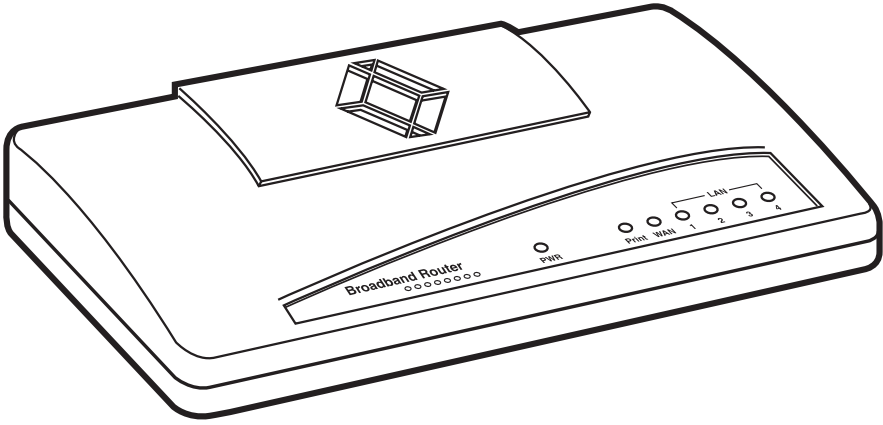




# Broadband Router



**CUSTOMER  
SUPPORT  
INFORMATION**

Order toll-free in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)  
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**  
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018  
Web site: [www.blackbox.com](http://www.blackbox.com) • E-mail: [info@blackbox.com](mailto:info@blackbox.com)



**FEDERAL COMMUNICATIONS COMMISSION  
AND  
INDUSTRY CANADA  
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

*This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.*

*Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.*

**EUROPEAN UNION DECLARATION OF CONFORMITY**

This equipment complies with the requirements of the European EMC Directive 89/336/EEC.



**NORMAS OFICIALES MEXICANAS (NOM)  
ELECTRICAL SAFETY STATEMENT****INSTRUCCIONES DE SEGURIDAD**

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
  - A: El cable de poder o el contacto ha sido dañado; u
  - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
  - C: El aparato ha sido expuesto a la lluvia; o
  - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
  - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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Microsoft, Windows, and Windows NT are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

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# 1. Specifications

**Protocols Supported:** TCP/IP, UDP, ICMP, PPPoE, PPTP, NAT/PAT, DHCP, L2TP, PPTP, IPSec passthrough

**Standards:** IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, PCI Bus 2.1/2.2

**Connectors:** LAN: (4) RJ-45; WAN: (1) RJ-45 MDI-II/MDI-X; Printer: (1) DB25 F

**Indicators:** LEDs: (1) Power, (1) Printer, (1) WAN, (4) LAN

**Power:** 120 VAC, 60 Hz, external

**Size:** 1.4"H x 7.4"W x 3.9"D (3.6 x 18.8 x 9.9 cm)

**Weight:** 0.6 lb. (0.3 kg)

## 2. Introduction

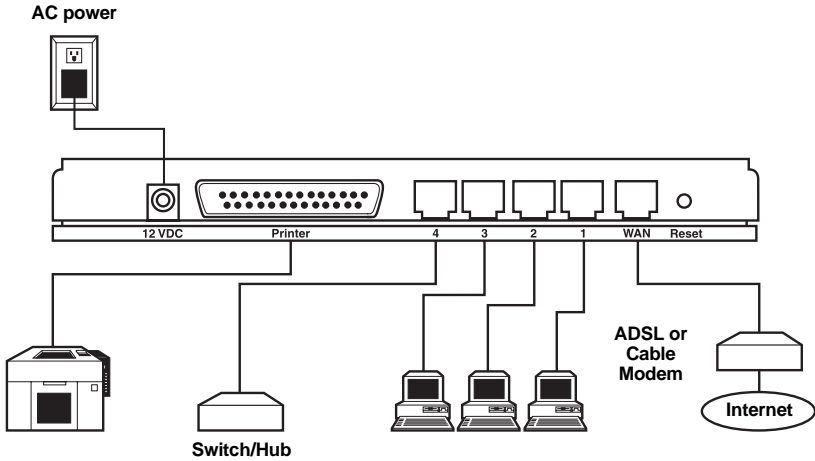
### 2.1 Overview

The Broadband Router is an incredibly fast router with 20-Mbps LAN-to-WAN throughput. It enables multiple users (up to 253!) to share one broadband Internet connection through an ADSL or cable modem. Simply configure your Internet connection settings in the Broadband Router. Then plug your PC into the LAN port and you're ready to share files and access the Internet. As your network grows, you can connect another hub or switch to the router's LAN ports, allowing you to easily expand your network. The router is also equipped with a print server that supports LPD printing protocol, so you can share your printer with all Intranet users. The Router gives you firewall protection between network users and the Internet and a built-in 4-port switch.

Additional features include:

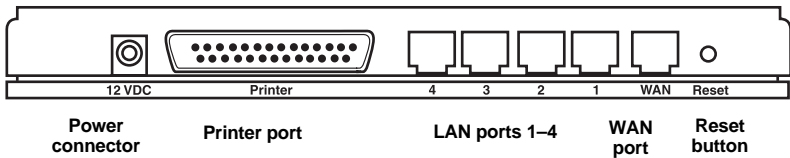
- Access Private LAN Servers from the Public Network.
- Equipped with four LAN ports and one WAN port .
- Supports DHCP (Server/Client) for easy setup.
- Supports advance features such as special applications, DMZ, virtual servers, access control, firewall, and bridge mode.
- Allows you to monitor the router's status such as DHCP client log, security log, and device/connection status.
- Easy to use Web-based GUI for configuration and management purposes.
- Remote management allows configuration and upgrades from a remote site (over the Internet).

Figure 2-1 shows a typical setup for a Local Area Network (LAN).



**Figure 2-1. Typical LAN setup.**

Figure 2-2 shows the Broadband Router's back panel. It has a power connector, printer port, 4 LAN ports, a WAN port, and a reset button.



**Figure 2-2. Back panel.**

***Printer Port***

This is where you connect your printer.

***LAN Ports***

Use the four LAN ports to connect your LAN's PCs, printer servers, hubs, and switches, etc.

## WAN Port

The WAN port connects to the segment that links your xDSL or cable modem to the Internet. If the modem port is an uplink port, use a crossover cable to link the WAN port to the modem. If the modem port is a regular port, use a straight-through cable to link the WAN port to the modem.

## NOTE

**See if the WAN LED on the front panel is lit. If it is lit, you're using the correct cable. If it's not lit, you're using the wrong cable.**

## Reset Button

The Reset button has a dual function.

1. If problems occur with your router, press the router's Reset button with a pencil tip for less than 4 seconds. The router will reboot itself, keeping your original configurations.
2. If problems persist, you experience extreme problems, or you forgot your password, press the reset button for longer than 4 seconds. The router will reset itself to the factory-default settings.

## CAUTION

**Your original configurations will be replaced with the factory-default settings.**

On the router's front panel, there are LEDs that inform you of the router's current status (see Figure 2-3).

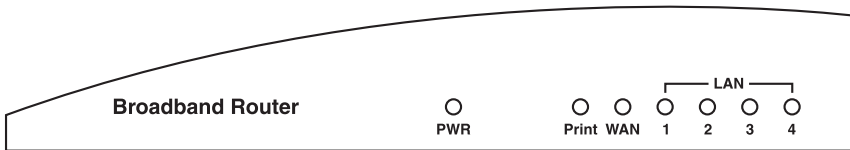


Figure 2-3. Front panel.

<b>LED</b>	<b>Light Status</b>	<b>Description</b>
PWR	On	The router's power supply is on.
Print	On	The printer attached is powered on.
	Off	No printer is attached or the printer is powered off.
	Flashing	The printer is printing.
WAN	Green	The WAN port is running at 100 Mbps.
	Yellow	The WAN port is running at 10 Mbps.
	Off	No WAN connection.
	Flashing	Data is being sent to the WAN port.
LAN (Port 1–4)	Green	The LAN port is running at 100 Mbps.
	Yellow	The LAN port is running at 10 Mbps.
	Off	No LAN connection.
	Flashing	Data is being sent to the LAN port.

## 2.2 What the Package Includes

Your package should contain the following items.

- Broadband Router
- (1) Straight-through UTP cable
- (1) Power adapter
- (1) Print server driver disk
- This users' manual

If anything is missing or damaged, please contact Black Box at 724-746-5500.

## 2.3 Minimum Requirements

- (1) External xDSL (ADSL) or cable modem with an Ethernet port (RJ-45).
- (1) Network Interface Card (NIC) for each PC.
- Each PC should have a Web browser installed (Internet Explorer 4.0 or higher, or Netscape Navigator® 4.7 or higher).

## 3. Getting Started

Follow these instructions to start using the router and get connected to the Internet.

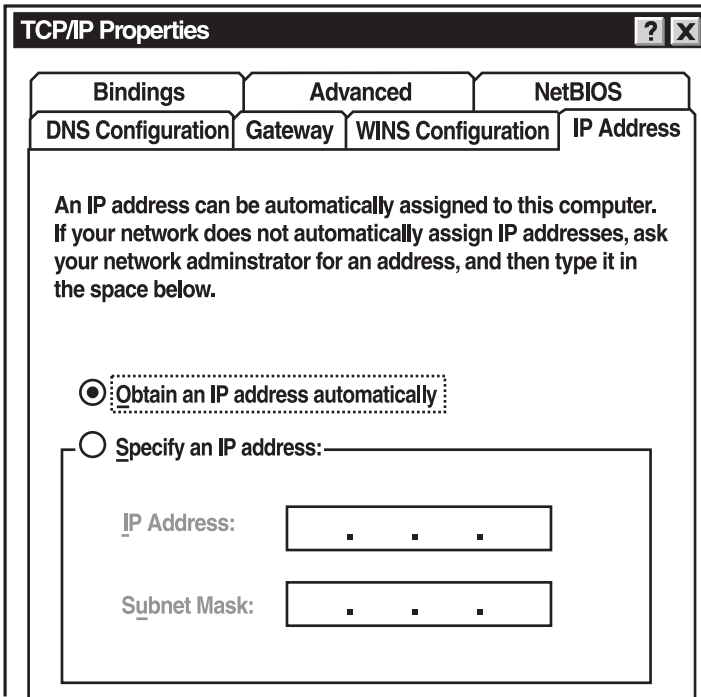
1. Set up your network as shown in Figure 2-1.
2. Set your LAN PC clients so that they can obtain an IP addresses automatically. Each LAN client requires an IP address. (If you have already configured your PC to obtain an IP automatically, then proceed to step 3 on page 16).

Configure your PC to obtain an IP address automatically.

By default the router's DHCP is on, which enables it to obtain an IP address automatically once your PC is configured to obtain an IP address automatically. This section shows you how to configure your PC so that it can obtain an IP address automatically for either Windows® 95/98/Me, 2000, or Windows NT® operating systems. For other operating systems (Macintosh®, Sun®, etc.), follow the manufacturer's instructions.

- a. Windows 95/98/Me
  1. Click the **Start** button and select **Settings**, then click **Control Panel**. The Control Panel window will appear.
  2. Double-click the **Network** icon. The Network window will appear.
  3. Check your list of Network Components. If TCP/IP is not installed, click the **Add** button to install it now. If TCP/IP is installed, go to step 6.
  4. In the Network Component Type dialog box, select **Protocol** and click the **Add** button.
  5. In the Select Network Protocol dialog box, select **Microsoft®** and **TCP/IP** and then click the **OK** button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.
  6. After installing TCP/IP, go back to the Network dialog box. Select **TCP/IP** from the list of Network Components, then click the **Properties** button.
  7. Check each of the tabs and verify the following settings (see Figure 2-4):
    - Bindings: Check client for Microsoft Networks, and File and printer sharing for Microsoft Networks.

- DNS Configuration: Select **Disable DNS**.
- Gateway: All fields are blank.
- WINS Configuration: Select **Disable WINS Resolution**.
- IP Address: Select **Obtain IP Address Automatically**.



**Figure 2-4. TCP/IP properties.**

8. Reboot the PC. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

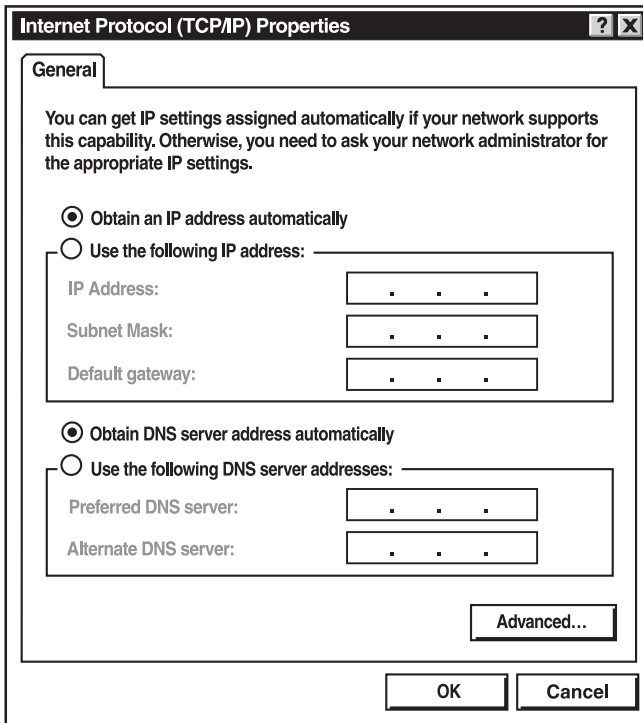
## NOTE

**Please make sure that the Broadband Router's DHCP server is the only DHCP server available on your LAN.**

Once you've configured your PC to obtain an IP address automatically, please proceed to step 3 on page 16.

## b. Windows 2000

1. Click the **Start** button and select **Settings**, then **Control Panel**. The Control Panel window will appear.
2. Double-click the **Network and Dial-up Connections** icon. In the Network and Dial-up Connection window, double-click the **Local Area Connection** icon. The Local Area Connection window will appear.
3. In the Local Area Connection window, click the **Properties** button.
4. Check your list of Network Components. You should see **Internet Protocol (TCP/IP)** on your list. Select it and click the **Properties** button.
5. In the Internet Protocol (TCP/IP) Properties window, select **Obtain an IP Address Automatically** and **Obtain DNS Server Address Automatically** as shown in Figure 2-5.



**Figure 2-5. Internet protocol (TCP/IP) properties, General tab.**



6. Click **OK** to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

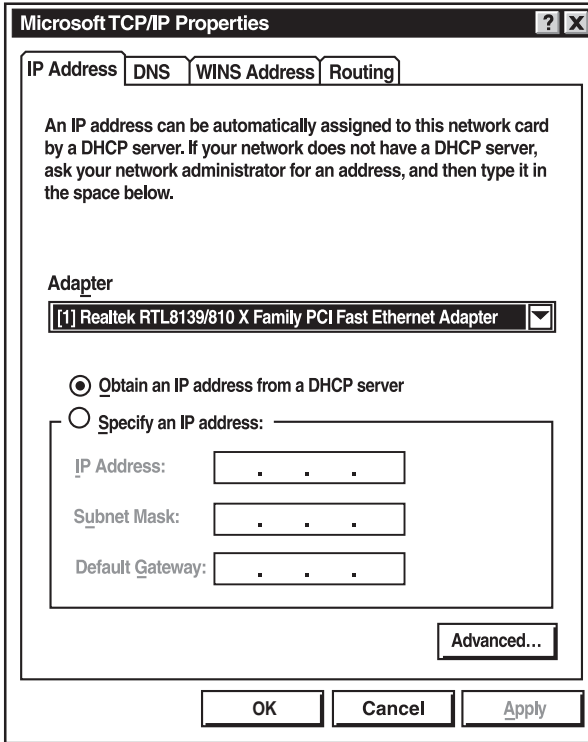
## **NOTE**

**Make sure that the Broadband Router's DHCP server is the only DHCP server available on your LAN.**

Once you've configured your PC to obtain an IP address automatically, proceed to step 3 on page 16.

### c. Windows NT

1. Click the **Start** button and select **Settings**, then **Control Panel**. The Control Panel window will appear.
2. Double-click the **Network** icon. The Network window will appear. Select the **Protocol** tab from the Network window.
3. Check if the TCP/IP Protocol is on your list of Network Protocols. If TCP/IP is not installed, click the **Add** button to install it now. If TCP/IP is installed, go to step 5 below.
4. In the Select Network Protocol window, select **TCP/IP Protocol** and click the **OK** button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.
5. After you install TCP/IP, go back to the Network window. Select **TCP/IP** from the list of Network Protocols and then click the **Properties** button.
6. Check each of the tabs and verify the following settings (see Figure 2-6):
  - IP Address: Select **Obtain an IP address** from a DHCP server.
  - DNS: Leave all fields blank.
  - WINS Address: Leave all fields blank.
  - Routing: Leave all fields blank.



**Figure 2-6. Microsoft TCP/IP properties, IP Address tab.**

7. Click **OK** to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.

## **NOTE**

**Make sure that the Broadband Router's DHCP server is the only DHCP server available on your LAN.**

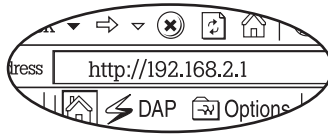
Once you've configured your PC to obtain an IP address automatically, proceed to step 3 (below).

3. Once you have configured your PCs to obtain an IP address automatically, the router's DHCP server will automatically give your LAN clients an IP address. By default, the Broadband Router's DHCP server is enabled so that you can obtain an IP address automatically. To see if you have obtained an IP address, see **Appendix A**.

**NOTE**

Make sure that the Broadband Router's DHCP server is the only DHCP server available on your LAN. If there is another DHCP on your network, then you'll need to switch one of the DHCP servers off.

- Once your PC has obtained an IP address from your router, enter the default IP address 192.168.2.1 (the Broadband Router's IP address) into your PC's Web browser and press <Enter>. See Figure 2-7.

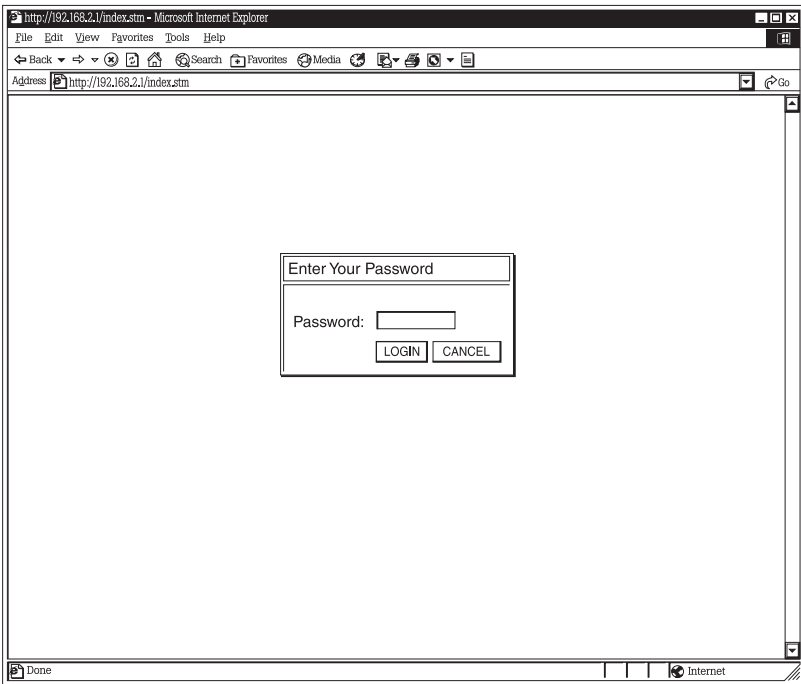


**Figure 2-7. Entering the default IP address.**

- The screen shown in Figure 2-8 will appear. This site contains the router's Web based management screens that allow you to configure your Broadband Router. Click <LOGIN>.

**NOTE**

By default there is no password. For security reasons, we recommend that you add a password as soon as possible (see Figure 2-8).



**Figure 2-8. The Enter Your Password screen.**

6. The Home page shown in Figure 2-9 will appear. The home page is divided into four sections: Quick Setup Wizard, General Setup, Status Information, and Tools.

### ***Setup Wizard (Chapter 4)***

If you want to use the Broadband Router only as an Internet Access device, then you *only* need to configure the screens in the Setup Wizard section.

### ***General Setup (Chapter 5)***

If you want to use the Broadband Router's advanced features, you'll need to configure the Setup Wizard and the General Setup section. You can just configure the General Setup section, since the General Setup/WAN and the Setup Wizard contain the same configurations.

### Status Information (Chapter 6)

Use the Status Information section for monitoring the router's current status information.

### Tools (Chapter 7)

If you want to reset the router (because of problems), save your configurations, or upgrade the firmware, go to **Chapter 7**.

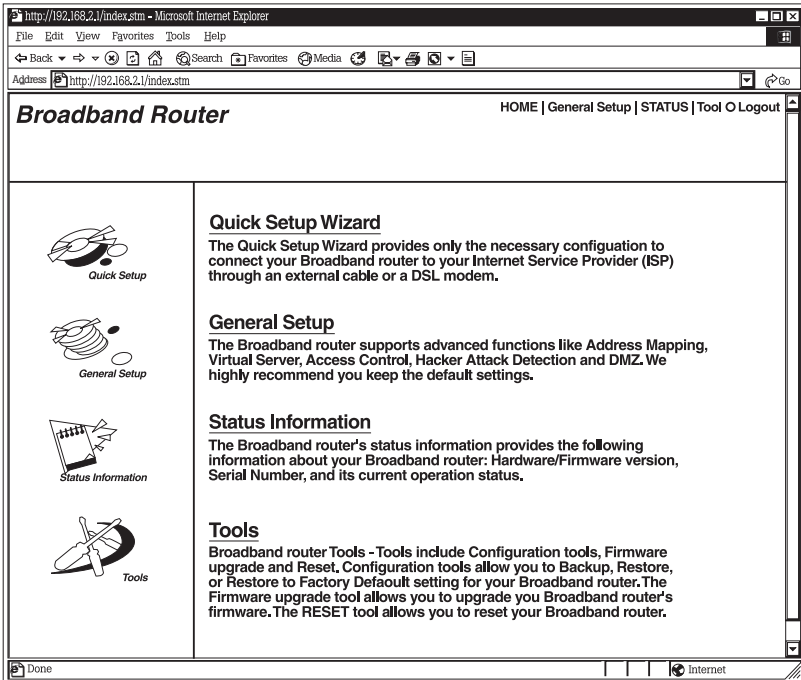


Figure 2-9. Home page.

<b>Menu</b>	<b>Description</b>
Setup Wizard ( <b>Chapter 4</b> )	Select your Internet connection type. Then perform the configurations necessary to connect to your Internet Service Provider (ISP).
General Setup ( <b>Chapter 5</b> )	This section contains configurations for the Broadband Router's advanced functions such as Bridge, Address Mapping, Virtual Server, Access Control, Hacker Attack Prevention, DMZ, Special Applications, and other functions to meet your LAN requirements.
Status Information ( <b>Chapter 6</b> )	In this section, you can see the Broadband Router's System Information, Internet Connection, Device Status, Security Log, and DHCP Client Log information.
Tools ( <b>Chapter 7</b> )	This section contains the Broadband Router's Tools, including Configuration tools, Firmware upgrade, and Reset. Configuration tools allow you to backup (save), restore, or restore to factory-default configuration for your Broadband Router. The Firmware upgrade tool allows you to upgrade your Broadband Router's firmware. The Reset tool allows you to reset your Broadband Router.
Logout	Selecting logout will return you to the Home page (that has the Login button).

7. Click on Quick Setup Wizard (see the **Chapter 4**) to start configuring settings required by your ISP so that you can access the Internet. The other sections (General Setup, Status Information, and Tools) do not need to be configured unless you wish to implement or monitor more advanced features or information.

Select the section (Quick Setup Wizard, General Setup, Status Information, or Tools) you wish to configure and proceed to the corresponding chapter. Use the selections on the Web management's top right-hand page (see Figure 2-10) to navigate around the Web based management user interface.



**Figure 2-10. Web management.**

# 4. Quick Setup Wizard

## 4.1 Setup

The Quick Setup Wizard is designed to get you using the Broadband Router as quickly as possible. You are required to fill in only the information necessary to access the Internet. Once you click on the Quick Setup Wizard in the Home page, you should see the screen shown in Figure 4-1.

## 4.2 Step 1: Time Zone

The Time Zone allows your router to base its time on the settings configured here. This will affect functions such as Log entries and Firewall settings.

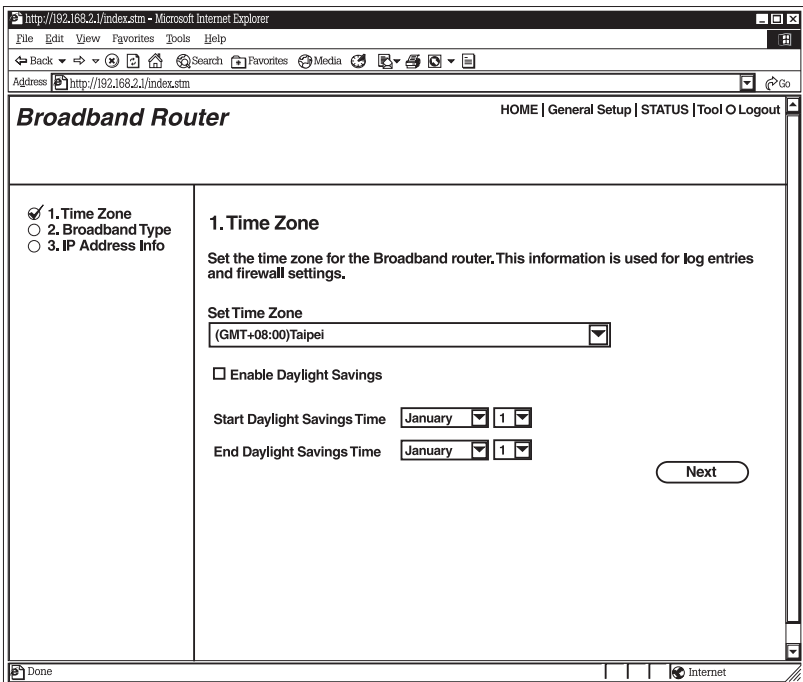


Figure 4-1. Set Time Zone screen.



Parameter	Description
Set Time Zone	Select the time zone of the country you are currently in. The router will set its time based on your selection.
Enable Daylight Savings	The router can also take daylight savings into account. If you wish to use this function, you must check the enable box to enable your daylight savings configuration.
Start Daylight Savings Time	Select the period in which you wish to start daylight savings time.
End Daylight Savings Time	Select the period in which you wish to end daylight savings time.

Click on **Next** to proceed to Step 2: Broadband Type.

### 4.3 Step 2: Broadband Type

In this section, you have to select one of four types of connections that you will be using to connect your Broadband Router's WAN port to your ISP (see Figure 4-2).

#### NOTE

**Different ISPs require different methods of connecting to the Internet. Please check with your ISP for the type of connection it requires.**

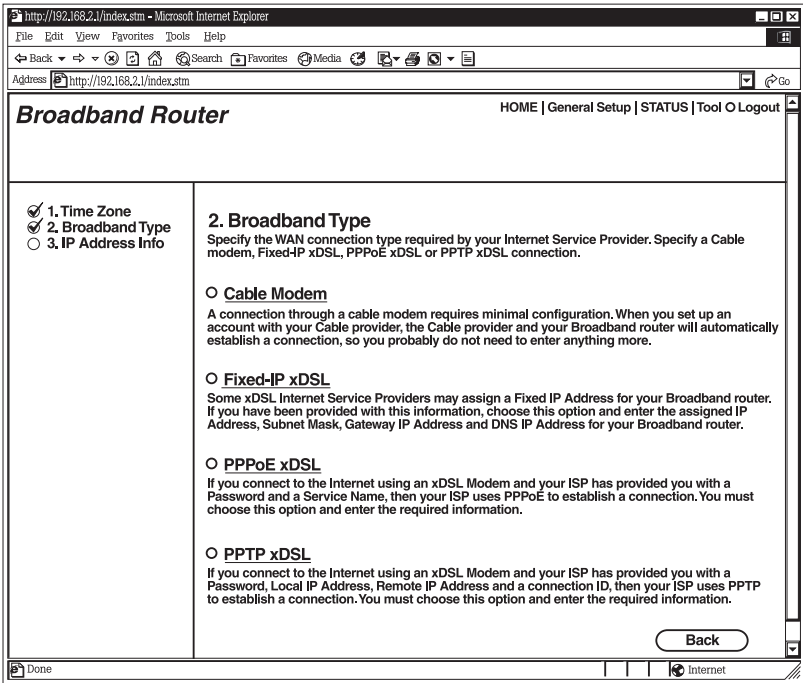


Figure 4-2. Broadband type.

## Menu

## Type of Connection

Cable Modem

Your ISP will automatically give you an IP address.

Fixed-IP xDSL

Your ISP has given you an IP address already.

PPPoE xDSL

Your ISP requires you to use a Point-to-Point Protocol over Ethernet (PPPoE) connection.

PPTP xDSL

Your ISP requires you to use a Point-to-Point Tunneling Protocol (PPTP) connection.

Click on one of the WAN types and then proceed to the manual's relevant subsection (4.1, 4.2, 4.3 or 4.4). Click on **Back** to return to the previous screen.

#### 4.3.1 CABLE MODEM

Choose **Cable Modem** if your ISP will automatically give you an IP address. Some ISPs may also require you to fill in additional information, such as Host Name and MAC address (see Figure 4-3).

### NOTE

**The Host Name and MAC address section is optional. You can skip this section if your ISP does not require these settings for you to connect to the Internet.**

The screenshot shows a Microsoft Internet Explorer browser window displaying the configuration page for a Broadband Router. The browser's address bar shows the URL `http://192.168.2.1/index.stm`. The page title is "Broadband Router" and the navigation menu includes "HOME | General Setup | STATUS | Tool O Logout".

On the left side of the page, there is a sidebar with a list of configuration steps:

- 1. Time Zone
- 2. Broadband Type
- 3. IP Address Info

The main content area is titled "3. IP Address Info ?" and is under the "Cable Modem" section. It contains the following fields and buttons:

- Host Name:
- MAC Address:  -  -  -  -  -
- Buttons:
- Navigation:

The browser's status bar at the bottom shows "Done" and "Internet".

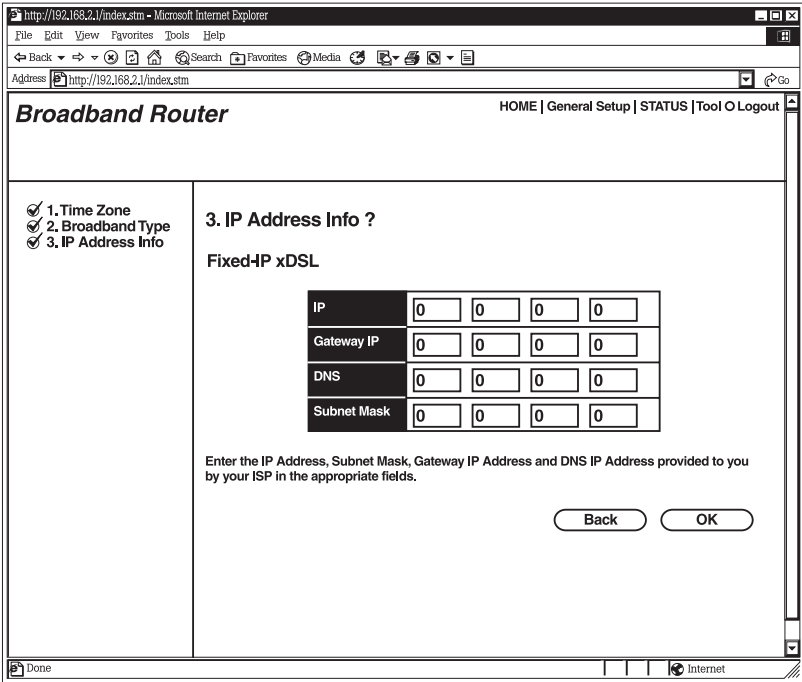
Figure 4-3. IP Address Info, Cable Modem.

Parameter	Description
Host Name	If your ISP requires a Host Name, type in the Host Name provided by your ISP. Leave it blank if your ISP does not require a Host Name.
MAC Address	Your ISP may require a particular MAC address in order for you to connect to the Internet. This MAC address is the PC's MAC address to which your ISP had originally established your Internet connection. Type in the MAC address in this section or use the <b>Clone MAC Address</b> button to replace the WAN MAC address with the MAC address of the PC you are currently using for the Clone MAC Address button to work. If necessary, you can use the <b>Release</b> and <b>Renew</b> buttons to release and renew the WAN IP address. To find out what the PC's MAC address is, see <b>Appendix A</b> . (See the <b>Glossary</b> for an explanation of MAC address.)

Click **OK** when you have finished the configuration above. You have completed the configuration for the Cable Modem connection. You can start using the router now. If you wish to use some of the advanced features supported by this router, see **Chapters 5, 6, and 7**.

### 4.3.2 FIXED-IP xDSL

Select Fixed-IP xDSL if your ISP has given you a specific IP address to use. Your ISP should provide all the information required in this section. See Figure 4-4.



**Figure 4-4. IP Address Info, Fixed-IP xDSL.**

## Parameters

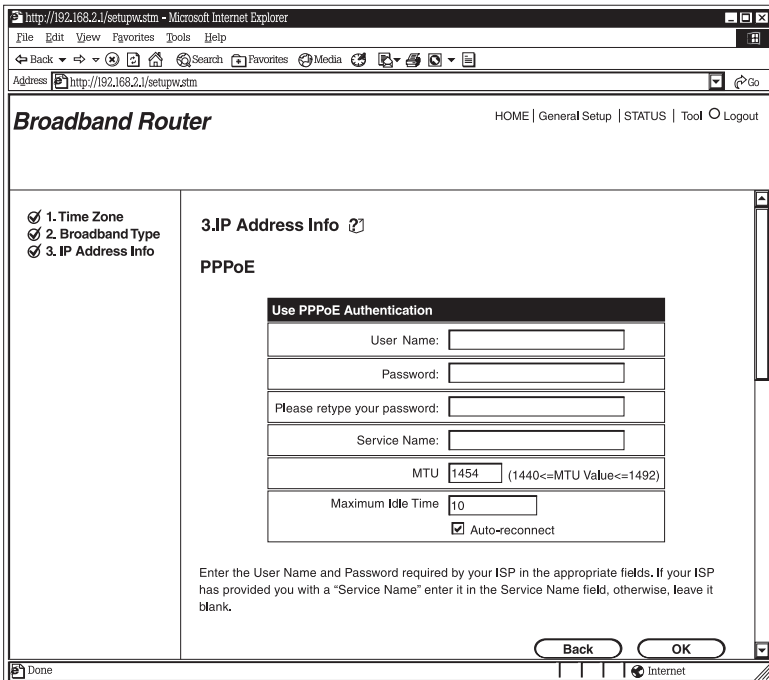
## Description

IP	This is the IP address that your ISP has given you.
Gateway IP	This is the ISP's IP address gateway.
DNS	This is the ISP's DNS server IP address.
Subnet Mask	Enter the Subnet Mask provided by your ISP (for example, 255.255.255.0).

Click **OK** when you have finished adding the information. You have completed the configuration for the Fixed-IP xDSL connection. You can start using the router now. If you wish to use some of the advanced features supported by this router, see **Chapters 4, 5, and 6**.

### 4.3.3 PPPoE xDSL

Select PPPoE xDSL if your ISP requires the PPPoE protocol to connect you to the Internet. Your ISP should provide all the information required in this section (see Figure 4-5).



**Figure 4-5. IP Address Info, PPPoE.**

Parameter	Description
User Name	Enter the User Name provided by your ISP for the PPPoE connection.
Password	Enter the password provided by your ISP for the PPPoE connection.
Please retype your password	Type in the password again to re-confirm.
Service Name	This is optional. Enter the Service Name if your ISP requires it; otherwise, leave it blank.
MTU	This is optional. You can specify the maximum size of your transmission packet to the Internet. Leave it as is if you do not wish to set a maximum packet size.
Maximum Idle Time	You can specify an idle time threshold (minutes) for the WAN port. This means that if no packets have been sent (no one using the Internet) during this specified period, the router will automatically disconnect the connection with your ISP.

### NOTE

**Idle time “0” means no timeout; for example, no time restriction (always On).**

Auto-reconnect	If you check the Auto-reconnect function, then when the WAN connection is disconnected, the router will automatically re-connect when a user requests access to the Internet.
----------------	---

Click **OK** when you have finished the configuration above. You have completed the configuration for the PPPoE connection. You can start using the router now. If you wish to use some of the advanced features supported by this router, see **Chapters 5, 6, and 7**.

## 4.3.4 PPTP xDSL

Select PPTP xDSL if your ISP requires the PPTP protocol for connecting you to the Internet. Your ISP should provide all the information required in this section. See Figure 4-6.

The screenshot shows a web browser window displaying the configuration page for a broadband router. The browser's address bar shows the URL `http://192.168.2.1/setupw.stm`. The page title is "Broadband Router" and it includes navigation links for "HOME", "General Setup", "STATUS", "Tool", and "Logout". On the left side, there is a sidebar with three checked options: "1. Time Zone", "2. Broadband Type", and "3. IP Address Info". The main content area is titled "3. IP Address Info" and "PPTP". It contains several input fields: "IP Address" (four boxes with '0'), "Subnet Mask" (four boxes with '0'), "Default Gateway" (four boxes with '0'), "User ID" (text box), "Password" (text box), "PPTP Gateway" (four boxes with '0'), and "Idle Time Out" (text box with '10' and '(min)'). Below the fields, there is a note: "Point-to-Point Protocol is a common connection method used in xDSL connections." At the bottom right of the form area, there are two buttons: "Back" and "OK". The browser's status bar at the bottom shows "Done" and "Internet".

Figure 4-6. IP Address Info, PPTP.

### Parameter

### Description

IP Address

This is the IP address that your ISP has given you to establish a PPTP connection.

Subnet Mask

Enter the Subnet Mask provided by your ISP (for example, 255.255.255.0).



Parameter	Description
Default Gateway	Enter the IP address of the ISP Gateway.
User ID	Enter the User Name provided by your ISP for the PPTP connection. This is sometimes called a Connection ID.
Password	Enter the password provided by your ISP for the PPTP connection.
PPTP Gateway	If your LAN has a PPTP gateway, then enter that PPTP gateway IP address here. If you do not have a PPTP gateway, then enter the ISP's Gateway IP address.
Idle Time Out	You can specify an idle time threshold (minutes) for the WAN port. This means that if no packets have been sent (no one is using the Internet) throughout this specified period, then the router will automatically disconnect the connection with your ISP.

### NOTE

**Idle time "0" means no time out; for example, no time restriction (always On).**

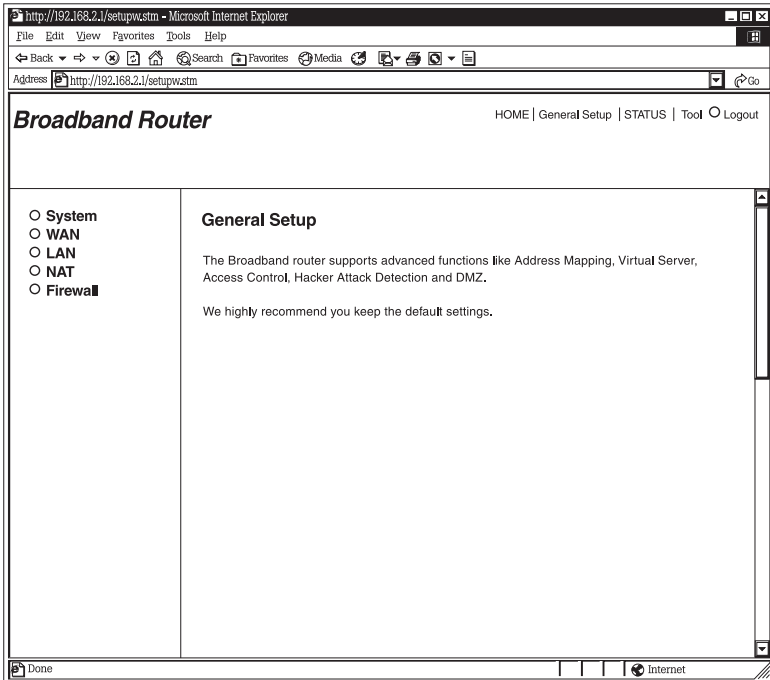
Click **OK** when you have finished the configuration above. You have completed the configuration for the PPTP connection. You can start using the router now. If you wish to use some of the advanced features supported by this router, see **Chapters 5, 6, and 7**.

# 5. General Setup

Once you click on the General Setup button at the Home Page, you should see the screen shown in Figure 5-1.

If you have already configured the Quick Setup Wizard, you do *not* need to configure anything in the General Setup screen for you to start using the Internet.

The General Setup screen contains advanced features that allow you to configure the router to meet your network's needs such as Wireless, Bridge, Address Mapping, Virtual Server, Access Control, Hacker Attack Prevention, Special Applications, DMZ, and other functions.



**Figure 5-1. General setup screen.**

Below is a general description of the advanced functions available.

<b>Menu</b>	<b>Description</b>
System	This section allows you to set the Broadband Router's system time zone, password, and remote management.
WAN	This section allows you to select the connection method in order to establish a connection with your ISP.
LAN	You can specify the LAN segment's IP address, subnet mask, enable/disable DHCP, and select an IP range for your LAN. You also can configure the print server.
NAT	Configure the Address Mapping, Virtual Server, and Special Applications functions in this section. This allows you to specify what user/packet can pass your router's NAT.
Firewall	The Firewall section allows you to configure Access Control, Intrusion Detection, and DMZ.

Select one of the above General Setup selections and proceed to the manual's relevant sub-section (**Section 5.1** through **5.5**).

## 5.1 System

The system screen allows you to specify a time zone, change the system password, and specify a remote management user for the Broadband Router. See Figure 5-2.

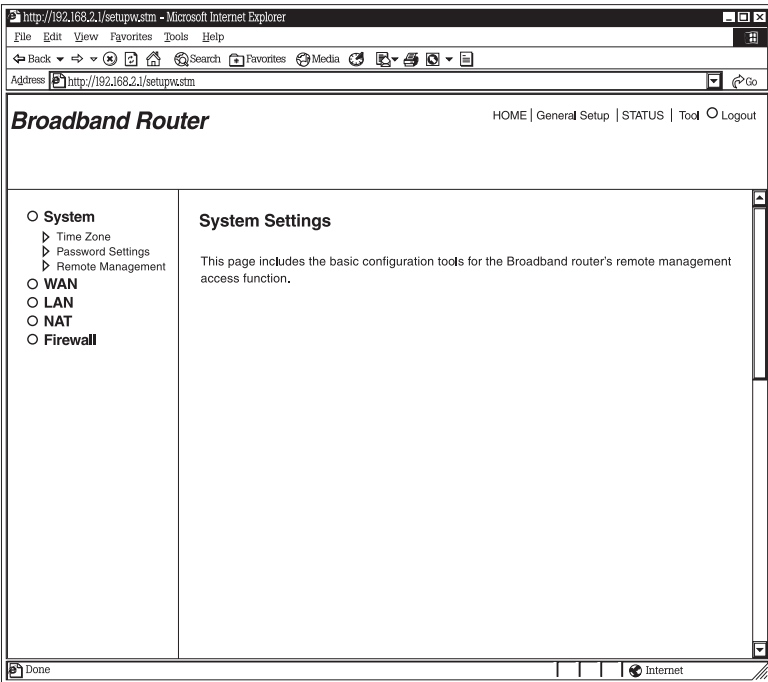


Figure 5-2. System settings.

### Parameters

### Description

#### *System Settings*

Time Zone

Select the time zone of the country you are currently in. The router will set its time based on your selection.

Password Settings

Allows you to select a password in order to access the Web-based management Web site.

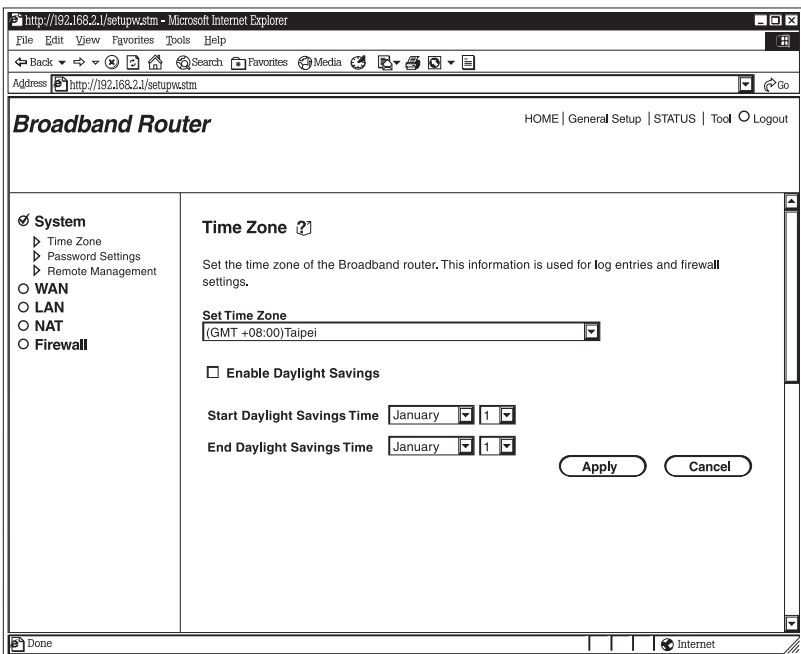
**Parameters****Description**

Remote Management

You can specify a Host IP address that can perform remote management functions.

**5.1.1 TIME ZONE**

The Time Zone allows your router to reference or base its time on the settings configured here, which will affect functions such as Log entries and Firewall settings. See Figure 5-3.



**Figure 5-3. Time Zone screen.**

Parameter	Description
Set Time Zone	Select the time zone of the country you are currently in. The router will set its time based on your selection.
Enable Daylight Savings	The router can also take daylight savings time into account. If you wish to use this function, you must check/tick the enable box to enable your daylight savings configuration (below).
Start Daylight Savings Time	Select the period in which you wish to start Daylight Savings Time.
End Daylight Savings Time	Select the period in which you wish to end Daylight Savings Time.

Click **Apply** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place).

## 5.1.2 PASSWORD SETTINGS

You can change the password required to log into the Broadband Router's system Web based management. By default, there is no password. Assign a password to the Administrator as soon as possible and store it in a safe place. Passwords can contain up to 12 alphanumeric characters and are case-sensitive. See Figure 5-4.

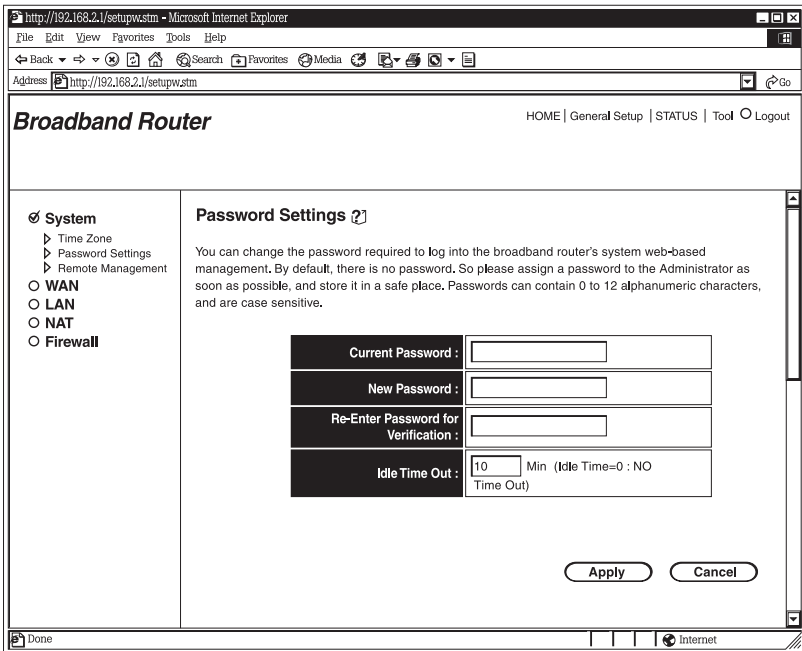


Figure 5-4. Password Settings screen.

### Parameters

Current Password

### Description

Enter your current password for the remote management administrator to login to the Broadband Router.

### NOTE

By default there is no password.

<b>Parameters</b>	<b>Description</b>
New Password	Enter your new password.
Re-Enter Password for Verification	Enter your new password again for verification purposes.

### **NOTE**

**If you forget your password, you'll have to reset the router to the factory default (no password) with the Reset button (see the router's back panel).**

Idle Time Out	Login Connections (login to Web based management) without any activity that goes beyond this specified period (minutes) will automatically disconnect the Web based management.
---------------	---

### **NOTE**

**Idle time "0" means no timeout; for example, no time restriction.**

Click **Apply** at the bottom of the screen to save the above configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).



### 5.1.3 REMOTE MANAGEMENT

The remote management function allows you to designate a host in the Internet. This lets you configure the Broadband Router from a remote site. Enter the designated host IP Address<sup>1,2</sup> in the Host IP Address field. See Figure 5-5.

## NOTES

1. This must be a real-world registered IP address.
2. This function will only work for a Fixed IP Static address from your ISP. Dynamically allocated IP addresses from your ISP will not work.

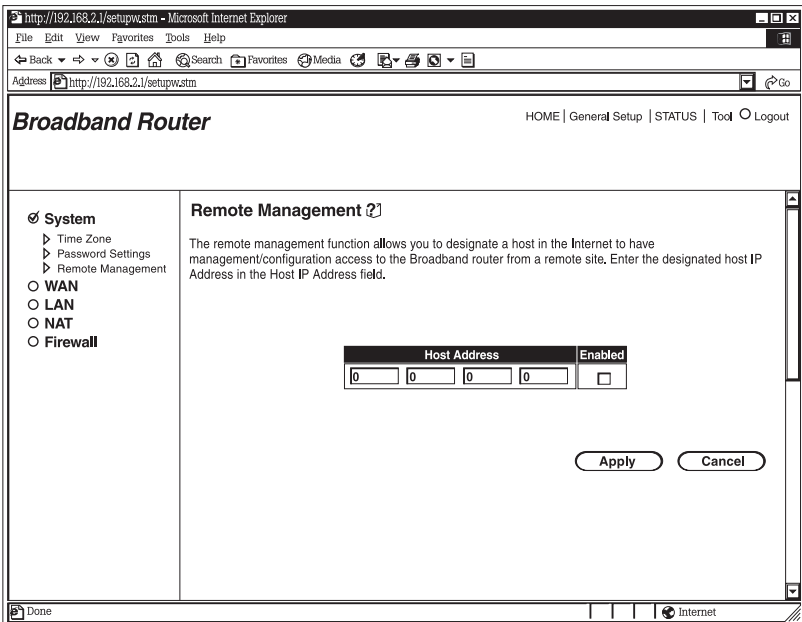


Figure 5-5. Remote Management screen.

## Parameters

## Description

Host Address

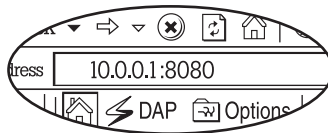
This is the IP address of the host in the Internet that will have management/configuration access to the Broadband Router from a remote site. If you are at home and your home IP address has been designated as the Remote Management host IP address for this router (located in your company office), then you are able to configure this router from your home. If the Host Address is left as 0.0.0.0, anyone can access the router's Web based configuration from a remote location if they know the password.

Enabled

Clicking on this box enables the Remote Management function.

## NOTE

When you want to access the Web based management from a remote site, you must enter the router's WAN IP address into your Web browser followed by port number 8080. You'll also need to know the password set in the Password Setting screen to access the router's Web based management. (For example, in Figure 5-6, the WAN IP address is 10.0.0.1 and the port number is 8080.) **NOTE:** Add **HTTP:** in front of the IP address!



**Figure 5-6. WAN IP address.**

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## 5.2 WAN

Use the WAN Settings screen if you have already configured the Quick Setup Wizard section and you would like to change your Internet connection type. The WAN Settings screen allows you to specify the type of WAN port connection you want to establish with your ISP. In the WAN Settings screen, you can also specify the router to act as a bridge. The WAN settings offer the following selections for the router's WAN port: Dynamic IP, PPPoE, PPTP, Static IP Address, Bridge, DNS, and DDNS. See Figure 5-7.

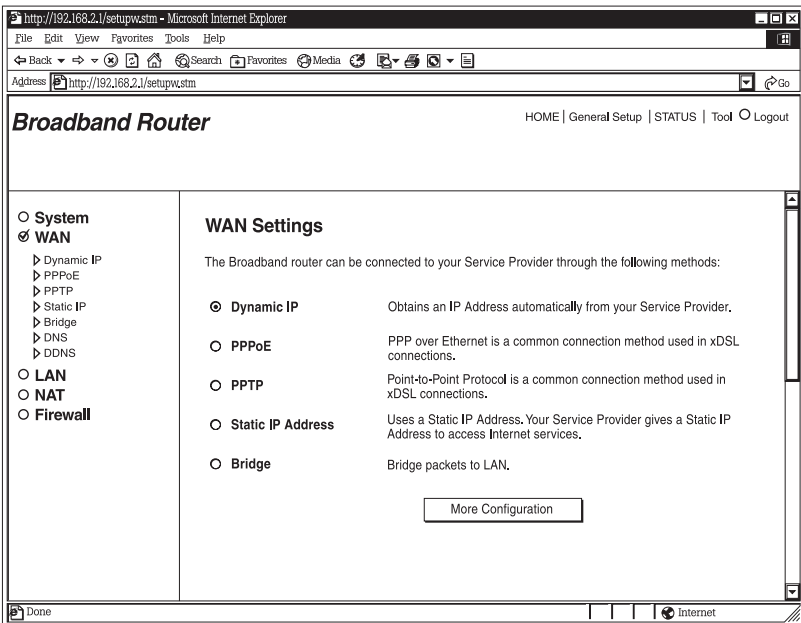


Figure 5-7. WAN Settings screen.

Parameters	Description
Dynamic IP	Your ISP will automatically give you an IP address.
PPPoE	Your ISP requires a PPPoE connection.
PPTP	Your ISP requires you to use a Point-to-Point Tunneling Protocol (PPTP) connection.
Static IP Address	Your ISP has given you an IP address already.
Bridge	The router can be used as a bridge between LANs.
DNS	You can specify a DNS server that you want to use.
DDNS	You can specify a DDNS server that you want to use and configure the user name and password provided by your DDNS service provider.

Once you have made a selection, click **More Configuration**.

### 5.2.1 DYNAMIC IP

Choose the Dynamic IP selection if your ISP will automatically give you an IP address. Some ISPs may also require you to fill in additional information, such as Host Name, Domain Name, and MAC address.

### 5.2.2 PPPoE

Select PPPoE if your ISP requires the PPPoE protocol for connecting to the Internet. Your ISP should provide all the information required in this section

### 5.2.3 PPTP

Select PPTP if your ISP requires the PPTP protocol for connecting to the Internet. Your ISP should provide all the information required in this section.

### 5.2.4 STATIC IP ADDRESS

Select Static IP address if your ISP has given you a specific IP address for you to use. Your ISP should provide all the information required in this section.

### 5.2.5 BRIDGE

The bridge mode screen allows you to set your Broadband Router to bridge mode and assign an IP address for management purposes. When the bridge mode is selected, the router in effect becomes a switch, transferring packets from the WAN port to the LAN port and vice versa without any NAT involvement. In bridge mode, the original WAN MAC is ignored, and the original LAN MAC address will be used as the MAC address. These values will be restored when you set the device to operating modes other than the bridge mode. See Figure 5-8.

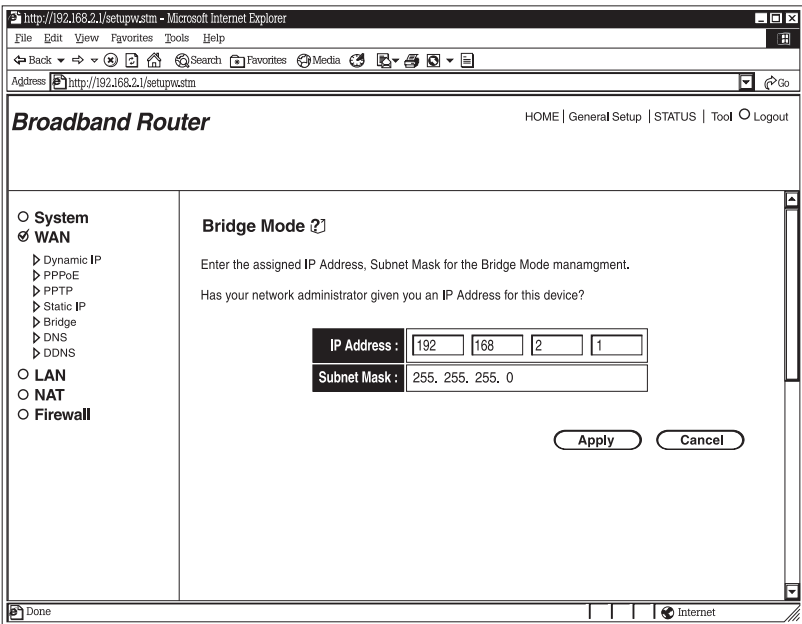


Figure 5-8. Bridge mode screen.

## Parameters

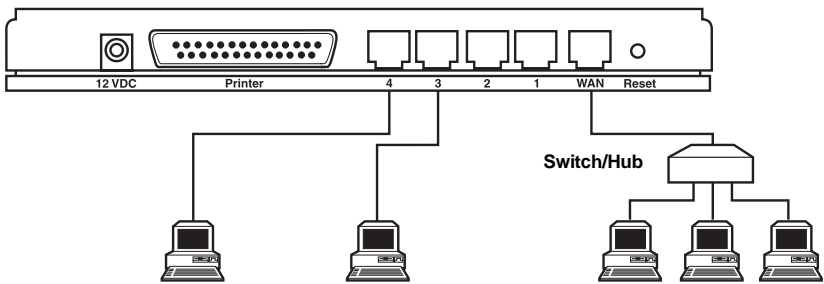
## Description

IP Address	Enter an IP address for the bridge mode. This IP address allows you to access the Web based management if you decide to switch back to the router mode.
Subnet Mask	This is the subnet mask for the bridge mode management.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

### *Example: Bridge mode*

Figure 5-9 demonstrates how you can use the bridge mode. The router basically becomes a hub/switch, allowing you to connect LAN clients to your Local Area Network.



**Figure 5-9. Bridge mode example.**

### 5.2.6 DNS

A Domain Name System (DNS) server is an index of IP addresses and Web addresses. If you type a Web address into your browser, a DNS server will find that name in its index and the matching IP address. Most ISPs provide a DNS server for speed and convenience. If your service provider connects you to the Internet with dynamic IP settings, it is likely that the DNS server IP address is provided automatically. However, if there is a DNS server that you would rather use, you need to specify the IP address of that DNS server here. See Figure 5-10.

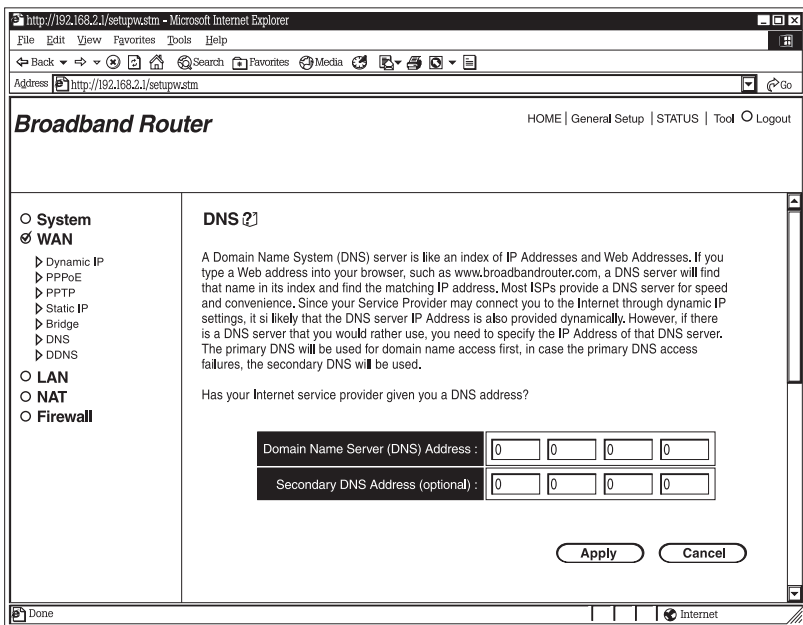


Figure 5-10. DNS screen.

#### Parameters

#### Description

Domain Name Server (DNS) Address This is the ISP's DNS server IP address. Or, you can specify your own preferred DNS server IP address.

## Parameters

## Description

Secondary DNS Address (optional)

This is an optional parameter. You can enter another DNS server's IP address as a backup. The secondary DNS will be used if the above DNS fails.

Click **Apply** at the bottom of the screen to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

### 5.2.7 DDNS

DDNS allows you to map the static domain name to a dynamic IP address. You must get an account, password, and your static domain name from the DDNS service providers. This router supports DynDNS and TZO. See Figure 5-11.

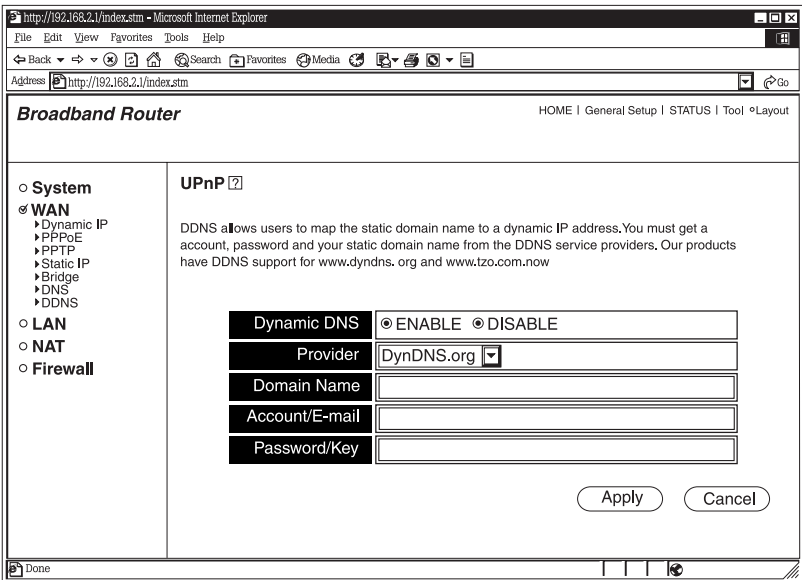


Figure 5-11. DDNS screen.



Parameters	Default	Description
Dynamic DNS	Disable	Enable or disable the DDNS function.
Provider	DynDNS	Select a DDNS service provider.
Domain Name		Your static domain name that uses DDNS.
Account/E-mail		The account that your DDNS service provider assigned to you.
Password/Key		The password you set for the DDNS service account above.

Click **Apply** at the bottom of the screen to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## 5.3 LAN

The LAN Settings screen allows you to setup the LAN Interface IP, DHCP Server parameters, UPnP, and Print Server. See Figure 5-12.

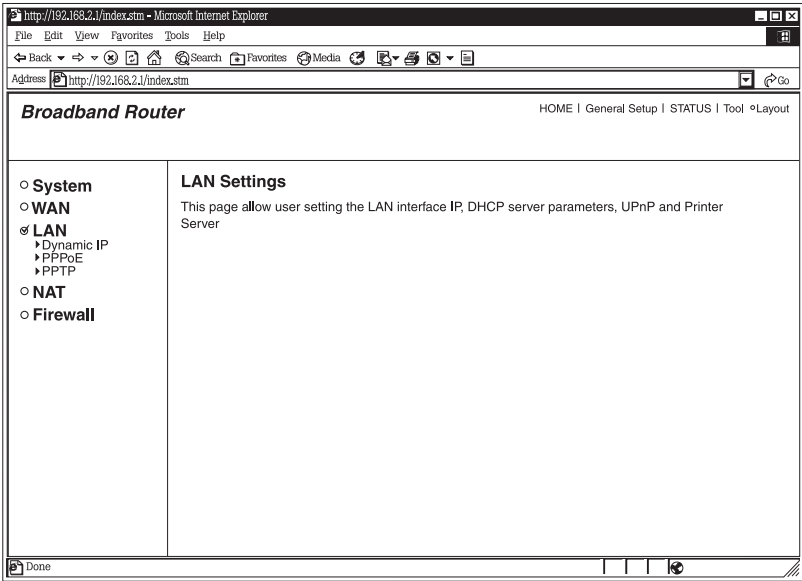


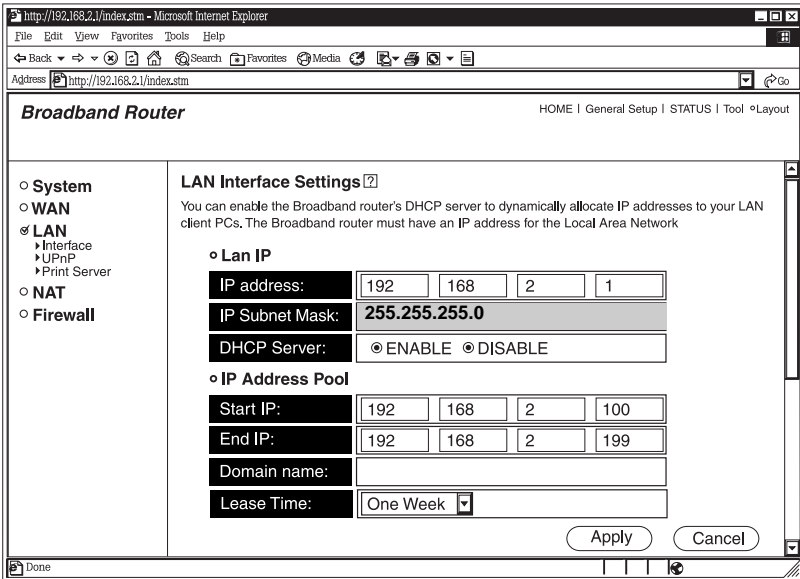
Figure 5-12. LAN Settings screen.

**5.3.1 INTERFACE**

The LAN Port screen allows you to specify a private IP address for your router’s LAN ports. See Figure 5-13.

**NOTE**

**You cannot change the subnet mask. It will always be 255.255.255.0.**



**Figure 5-13. LAN Port screen.**

<b>Parameters</b>	<b>Default</b>	<b>Description</b>
<b>LAN IP</b>		
IP address	192.168.2.1	This is the router’s LAN port IP address. (Your LAN client’s default gateway IP address.)
IP Subnet Mask	255.255.255.0	Specifies a subnet mask for your LAN segment.

## BROADBAND ROUTER

Parameters	Default	Description
DHCP Server	Enabled	You can enable or disable the DHCP server. By enabling the DHCP server, the router will automatically give your LAN clients an IP address. If the DHCP is not enabled, then you'll have to manually set your LAN client's IP addresses. Make sure the LAN client is in the same subnet as the Broadband Router if you want the router to be your LAN client's default gateway.
IP Address Pool		You can select a particular IP address range for your DHCP server to issue IP addresses to your LAN Clients.

### NOTE

**By default the IP range is from Start IP 192.168.2.100 to End IP 192.168.2.199. If you want your PC to have a static/fixed IP address, then you'll have to choose an IP address outside this IP address pool.**

Domain Name		You can specify a domain name for your LAN.
Lease Time		The DHCP, when enabled, will temporarily give your LAN clients an IP address. In the Lease Time setting, you can specify the time period that the DHCP lends an IP address to your LAN clients. The DHCP will change your LAN client's IP address when it reaches this time threshold period.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## 5.3.2 UPnP

With UPnP, all PCs in your intranet will discover the router automatically. You do not have to do any configuration for your PC. You can access the Internet through this router easily. See Figure 5-14.

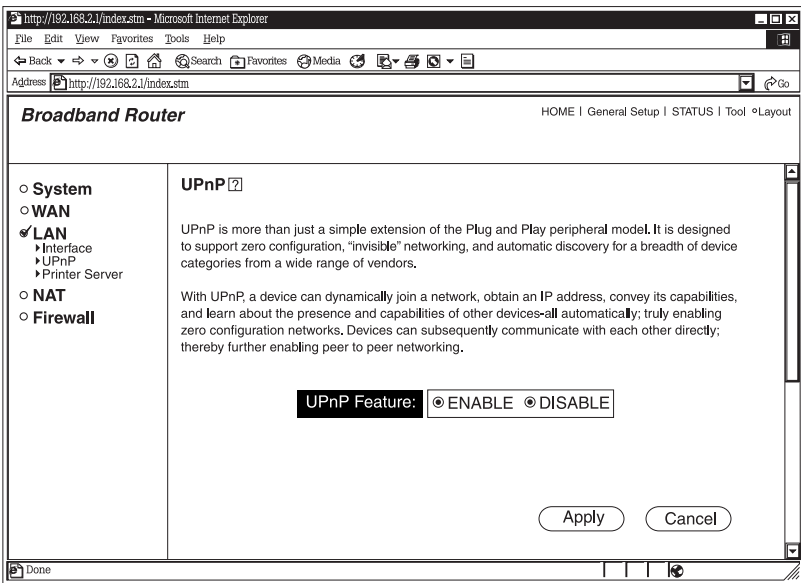


Figure 5-14. UPnP screen.

Parameters	Default	Description
UPnP Feature	Disable	You can enable or disable the UPnP feature. After you enable the UPnP feature, all client systems that support UPnP, like Windows XP, can discover this router automatically and access the Internet through the router without any configuration.

Parameters	Default	Description
UPnP Feature	Disable (continued)	The NAT Traversal function provided by UPnP can let applications that support UPnP smoothly connect to Internet sites without any incompatibility problem due to the NATP port translation.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

### 5.3.3 PRINT SERVER

The router provides a Print Server function that can let you share a printer among all PCs in your Intranet. It supports LPD printing protocol. LPD printing protocol can be used in Windows, Linux®, and other operating systems that provide LPD printing. For Windows users, we provide a print server network driver. You have to install the driver before using the router as a print server. See Figure 5-15.

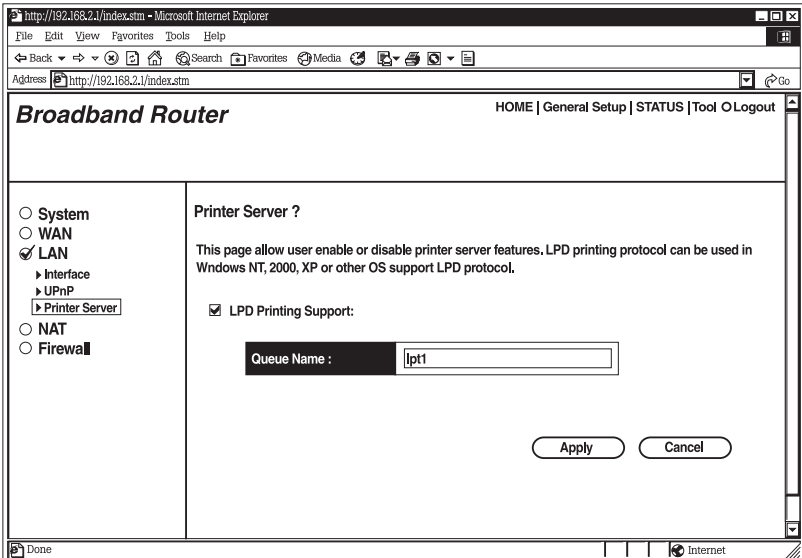


Figure 5-15. Printer Server screen.

Parameter	Description
LPD Printing Support	This allows you to enable/disable the LPD printing of the print server.
Queue Name	The queue name of the LPD print server.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## 5.4 NAT

Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single Public IP address or multiple Public IP addresses. NAT provides firewall protection from hacker attacks and allows you to map private IP Addresses to public IP addresses for key services, such as Web sites and FTP. See Figure 5-16.

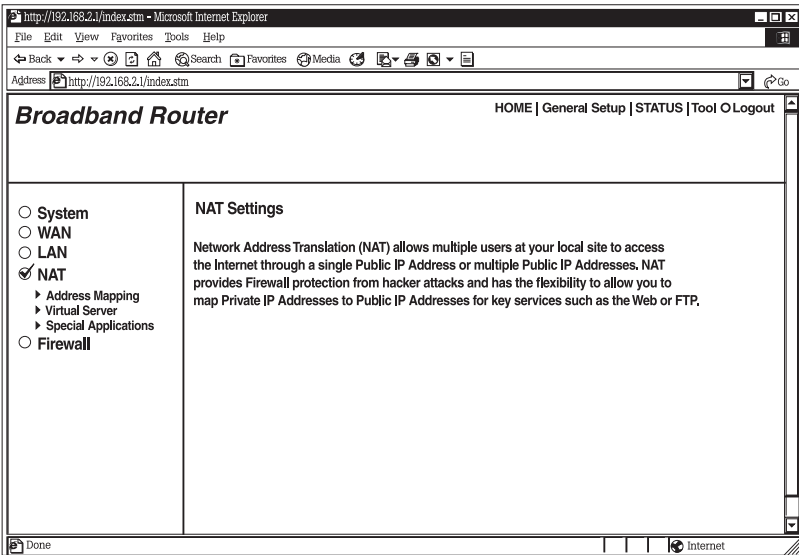


Figure 5-16. NAT settings screen.

### Parameter

### Description

Address Mapping

The Broadband Router allows one or more public IP address(es) to be mapped to a pool of local private IP address(es). This feature is particularly useful when you have multiple global IPs and want to divide local users into different groups.



<b>Parameter</b>	<b>Description</b>
Virtual Server	You can have different services (for example, email, FTP, Web, etc.) going to different service servers/clients in your LAN. The Virtual Server allows you to re-direct a particular service port number (from the Internet/WAN Port) to a particular LAN IP address and its service port number.
Special Applications	Some applications require multiple connections, such as Internet games, videoconferencing, Internet telephony, and others. In this section, you can configure the router to support these types of applications.

Click on one of the three NAT selections and proceed to **Section 5.3.1**, **5.3.2**, and **5.3.3**.

#### **5.4.1 ADDRESS MAPPING**

The Address Mapping function allows IP addresses used in a private Local Area Network (LAN) to be mapped (translated) to different public IP addresses used in the public/global Internet. This feature limits the number of public IP addresses required from the ISP and also maintains the privacy and security of the Local Area Network. Essentially, the Broadband Router allows one or more public IP address(es) to be mapped to a pool of local private IP address(es). See Figure 5-17.

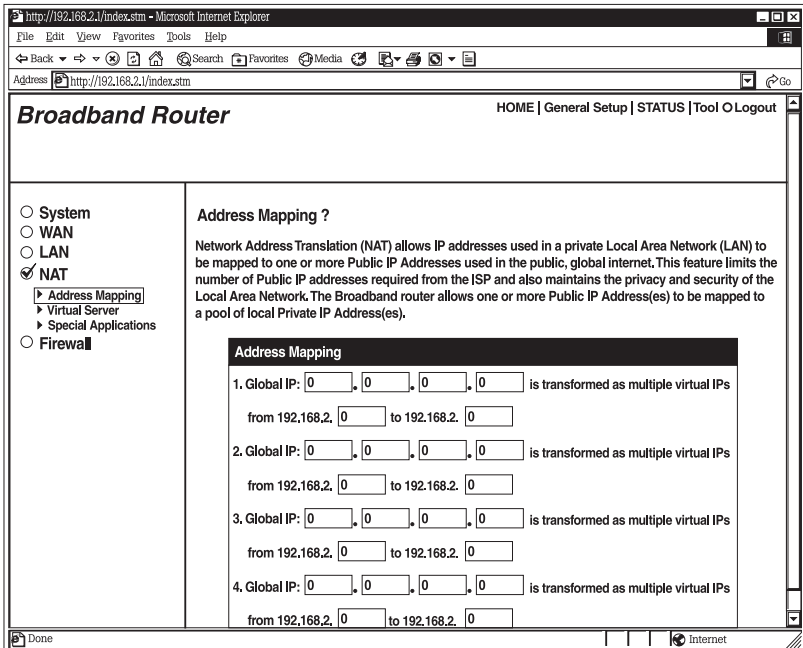


Figure 5-17. Address Mapping screen.

## Parameter

## Description

Global IP

This is the public/legal IP address that exists in the Internet that will be transformed to one or more private/virtual IP addresses (LAN PC clients). This means that the private IP address(es) selected will use the designated public IP address when accessing the Internet.

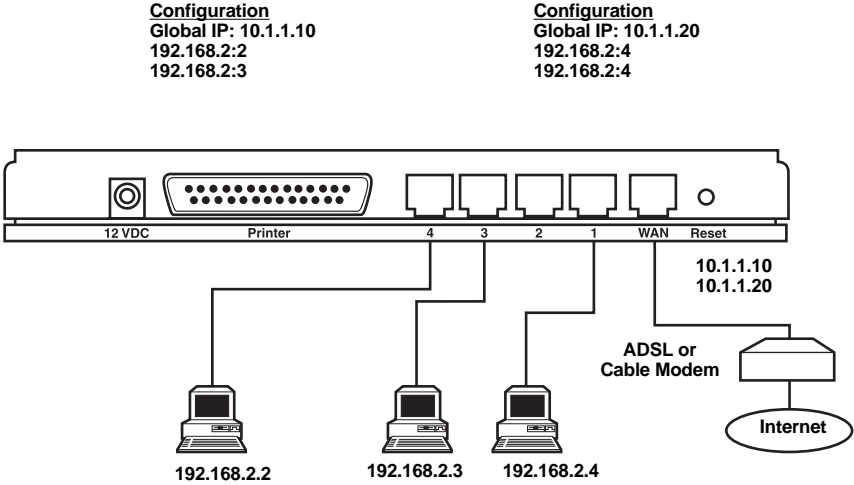
## NOTE

You need to give your LAN PC clients a fixed/static IP address for address mapping to work properly.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

*Example: Address Mapping*

Figure 5-18 demonstrates how address mapping works. With the configuration shown below, LAN clients A and B will use the global/public IP address 10.1.1.10. LAN client C will use 10.1.1.20.



**Figure 5-18. Address Mapping example.**

**5.4.2 VIRTUAL SERVER**

Use the Virtual Server function when you want different servers/clients in your LAN to handle different services/Internet application types (for example, email, FTP, Web server, etc.) from the Internet. Computers use port numbers to recognize a particular service/Internet application type. The Virtual Server allows you to re-direct a particular service port number (from the Internet/WAN Port) to a particular LAN private IP address and its service port number. (See the **Glossary** for an explanation of the Port number.) See Figure 5-19.

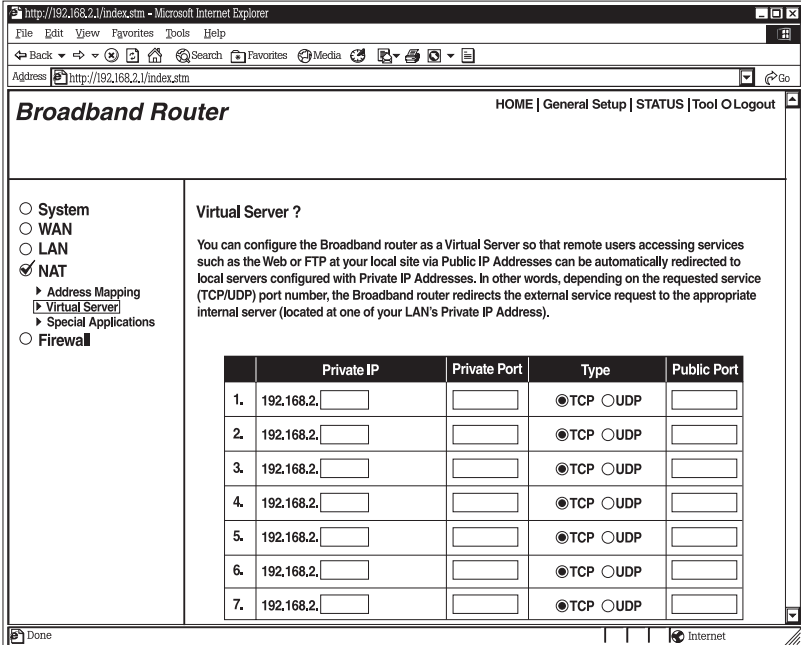


Figure 5-19. Virtual Server screen.

## Parameters

## Description

Private IP

This is the LAN client/host IP address that the Public Port number packet will be sent to.

## NOTE

You need to give your LAN PC clients a fixed/static IP address for Virtual Server to work properly.

Parameters	Description
Private Port	This is the port number (of the above Private IP host) that the below Public Port number will be changed to when the packet enters your LAN (to the LAN Server/Client IP).
Type	Select the port number protocol type (TCP or UDP). If you are unsure, then leave it set to the default TCP protocol.
Public Port	Enter the service (service/Internet application) port number from the Internet that will be re-directed to the above Private IP address host in your LAN.

### NOTE

**The Virtual Server function will have priority over the DMZ function if there is a conflict between the Virtual Server and the DMZ settings.**

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

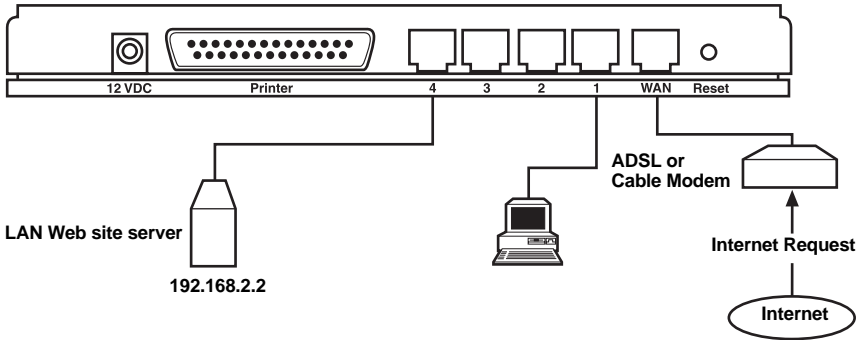
#### *Example: Virtual Server*

Figure 5-20 demonstrates one of the ways you can use the Virtual Server function. Use the Virtual Server when you want the Web server located in your private LAN to be accessible to Internet users. The following configuration means that any request coming from the Internet to access your Web server will be translated to your LAN's Web server (192.168.2.2).

### NOTE

**For the Virtual Server to work properly, Internet/remote users must know your global IP address. (For Web sites you will need to have a fixed/static global/public IP address.)**

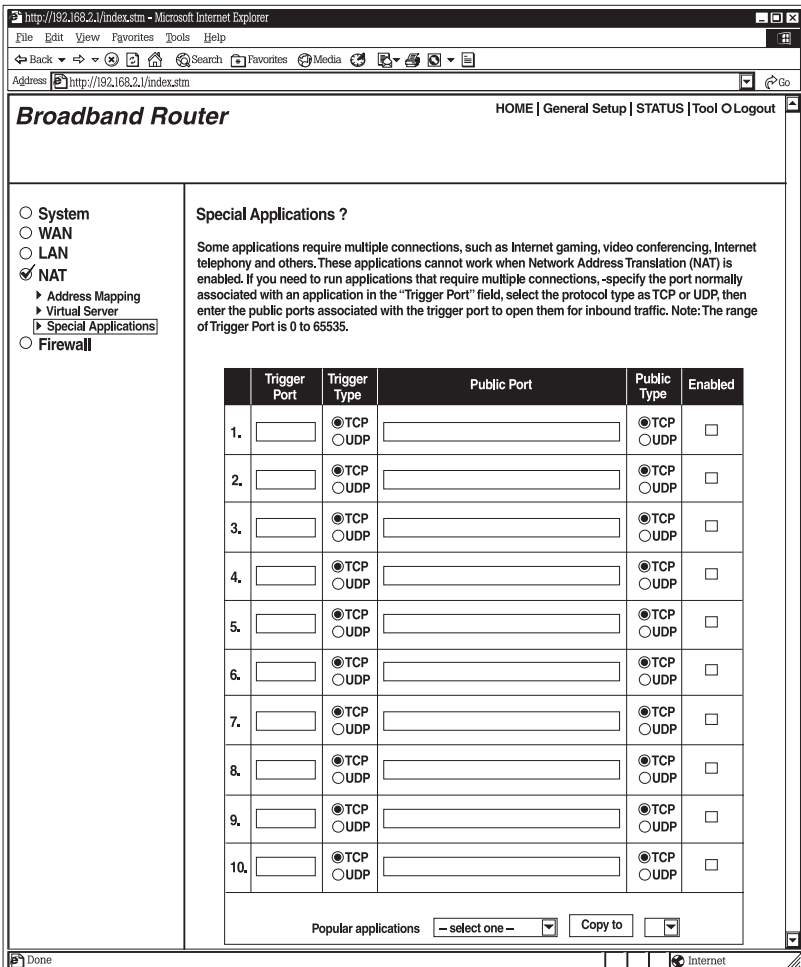
**Configuration**  
Private IP: 192.168.2.2  
Private Port: 80  
Type: TCP  
Public Port: 80



**Figure 5-20. Virtual Server example.**

### 5.4.3 SPECIAL APPLICATIONS

Some applications, such as Internet games and videoconferencing, Internet telephony and others, require multiple connections. In this section, you can configure the router to support multiple connections for these types of applications. See Figure 5-21.



**Figure 5-21. Special Applications screen.**

## Parameters

## Description

Trigger Port

This is the outgoing (Outbound) port number for this particular application.

## NOTE

**The range of the Trigger Port is from 0 to 65535.**

Trigger Type

Select whether the outbound port protocol is TCP or UDP.

## Parameters

## Description

Public Port Enter the Incoming (Inbound) port or port range for this type of application (for example, 2300-2400, 47624).

### NOTE

Individual port numbers are separated by a comma (for example, 47624, 5775, 6541, etc.). To add a port range, use a hyphen to separate the two-port-number range (for example, 2300-2400).

Public Type Select the Inbound port protocol type (TCP or UDP).

Enabled You must check the Enabled box to enable this particular Special Application configuration.

### NOTE

Only one LAN client can use a particular Special Application at a time.

Popular Applications This section lists the more popular applications that require multiple connections. Select an application from Popular Applications. Then select a location (1–10) in the Copy to selection box. Click the **Copy to** button. This will automatically list the public ports required for this popular application in the location (1–10) you specified.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

### *Example: Special Applications*

If you need to run applications that require multiple connections, then specify the port (outbound) normally associated with that application in the “Trigger Port” field. Then select the protocol type (TCP or UDP) and enter the public ports associated with the trigger port to open them up for inbound traffic.



*Example:*

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	28800	UDP	2300-2400, 47624	TCP	MSN Game Zone
2	6112	UDP	6112	UDP	Battle.net

In the example above, when you trigger port 28800 (outbound) for MSN Game Zone, then the router will allow incoming packets for ports 2300-2400 and 47624 to be directed to you.

## NOTE

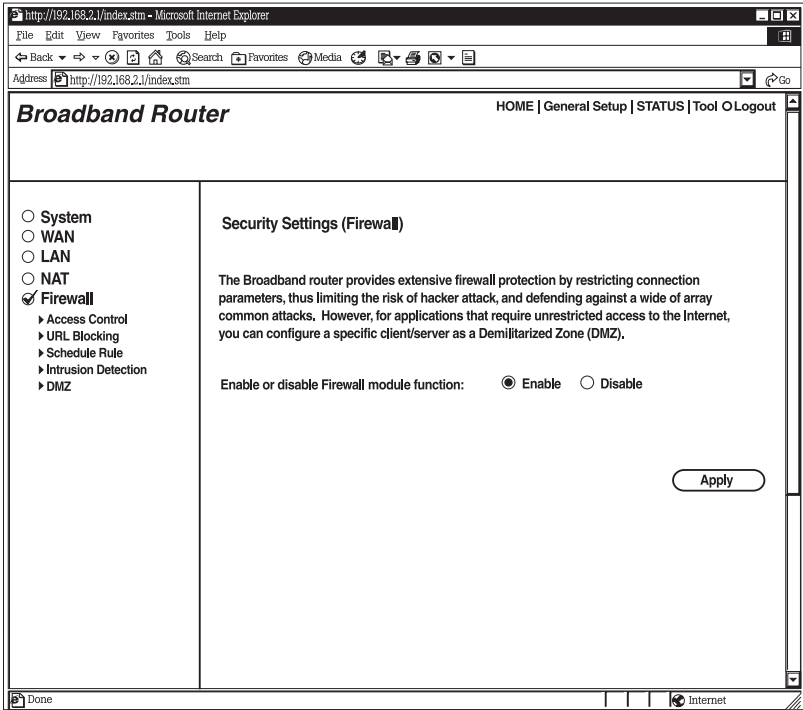
**Only one LAN client can use a particular special application at a time.**

## 5.5 Firewall

The Broadband Router provides extensive firewall protection. This restricts connection parameters, thus limiting the risk of hacker attack. However, for applications that require unrestricted access to the Internet, you can configure a specific client/server as a Demilitarized Zone (DMZ). See Figure 5-22.

## NOTE

**To enable the Firewall settings, select Enable and click Apply.**



**Figure 5-22. Security Settings (Firewall) screen.**

## Parameters

## Description

Access Control

Access Control allows you to specify which hosts can or cannot have access to certain Internet applications.

URL Blocking

URL Blocking allow you to specify which URLs can not be accessed by users.

Schedule Rule

Schedule Rule lets you assign time ranges for schedules.

Intrusion Detection

The Broadband Router's firewall can block common hacker attacks and alert you by email if attacks occur.

**Parameters**

**Description**

DMZ

The DMZ function allows you to redirect all packets going to your WAN port IP address to a particular IP address in your LAN.

**5.5.1 ACCESS CONTROL**

If you want to restrict users from accessing certain Internet applications/services (for example, Internet Web sites, email, FTP etc.), then this is the place to set that configuration. Access Control allows users to define the traffic type permitted in your LAN. You can control which PC client uses what services and also the time period in which they can have access to these services. See Figure 5-23.

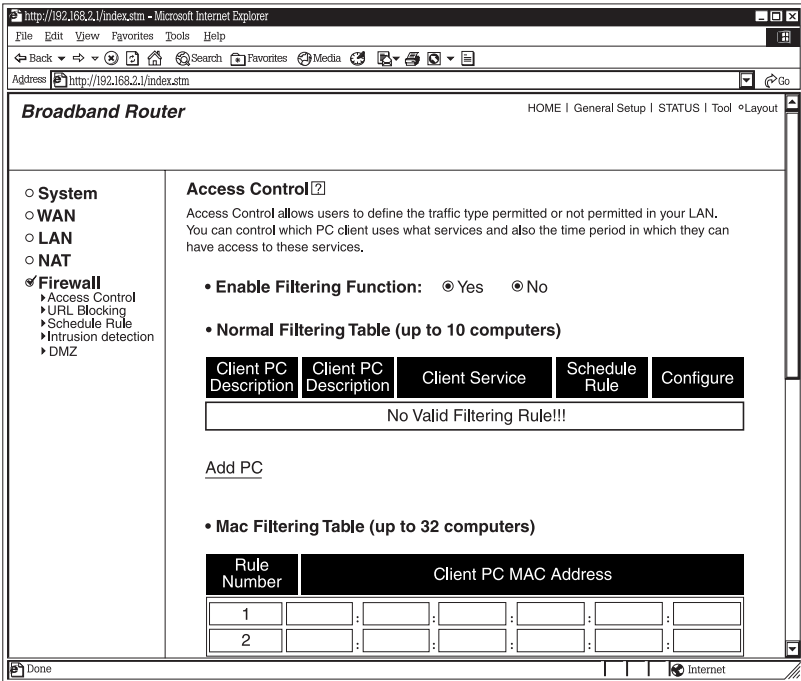


Figure 5-23. Access Control screen.



## Add PC

Parameters	Description
Client PC Description	The description for this client PC rule.
Client PC IP Addresses	Enter the IP address range that you wish to apply to this Access Control rule. This is the user's IP address(es) for which you want to setup an Access Control rule. You can select a range of users simply by inputting the starting users' last digit (octet) IP address and the last user's last octet IP address in the appropriate boxes. If you want to select only one user, then input the user's last digit IP address in both boxes.

### NOTE

**You need to give your LAN PC clients a fixed/static IP address for the Access Control rule to work properly.**

Client PC Service	You can block the clients from accessing some Internet services by checking the services you want to block.
Protocol	This allows you to select the UDP or TCP protocol type you want to block.
Port Range	You can assign up to five port ranges. The router will block clients from accessing Internet services that use these ports.
Scheduling Rule	You can select one of the Scheduling Rules you set previously. The router will block the clients during the time in the Scheduling Rule.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## Example: Access Control

In Figure 5-25, LAN client B cannot access any Web sites ever (Web sites use Port 80). However, LAN client A is unable to access Web sites (and any other service that uses ports between 80 and 999) between Saturday 8 am to Sunday 8 pm.

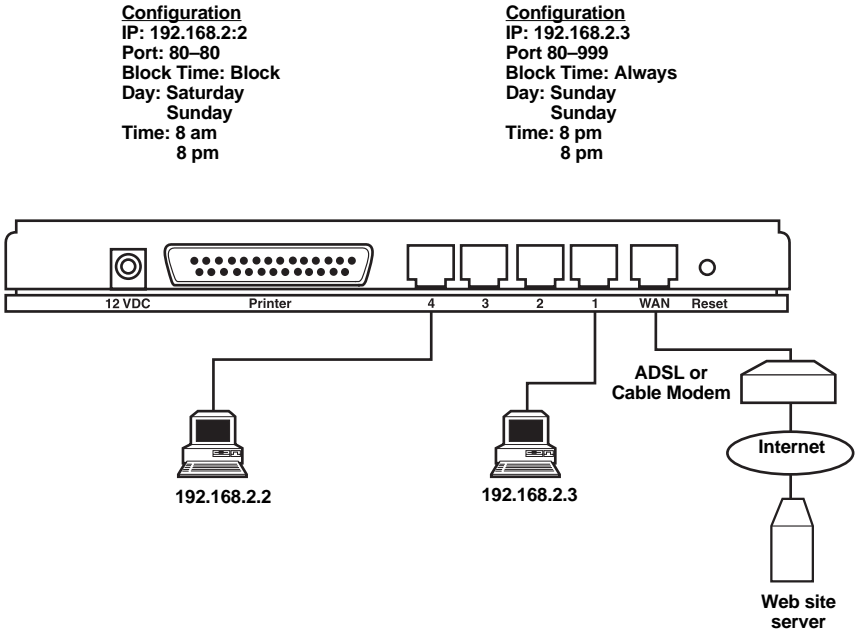


Figure 5-25. Access Control example.

### 5.5.2 URL BLOCKING

You can block access to some Web sites from particular PCs by entering a full URL address or just a keyword of the Web site. To specify particular PCs, go to the Access Control page and check the box for “WWW with URL Blocking” in the “Client PC service” table. See Figure 5-26.

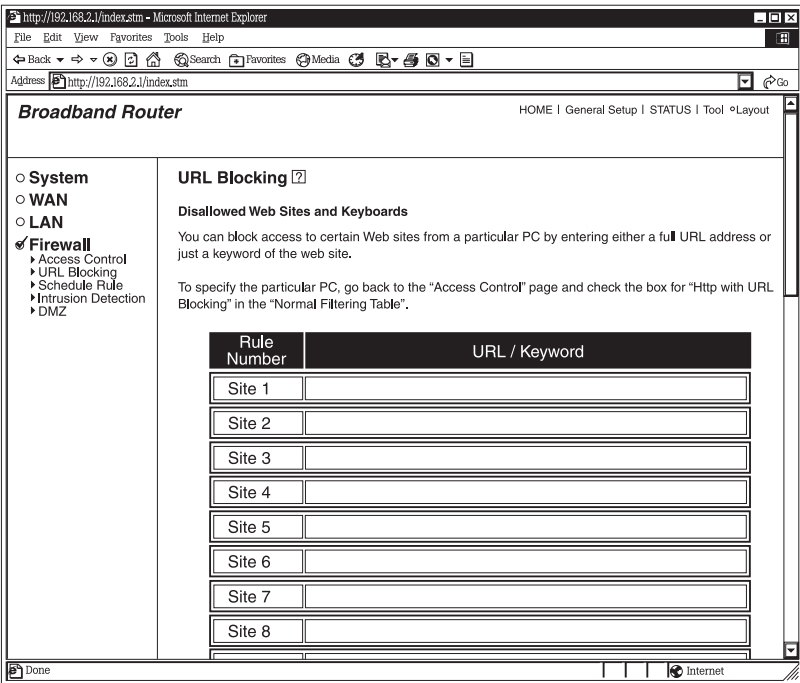


Figure 5-26. URL Blocking screen.

**Parameters**

**Description**

URL/Keyword

Enter the full URL address or the keyword of the Web site you want to block.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

**5.5.3 SCHEDULE RULE**

You can assign time ranges for schedule. The schedule can be used by other functions, for example, Access Control. See Figure 5-27.

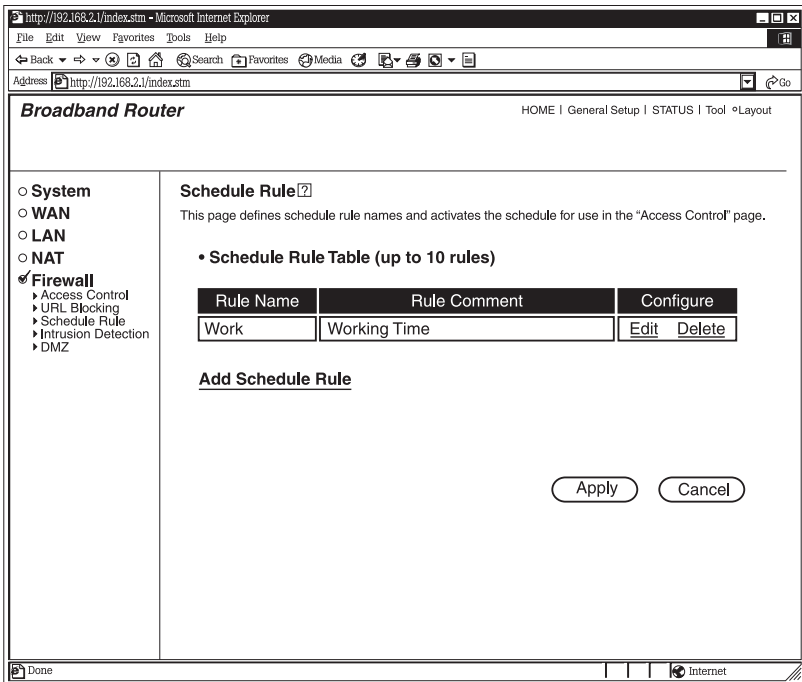


Figure 5-27. Schedule Rule screen.

## Parameters

## Description

Edit

Click **Edit** to modify the time range of the rule schedule.

Delete

Click **Delete** to delete the rule of schedule.

Add Schedule Rule

Click **Add Schedule Rule** to add a new schedule rule and enter the detail edit page to edit the time range of the schedule rule.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place). See Figure 5-28.



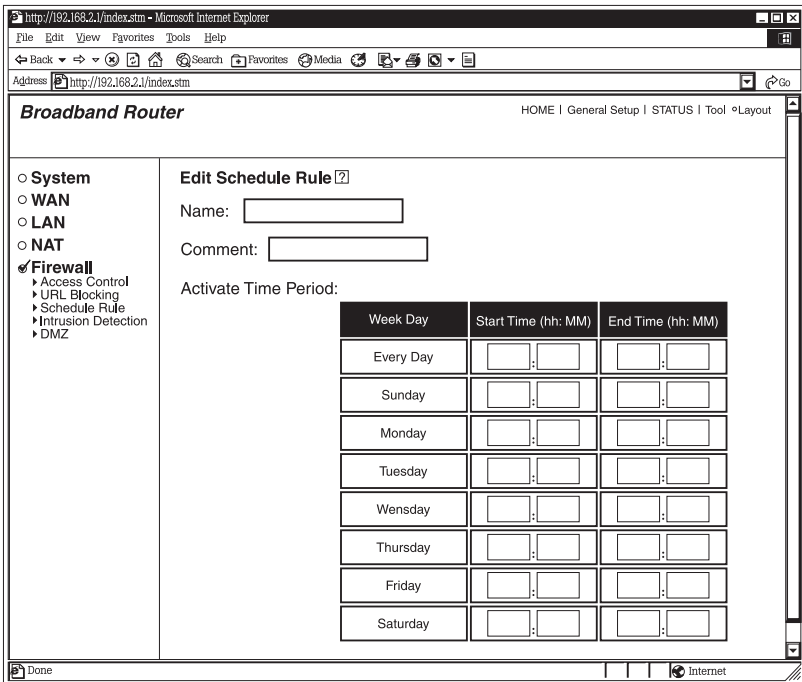


Figure 5-28. Edit Schedule Rule screen.

## Edit Schedule Rule

### Parameters

### Description

Name	The name of the schedule rule.
Comment	You can enter a comment for the schedule rule.
Activate Time Period	You can enter the start time and end time of each day in a week for the schedule rule.

Click **Apply** to save the configurations and go back to the Schedule Rule screen.

## 5.5.4 INTRUSION DETECTION

The Broadband Router's firewall can block common hacker attacks, including Denial of Service, Ping of Death, and RIP defect. If Internet attacks occur, the router can also alert you by email. See Figures 5-29, 5-30, and 5-31.

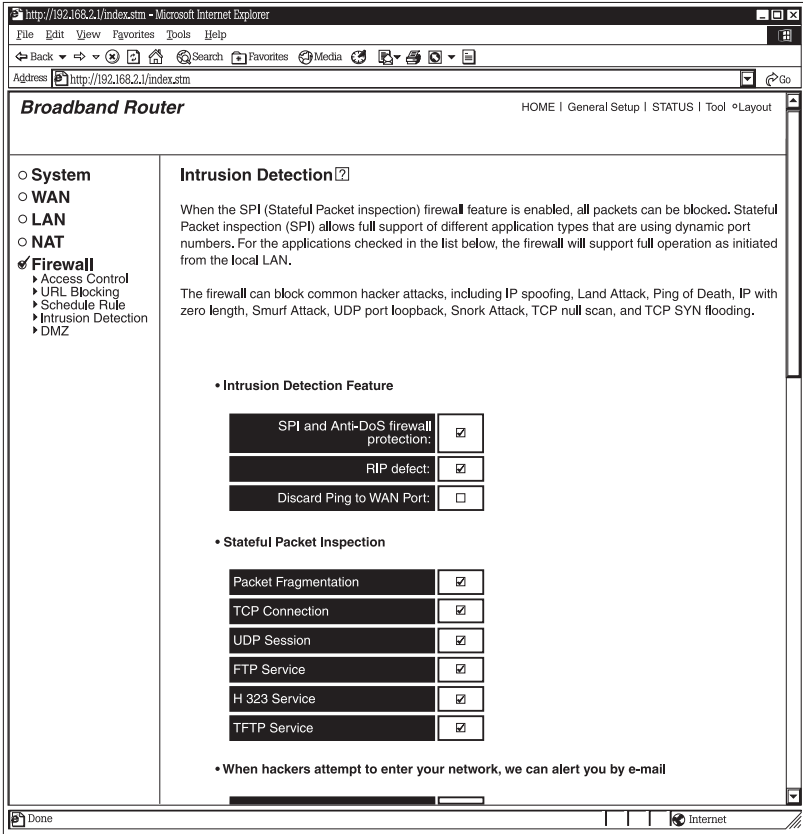


Figure 5-29. Intrusion Detection screen #1.

http://192.168.2.1/index.stm - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.2.1/index.stm

**Broadband Router** HOME | General Setup | STATUS | Tool | Layout

System  
 WAN  
 LAN  
 NAT  
 **Firewall**  
   ▶ Access Control  
   ▶ URL Blocking  
   ▶ Schedule Rule  
   ▶ Intrusion Detection  
   ▶ DMZ

• When hackers attempt to enter your network, we can alert you b e-mail

E-mail Address	<input type="text"/>
SMTP Server Address:	<input type="text"/>
POP3 Server Address:	<input type="text"/>
User name:	<input type="text"/>
Password:	<input type="text"/>

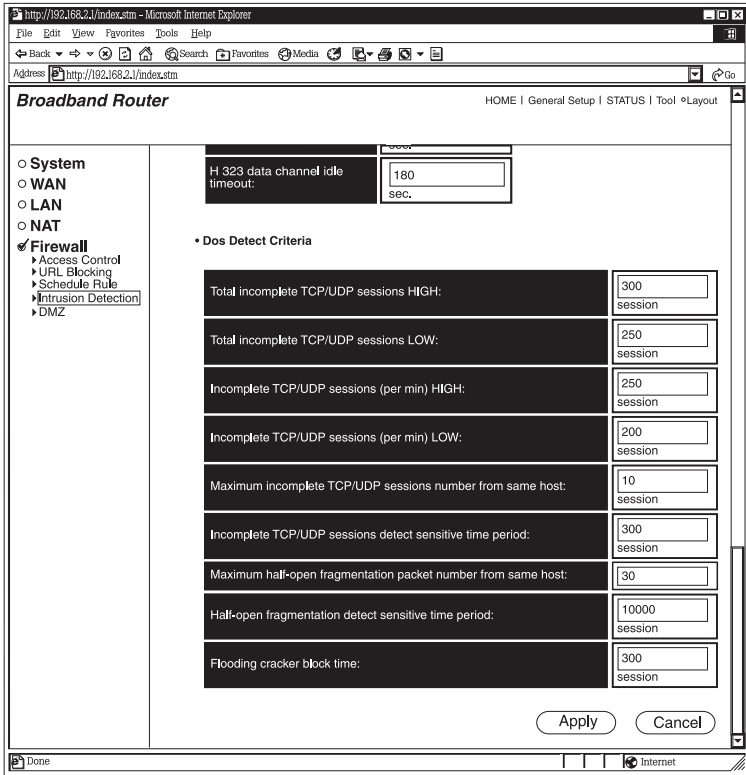
• Connection Policy

Fragmentation half-open wait:	<input type="text" value="10"/> secs
TCP SYN wait:	<input type="text" value="30"/> sec.
TCP FIN wait:	<input type="text" value="5"/> sec.
TCP connection idle timeout:	<input type="text" value="3600"/> sec.
UDP session idle timeout:	<input type="text" value="30"/> sec.
H 323 data channel idle timeout:	<input type="text" value="180"/> sec.

• DoS Detect Criteria

Done Internet

Figure 5-30. Intrusion Detection screen #2.



**Figure 5-31. Intrusion Detection screen #3.**

## Parameters

## Description

### Intrusion Detection Feature

DoS Protection

Protects from any Denial of Service Attacks.

Discard Ping From WAN

The router's WAN port will not respond to any Ping requests.

RIP defect

Protection from RIP defect.

### Stateful Packet Inspection

The router will analyze all packets of selected protocols according to the state of all sessions and block all abnormal packets.

**When hackers attempt to enter your network, we can alert you by e-mail.**

Email Address	Enter the email address that you would like the alert warning to be sent to if an attack occurs.
SMTP Server Address	Enter the IP address of the above email address' SMTP server.
POP3 Server Address	Enter the IP address of the above email address' POP3 server.
User name	Enter the User Name of the above POP3 server.
Password	Enter the Password of the above POP3 server.

**Connection Policy**

Setup wait and idle timeout of session states. All timeout sessions will be removed to protect the router from DoS attacks.

**DoS Detect Criteria**

Setup the criteria of each kind of abnormal events. Any abnormal event that happens more often than the allowed criteria will be treated as a DoS attack. The router will record this event in the security log and alert the user by e-mail.

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## 5.5.5 DMZ

If you have a local client PC that cannot run an Internet application (for example, Games) properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a DMZ host. The DMZ function allows you to re-direct all packets going to your WAN port IP address to a particular IP address in your LAN. The difference between the Virtual Server and the DMZ function is that the Virtual Server redirects a particular service/Internet application (for example, FTP, Web sites) to a particular LAN client/server, whereas DMZ redirects all packets (regardless of services) going to your WAN IP address to a particular LAN client/server. See Figure 5-32.

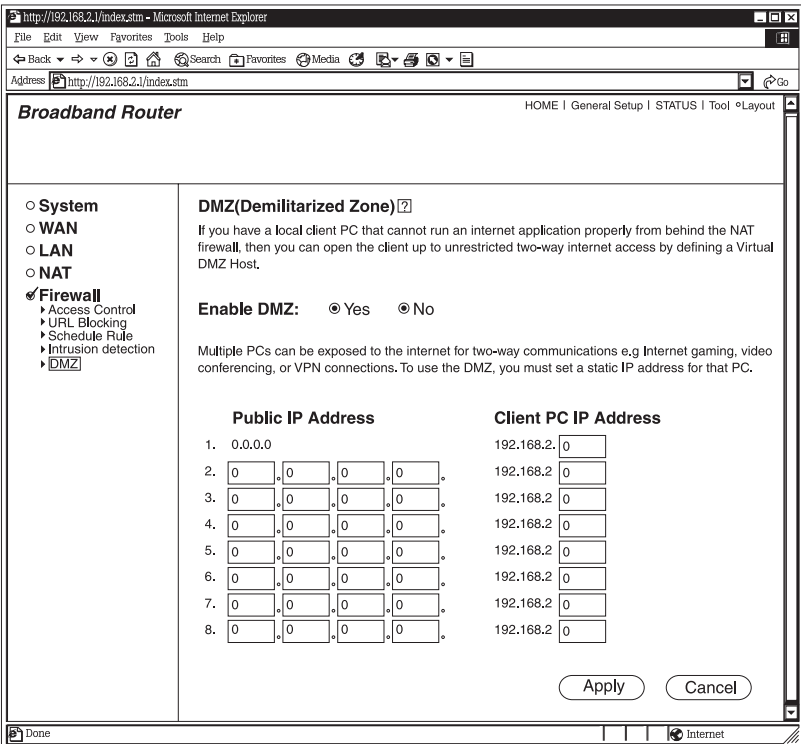


Figure 5-32. DMZ (Demilitarized Zone) screen.

**Parameters****Description**

Enable DMZ

Select Yes to enable DMZ.  
Select No to disable DMZ.

**NOTE**

**If there is a conflict between the Virtual Server and the DMZ setting, then the Virtual Server function will have priority over the DMZ function.**

Public IP Address

The IP address of the WAN port or any other Public IP addresses given to you by your ISP.

Client PC IP Address

Input the IP address of a particular host in your LAN that will receive all the packets originally going to the WAN port/Public IP address(es) above.

**NOTE**

**You need to give your LAN PC clients a fixed/static IP address for DMZ to work properly.**

Click **Apply** to save the configurations. You can now configure other advanced sections or start using the router (with the advanced settings in place).

## 6. Status Information

The Status Information section allows you to monitor the current status of your router. You can use the Status Information page to monitor the connection status of the Broadband Router's WAN/LAN interfaces, the current firmware and hardware version numbers, any illegal attempts to access your network, and information on all DHCP client PCs currently connected to your network.

<b>Parameters</b>	<b>Description</b>
Status and Information	Shows the router's system information.
Internet Connection	View the Broadband Router's current Internet connection status and other related information.
Device Status	View the Broadband Router's current setting status.
Security Log	View any attempts that have been made to illegally gain access to your network.
DHCP PC Client Log	View your LAN client's information that is currently linked to the Broadband Router's DHCP server.

Select one of the above five Status Information selections and proceed to the relevant sub-section (**Section 6.1** through **6.5**).



## 6.1 Status and Information

The Status and Information section allows you to view the router's system information. See Figure 6-1.

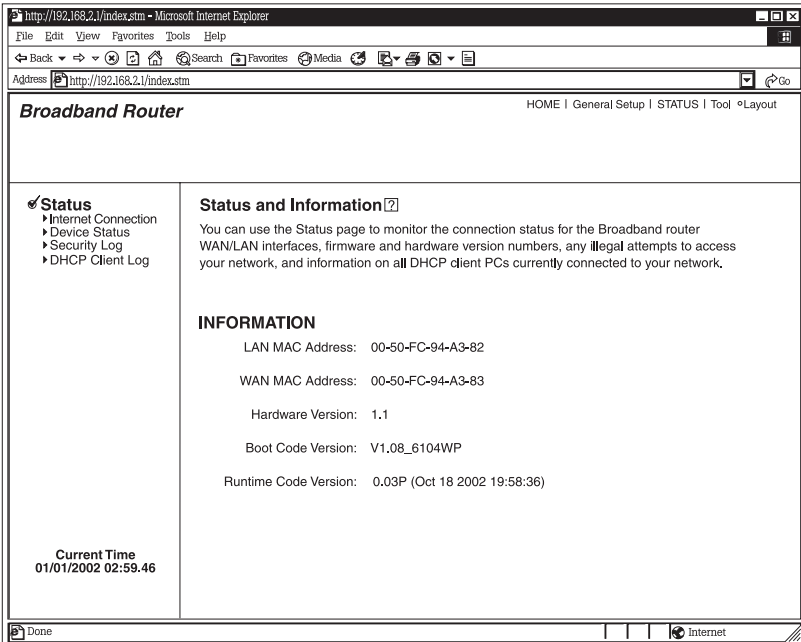


Figure 6-1. Status and Information screen.

### Parameters

### Description

Information

You can see the router's system information, such as the router's LAN MAC Address, WAN MAC Address, Hardware Version, Boot Code Version, and Runtime Code Version.

## 6.2 Internet Connection

View the Broadband Router's current Internet connection status and other related information. See Figure 6-2.

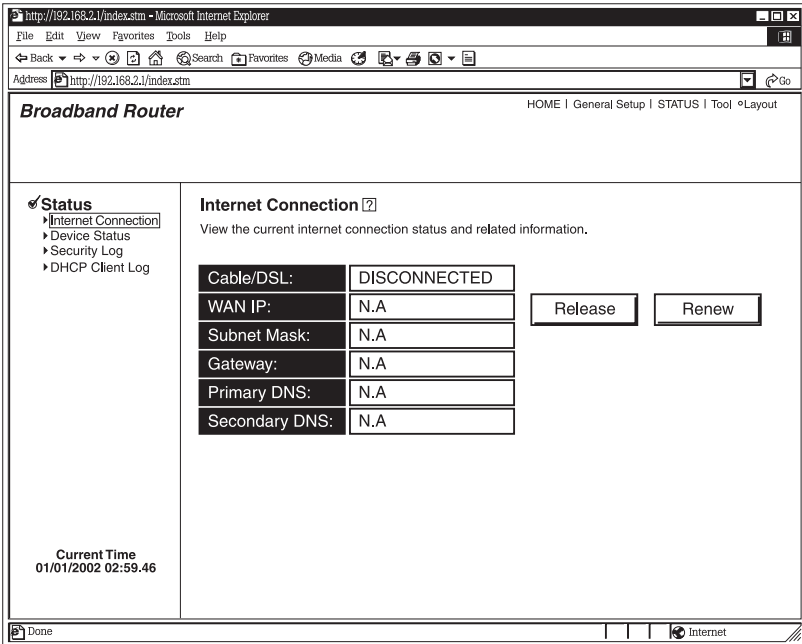


Figure 6-2. Internet Connection screen.

### Parameters

### Description

Internet Connection

This page displays whether the WAN port is connected to a cable/DSL connection. It also displays the router's WAN port's WAN IP address, subnet mask, and ISP gateway as well as the primary DNS and secondary DNS being used.

## NOTE

When the WAN port is a Dynamic IP connection, the Release and Renew buttons will release the Broadband Router's WAN IP address. Renew will get another IP address from the DHCP server. If the WAN port uses PPPoE, Release will disconnect the PPP session, and Renew will initialize another PPP session.

### 6.3 Device Status

View the Broadband Router's current configuration settings. The Device Status displays the configuration settings you've configured in **Chapters 4** and **5**. See Figure 6-3.

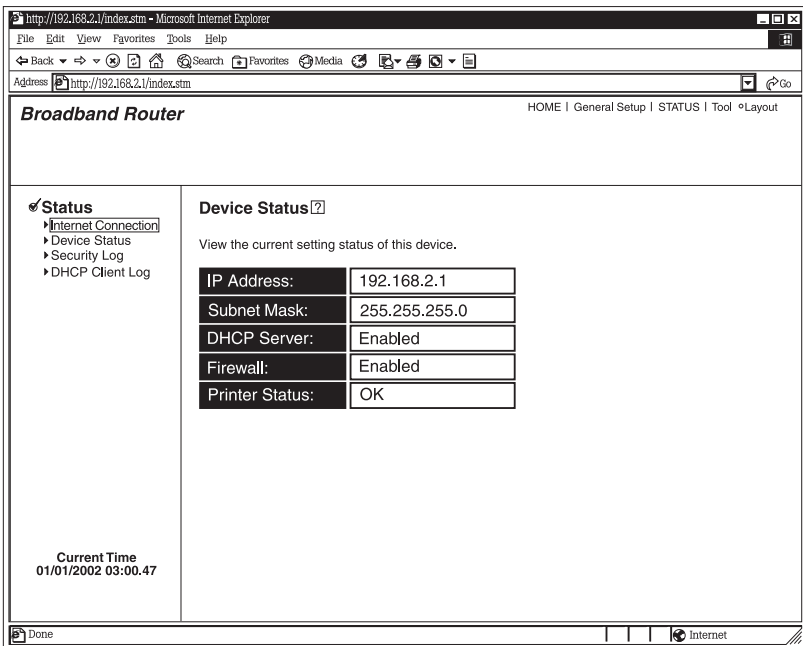


Figure 6-3. Device Status screen.

## Parameters

## Description

Device Status

This page shows the Broadband Router's current device settings. This page displays the Broadband Router LAN port's current LAN IP Address and Subnet Mask. It also shows whether the DHCP Server and Firewall functions are enabled/disabled. The firewall status is shown as **Enabled** if the firewall is enabled (regardless of whether you've configured any of the firewall features).

## 6.4 Security Log

View any attempts that have been made to illegally gain access to your network. See Figure 6-4.

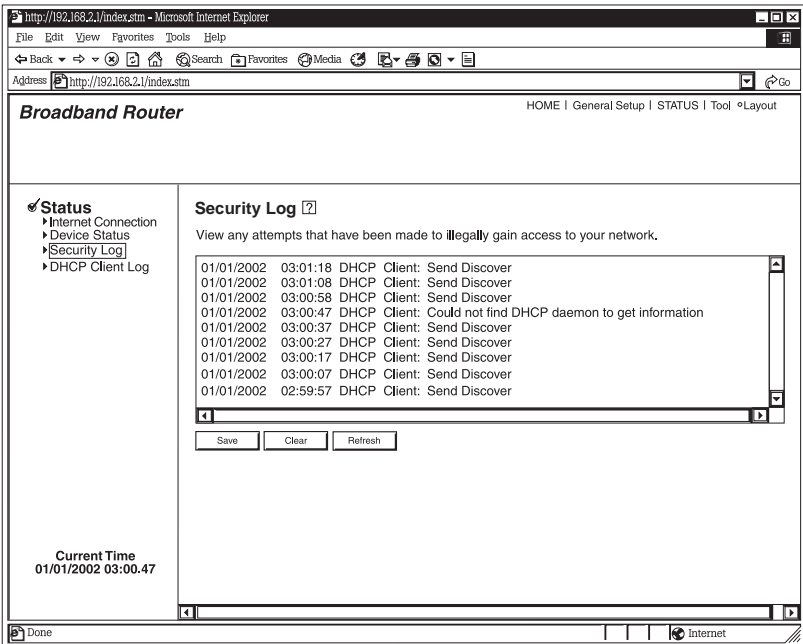


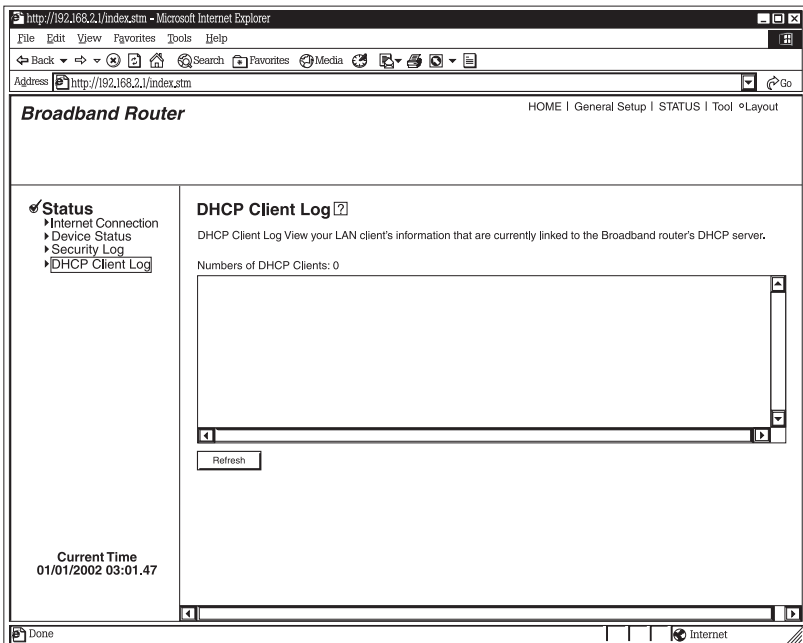
Figure 6-4. Security Log screen.

**Parameters****Description****Security Log**

This page shows the router's current security log. It displays any illegal attempts to access your network. The security log can be saved (Save) to a local file for further processing. It can also be cleared (Clear) or refreshed (Refresh) to get the most updated information. When the system is powered down, the security log will disappear if it's not saved to a local file.

**6.5 DHCP Client Log**

View your LAN client's information that's currently linked to the Broadband Router's DHCP server. See Figure 6-5.



**Figure 6-5. DHCP Client Log screen.**

### Parameters

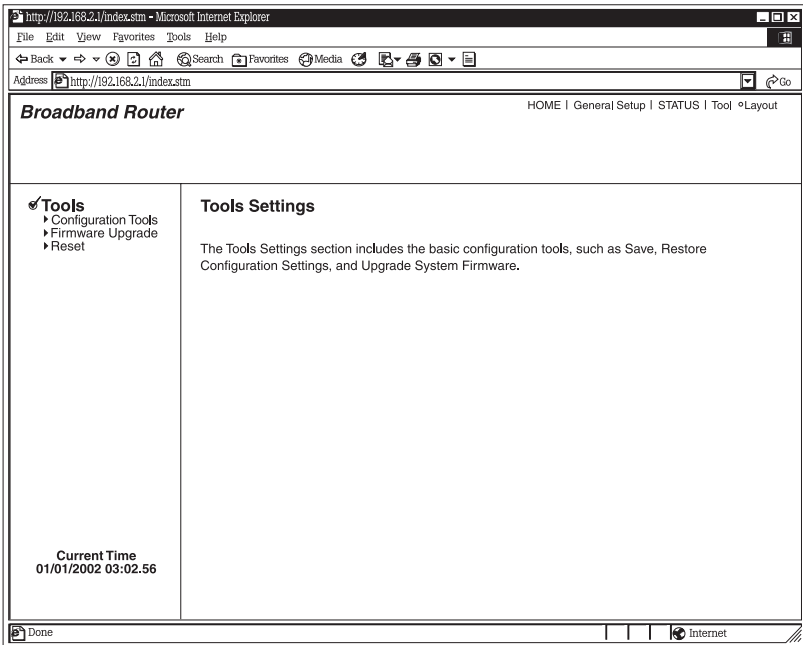
### Description

DHCP Client Log

This page shows all DHCP clients (LAN PCs) currently connected to your network. **Numbers of DHCP Clients** displays the number of LAN clients that are currently linked to the Broadband Router's DHCP server. The DHCP Client Log displays the IP address and the MAC address of each LAN client. Use the **Refresh** button to get the most updated information.

# 7. Tools

This page includes the basic configuration tools, such as Configuration Tools (save or restore configuration settings), Firmware Upgrade (upgrade system firmware), and Reset. See Figure 7-1.



**Figure 7-1. Tool Settings screen.**

## Parameters

## Description

Configuration Tools

You can save the router's current configuration, restore the router's saved configuration files, and restore the router's factory-default settings

Firmware Upgrade

This page allows you to upgrade the router's firmware.

<b>Parameters</b>	<b>Description</b>
Reset	You can reset the router's system if any problem exists.

Select one of the Tools Settings selections and proceed to **Section 7.1, 7.2, or 7.3.**

## **7.1 Configuration Tools**

The Configuration Tools screen allows you to backup the router's current configuration setting. Saving the configuration settings provides an added protection and convenience if problems occur with the router and you have to reset it to factory default. When you save the configuration setting, you can re-load the saved configuration into the router through the Restore selection. If extreme problems occur, you can use the Restore to Factory Default selection; this will set all configurations to their original default settings (for example, when you first purchased the router). See Figure 7-2.



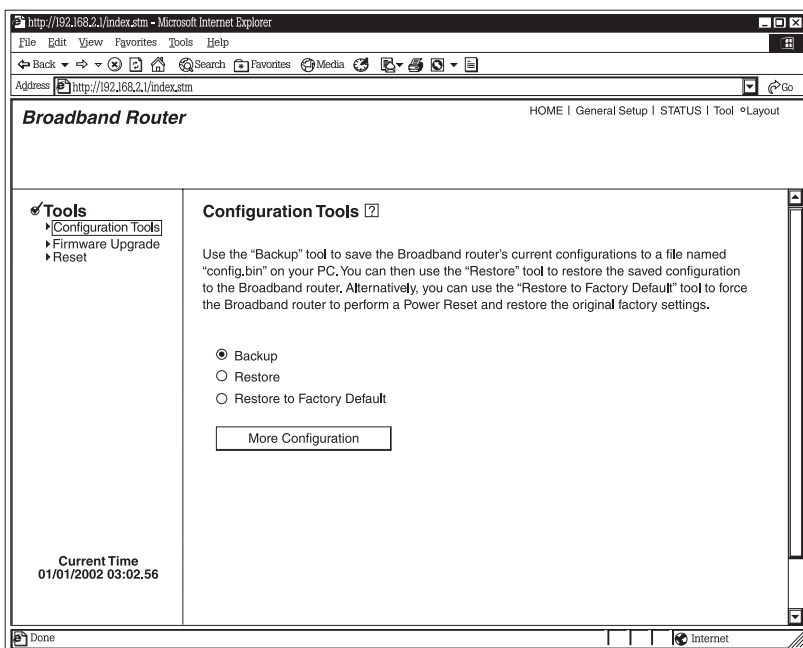


Figure 7-2. Configuration Tools screen.

## Parameters

Configuration Tools

## Description

Use the **Backup** tool to save the Broadband Router's current configuration to a file named *backup\_config.exe* on your PC. You can then use the **Restore** tool to restore the saved configuration to the Broadband Router. Alternatively, you can use the **Restore to Factory Default** tool to force the Broadband Router to perform a power reset and restore the original factory settings.

## NOTE

Click **More Configuration** after making a selection; follow the instructions.

## 7.2 Firmware Upgrade

This page allows you to upgrade the router's firmware. See Figure 7-3.

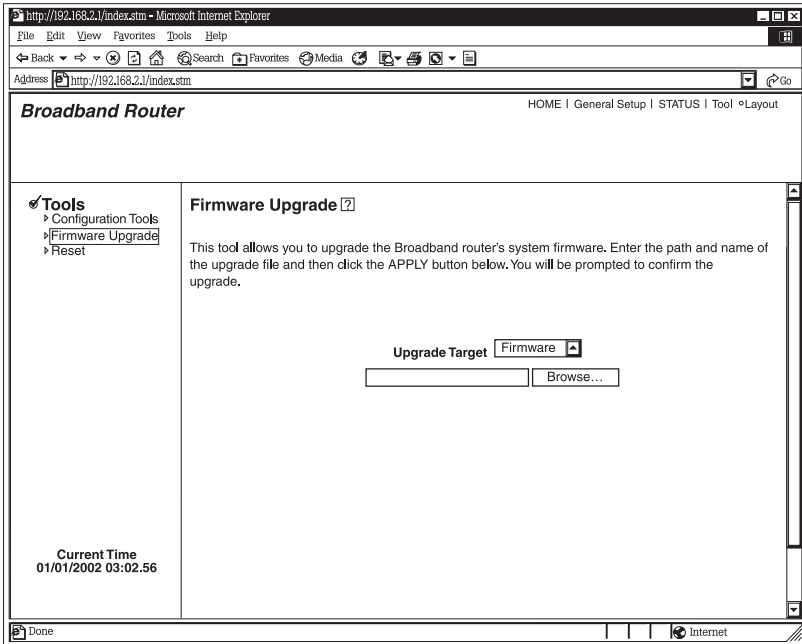


Figure 7-3. Firmware Upgrade screen.

### Parameters

Firmware Upgrade

### Description

This tool allows you to upgrade the Broadband Router's system firmware. To upgrade the firmware, you'll need to download the firmware file to your local hard disk and enter that file name and path in the appropriate field on this page. You can also use the **Browse** button to find the firmware file on your PC.

Once you've selected the new firmware file, click **Apply** to start the upgrade process. (You may have to wait a few minutes for the upgrade to complete.) Once the upgrade is complete you can start using the router.

## 7.3 Reset

You can reset the router's system if any problem exists. The reset function re-boots your router's system. See Figure 7-4.

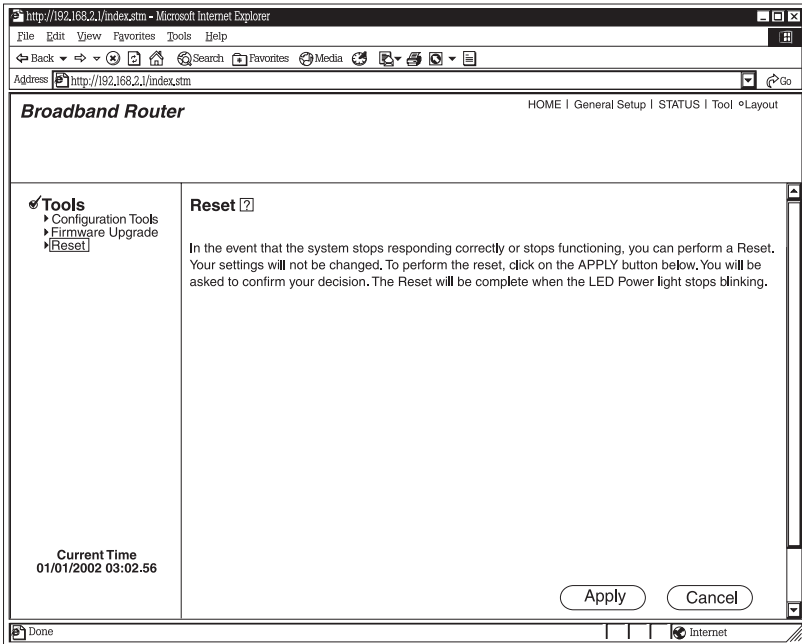


Figure 7-4. Reset screen.

### Parameters

Reset

### Description

If the system stops responding correctly, or in some way stops functioning, you can perform a reset. *Your settings will not be changed.* To perform the reset, click on the **Apply** button. You will be asked to confirm your decision. The reset will be complete when the power light stops blinking. Once the reset process is complete, you may start using the router again.

## 8. Print Server

### 8.1 Install the Print Server Network Driver

1. Execute WEClient.exe and the **PrintServer Network Driver Setup Program** window will appear. See Figure 8-1.

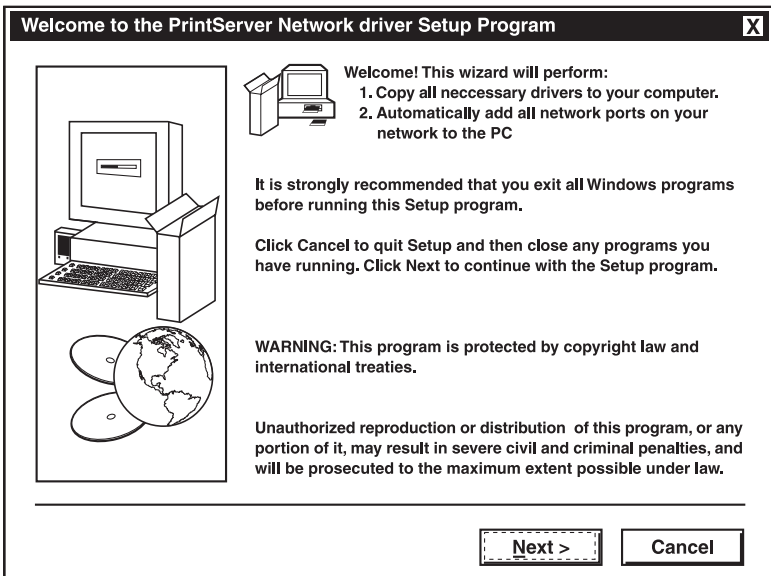
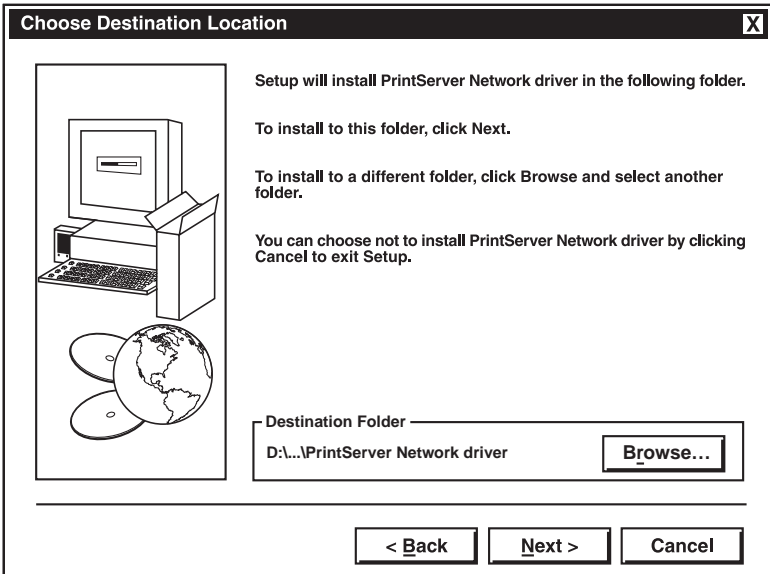


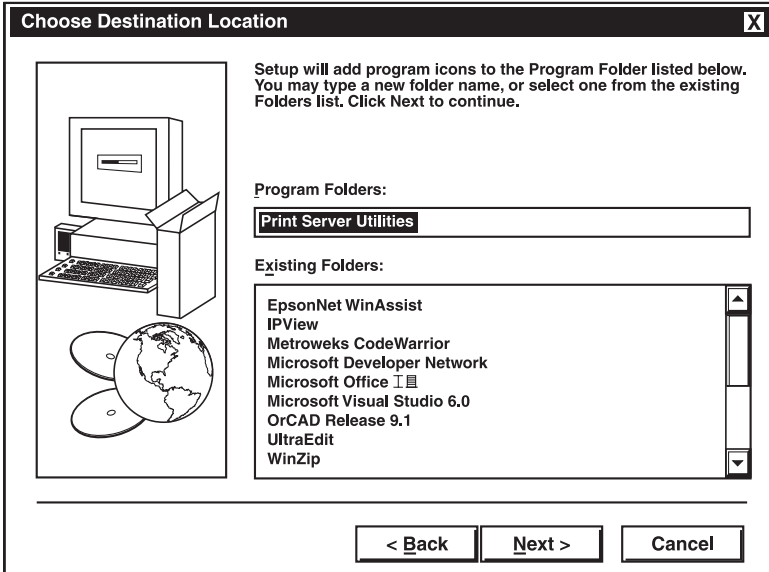
Figure 8-1. PrintServer Network Driver Setup Program window.

2. Click **Next** and specify the destination folder where the utility will be installed. See Figure 8-2.



**Figure 8-2.** Choose Destination Location window.

3. Click **Next** and specify the program folder where the program icons will be added. See Figure 8-3.



**Figure 8-3. Select Program Folder window.**

4. Click **Next** to start installation. The **PrintStir Utilities Installation** window (not shown here) appears on your screen.
5. The program will finish installing all the utilities and drivers. So far you've only completed the installation phase and prepared to use the print server. Next, you'll add a remote port for the print server. Click **Add** to add a remote port. See Figure 8-4.

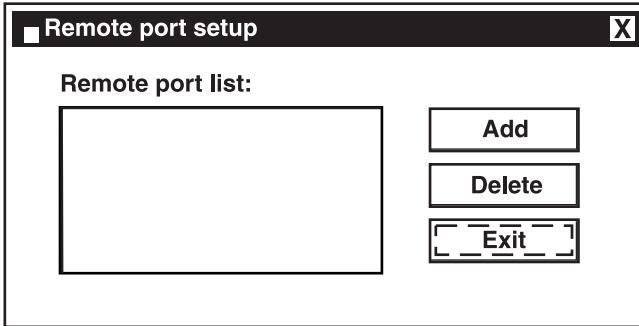


Figure 8-4. Remote Port Setup window.

6. You have to assign a print server name and enter the print server's IP address. You can only select P1, because the router only has one print port. After filling in the data, click **OK** to proceed. See Figure 8-5.

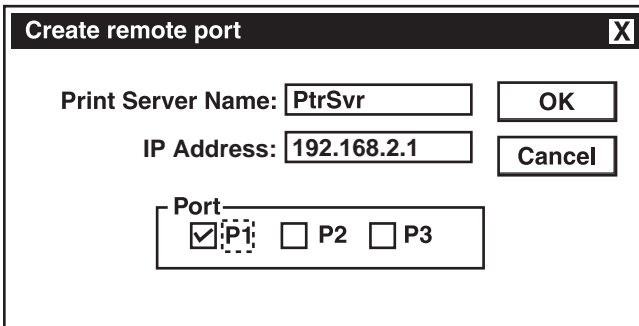
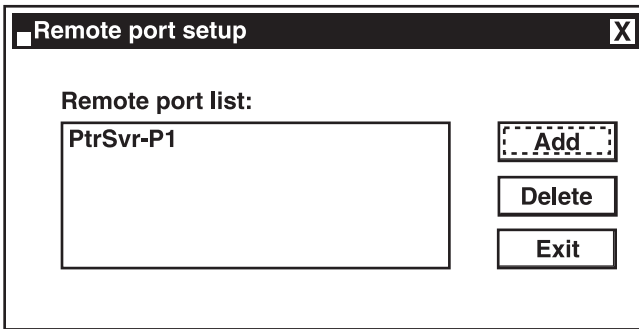


Figure 8-5. Create Remote Port window.

7. After adding a remote port for the print server, you can see the remote port's name in the remote port list. The remote port's name consists of the print server name and the port number, which are separated by a hyphen. For example, if you assign "PtrSvr" as the print server name and select port "P1", then the remote port's name will be "PtrSvr-P1." You can click **Add** to add another remote port. Click **Delete** to delete a selected remote port. When you have finished setting the remote port, click **Exit** to exit the setup tool. See Figure 8-6.



**Figure 8-6. Remote Port Setup window.**

8. Print server client tool installation is complete. You can start using the print server.



## 8.2 Add a Network Printer

After installing the print server client tool, you then need to add the network printer to your PC.

1. Click the **Start** button. Choose **Setting** and **Printers**.
2. Double click on **Add Printer**. See Figure 8-7.

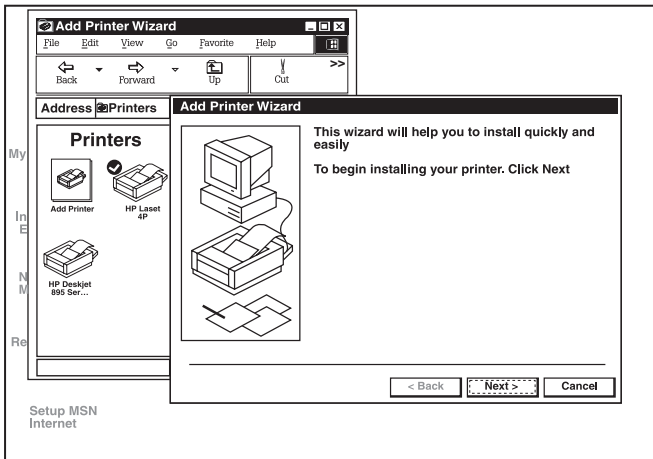
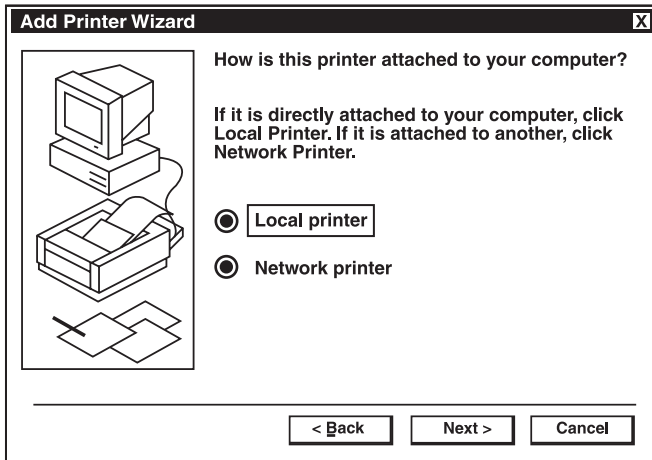


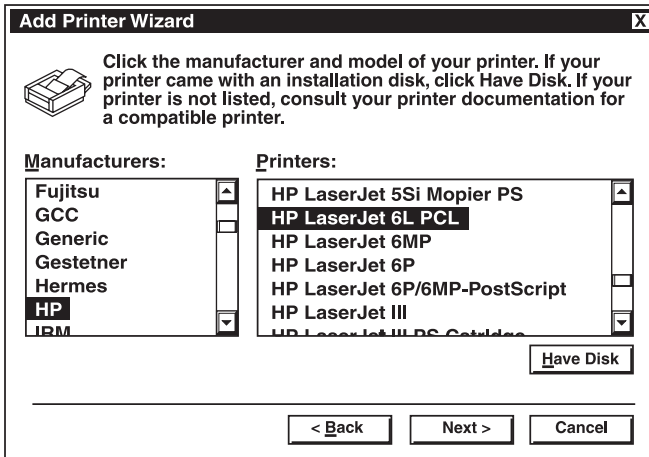
Figure 8-7. Add Printer window.

3. Select **Local Printer** and click **Next**. See Figure 8-8.



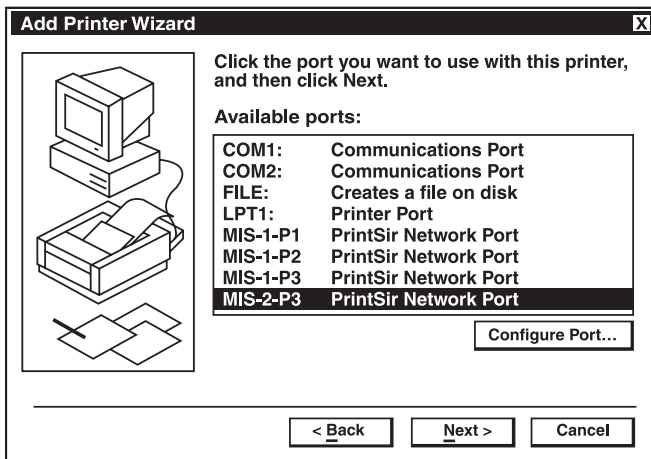
**Figure 8-8. Add Printer Wizard.**

4. Select the suitable printer manufacturer and model, then click **Next**. See Figure 8-9.



**Figure 8-9. Choosing a Printer.**

5. Choose the print server's remote port that was created in **Section 8.1** and click **Next**. See Figure 8-10.

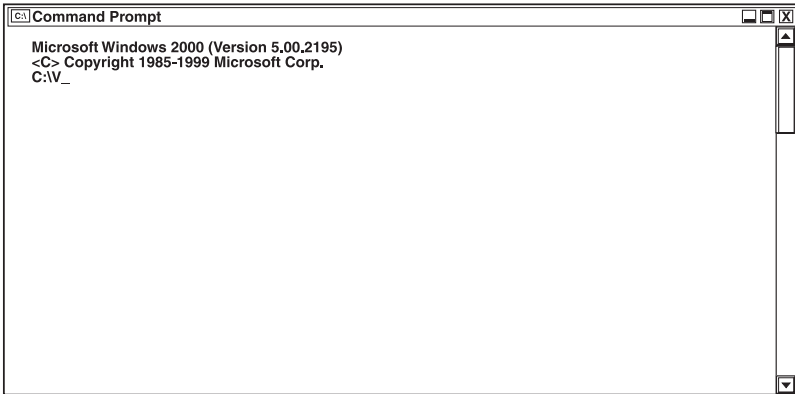


**Figure 8-10. Choosing the Print Server's remote port.**

6. Complete the rest of the questions to finish the network printer setup.

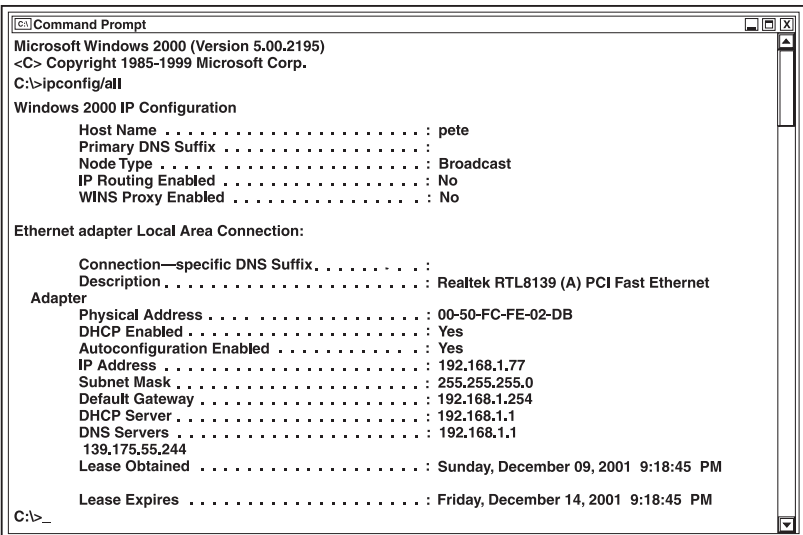
# Appendix A. How to Manually Find Your PC's IP and MAC Addresses

1. In Windows, open the Command Prompt program. See Figure A-1.



**Figure A-1. Command Prompt program window #1.**

2. Type `Ipconfig /all` and press **<Enter>**. See Figure A-2.



**Figure A-2. Command Prompt program window #2.**

## APPENDIX A: How to Manually Find Your PC's IP and MAC Addresses

- Your PC's IP address is the "IP address" (in this case, 192.168.1.77).
- The router's IP address is the "Default Gateway" (in this case, 192.168.1.254).
- Your PC's MAC Address is the "Physical Address" (in this case, 00-50-FC-FE-02-DB).

# Appendix B. Troubleshooting

## **B.1 Calling Black Box**

If you determine that your Broadband Router is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

## **B.2 Shipping and Packaging**

If you need to transport or ship your Broadband Router:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the Broadband Router for repair, make sure you include everything that came in the original package. Before you ship, contact Black Box to get a Return Authorization (RA) number.

# Appendix C. Glossary

**Bridge:** A bridge is an intelligent, internetworking device that forwards or filters packets between different networks based on data link layer (MAC) address information.

**Default Gateway (Router):** Every non-router IP device needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out toward the destination.

**DHCP:** Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

**DNS Server IP Address:** DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as *www.Broadbandrouter.com*) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses so that when a domain name is requested (as in typing "*Broadbandrouter.com*" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

**DSL Modem:** DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

**Ethernet:** A standard for computer networks. Ethernet networks are connected by special cables and hubs. They move data around at up to 10/100 Mbps.

**Idle Timeout:** After there is no traffic to the Internet for a pre-configured amount of time, the connection will automatically be disconnected.

**IP Address and Network (Subnet) Mask:** IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods that identifies a single, unique Internet computer host in an IP network. Example: 192.168.2.1. It consists of 2 portions: the IP network address and the host identifier.

The IP address is a 32-bit binary pattern that can be represented as four cascaded decimal numbers separated by "." For example, an address follows this pattern: aaa.aaa.aaa.aaa, where each "aaa" can be anything from 000 to 255, or as four cascaded binary numbers separated by ".":

bbbbbbbb.bbbbbbbb.bbbbbbbb.bbbbbbbb, where each "b" can either be 0 or 1.

A network mask is also a 32-bit binary pattern. It consists of consecutive leading 1's followed by consecutive trailing 0's, like this:

11111111.11111111.11111111.00000000. Therefore, sometimes a network mask can also be described simply as  $x$  number of leading 1's.

When both are represented side by side in their binary forms, all bits in the IP address that correspond to 1's in the network mask become part of the IP network address, and the remaining bits correspond to the host ID.

For example, if the IP address for a device is, in its binary form, 11011001.10110000.10010000.00000111, and if its network mask is, 11111111.11111111.11110000.00000000, it means the device's network address is 11011001.10110000.10010000.00000000, and its host ID is 00000000.00000000.00000000.00000111. This is a convenient and efficient method for routers to route IP packets to their destination.

**ISP:** Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

**ISP Gateway Address:** The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

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

**MAC (Media Access Control) Address:** A MAC address is the hardware address of a device connected to a network. The MAC address is a unique identifier for a device with an Ethernet interface. It consists of two parts: 3 bytes of data that corresponds to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product's serial number.

**NAT:** Network Address Translation. This process allows all of the computers on your home network to use one IP address. Using the Broadband Router's NAT capability, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.



**Port:** Network clients (LAN PC) use port numbers to distinguish one network application/protocol from another. Below is a list of common applications and protocol/port numbers:

<b>Application</b>	<b>Protocol</b>	<b>Port Number</b>
Telnet	TCP	23
FTP	TCP	21
SMTP	TCP	25
POP3	TCP	110
H.323	TCP	1720
SNMP	UDP	161
SNMP Trap	UDP	162
HTTP	TCP	80
PPTP	TCP	1723
pcANYWHERE®	TCP	5631
pcANYWHERE	UDP	5632

**PPPoE:** Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers.

**Protocol:** A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

**Router:** A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses.

**Subnet Mask:** A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of ten numbers (for example, 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

**TCP/IP, UDP:** Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocol. TCP performs proper error detection and error recovery, and thus is reliable. UDP, on the other hand, is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

**WAN:** Wide Area Network. A network that connects computers located in geographically separate areas (for example, in different buildings, cities, or countries). The Internet is a wide area network.

**Web-based management Graphical User Interface (GUI):** Many devices support a graphical user interface that is based on the Web browser. This means the user can use the familiar Netscape Navigator or Microsoft Internet Explorer to control/configure or monitor the device being managed.



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