Actiontec™

Wireless–Ready DSL Gateway

User Manual

Table of Contents

Introduction 1

Thank you for purchasing the *Action*tec Wireless-Ready Gateway. The Gateway is the simplest way to connect a multiple number of computers to a single high-speed broadband connection. 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-Ready DSL Gateway is one of the keys to your success.

Package Contents

- One- or Four-port Actiontec Wireless-Ready DSL Gateway
- Power adapter
- Ethernet cable
- USB cable
- Installation CDs
- Quick start guide
- Warranty and registration card

Minimum System Requirements

- Active DSL service
- 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

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 every day from 6 A.M. to 11 P.M. (MST) to provide professional support.

***Action*tec Electronics, Inc.**

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Technical Support

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Setting Up the Gateway

2

The instructions that follow parallel the steps contained in the *Action*tec Installation Buddy™, which provides a visual guide to setting up the Gateway. It is recommended the user run the Installation Buddy first, before attempting any other procedures.

To set up the Gateway, connect it to a computer. After connecting this first computer, other computers can be added to the network via USB, Ethernet, or wirelessly (see "Connecting Additional Computers on page 22").

☞ ***Note***: The Installation Buddy is not supported on computers running Windows 95 and NT 4.0, Macintosh, or Linux operating systems.

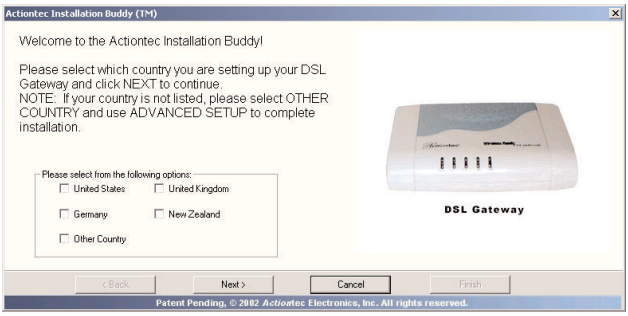
Connecting a Computer to the Gateway

Connecting a computer to the Gateway for setup involves three basic steps: initial setup, plugging in the Gateway's Power Cord, and connecting the Gateway to the computer.

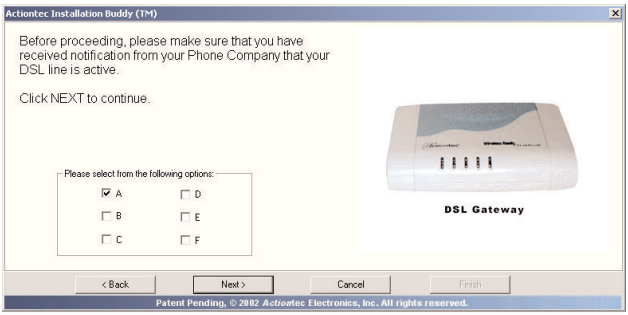
☞ ***Note***: The following procedures are for U.S. installations only.

Connecting Via Ethernet

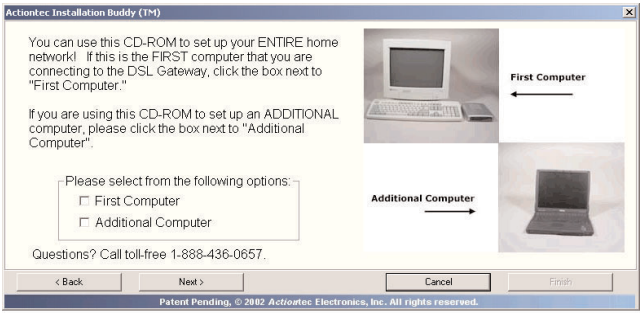
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, select a country, then click **Next**.



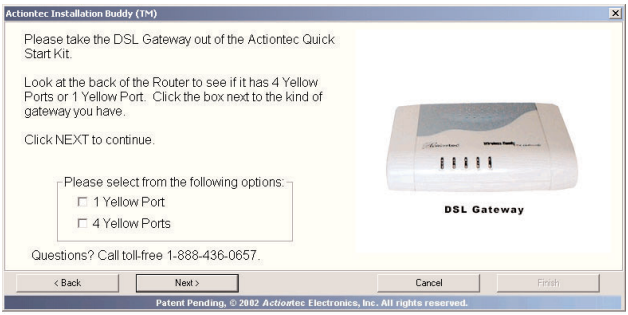
2. When the following screen appears, read the onscreen instructions, select an option, then click **Next**.



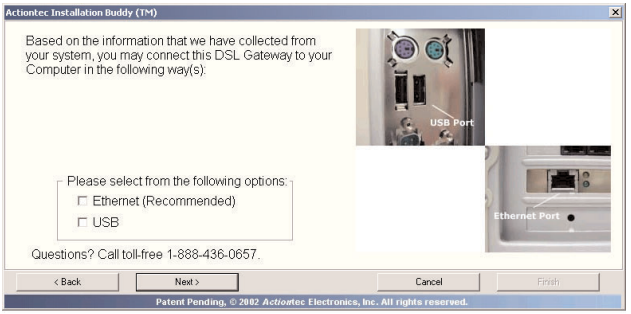
3. The next window appears. Read the instructions, select **First Computer** by clicking on the check box, then click **Next**.



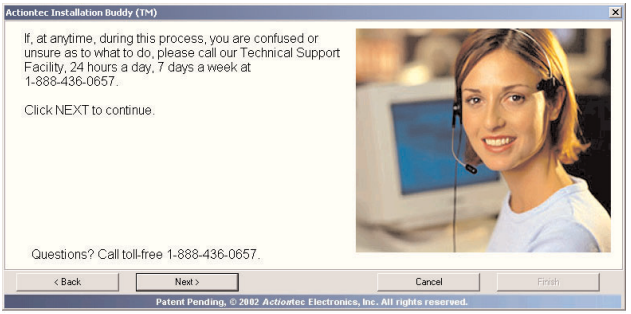
4. In the next window, select the type of Gateway (**1 Yellow Port** or **4 Yellow Port**), then click **Next**.



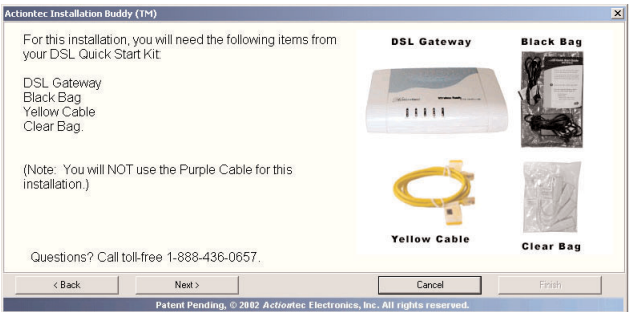
5. In the next window, select **Ethernet**, then click **Next**.



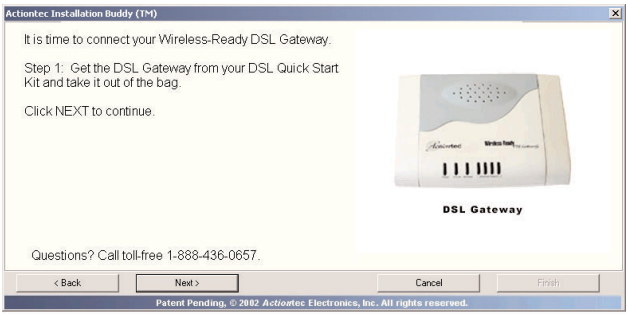
6. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



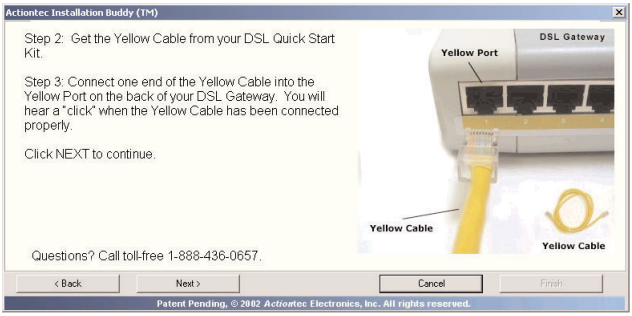
7. The next window appears, showing the items needed to set up the Gateway. Click **Next**.



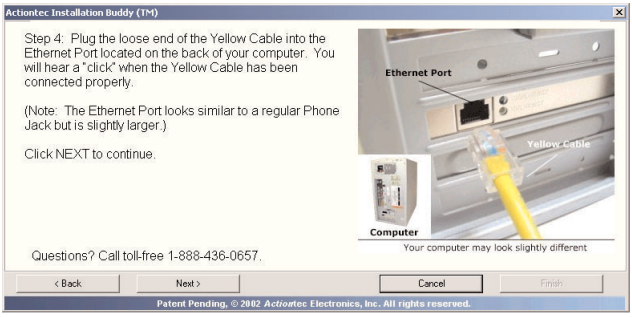
8. The next window appears. Get the Gateway, take it out of its protective plastic bag, then click **Next**.



9. When the next window appears, get the **Yellow Cable** and connect one end to one of the **Yellow Ports** on the back of the Gateway, then click **Next**.

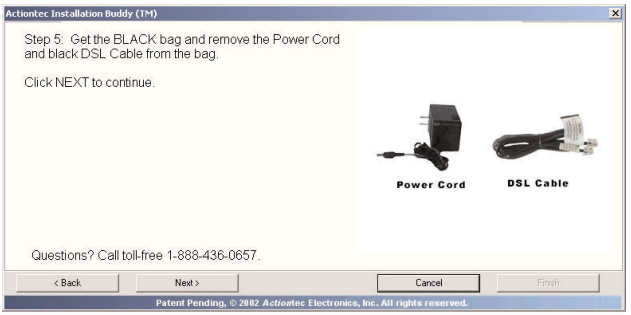


10. Another window appears. Plug the other end of the **Yellow Cable** into an **Ethernet port** on the back of the computer, then click **Next**.



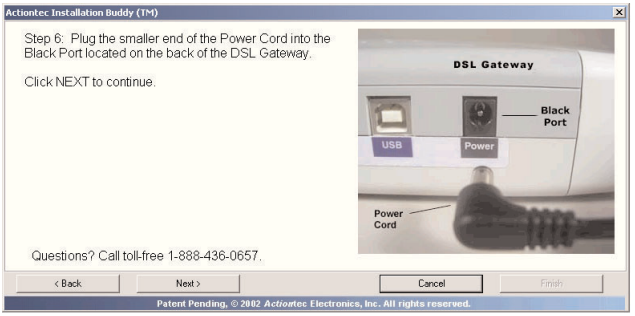
☞ ***Note***: An Ethernet port looks similar to a phone jack, but is slightly larger.

11. As shown in the next window, get the **Black Bag** and remove the **Power Cord** and **Black DSL Cable**, then click **Next**.

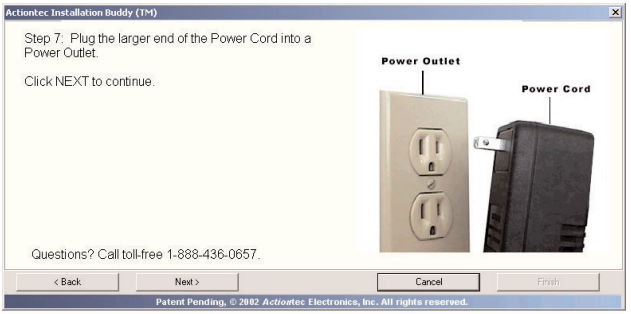


☞ ***Note***: Depending on the country, the picture in the previous figure may or may not reflect the type of power cord supplied.

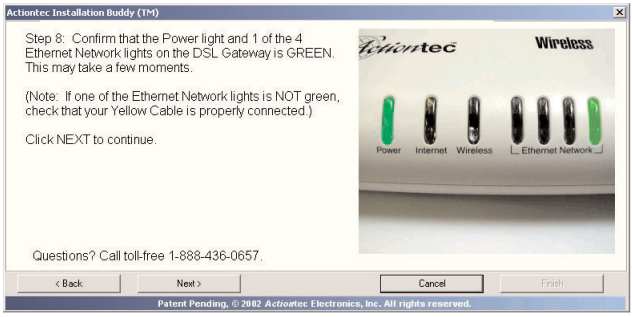
12. The next window appears. Plug the smaller end of the **Power Cord** into the **Black Port** on the back of the Gateway, then click **Next**.



13. When the next window appears, plug the larger end of the **Power Cord** into a **Power Outlet**, then click **Next**.

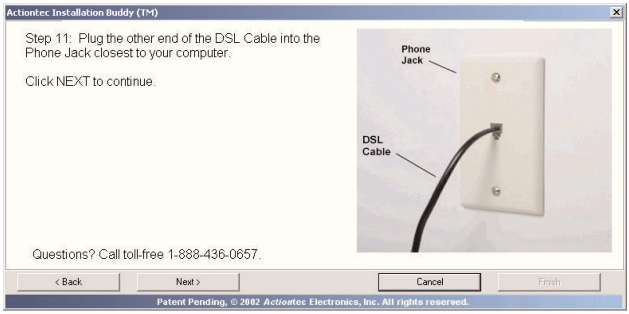


14. When the next window appears, confirm the **Power** and one of the **Ethernet Lights** on the Gateway **glows steadily green**. This may take up to 30 seconds. Click **Next**.

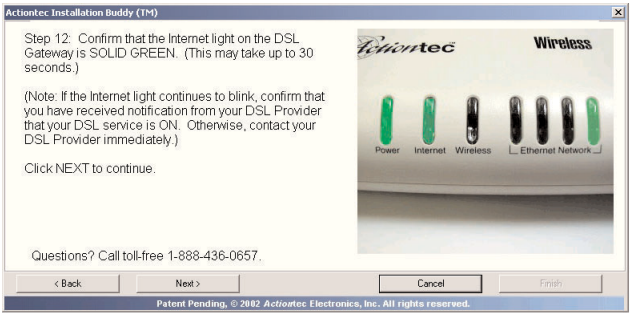


15. The following window appears. Get the **Black DSL Cable** and plug one end into the **Green Line Port** on the back of the Gateway, then click **Next**.

16. When the next window appears, plug the other end of the **Black DSL Cable** into the **Phone Jack** nearest to the computer, then click **Next**.



17. When the next window appears, confirm the **Power**, **Internet**, and one of the **Ethernet Lights** on the Gateway **glow steadily green**. This may take up to 30 seconds. Click **Next**.

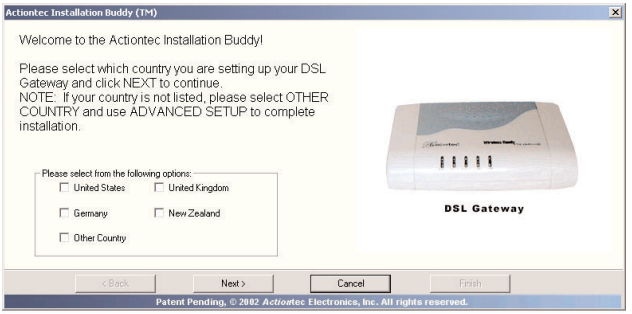


☞ ***Note***: If the Power, Internet and Ethernet Lights on the Gateway are not solid green, check all connections to the Gateway. If all connections are plugged in properly, call your DSL service provider.

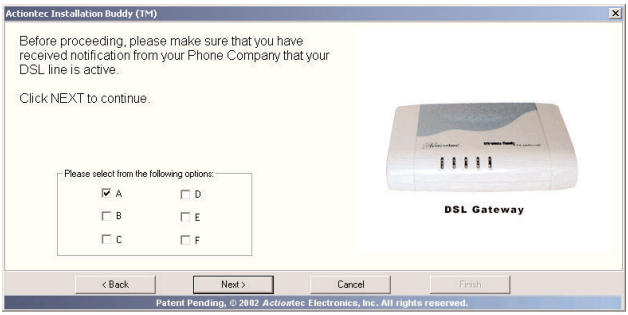
The Gateway is connected to a computer via Ethernet. Next, install the filters as described in "Installing Filters" on page 15.

Connecting Via USB

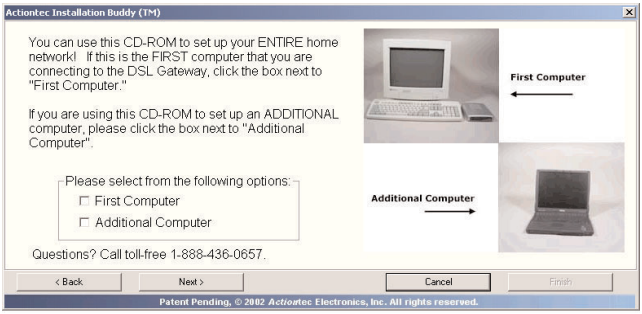
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, select a country, then click **Next**.



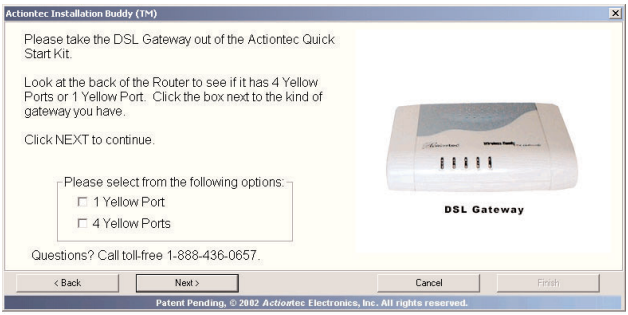
2. When the following screen appears, read the onscreen instructions, select an option, then click **Next**.



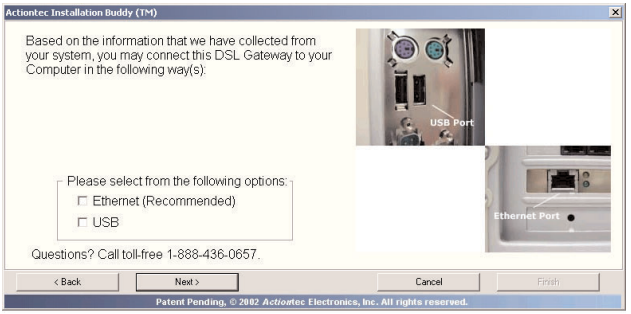
3. The next window appears. Read the instructions, select **First Computer** by clicking on the check box, then click **Next**.



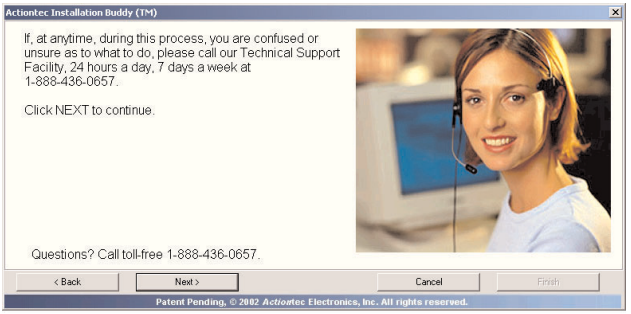
4. In the next window, select the type of Gateway (**1 Yellow Port** or **4 Yellow Port**), then click **Next**.



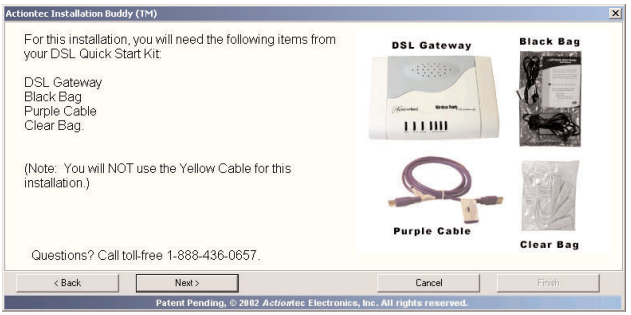
5. In the next window, select **USB**, then click **Next**.



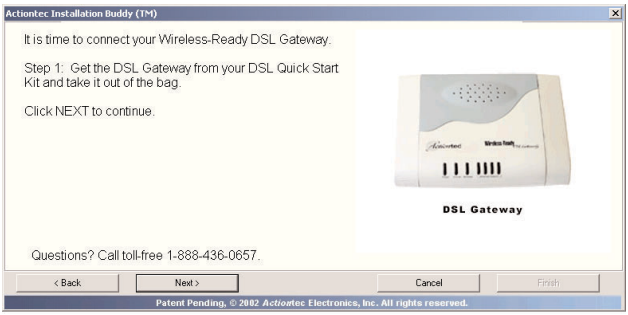
6. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



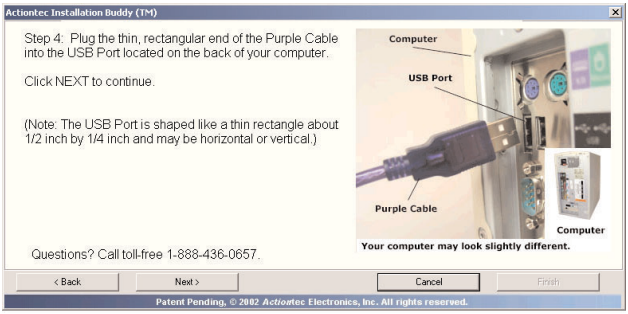
7. The next window appears, with information regarding the items needed to set up the Gateway. Click **Next**.



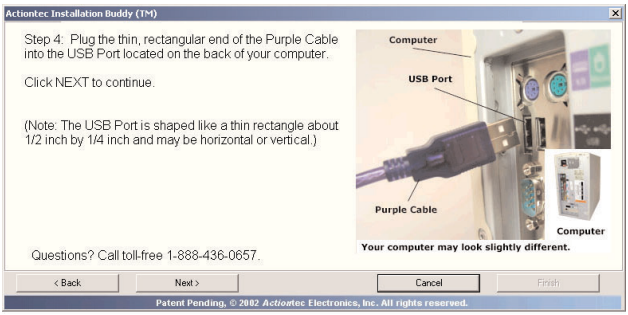
8. The next window appears. Get the Gateway, take it out of its protective plastic bag, then click **Next**.



9. When the next window appears, get the **Purple Cable** and connect the square end to the **Purple Port** on the back of the Gateway, then click **Next**.

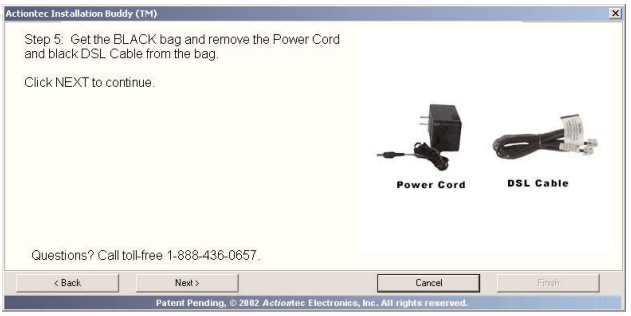


10. Another window appears. Plug the rectangular end of the **Purple** (**USB**) **Cable** into a **USB port** on the front or back of the computer, then click **Next**.



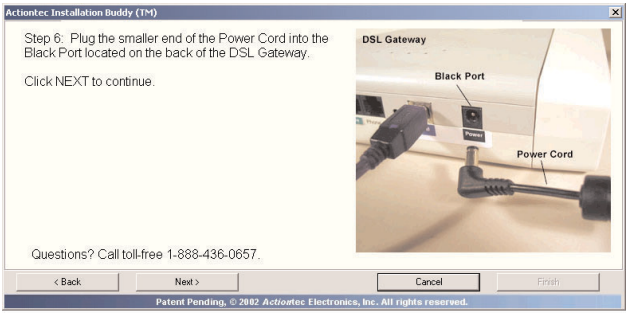
☞ ***Note***: A USB port is shaped like a thin rectangle about 1/4 inch by 1/2 inch, and may be vertically or horizontally oriented.

11. As shown in the next window, get the **Black Bag** and remove the **Power Cord** and **Black DSL Cable**, then click **Next**.

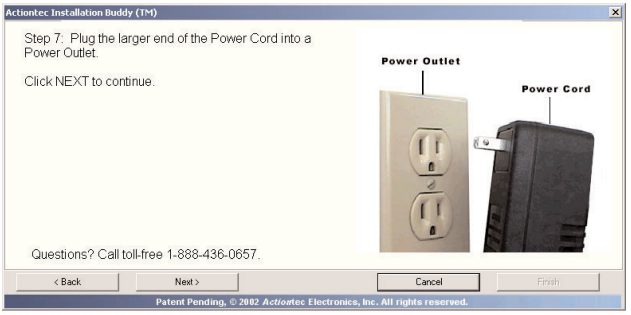


☞ ***Note***: Depending on the country, the picture in the previous figure may or may not reflect the type of power cord supplied.

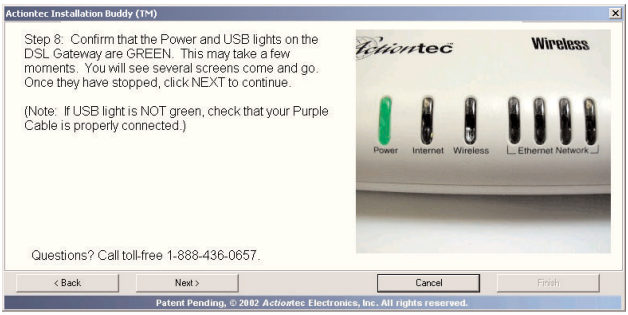
12. The next window appears. Plug the smaller end of the **Power Cord** into the **Black Port** on the back of the Gateway, then click **Next**.



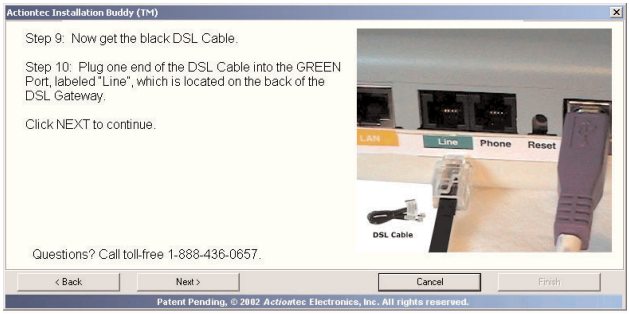
13. When the next window appears, plug the larger end of the **Power Cord** into a **Power Outlet**, then click **Next**.



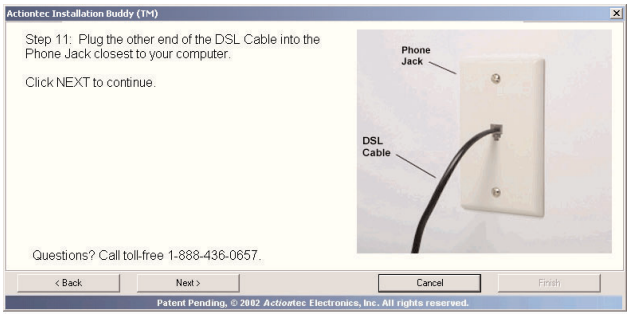
14. When the next window appears, confirm the **Power Light** on the Gateway **glows steadily green**. This may take up to 30 seconds. Click **Next**.



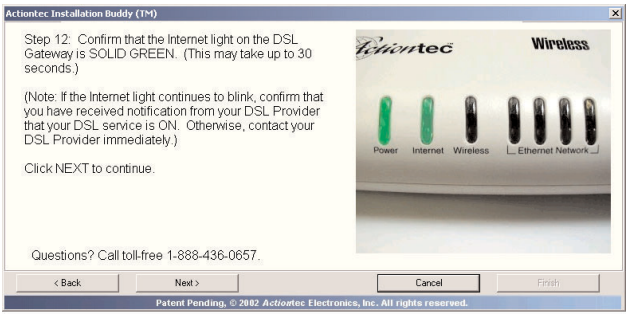
15. The following window appears. Get the **Black DSL Cable** and plug one end into the **Green Line Port** on the back of the Gateway, then click **Next**.



16. When the next window appears, plug the other end of the **Black DSL Cable** into the **Phone Jack** nearest to the computer, then click **Next**.



17. When the next window appears, confirm the **Power** and **Internet Lights** on the Gateway **glow steadily green**. This may take up to 30 seconds. Click **Next**.



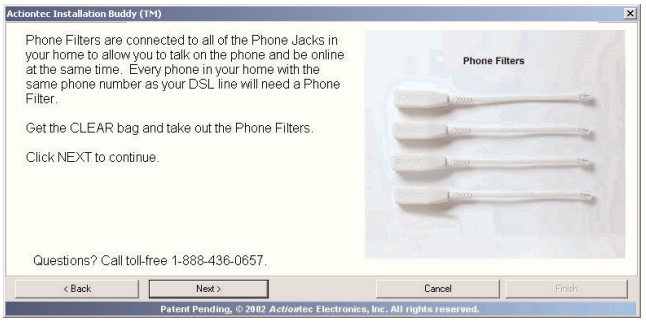
☞ ***Note***: If the Powerand Internet Lights on the Gateway are not solid green, check all connections to the Gateway. If all connections are plugged in properly, call your DSL service provider.

The Gateway is connected to a computer via USB. Next, install the phone filters as described in "Installing Filters," below.

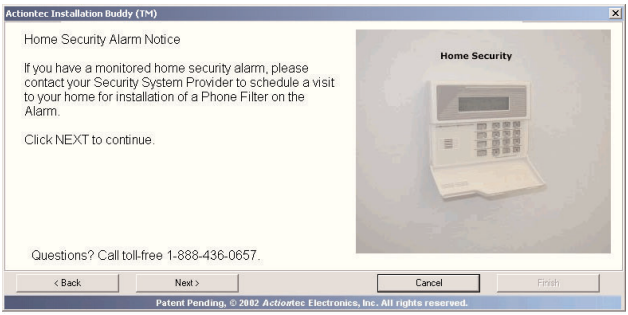
Installing Filters

Filters allow the use of the phone while online. All phones and other devices (answering machines, fax machines, etc.) using the same line (i.e., using the same phone number) as the DSL line must have a filter installed. To install a filter, follow these instructions:

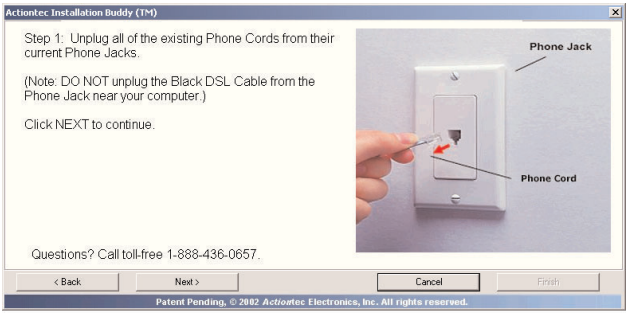
1. When the following window appears, get the **Clear Bag** from the DSL Quick Start Kit and take out the **Filters**. Click **Next** to continue.



2. When the next window appears, read the onscreen information concerning home security alarms, then click **Next**.

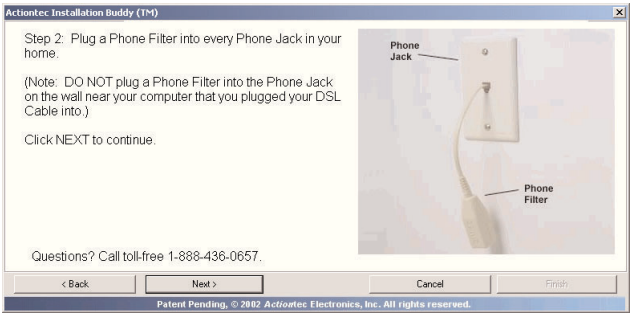


2. When the next window appears, unplug all phone cords from their respective phone jacks, then click **Next**.



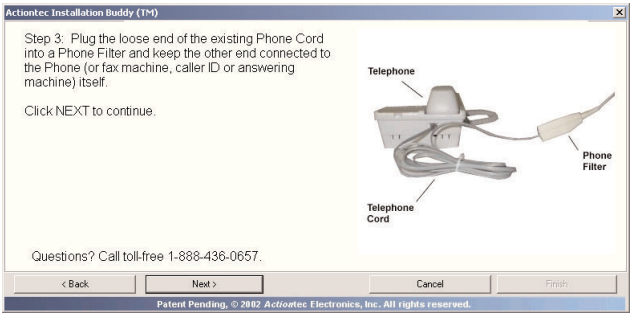
Caution: **Do not** unplug the black DSL cable from the phone jack near your computer.

3. Plug a **filter** in every phone jack using the same number as the DSL line, then click **Next**.

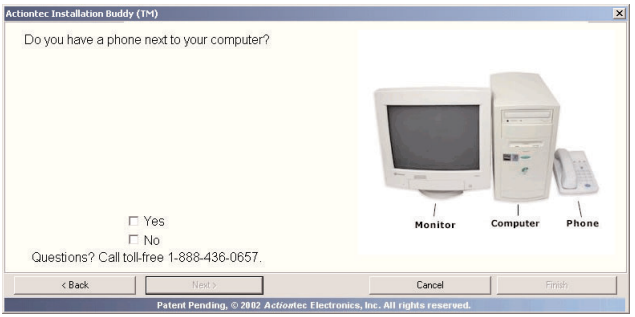


Caution: **Do not** install a filter in the phone jack used by the black DSL cable.

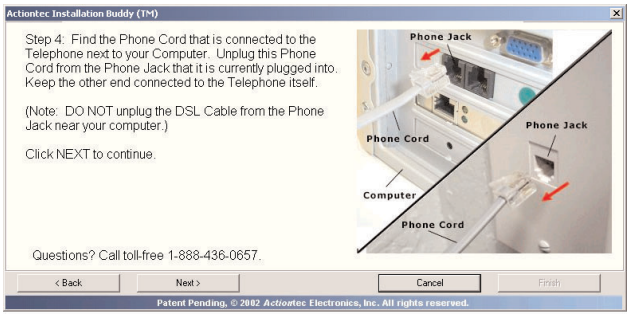
4. In the next window, read the instructions. Plug the loose end of the existing phone cord into a filter, keeping the other end connected to the device (phone, fax machine, answering machine, etc.). Click **Next**.



5. Answer the question ("Do you have a phone next to your computer?") in the following window by clicking **Yes** or **No**, then click **Next**.

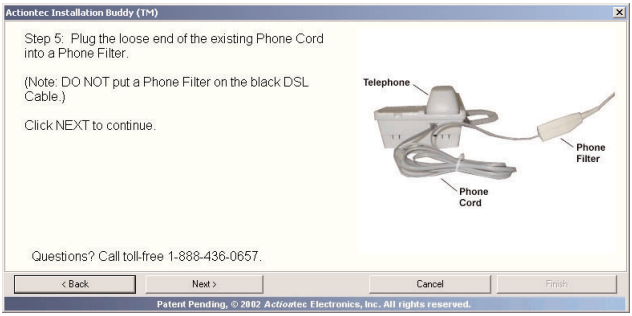


6. If you answered "No" in the previous window, go to "Setting up the DSL Connection" on page 19. If you answered "Yes," the following window appears. Unplug the phone cord connected to the phone from its phone jack in the wall, the click **Next**.



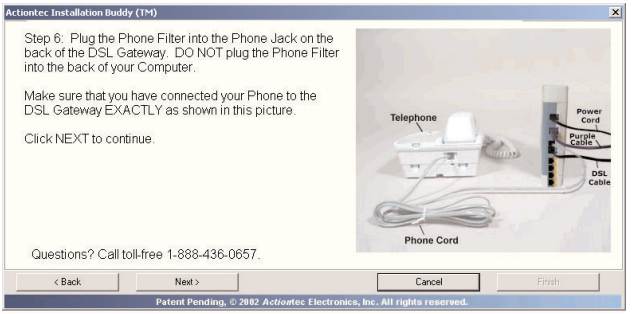
Caution: **Do not** unplug the black DSL cable from the phone jack near your computer.

7. When the next window appears, plug the loose end of the phone cord into a filter.



Caution: **Do not** connect a phone filter to the black DSL cable.

8. The next window appears. Plug the phone filter into the **Phone Jack** on the back of the Gateway. Do not plug the phone filter into the phone jack on the back of the computer. The connections should look exactly as the configuration in the picture, below (if the first computer is connected via USB; if the first computer is connected via Ethernet, the yellow cable will be plugged into one of the yellow ports). Click **Next**

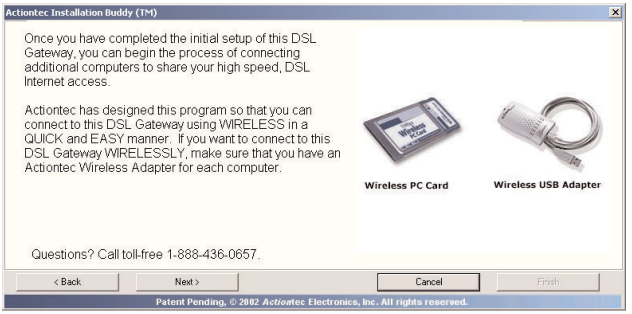


Next, go to "Setting Up the DSL Connection," below.

Setting Up the DSL Connection

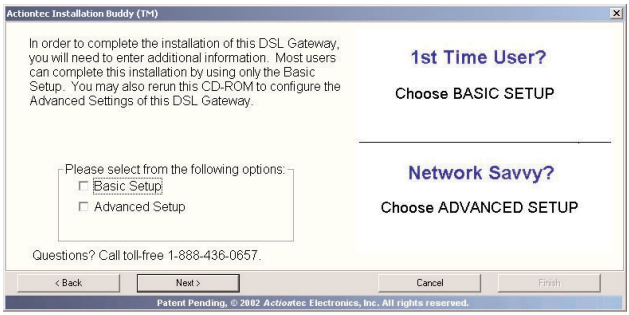
After connecting the Gateway and installing filters, the DSL connection must be configured. To do this:

1. When the following window appears, read the onscreen instructions, then click **Next**.



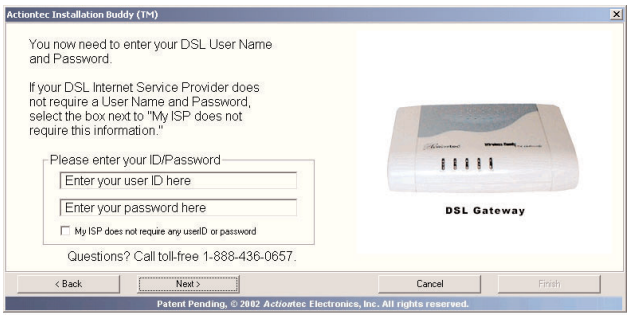
2. In the next window, read the onscreen information, then click **Next**.

3. In the next window, select the type of setup implementation, then click **Next**.

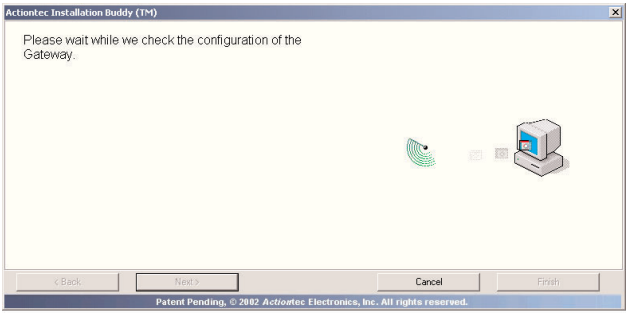


Basic Setup

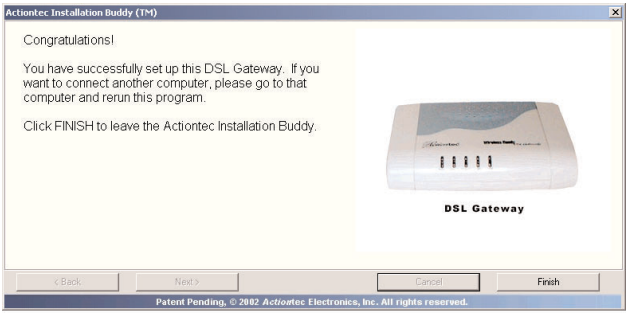
1. If "Basic Setup" was chosen, the following window appears. Enter the appropriate user name and password in the text boxes. If no user name and password are needed, click on the check box next to "My ISP does not require this information." Click **Next**.



2. The next window appears while the configuration of the Gateway is checked.



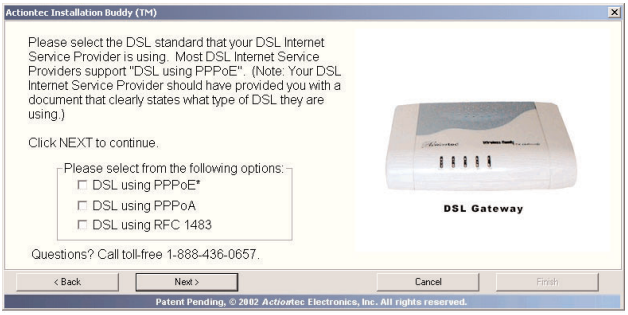
3. The final window appears after the Gateway is successfully set up. Click **Finish** to exit the Installation Buddy.



The first computer is configured to use the Gateway. To connect additional computers, go to "Connecting Additional Computers" on page 21.

Advanced Setup

1. If "Advanced Setup" was chosen, select the type of connection, then click **Next**.



2. Follow the instructions in the next windows to set up the Gateway.

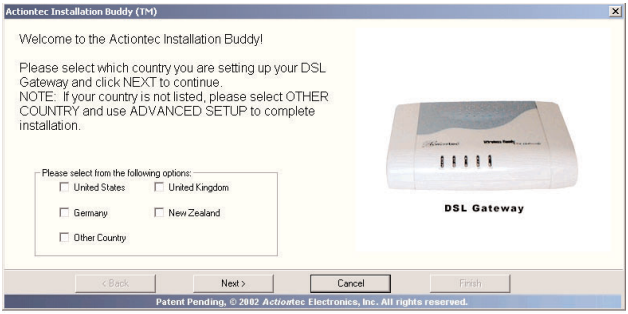
The first computer is configured to use the Gateway. To connect additional computers, go to "Connecting Additional Computers" below.

Connecting Additional Computers

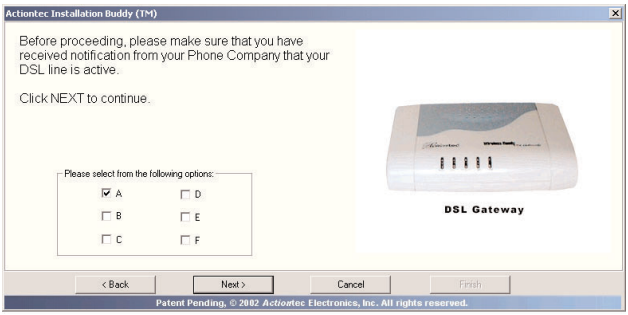
To connect additional computers to the Gateway, select the type of connection, then follow the instructions.

Connecting Via Ethernet

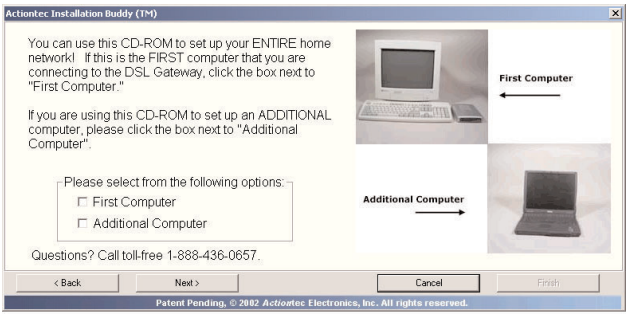
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, select a country, then click **Next**.



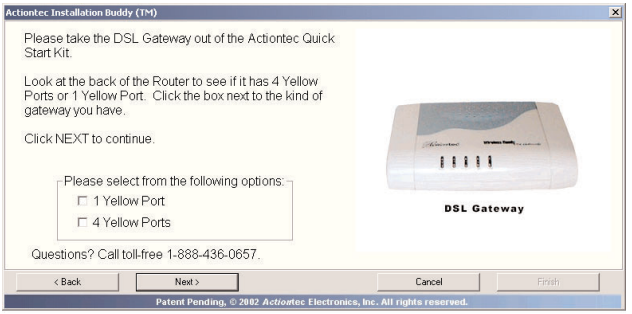
2. When the following screen appears, read the onscreen instructions, select an option, then click **Next**.



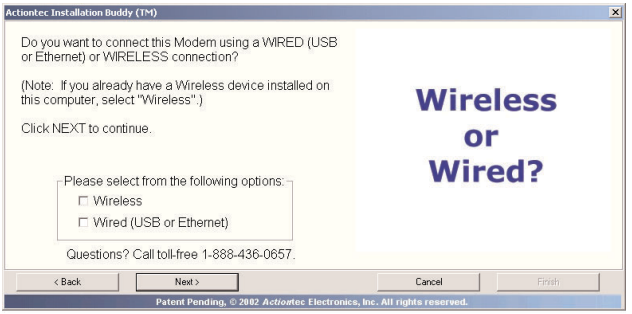
3. The next window appears. Read the instructions, select **Addtional Computer** by clicking on the check box, then click **Next**.



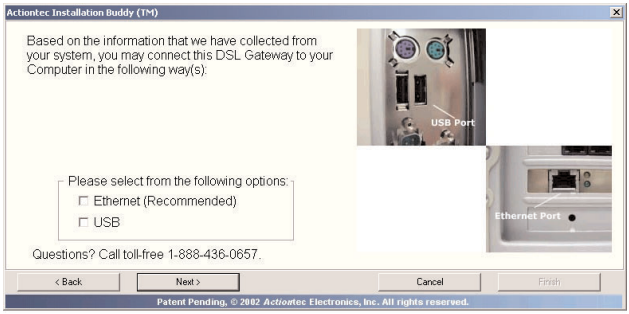
4. The next window appears. Select the type of Gateway (**1 Yellow Port** or **4 Yellow Ports**) by clicking on the appropriate check box, then click **Next**.



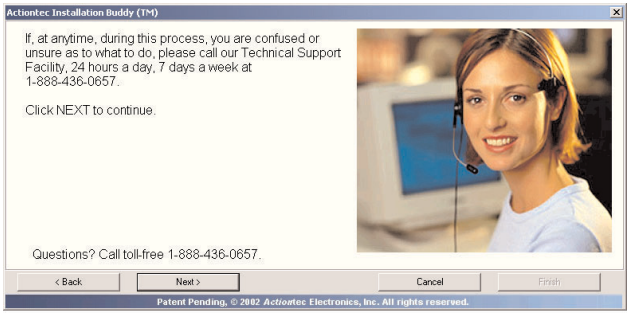
5. In the next window, select **Wired (USB or Ethernet)**, then click **Next**.



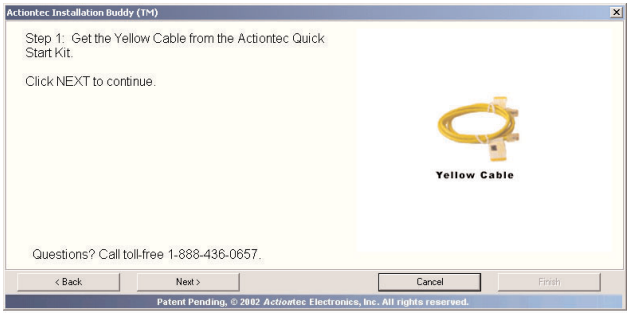
6. In the next window, select **Ethernet**, then click **Next**.



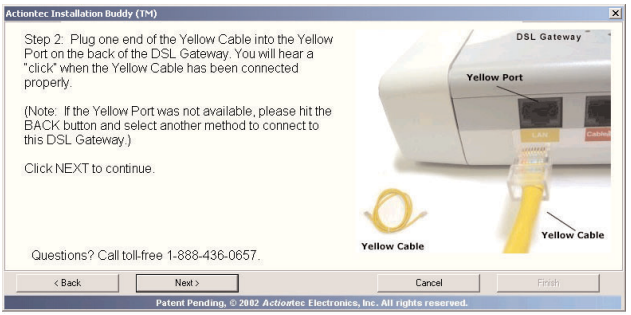
7. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



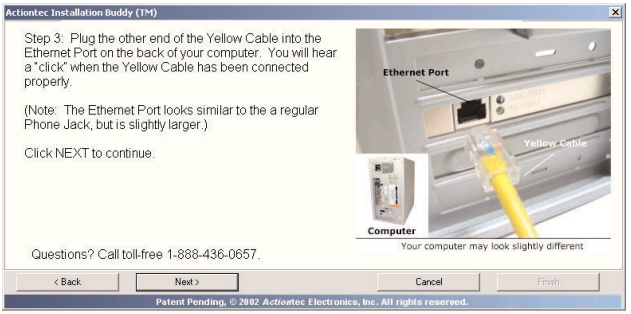
8. The following window appears. Get the **Yellow** (**Ethernet**) **Cable** from the DSL Quick Start Kit, then click **Next**.



9. When the next window appears, plug one end of the **Yellow (Ethernet) Cable** into the **Yellow Port** on the back of the Gateway, then click **Next**.

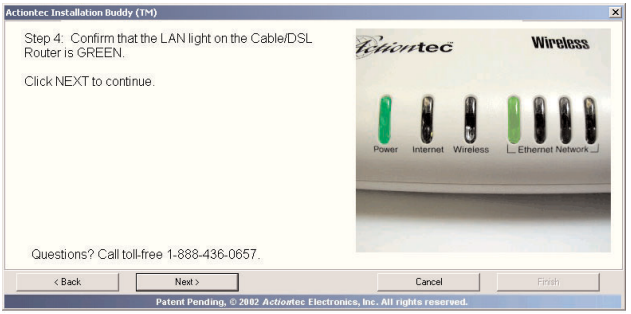


10. Another window appears. Plug the other end of the **Yellow (Ethernet) Cable** into an **Ethernet port** on the back of the computer, then click **Next**.

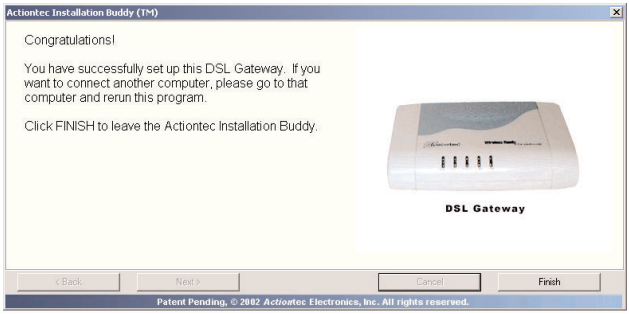


☞ ***Note***: An Ethernet port looks similar to a phone port, but is slightly bigger.

11. When the next window appears, confirm the **Power** and one of the **Ethernet Lights** on the Gateway **glows steadily green**. This may take up to 30 seconds. Click **Next**.



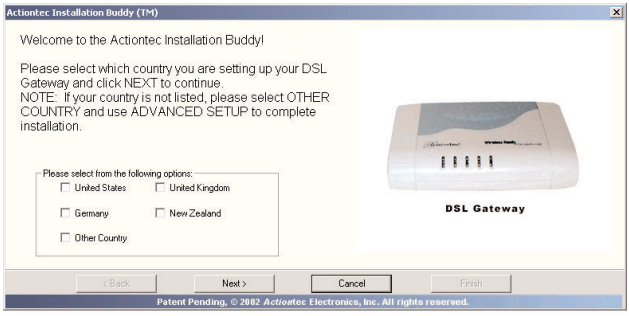
12. The Gateway connects, and then the final window appears. Click **Finish**.



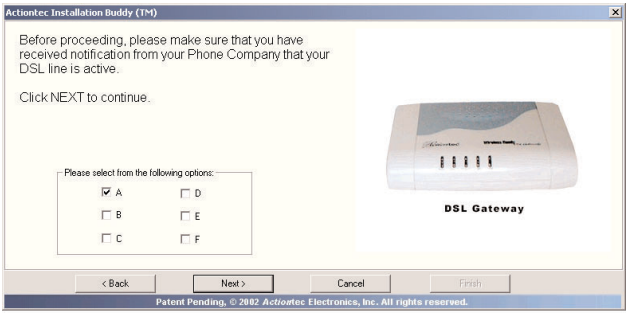
The Gateway is connected to a computer via Ethernet.

Connecting Via USB

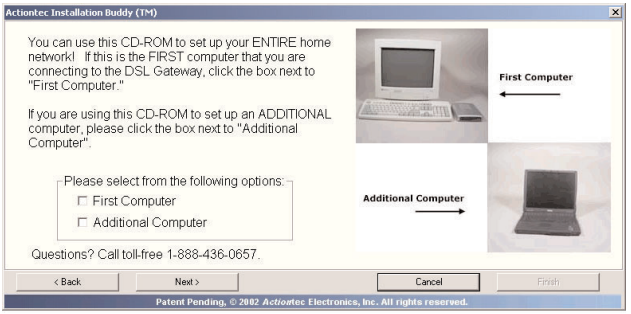
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, select a country, then click **Next**.



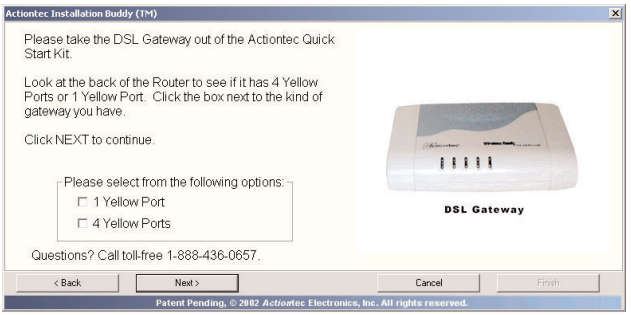
2. When the following screen appears, read the onscreen instructions, select an option, then click **Next**.



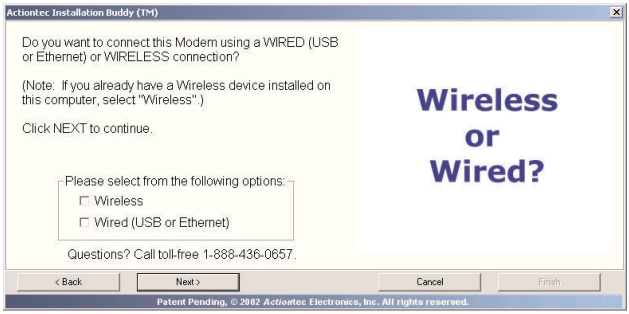
3. The next window appears. Read the instructions, select **Addtional Computer** by clicking on the check box, then click **Next**.



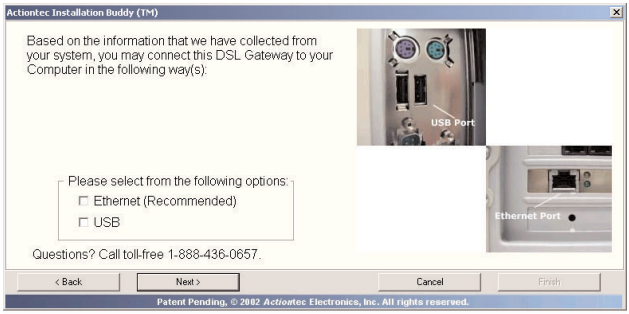
4. The next window appears. Select the type of Gateway (**1 Yellow Port** or **4 Yellow Ports**) by clicking on the appropriate check box, then click **Next**.



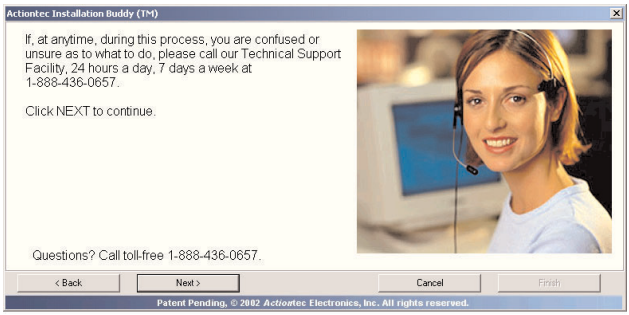
5. In the next window, select **Wired (USB or Ethernet)**, then click **Next**.



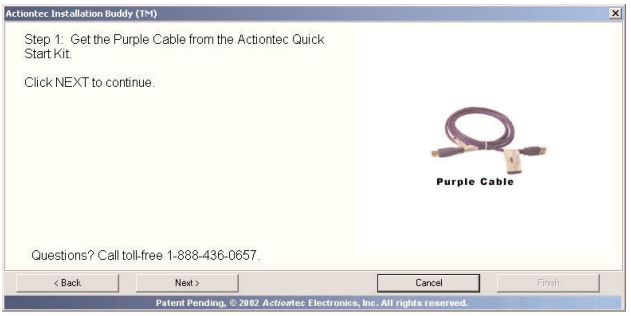
6. In the next window, select **USB**, then click **Next**.



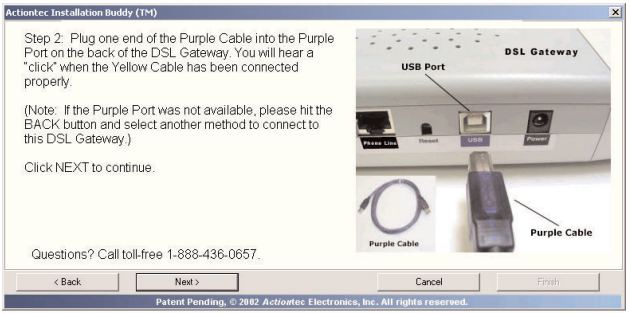
7. The next window appears, with information regarding *Action*tec's 24-hour, 7-day-a-week Technical Support. If you have any problems, call **1.888.436.0657**. Click **Next**.



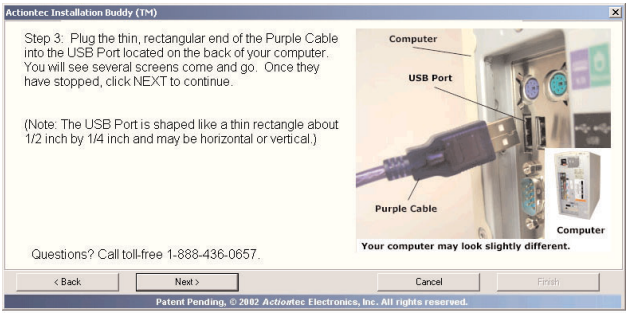
8. The following window appears. Get the **Purple (USB) Cable** from the DSL Quick Start Kit, then click **Next**.



9. When the next window appears, plug square end of the **Purple (USB) Cable** into the **Purple Port** on the back of the Gateway, then click **Next**.

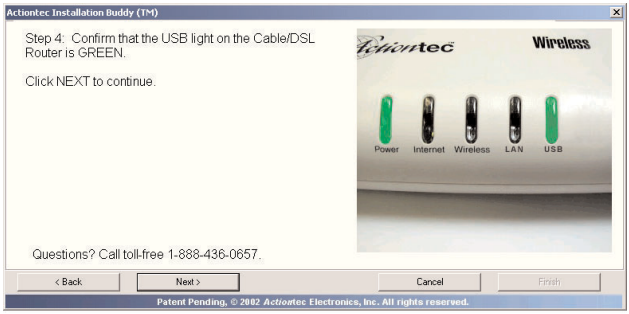


10. Another window appears. Plug the other end of the **Yellow (Ethernet) Cable** into an **Ethernet port** on the back of the computer, then click **Next**.

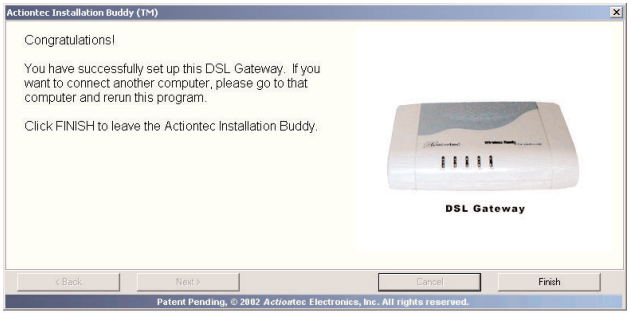


☞ ***Note***: A USB port is shaped like a thin rectangle about 1/4 inch by 1/2 inch, and may be vertically or horizontally oriented..

12. When the next window appears, confirm the **Power** and **Internet** (4 Yellow Port model) or **Power** and **USB** (1 Yellow Port model) **glows steadily green**. This may take up to 30 seconds. Click **Next**.



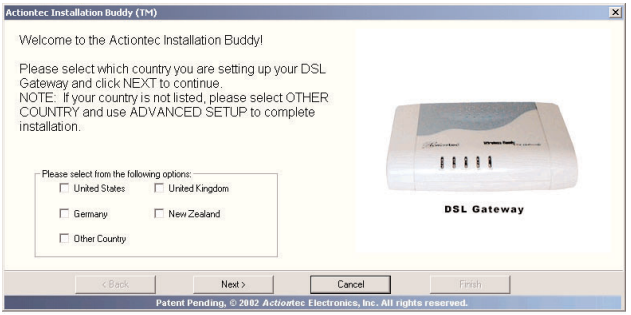
13. The Gateway connects, and then the final window appears. Click **Finish**.



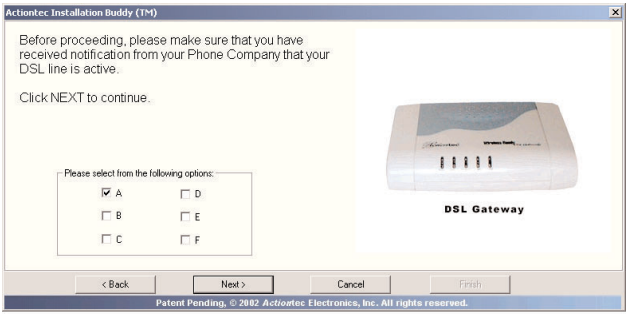
The Gateway is connected to a computer via Ethernet.

Connecting Wirelessly

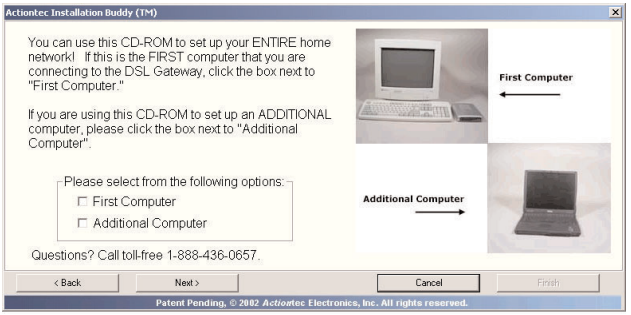
1. Insert **Disk 1** (Installation Buddy CD) in the CD-ROM drive of the computer. The Installaton Buddy will start automatically. Wait until the following screen appears, read the onscreen instructions, select a country, then click **Next**.



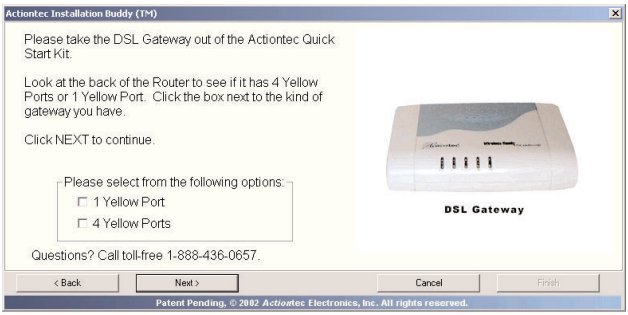
2. When the following screen appears, read the onscreen instructions, select an option, then click **Next**.



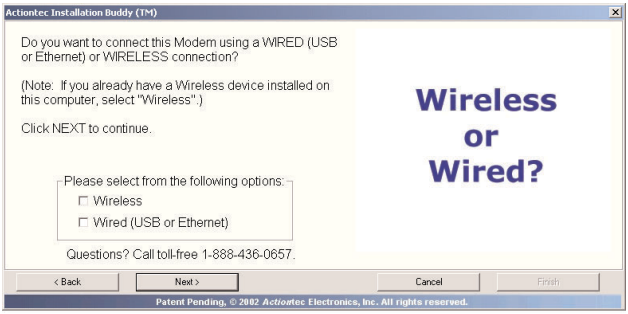
3. The next window appears. Read the instructions, select **Addtional Computer** by clicking on the check box, then click **Next**.



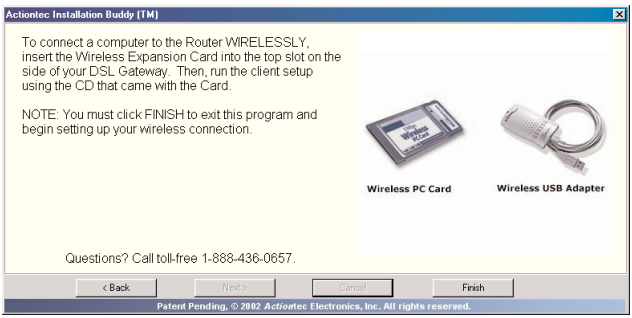
4. The next window appears. Select the type of Gateway (**1 Yellow Port** or **4 Yellow Ports**) by clicking on the appropriate check box, then click **Next**.



5. In the next window, select **Wireless**, then click **Next**.



6. The next window appears. Read and follow the onscreen instructions. To finish connecting the Gateway wirelessly to the computer, insert the CD that come with the PC Card into the computer's CD-ROM drive and run the client setup.



Basic Setup

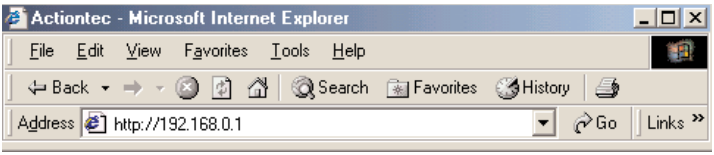
4

This chapter is a guide through a basic configuration of the Gateway, including how to connect the Gateway to the ISP, as well as an overview of the Gateway's LEDs and switches.

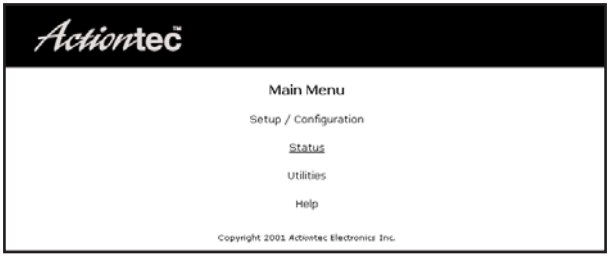
Basic Setup

To configure the gateway for basic operation:

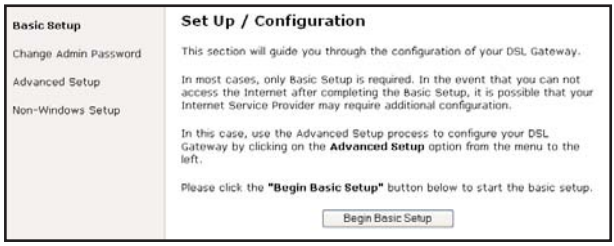
1. Open the Web browser. In the address bar, enter
   `http://192.168.0.1`
   then press **Enter** on the keyboard.



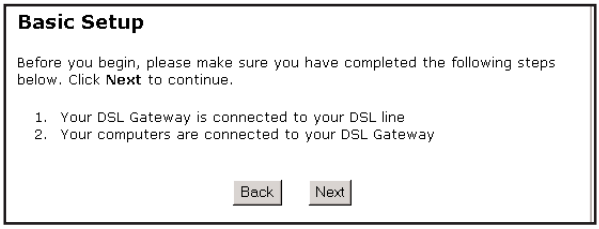
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



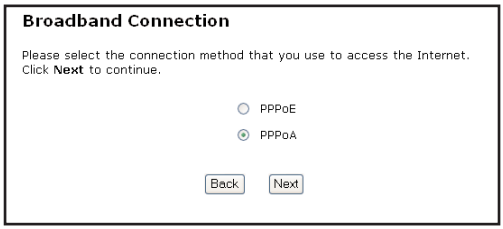
3. Follow the instructions in the "Set Up/Configuration" screen, then click **Begin Basic Setup**.



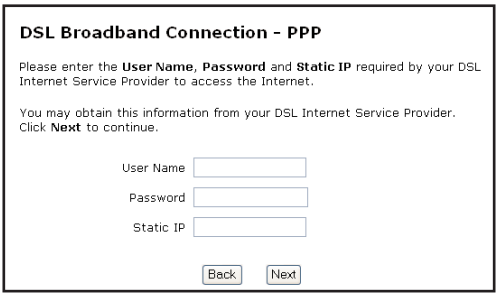
4. In the next window, follow the onscreen instructions, then click **Next**.



5. In the next window, select the type of connection by clicking on the circle next to **PPPoA** or **PPPoE**. If unsure about the selection, contact the ISP.

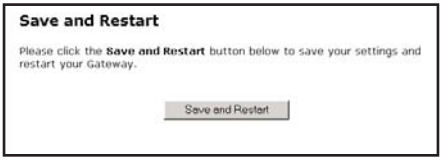


6. Enter the **User Name**, **Password**, and **Static IP** provided by the ISP in the "DSL Broadband Connection - PPP" screen. Click **Next**.

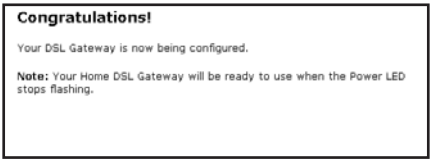


☞ ***Note***: If the ISP uses a connection method other than PPPoE (DHCP or Static IP, for example) see "Advanced Setup" to connect the Gateway.

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



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



The power LED flashes rapidly while the Gateway restarts, then glows steadily green when fully operational. The Gateway 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.

Gateway Features

This section contains a quick description of the Gateway's LEDs and switches.

Power LED - The Power LED displays the Gateway's current status. If the Power LED glows steadily green, the Gateway is receiving power and fully operational. When the Power LED is rapidly flashing, the Gateway is initializing. If the Power LED is not illuminated when the power adapter is plugged in, the Gateway has suffered a critical error and technical support should be contacted.

Internet LED - When the Internet LED glows steadily, the Gateway is connected to the ISP.

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

Ethernet Network LED - The Ethernet Network LEDs glow when a network link is established with a computer. A flashing LED signifies network traffic across the specific Ethernet connection.

Reset Switch - Depressing the reset switch for one or two seconds will reset the Gateway. To restore the Gateway's factory default settings, depress and hold the Reset Switch for approximately 10 seconds.

Advanced Setup

5

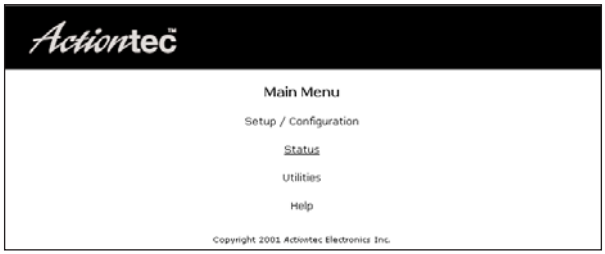
This section contains information concerning advanced configuration, such as wireless settings, remote management, and Web site blocking.

Accessing Advanced Setup

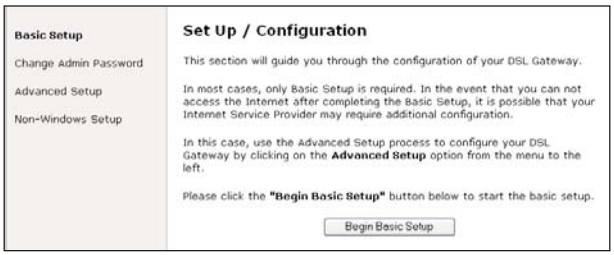
To access the Advanced Setup configuration screens, follow these instructions:

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

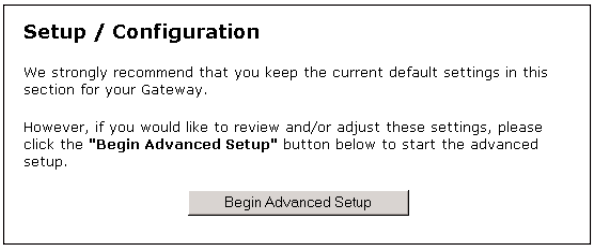
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



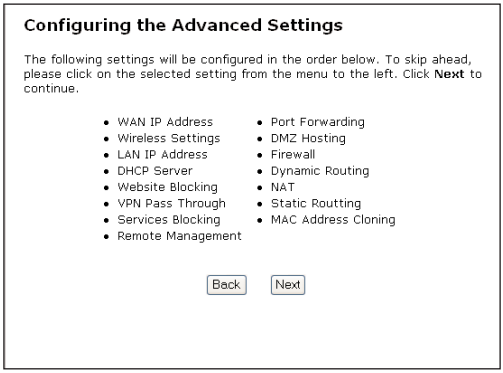
3. In the "Set Up/Configuration" screen, read the instructions, then select **Advanced Setup** from the menu on the left side.



4. In the next screen, read the recommendations. To perform an advanced setup on the Gateway, 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.

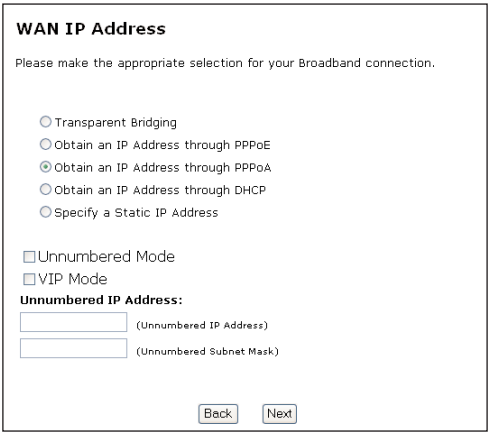
WAN IP Address

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 Gateway. There are three ways to do this: **Obtain an IP Address through PPPoE/PPPoA**, **Obtain an IP Address Through DHCP**, and **Specify a Static IP Address**.

☞ ***Note***: Some DSL providers use PPPoE/PPPoA 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.



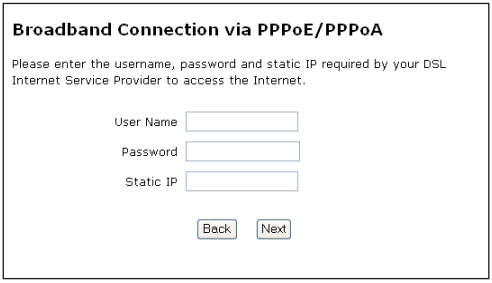
Transparent Bridging

Select this option to use the Gateway as a transparent bridge. This option should only be used if the Gateway is being used as a Modem to connect one computer to the Internet via a DSL connection. When the Gateway is being used as a transparent bridge, it does not provide any firewall security.

☞ ***Note***: If more than one computer is being set up to access the Internet at high speeds, **do not** activate Transparent Bridging.

Obtain an IP Address through PPPoE or PPPoA

Select this option to allow the Gateway to use the Point-to-Point over Ethernet (PPPoE) or Point-to-Point over ATM (PPPoA) protocol.

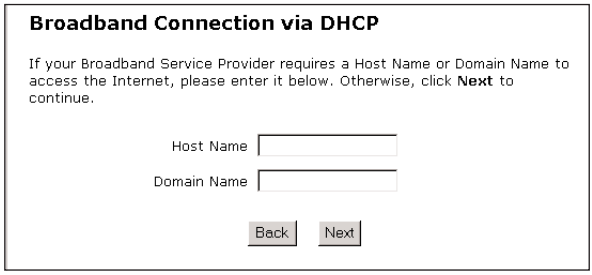


If a **User Name**, **Password** and/or **Static IP** was entered during Basic Setup, it should be displayed in the "Broadband Connection via PPPoE/PPPoA" screen. If not, enter the information now. If the information is unavailable, contact the Internet Service Provider (ISP).

Obtain an IP Through DHCP

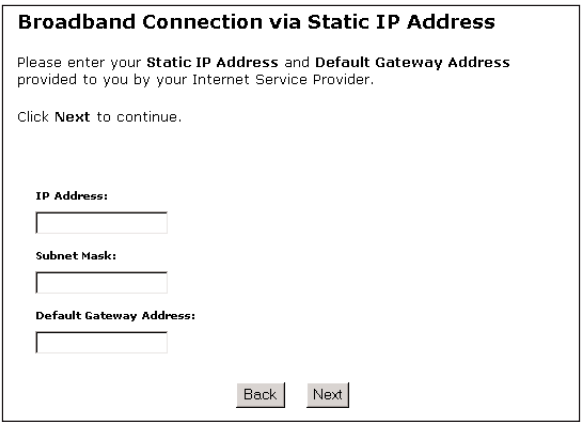
Select this option (used for cable modem configurations without a Static IP assigned by an ISP) to allow the modem to query the Internet Service Provider (ISP) and receive IP address and routing information. Some ISPs need to authenticate their end users with a **Host Name** and/or **Domain Name**. If 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.



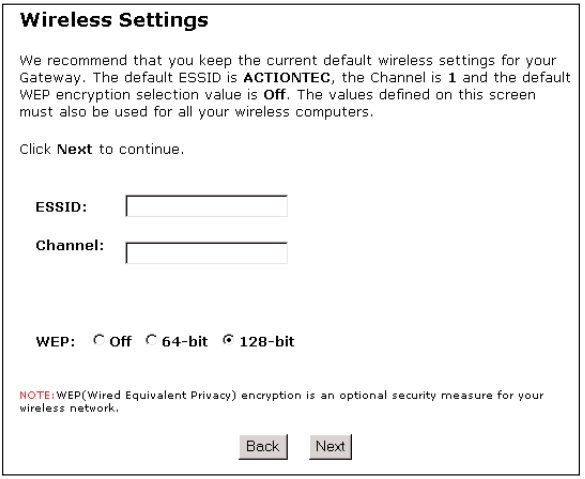
Specify a Static IP Address

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 Gateway 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 Gateway'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 Gateway communicates. In the United States, use channels 1-11. (The factory default value is set to 1.)

Wireless Equivalent Privacy

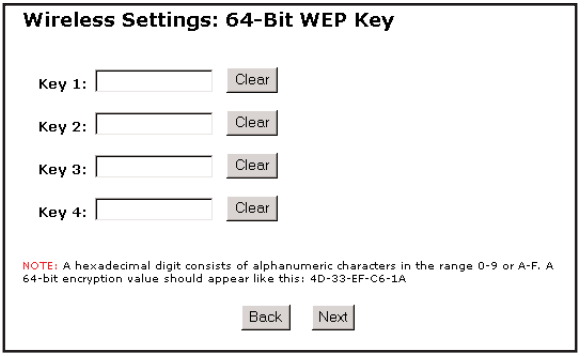
Wireless Equivalent Privacy (WEP) is an encryption method used with the 802.11b standard to ensure data security over wireless networks. The Gateway offers three levels of WEP: Off, 64-bit, and 128-bit.

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

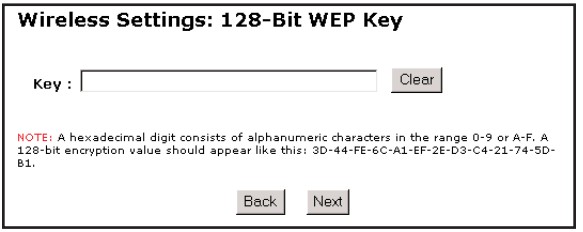
64-bit WEP requires four separate keys. Each key comprises five hexadecimal digit pairs. A hexadecimal digit consists of an alphanumeric character ranging from 0-9 or A-F. An example of a 64-bit WEP key is: 4E-A3-3D-68-72. To create a set of 64-bit WEP keys, enter five hexadecimal digit pairs in each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

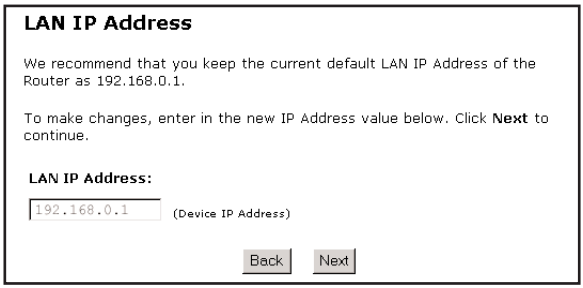
Note: Not all wireless PC Cards support 128-bit WEP. Ensure that all PC Cards installed in the networked computers support 128-bit WEP before activating.



LAN IP Address

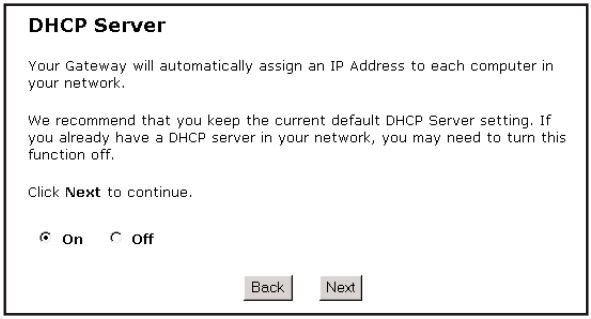
Selecting **LAN IP Address** in the "Advanced Configuration" screen generates the "LAN IP Address" screen. The value in the **LAN IP Address** text box is the IP address of the Gateway as seen on the network.
The LAN IP address of the Gateway can be modified, but *Action*tec recommends keeping the default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

☞ ***Note***: If the Gateway'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

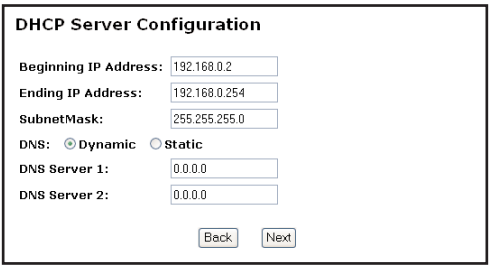
Selecting **DHCP Server** in the "Advanced Configuration" screen generates the "DHCP Server" screen. The Gateway has a built-in DHCP (Dynamic Host Configuration Protocol) server that automatically assigns a different IP address to each computer on the network, eliminating IP address conflicts.
The factory 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 Gateway. 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 Gateway. If the default values are left intact, the Gateway 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 Gateway must be on the same subnet as the IP address range it generates. For instance, if the Gateway'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.

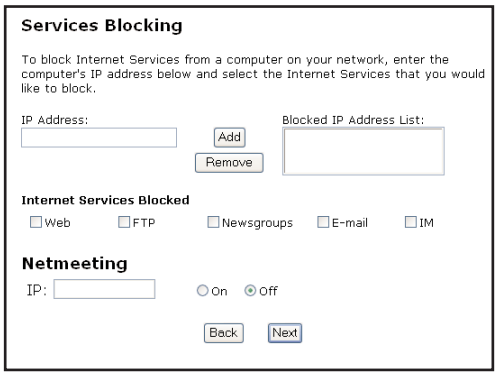
DNS (Dynamic or **Static)** - the type of DNS server provided by the Internet Service Provider (ISP). If the ISP provided DNS server information, select the type here. If not, leave as is.

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:

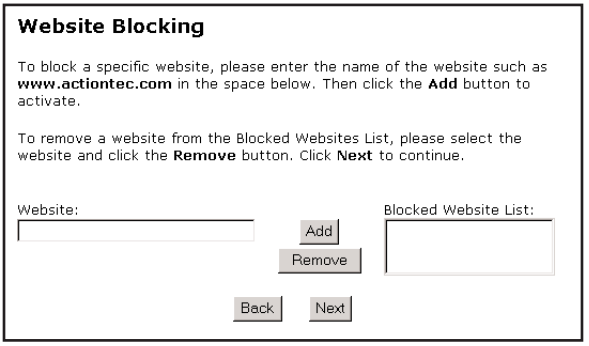
1. Enter the computer's IP address in the **Enter IP Address:** text box.
2. Select the Internet service(s) to be blocked.
3. Click **Add** to enter the computer's IP address in the "Blocked IP Address List" text box.
4. To remove blocked services, select the computer's IP address in the "Blocked IP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

Netmeeting

To allow the computers on the Gateway'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**.

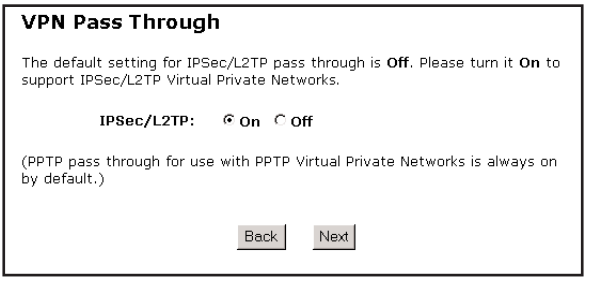
Website Blocking

Selecting **Website Blocking** in the "Advanced Configuration" screen generates the "Website Blocking" screen. This feature enables the Gateway 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**.



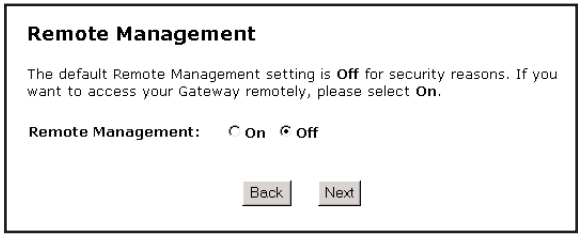
VPN Pass Through

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 Gateway through the Internet via another computer. *Action*tec recommends leaving the Remote Management **Off** (the factory default setting).



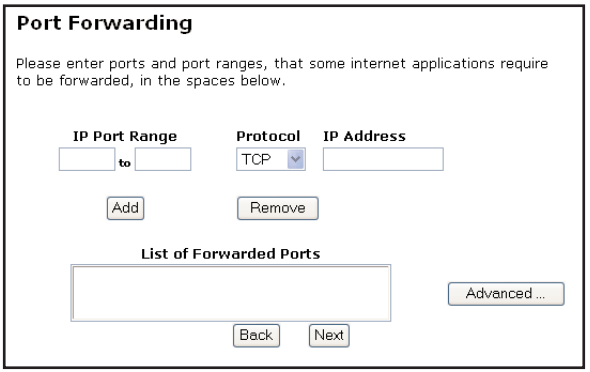
To access the Gateway from the Internet, activate Remote Management by selecting **On** and writing down the WAN IP address of the Gateway (see "WAN IP Address"). On a computer outside of the network, open a Web browser and enter the Gateway's WAN IP address in the address text box. The Gateway's Main 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

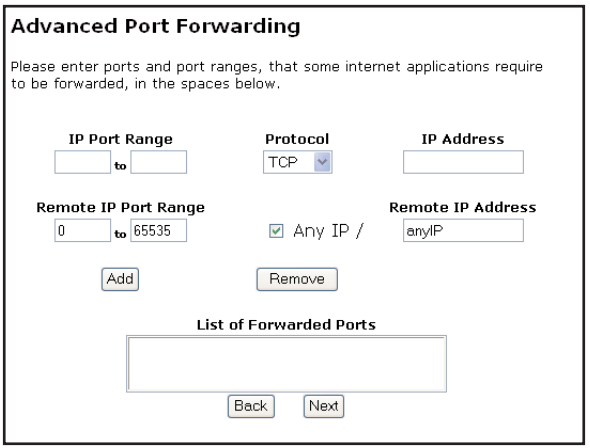
Port Forwarding

Selecting **Port Forwarding** in the "Advanced Configuration" screen generates the "Port Forwarding" screen. Port forwarding allows certain programs to bypass the Gateway'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**.



Clicking **Advanced** brings up the "Advanced Port Forward" screen.

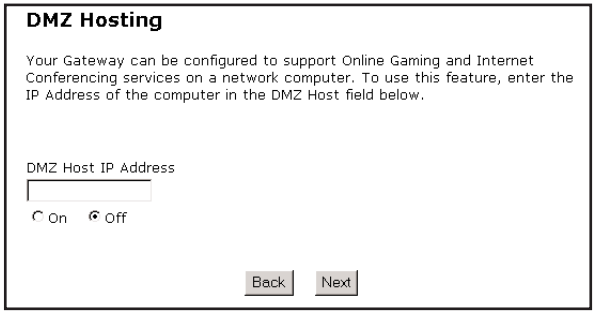


In this screen, the user can allow only certain IP addresses to access forwarded ports. Enter the port range of the forwarded ports in the "Remote IP Port Range" text boxes, enter the IP address to be allowed access in the "Remote IP Address" text box, then click "Add." The active forwarded ports will appear in the "List of Forwarded Ports" text box.

To deactivate a forwarded port, select it from the "List of Forwarded Ports" text box, 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**.

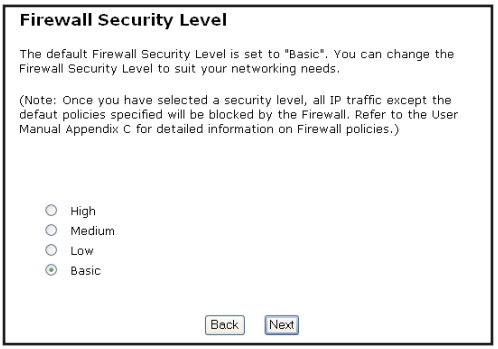


DMZ hosting is used to support online gaming and Internet conferencing services. These programs usually require multiple open ports, making the network accessible from the Internet. DMZ hosting symbolically places the DMZ host computer outside of the Gateway's network. Access to the network resources 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.

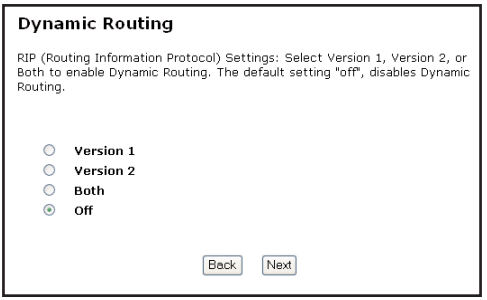
Firewall

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

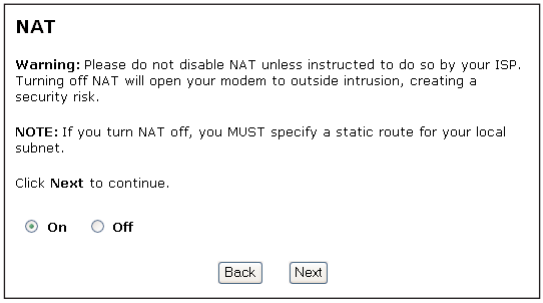
Selecting **Dynamic Routing** in the "Advanced Configuration" screen generates the "Dynamic Routing" screen.



If a router is set up behind the Gateway 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.

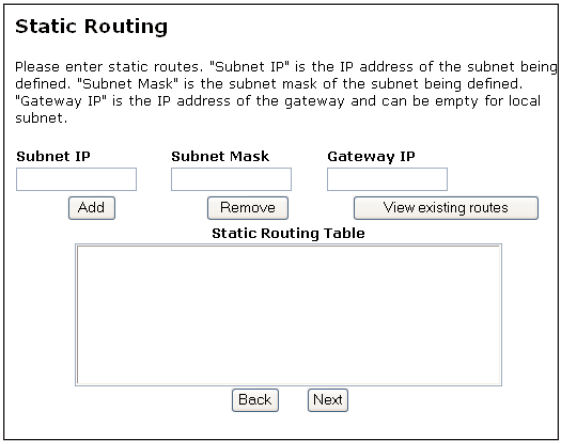
NAT (Network Address Translation)

Selecting **NAT** in the "Configuring the Advanced Settings" screen generates the "NAT" screen. The Gateway's basic firewall security is based on NAT. Disabling NAT allows the computers connected to the Gateway to be accessed by outside parties. Do not turn NAT off unless instructed to do so by the Internet Service Provider (ISP).



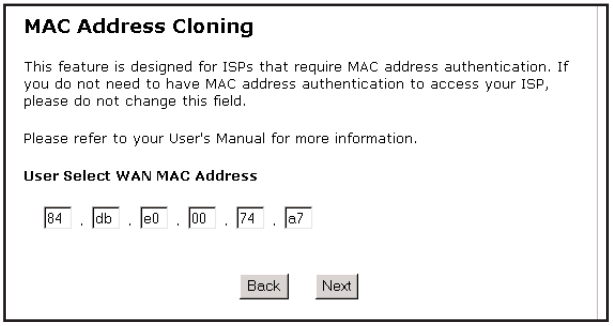
Static Routing

Selecting **Static Routing** in the "Configuring 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**.



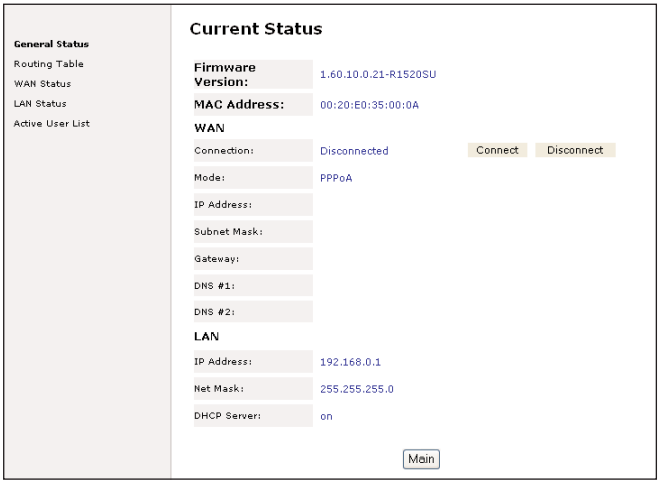
MAC Address Cloning

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.



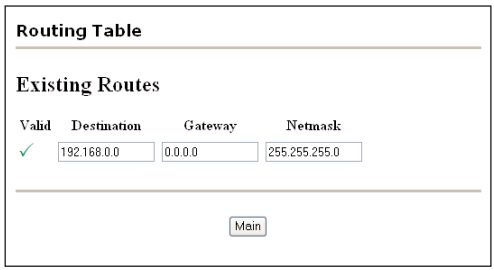
Status

After configuring the Gateway, settings can be viewed by selecting **Status** in the Main Menu. The "Current Status" screen appears, displaying many of the Gateway'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.



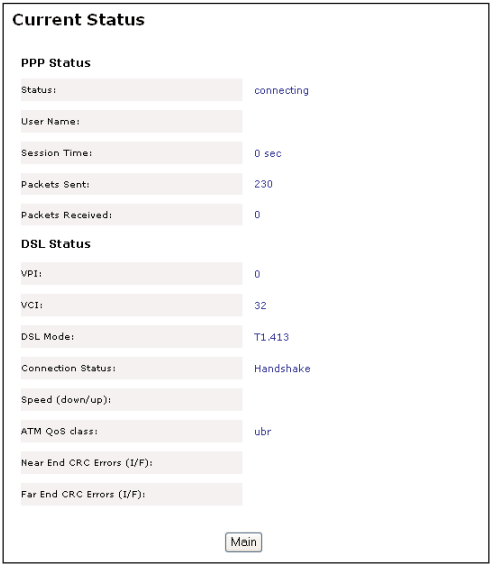
Routing Table

Selecting **Routing Table** generates the "Routing Table" screen. This screen displays on overview of the Gateway's routes.



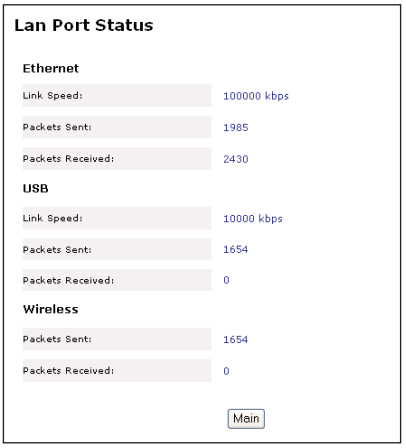
WAN Status

Selecting **WAN Status** generates a "Current Status" screen. This screen displays on overview of the Gateway's WAN (Wide Area Network) connection.



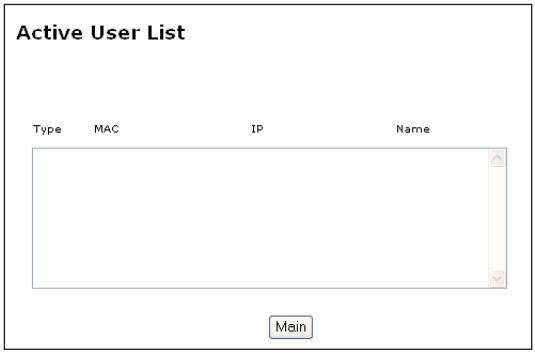
LAN Status

Selecting **LAN Status** generates the "Lan Port Status" screen. This screen displays on overview of the Gateway's LAN (Local Area Network) port connections.



Active User List

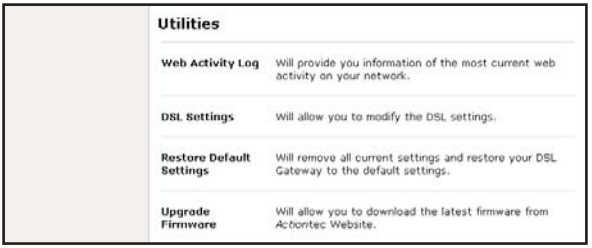
Selecting **Active User List** generates the "Active User List" screen. This screen displays a list of the users currently connected to the Gateway accessing the Internet with Network Address Translation (NAT) security activated.



Utilities

6

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



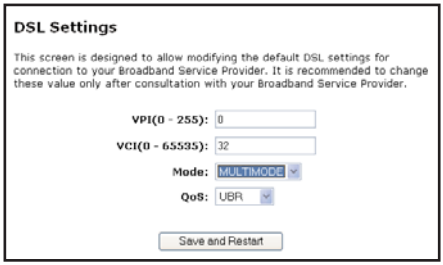
From here, the Web activity log can be viewed, the DSL settings changed, the Gateway's factory default settings restored, and the Gateway's firmware upgraded.

Web Activity Log

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

DSL Settings

To access DSL Settings, select **DSL Settings** from the "Utilities" screen. The Gateway's VPI, VCI, Mode, and QoS (Quality of Service) settings can be changed from here. *Action*tec recommends not changing these values without consulting the ISP.



Restore Default Settings

To restore the Gateway 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 Gateway's settings will be lost and the factory default settings will be restored. During this process, the Gateway's power LED flashes and the Gateway is disabled.

Warning: Do not unplug the power adapter from the Gateway during the Restore Default Settings process. Doing so may result in permanent damage to the Gateway.

When the power LED stops flashing and glows steadily green, the Gateway 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 Gateway's capabilities.

To upgrade the Gateway's firmware:

1. Click the link in the "Upgrade Firmware" window and download the upgrade files to the hard drive of the computer.
2. Double-click on the upgrade file, named "upgrade.exe."
3. Enter the IP address of the Gateway and click **Start**. The upgrade process begins.

   Warning: Do not unplug the power adapter from the Gateway during the Upgrade Firmware process. Doing so may result in permanent damage to the Gateway.

4. After the upgrade is complete, unplug the power adapter from the Gateway, then plug it back in again.
5. When the power LED stops flashing and glows steadily green, the Gateway is fully operational.
6. Reconfigure the Gateway settings.

Troubleshooting 7

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

LAN Connection Failure

- Ensure the Gateway is properly installed, the LAN connections are correct, and the power is on.
- Confirm the computer and Gateway 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 Gateway.
- 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 98, check the computer's TCP/IP settings. Select **Start**, **Run**, enter

  `winpcfg`

  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 Gateway'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 Gateway is on and connected properly.
- Verify the Gateway'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.

Setting Up Static IP Address

A

To communicate with the Gateway from a computer on the network (to use the Web Configuration Utility, for example), the user may have to switch the IP address settings from DHCP-enabled to static IP, so that the computer and the Gateway are on the same subnet.

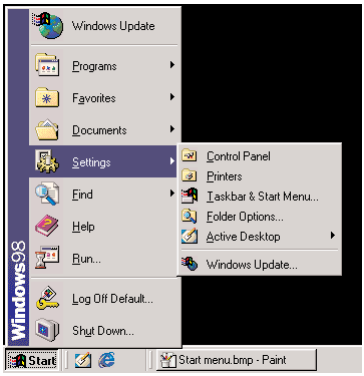
To set up static IP on a computer, select the operating system and follow the instructions.

Note: The following procedures are based on the Gateway's factory default IP address. If the Gateway's IP address has been changed, enter the new IP address when instructed to enter an IP address.

Windows 98 and 98 SE

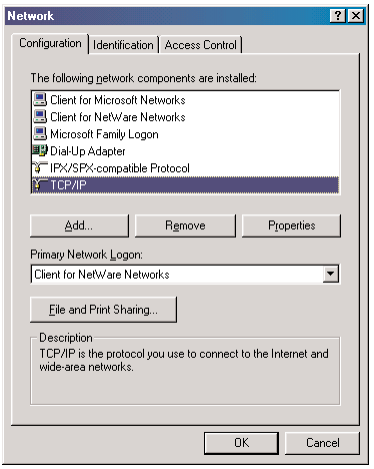
1. From the desktop, click on the **Start** button in the lower left corner.
2. From the menu that appears, select **Settings**.

3. Another menu appears. Select **Control Panel**.

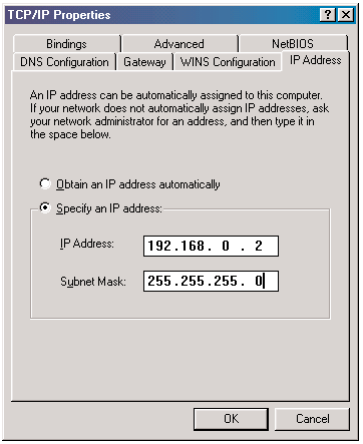


4. When the "Control Panel" window appears, double-click **Network**.

5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Select **IP Address**.



7. In the IP Address tab, make sure the the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following numbers in the "IP Address" text box:

`192.168.0.2`

Do not include the periods; they are automatically entered.

9. Enter the following numbers in the "Subnet mask" text box:

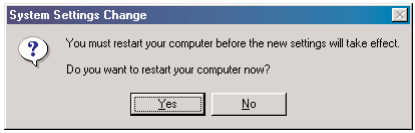
255.255.255.0

Do not include the periods; they are automatically entered.

10. Click **OK**. The TCP/IP Properties window disappears.

11. In the Network window, click **OK**. The Network window disappears.

12. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.

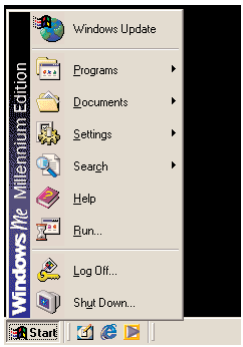


The computer restarts. It is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

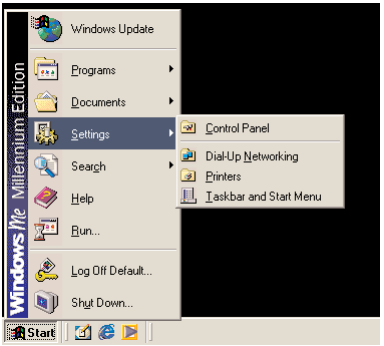
Windows Me

1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

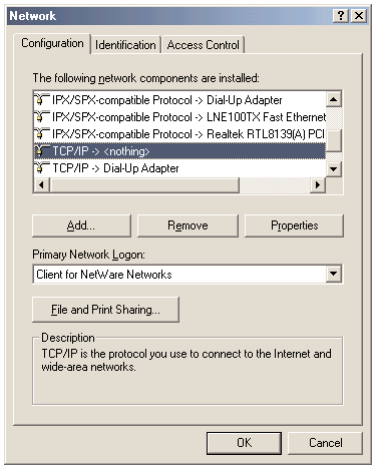


3. Another menu appears. Select **Control Panel**.

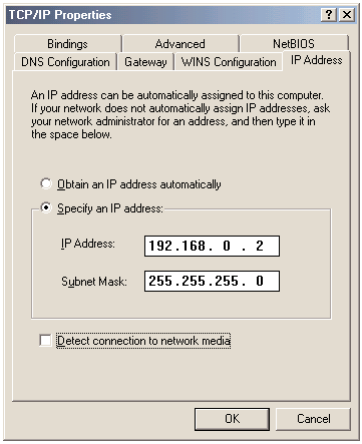


4. When the "Control Panel" window appears, double-click **Network**.

5. The "Network" window appears. In the "The following network components are installed" list box, locate and double-click **TCP/IP**.



6. The "TCP/IP Properties" window appears. Click **IP Address**.



7. In the IP Address tab, make sure the the circle next to "Specify an IP Address" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

8. Enter the following numbers in the "IP Address" text box:

192.168.0.2

Do not include the periods; they are automatically entered.

9. Enter the following numbers in the "Subnet mask" text box:

`255.255.255.0`

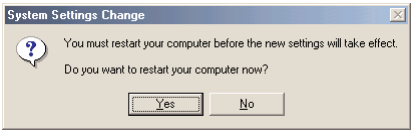
Do not include the periods; they are automatically entered.

10. Click **OK**. The TCP/IP Properties window disappears.

11. If there is a check in the box next to "Detect connection to network media," click on it to uncheck the box.

12. In the Network window, click **OK**. The Network window disappears.

13. The "System Settings Change" window appears, asking whether the computer should be restarted. Click **Yes**.



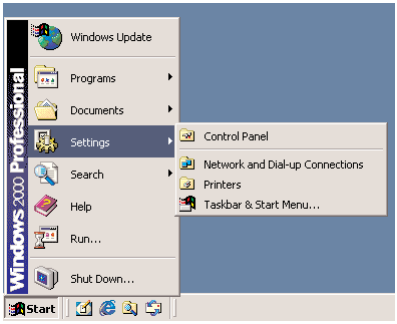
The computer restarts. It is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

Windows 2000

1. From the desktop, click on the **Start** button in the lower left corner.

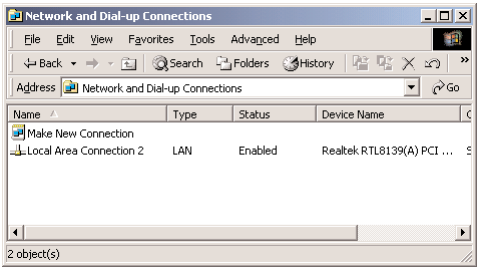
2. From the menu that appears, select **Settings**.

3. Another menu appears. Select **Control Panel**.

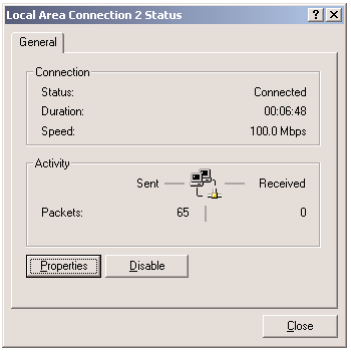


4. When the "Control Panel" window appears, double-click **Network and Dial-up Connections**.

5. In the "Network and Dial-up Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in the computer by finding the name of the network card in the **Device Name** column.

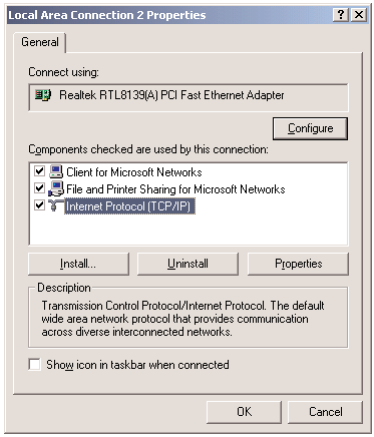


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

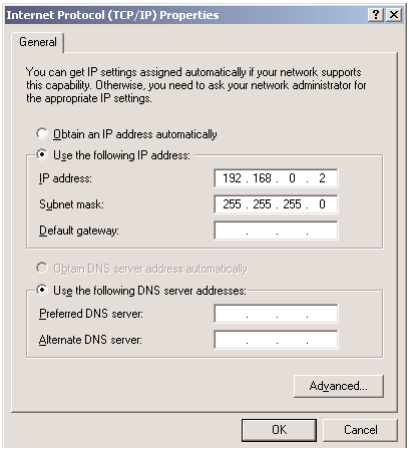


7. The "Local Area Connection Properties" window appears. Click **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol (TCP/IP)**.



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, make sure the the circle next to "Obtain an IP Address automatically" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

11. Enter the following numbers in the "IP Address" text box:

`192.168.0.2`

Do not include the periods; they are automatically entered.

12. Enter the following numbers in the "Subnet mask" text box:

255.255.255.0

Do not include the periods; they are automatically entered.

13. Click **OK**. The "Internet Protocol (TCP/IP) Properties" window disappears.

14 In the "Local Area Connection Properties" window, click **OK**. The Local Area Connection Properties window disappears.

15. Click **Close** in the Local Area Connection Status window. The window disappears.

16. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

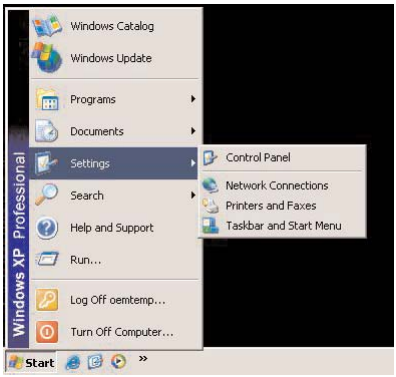
The computer is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

Windows XP

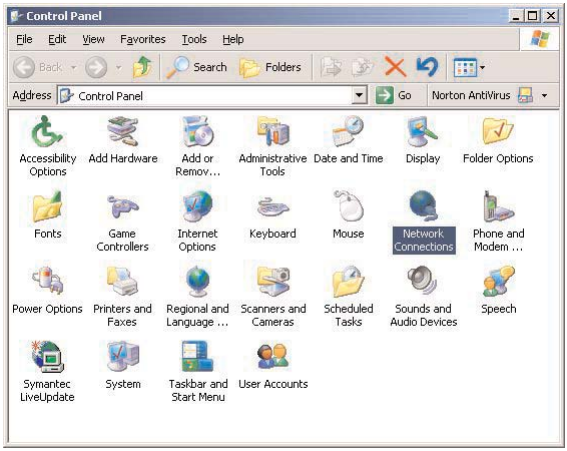
1. From the desktop, click on the **Start** button in the lower left corner.

2. From the menu that appears, select **Settings**.

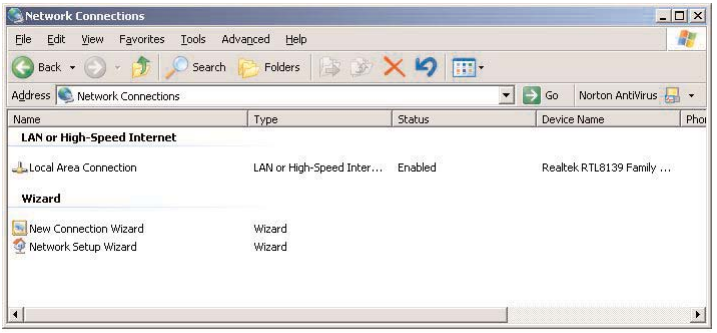
3. Another menu appears. Select **Control Panel**.



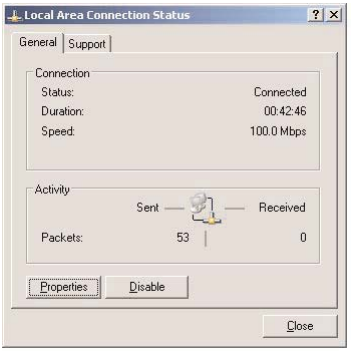
4. When the "Control Panel" window appears, double-click **Network Connections**.



5. In the "Network Connections" window, double-click **Local Area Connection**. A number may be displayed after the Local Area Connection. If there is more than one Local Area Connection listed, locate the one that corresponds to the network card installed in your computer by finding the name of the network card in the **Device Name** column.

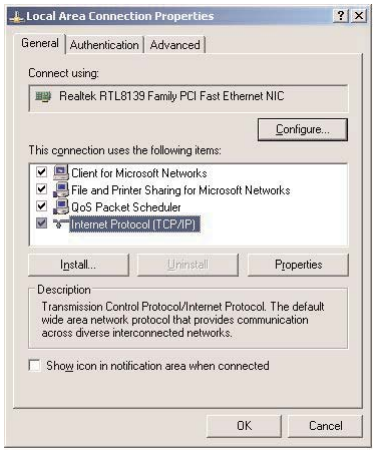


6. The "Local Area Connection Status" window appears. Select **General**, then click **Properties**.

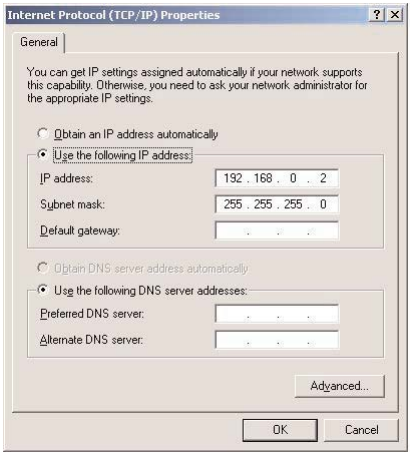


7. The "Local Area Connection Properties" window appears. Select **General**.

8. In the "Components checked are used by this connection" list box, double-click **Internet Protocol (TCP/IP)**.



9. The "Internet Protocol (TCP/IP) Properties" window appears.



10. In the **General** tab, make sure the the circle next to "Obtain an IP Address automatically" is selected. When active, a black dot appears in the circle. If the circle already contains a black dot, leave it alone.

11. Enter the following numbers in the "IP Address" text box:

198.162.0.2

Do not include the periods; they are automatically entered.

12. Enter the following numbers in the "Subnet mask" text box:

255.255.255.0

Do not include the periods; they are automatically entered.

13. Click **OK**. The Internet Protocol (TCP/IP) Properties window disappears.

14 In the Local Area Connection Properties window, click **OK**. The Local Area Connection Properties window disappears.

15. Click **Close** in the Local Area Connection Status window. The window disappears.

16. Close the Network and Dial-up Connections window by clicking on the "**x**" button at the upper right corner of the window.

The computer is now set up with a static IP address, allowing the user to access the Modem's Advanced Setup utility.

Specifications

B

General

Model Number

GS204AD9-01 (Four-Port Wireless-Ready DSL Gateway

Standards

IEEE 802.3 (10BaseT)
IEEE 802.3u (100BaseTX)
IEEE 802.11b (Wireless)
G.dmt
G.lite
t1.413
RFC 1483, 2364, 2516

Protocol

CSMA/CD

WAN

Full-rate DSL modem

LAN

GS204AD9-01

10/100 RJ-45 switched ports (4)
USB port (1)

GS404AD9-01

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

Expansion

PCMCIA expansion slot (2)

Speed

LAN Ethernet: 10/100Mbps
Wireless: See "Wireless Operating Range" (if used)

Cabling Type

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

Wireless Operating Range

If used:

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 396M (1300 ft.) @ 2 Mbps
Up to 457M (1500 ft.) @ 1 Mbps

Topology

Star (Ethernet)

LED Indicators

4-port: Power, Internet, Wireless, LAN, USB
1-port: Power, Internet, Wireless, Ethernet Network

Environmental

Power Input

External, 12V DC, 1.2 A

Certifications

FCC Class B
FCC Class C (part 15, 68)
CE Mark Commercial
UL

Operating Temperature

0° C to 40° C (32°F to 104°F)

Storage Temperature

-20°C to 70°C (-4°F to 158°F)

Operating Humidity

10% to 85% non-condensing

Storage Humidity

5% to 90% non-condensing

Glossary

C

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.

Security Level Services Table

D

The following information is related to the Firewall options (High, Medium, and Low) in the "Advanced Services" chapter of this manual (page 35). The types of services and their respective ports are listed in the two right-hand columns; the "In" column details if a particular service can be accessed by a user outside of the network; and the "Out" column informs whether a computer on the Gateway's network can access a particular incoming service.
For example, in the "High Security Level" section, below, the http service uses port 80. Since "no" is listed in the In column, a user outside the Gateway's network cannot access a computer on the network via the http service; in this case, no computers on the network can be used as a Web server (i.e., hosting a Web site accessible to outside users). However, since "yes" is listed in the Out column, all computers on the Gateway's network can access the Internet via the http port.
If Basic Security is selected in the "Firewall" screen, firewall filtering is based on the basic NAT firewall.

☞ ***Note***: The stateful packet inspection firewall is based on the Globespan-Virata implementation and specification for release 8.2.

High Security Level

Service	Port	In	Out
http	80	no	yes
dns	53	no	yes
ftp	21	no	no
telnet	23	no	yes
smtp	25	no	yes
pop3	110	no	yes
nntp	119	no	no
real audio/video	7070	no	yes
icmp	n/a	no	yes
H.323	1720	no	no
T.120	1503	no	no
SSH	22	no	no

Medium Security Level

Service	Port	In	Out
http	80	no	yes
dns	53	no	yes
ftp	21	no	yes
telnet	23	no	yes
smtp	25	no	yes
pop3	110	no	yes
nntp	119	no	yes
real audio/video	7070	yes	no
icmp	n/a	no	yes
H.323	1720	no	yes
T.120	1503	no	yes
SSH	22	no	yes

Low Security Level

Service	Port	In	Out
http	80	no	yes
dns	53	yes	yes
ftp	21	no	yes
telnet	23	no	yes
smtp	25	no	yes
pop3	110	no	yes
nntp	119	no	yes
real audio/video	7070	yes	no
icmp	n/a	yes	yes
H.323	1720	yes	yes
T.120	1503	yes	yes
SSH	22	yes	yes

Non-Windows System Setup

E

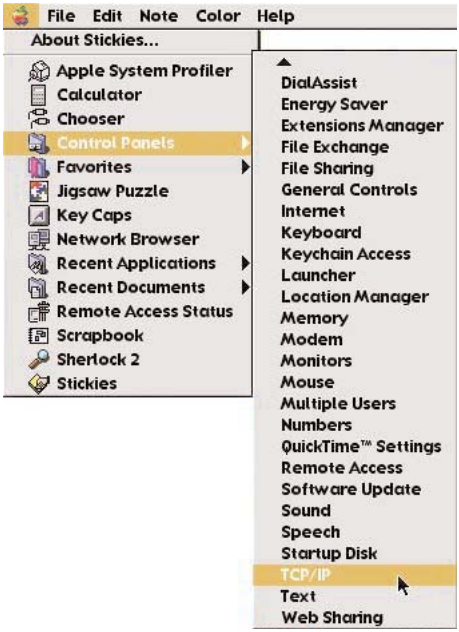
The Gateway supports both the Classic Macintosh operating systems (9.2.1 and below), as well as OS X.

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**.

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

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

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

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

8. 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**.

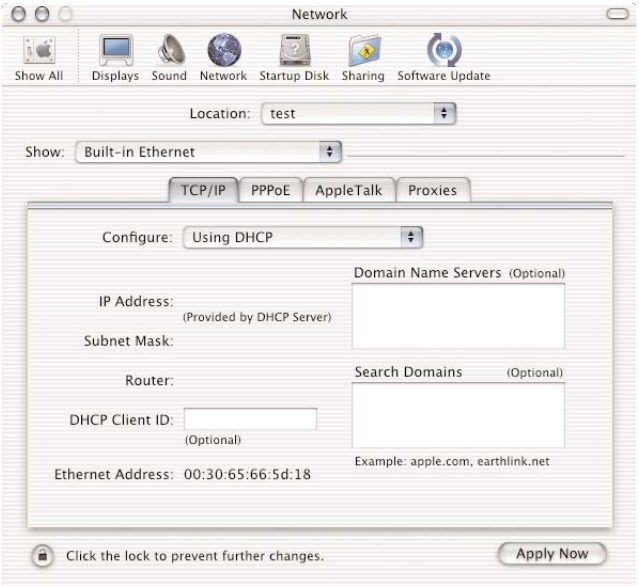
9. Close the "TCP/IP" window and when prompted to save changes, click **Save**.

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

Next, go to "Connecting to the ISP" on page 86.

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.

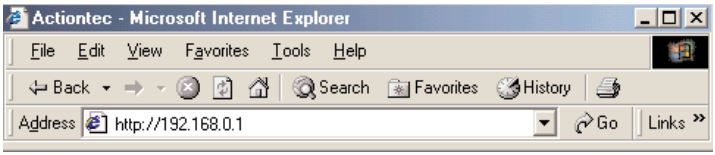
3. Select **TCP/IP** and, from the "Configure" drop-down list, select **Using DHCP**.

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

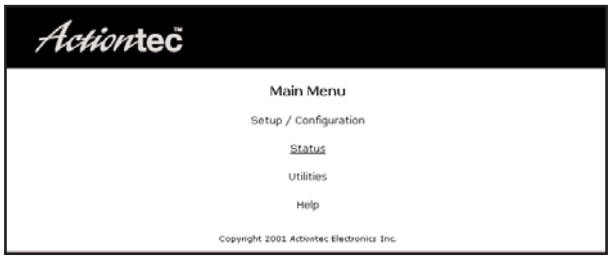
Next, go to "Connecting to the ISP" on page 86.

Connecting to the ISP

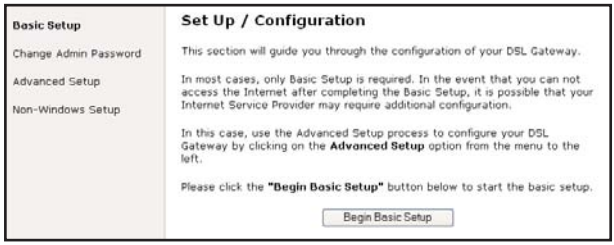
1. Open the Web browser. In the address bar, enter
   `http://192.168.0.1`
   then press **Enter** on the keyboard.



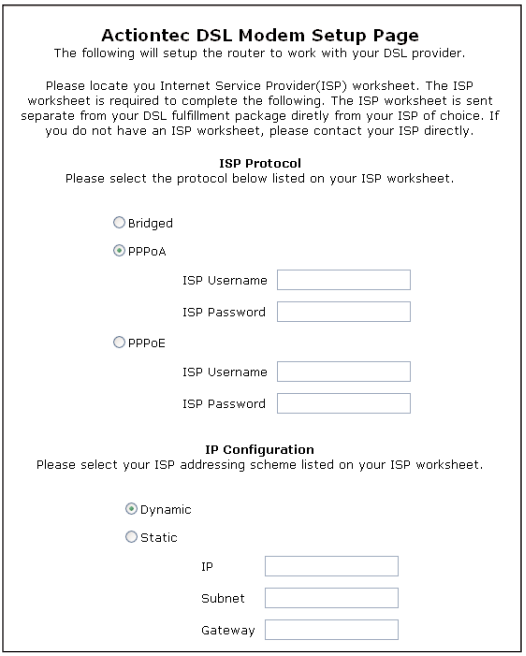
2. The "Main Menu" screen appears. Select **Setup/Configuration**.



3. In the "Set Up/Configuration" screen, select **Non-Windows Setup** from the menu on the left side.



4. The "Actiontec DSL Modem Setup Page" screen appears. Follow the onscreen instructions and, using the Internet Service Provider (ISP) Worksheet provided by the ISP, enter the information in the appropriate text boxes.
If no worksheet has been provided, contact the ISP.



5. Click **Save and Restart** at the bottom of the Actiontec DSL Modem Setup Page screen.

The Gateway will be ready to use when the Power and Internet LEDs stop blinking.

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

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*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.

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

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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.