Actiontec®

Wireless

Cable/DSL Router

User Manual

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Introduction 1

Thank you for purchasing the *Action*tec Wireless Cable/DSL Router. This Router is the simplest way to connect a number of computers to a single high-speed broadband modem. This easy-to-use product is perfect for the home office or small business. If you want to take your computing to the next level, the *Action*tec Wireless Cable/DSL Router is the key to your success.

Package Contents

- Single-port *Action*tec Wireless Cable/DSL Router
- Power adapter
- Ethernet cable
- USB cable
- Installation CD
- Quick start guide
- Warranty and registration card

Minimum System Requirements

- Broadband Internet connection using an external Ethernet modem
- Computer with an 10 Mbps or 10/100 Mbps Ethernet connection
- Microsoft Windows 95, Windows 98, Windows 98 Second Edition (SE), Windows Millennium Edition (Me), Windows NT 4.0, Windows 2000, Windows XP, Mac OS 7.1+, Mac OS 8.0+, Mac OS 9.0+, or Mac OS X+

☞ ***Note***: USB LAN port is not supported with Microsoft Windows 95, Windows NT 4.0, and Mac OS

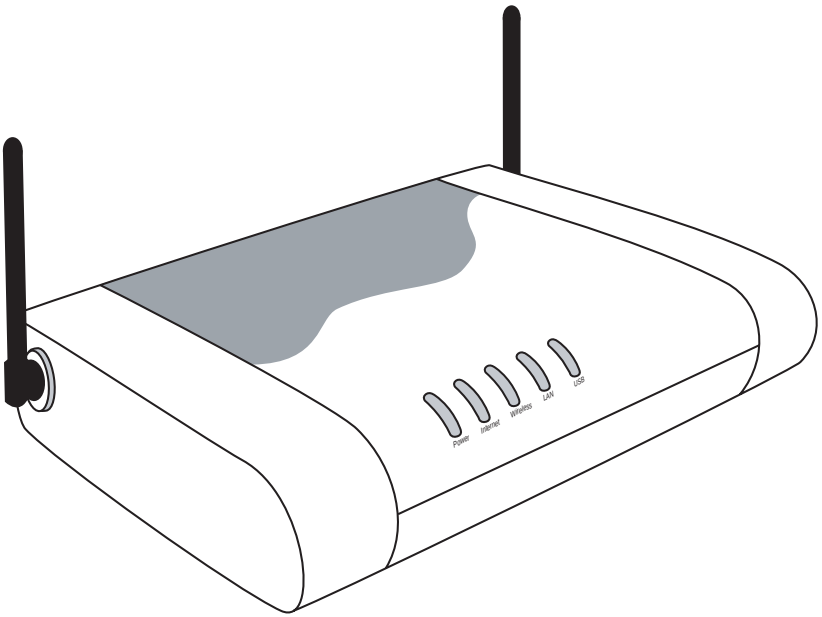
- Internet Explorer 4.0 or higher (5.x recommended) or Netscape Navigator 4.0 or higher (4.7 recommended)
- TCP/IP network protocol installed on each computer

Router Features

The Router has a series of informational LEDs (lights) on its front panel, and a variety of ports on its rear panel. It is recommended that the user become familiar with these features before installing or setting up the Router.

Front Panel

There are five LEDs (light emitting diodes, or lights) on the front panel of the Router, as shown in the figure, below.



Power LED

The Power LED glows green when power is supplied to the Router. When it flashes, the Router is going through its initialization process.

Internet LED

When the Internet LED glows steadily, the Router is connected to the broadband modem.

Wireless LED

When the Wireless LED glows steadily, the Router is ready for wireless networking.

LAN LED

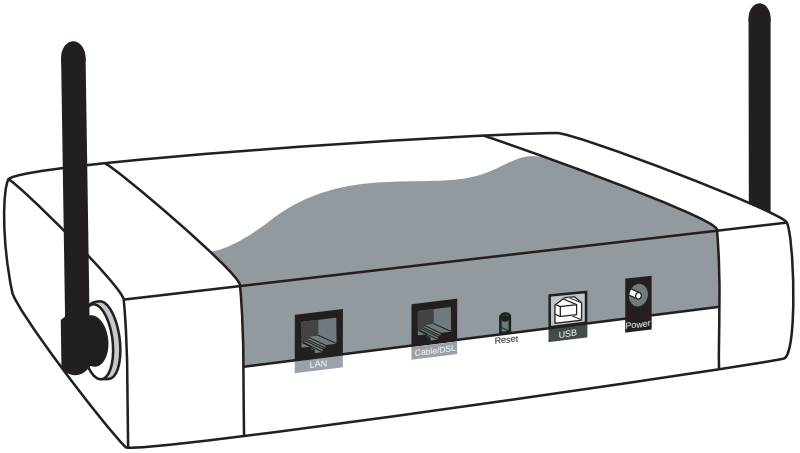
The LAN LED glows green when the Router is successfully connected to a computer with the yellow (Ethernet) cable.

USB LED

The USB LED glows green when the Router is successfully connected to a computer with the purple (USB) cable.

Rear Panel

The Router has four ports and a Reset button on its rear panel, as shown in the figure below.



LAN Port

The Yellow port is used to connect the Router to the cable modem or set top box using the Yellow Ethernet cable.

Cable/DSL Port

The Red port is used to connect the Router to a cable or DSL modem with an Ethernet cable.

USB Port

The Purple port is used to connect the Router to a computer on the home network with the Purple (Ethernet) cable.

Power Port

The Black port is used to connect the Router's Power cord.

Reset Button

The Reset button is used to reset the Router. Holding the button down for less than 10 seconds causes the Router to restart, with all settings remaining intact. If the Reset button is held for more than 10 seconds, the default settings will be reloaded onto the Router, and any changes made to the settings must be reinstalled on the Router.

Technical Support

*Action*tec Electronics prides itself on making high-quality, durable, high-performance products. If you need assistance, the *Action*tec Technical Support Department is available all day ever day to provide professional support.

Actiontec Electronics, Inc.

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Sunnyvale, CA 94085

Technical Support

Phone: 1.888.436.0657
E-mail: http://support.actiontec.com/email_support/support_form.php
Internet: www.actiontec.com/support

Connecting the Router

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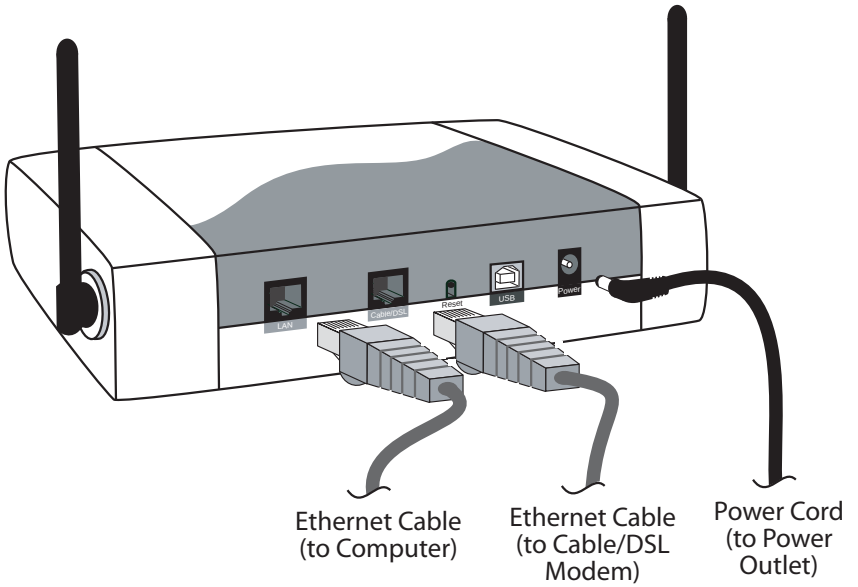
The Router can be physically connected to the computers in two ways: by Ethernet cable, or USB cable, as well as wirelessly. Select the type of connection and follow the instructions.

Ethernet Connection

1. Start up the computer.
2. Plug one end of the red cable (included with the Router) to the port labeled "LAN" on the back of the Router. Connect the other end to the Ethernet port on the computer.
3. Plug the Router's power supply into a wall outlet, and then plug the other end in the port labeled "Power" on the back of the Router. The Router is now connected to the computer with an Ethernet cable.

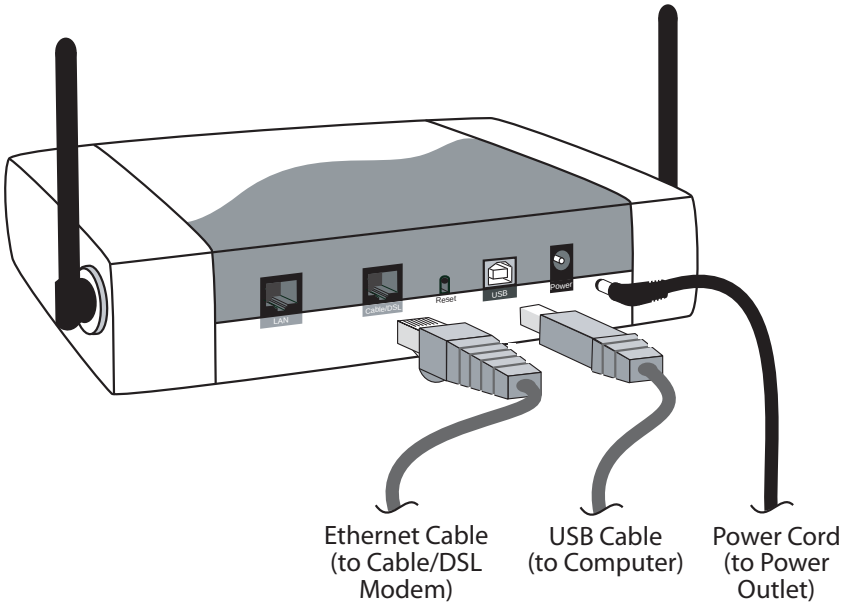


USB Connection

1. Start up the computer.

2. Connect the square plug of the purple cable to the port labeled "USB" on the back of the Router. Connect the rectangular plug of the blue cable to a USB port on the computer.

3. Plug the Router's power supply into a electrical wall outlet, then plug the other end in the port labeled "Power" on the back of the Router. Next, follow the instructions in the "Loading the USB Software" section to finish connecting the Router with a USB cable.



Basic Setup

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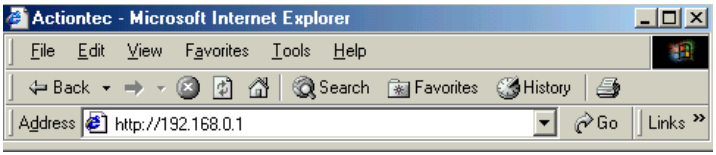
This section is a guide through a basic configuration of the R0uter, including how to connect the Router to the ISP.

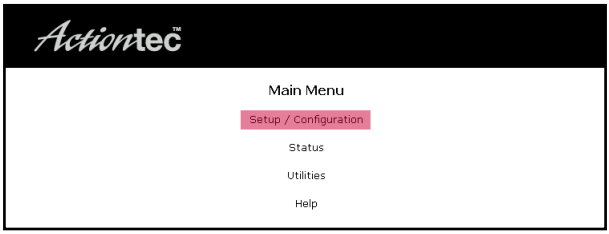
Basic Setup

To configure the router for basic operation:

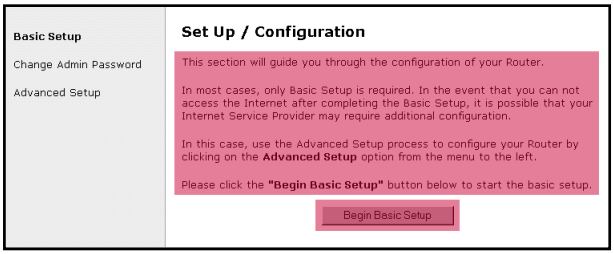
1. Open the Web browser. In the address bar, enter
   `http://192.168.0.1`
   then press **Enter** on the keyboard.



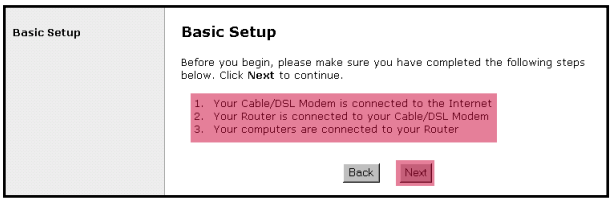
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



3. Follow the instructions in the "Set Up/Configuration" screen, then click **Begin Basic Setup**.

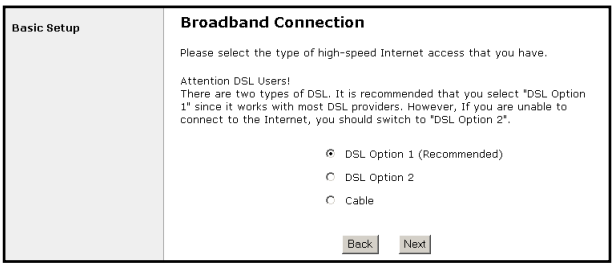


4. Complete the three steps listed in the "Basic Setup" screen, then click **Next**.



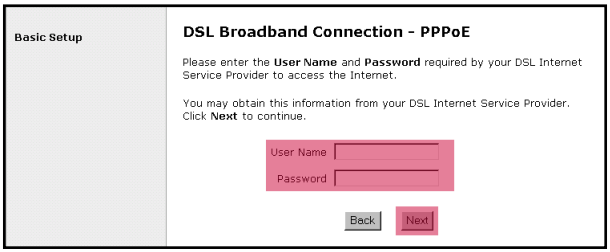
5. Select either **DSL Option 1**, **DSL Option 2**, or **Cable** (depending on what kind of broadband service is received) in the "Broadband Connection" screen , then click **Next**.

☞ ***Note***: If using a DSL modem, select **DSL Option 1**. If an Internet connection cannot be established after selecting DSL Option 1, return to this screen and select DSL Option 2.



☞ ***Note***: If a T1 line or a fixed point broadband connection is being used, select **Cable**.

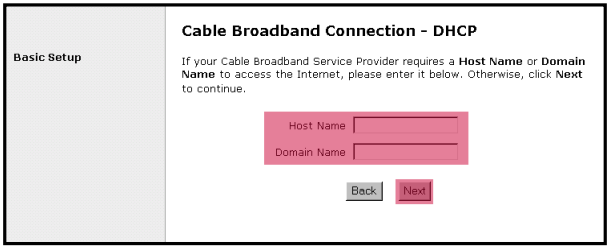
6a. If **DSL Option 1** is selected, enter the **user name** and **password** provided by the ISP in the "DSL Broadband Connection - PPPoE" screen. Click **Next**.



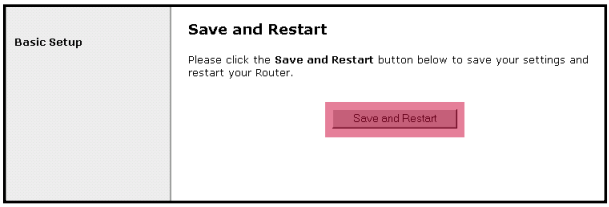
6b. If **DSL Option 2** is selected, go directly to step 7. DSL Option 2 should only be selected if the Router cannot connect using DSL Option 1

6c. If **Cable** is selected and the ISP requires a host name and/or domain name to access their network, enter them in the **Host Name** and/or **Domain Name** text boxes in the "Cable Broadband Connection-DHCP" screen. Click **Next**.

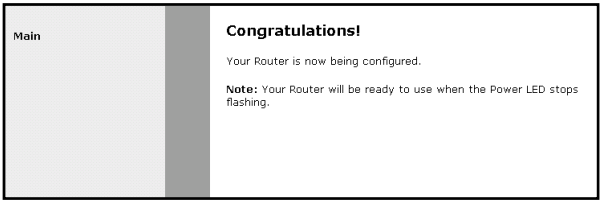
☞ ***Note***: If the ISP does not require a host or domain name, leave the Host Name and Domain Name text boxes blank.



7. Click **Save and Restart** in the "Save and Restart" screen.



8. The "Congratulations" screen appears. The Router is successfully configured.



The power LED flashes rapidly while the Router restarts, then glows steadily green when fully operational. The Router is now configured and users can start surfing the Web.

If an error stating the Web browser was unable to connect to the Internet appears, check the configuration settings. Ensure all the information required by the ISP is entered correctly.

Advanced Setup

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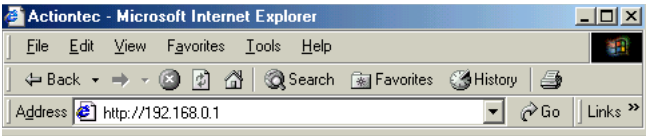
This section contains information concerning advanced configuration, such as wireless settings, remote management, and Web site blocking.

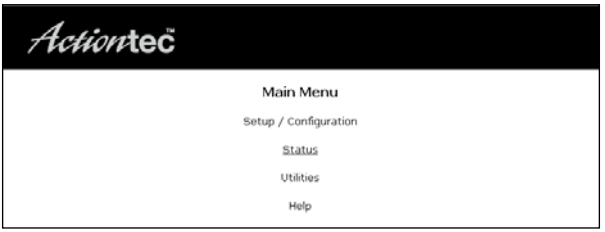
Accessing Advanced Setup

To access the Advanced Setup configuration screens, follow these instructions:

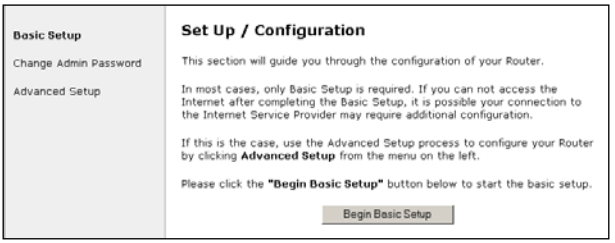
1. Open the Web browser. In the address bar enter:
   `http://192.168.0.1`
   then press **Enter** on the keyboard.



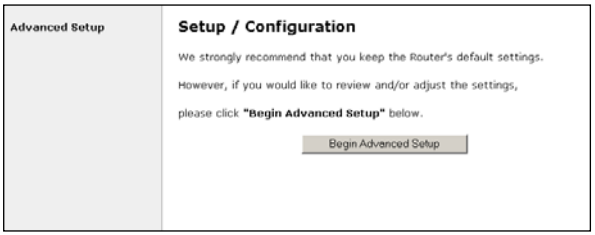
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



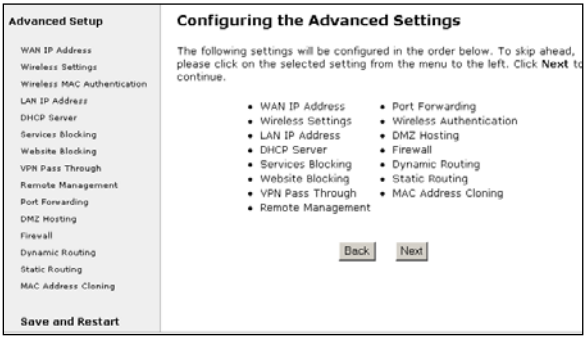
3. In the "Set Up/Configuration" screen, read the instructions, then select **Advanced Setup** from the menu on the left side.



4. In the next screen, read the recommendations. To perform an advanced setup on the Router, click **Begin Advanced Setup**.



5. The "Configuring the Advanced Settings" screen appears. To check all the settings, or if unsure of which settings to modify, select **Next**. To modify a specific configuration, click on its name in the menu bar on the left.



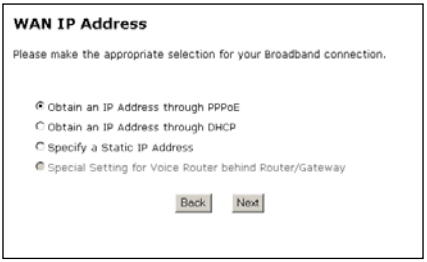
Note: Click **Save and Restart** on the bottom left-hand side of the screen after finishing the configuration of one or more of the Advanced Setup settings.

WAN IP Address

Selecting **WAN IP Address** in the "Advanced Configuration" screen generates the "WAN IP Address" screen. WAN IP Address allows manual set up of the IP address of the Router. There are three ways to do this: **Obtain an IP Address through PPPoE**, **Obtain an IP Address Through DHCP**, and **Specify a Static IP Address**.

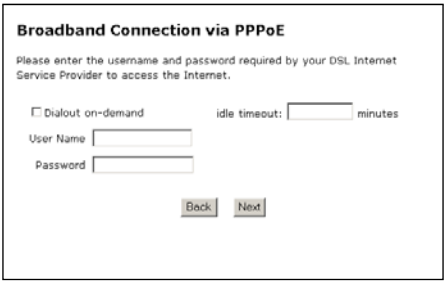
Note: Some DSL providers use PPPoE to establish communication with an end user, while others use static IP. Cable modem providers and other types of broadband Internet connections (such as fixed point wireless) may use either DHCP or Static IP address. If unsure about which connection is present, check with the Internet Service Provider (ISP) before continuing.

After selecting a connection type, click **Next** to continue configuring the connection.



Obtain an IP Address through PPPoE

Select this option to allow the Router to use the Point-to-Point over Ethernet protocol.



Dialout on-demand

Select this option to disconnect from the current Internet session after an idle time designated in the "Idle Timeout" text box.

Idle Timeout

Designates the number of minutes of idle time before the Router ends the current Internet session when the "Dial on-demand" option is activated.

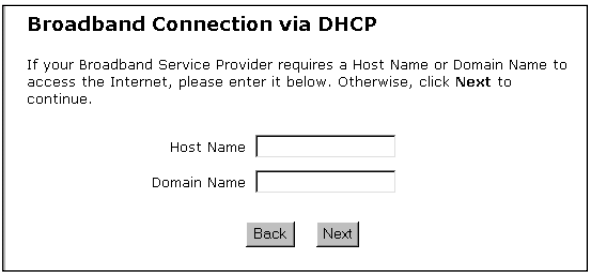
User Name and Password

If a **User Name** and **Password** was entered during Basic Setup, it should be displayed in the "Broadband Connection via PPPoE" screen. If not, enter the information now. If the information is unavailable, contact the Internet Service Provider (ISP).

Obtain an IP Through DHCP

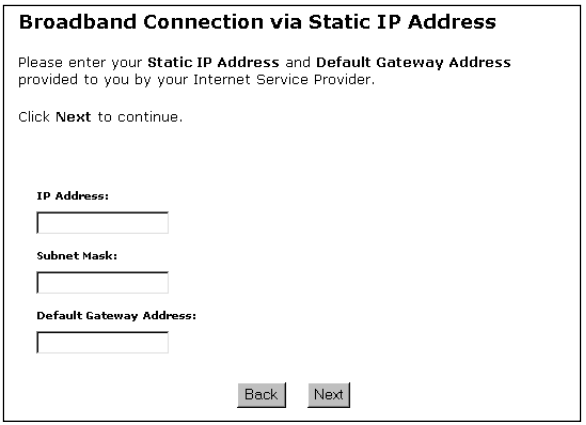
Select this option (used for cable modem configurations without a Static IP assigned by an ISP) to allow the modem to query the Internet Service Provider (ISP) and receive IP address and routing information. Some ISPs need to authenticate their end users with a **Host Name** and/or **Domain Name**. If this is the case, check with the ISP for a host name and domain name and enter them in the "Broadband Connection via DHCP" screen. If the ISP does not require these settings, leave the text boxes blank.

Note: Host and domain name information may also be accessed from the computer originally connected to the cable modem.



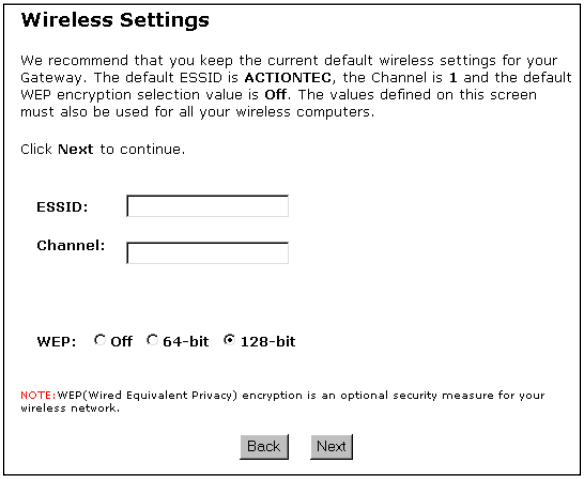
Specify a Static IP Address

Select this option if assigned a static (specific) IP Address by the Internet Service Provider (ISP). Enter the **IP Address**, along with the **Subnet Mask** and **Default Gateway Address** (also provided by the ISP), in the "Broadband Connection via Static IP Address" screen. If required to provide a **Host Name** and **Domain Name**, enter them here as well.



Wireless Settings

Selecting **Wireless Settings** in the "Advanced Configuration" screen generates the "Wireless Settings" screen. Modify the wireless capabilities of the Router here.



ESSID

ESSID is the network name assigned to the wireless network. The factory default setting is "ACTIONTEC." Although *Action*tec recommends keeping the default value intact, the ESSID value can be modified, using any combination of alphanumeric characters (i.e., A-Z, a-z, 0-9). All wireless-capable computers included on the Router's wireless network must have this same ESSID value. (For the *Action*tec 802.11b Wireless PC Card, the ESSID value must be the same as the SSID value.)

Channel

Channel assigns the frequency band at which the Router communicates. In the United States, use channels 1-11. (The factory default value is set to 1.)

Wireless Equivalent Privacy

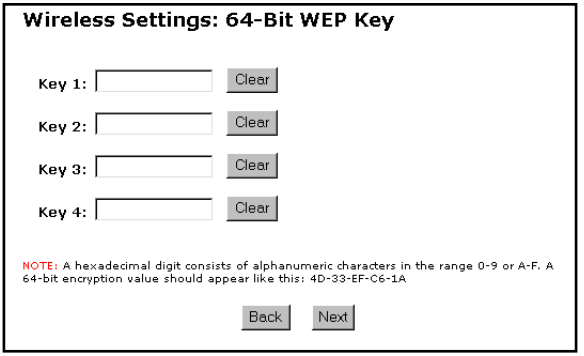
Wireless Equivalent Privacy (WEP) is an encryption method used with the 802.11b standard to ensure data security over wireless networks. The Router offers three levels of WEP: Off, 64-bit, and 128-bit.

Off

Selecting **Off** disables encryption. Selecting this option allows any computer with wireless capability and the correct ESSID value to join the wireless network.

64-bit WEP

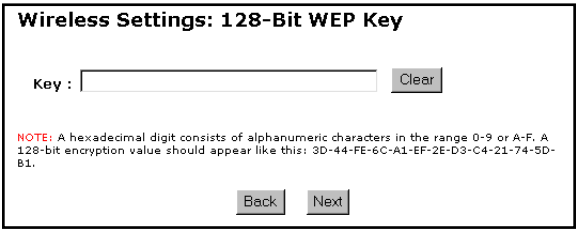
64-bit WEP requires four separate keys. Each key comprises five hexadecimal digit pairs. A hexadecimal digit consists of an alphanumeric character ranging from 0-9 or A-F. An example of a 64-bit WEP key is: 4E-A3-3D-68-72. To create a set of 64-bit WEP keys, enter five hexadecimal digit pairs in each **Key** text box (**Key 1**, **Key 2**, **Key 3**, **Key 4**). After activating 64-bit WEP on the Router, a computer with wireless capability can join the network only if these same keys are entered in the computer's wireless encryption scheme.



128-bit WEP

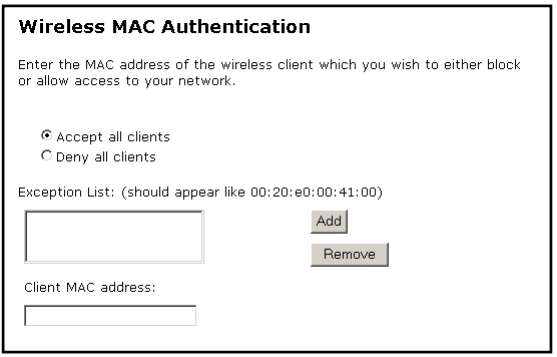
128-bit WEP requires one key of 13 hexadecimal pairs. A hexadecimal digit consists of alphanumeric characters ranging from 0-9 or A-F. An example of a 128-bit WEP key is: 3D-44-FE-6C-A1-EF-2E-D3-C4-21-74-5D-B1. To create a 128-bit WEP key, enter 13 hexadecimal digit pairs in the **Key** text box. After activating 128-bit WEP on the Router, a computer with wireless capability can join the network only if this key is entered in the computer's wireless encryption scheme.

Note: Not all wireless PC Cards support 128-bit WEP. Ensure that all PC Cards installed in the networked computers support 128-bit WEP before activating.



Wireless MAC Authentication

Selecting **Wireless MAC Authentication** in the "Advanced Configuration" screen generates the "Wireless MAC Authentication" screen. Here, the user can manage the access other wireless networking devices have on the wireless network.



Accept All Clients

Select this option to allow all wireless networking devices (except those entered in the "Exception List" list box; see below) access to the wireless network.

Deny All Clients

Select this option to deny all wireless networking devices (except those entered in the "Exception List" list box; see below) access to the wireless network.

Exception List

Lists the MAC addresses of the wireless network clients designated as exceptions. To delete a MAC address from the Exception list, select it, then click **Remove**.

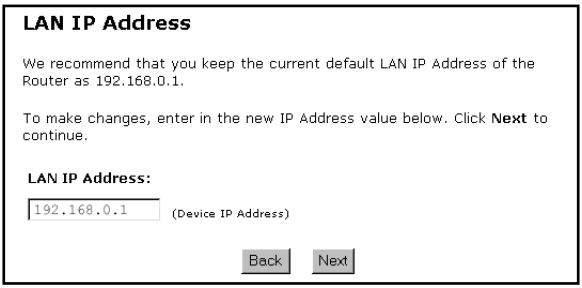
Client MAC Address

Enter the MAC address of the wireless network clients designated as exceptions in this text box, then click **Add**. The MAC address then appears in the "Exception List" text box. If **Accept All Clients** was selected, above, all wireless network clients whose MAC addresses appear in the Exception List text box are denied access to the wireless network. If **Deny All Clients** was selected, above, all wireless network clients whose MAC addresses appear in the Exception List text box are allowed access to the wireless network.

LAN IP Address

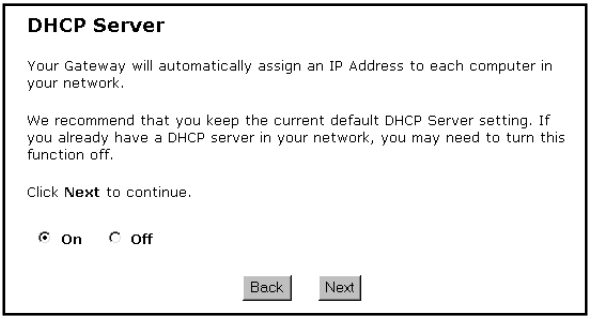
Selecting **LAN IP Address** in the "Advanced Configuration" screen generates the "LAN IP Address" screen. The value in the **LAN IP Address** text box is the IP address of the Router as seen on the network.
The LAN IP address of the Router can be modified, but *Action*tec recommends keeping the default factory setting (192.168.0.1).

Note: If the Router's LAN IP Address is modified, verify the DHCP Server range is within the same subnet. For more information, see "DHCP Server Configuration."



DHCP Server

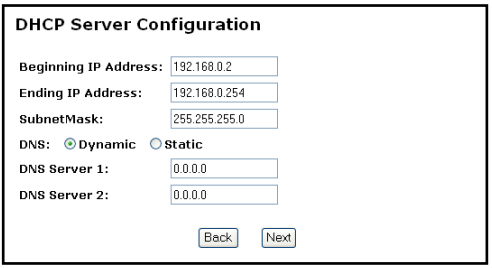
Selecting **DHCP Server** in the "Advanced Configuration" screen generates the "DHCP Server" screen. The Router has a built-in DHCP (Dynamic Host Configuration Protocol) server that automatically assigns a different IP address to each computer on the network, eliminating IP address conflicts.
The factory default setting is **On**. To disable the DHCP Server, select **Off**.



*Action*tec strongly recommends leaving the DHCP Server option **On**. If the DHCP Server option is **Off**, ensure the IP addresses of the networked computers are on the same subnet as the IP address of the Router. For more information, see "DHCP Server Configuration."

DHCP Server Configuration

Clicking **Next** in the "DHCP Server" screen generates the "DHCP Server Configuration" screen. Change IP address range and DNS server information here.



Beginning IP Address - the IP address at which the DHCP server starts assigning IP addresses. *Action*tec recommends keeping the factory default setting (192.168.0.2).

Ending IP Address - the IP Address at which the DHCP Server stops assigning IP addresses. *Action*tec recommends keeping the factory default settings (192.168.0.254).

The beginning and ending IP addresses define the IP address range of the Router. If the default values are left intact, the Router supplies a unique IP address between 192.168.0.2 and 192.168.0.254 to each computer on the network. Note that the first three groups of numbers of the addresses are identical; this means they are on the same subnet. The IP address of the Router must be on the same subnet as the IP address range it generates. For instance, if the Router's IP address is changed to 10.33.222.1, set the beginning IP address to 10.33.222.2, and the ending IP address to 10.33.222.254.

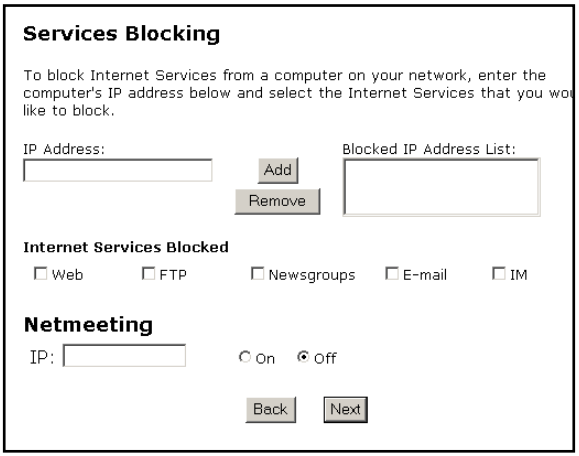
DNS (Dynamic or **Static)** - the type of DNS server provided by the Internet Service Provider (ISP). If the ISP provided DNS server information, select the type here. If not, leave as is.

DNS Server 1 - the primary DNS server provided by the Internet Service Provider (ISP). If the ISP provided DNS server information, enter it here. If not, leave the text box intact.

DNS Server 2 - the secondary DNS provided by the Internet Service Provider (ISP). If the ISP provided secondary DNS server information, enter it here. If not, leave the text box intact.

Services Blocking

Selecting **Services Blocking** in the "Advanced Configuration" screen generates the "Services Blocking" screen.



To modify Internet privileges (Web, FTP, Newsgroups, etc.) for the computers on the network:

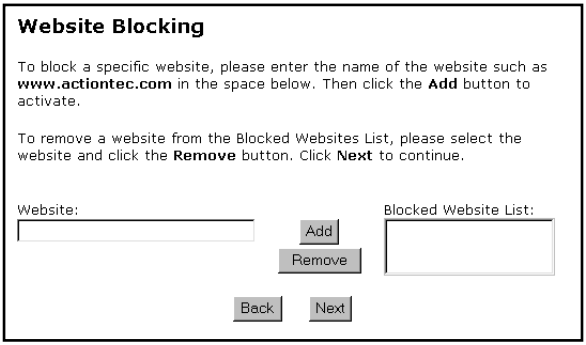
1. Enter the computer's IP address in the **Enter IP Address:** text box.
2. Select the Internet service(s) to be blocked.
3. Click **Add** to enter the computer's IP address in the "Blocked IP Address List" text box.
4. To remove blocked services, select the computer's IP address in the "Blocked IP Address List" text box and click **Remove**.

Netmeeting

To allow the computers on the Router's network to access Netmeeting, enter the Netmeeting IP address in the **IP** text box, then select **On**. If Netmeeting is not needed, select **Off**.

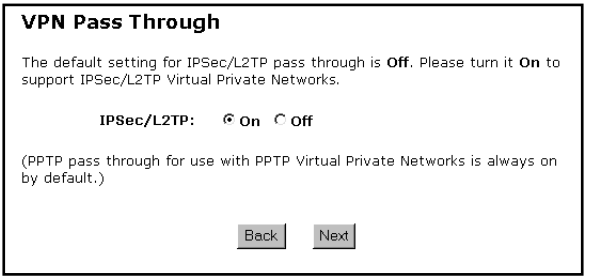
Website Blocking

Selecting **Website Blocking** in the "Advanced Configuration" screen generates the "Website Blocking" screen. This feature enables the Router to block Web sites to all computers on the network. To block a Web site, enter the address of the Web site in the "Website" text box and click **Add**. The blocked Web site address will be displayed in the "Blocked Website List" text box, and will not be available to computers on the network. To remove a blocked Web site, click on it in the "Blocked Website List," then click **Remove**.



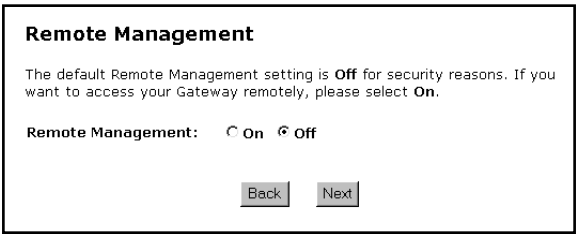
VPN Pass Through

Selecting **VPN Pass Through** in the "Advanced Configuration" screen generates the "VPN Pass Through" screen. To set up Virtual Private Networking (VPN) using IPSec/L2TP (which allows multiple, client-initiated VPN pass-through sessions), select **On**. Note that VPN via PPTP pass through is always active.



Remote Management

Selecting **Remote Management** in the "Advanced Configuration" screen generates the "Remote Management" screen. Remote Management allows access to the Router through the Internet via another computer. *Action*tec recommends leaving the Remote Management **Off** (the factory default setting).



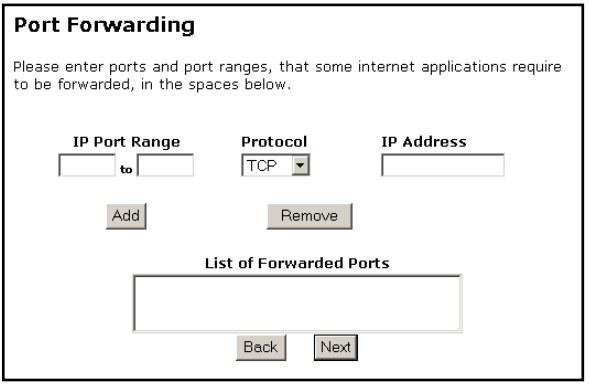
To access the Router from the Internet, activate Remote Management by selecting **On** and writing down the WAN IP address of the Router (see "WAN IP Address"). On a computer outside of the network, open a Web browser and enter the Router's WAN IP address in the address text box. The Router's Main Menu (or a password prompt, if a password has been set) appears in the browser window.

☞ ***Note***: Before Remote Management can be activated, the administrator password must be set. To do this, go to the Basic Setup screen and select **Change Admin Password**. Follow the instructions in the subsequent screens

Port Forwarding

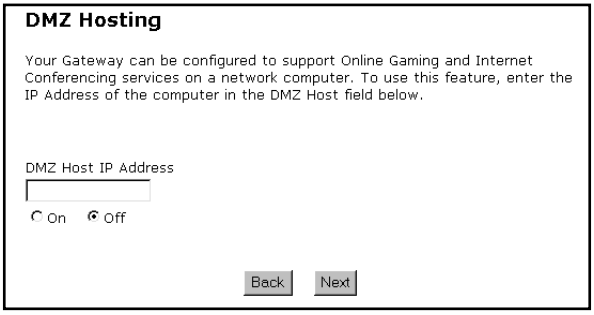
Selecting **Port Forwarding** in the "Advanced Configuration" screen generates the "Port Forwarding" screen. Port forwarding allows certain programs to bypass the Router's built-in firewall, allowing access to parts of the network (for hosting a Web or ftp server, for example). To use port forwarding, enter the IP port range in the "IP Port Range" text boxes. (If more than 10 ports are needed, *Action*tec recommends using DMZ Hosting. See "DMZ Hosting," below, for more information.) Choose the protocol type from the "Protocol" list box, then enter the IP address of the computer on the network to be used as a host. Click **Add**. The forwarded ports appear in the "List of Forwarded Ports" text box. For a list of programs that use port forwarding, as well as port numbers used, see "Appendix C - Program and Port List."

To remove forwarded ports, highlight them, then click **Remove**.



DMZ Hosting

Selecting **DMZ Hosting** in the "Advanced Configuration" screen generates the "DMZ Hosting" screen. To use DMZ hosting, enter the IP address of the computer on the network to be used as a DMZ host in the "DMZ Host IP Address" text box, then click **On**.

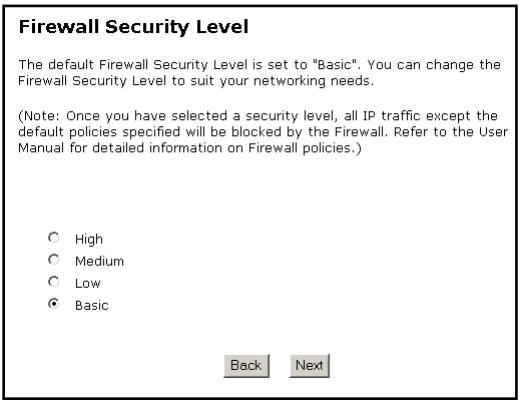


DMZ hosting is used to support online gaming and Internet conferencing services. These programs usually require multiple open ports, making the network accessible from the Internet. DMZ hosting symbolically places the DMZ host computer outside of the Router's network. Access to the network resources while DMZ hosting is active is blocked. *Action*tec recommends activating DMZ hosting only as long as necessary.

Warning: The DMZ Host computer will be vulnerable to computer hackers on the Internet while in DMZ mode.

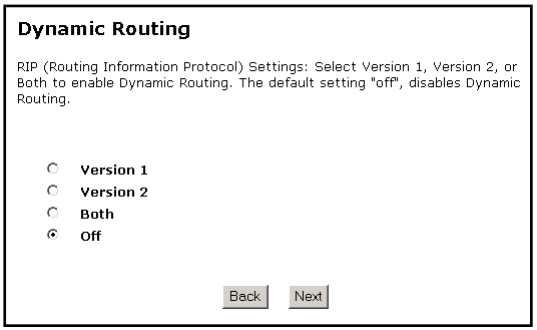
Firewall

Selecting **Firewall** in the "Advanced Configuration" screen generates the "Firewall Security Level" screen. Select the level of security needed for the network. See Appendix E for details concerning each level of security.



Dynamic Routing

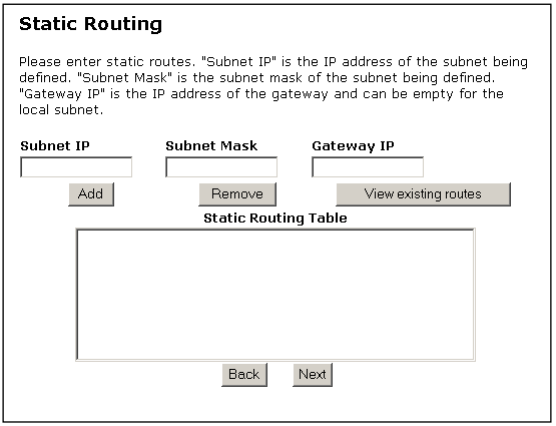
Selecting **Dynamic Routing** in the "Advanced Configuration" screen generates the "Dynamic Routing" screen.



If another route/gatewayr is set up behind the Router in the network configuration, consult the documentation that came with the router to see what kind of Dynamic Routing is required, then select the needed option.

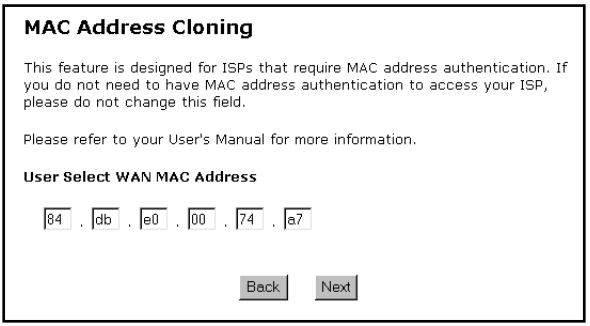
Static Routing

Selecting **Static Routing** in the "Advanced Settings" screen generates the "Static Routing" screen. Enter the addresses in their respective text boxes, then click **Add**. The address will appear in the "Static Routing Table." To remove an address, highlight it by clicking on it in the Static Routing Table, then click **Remove**.



MAC Address Cloning

Selecting **MAC Address Cloning** in the "Advanced Configuration" screen generates the "MAC Address Cloning" screen. A MAC (media access control) address is an identifier unique to every networkable device. Some Internet Service Providers (ISP) require a MAC address to validate a computer's permission to be on their network. If the ISP requires this information, obtain the MAC address of the computer originally configured for the ISP (see Appendix D for instructions to determine the computer's MAC address). Enter the MAC address in the "User Select WAN MAC Address" text boxes in the "MAC Address Cloning" screen.



Status

After configuring the Router, settings can be viewed by selecting **Status** in the Main Menu. The "Current Status" screen appears, displaying many of the Router's settings. No settings (other than connecting or disconnecting from the Internet) can be changed from the Current Status screen.
In the left hand column, there are other Status options available: **Routing Table**, **WAN Status**, **LAN Status**, and **Active User List**. Click to generate the option of choice.

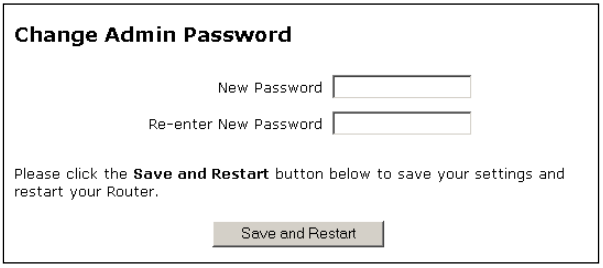
Changing the Password

To change the administrator's password on the Router:

1. From the Main Menu screen, select **Setup/Configuration**.

2. From the Setup/Configuration screen, select **Change Admin Password**.

3. The "Change Admin Password" screen appears.



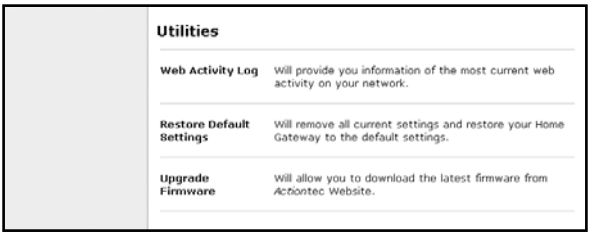
   Enter the new password in the "New Password" text box, then enter it again in the "Re-enter New Password" text box.

4. Click Save and Restart. The new password will be in effect when the Router restarts.

Utilities

5

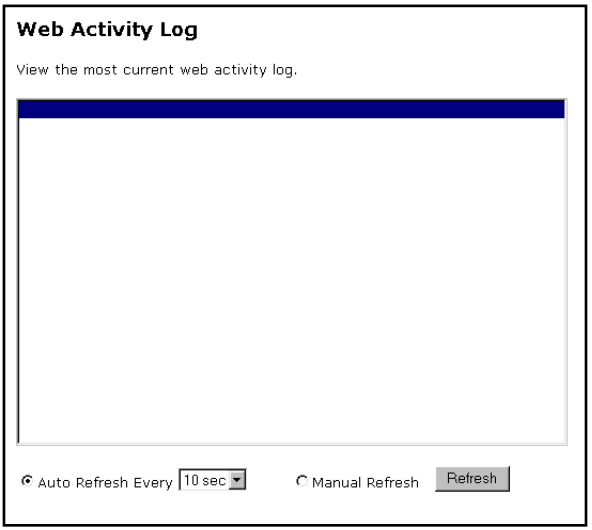
To access the Router's utilities select **Utilities** from the "Main Menu" screen. The "Utilities" screen appears.



From here, the Web activity log can be viewed, the Router's factory default settings restored, and the Router's firmware upgraded.

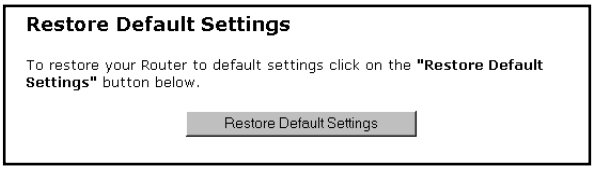
Web Activity Log

The Web Activity Log provides information about the Web sites each computer on the Router's network has visited. To access the Web Activity Log, select **Web Activity Log** from the "Utilities" screen.



Restore Default Settings

To restore the Router to its factory default settings, select **Restore Default Settings** from the "Utilities" screen. When the "Restore Default Settings" screen appears, click **Restore Default Settings**. Any changes made to the Router's settings will be lost and the factory default settings will be restored. During this process, the Router's power LED flashes and the Router is disabled. When the power LED stops flashing and glows steadily green, the Router is fully operational.



Upgrade Firmware

Selecting **Upgrade Firmware** in the "Utilities" screen generates the "Upgrade Firmware" screen. *Action*tec periodically posts firmware upgrades to enhance the Router's capabilities.

To upgrade the Router's firmware, click the link in the "Upgrade Here" in the Upgrade Firmware screen and follow the instructions. An Internet connection must be established to upgrade the Router's firmware.

Troubleshooting 6

This chapter contains a list of problems that may be encountered while using the Router, and solutions to overcome the problem.

Cannot Use the Internet

If the Router cannot connect to the Internet, check the following:

Physical Connection

- Ensure that the power light is on, as well as lights for any active connections, such as USB, Wireless, or Ethernet. If they are not on, reconnect the cable or adapter.

Connection to the Router

- Having verified that the appropriate network light is lit on the router. The computer connected to the router should be receiving an IP address from the router. Unless the default address has been changed, it should be in the range of 192.168.0.2 to 192.168.0.254. This can be checked by opening a DOS/Command prompt and typing "ipconfig" and pressing **Enter**. The IP address for the network adapter should be 192.168.0.x and the Default Gateway should be 192.168.0.1. If it is not, restart the computer to have an IP address assigned by the router. (If a static IP address has been assigned previously to the adapter, it will need to be removed and set to obtain an IP address via DHCP/automatically before restarting.) Check the IP address assigned to the network adapter using "ipconfig;" if it is still not a 192.168.0.x number, use "ipconfig /?" to view the command necessary to release & renew the IP address.
- Having verified that the IP address is 192.168.0.x, open a Web browser and in the address bar type 192.168.0.1 and click **Go**. You should see the Main Menu, verifying that the connection to the router is good.

Connection to the Internet

- Open a Web browser and in the address bar type 192.168.0.1 and click GO. You should see the Actiontec Main Menu. Click Status, the Connection line under the WAN section near the top, should read "Connected". If not, power cycle the router by disconnecting and then reconnecting the power cable. (It will take 1 minute for the router to restart.) Recheck the Connection Status.

If still disconnected, click Setup at the top of the page and go through the Basic setup to configure the router for your connection to the Internet. Make the appropriate selections for DSL/Cable, Ethernet/USB and Username/Password. Click Save and Restart to save the configuration. (It will take 1 minute for the router to restart.) Recheck the Connection Status. When the status is "Connected" web browsing is possible.

- If after following the above steps, the Status page still indicates "Disconnected", unplug the power cable to your broadband modem, and leave it disconnected for 10 minutes. At the end of that time reconnect the power to it, and when the modem has fully restarted, power cycle the router to restart it. (It will take 1 minute for the router to restart.) Recheck the Connection Status. When the Connection line under the WAN section near the top of the page reads "Connected", the router has successfully connected to the Internet.
- Test the Internet connection by opening a favorite Web page.

LAN Light

If the LAN light on the Router does not come on, it could be caused a bad connection, a disabled Ethernet card, or by a static speed setting on your Ethernet card. Double check all cable connections to make sure everything is firmly connected. Next, check the Device Manager and make sure there are no red "x" or yellow "!" on your Ethernet card.

To get into device manager in Windows 95, 98, 98SE or ME, click **My Computer** on the desktop, then click **Properties**. Click **Device Manager**.

For Windows 2000 or XP, click **My Computer** on the desktop then click on **Properties**. Click **Hardware** , then press **Device Manager**.

If there are no red "x" or yellow "!" on the Ethernet card, the speed setting will need to be changed before you will be able to connect to the Router.

Windows 95, 98, 98SE, ME

1. From the desktop, click **Network Neighborhood** (**My Network Places** in Me) and click **Properties**.
2. This will bring up the "Network Properties" window. Find your Ethernet card in the list and click on it to highlight it and then click on **Properties** down below. (Ethernet card should have a green icon next to it).

3. Click **Advanced** and in the "Property" list find an entry for speed or media type and click it to highlight it. To the right of that should be a "Value" drop down menu. Click on the drop down arrow and then click on Auto, Autoselect, or Auto sense in that menu. Then, click **OK** to close the window.
4. Click **Ok** in the "Network Properties" window and you will be prompted to restart your computer. Click **Yes**. Once you computer has restarted the LAN light should turn solid green on the Router. Continue on with the Quick Start Guide.

Windows 2000, XP

1. From your desktop, right-click on the **My Network Places** (In XP, this icon may not be on the desktop. See below for instructions on how to place it on the desktop) and left click on properties.
2. The "Network Connections" window appears. Find the connection for your Ethernet card (It may Local Area Connection) right click on it and left click on properties.
3. In the next window, click **Configure** (listed under your Ethernet card). Click **Advanced** and, in the "Property" list, find an entry for speed or media type and click it to highlight it. To the right of that should be a "Value" drop down menu. Click on the drop down arrow and then click on the auto, autoselect, or auto sense in that menu. Then click **OK** to close the window.
4. The LAN light on the router should turn solid green on the Router. Continue on with the Quick Start Guide.

XP Users

To place the My Network Places icon on your desktop, right-click on your desktop and click on **Properties**. This will bring up the "Display Properties" window. Click Desktop and towards the bottom left, click **Customize Desktop**. Under "Desktop Icons,"click **My Network Places** and click **OK**. Click **OK** in the Display Properties window. You should now have a My Network Places icon on your desktop.

Other Problems

LAN Connection Failure

- Ensure the Router is properly installed, the LAN connections are correct, and the power is on.
- Confirm the computer and Router are on the same network segment. If unsure, let the computer get the IP address automatically by initiating the DHCP function (see "DHCP Server"), then verify the computer is using an IP address within the default range (192.168.1.2 through 198.168.1.254). If the computer is not using an IP address within the range, it will not connect to the Router.
- Ensure the Subnet Mask address is set to 255.255.255.0 by clicking **Status** in the "Main Menu" screen.

Cannot Connect to the Internet

- Ensure both ends of the power adapter and network cables are properly connected and the status LEDs on the front panel are working properly.
- If running Windows 95 or Windows 98, check the computer's TCP/IP setings. Select **Start**, **Run**, enter

  `winipcfg`

  in the "Open" text box, then press **Enter** on the keyboard. The computer should have an IP address in the default range (192.168.1.2 through 198.168.1.254).
- Ensure the Subnet Mask address is set to 255.255.255.0 by clicking **Status** in the "Main Menu" screen.
- Verify the Router's settings are the same as the computer by clicking **Status** in the "Main Menu" screen.

Time out error occurs when entering a URL or IP Address.

- Verify all the computers are working properly.
- Ensure the IP settings are correct.
- Ensure the Router is on and connected properly.
- Verify the Router's settings are the same as the computer by clicking **Status** in the "Main Menu" screen.
- Check the cable/DSL modem by attempting to connect to the Internet.

Unable to get an IP address from Cable/DSL Modem.

- Ensure the Router is properly connected to the computer and is plugged in.
- Turn off the cable/DSL modem and wait a few seconds. Turn the modem back on, wait for it to go through its self-test, then check for the IP address.
- Verify the modem is DHCP compatible.
- Ensure the user name and password are entered for the cable/DSL modem by using to the Router's Web-based utility (see "Advanced Setup" for more information).

Specifications

A

General

Model Number

GE344000-01 (Single-Port Wireless Cable/DSL Router)

Standards

IEEE 802.3 (10BaseT)
IEEE 802.3u (100BaseTX)
IEEE 802.11b (Wireless)

Protocol

CSMA/CD

WAN

10Base-T RJ-45 port for cable/DSL modem (1)

LAN

GE344000-01

10/100 RJ-45 port (1)
Shared uplink port (1)
USB port (1)

Expansion

PCMCIA expansion slots (1)

Speed

WAN: 10Mbps
LAN Ethernet: 10/100Mbps
Wireless: See "Wireless Operating Range"

Cabling Type

10BaseT: UTP/STP Category 3 or 5
100BaseTX: UTP/STP Category 5

Wireless Operating Range

Indoors

Up to 30M (100 ft.) @ 11 Mbps
Up to 50M (165 ft.) @ 5.5 Mbps
Up to 70M (230 ft.) @ 2 Mbps
Up to 91M (300 ft.) @ 1 Mbps

Outdoors

Up to 152M (500 ft.) @ 11 Mbps
Up to 270M (885 ft.) @ 5.5 Mbps
Up to 396 (1300 ft.) @ 2 Mbps
Up to 457M (1500 ft.) @ 1 Mbps

Topology

Star (Ethernet)

Environmental

Power Input

External, 6.5V DC, 2 A

Certifications

FCC Class B
FCC Class C
CE Mark Commercial
UL
Wi-Fi

Operating Temperature

0º C to 40º C (32ºF to 104ºF)

Storage Temperature

-20ºC to 70ºC (-4ºF to 158ºF)

Operating Humidity

10% to 85% non-condensing

Storage Humidity

5% to 90% non-condensing

Configuring TCP/IP

B

To configure computers using operating systems other than Windows XP (for Windows XP instructions, see "Before Connecting"), choose the operating system and follow the instructions:

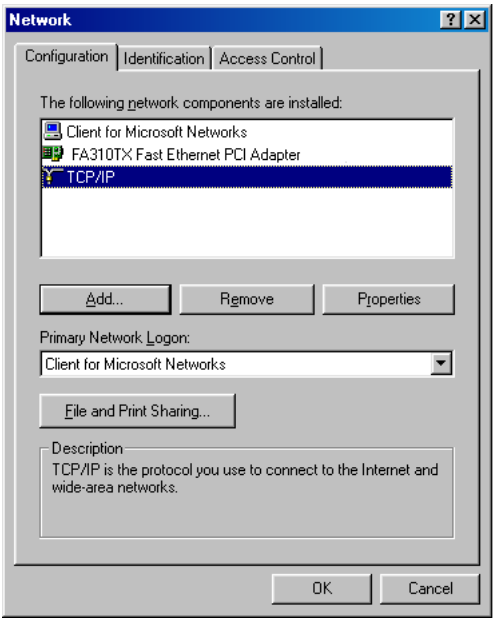
Windows 95, 98, and Me

Ensure the Windows installation disks or CD-ROM is available before beginning, since some driver information may need to be copied during the configuration process. If the installed Ethernet adapter was supplied with a driver diskette, it should be available as well.

> ***Note***: When installing any software, consult the user guide and help files supplied with the software for detailed information. *Action*tec provides the following information as a guideline only..

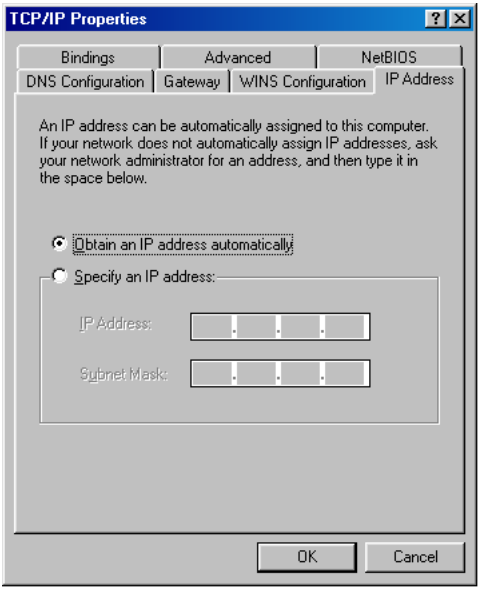
To configure the computer:

1. Click **Start**, **Settings**, **Control Panel**.
2. In the "Control Panel" window, double-click **Network**.
3. When the "Network" window appears, select **Configuration**.

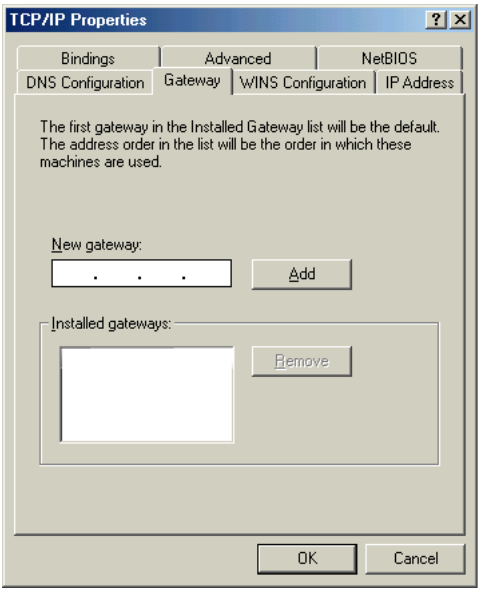


4. Select **TCP/IP** from the "The following network components are installed" list box, then click **Properties**. If TCP/IP is not listed, add it by clicking **Add**… and following the prompts.

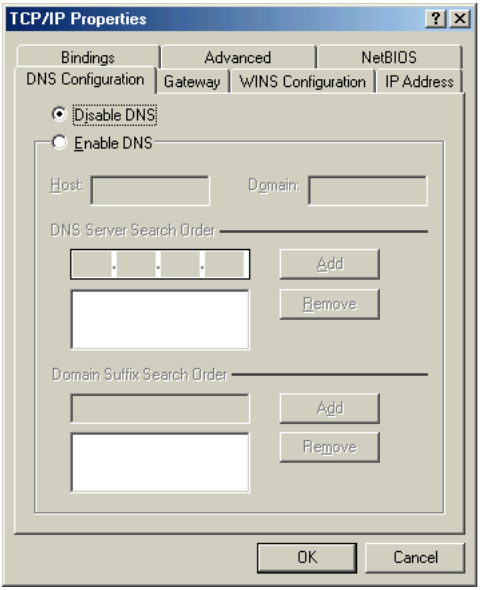
5. When the "TCP/IP Properties" window appears, select **IP Address**, then **Obtain an IP Address automatically**.



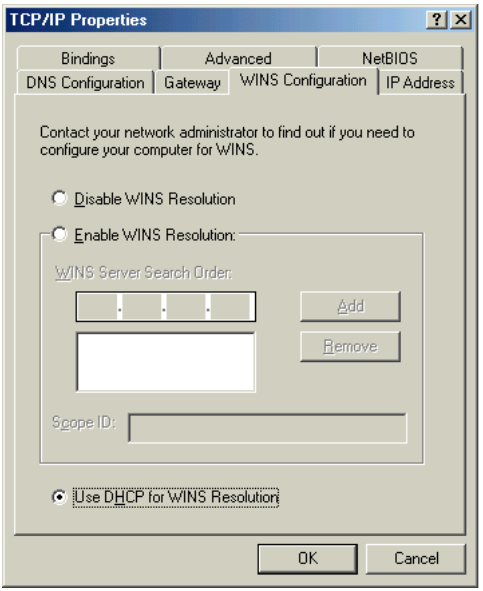
6. Select **Gateway**. If there is an IP address in the "Installed gateways" list box, click on it, then click **Remove**.



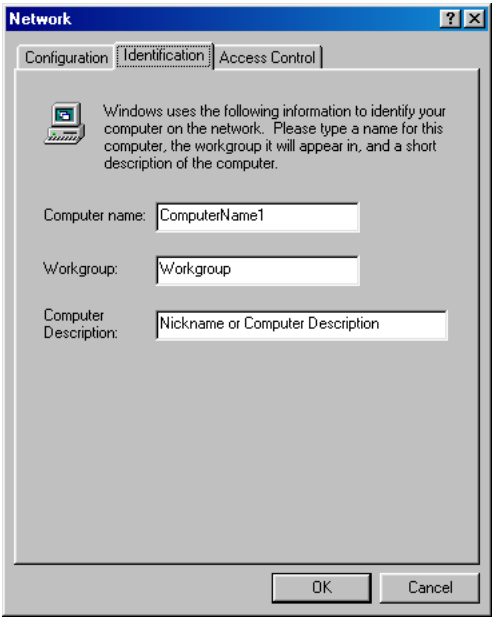
7. Select **DNS Configuration**, then click **Disable DNS**.



8. Select **WINS Configuration**. Ensure **Use DHCP for WINS Resolution** is activated, and **Disable WINS Resolution** is **not** activated.



9. Click **OK** and, in the "Network" window, select **Identification**.



The "Identification" tab contains three text boxes:

Computer Name - Enter the name of the computer (i.e., MyComputer, John, CPU654) in this text box. All computers on the network must have a unique name.

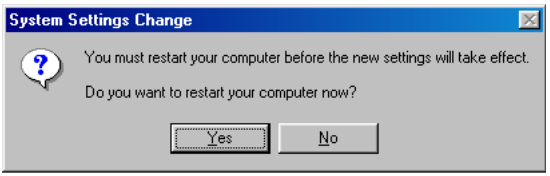
☞ ***Note***: *Action*tec recommends the "Computer Name" contain **no** spaces. For example, entering "jackscomputer" is correct; entering "big beige box" is incorrect.

Workgroup - Enter the name of the network in this text box. The "Workgroup" name is used to include other computers on the network.

Computer Description - Enter any description in this text box. Usually, computer's location or the name of the main user is entered here.

10. Click **OK**. Windows loads the necessary files. If prompted for the Windows disks, insert them now.

11. The "System Settings Change" window appears. Click **Yes** to restart the computer.



☞ ***Note***: If the "System Settings Change" window does not appear, restart the computer manually after completing step 10.

12. Once the computer restarts and Windows has finished loading, a prompt for a password appears. **Do not click Cancel!** This is the password that Windows will use to authenticate a user's permission to be on the network. The password entered now becomes the permanent network password. If OK is clicked without a entering a password, the password will be blank (no keystrokes).

☞ ***Note***: Entering this password is required each time Windows is restarted.

Windows NT 4.0

Ensure the Windows NT Workstation 4.0 installation disks or CD-ROM is available before beginning, since some driver information may need to be copied during the configuration process. If the installed Ethernet adapter was supplied with a driver diskette, it should be available as well.

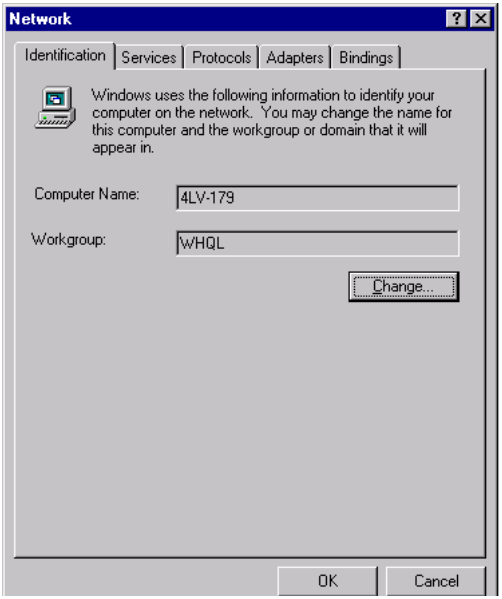
☞ ***Note***: When installing any software, consult the user manual and help files supplied with the software for detailed information. *Action*tec provides the following information as a guideline only..

To configure the computer:

1. Click **Start**, **Settings**, **Control Panel**.

2. In the "Control Panel" window, double-click **Network**.

3. When the "Network" window appears, select **Identification**.



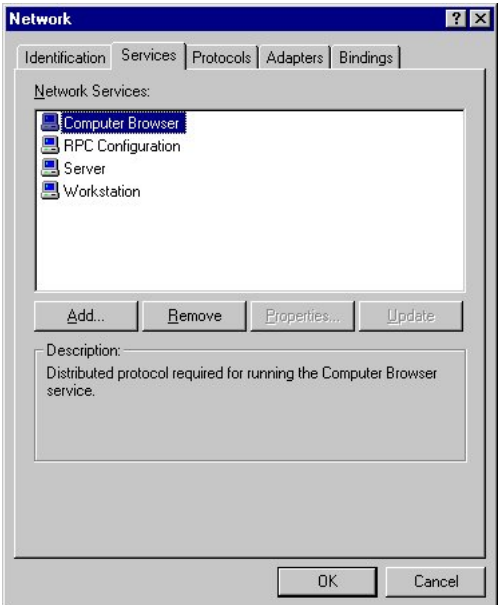
4. In the "Identification" tab, enter a **Computer Name** (if needed) and **Workgroup** in their respective text boxes.

5. Restart the computer.

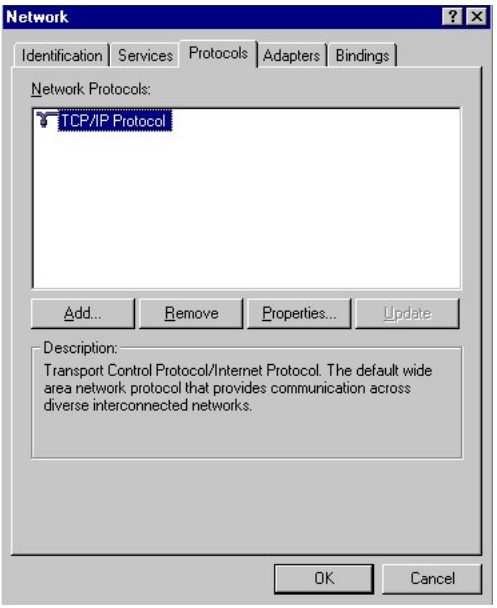
Caution: Do not change both the Computer Name and Workgroup at the same time. Change one, restart the computer, change the other, and restart the computer a second time.

6. After restarting, return to the "Network" window and select **Services**.

7. In the "Network Services" list box, ensure the following services are listed: **Computer Browser**, **RPC Configuration**, **Server**, and **Workstation**. These services should be present after a TCP/IP installation. Note that not all of the services listed below are required for Router operation. For additional information, refer to the Windows documentation or Microsoft support services.

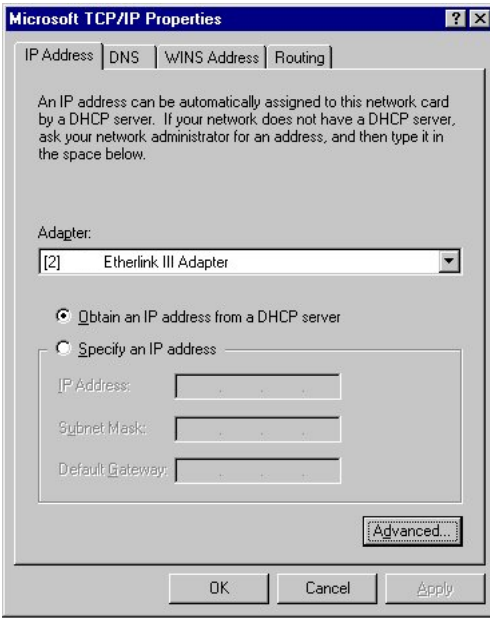


8. Select **Protocols** and verify **TCP/IP Protocol** is listed in the "Network Protocols" list box. If not, add it by clicking **Add**… and following the prompts.



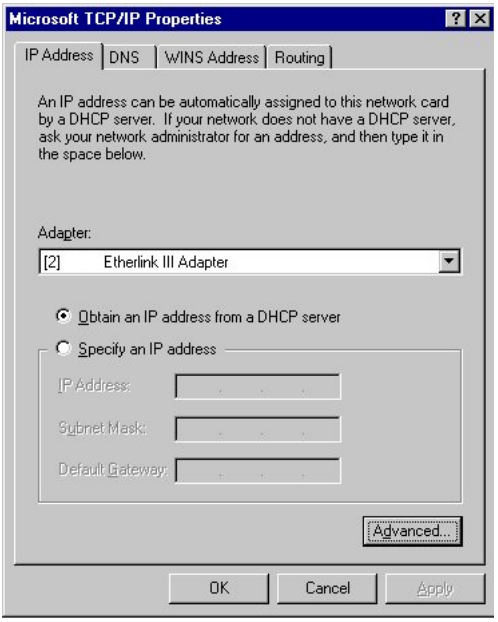
9. Select **TCP/IP Protocol** in the "Network Protocols" list box and click **Properties**.

10. When the "Microsoft TCP/IP" window appears, select **IP Address**.

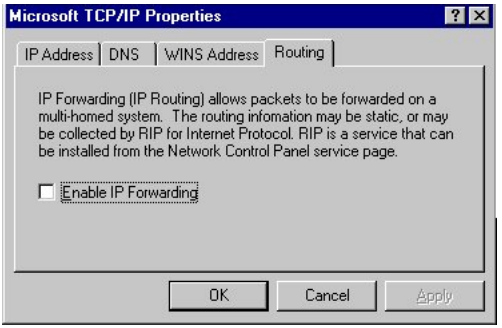


11. Click **Obtain an IP Address from a DHCP Server**. Verify DHCP is enabled by clicking **Advanced**.

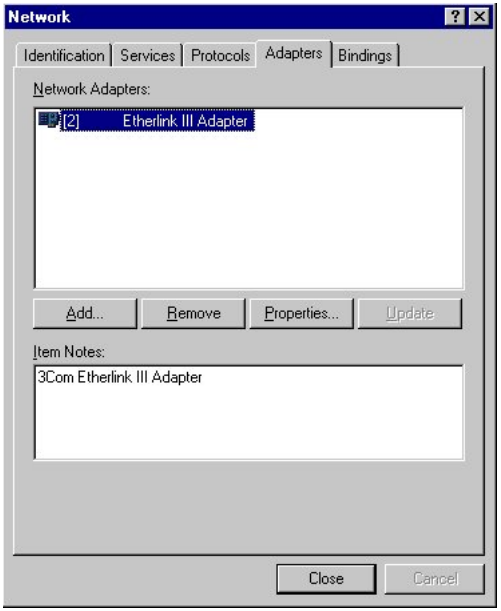
12. Select **WINS Address** and verify the only entry in the "Adapter" list box is the Ethernet adapter installed in the computer.



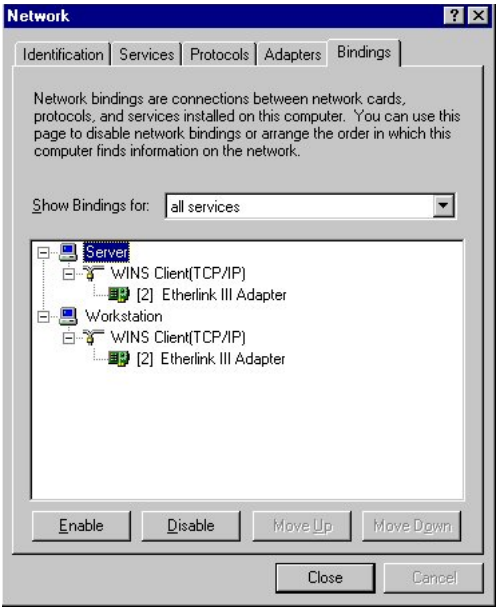
13. Select **Routing**, verify **Enable IP Forwarding** is **not** checked, then click **OK** to return to the "Network" window.



14. When the "Network" window appears, click **Adapters** and verify the installed Ethernet adapter is listed. If the card is not listed, add it by clicking **Add…** and following the prompts.

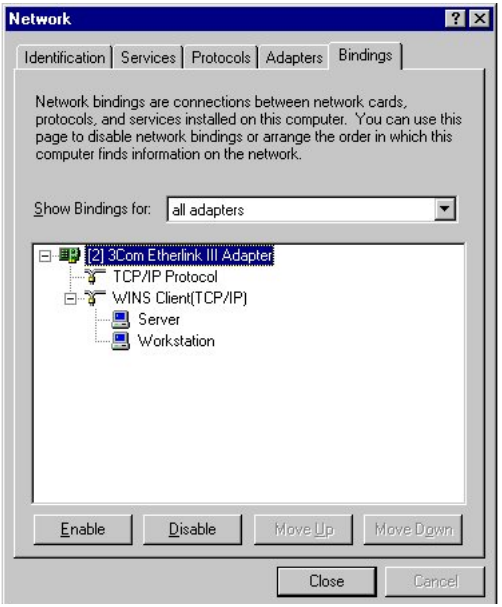


15. Click the **Bindings** tab, select **All Services** from the "Show Bindings for" drop-down list, and verify TCP/IP is bound to the Ethernet adapter, as shown below.



16. Select **All Protocols** from the "Show Bindings for" drop-down list in the "Bindings" tab and expand all entries shown by clicking the **plus signs** (+). Verify that both the TCP/IP Protocol and WINS Client (TCP/IP) entries are both bound to the Ethernet adapter.

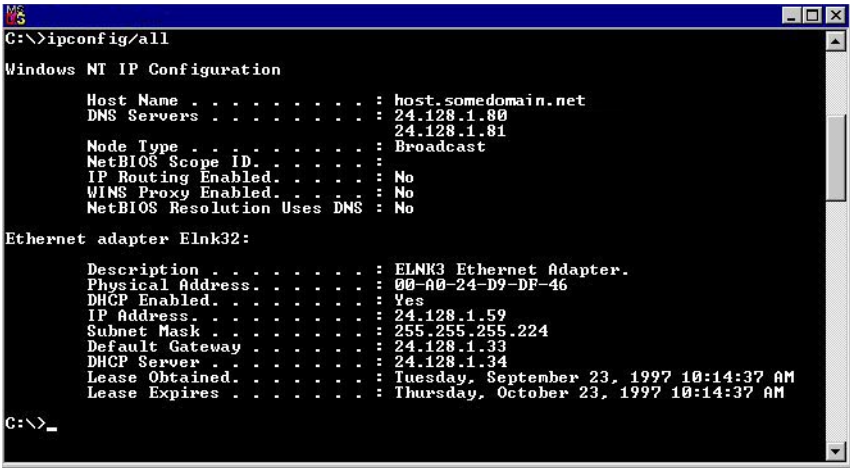
17. Select **All Adapters** from the "Show Bindings for" drop-down list in the "Bindings" tab and expand all entries shown by clicking the **plus signs** (+). Verify the Ethernet adapter is bound to the TCP/IP Protocol, and the WINS Client (TCP/IP) is bound to both Server and Workstation, as shown below.



18. Restart the computer. After the computer restarts, verify the settings. Click **Start**, **Programs** and **Command Prompt**. At the command prompt, enter:

```
ipconfig /all
```

Verify an IP address was received, then close the window.



Windows 2000

Windows 2000 installs with default TCP/IP configuration. If the computer is new with Windows 2000 installed, or Windows 2000 has just been installed on the computer, connect the computer to the Router. No further configuration is necessary.

If the Windows 2000 TCP/IP settings on the computer have been changed since installation, the TCP/IP settings must be configured. If this is the case, ensure the Windows 2000 installation disks or CD-ROM is available before beginning, since some driver information may need to be copied during the configuration process. If the installed Ethernet adapter was supplied with a driver diskette, it should be available as well.

☞ ***Note***: When installing any software, consult the user guide and help files supplied with the software for detailed information. *Action*tec provides the following information as a guideline only.

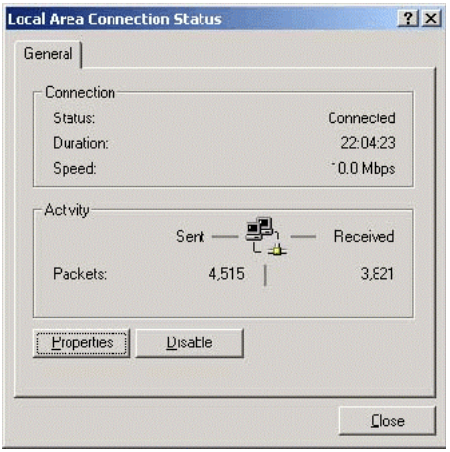
To configure Windows 2000 TCP/IP settings:

1. Click **Start**, **Settings** and **Control Panel**.

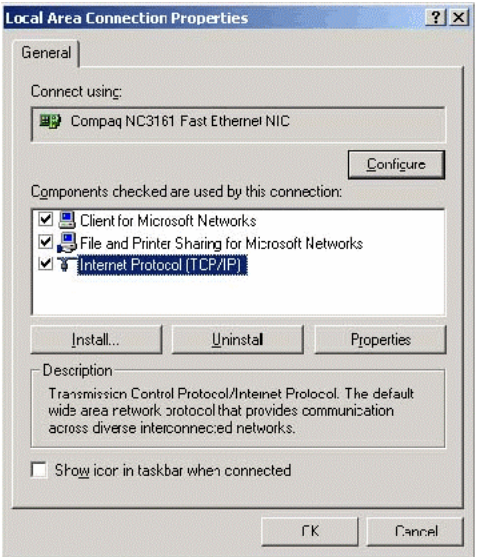
2. When the "Control Panel" window appears, double-click **Network and Dial-Up Connections**.

3. From the "Network and Dial-Up Connections" window, double-click **Local Area Connection Status**.

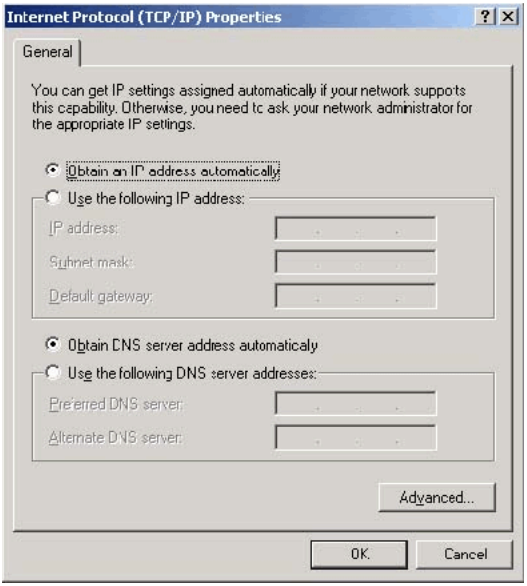
4. Click **Properties** in the "Local Area Connection Status" window.



5. In the "Connect using" text box of the "Local Area Connection Properties" window, the Ethernet adapter used by the Local Area Connection is displayed. In the "Components checked are used by this connection" list box, the components bound to the Ethernet adapter are displayed, with a check next to them if currently active. Verify there is a check next to the "Internet Protocol (TCP/IP)" entry, or click the box if not checked. Then, highlight **Internet Protocol (TCP/IP)**, and click **Properties**.



4. When the Internet Protocol (TCP/IP) Properties window appears, ensure both **Obtain an IP address automatically** and **Obtain DNS server address automatically** are activated. If not, click their respective radio buttons.



5. Click **OK** to finish. The Windows 2000 TCP/IP settings are configured.

Macintosh

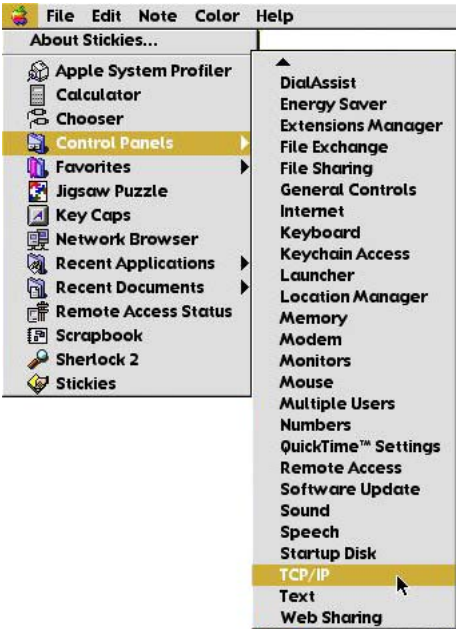
The Router supports both the Classic Macintosh operating systems (9.2.1 and below), as well as OS X.

Note: When installing any software, consult the user manual and help files supplied with the software for detailed information. *Action*tec provides the following information as a guideline only.

Classic

To configure the Router, Open Transport 2.5.2 or above must be loaded on the computer.

1. Click **Apple, Control Panels**, then **TCP/IP**.



2. When the "TCP/IP" window appears, select **Edit** from menu bar, then select **User Mode**.

3. When the "User Mode" window appears, select **Advanced**, then click **OK**.

3. In the "TCP/IP" window, select **Ethernet** from the "Connect via" drop-down list.

4. Select **Using DHCP Server** from the "Configure" drop-down list.

5. Ensure the "Use 802.3" option is **not** checked.

6. Disregard any addresses in the IP Address text boxes. They will be reacquired when the first connection is made.

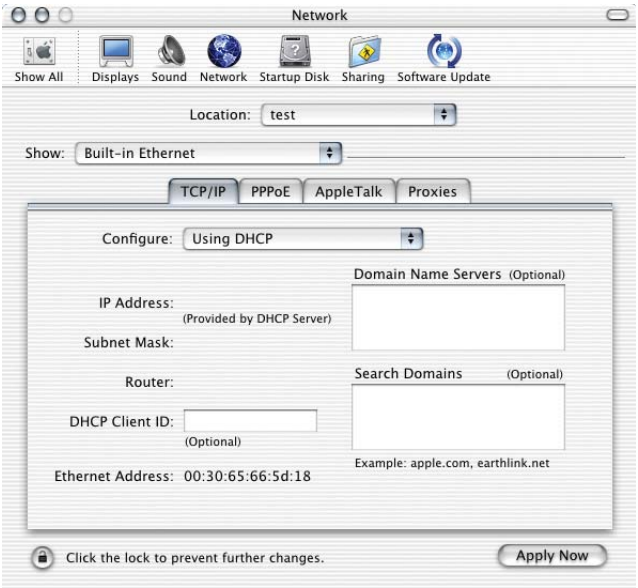
7. Click **Options** and when the "TCP/IP Options" window appears, select **Active**. Ensure the "Load only when needed" option is **not** checked, then click **OK**.

8. Close the "TCP/IP" window and when prompted to save changes, click **Save**.

9. Restart the computer. The TCP/IP settings are configured.

OS X

1. Open the "System Preferences" application via the Dock or Apple Menu. The "Network" window appears.



2. Select **Built-In Ethernet** from the "Show" drop-down list.

3. Select **TCP/IP** and, from the "Configure" drop-down list, select **Using DHCP**.

4. Click **Apply Now** and close the "System Preferences" application. The TCP/IP settings are configured.

Sharing Files and Printers

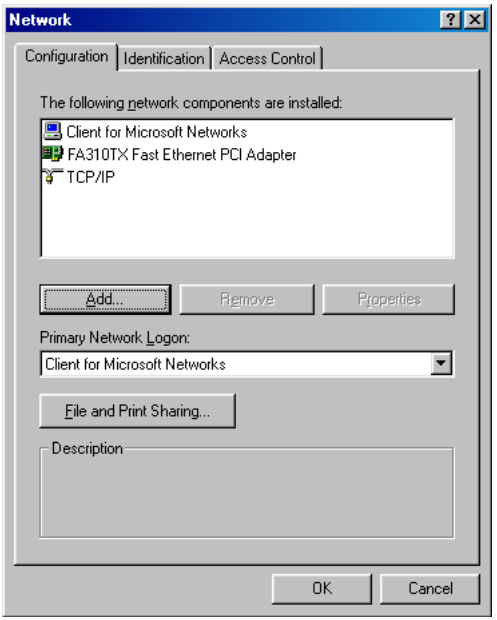
C

The Router supports file and printer sharing, allowing any computer on the network to share files and access a shared printer. To configure file and printer sharing, select the operating system and follow the instructions.

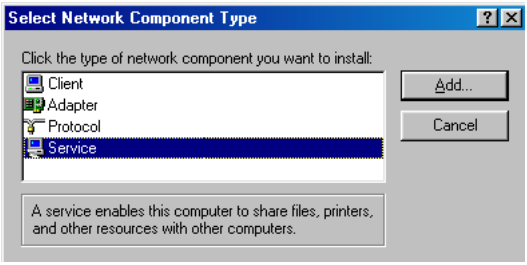
Windows 95, 98, and Me

File Sharing

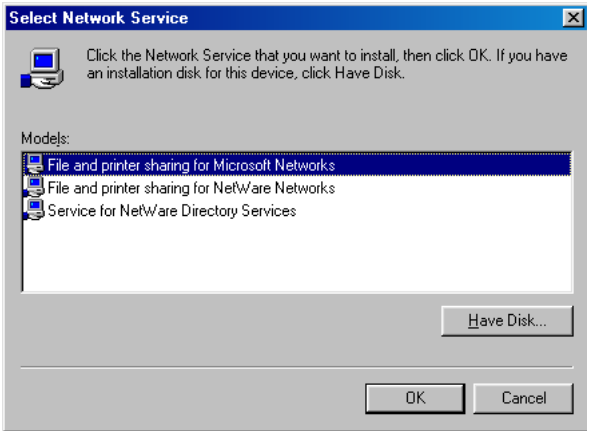
1. Click **Start**, **Settings**, then **Control Panel**.
2. In the "Control Panel" window, click **Network**.
3. The "Network" window appears. If "File and Printer Sharing" is not listed in "The following network components are installed" list box, click **Add…**.



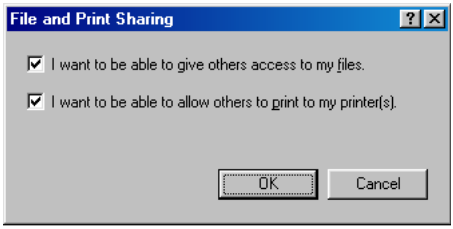
4. In the "Select Network Component Type" window, select **Service** in the "Click the type of network component you want to install" list box, then click **Add…**.



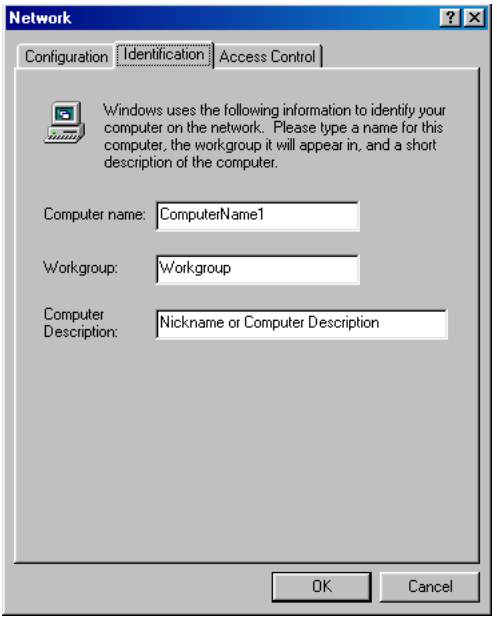
5. The "Select Network Service" window appears. Select **File and printer sharing for Microsoft Networks** from the "Models" list box, then click **OK**.



6. In the "File and Print Sharing" window, ensure both of the listed options are checked. If not, click the boxes, then click **OK**.



7. The "Network" window reappears. Select **Identification**.



The "Identification" tab contains three text boxes:

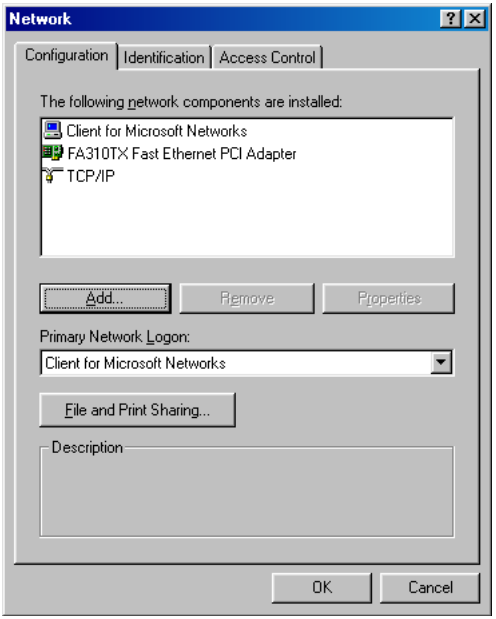
Computer Name - Enter the name of the computer (i.e., MyComputer, John, CPU654) in this text box. All computers on the network must have a unique name.

☞ ***Note***: *Action*tec recommends the "Computer Name" contain **no** spaces. For example, entering "jackscomputer" is correct; entering "big beige box" is incorrect.

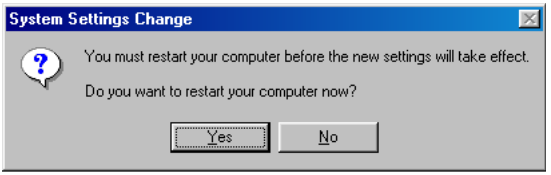
Workgroup - Enter the name of the network in this text box. The "Workgroup" name is used to include other computers on the network.

Computer Description - Enter any description in this text box. Usually, computer's location or the name of the main user is entered here.

8. Select **Configuration**. In the "Primary Network Logon" list box, ensure **Client for Microsoft Networks** is selected. If not, select it from the drop-down list, then click **OK**.



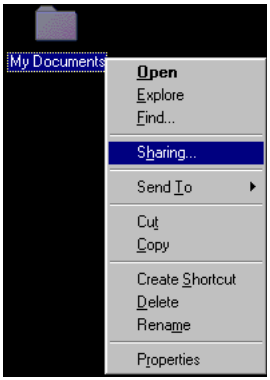
9. The "System Settings Change" window appears. Click **Yes** to restart the computer.



☞ ***Note***: If the "System Settings Change" window does not appear, restart the computer manually after completing step 7.

10. After the computer restarts and a password and user name entered, a file or drive for sharing must be activated. Locate the file or drive to share (navigate via "My Computer" or use Windows Explorer).

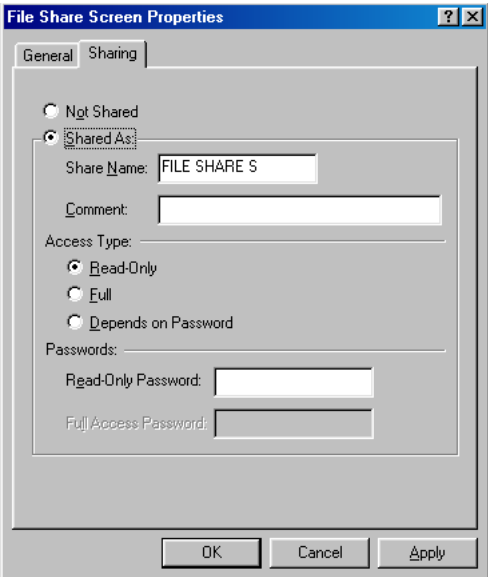
11. Right-click the file or drive to share. In the pop-up menu that appears, select **Sharing**.



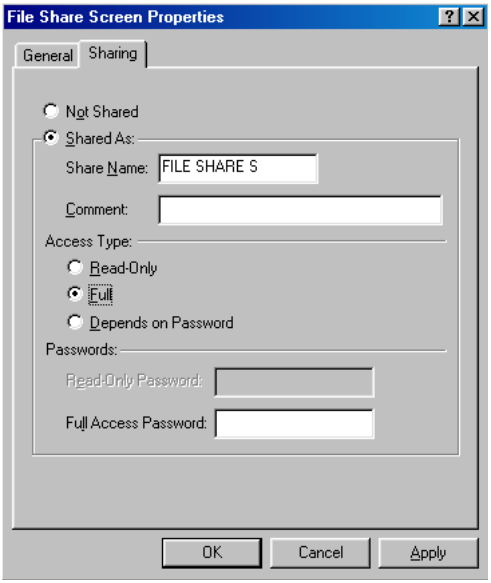
12. Select **Shared As** from the "File Share Screen Properties" windows and enter a name in the "Share Name" text box. This name will show up on the other computers on the network as a shared device.

13. Select an "Access Type," as explained below.

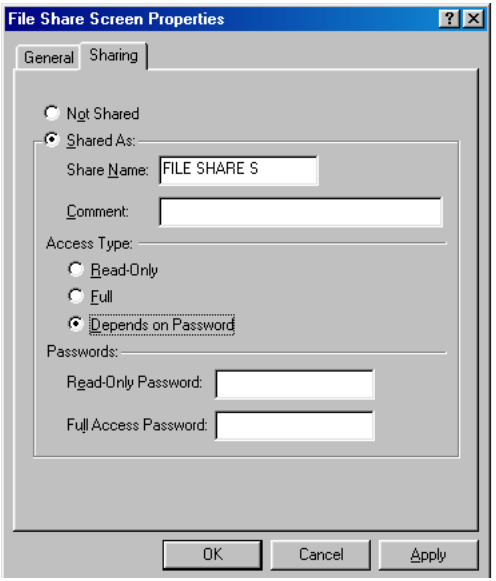
Read Only - Allows other users on the network to view the file or drive selected, but not modify it. Sharing privileges can be restricted by entering a password in the "Read-Only Password" text box.



Full - Allows other users on the network to read, modify, move, and delete any information in the selected file or drive. Sharing privileges can be restricted by entering a password in the "Full Access Password" text box.



Depends on Password - Allows both read-only and full access on the shared file or drive. The level of access depends on the passwords entered in the "Read-Only Password" and "Full Access Password" text boxes.



Users with access to the read-only password have read-only privileges to the shared file or drive; users with access to the full-access password have full access to the shared file or drive.

When finished, click **Apply**, then **OK**.

Printer Sharing

1. To share a printer on the network, click **Start**, **Settings**, then **Printers**.

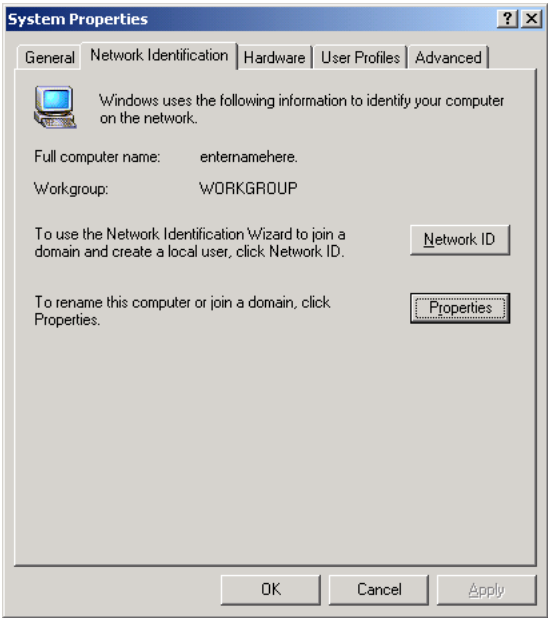
2. In the "Printers" window, right-click the printer to share and select **Sharing** from the pop-up menu.

3. Select "Shared As" in the window that appears. A default "Share Name" is automatically generated for the printer. Sharing privileges can also be modified from this window. When finished, click **OK**.

Windows 2000

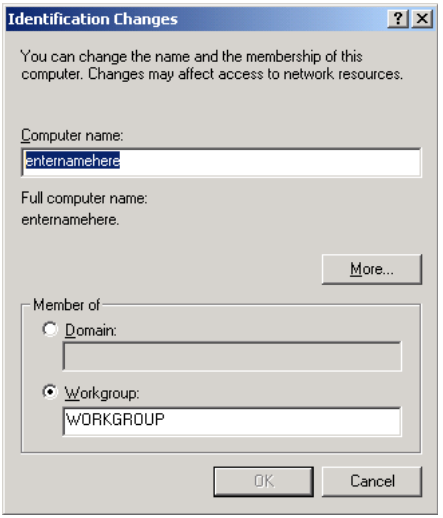
1. After configuring the computer (including installing and configuring the network adapter), Windows 2000 automatically enables file and print sharing. The only item to be checked is the computer and workgroup names. All computers on the network must have a unique computer name and the same workgroup name. To check or change the computer and workgroup names, right-click **My Computer**, then select **Properties** from the pop-up menu.

2. In the "System Properties" window, select **Network Identification**. If the "Full computer name" is unique and the "Workgroup" name is the same as all other computers on the network, click **OK**. If not, click **Properties**.



3. The "Identification Changes" window appears. In the "Computer Name" text box, enter a name different than the names of the other computers on the network.

4. In the "Workgroup" text box, enter the network name. This name must be the same on every computer on the network. Click **OK**.



5. The "Network Properties" window appears. Click **OK**, and restart the computer.

Macintosh

File Sharing

1. Select **Apple**, **Control Panels**, then **File Sharing**.

2. When the "File Sharing" window appears, select "Start/Stop." In the "Network Identity" section, enter an **Owner Name** and **Owner Password**.

   Caution: To deter potential hackers from guessing the password, *Action*tec recommends the password contain a minimum of eight characters and a mix of numbers and upper- and lower-case letters.

3. In the "File Sharing" section, click **Start**. If the button in this section reads "Stop," file sharing is already enabled.

4. To activate program linking, click "Start" in the "Program Linking" section.

5. To allow other users to access the computer without giving out the owner name and owner password, select **Users and Groups**, then **New User**.

6. When the "New User" window appears, enter the **Name** and **Password** of the user in their respective text boxes. If allowing the user to change his/her password, click the **Allow user to change password** box.

7. From the "Show" list menu, select **Sharing**. In the "File Sharing" section, click the **Allow user to connect to this computer** box. If allowing program linking by this user, click the **Allow user to link to programs on this computer** box.

8. Close the "New User" window. The new user is displayed in the list box under "Users and Groups."

9. Close the "File Sharing" window by clicking the small box in the upper left corner. File sharing and/or program linking is now enabled.

Printer Sharing

1. Click **Apple**, **Control Panels**, then **AppleTalk**.

2. When the "AppleTalk" window appears, select **Ethernet** or **Ethernet Built-In** from the "Connect via" drop-down list.

3. Close the "AppleTalk" window. If prompted to save changes, click **Save**.

4. Click **Apple**, then **Chooser**.

5. When the "Chooser" window appears, click **Active** from the "AppleTalk" options.

6. When prompted to make sure the computer is connected to an AppleTalk network, click **OK**.

7. Close the "Chooser" window.

Caution: When printer sharing is enabled on a Macintosh, the printer is not password protected, and any user on the network can use it. When other users have finished printing files on the printer, *Action*tec recommends disabling printer sharing by selecting **Apple**, then **Chooser**. In the "Chooser" window, turn off AppleTalk by clicking **Inactive**.

Finding the MAC Address

D

This appendix explains how to determine the MAC address of an Ethernet adapter installed on a computer. Select the operating system and follow the instructions.

Windows 95, 98

1. Click **Start**, then **Run**.
2. The "Run" window appears. In the "Open" text box, enter:
   ```
   ipconfig /all
   ```
3. Click **OK**. The "IP Configuration" window appears.
4. Note the "Adapter Address," which is the MAC address of the installed Ethernet adapter.

Windows Me

1. Click **Start**, then **Run**.
2. The "Run" window appears. In the "Open" text box, enter:
   ```
   winipcfg
   ```
3. Click **OK**. The "IP Configuration" window appears.
4. Note the "Adapter Address," which is the MAC address of the installed Ethernet adapter.

Windows 2000

1. Click **Start**, **Programs**, Accessories, **Command Prompt**.
2. When the "Command Prompt" window appears, enter:
   `ipconfig /all`
   then press **Enter** on the keyboard.
3. A list of information about the Ethernet adapter appears.
4. Note the "Physical Address," which is the MAC address of the installed Ethernet adapter.

Windows NT 4.0

1. Click **Start**, **Programs**, **Command Prompt**.
2. When the "Command Prompt" window appears, enter:
   `ipconfig /all`
   then press **Enter** on the keyboard.
3. A list of information about the Ethernet adapter appears.
4. Note the "Physical Address," which is the MAC address of the installed Ethernet adapter.

Macintosh

1. Select **Apple**, **Control Panels**, **TCP/IP**.
2. In the "TCP/IP" window, click **Info**.
3. The "TCP/IP Info" window appears. In the "Addresses" section, note the "Hardware address," which is the MAC address of the installed Ethernet adapter.

Glossary

E

Access Point

A device that allows wireless clients to connect to one another. An access point can also act as a bridge between wireless clients and a "wired" network, such as an Ethernet network. Wireless clients can be moved anywhere within the coverage area of the access point and remain connected to the network. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless traffic and forwarding wireless client messages to the Ethernet network.

Client

A desktop or mobile computer connected to a network.

DHCP (Dynamic Host Configuration Protocol)

A protocol designed to automatically assign an IP address to every computer on a network.

DNS (Domain Name System) Server Address

Allows Internet host computers to have a domain name and one or more IP addresses. A DNS server keeps a database of host computers and their respective domain names and IP addresses so that when a user enters a domain name into a Web browser, the user is sent to the proper IP address. The DNS server address used by computers on the home network corresponds to the location of the DNS server the ISP has assigned.

DSL (Digital Subscriber Line) Modem

A modem that uses existing phone lines to transmit data at high speeds.

Encryption

Provides security for wireless data transmissions.

ESSID (Extended Service Set Identifier)

A unique identifier for a wireless network.

Ethernet Network

A standard wired network configuration using cables and hubs.

Firewall

Prevents users outside the network from accessing and/or damaging files or computers on the network.

Gateway

A device that manages the data traffic of a network, as well as data traffic to and from the Internet.

IP (Internet Protocol) Address

A series of four numbers separated by periods identifying a unique Internet computer host.

ISP Gateway Address

An IP address for the Internet gateway. This address is only required when using a cable or DSL modem.

ISP (Internet Service Provider)

A business that connects individuals or businesses to the Internet.

LAN (Local Area Network)

A group of computers and devices connected together in a relatively small area (such as a house or an office). A home network is considered a LAN.

MAC (Media Access Control) Address

The hardware address of a device connected to a network.

NAT (Network Address Translation)

Allows all computers on a network to use one IP address, enabling access to the Internet from any computer on the the network without purchasing more IP addresses from an ISP.

PC Card

An Ethernet adapter connected to the PCMCIA slot in a computer, enabling the communication with the Gateway.

PPPoE (Point-to-Point Protocol over Ethernet)

A method of secure data transmission.

Subnet Mask

A set of four numbers configured like an IP address used to create IP address numbers used within a particular network only.

TCP/IP (Transmission Control Protocol/Internet Protocol)

The standard protocol for data transmission over the Internet.

WAN (Wide Area Network)

A network connecting computers located in separate areas, (i.e., different buildings, cities, countries). The Internet is a WAN.

WECA (Wireless Ethernet Compatibility Alliance)

An industry group that certifies cross-vender interoperability and compatibility of IEEE 802.11b wireless networking products and promotes the standard for enterprise, small business, and home environments.

WLAN (Wireless Local Area Network)

A group of computers and other devices connected wirelessly in a small area.

Notices

Regulatory Compliance Notices

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by A*ction*tec Electronics, Inc., may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference;

2. This device must accept any interference received, including interference that may cause unwanted operation.

☞ ***Note***: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

*Action*tec Electronics, Inc.
760 North Mary Ave.
Sunnyvale, CA 94086
United States
Tel: (408) 752-7700
Fax: (408) 541-9005

Limited Warranty

Hardware: *Action*tec Electronics, Inc., warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for twelve (12) months from the date of purchase from *Action*tec Electronics or its authorized reseller.

*Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, *Action*tec Electronics may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of *Action*tec Electronics, Inc. Replacement products may be new or reconditioned. *Action*tec Electronics warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

Software: *Action*tec Electronics warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from *Action*tec Electronics or its authorized reseller. *Action*tec Electronics warrants the media containing software against failure during the warranty period. The only updates that will be provided are at the sole discretion of *Action*tec Electronics and will only be available for download at the *Action*tec Web site, www.actiontec.com. *Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec Electronics' option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable *Action*tec Electronics published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. *Action*tec Electronics makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the *Action*tec Electronics software product documentation or specifications as being compatible, *Action*tec Electronics will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with *Action*tec Electronics published specifications or user guide.

THIS *ACTION*TEC ELECTRONICS PRODUCT MAY INCLUDE OR BE BUNDLED WITH THIRD-PARTY SOFTWARE, THE USE OF WHICH IS GOVERNED BY A SEPARATE END-USER LICENSE AGREEMENT.

THIS *ACTION*TEC ELECTRONICS WARRANTY DOES NOT APPLY TO SUCH THIRD-PARTY SOFTWARE. FOR THE APPLICABLE WARRANTY, PLEASE REFER TO THE END-USER LICENSE AGREEMENT GOVERNING THE USE OF SUCH SOFTWARE.

Obtaining Warranty Service: Customer may contact *Action*tec Electronics Technical Support Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from *Action*tec Electronics or its authorized reseller may be required. Products returned to *Action*tec Electronics must be pre-authorized by *Action*tec Electronics with a Return Merchandise Authorization (RMA) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. The repaired or replaced item will be shipped to Customer, at *Action*tec Electronics' expense, not later than thirty (30) days after *Action*tec Electronics receives the defective product.

Return the product to:
(In the United States)
*Action*tec Electronics, Inc.
760 North Mary Avenue
Sunnyvale, CA 94085

*Action*tec Electronics shall not be responsible for any software, firmware, information, memory data, or Customer data contained in, stored on, or integrated with any products returned to *Action*tec Electronics for repair, whether under warranty or not.

WARRANTIES EXCLUSIVE: IF AN *ACTION*TEC ELECTRONICS' PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT *ACTION*TEC ELECTRONICS' OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, TERMS OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. *ACTION*TEC ELECTRONICS

NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF ITS PRODUCTS.

*ACTION*TEC ELECTRONICS SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT OR MALFUNCTION IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLECT, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPT TO OPEN, REPAIR OR MODIFY THE PRODUCT, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OTHER HAZARDS, OR ACTS OF GOD.

LIMITATION OF LIABILITY: TO THE FULL EXTENT ALLOWED BY LAW, *ACTION*TEC ELECTRONICS ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCT, EVEN IF *ACTION*TEC ELECTRONICS OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT,OR REFUND OF THE PURCHASE PRICE PAID, AT *ACTION*TEC ELECTRONICS' OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

Disclaimer: Some countries, states or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to you. When the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights which may vary depending on local law.

Dispute Resolution: The customer may contact the Director of Technical Support in the event the Customer is not satisfied with *Action*tec Electronics' response to the complaint. In the event that the Customer is still not satisfied with the response of the Director of Technical Support, the Customer is instructed to contact the Director of Marketing. In the event that the Customer is still not satisfied with the response of the Director of Marketing, the Customer is instructed to contact the Chief Financial Officer and/or President.

Governing Law: This Limited Warranty shall be governed by the laws of the State of California, U.S.A., excluding its conflicts of laws and principles, and excluding the United Nations Convention on Contracts for the International Sale of Goods.