



Wireless Mobile Router User's Manual



Model WMR1000B

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Federal Communication Commission Interference Statement

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 one of the following measures:

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

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. 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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters (8 inches) between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada - Class B

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le ministère des Communications.

EC Conformance Declaration - Class B

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

- RFI *Limit class B according to EN 55022:1998
- Emission*Limit class B for harmonic current emission according to EN 61000-3-2/1995
:
*Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995
- Immunity*Product family standard according to EN 55024:1998
:
*Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ± 4 kV, Air Discharge: ± 8 kV)
*Radio-frequency electromagnetic field according to EN 61000-4-3: 1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
*Electrical fast transient/burst according to EN 61000-4-4:1995 (AC/DC power supply: ± 1 kV, Data/Signal lines: ± 0.5 kV)
*Surge immunity test according to EN 61000-4-5:1995 (AC/DC Line to Line: ± 1 kV, AC/DC Line to Earth: ± 2 kV)
*Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996(0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
*Power frequency magnetic field immunity test according to EN 61000-4-8:1993 (1 A/m at frequency 50 Hz)
*Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994(>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)
- LVD: *EN60950 (A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

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ABOUT THE WIRELESS MOBILE ROUTER

Thank you for purchasing APC's Wireless Mobile Router. This device is a powerful yet simple communication device for connecting a local area network (LAN) to the internet.

Package Contents

After unpacking the Wireless Mobile Router, check the contents of the box to ensure that it contains the following:

- Wireless Mobile Router (model number: WMR1000B)
- One AC Power adapter
- One USB power cord for connecting to APC's Travel Power Adapter
- One CAT-6 Ethernet cable
- One driver and utility installation and documentation compact disk (CD)
- Quick Installation Guide

Please contact the reseller if any item is missing or damaged.

Note: The purchaser must use APC's Wireless Mobile Router in full compliance with Federal Law and guidelines established by the local service provider.

About the Wireless Mobile Router

Features and Benefits

- Internet connection to DSL or cable modem via a 10/100 Mbps ethernet port
- IEEE 802.11b compliant – interoperable with multiple vendor's equipment
- Provides roaming within 802.11b WLAN environment
- Dynamic Host Configuration Protocol (DHCP) for dynamic Internet Protocol (IP) configuration, and Domain Naming Service/Service (DNS) for domain name mapping
- Stateful Packet Inspection (SPI) firewall with client privileges, hacker prevention, and NAT
- Network Address Translation (NAT) also enables multi-user access with a single-user account, and virtual server functionality (providing protected access to Internet services such as web, File Transfer Protocol (FTP), mail and Telnet)
- Virtual Private Network (VPN) support using PPTP, L2TP or IPsec pass-through
- Easy setup through a web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications
- Integrates with APC's TravelPower Case
- USB or AC powered.

LED Indicators

APC's Wireless Mobile Router includes status Light Emitting Diode (LED) indicators, as defined in Figure 1 and Table 1.

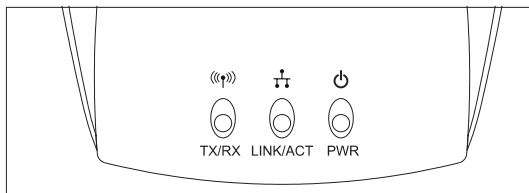


Figure 1. Wireless Mobile Router LEDs

Table 1. LED Indicators

LED		Status	Description
Wireless Link	TX/RX	Flashing (Green)	The device is transmitting or receiving data through wireless links.
Ethernet Status	LNK/ACT	On (Orange)	The device has established a valid 100 Mbps ethernet link.
		On (Green)	The device has established a valid 10 Mbps ethernet link.
		Flashing	The device is transmitting or receiving data on the ethernet LAN
Power (PWR)		On (Green)	Power is being supplied.

Installing the Wireless Router

INSTALLING THE WIRELESS ROUTER

Before installing the APC's Wireless Mobile Router, ensure the items listed under "*Package Contents*" are available. If any item is missing or damaged, contact the place of purchase or a local APC distributor. Also ensure that all the necessary cabling is in place before installing the Wireless Mobile Router.

Hardware Description

APC's Wireless Mobile Router can be connected to the internet using a Wide Area Network (WAN) port. Use the WAN port for connection to a 10BASE-T/100BASE-TX ethernet LAN. It can auto-negotiate the operating speed to 10/100 Mbps, and the mode to half/full duplex. This port can be connected directly to a PC or to a server equipped with an ethernet network interface card via a crossover cable, or to a networking device such as an ethernet hub or switch. This WAN port can also be used for a connection to a Digital Subscriber Line (DSL) or cable modem (WAN). Refer to Figure 2 and Table 2 for a description of the two connectors on the Wireless Mobile Router.

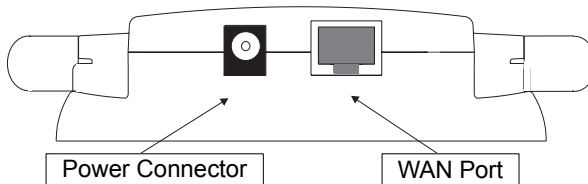


Figure 2. Wireless Mobile Router Rear Panel Connectors

Table 2. Wireless Mobile Router Rear Panel Connectors

Item	Description
Power Connector	Connect the power adapter (included) to this connector. Warning: Using the wrong type of power adapter or power adapter plug may damage the adapter.
WAN Connector	Fast Ethernet (WAN) port (RJ-45). Connect a device (such as a PC, hub or switch) from the local area network to this port.

Note: If using the **RELOAD** button located at the bottom, the Wireless Mobile Adapter performs a power reset. If the button is held depressed for over 5 seconds, all LEDs will illuminate and the factory settings will be restored.

Installing the Wireless Router

System Requirements

- TCP/IP network protocol installed on each PC that needs to access the internet.
- JAVA enabled web browser such as Microsoft Internet Explorer 5.0 or Netscape.
- Input Power Requirements
 - Mobile:** USB power cord (provided).
 - Note:** Ideally to be used with APC's TravelPower Case. For more information, go to www.apc.com and select Mobile Accessories.
 - Home/Small Business:** Power adapter, 120 volts, North America only.
- Computer (Wireless Enabled)
 - Mobile:**
 - Laptops - Centrino enabled or 802.11b compliant card bus
 - Handheld - Wi-Fi enabled
 - Home/Small Business:**
 - Desktop computers - 802.11b wireless enabled network interface card or USB wireless card.
- Existing LAN/Internet Access
 - Mobile:**
 - Using existing DHCP enabled LAN port. Example: Hotel rooms with high-speed internet access or LAN port in a conference room.
 - Home/Small Business:**
 - Internet access and settings provided by an Internet Service Provider (ISP). Example: Digital Subscriber Line (DSL), cable modem, etc.
 - Note:** In case of existing network, use the *Mobile Settings* previously defined.

Installation Procedure

The Wireless Mobile Router can be positioned at any convenient location in the home or office. No special wiring or cooling requirements are needed. However, APC recommends the following guidelines:

- Keep the Wireless Mobile Router away from heat.
- Do not place the Wireless Mobile Router in a dusty or wet environment.

To install the Wireless Mobile Router (Figure 3), proceed as follows:

1. Connect the Category 6 (CAT6) ethernet cable provided with the Wireless Mobile Router to the LAN/WAN port on the network (providing internet access, e.g., xDSL modem or cable modem) to the WAN connector at the rear of the Router.

Caution: Do not plug a phone jack connector into any RJ-45 port, as this may damage the Router. Instead, use twisted-pair cables having RJ-45 connectors that conform to Federal Communications Commission (FCC) standards.

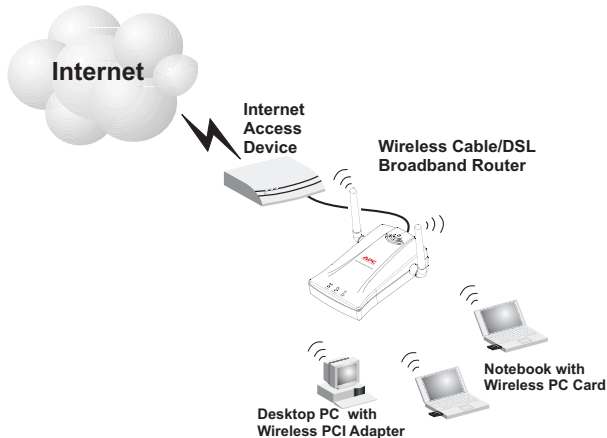


Figure 3. Connecting the Wireless Mobile Router

Installing the Wireless Router

2. Connect power to the Wireless Mobile Router as follows:

Mobile - connect one end of the USB power cable (provided) to the Router power connector. Connect the other end of the USB cable to the USB connector on the notebook computer being used, or to the TravelPower[®] Adapter (if using APC's TravelPower Case).

Home Office/Small Business - connect the AC power adapter (provided) to the Wireless Mobile Router. Connect the AC power adapter to an AC power source (wall outlet, APC surge protector, DC/AC inverter, etc).

Rotate both antennas on the side of the Wireless Mobile Router to the desired position. For more effective coverage, position antennas along different axes; for example around 45 to 90 degrees apart. Try to place the Wireless Mobile Router in a position that is located in the center of the wireless network. Normally, the higher the antenna is placed, the better the performance. Ensure the Wireless Mobile Router location provides optimal reception throughout the home or office.

Computers equipped with a wireless adapter can communicate with each other as an independent wireless LAN by configuring each computer to the same radio channel. However, the Wireless Mobile Router can provide access to the wired/wireless LAN or to the Internet for all wireless workstations. Each wireless PC in this network infrastructure can talk to any computer in the wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure or over the Internet via the Wireless Mobile Router.

The wireless infrastructure configuration not only extends the accessibility of wireless PCs to the wired LAN, but also increases the effective wireless transmission range for wireless PCs by retransmitting incoming radio signals through the Wireless Mobile Router.

Ensure that the clients are configured to the same SSID (default: APC), and that encryption and wireless communication are configured.

For additional information about SSID and encryption, refer to the "*Advanced Setup*" section in this manual.

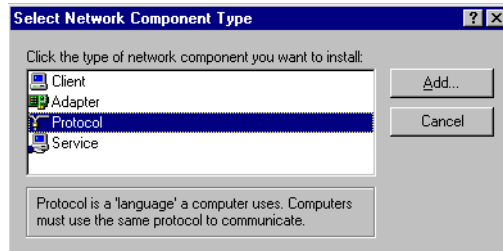
CONFIGURING CLIENT TCP/IP

If TCP/IP protocols have not previously been installed on the client PCs, refer to the following section. For information on how to configure a TCP/IP address on a PC, refer to “*Setting Up TCP/IP*”.

Installing TCP/IP

Windows 95/98/Me/NT

1. Click **Start/Settings/Control Panel**.
2. Double-click the **Network** icon and select the **Configuration** tab in the **Network** screen (Figure 4).
3. Click the **Add** button.
4. Double-click the **Protocol** icon.



**Figure 4. Windows 95/98/Me/NT
Select Network Component Type
Screen**

Configuring Client TCP/IP

5. In the **Select Network Protocol** screen (Figure 5) select **Microsoft** in the **Manufacturers** list. Select **TCP/IP** in the **Network Protocols** list. Click the **OK** button to return to the **Network** screen.

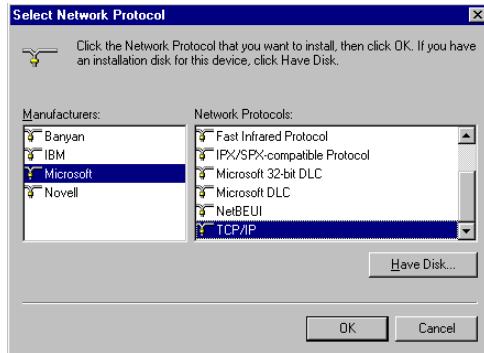


Figure 5. Windows 95/98/Me/NT Select Network Protocol Screen

6. The TCP/IP protocol will be listed in the **Network** window. Click **OK**. The operating system may prompt for a restart of the system. Click **Yes** at this prompt - the computer will **shut down** and **restart**.

Windows 2000

1. Click the **Start** button and choose **Settings**: click the **Network and Dial-up Connections** icon.
2. Double-click the **Local Area Connection** icon; click the **Properties** button on the **General** tab.
3. Click the **Install** button.

4. Double-click **Protocol** (refer to Figure 6).

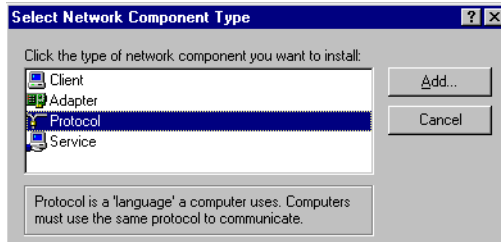


Figure 6. Windows 2000 Select Network Component Type Screen

5. In the Select Network Protocol screen (Figure 7), choose **Internet Protocol (TCP/IP)**. Click the **OK** button to return to the **Network** screen.

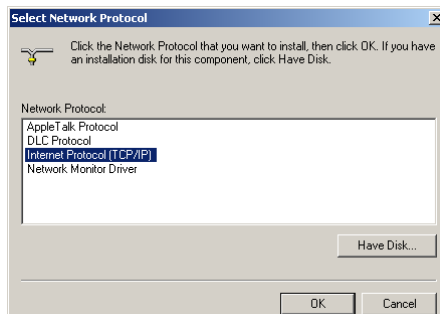


Figure 7. Windows 2000 Select Network Protocol Screen

6. The **TCP/IP protocol** will be listed in the **Network** screen. Click **OK** to complete the installation procedure.

Setting Up TCP/IP

To access the Internet through the Wireless Mobile Router, first configure the network settings of the computers on the LAN to use the same IP subnet as the Wireless Mobile Router. The default network settings for the Wireless Mobile Router are:

Gateway IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0

Note: These settings may be changed to suit individual network requirements, but at least one computer must be configured as described in this section to access the Wireless Mobile Router's web configuration interface. See "*Configuring the Wireless Mobile Router*" for information on configuring the Wireless Mobile Router.

If TCP/IP has not previously been configured on the computer, refer to "*Configuring Client TCP/IP*".

The IP address of the connected client PC should be 192.168.2.x (where x means 2–254). Set the IP address for client PCs either by automatically obtaining an IP address from the Wireless Mobile Router's DHCP service, or by manual configuration.

Configuring Your Computer in Windows 95/98/Me

The instructions here may not exactly match your version of Windows, as these steps and screenshots were created using Windows 98. Windows 95 and Windows Millennium Edition are very similar, but not identical, to Windows 98.

DHCP IP Configuration

1. From the **Windows** desktop, click **Start/Settings/Control Panel**.
2. In the **Control Panel**, locate and double click the **Network** icon.
3. On the **Network** window **Configuration** tab (Figure 8), double-click the **TCP/IP** entry for your network card.

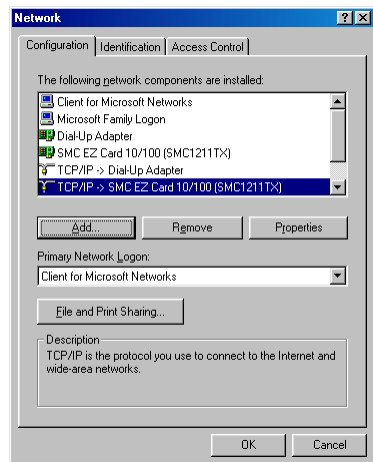


Figure 8. Windows 95/98/Me Network Screen

Configuring Client TCP/IP

4. Click the **IP Address tab** (Figure 9).
5. Click “**Obtain an IP address**”.
6. Click on the **Gateway tab** and verify the Gateway field is blank. If there are **IP addresses** listed in the **Gateway section**, highlight each one and click **Remove** until the section is empty.

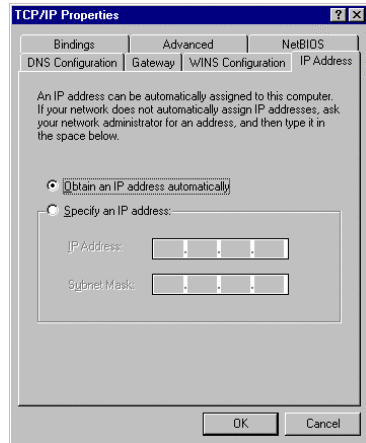


Figure 9. Windows 95/98/Me TCP/IP Properties Screen

7. Click the **OK** button to close the TCP/IP Properties window.
8. On the **Network Properties Window**, click the **OK** button to save these new settings.
9. Windows may prompt for the original **Windows installation disk** or additional files. Check for the files at **c:\windows\options\cabs**, or insert the **Windows CD-ROM** into the CDROM drive and check for the correct file location, e.g., **D:\win98**, **D:\win9x**. (if D is the letter of your CD-ROM drive).
10. Windows may prompt to restart the PC. If so, click the **Yes** button. If Windows does not prompt to restart the computer, do so to insure the settings.

Setting Up TCP/IP

Obtain IP Settings from Your Wireless Mobile Router

Now that the computer has been configured to connect to the Router, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the Wireless Mobile Router, this will also verify that the computer has been configured correctly.

1. Click **Start/Run**.
2. Type **WINIPCFG** and click **OK** (Figure 10).

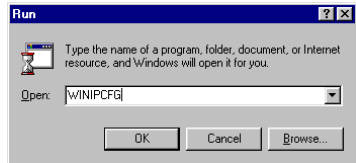


Figure 10. Windows 95/98/Me Run Screen

3. From the **drop-down menu** (Figure 11), select your **network card**. Click **Release** and then **Renew**. Verify your **IP address** is now **192.168.2.xxx**, your **Subnet Mask** is **255.255.255.0** and your Default Gateway is 192.168.2.1. These values confirm that the Router is functioning. Click **OK** to close the IP Configuration window.

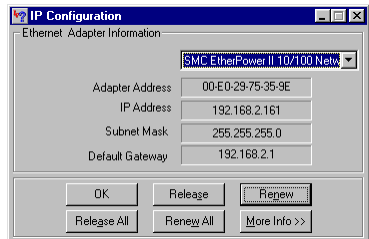


Figure 11. Windows 95/98/Me IP Configuration Screen

Configuring Your Computer in Windows NT 4.0

DHCP IP Configuration

1. From the Windows desktop click **Start/Settings/Control Panel** (Figure 12).
2. Double-click the **Network icon**.

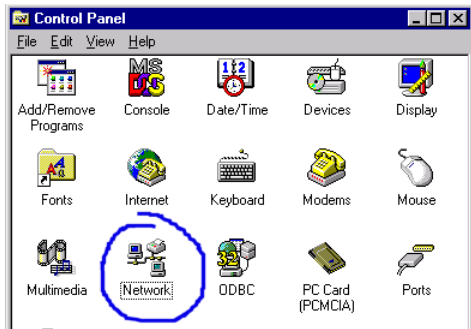


Figure 12. Windows NT 4.0 Control Panel Screen

Setting Up TCP/IP

3. Click on the **Protocols tab** (Figure 13).
4. Double-click **TCP/IP Protocol** icon.
5. Click on the IP Address tab.
6. In the **Adapter drop-down list**, be sure your Ethernet adapter is selected.
7. Click on “**Obtain an IP address from a DHCP server**”.

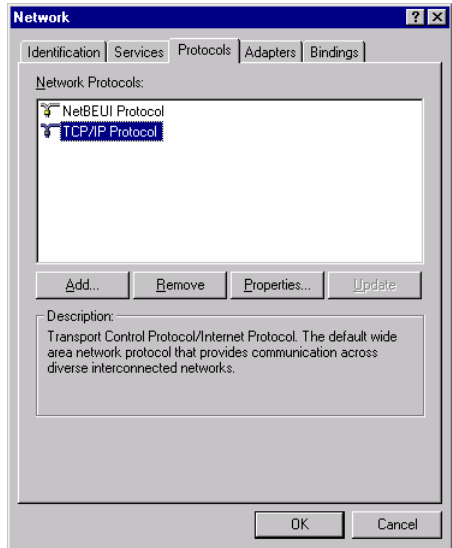


Figure 13.

Windows NT 4.0 Network Screen

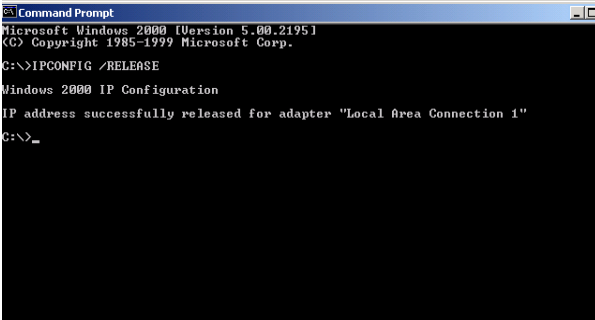
8. Click **OK** to close the window.
9. Windows may copy files and will then prompt to restart your system. Click **Yes**; your computer will shut down and restart.

Configuring Client TCP/IP

Obtain IP Settings From Your Wireless Mobile Router

Now that you have configured your computer to connect to the Wireless Mobile Router, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the Wireless Mobile Router, this will also verify that you have configured your computer correctly.

1. On the Windows desktop, click **Start/Programs/Command Prompt**, the **Command Prompt** screen (Figure 14) will be displayed.
2. In the Command Prompt screen, type **IPCONFIG /RELEASE** and press the <ENTER> key.



```
Microsoft Windows [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>IPCONFIG /RELEASE

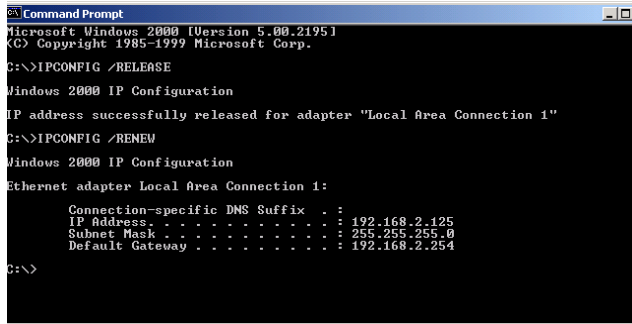
Windows 2000 IP Configuration

IP address successfully released for adapter "Local Area Connection 1"

C:\>_
```

Figure 14. Command Prompt Screen

3. Type **IPCONFIG /RENEW** and press the <ENTER> key. The updated **Command Prompt** screen (Figure 15) will be displayed. Verify that your IP Address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that the Wireless Mobile Router is functioning.



```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>IPCONFIG /RELEASE

Windows 2000 IP Configuration

IP address successfully released for adapter "Local Area Connection 1"

C:\>IPCONFIG /RENEW

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 1:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.2.125
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.254

C:\>
```

Figure 15. Updated Command Prompt Screen

4. Type **EXIT** and press <ENTER> to close the **Command Prompt** screen.

Configuring Your Computer in Windows 2000

DHCP IP Configuration

1. Access **Network settings** by clicking **Start/Settings/Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. Double-click the **Local Area Connection** icon for the ethernet adapter connected to the Wireless Mobile Router. When the **Status** dialog box screen (Figure 16), click the **Properties** button.
4. In the **Local Area Connection Properties** box, verify the box next to **Internet Protocol (TCP/IP)** is checked. Highlight **Internet Protocol (TCP/IP)**, and click the **Properties** button.

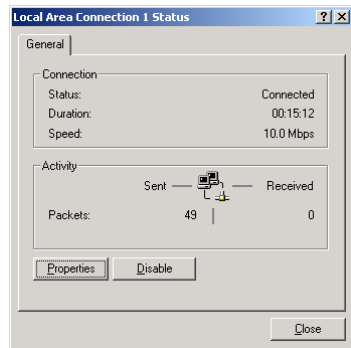


Figure 16. Local Area Connection 1 Status Screen

5. Select **Obtain an IP address automatically** to configure your computer for DHCP. Click the **OK** button to save this change and close the **Properties** screen.
6. Click the **OK** button again to save these new changes.
7. **Reboot** the PC.
8. To obtain new network settings see "*Obtain IP Settings from Your Wireless Mobile Router*".

Configuring Your Computer in Windows XP

DHCP IP Configuration

The following instructions assume you are running Windows XP with the default interface. If using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000.

1. Access **Network** settings by clicking Start/Control Panel, select **Network and Internet Connections**. Click on the **Network Connections** icon.
2. Double-click the **Local Area Connection icon** for the Ethernet adapter connected to the Wireless Mobile Router. Click the **Properties** button.

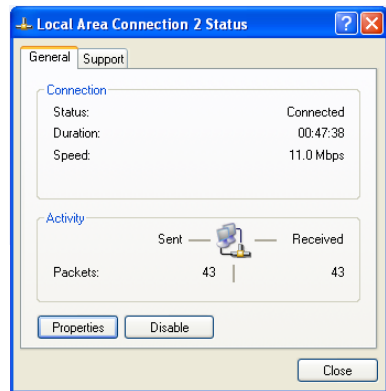


Figure 17. Local Area Connection 2 Status Screen


3. In the **Local Area Connection Properties** box, verify the box next to **Internet Protocol (TCP/IP)** is checked. Highlight **Internet Protocol (TCP/IP)**; click the **Properties** button.
4. Select **Obtain an IP address automatically** to configure your computer for DHCP. Click the **OK** button to save this change and close the **Properties** window.
5. Click the **OK** button again to save these new changes.
6. Reboot the PC.

Configuring a Macintosh Computer

DHCP IP Configuration

The instructions here may not exactly match the operating system being used as these steps and screenshots were created using Mac OS 10.2. Mac OS 7.x and above are similar, but may not be identical to Mac OS 10.2.

Follow these instructions:

1. Pull down the Apple Menu  . Click System Preferences (Figure 18).
2. Double-click the **Network icon** in the **Systems Preferences** screen (Figure 19) and the **Network screen** (Figure 20) will be displayed.

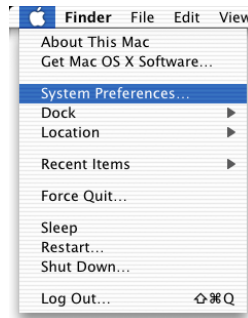


Figure 18. Apple Menu (System Preferences Selected)



Figure 19. Apple System Preferences Screen

Setting Up TCP/IP

3. If **Using DHCP Server** is already selected in the **Configure** field, the computer is already configured for DHCP. If not, select this option.

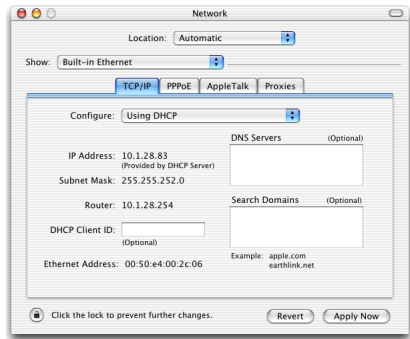


Figure 20. Apple Network Screen

4. The new settings are shown on the **TCP/IP tab**. Verify the **IP Address** is **192.168.2.xxx**, the **Subnet Mask** is **255.255.255.0** and the **Default Gateway** is **192.168.2.1**. These values confirm that the computer is set up for DHCP use.
5. Close the **Network** screen.

The computer is configured to connect to the Wireless Mobile Router.

Manual IP Configuration (for all Windows OS)

The instructions here may not exactly match your version of Windows as these steps and screenshots were created in Windows 98. The setup steps of Manual IP Configuration in Windows 95, Windows Me, Windows NT, and Windows 2000, are similar, but not identical, to Windows 98.

1. Check **Specify an IP address** on the **IP Address tab**. Enter an **IP address** based on the default network **192.168.2.x** (where x is between 2 and 254), and use **255.255.255.0** for the Subnet mask (Figure 21).

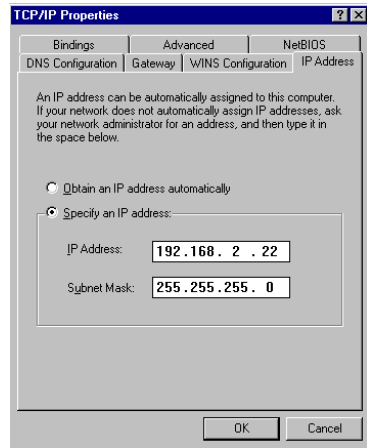


Figure 21. TCP/IP Properties Screen

2. Select the **Gateway tab** (Figure 22), add the **IP address** of the Wireless Mobile Router (default: **192.168.2.1**) in the **New Gateway** field; click **Add**.

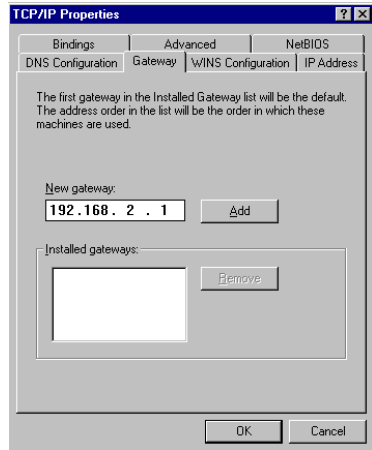


Figure 22. TCP/IP Properties Gateway Screen

3. Select the **DNS Configuration tab** (Figure 23), enter the **IP address** for the Wireless Mobile Router; click **Add**. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the **DNS Server Search Order** field; click **Add**.
4. After finishing **TCP/IP setup**, click **OK**. **Reboot** the computer. Set up other PCs on the LAN according to the procedures defined above.

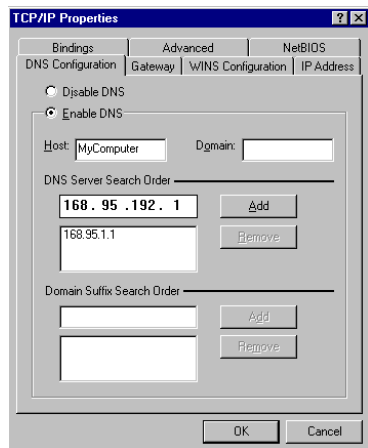


Figure 23. TCP/IP Properties DNS Configuration Screen

Verifying Your TCP/IP Connection

After installing the TCP/IP communication protocols and configuring an IP address in the same network as the Wireless Mobile Router, use the **Ping** command to ensure the computer has successfully connected to the Wireless Mobile Router, as follows:

1. In an MS-DOS window, enter the Ping command:

ping 192.168.2.1

If a message similar to the following appears, a communication link between your computer and the Wireless Mobile Router has been successfully established.

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=2ms TTL=64

2. If you get the following message, there may be something wrong in your installation procedure. Check the following items in sequence:

Pinging 192.168.2.1 with 32 bytes of data:

Request timed out.

- a. Is the **ethernet cable** correctly connected between the Wireless Mobile Router and the wireless computer?

The RJ-45 port LED on the Wireless Mobile Router and the Link LED of the network card on the computer must be on.

- b. Is TCP/IP properly configured on your computer?

If the **IP address** of the Wireless Mobile Router is 192.168.2.1, the IP address of the computer must be from 192.168.2.2 to 192.168.2.254 and the default gateway must be 192.168.2.1. Also ensure that all clients are configured same SSID, and encryption for wireless communications is set up.

If you can successfully Ping the Wireless Mobile Router you are now ready to connect to the internet.

CONFIGURING THE WIRELESS MOBILE ROUTER

The Wireless Mobile Router can be configured by any Java-supported browser, including Internet Explorer 5.0 or above. Using the web management interface, you can configure the Wireless Mobile Router and view statistics to monitor network activity.

Note: Before attempting to configure the Wireless Mobile Router, and if you have access to the internet, please go to www.apc.com, and download the latest firmware version.

Before attempting to log into the Wireless Mobile Router's web-based Administration, please verify the following.

1. The browser is configured properly (see below).
2. Any firewall or security software that may be running is disabled.
3. Confirm that the **Link LED** where the computer is plugged into the Wireless Mobile Router is active. If the **Link LED** is not lit – try another cable until a good link is established.

Browser Configuration

Confirm the browser is configured for a direct connection to the internet. This is configured through the **options/preference** section of the browser.

Configuring the Wireless Mobile Router

Disable Proxy Connection

Verify that the HTTP Proxy feature of the web browser is disabled. This is so that the browser will be able to view the Wireless Mobile Router configuration pages. The following steps are for Internet Explorer:

Internet Explorer (5 or above)

1. Open Internet Explorer. Click **Tools**, and select **Internet Options**.
2. In the Internet Options screen, click the **Connections** tab.
3. Click the **LAN Settings** button.
4. Clear all the check boxes; click **OK** to save these **LAN settings**.
5. Click **OK** to close the Internet Options window.

Internet Explorer (for Macintosh)

1. Open Internet Explorer and click the **Stop** button. Click **Explorer/Preferences**.
2. In the **Internet Explorer Preferences** screen, under **Network**, select **Proxies**.
3. Uncheck all check boxes and click **OK**.

Navigating the Web Browser Interface

The Wireless Mobile Router's management interface features a **Setup Wizard** and an **Advanced Setup** section. Use the Setup Wizard to quickly set up the Wireless Mobile Router for use with a cable modem or DSL modem.

Advanced setup supports more advanced functions such as: hacker attack detection, IP and MAC address filtering, intrusion detection, virtual server setup, virtual DMZ hosts, and other advanced functions.

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the **Apply** or **Next** button at the bottom of the page to enable the new setting.

Note: To ensure proper screen refresh after a command entry, ensure that Internet Explorer 5.0 is configured as follows: Under the menu **Tools/Internet Options/General/Temporary Internet Files/Settings**, the setting for **Check for newer versions of stored pages**, should be set to **"Every visit to the page."**

Configuring the Wireless Mobile Router

To access the Wireless Mobile Router's management interface, enter the Wireless Mobile Router IP address in your web browser (**http://192.168.2.1**), click **LOGIN** and the **Login screen** (Figure 24) will be displayed.



Figure 24. Login Screen

By default, there is no password. APC highly recommends the user setup a **password** for increased security (see *Password Setting* in the *Advanced Setup* section).

The **home page** (Figure 25) displays the **Setup Wizard** and **Advanced Setup** options.



Figure 25. Overview Screen with Setup Wizard and Advanced Setup Options

Setup Wizard

Time Zone

Click on the **Setup Wizard button** (Figure 25). The screen prompts you to choose your Time Zone (Figure 26).

For accurate timing of client filtering and log events, you need to set the time zone. Select your **time zone** from the drop-down list, and click **Next**.

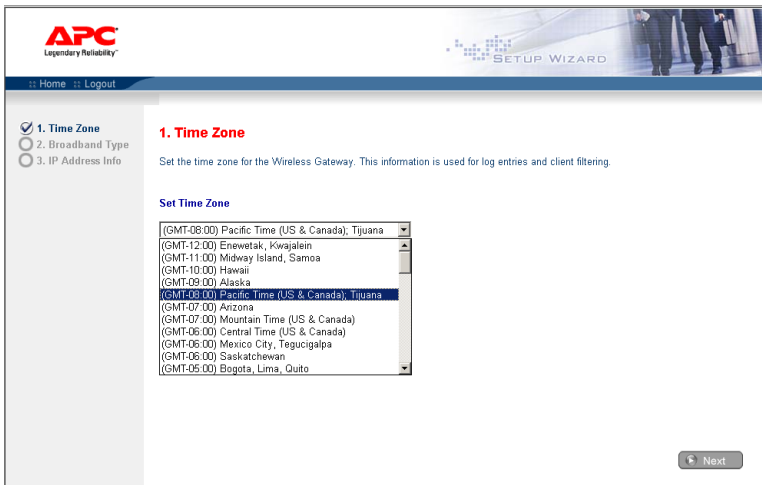


Figure 26. Select Time Zone Screen

Configuring the Wireless Mobile Router

Broadband Type

Select the type of **broadband connection** that you have from your service provider (Figure 27).

For a cable modem connection see the following page. For a **Fixed-IP xDSL connection** see “*Fixed-IP xDSL*”, for a **PPPoE xDSL connection**, see “*PPPoE xDSL*”, for a **PPTP connection**, see “*PPTP (Point-to-Point Tunneling Protocol)*”, and for **BigPond connection**, see “*BigPond*”.



Figure 27. Broadband Type Selection Screen

Cable Modem

Your ISP may have given you a **host name**. If so, enter it into the field shown in Figure 28.

Click **Finish** to complete the setup. The **Status page** will open to allow you to view the connection status, as well as other information. See “*Status*” for details.

The screenshot shows a window titled "Cable Modem". It has a dark blue header bar. Below the header, there is a "Host Name" label followed by a text input field. Underneath that is a "MAC Address" label followed by a grid of six small input boxes, each containing a letter: 'aa', 'bb', 'cc', 'dd', 'ee', and 'ff'. Below the grid is a button labeled "Clone MAC Address".

A cable modem requires minimal configuration. If the ISP requires you to input a Host Name, type it in the "Host Name" field above.

Figure 28. Cable Modem Setup Screen

Fixed-IP xDSL

Some xDSL Internet Service Providers may assign a fixed (static) IP address (see Figure 29). If you have been provided with this information, choose this option and enter the **assigned IP address, gateway IP address, DNS IP addresses, and subnet mask**. Click **Finish** to complete the setup.

The screenshot shows a window titled "Fixed-IP xDSL". It has a dark blue header bar. Below the header, there are four rows of input fields. Each row has a label on the left and a grid of four small input boxes on the right. The labels are "IP Address", "Subnet Mask", "Gateway IP Address", and "DNS IP Address".

Enter the IP address, Subnet Mask, Gateway IP address, and DNS IP address provided to you by your ISP in the appropriate fields above.

Figure 29. Fixed-IP xDSL Setup Screen

Configuring the Wireless Mobile Router

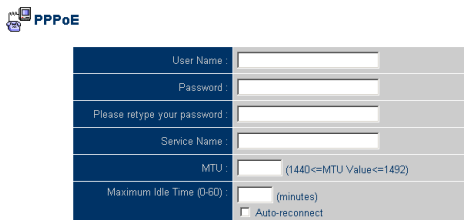
PPPoE xDSL

Enter the **PPPoE User Name and Password** assigned by your service provider in the screen shown in Figure 30. The **Service Name** is normally optional, but may be required by some service providers.

Leave the **Maximum Transmission Unit (MTU)** at the **default value (1454)** unless you have a particular reason to change it.

Enter a **Maximum Idle Time (in minutes)** to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (**Default: 10**)

Enable the **Auto-reconnect option** to automatically re-establish the connection as soon as you attempt to access the Internet again. Click **FINISH** to complete the setup.



User Name	<input type="text"/>
Password	<input type="password"/>
Please retype your password	<input type="password"/>
Service Name	<input type="text"/>
MTU	<input type="text" value="1454"/> (1440<=MTU Value<=1492)
Maximum Idle Time (0-60)	<input type="text" value="10"/> (minutes)
	<input type="checkbox"/> Auto-reconnect

Enter the User Name and Password required by your ISP in the appropriate fields. If your ISP has provided you with a Service Name enter it in the "Service Name" field, otherwise, leave it blank.

Figure 30. PPPoE xDSL Setup Screen

PPTP (Point-to-Point Tunneling Protocol)

Point-to-Point Tunneling Protocol is a common connection method used for xDSL connections in Europe. It can be used to join different physical networks using the Internet as an intermediary.

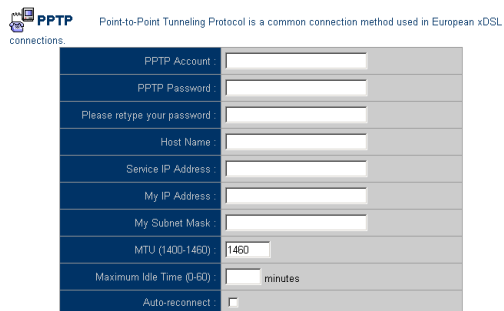
If you have been provided with the information requested on the screen (Figure 31), enter the assigned **IP address, subnet mask, default gateway IP address, user ID and password, and PPTP Gateway.**

The **MTU (Maximum Transmission Unit)** governs the maximum size of the data packets. Leave this on the **default value (1460)** unless you have a particular reason to change it.

Enter a **Maximum Idle Time (in minutes)** to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. **(Default: 10)**

Enable the **Auto-reconnect option** to automatically re-establish the connection as soon as you attempt to access the Internet again.

Click **Finish** to complete the setup. (Refer to “Point-to-Point Tunneling” for additional details.)



The screenshot shows a web-based configuration screen for PPTP. At the top left, there is a small icon of a computer and the text 'PPTP connections'. To the right, a subtitle reads 'Point-to-Point Tunneling Protocol is a common connection method used in European xDSL'. The main area contains a table of configuration options:

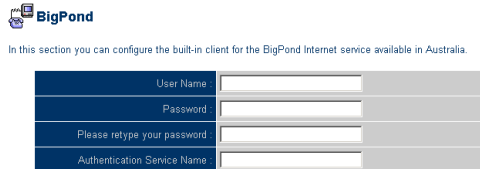
PPTP Account	<input type="text"/>
PPTP Password	<input type="password"/>
Please retype your password	<input type="password"/>
Host Name	<input type="text"/>
Service IP Address	<input type="text"/>
My IP Address	<input type="text"/>
My Subnet Mask	<input type="text"/>
MTU (1400-1460)	<input type="text" value="1460"/>
Maximum Idle Time (0-60)	<input type="text"/> minutes
Auto-reconnect	<input type="checkbox"/>


Figure 31. PPTP (Point-to-Point Tunneling Protocol) Setup Screen

Configuring the Wireless Mobile Router

Big Pond

If you use the **BigPond Internet Service**, available in Australia, enter the **user name, password and service name for BigPond authentication**. Click **Finish** to complete the setup (Figure 32).



 **BigPond**

In this section you can configure the built-in client for the BigPond Internet service available in Australia.

User Name:	<input type="text"/>	
Password:	<input type="password"/>	
Please retype your password:	<input type="password"/>	
Authentication Service Name:	<input type="text"/>	

Figure 32. Big Pond Setup Screen

Advanced Setup

Use the web management interface to define system parameters, manage and control the Wireless Mobile Router and its ports, or monitor network conditions. The Table 3 outlines the selections available from this program.

Table 3. Advanced Setup Features

Menu	Description
System	Sets the local time zone, the password for administrator access, and the IP address of a PC that will be allowed to manage the Wireless Mobile Router remotely.
WAN	Specifies the Internet connection type: <ul style="list-style-type: none"> • Dynamic IP host configuration and the physical MAC address of each media interface • PPPoE configuration • PPTP • Static IP and ISP gateway address • BigPond (Internet service available in Australia) • Specifies DNS servers to use for domain name resolution.
LAN	Sets the TCP/IP configuration of the Wireless Mobile Router's LAN interface and all DHCP clients.
Wireless	Configures the radio frequency, SSID, and encryption for wireless communications.
NAT	Shares a single ISP account with multiple users, sets up virtual servers.
Firewall	Configures a variety of security and specialized functions, including: Access Control, Hacker Prevention, and DMZ.
DDNS	Dynamic DNS provides users on the Internet with a method to tie their domain name(s) to computers or servers.
UPnP	With Universal Plug and Play, a device can automatically dynamically join a network, obtain an IP address, communicate its capabilities, and learn about the presence and capabilities of other devices. Devices can then directly communicate with each other. This further enables peer-to-peer networking.
Tools	Contains options to backup & restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.
Status	Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and Firewall information. Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number. Shows the security and DHCP client log.

Configuring the Wireless Mobile Router

System

Time Zone

Set the **time zone** and **time server** for the Wireless Mobile Router (Figure 33). This information is used for log entries and client access control.

Check **Enable Automatic Time Server Maintenance** to automatically maintain the Wireless Mobile Router's system time by synchronizing with a public time server over the internet. Then configure two different time servers by selecting the options in the **Primary Server** and **Secondary Server** fields.

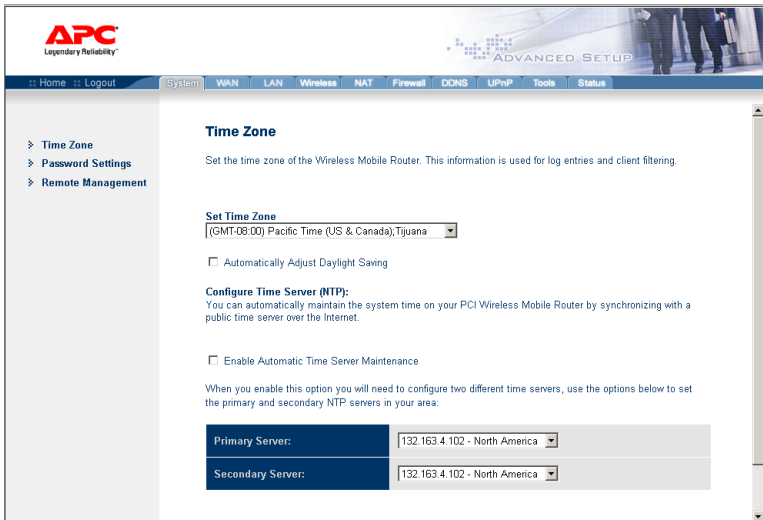


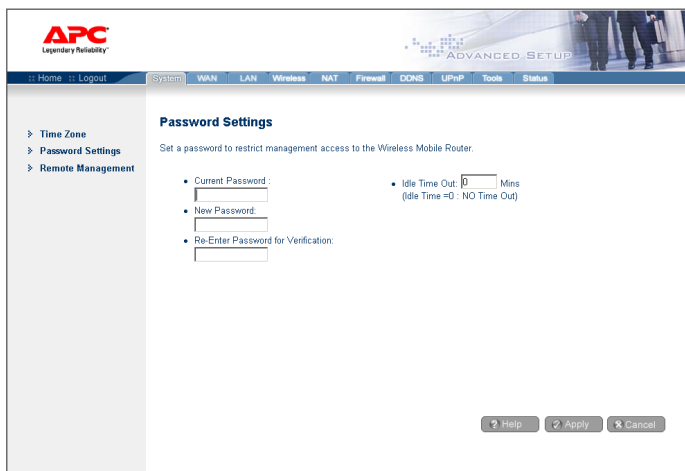
Figure 33. Set System Time Zone Screen

Password Settings

Use this menu (Figure 34) to restrict access based on a password. By default, there is no password. For security you should assign one before exposing the Wireless Mobile Router to the internet.

Passwords can contain from 3–12 alphanumeric characters and are not case sensitive.

Note: If your password is lost, or you cannot gain access to the user interface, press the **RELOAD** button on the back of the device (holding it down for at least five seconds) to restore the factory defaults. (The default is **no password**.)



The screenshot shows the APC Advanced Setup web interface. The top navigation bar includes 'Home', 'Logout', and a menu with 'System', 'WAN', 'LAN', 'Wireless', 'NAT', 'Firewall', 'DNS', 'UPnP', 'Tools', and 'Status'. The 'System' menu is expanded, showing 'Time Zone', 'Password Settings', and 'Remote Management'. The 'Password Settings' page has the title 'Password Settings' and a subtitle 'Set a password to restrict management access to the Wireless Mobile Router.' Below this, there are three main sections: 'Current Password' with an input field, 'New Password' with an input field, and 'Re-Enter Password for Verification' with an input field. To the right of the 'Current Password' field is an 'Idle Time Out' section with a dropdown menu set to '0 Mins' and a note '(Idle Time = 0 = NO Time Out)'. At the bottom right, there are three buttons: 'Help', 'Apply', and 'Cancel'.

Figure 34. Password Setup Screen

Configuring the Wireless Mobile Router

Enter a maximum **Idle Time Out (in minutes)** to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform system logout, and you have to login to the web management system again. (**Default: 0 minute**)

Remote Management

Remote Management (Figure 35) allows a remote PC to configure, manage, and monitor the Wireless Mobile Router using a standard web browser. Check **Enable** and enter the **IP address of the remote host**. Click **APPLY**.

Note: If you specify 0.0.0.0 as this IP address, any host can manage the Wireless Mobile Router.

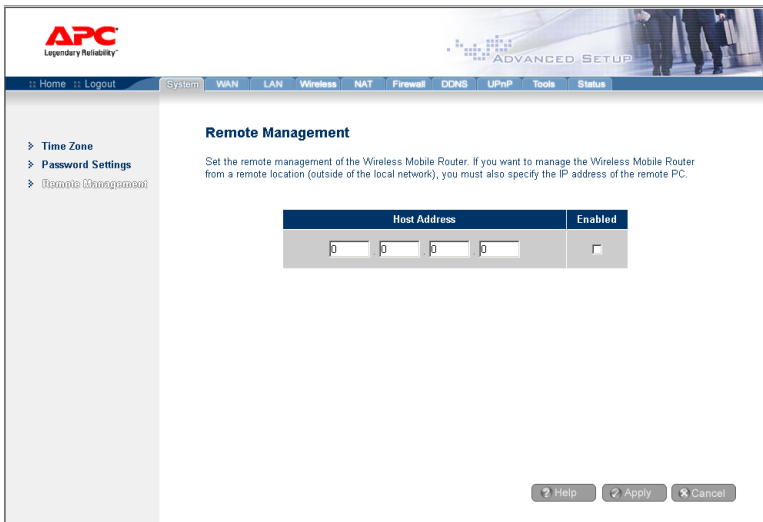


Figure 35. Remote Management Setup Screen

WAN

Specify the **WAN connection type** provided by your Internet Service Provider, then click **More Configuration** to enter detailed **configuration parameters** for the selected connection type.

Dynamic IP

When setting up a Dynamic IP address (Figure 36), the **Host Name** is optional, but may be required by some ISPs. The default **MAC address** is set to the WAN's physical interface on the Wireless Mobile Router. Use this address when registering for internet service, and do not change it unless required by the ISP. If the ISP used the MAC address of an ethernet card as an identifier when first setting up your broadband account, only connect the PC with the **registered MAC address** to the Wireless Mobile Router and click the **Clone MAC Address button**. This will replace the current Wireless Mobile Router MAC address with the already registered Ethernet card MAC address.

The screenshot shows the 'Advanced Setup' interface for a Dynamic IP configuration. The top navigation bar includes 'System', 'WAN', 'LAN', 'Wireless', 'NAT', 'Firewall', 'DDNS', 'UPnP', 'Tools', and 'Status'. The left sidebar lists configuration options: Dynamic IP (selected), PPPoE, PPTP, Static IP, BigPond, and DNS. The main content area is titled 'Dynamic IP' and contains the following text:

The Host name is optional, but may be required by some Service Provider's. The default MAC address is set to the WAN's physical interface on the Wireless Gateway.

If required by your Service Provider, you use the "Clone MAC Address" button to copy the MAC address of the Network Interface Card installed in your PC to replace the WAN MAC address.

If necessary, you can use the "Release" and "Renew" buttons on the Status page to release and renew the WAN IP address.

The form below has the following fields and buttons:

- Host Name:
- MAC Address: - - - -
- Clone MAC Address:

At the bottom right, there are three buttons: (with a question mark icon), (with a checkmark icon), and (with an 'X' icon).

Figure 36. Dynamic IP Setup Screen

Configuring the Wireless Mobile Router

If you are unsure of which PC was originally set up by the broadband technician, call your ISP and request they register a new MAC address for your account. Register the **default MAC address** of the Wireless Mobile Router.

Point-to-Point Over Ethernet (PPPoE)

Enter the **PPPoE User Name and Password** assigned by your Service Provider (see Figure 37). The **Service Name** is normally optional, but may be required by some service providers.

The **MTU (Maximum Transmission Unit)** governs the maximum size of the data packets. Leave this at the **default value (1492)** unless you have a particular reason to change it.

Enter a **Maximum Idle Time (in minutes)** to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (**Default: 0 minute**)

Enable the **Auto-reconnect option** to automatically re-establish the connection as soon as you attempt to access the internet again.

The screenshot shows the APC Advanced Setup web interface. The top navigation bar includes 'Home', 'Logout', 'System', 'WAN', 'LAN', 'Wireless', 'NAT', 'Firewall', 'DNS', 'UPnP', 'Tools', and 'Status'. The 'WAN' tab is selected. On the left, a sidebar menu lists configuration options: Dynamic IP, PPPoE (selected), PPP, Static IP, BigPond, and DNS. The main content area is titled 'PPPoE' and contains the following text: 'Enter the PPPoE user name and password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, then it will be dropped. You can enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again. If your Internet Service Provider requires the use of PPPoE, enter the information below.'

User Name	<input type="text"/>
Password	<input type="password"/>
Please retype your password	<input type="password"/>
Service Name	<input type="text"/>
MTU	1492 (1440<=MTU Value<=1492)
Maximum Idle Time (0-60)	0 (minutes)
	<input type="checkbox"/> Auto-reconnect

Buttons: Help, Apply, Cancel

Figure 37. Point-to-Point Over Ethernet (PPPoE) Setup Screen

Point-to-Point Tunneling Protocol (PPTP)

Point-to-Point Tunneling Protocol (PPTP) can be used to join different physical networks using the Internet as an intermediary. Using the above screen allows client PCs to establish a normal PPTP session and provides hassle-free configuration of the PPTP client on each client PC.

Enter the **PPTP user ID, Password, Host Name and Service IP address**, and then the assigned IP address and subnet mask (usually supplied by your ISP), Figure 38.

The MTU (Maximum Transmission Unit) governs the maximum size of the data packets. Leave this on the default value (1460) unless you have a particular reason to change it.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the PPTP connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped.

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.

The screenshot shows the 'PPTP' configuration screen within the 'Advanced Setup' utility. The interface includes a navigation menu on the left with options like 'Dynamic IP', 'PPPoE', 'Static IP', 'BigPond', and 'DNS'. The main content area is titled 'PPTP' and contains a form with the following fields:

PPTP Account	<input type="text"/>
PPTP Password	<input type="password"/>
Please retype your password	<input type="password"/>
Host Name	<input type="text"/>
Service IP Address	<input type="text"/>
My IP Address	<input type="text"/>
My Subnet Mask	<input type="text"/>
MTU (1400-1460)	1460
Maximum Idle Time (0-60)	<input type="text"/> minutes
Auto-reconnect	<input type="checkbox"/>

At the bottom right of the form are buttons for 'Help', 'Apply', and 'Cancel'.

Figure 38. Point-to-Point Tunneling Protocol (PPTP) Setup Screen

Configuring the Wireless Mobile Router

Static IP

If your Internet Service Provider has assigned a fixed IP address, enter the **assigned address and subnet mask** for the Wireless Mobile Router, then enter the **gateway address of your ISP** (Figure 39).

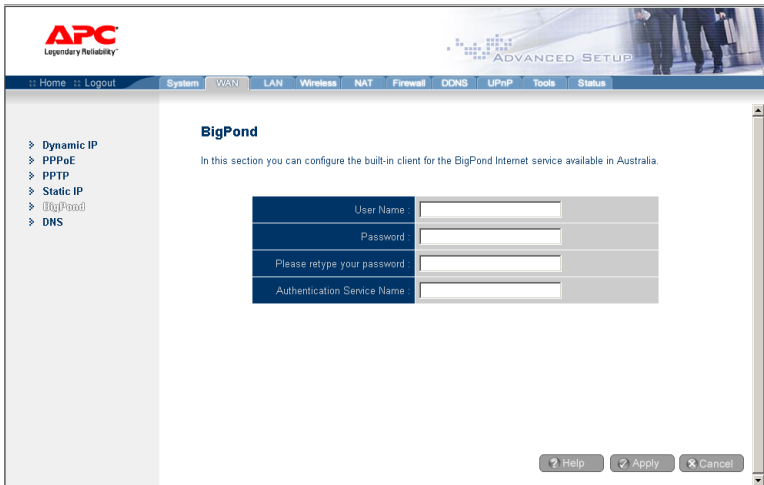
You may need a **fixed address** if you want to provide Internet services, such as a web server or FTP server.



Figure 39. Static IP Address Setup Screen

BigPond

BigPond is a service provider in Australia that uses a “heartbeat” system to maintain the internet connection. Configure the **built-in client** with your **user name, password and service name** to get on line (Figure 40). You might have the **Authentication Service Name** as “login-server” for a universal configuration.



The screenshot shows the APC Advanced Setup web interface. The top navigation bar includes 'System', 'WAN', 'LAN', 'Wireless', 'NAT', 'Firewall', 'DDNS', 'UPnP', 'Tools', and 'Status'. The left sidebar contains a tree view with options: Dynamic IP, PPPoE, PPTP, Static IP, BigPond (selected), and DNS. The main content area is titled 'BigPond' and contains the following text: 'In this section you can configure the built-in client for the BigPond Internet service available in Australia.' Below this text are four input fields: 'User Name', 'Password', 'Please retype your password', and 'Authentication Service Name'. At the bottom right of the form are three buttons: 'Help', 'Apply', and 'Cancel'.

Figure 40. BigPond Setup Screen

Configuring the Wireless Mobile Router

Domain Name Servers (DNS)

Domain Name Servers map numerical IP addresses to the equivalent domain name (e.g., www.apc.com). Your ISP should provide the IP address of one or more domain name servers. Enter **those addresses** in this screen (Figure 41).



Figure 41. DNS Setup Screen

LAN

- **LAN IP** – Use the **LAN menu** (Figure 42) to configure the **LAN IP address** for the Wireless Mobile Router and to **enable the DHCP server** for **dynamic client address allocation**.
- **Lease Time** - Set a period for the **lease time**, if required. For home networks, this may be set to **Forever**, which means there is no time limit on the IP address lease.
- **IP Address Pool** – A **dynamic IP start address** may be specified, e.g. **192.168.2.100 (default value)**. Once this start IP address has been assigned, IP addresses from **192.168.2.100 to 192.168.2.199** will be part of the dynamic IP address pool. IP addresses from **192.168.2.2 to 192.168.2.99, and 192.168.2.200 to 192.168.2.254** will be available as **static IP addresses**.

Do not include the address of the Wireless Mobile Router in the client address pool. Also remember to configure your **client PCs** for dynamic IP address allocation.

The screenshot displays the 'LAN Settings' page in the APC Advanced Setup interface. The page includes a navigation menu at the top with options like Home, Logout, System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'LAN Settings' and contains the following configuration fields:

- LAN IP:** IP Address (192.168.2.1), IP Subnet Mask (255.255.255.0), DHCP Server (Enabled/Disabled), Lease Time (Forever).
- IP Address Pool:** Start IP (192.168.2.100), End IP (192.168.2.199), Domain Name (optional).

At the bottom right, there are buttons for Help, Apply, and Cancel.

Figure 42. LAN Setup Screen

Configuring the Wireless Mobile Router

Wireless

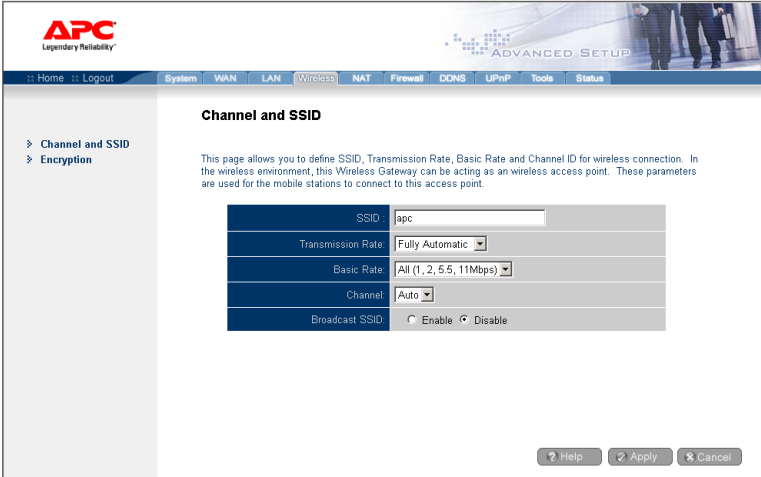
To configure the Wireless Mobile Router as a **wireless access point** for wireless clients (either stationary or roaming), all you need to do is define the **radio channel**, the **Service Set Identifier (SSID)**, and **encryption options** (Figure 43 - **Note**: The figures not numbered on the following page are provided to show better details of the fields on this screen).

Channel and SSID

You must specify a **common radio channel and SSID** (Service Set ID) to be used by the Wireless Mobile Router and **all of your wireless clients**. Be sure you configure all of your clients to the same values.

SSID: This should be set to the **same value** as other wireless devices in the network. (Default: **apc**)

Note: The SSID is case sensitive and can consist of up to 32 alphanumeric characters.



The screenshot shows the 'Channel and SSID' configuration page in the APC Advanced Setup interface. The page title is 'Channel and SSID' and it includes a navigation menu with options like 'Channel and SSID' and 'Encryption'. The main content area contains a table with the following fields:

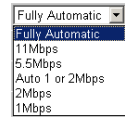
SSID	apc
Transmission Rate	Fully Automatic
Basic Rate	All (1, 2, 5.5, 11Mbps)
Channel	Auto
Broadcast SSID	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

At the bottom right of the form, there are three buttons: 'Help', 'Apply', and 'Cancel'.

Figure 43. Channel and SSID Setup Screen

Transmission Rate: Set the **data rate** transmitted from the Wireless Mobile Router. The lower the data rate, the longer the transmission distance.

(Default: **Fully Automatic**)



Basic Rate: The highest rate specified is the rate the Wireless Mobile Router will use when transmitting **broadcast/multicast and management frames**.

Available options are: **All** (1, 2, 5.5, 11 Mbps) and 1, 2 Mbps.

Default: **All (1, 2, 5.5, 11Mbps)**

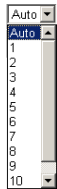


Channel: The **radio channel** through which the Wireless Mobile Router communicates with PCs in its BSS. (Default: **Auto**)

Note: The available channel settings are limited by local regulations.

Broadcast SSID: Broadcasting the SSID on the wireless network for easy connection with client PCs.

(Default: **Disable**)

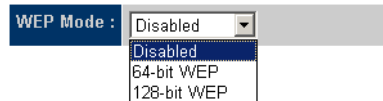


Encryption

If you are transmitting sensitive data across wireless channels, you should enable **Wired Equivalent Privacy (WEP) encryption**. Encryption requires

you to use the **same set of encryption/decryption keys** for the Wireless Mobile Router and all of your wireless clients. You can choose between **standard 64-bit** or the more robust **128-bit** encryption.

(Default: **Disabled**)



Configuring the Wireless Mobile Router

You may automatically generate encryption keys or manually enter the keys. For automatic 64-bit security (Figure 44), enter a **pass phrase** and click **Generate**. Four keys will be generated. Choose a key from the **drop-down list** or accept the **default key**. Automatic **128-bit security** generates a single key (Figure 45).

The screenshot shows the APC Advanced Setup interface for configuring 64-bit WEP encryption. The top navigation bar includes Home, Logout, System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The left sidebar shows a navigation menu with 'Channel and SSID' and 'Encryption'. The main content area is titled 'Encryption' and contains the following elements:

- A 'WEP Mode' dropdown menu set to '64-bit WEP'.
- Text: 'Encryption transmits your data securely over the wireless network. Matching encryption keys must be setup on your Wireless Gateway and wireless client devices to use encryption. Do you want to use encryption?'
- Text: 'Enter a passphrase and click the Generate button, or manually enter a key into the table.'
- A 'Passphrase' input field with a 'Generate' button.
- A table with four rows for 'Key 1', 'Key 2', 'Key 3', and 'Key 4'. Each row has five asterisks in the input field and a 'Default Key' dropdown menu set to '1'.
- A 'Clear All Keys' button.
- Buttons for 'Help', 'Apply', and 'Cancel' at the bottom right.

Figure 44. 64-Bit Encryption Setup Screen

If you use encryption, **configure the same keys** used for the Wireless Mobile Router on **each of your wireless clients**. Note that **Wired Equivalent Privacy (WEP)** protects data transmitted between wireless nodes, but **does not** protect any transmissions over your wired network or over the internet.

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ADVANCED SETUP

Home Logout System WAN LAN **Wireless** NAT Firewall DDNS UPnP Tools Status

> Channel and SSID
> **Encryption**

Encryption

Encryption transmits your data securely over the wireless network. Matching encryption keys must be setup on your Wireless Gateway and wireless client devices to use encryption. Do you want to use encryption?

WEP Mode: 128-bit WEP

Enter a passphrase and click the Generate button, or manually enter a key into the table.

Passphrase	<input type="text"/>					Generate
Key	**	**	**	**	**	
	**	**	**	**	**	
	**	**	**			
	<input type="text"/>					
	Clear Key					

Help Apply Cancel

Figure 45. 128-Bit Encryption Setup Screen

Configuring the Wireless Mobile Router

Network Address Translation (NAT)

From this section you can configure the Address Mapping, Virtual Server, and Special Application features that provide control over the port openings in the Wireless Mobile Router's firewall. This section can be used to support several Internet based applications such as VPN

Address Mapping

Address mapping (Figure 46) allows one or more **public IP addresses** to be shared by multiple internal users. Enter the **Public IP address** you wish to share into the **Global IP field**. Enter a **range of internal IP addresses** that will share the global IP.

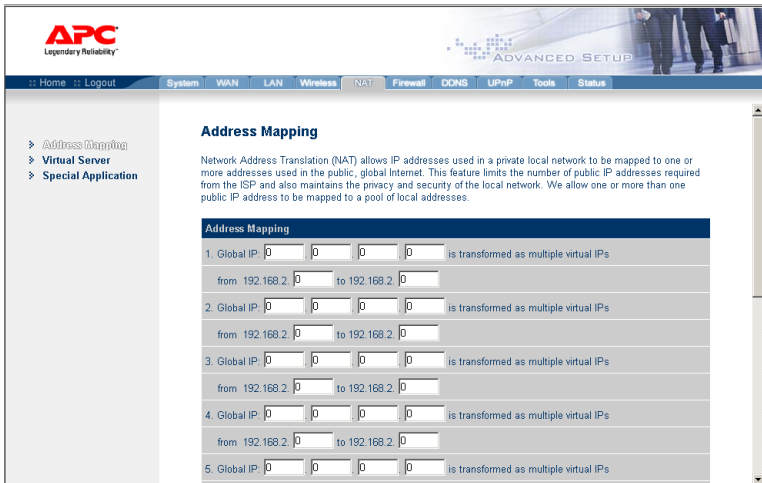


Figure 46. Address Mapping Setup Screen

Virtual Server

If you configure the Wireless Mobile Router as a virtual server, remote users accessing services such as web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Wireless Mobile Router redirects the external service request to the appropriate server (located at another internal IP address).

The more common TCP service ports include:

HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110

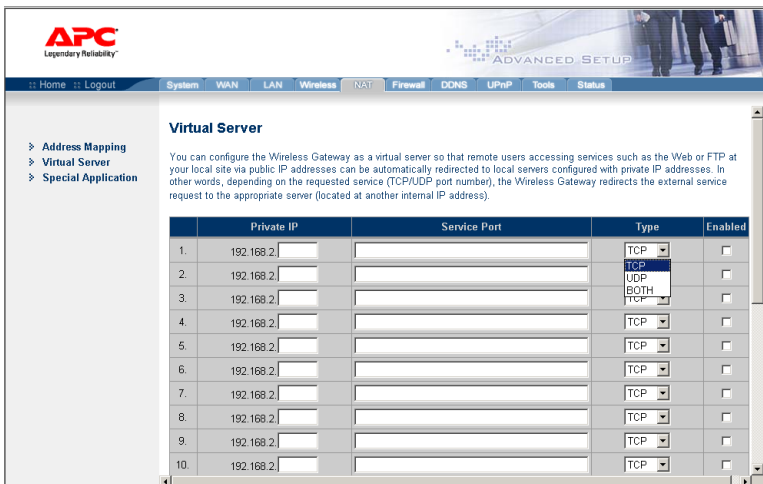


Figure 47. Virtual Server Setup Screen

Special Applications

Some applications, such as **internet gaming, videoconferencing, Internet telephony and others**, require **multiple connections**. These applications **cannot work with Network Address Translation (NAT) enabled**. If you need to run applications that require multiple connections, use the following screen (Figure 48) and Table 3 to specify the **additional public ports** to be opened for each application.

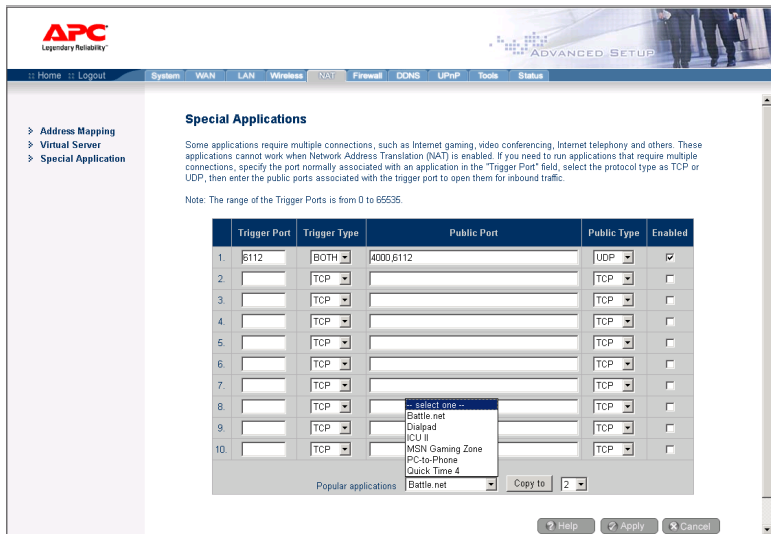


Figure 48. Special Applications Setup Screen

Specify the **public port number** normally associated with an application in the **Trigger Port** field. Set the **protocol type** to **TCP** or **UDP**, then **enter the ports** that the application requires.

Special application connections can also be achieved by selecting the application type and item number in the **Popular applications** field, and clicking the **Copy to** button to easily specify the port numbers. Then set the protocol type to TCP or UDP.

Example:

Table 3. Configuring Ports for Special Applications

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

For a full list of ports and the services that run on them, see www.iana.org/assignments/port-numbers.

Configuring the Wireless Mobile Router

Firewall

The Wireless Mobile Router firewall can provide access control of connected client PCs, block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. The firewall does not significantly affect system performance. APC advises leaving it enabled to protect your network users.

Access Control

The Access Control option (Figure 49) allows you to specify different **privileges** based on **IP address** for the client PCs.



Figure 49. Access Control Setup Screen

Note: Click on **Add PC** and define the appropriate settings for client PC services, as shown in Figure 50.

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System | WAN | LAN | Wireless | NAT | Firewall | DDNS | L2TP | Tools | Status

Access Control Add PC

This page allows users to define service limitations of client PCs, including IP address, service type and scheduling rule criteria. For the URL blocking function, you need to configure the URL address first on the "URL Blocking Site" page. For the scheduling function, you also need to configure the schedule rule first on the "Schedule Rule" page.

- Client PC Description:
- Client PC IP Address: 192.168.2. -

Client PC Services:

Service Name	Detail Description	Blocking
WWW	HTTP, TCP Port 80, 3128, 8000, 8080, 8081	<input type="checkbox"/>
WWW with URL Blocking	HTTP (Ref. URL Blocking Site Page)	<input type="checkbox"/>
E-mail Sending	SMTP, TCP Port 25	<input type="checkbox"/>
News Forums	NNTP, TCP Port 119	<input type="checkbox"/>
E-mail Receiving	POP3, TCP Port 110	<input type="checkbox"/>
Secure HTTP	HTTPS, TCP Port 443	<input type="checkbox"/>
File Transfer	FTP, TCP Port 21	<input type="checkbox"/>
MSN Messenger	TCP Port 1863	<input type="checkbox"/>
Telnet Service	TCP Port 23	<input type="checkbox"/>
AIM	AIM Instant Messenger, TCP Port 6190	<input type="checkbox"/>
NetMeeting	H.323, TCP Port 1720	<input type="checkbox"/>
DNS	UDP Port 53	<input type="checkbox"/>
SNMP	UDP Port 161, 162	<input checked="" type="checkbox"/>
VPN-PPTP	TCP Port 1723	<input type="checkbox"/>
VPN-L2TP	UDP Port 1701	<input type="checkbox"/>
TCP	All TCP Port	<input type="checkbox"/>
UDP	All UDP Port	<input type="checkbox"/>

User Define Service

Protocol: TCP UDP
 Port Range: - - - - -

Scheduling Rule (Ref. Schedule Rule Page):

Figure 50. Access Control Setup Screen

Configuring the Wireless Mobile Router

MAC Filtering Table

The MAC Filtering feature of the Wireless Mobile Router allows you to control access to your network to up to 32 clients based on the MAC (Media Access Control) address of the **client machine**. This ID is unique to each network adapter. If the MAC address is listed in Figure 51, that client machine will have access to the network.

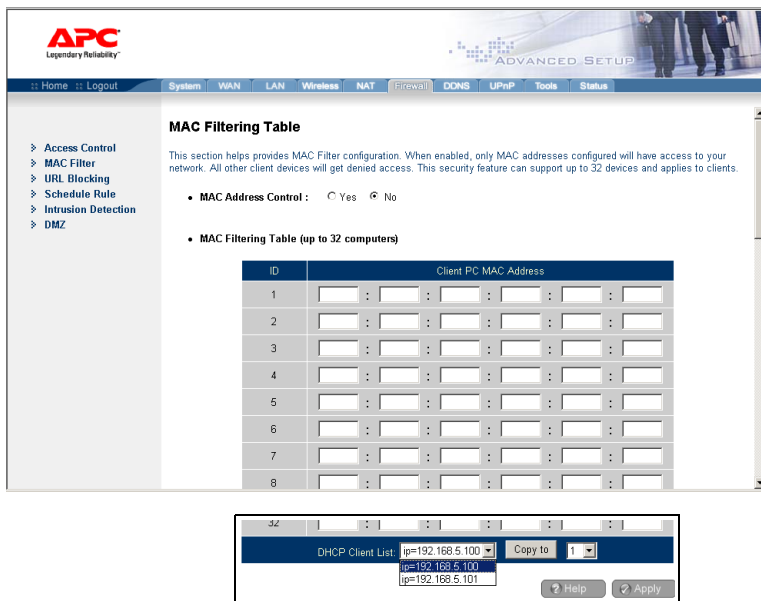


Figure 51. MAC Filtering Table Setup Screen

URL Blocking

To configure the URL Blocking feature, use information provided in (Figure 52) to specify the **web sites** (www.somesite.com) and/or **keywords** you want to filter on your network. Use the screen to block access to web sites or to web URLs containing the keyword specified in the table.

To complete this configuration, you will need to **create or modify an access rule** (see “Access Control”). To modify an existing rule, click the **Edit option** next to the rule you want to modify. To create a new rule, click on the **Add PC option**.

From the **Access Control Add PC** section, **check the option for WWW with URL Blocking** in the **Client PC Service** table to filter out the web sites and keywords specified below:

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URL Blocking

Disallowed Web Sites and Keywords.

You can block access to certain Web sites from a particular PC by entering either a full URL address or just a keyword of the Web site.

To specify the particular PC, go back to the "Access Control" page and check the box for "Http with URL Blocking" in the "Normal Filtering Table".

Rule Number	URL / Keyword	Rule Number	URL / Keyword
Site 1	<input type="text"/>	Site 16	<input type="text"/>
Site 2	<input type="text"/>	Site 17	<input type="text"/>
Site 3	<input type="text"/>	Site 18	<input type="text"/>
Site 4	<input type="text"/>	Site 19	<input type="text"/>
Site 5	<input type="text"/>	Site 20	<input type="text"/>
Site 6	<input type="text"/>	Site 21	<input type="text"/>
Site 7	<input type="text"/>	Site 22	<input type="text"/>
Site 8	<input type="text"/>	Site 23	<input type="text"/>
Site 9	<input type="text"/>	Site 24	<input type="text"/>

Figure 52. URL Blocking Setup Screen

Configuring the Wireless Mobile Router

Schedule Rule

The Schedule Rule feature allows you to configure specific rules based on **Time and Date**. These rules can then be used to configure more specific **Access Control** and enables **Schedule-based Internet access control**.

1. Click **Add Schedule Rule**.
2. Define the **settings** for the schedule rule (as shown in Figure 53).
3. Click **OK** and then click the **Apply** button to save your settings.

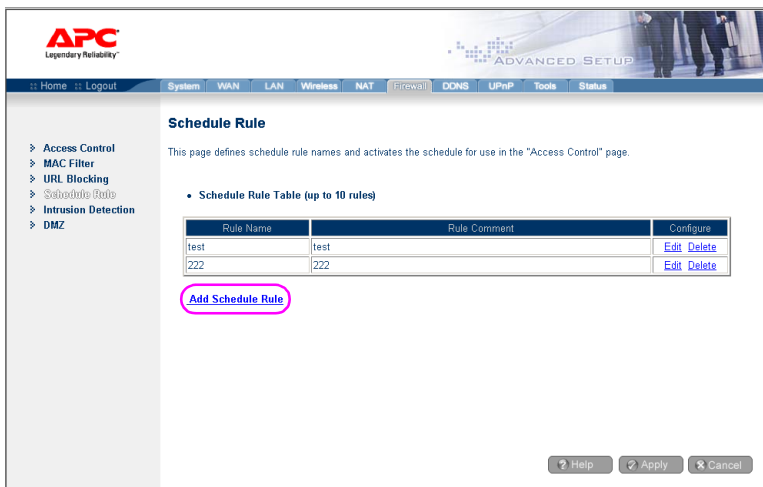


Figure 53. Schedule Rule Setup Screen

Use this section (Figure 54) to create your network schedule rules.

The times you set below are the times periods that you want the Access Control Rule to be active. For example, if you want to block Internet access (block WWW) from 9AM to 9PM during the week, simply configure 9:00 AM as “Start Time” and 9:00 PM as “End Time” for each weekday. During that time period the user will be unable to access the internet.

Once the schedule rule is set up, you will need to configure or edit an Access Control rule, and select the Schedule Rule that you want to apply to that Access Control rule. You can set the schedule rule at the bottom of the Access Control Configuration page in the "Scheduling Rule" drop-down option.

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Edit Schedule Rule

Use this section to create your network schedule rules.

The times you set below are the times periods that you want the Access Control Rule to be active. For example, if you want to block Internet access (block WWW) from 9AM to 9PM during the week. Simply configure 9:00 AM as "Start Time" and 9:00 PM as "End Time" for each weekday - during that time period the user will be unable to access the internet.

Once the schedule rule is setup, you will need to configure or edit an Access Control rule, and select your Schedule Rule that you want to apply to that Access Control rule. You can set the schedule rule at the bottom of the Access Control Configuration page in the "Scheduling Rule" drop-down option.

Schedule Rule Name:

Schedule Rule Comment/Desc: (ex. 10:30AM - 7:45PM)

Current Router Time: 2002/01/01 00:35:41 AM

Week Day	Start Time (hh:mm)	End Time (hh:mm)
Every Day	12 : 0 PM	12 : 0 PM
Sunday	0 : 0 AM	0 : 0 AM
Monday	0 : 0 AM	0 : 0 AM
Tuesday	0 : 0 AM	0 : 0 AM

Figure 54. Edit Schedule Rule Setup Screen

Configuring the Wireless Mobile Router

Intrusion Detection

APC's Wireless Mobile Router provides intrusion detection (Figure 55) through the firewall and email configurations, as follows:

Firewall Configuration

- **SPI (Stateful Packet Inspection) and Anti-DoS firewall protection (Default: Disable)** – The Wireless Mobile Router's Intrusion Detection feature limits access for incoming traffic at the WAN port. When the SPI feature is turned on, all incoming packets are blocked.
- **Discard Ping from WAN (Default: Disable)** – Prevents any response to ping commands on the Wireless Mobile Router's WAN port.



Figure 55. Intrusion Detection Setup Screen

E-Mail Alert Configuration

- **When hackers attempt to enter your network, we can alert you by e-mail** – Enter your E-mail address. Specify your SMTP server, user name, and password.

DMZ (Demilitarized Zone)

If you have a client PC that cannot run an internet application properly from behind the firewall, you can open the client up to unrestricted two-way internet access. Enter the **IP address of a DMZ host** to this screen (Figure 56). Adding a client to the DMZ may expose your local network to a variety of security risks, so only use this option as a last resort.

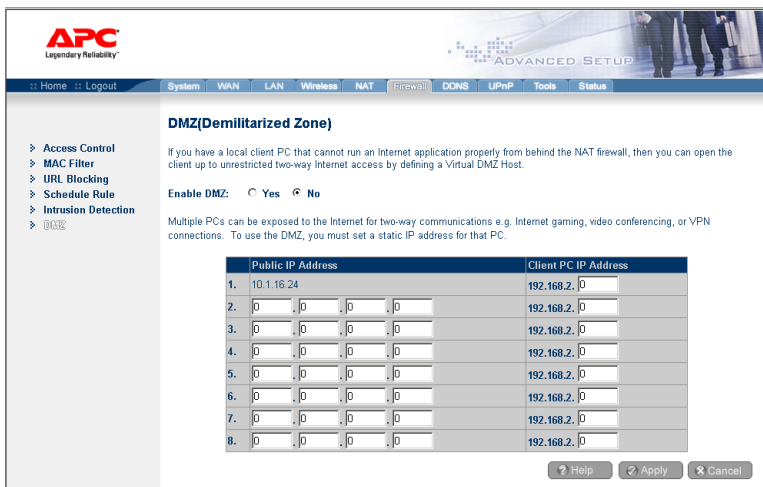


Figure 56. DMZ Setup Screen

Configuring the Wireless Mobile Router

DDNS (Dynamic DNS) Settings

Domain Name is a series of alphanumeric strings separated by periods that maps to the address of a network connection and identifies the owner of the address.

Dynamic DNS (Figure 57) provides users on the internet with a method to tie their domain name to a computer or server. DDNS allows your domain name to follow your IP address automatically by having your DNS records changed when your IP address changes.

The **Server Configuration section** automatically opens the TCP port options checked in the **Virtual Server section**. Simply enter in the **IP Address of your server**, such as a web server, and then click on the **port option HTTP Port 80**, so users can access your web server from the WAN connection (internet).

This DNS feature is powered by TZO.com. With a DDNS connection, you can host your own web site, email server, FTP site, and more at your own location even if you have a dynamic IP address. (Default: **Disabled**).



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ADVANCED SETUP

Home Logout System WAN LAN Wireless NAT Firewall **DDNS** UPnP Tools Status

DDNS (Dynamic DNS) Settings

Dynamic DNS provides users on the Internet a method to tie their domain name(s) to computers or servers. DDNS allows your domain name to follow your IP address automatically by having your DNS records changed when your IP address changes.

This DNS feature is powered by TZO.com. With a DDNS connection you can host your own web site, email server, FTP site and more at your own location even if you have a dynamic IP address. To sign-up for a free 30-day trial click [here](#).

Dynamic DNS: Enabled Disabled

TZO Configuration

Domain Name:

E-mail:

Key: [Get free 30-day trial key!](#)

Control Panel: [Click here to login to your TZO control panel!](#)

Server Configuration

Server IP: 192.168.1.

Server Type:

Web Server: (HTTP) Port 80 <input type="checkbox"/>	Port 8000 <input type="checkbox"/>
FTP Server: Port 20 <input type="checkbox"/>	Port 21 <input type="checkbox"/>
Email Server: (POP3) Port 110 <input type="checkbox"/>	(SMTP) Port 25 <input type="checkbox"/>

Figure 57. DDNS Setup Screen

UPnP (Universal Plug and Play) Setting

Enable UPnP by checking **ON** (see Figure 58). UPnP allows the device to automatically:

- dynamically join a network
- obtain an IP address
- convey its capabilities and learn about the presence and capabilities of other devices. (Default: **OFF**)

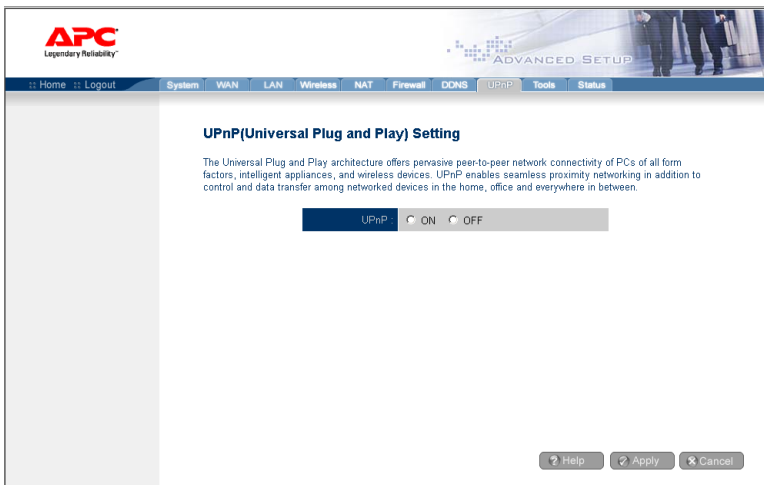


Figure 58. UPnP Setup Screen

Configuring the Wireless Mobile Router

Tools

Use the Tools menu (Figure 59) to **backup the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset** the Wireless Mobile Router.

Tools - Configuration Tools

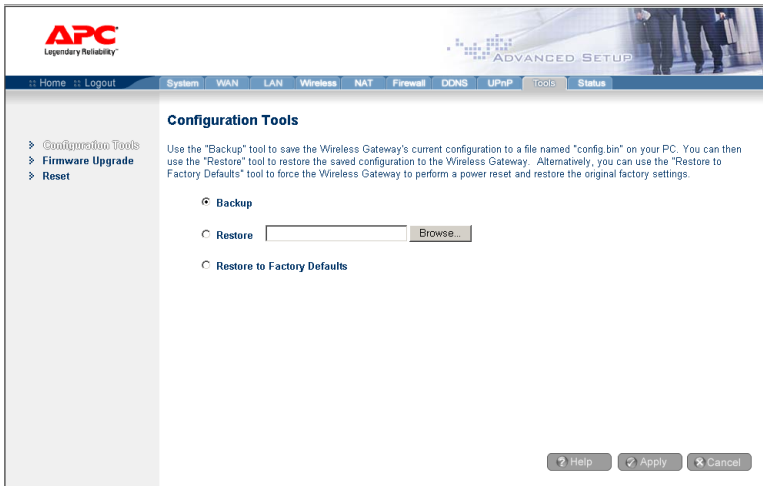


Figure 59. Configuration Tools Setup Screen

- **Backup** – saves the Wireless Mobile Router’s configuration to a file.
- **Restore** – restores settings from a saved backup configuration file.
- **Restore to factory defaults** – restores the Wireless Mobile Router settings to factory defaults.

Tools - Firmware Upgrade

APC's Wireless Mobile Router has software stored in its internal memory. This software is usually referred to as **Firmware**. Use this screen (Figure 60) to **update the firmware** or **user interface** to the latest versions. **Download** the upgrade file from the APC web site (www.apc.com) and **save** it to your **hard drive**. In the **Upgrade Target field**, choose **Firmware**. Then click **Browse** to look for the previously downloaded file. Click **APPLY**. Check the **Status page Information** section to **confirm** the upgrade process was successful.

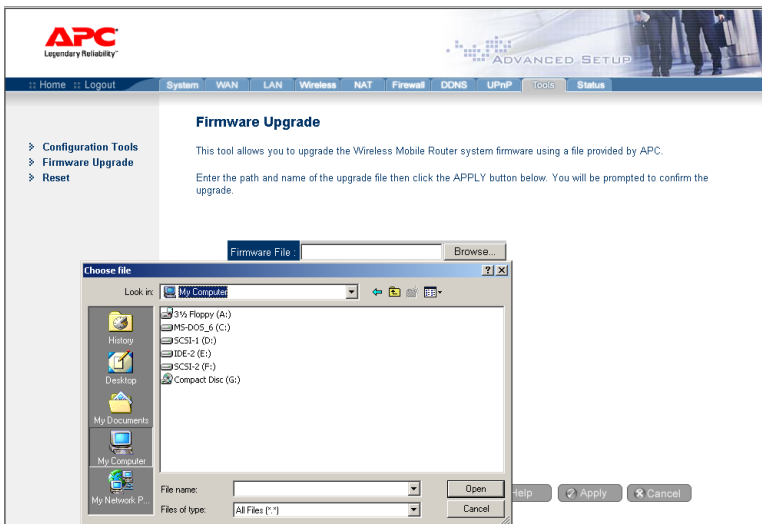


Figure 60. Firmware Upgrade Screen

Configuring the Wireless Mobile Router

Tools - Reset

APC's Wireless Mobile Router provides the ability to reset all tools resident in firmware. From this screen (Figure 61), click **Apply** to reset the Wireless Mobile Router. The reset will be complete when the **Power LED** stops blinking.

If you use the **Reset** button on the front panel, the Wireless Mobile Router performs a **power reset**. If the button is held **depressed for over five seconds**, all LEDs will illuminate and the factory settings will be restored.

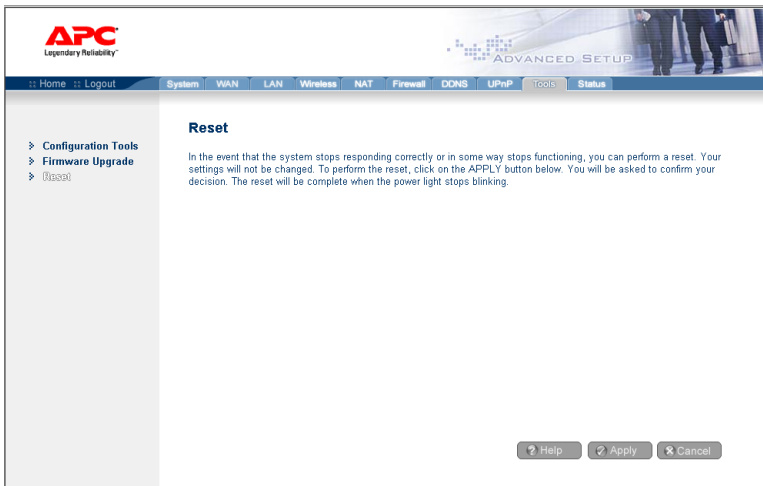


Figure 61. Tools Reset Screen

Status

The Status screen (Figure 62) displays WAN/LAN connection status, firmware, and hardware version numbers, illegal attempts to access your network, as well as information on DHCP clients connected to your network. The items defined in Table 4 are included on this screen:

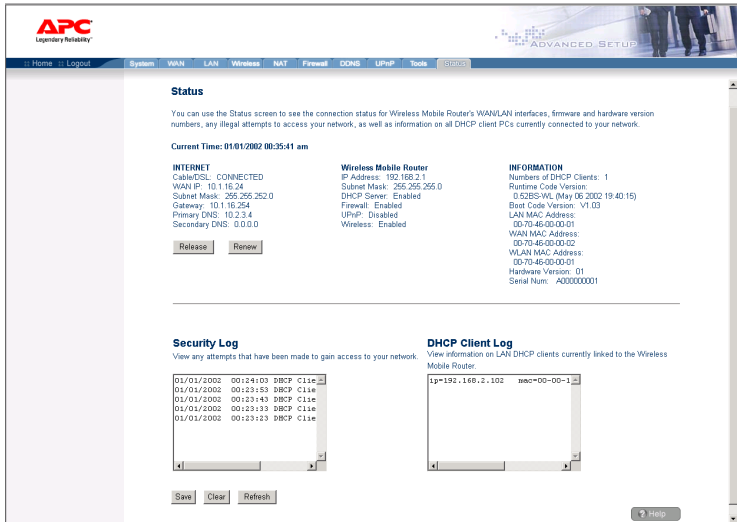


Figure 62. Status Screen

Table 4. Status Screen Elements

Section	Description
INTERNET	Displays WAN connection type and status.
Wireless Mobile Router	Displays system IP settings, as well as DHCP, Firewall, UPnP and Wireless status.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.
Security Log	Displays illegal attempts to access your network.
Save	Click on this button to save the security log file.
Clear	Click on this button to delete the access log.
Refresh	Click on this button to refresh the screen.
DHCP Client Log	Displays information on all DHCP clients on your network.

TROUBLESHOOTING

The information outlined in this section describes some useful steps for getting your computer and the Wireless Mobile Router online. Before contacting Technical Support, ensure you have applied the correct information in all setup screens presented in this manual. Additionally, check for firmware upgrades and other information at APC's Technical Support website (www.apc.com/support).

A. Verify your connection to the Wireless Mobile Router

If you are unable to access the Wireless Mobile Router's web-based administration pages, you may not be properly connected or configured. The screens presented in this section are from a notebook computer running Windows 2000, but the same steps apply to Windows 95/98/Me/XP.

To determine your **TCP/IP configuration status**, proceed as follows:

1. Click **Start**, then choose **Run**.
2. Type **cmd** or **command** to open a **DOS prompt**.
3. In the DOS window, type **ipconfig** and verify the information that is displayed (Figure 63).
4. If your computer is setup for **DHCP**, your **TCP/IP configuration** should be similar to the information displayed:
 - **IP Address:** 192.168.2.X (x is number between 2 and 254)
 - **Subnet:** 255.255.255.0
 - **Gateway:** 192.168.2.1

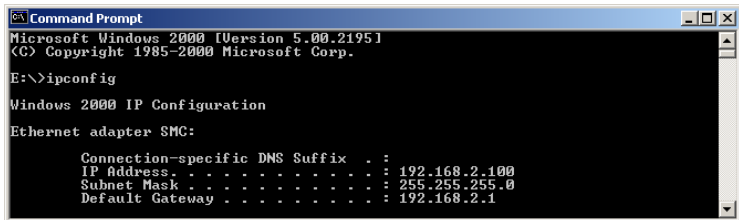


Figure 63. Command Prompt Screen

If you have **any other IP address** information listed, proceed as follows:

If you have an **IP address that starts with 169.254.XXX.XXX**, see **Section B**.

If you have another IP address configured, see **Section C**.

B. I am getting an IP Address that starts with 169.254.XXX.XXX

If you are getting this IP Address, you need to check that you are properly connected to the Wireless Mobile Router.

Confirm that you have a good **Link LED** on the Wireless Mobile Router for the corresponding port. If not, please try another cable.

If you have a good **Link LED**, **open up a DOS window** as described in the previous section and type **ipconfig/renew**.

If you are still unable to get an IP Address from the Wireless Mobile Router, **reinstall** your **network adapter**. Please refer to your adapter manual for information on how to do this.

C. I have another IP Address displayed

If you have another IP address listed, the PC may not be configured for a **DHCP connection**. Please refer to "Configuring Client TCP/IP" for information.

Once you have confirmed your computer is configured for DHCP, proceed as follows:

1. Open a DOS window (Figure 64).
2. Type `ipconfig/release`.

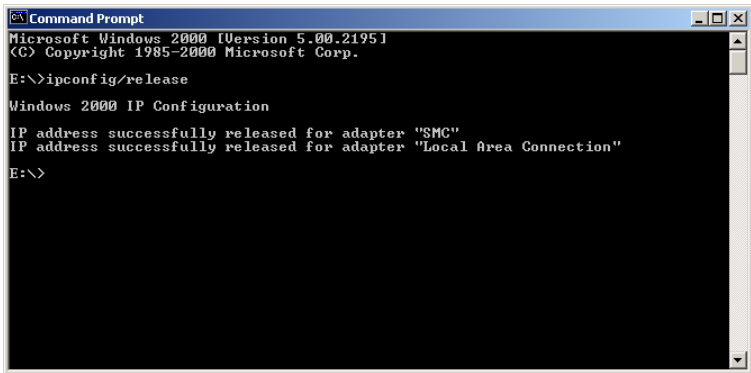


Figure 64. Command Prompt IP Configuration Screen

3. Then type `ipconfig/renew`.

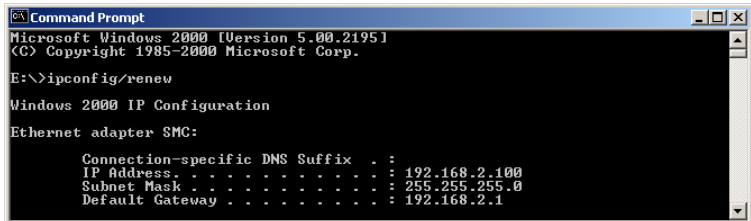


Figure 65. Command Prompt Ethernet Adapter Screen

SPECIFICATIONS

Item	Specification
Standards	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.11b
WAN Interface	One RJ-45 10/100 Mbps port
Management	Web management
Advanced Features	Dynamic IP Address Configuration – DHCP, DNS Firewall – Client privileges, hacker prevention and logging Virtual Private Network – PPTP, L2TP, IPsec pass-through
LED Indicators	Power, Ethernet Link/Activity (10/100 Mbps), Wireless Activity (TX/RX)
Temperature	Operating: 0 to 40 °C (32 to 104 °F) Storage: -20 to 70 °C (-4 to 158 °F)
Humidity	5% to 95% (non-condensing)
Physical Size	14.30 x 12.20 x 3.03 cm (5.63 x 4.80 x 1.19 in)
Weight	150 g (5.3 oz)
Antenna	Two 2.0 dBi omni-directional dipole antenna
Input Power	6 Volts (1 Amp)
Internet Standards	ARP (RFC 826), IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), TCP (RFC 793), Telnet (RFC 854-859), BOOTP Extension (RFC 1497), PPP LCP Extension (RFC 1570), PPPoE (RFC 2516), NAT (RFC 1631), PPP (RFC 1661), HTML (RFC 1866), HTTP (RFC 1945), CHAP (RFC 1944), DHCP (RFC 2131), PPTP (RFC 2637)
Compliances	CE Mark Emissions FCC Class B VCCI Class B Industry Canada Class B EN55022 (CISPR 22) Class B C-Tick - AS/NZS 3548 (1995) Class B Immunity EN 61000-3-2/3 EN 61000-4-2/3/4/5/6/8/11 Safety UL 1950 EN60950 (TÜV) CSA 22.2 No. 950

WARRANTY

The standard warranty is two (2) years from the date of purchase. APC's standard procedure is to replace the original unit with a factory reconditioned unit. APC will ship the replacement unit once the defective unit has been received by the repair department, or cross-ship upon the receipt of a valid credit card number. The customer pays for shipping the unit to APC. APC pays ground freight transportation costs to ship the replacement unit to the customer.

Warranty Registration

To register this product for purposes of the warranty, please go to warranty.apc.com.

APC Contact Information

Technical Support	www.apc.com/support
Internet	www.apc.com
USA and Canada	800-800-4272
France	0800 906 483
Asia-Pacific	(+65) 3896 823
China	(+86) (10) 8529 9888
Europe/Middle East/Africa	(+353) 91 702020
Worldwide	(+1) 401 789 5735

APPENDIX: COMPATIBILITY WITH APC'S TRAVELPOWER CASE AND TRAVELPOWER ADAPTER

The WMR1000B is easily integrated with APC's TravelPower® Case using our TravelPower Adapter deriving the input voltage from a 120-volt wall outlet, 12-volt automobile cigarette lighter, or 12-volt power from a commercial airliner.

For additional information about the TravelPower Case and TravelPower Adapter, go to www.apc.com and select "Mobile Computing".

Note: The TravelPower Adapter can be purchased separately from the TravelPower Case.



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