** (for example, the **D-Link DI-704P**) to a Broadband connection, (e.g., a **Cable** modem such as the **D-Link DCM-200** cable modem or a **DSL** modem such as the **D-Link DSL-300**.)
2. Connect the 802.11a/b Access Point (**DWL-5000AP**) to the router.
3. Install the **D-Link DWL-AB520 Wireless PCI Adapter** into a desktop computer on your wireless network. (You can also install the **Wireless Cardbus Adapter** into a laptop computer. Please refer to the **Quick Install Guide** included with each product.)

4. Check the **Device Manager** to confirm that the wireless adapter is installed correctly. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Installation of the Drivers for the Wireless Adapter**.
5. *By default, the wireless adapter is set to obtain a Dynamic IP Address.* If you are having difficulty connecting, check to make sure that the **IP Address** of the **wireless adapter** is within the IP address range of your network. Please refer to the **Networking Basics** section in this manual entitled: **Checking The IP Address**.
6. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

2. A Home Internet Network with Multiple IP Addresses

(Network administrators with Static IPs can also follow these instructions.)

If you have two or more computers (laptops or desktops) and want to share files, printers, and Internet access using multiple IP addresses that you have purchased from your Internet Service Provider **-or-** you want to connect to an Ethernet network that uses Static IP Addresses, then follow the instructions on the next page. When you have completed your network, it should look similar to this:

Please note that this type of installation requires that your ISP (Internet Service Provider) provides you a static IP address for each computer and the Access Point on your network. Please refer to the manual that came with your Access Point to determine its configuration.

2. A Home Internet Network with Multiple IP Addresses (continued)

Please follow these steps to complete the installation:

1. Connect the **Wireless Access Point** (as shown in the example) to a Broadband connection (i.e., a **Cable** modem such as the cable modem.)
2. Install the **DWL-AB520 Wireless PCI Adapter** into a desktop computer on your wireless network. (You can also install the **Wireless Cardbus Adapter** into a laptop computer. Please refer to the **Quick Install Guide** included with each product.)

3. Check the **Device Manager** to confirm that the **wireless adapter** is installed correctly. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Installation of the Drivers for the Wireless Adapter**.
4. Set the **Static IP Address** of the **wireless adapters**. Please refer to the **Networking Basics** section in this manual entitled: **Assigning an IP Address**.

Note: The IP Address for all computers must be in the same IP Address range, and the Subnet Mask must be the same for all the computers on the network. For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

*If you are using a **PPPoE client (Point to Point Protocol over Ethernet)** please contact your **ISP (Internet Service Provider)** for further instructions regarding connecting to the Internet.*

5. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

3. An Ad Hoc Network

If you have two or more computers (desktops or laptops) and want to share files and printers, but no Internet connection, please complete the following instructions. When your Ad Hoc network is complete it may look similar to this:



(Requirements: Wireless network adapters -for example)

To complete this installation, please follow these steps:

1. Install the **D-Link DWL-AB520 Wireless PCI Adapter** into a desktop computer on your wireless network. (You can also install the **Wireless Cardbus Adapter** into a laptop computer. Please refer to the **Quick Install Guide** included with each product.)

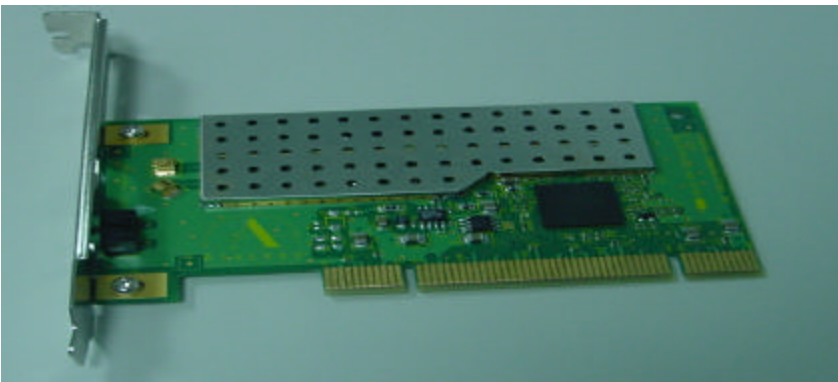
2. Set the **Static IP Address** of the **wireless adapters**. Please refer to the **Networking Basics** section in this manual entitled: **Assigning an IP Address**.

Note: The IP Address for all computers must be in the same IP Address range, and the Subnet Mask must be the same for all computers on your network. For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

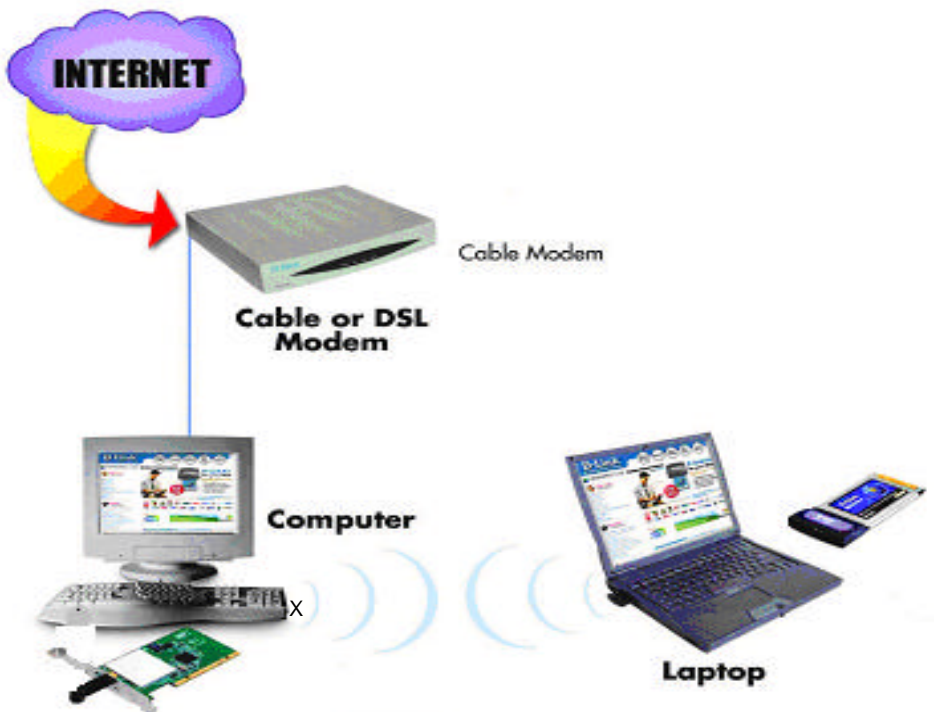
3. Check the **Device Manager** to confirm that the **wireless adapter** is installed correctly. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Installation of the Drivers for the Wireless Adapter**.
4. Check the **Wireless Configuration** for each **wireless adapter**. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Wireless Configuration**.
5. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

4. An Ad Hoc Network with Internet Sharing

If you have two or more computers (desktops or laptops) and want to share files, printers, and Internet access using one computer or laptop as an Internet Server, then follow the instructions below. When you have completed your network, it should look similar to this:



Wireless Basics *(continued)*



To share an Internet connection with Internet Sharing software you will need to purchase Internet Sharing software or use the Internet Connection Sharing (ICS) utility provided with Windows XP, Windows 2000, Windows ME or Windows 98SE.

Please follow your software documentation to properly configure the Internet sharing software after you install your wireless networking adapters. To install your wireless network adapter follow the instructions on the next page.

4. An Ad Hoc Network with Internet Sharing *(continued)*

If the Internet Sharing Software will be installed on the same computer into which you are installing this wireless network adapter, then follow these steps:

1. Install the **D-Link DWL-AB520 Wireless PCI Adapter** (please refer to the **Quick Install Guide**.)

2. Check the **Device Manager** to confirm that your adapter is installed correctly. Please refer to the **Networking Basics** section in this manual entitled: **Checking the Installation of the Drivers for the Wireless Adapter**.
3. Install your **Internet Sharing Software**
4. If required by the ICS software, set the static IP Address for the **wireless adapter**. Please refer to the **Networking Basics** section in this manual entitled: **Assigning an IP Address**.

Note: The IP Address for all the computers on the network must be in the same IP Address range, and the Subnet Mask must be the same for all the computers on the network. For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

5. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers**.

If the **Internet Sharing Software** will be installed on a computer other than the one in which you are installing the **D-Link DWL-AB520 Wireless PCI Adapter**, then follow these steps:

1. Install the **D-Link DWL-AB520 Wireless PCI Adapter** into the computer (please refer to the **Quick Install Guide**.)
2. Check the **IP Address** for the **wireless adapter**. Please make certain that all the computers on your network are in the same IP Address range. Please refer to the **Networking Basics** section in this manual entitled: **Checking your IP Address**.

*Note: By default, the **wireless adapter** is set to obtain a **Dynamic IP Address**, automatically.*

3. Learn to share printers and files. Please refer to the **Networking Basics** section in this manual entitled: **Adding and Sharing Printers in Windows XP**.

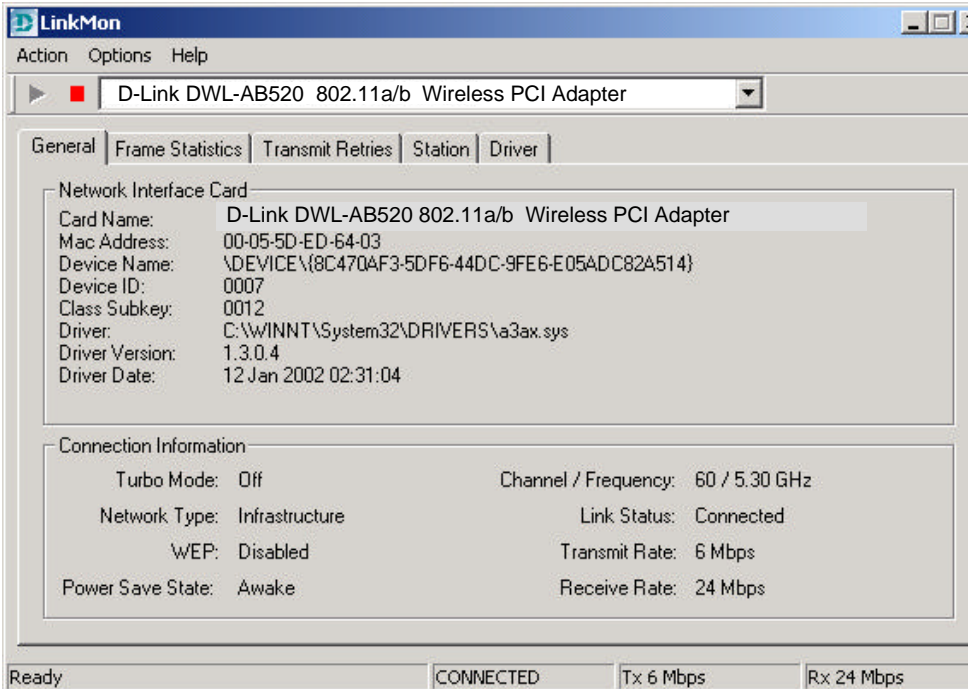
Using the Configuration Utility

The Configuration Utility program for the DWL-AB520 is called **LinkMon**. Please refer to the *Quick Install Guide* that came with the DWL-AB520 for instructions on how to install **LinkMon** on your computer. Once you have installed **LinkMon** (the configuration utility), you can read this section of the manual to find out how to monitor and configure your DWL-AB520 adapter using **LinkMon**. There are five tabs in the **LinkMon** Configuration Utility program. In this section we will describe the uses for each tab in the Configuration Utility window.

To access **LinkMon** once it has been installed, just double-click on the **LinkMon** icon in the taskbar.

Under the **General Tab** you will find general information about the program and its operations.

General Tab



Using the Configuration Utility *(continued)*

Under the **Frame Statistics Tab** you will find statistical information showing the number of frames being sent and received, retry count on frames sent, frame checksum error counts for received frames, and receive signal strength indicator (RSSI) information.

Frame Statistics Tab

The screenshot shows the LinkMon configuration utility window. The title bar reads "LinkMon". The menu bar includes "Action", "Options", and "Help". The device selected is "D-Link DWL-AB520 802.11a/b Wireless PCI Adapter". The "Frame Statistics" tab is active, showing the following data:

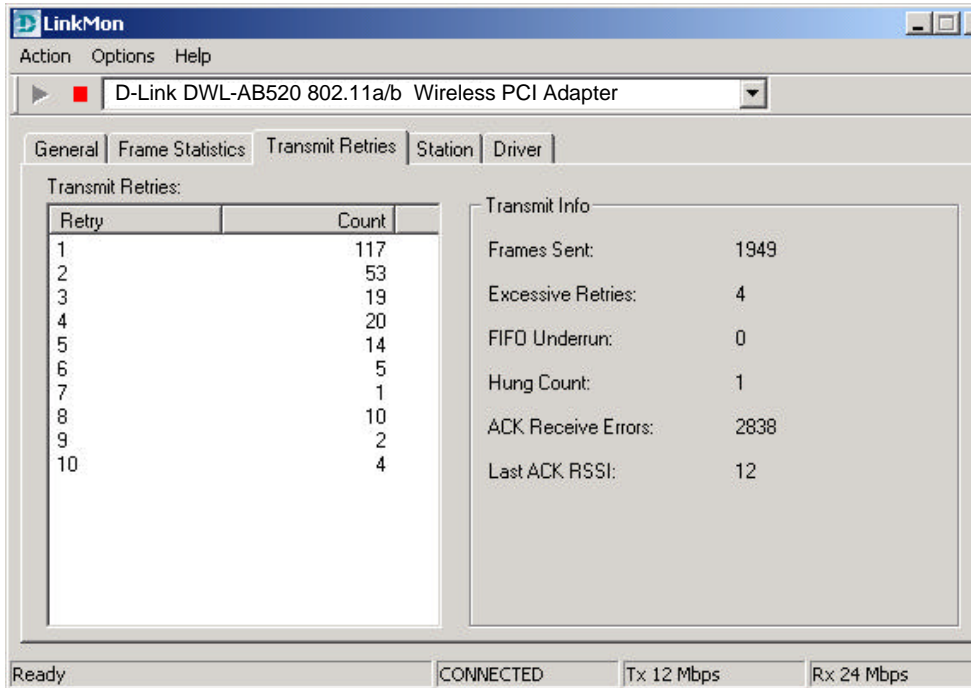
Transmit Statistics	Receive Statistics
Frames Sent: 1944	Frames Received: 118070
One Retry: 117	Duplicate Frames: 53
Excessive Retries: 4	Multiple Duplicates: 0
FIFO Underruns: 0	Multicast Frames: 0
Hung Count: 1	FIFO Overruns: 0
ACK Receive Errors: 2766	HW Reported FCS Errors: 83342
Last ACK RSSI: 12	SW Reported FCS Errors: 9350
	WEP Decryption Errors: 0
	Last Frames RSSI: 13

At the bottom of the window, the status bar shows "Ready", "CONNECTED", "Tx 6 Mbps", and "Rx 24 Mbps".

Using the Configuration Utility *(continued)*

Under the **Transmit Retries Tab** you will find detailed transmit retry statistical information for transmitted frames.

Transmit Retries Tab



LinkMon

Action Options Help

D-Link DWL-AB520 802.11a/b Wireless PCI Adapter

General Frame Statistics **Transmit Retries** Station Driver

Transmit Retries:

Retry	Count
1	117
2	53
3	19
4	20
5	14
6	5
7	1
8	10
9	2
10	4

Transmit Info

Frames Sent: 1949

Excessive Retries: 4

FIFO Underrun: 0

Hung Count: 1

ACK Receive Errors: 2838

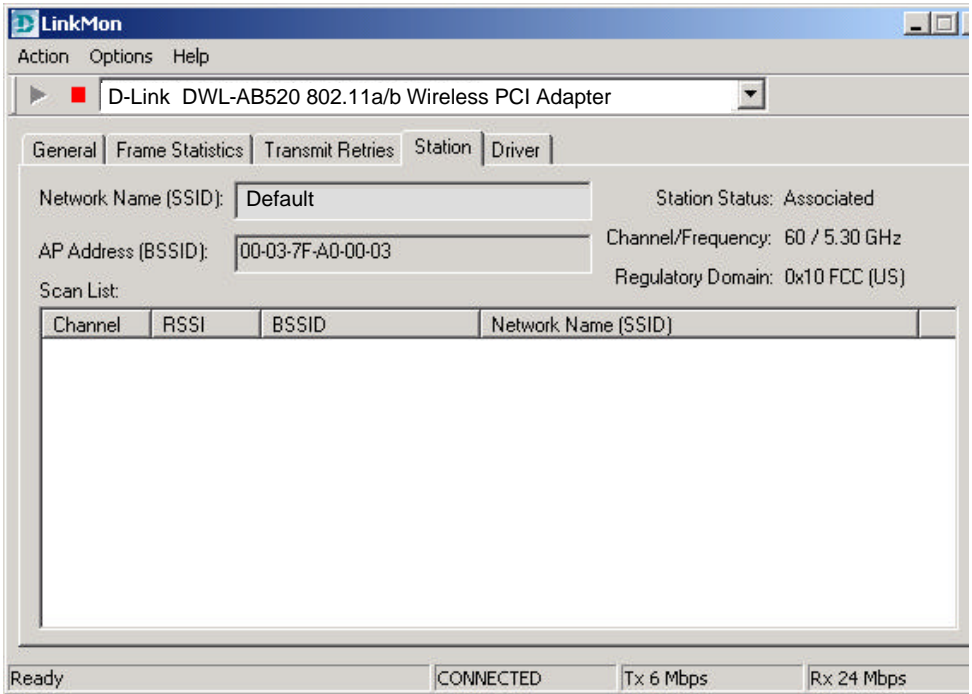
Last ACK RSSI: 12

Ready CONNECTED Tx 12 Mbps Rx 24 Mbps

Using the Configuration Utility *(continued)*

Under the **Station Tab** you will find detailed **BSS** information including **SSID**, **BSSID**, association status, operating channel frequency, and information about scanned APs.

Station Tab



BSS – (Basic Service Set) when one AP is connected to a wired network and a set of wireless stations, it is a **BSS**.

SSID – (Service Set Identifier) it is essentially a **network name**; a name that identifies a wireless network. All Access Points and all devices attempting to connect to a specific WLAN (Wireless Local Area Network) must use the same SSID.

Using the Configuration Utility *(continued)*

Under the **Driver Tab** you will find statistical data pertaining to NDIS (Network Driver Interface Specification) driver operations.

Driver Tab

The screenshot shows the LinkMon utility window. The title bar reads "LinkMon". The menu bar contains "Action", "Options", and "Help". A dropdown menu shows "ID-Link AirPro DWL-AB520 Wireless PCI Adapter". Below the menu are tabs for "General", "Frame Statistics", "Transmit Retries", "Station", and "Driver". The "Driver" tab is selected and displays two sections:

NDIS Statistics

NDIS Resets:	1
Self Induced Resets:	0
NDIS Send Requests:	877
NDIS Send Request Denied:	4

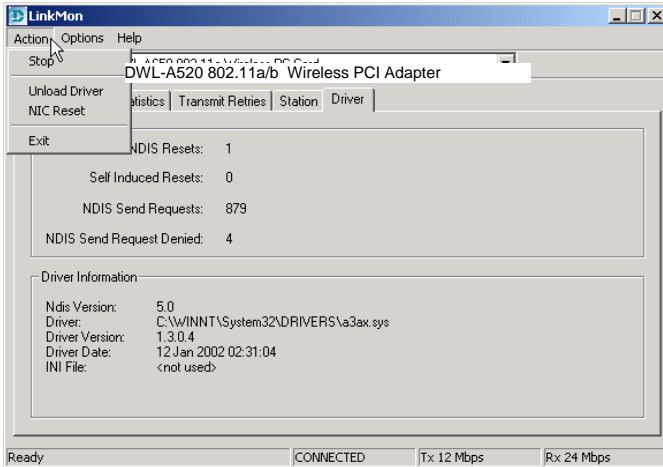
Driver Information

Ndis Version:	5.0
Driver:	C:\WINNT\System32\DRIVERS\A3ax.sys
Driver Version:	1.3.0.4
Driver Date:	12 Jan 2002 02:31:04
INI File:	<not used>

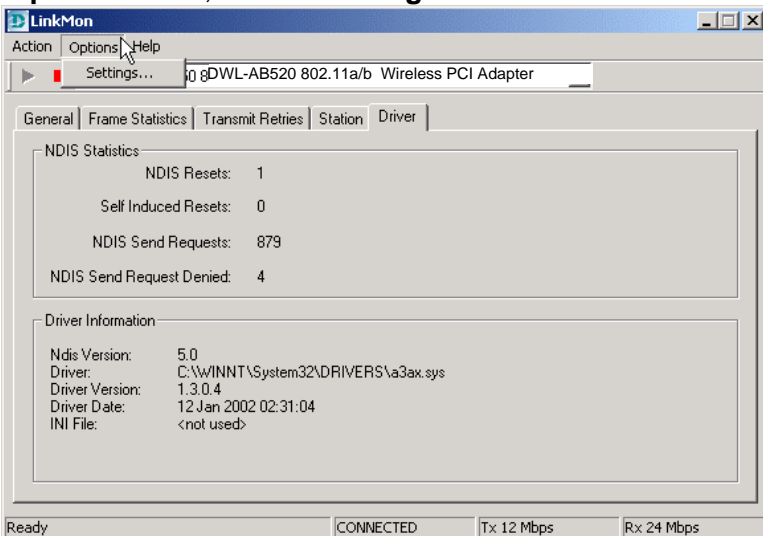
At the bottom of the window, there are four status indicators: "Ready", "CONNECTED", "Tx 18 Mbps", and "Rx 24 Mbps".

Using the Configuration Utility *(continued)*

The **Action** menu allows the unloading of the NDIS driver, and the resetting of the network interface card (NIC.) Note that unloading the driver and resetting the NIC are options that are available only in Windows XP and Windows 2000.

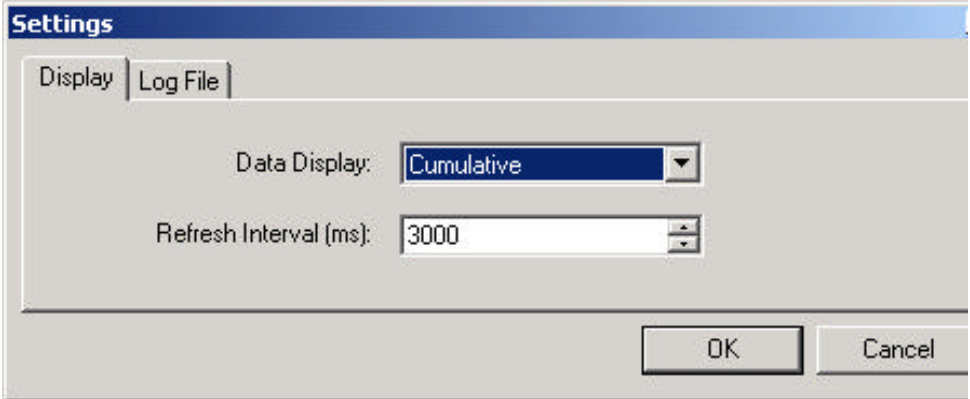


On the **Options** menu, choose **Settings**:

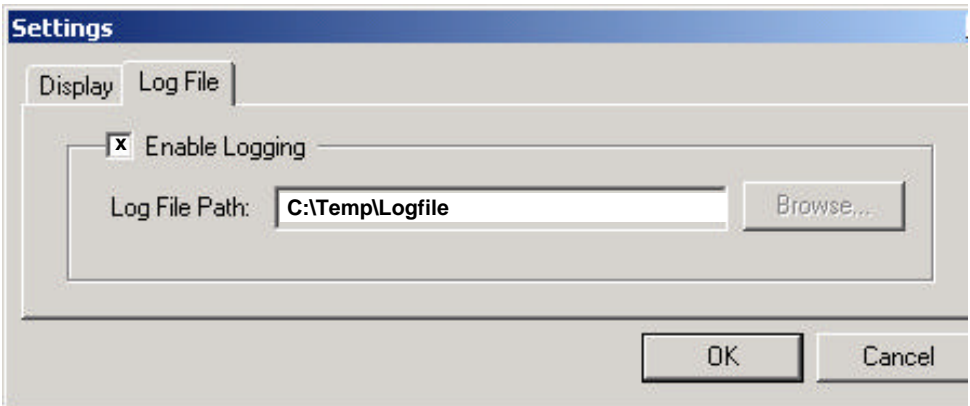


Using the Configuration Utility (*continued*)

Under the **Display Tab**, you can select the data display modes of **Cumulative**, or **Relative**. **Cumulative** mode displays statistical data collected when **LinkMon** is started. **Relative** mode displays differences in the statistical data since the last update of collected data.



Under the **Log File Tab**, the logging function can be enabled to log to a file the statistical information collected by the **LinkMon** utility, for later reference or post processing by an application such as Microsoft Excel.



Click the **Enable Logging** click-box to enable **LinkMon** to write a log file. You must also specify the full DOS path to the log file, such as C:\Temp\Logfile.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DWL-AB520 Wireless PCI Adapter. Read the following descriptions if you are having problems.

1. The computer does not recognize the DWL-AB520 802.11a/b Wireless PCI Adapter.

- Make sure that the DWL-AB520 Wireless PCI Adapter is properly seated in the computer's PCI slot.
- Check that the DWL-AB520 is installed in a 32-bit PCI 2.2 slot.
- If Windows does not detect the hardware upon insertion of the adapter, make sure to completely remove drivers that were previously loaded. To remove the drivers, do the following:
 - A. Under **Tools**> select **Folder Options...**> select **View** > under **Hidden files and folders** > select **Show hidden files and folders**
 - B. Uncheck **Hide extension for known file types** > click on **Apply**
 - C. Search for the files **NetA3x.inf** and **A3ax.sys**. Remove these files from the **INF** and **SYSTEM32 (DRIVERS)** folders in the Windows directory. Note: Windows XP and Windows 2000 will rename **.inf** files that have not received certification into **oem.inf** files (e.g., **oem1.inf**.)

2. The DWL-AB520 802.11a/b Wireless PCI Adapter does not work properly after the driver is installed.

- **Restart** the computer. (In some cases, it will be necessary to restart the computer after installing the drivers.)
- In Windows XP, go to **Start>Control Panel>System>Hardware Tab**> click on the **Device Manager Tab**> click on **Network Adapters**> double click on **D-Link DWL-AB520 Wireless PCI Adapter**> make sure that **"This device is working properly"** is displayed under **Device Status** under the **General Tab**. (Please refer to **Checking the Installation of the Drivers for the Wireless Adapter** in the **Networking Basics** section of this manual for more information.)

Troubleshooting *(continued)*

- If the device is not working properly and a yellow exclamation mark is displayed, then there is probably a resource conflict. In this case, make sure the computer system has a free IRQ and if necessary, uninstall the drivers, restart the system, and repeat the driver installation procedure.
3. **The computer with the wireless adapter installed is unable to connect to the wireless network.**
- In **Infrastructure** mode, make sure the same **Service Set Identifier (SSID)** is specified on the settings for the wireless clients and access points. The **SSID** factory default setting for the D-Link products is **Default**. (Please refer to **Checking the Wireless Configuration** in the **Networking Basics** section of this manual for more information.)
 - In **Ad-Hoc** mode, both wireless clients will need to have the same **SSID**. Please note that it might be necessary to set up one client to establish a **BSS (Basic Service Set)** and wait briefly before setting up other clients. This prevents several clients from trying to establish a **BSS** at the same time, which can result in multiple singular **BSSs** being established, rather than a single **BSS** with multiple clients associated to it. (Please see the **Status Tab** in **Linkmon** in the **Configuration Utilities** section or see **Checking the Wireless Configuration** in the **Networking Basics** section of this manual to learn more about **BSS-Basic Service Set**.)
 - Check that the **Network Connection** for the wireless client is configured properly. Select **AP (Infrastructure)** when connecting to an access point and select **Ad-Hoc mode** when connecting without an access point. **Double-click** on the **network connection icon** in the taskbar > click on **Properties** > click on **Configure** > select the **Settings** Tab > click on **Modify** to change the settings for the wireless adapter. (Please refer to **Checking the Wireless Configuration** in the **Networking Basics** section of this manual for more information.)
 - Verify that the **Turbo Mode** setting is exactly the same for wireless clients and the access point. Please note that the wireless connection will not be established in **Infrastructure** or **Ad-Hoc** mode if **Turbo Mode** is enabled on one end of the wireless connection and not the other. (Please refer to **Checking the Wireless**

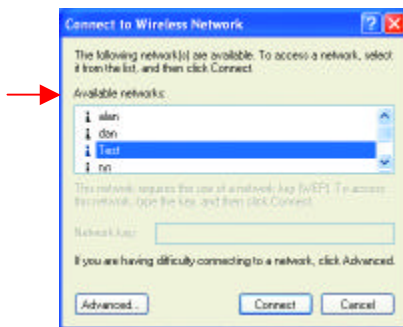
Troubleshooting *(continued)*

Configuration in the **Networking Basics** section of this manual for more information.)

- If **Enable Security** is selected, make sure that the correct encryption keys are entered on both the wireless clients and the access points. (Please see **Checking the Wireless Configuration** in the **Networking Basics** section of this manual for more information.)

4. The wireless client cannot access the Internet in the Infrastructure mode.

- Make sure the wireless client is associated and joined with the correct Access Point. To check this connection: **Right-click** on the **Networking Icon** in the taskbar > select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.



- Check that the **IP Address** assigned to the wireless adapter is within the same **subnet range** as the access point and gateway. To check the **IP Address** assigned to the wireless adapter, **double-click** on the **Network Connection Icon** in the taskbar > select the **Support** tab and the **IP Address** will be displayed. (Please refer to **Checking the IP Address** in the **Networking Basics** section of this manual.)
- If it is necessary to assign a static **IP Address** to the wireless adapter, please refer to the appropriate section in **Networking Basics**.

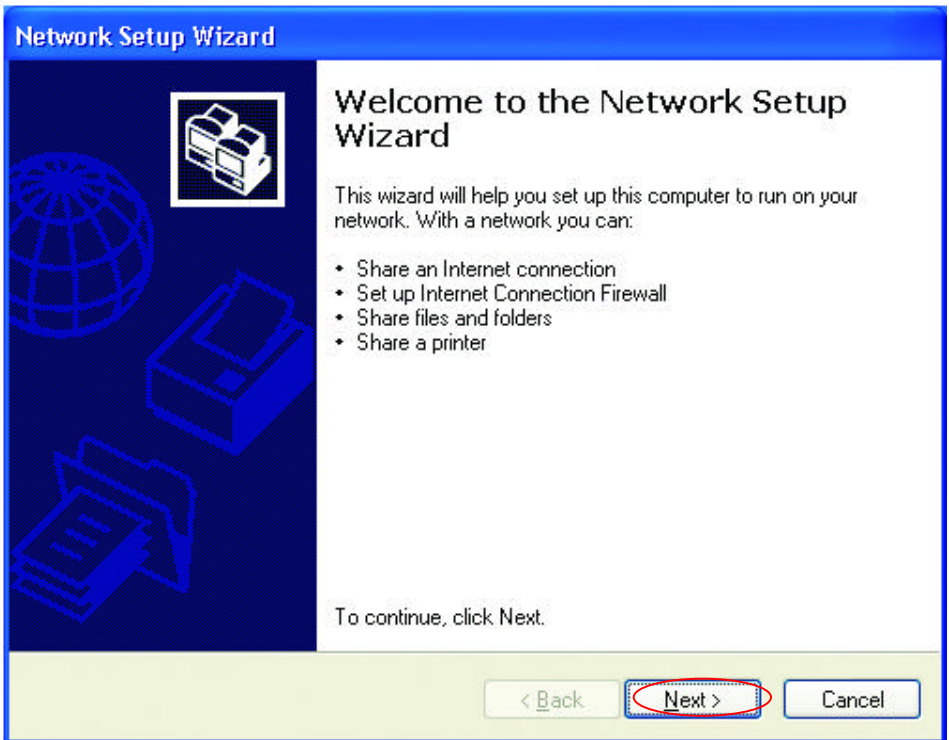
Networking Basics

Using the Network Setup Wizard in Windows XP

In this section you will learn how to establish a network at home or work, using **Microsoft Windows XP**.

Note: Please refer to websites such as <http://www.homenethelp.com> and <http://www.microsoft.com/windows2000> for information about networking computers using Windows 2000, ME or 98.

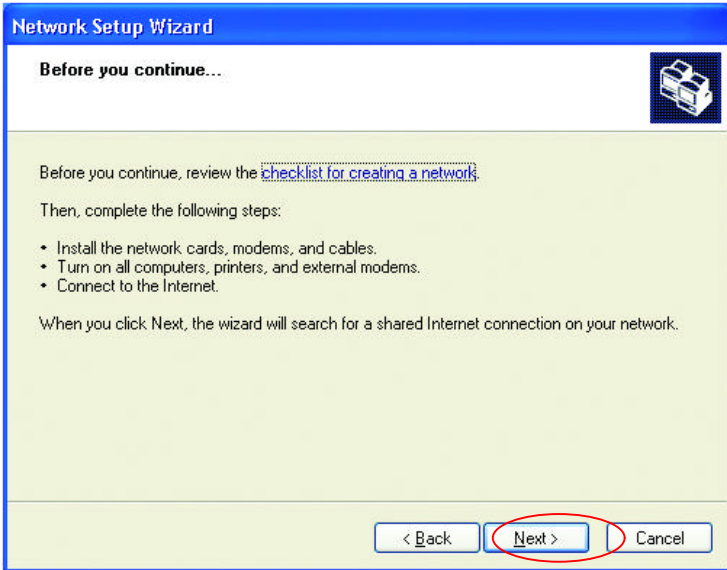
Go to **START>CONTROL PANEL>NETWORK CONNECTIONS**
Select **Set up a home or small office network**



When this screen appears, click **Next**.

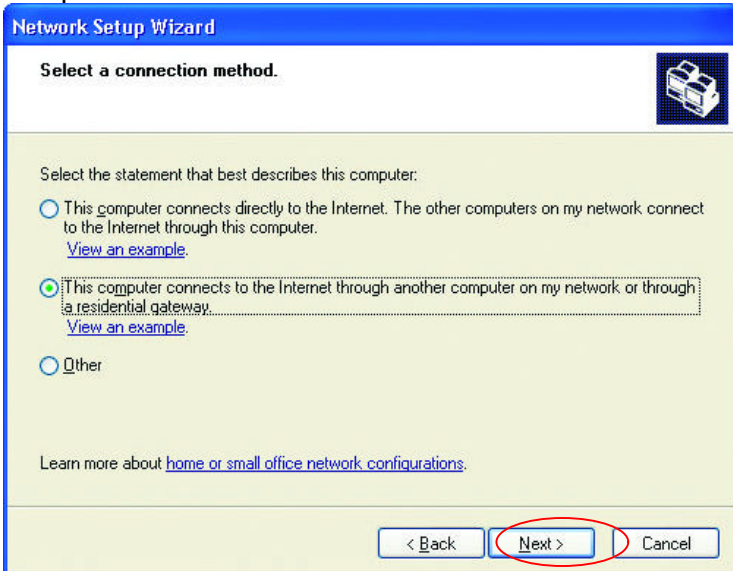
Networking Basics

Please follow all the instructions in this window:



Click **Next**

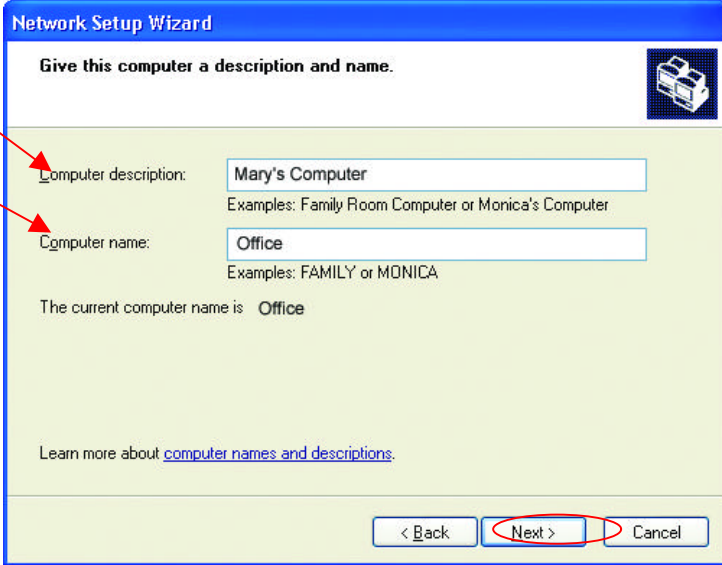
In the following window, select the best description of your computer. If your computer connects to the internet through a gateway/router, select the second option as shown.



Click **Next**

Networking Basics

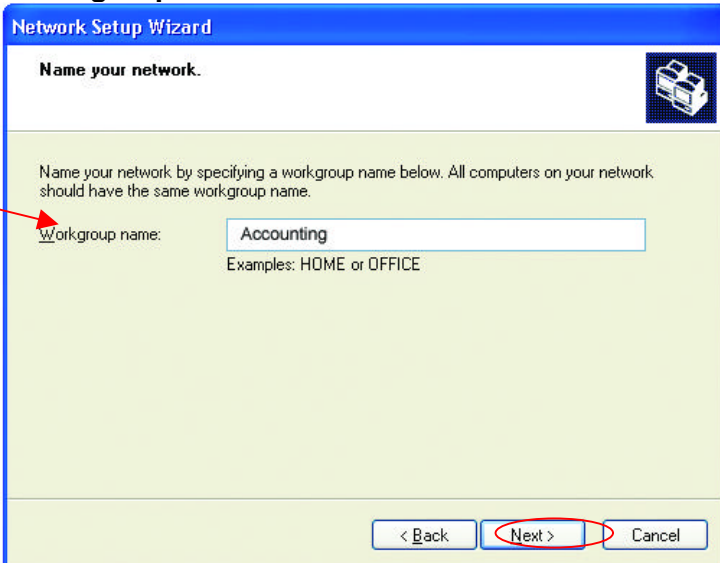
Enter a **Computer description** and a **Computer name** (optional.)



The screenshot shows the 'Network Setup Wizard' window with the title 'Give this computer a description and name.' The window contains two text input fields: 'Computer description:' with the value 'Mary's Computer' and 'Computer name:' with the value 'Office'. Below the 'Computer name' field, it says 'The current computer name is Office'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is circled in red. Two red arrows point to the 'Computer description' and 'Computer name' labels.

Click **Next**

Enter a **Workgroup** name. All computers on your network should have the same **Workgroup** name.



The screenshot shows the 'Network Setup Wizard' window with the title 'Name your network.' The window contains a text input field for 'Workgroup name:' with the value 'Accounting'. Below the field, it says 'Examples: HOME or OFFICE'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is circled in red. A red arrow points to the 'Workgroup name:' label.

Click **Next**