

USER GUIDE



BARRICADE™ N
150/300Mbps 4-Port Wireless Broadband Router

SMCWBR14S-N5, SMCWBR14-N5



Wireless Broadband Router User Guide

SMC[®]

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- ◆ 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

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.



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IMPORTANT NOTE: FCC RADIATION EXPOSURE STATEMENT

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

“To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.”

CE MARK WARNING

SMC contact for these products in Europe is:
SMC Networks Europe,
C/Fructuós Gelabert 6-8, 2^a, 2^a,
Edificio Conata II,
08970 - Sant Joan Despí, Barcelona, Spain.

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

NATIONAL RESTRICTIONS

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reason/Remark
Bulgaria	None	General authorization required for outdoor use and public service
France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz	Military Radiolocation use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow current relaxed regulation. Full implementation planned 2012
Italy	None	If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply(not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
Russian Federation	None	Only for indoor applications



NOTE: Do not use the product outdoors in France.

ABOUT THIS GUIDE

PURPOSE This guide details the hardware features of the wireless router, including its physical and performance-related characteristics, and how to install the device and use its configuration software.

AUDIENCE This guide is for PC users with a working knowledge of computers. You should be familiar with Windows operating system concepts.

CONVENTIONS The following conventions are used throughout this guide to show information:



NOTE: Emphasizes important information or calls your attention to related features or instructions.



CAUTION: Alerts you to a potential hazard that could cause loss of data, or damage the system or equipment.



WARNING: Alerts you to a potential hazard that could cause personal injury.

RELATED PUBLICATIONS The following publication gives basic information on how to install and use the wireless router.

Quick Installation Guide

Also, as part of the wireless router's software, there is online help that describes all configuration related features.

REVISION HISTORY This section summarizes the changes in each revision of this guide.

JUNE 2011 REVISION

This is the first revision of this guide.

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OVERVIEW OF THE ROUTERS

The Barricade™ SMCWBR14S-N5 150Mbps 4-Port Wireless Broadband Router and SMCWBR14-N5 300Mbps 4-Port Wireless Broadband Router deliver exceptional range and speed, which can fully meet the needs of Small Office/Home Office (SOHO) networks and users demanding higher network performance. The routers integrate a 4-port switch, firewall, NAT router, and wireless access point (AP).

INCREDIBLE SPEED

The SMCWBR14S-N5 provides up to 150 Mbps wireless connections with other 802.11n wireless clients, and the SMCWBR14-N5 provides up to 300 Mbps connections. The speed makes the routers ideal for handling multiple data streams at the same time, which ensures your network remains stable and smooth. The routers are compatible with all IEEE 802.11g and IEEE 802.11b products.

MULTIPLE SECURITY PROTECTIONS

With multiple protection measures, including SSID broadcast control, 64/128/152-bit WEP encryption, Wi-Fi protected Access (WPA2-PSK, WPA-PSK), as well as advanced firewall protection, the routers provide complete data privacy.

FLEXIBLE ACCESS CONTROL

The routers provide flexible access control, so that parents or network administrators can establish restricted access policies for children or staff. It also supports Virtual Server and DMZ host for Port Triggering, and then the network administrators can manage and monitor the network in real time with the remote management function.

SIMPLE INSTALLATION

Since the routers are compatible with all major operating systems, it is easy to manage. A Quick Setup Wizard is supported and detailed step-by-step instructions are provided in this User Guide. Before installing the router, read through this guide to understand all the router's features.

CONVENTIONS

The Router, SMCWBR14S-N5, or SMCWBR14-N5 mentioned in this guide stands for the SMCWBR14S-N5 150Mbps 4-Port Wireless Broadband Router or the SMCWBR14-N5 300Mbps 4-Port Wireless Broadband Router without any explanation.



NOTE: The SMCWBR14S-N5 and SMCWBR14-N5 are both documented in this User Guide. For simplicity, the SMCWBR14S-N5 is used for examples throughout this guide.

The differences between the two routers are:

- ◆ SMCWBR14S-N5: 150 Mbps router with one fixed antenna.
- ◆ SMCWBR14-N5: 300 Mbps router with two detachable antennas.

MAIN FEATURES

- ◆ IEEE 802.11n wireless technology provides a wireless data rate of up to 150 Mbps (SMCWBR14S-N5) or 300 Mbps (SMCWBR14-N5).
- ◆ One 10/100 Mbps Auto-Negotiation RJ-45 WAN port, four 10/100 Mbps Auto-Negotiation RJ-45 LAN ports, supporting Auto MDI/MDIX.
- ◆ Provides WPA/WPA2, WPA-PSK/WPA2-PSK authentication, TKIP/AES encryption security.
- ◆ Shares data and Internet access for users, supporting dynamic IP/static IP/PPPoE Internet access.
- ◆ Supports Virtual Server, Special Application, and DMZ host.
- ◆ Supports UPnP, Dynamic DNS, Static Routing.
- ◆ Provides automatic and scheduled connection to the Internet.
- ◆ Connects to the Internet on demand, and disconnects from the Internet when idle for PPPoE.
- ◆ Built-in NAT and DHCP server supporting static IP address assignment.
- ◆ Supports Stateful Packet Inspection.
- ◆ Supports VPN Passthrough.
- ◆ Supports Parental Control and Access Control.

- ◆ Provides 64/128/152-bit WEP encryption security and wireless LAN ACL (Access Control List).
- ◆ Supports Flow Statistics.
- ◆ Supports firmware upgrade and Web management.

KEY HARDWARE FEATURES

The following table describes the main hardware features of the Router.

Table 1: Key Hardware Features

Feature	Description
WAN Port	One 100BASE-TX RJ-45 port for connecting to the Internet.
LAN Port	Four 100BASE-TX RJ-45 ports for local network connections.
Reset Button	For resetting the unit and restoring factory defaults.
LEDs	Provides LED indicators for Power, WAN port, LAN port, and WLAN status.

PACKAGE CONTENTS

The following items should be found in your package:

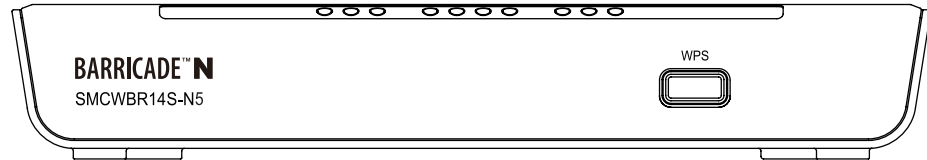
- ◆ SMCWBR14S-N5 150Mbps 4-Port Wireless Broadband Router, or SMCWBR14-N5 300Mbps 4-Port Wireless Broadband Router
- ◆ AC Power Adapter
- ◆ Quick Installation Guide
- ◆ Resource CD, including:
 - ◆ This Guide
 - ◆ Other Helpful Information



NOTE: Make sure that the package contains the above items. If any of the listed items are damaged or missing, please contact with your distributor.

FRONT PANEL

Figure 1: Front Panel



LED INDICATORS The Router includes ten status LED indicators, as described in the following table.

Table 2: LED Behavior

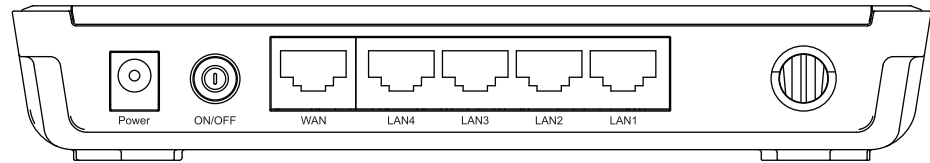
LED	Status	Description
Power	On	The unit is receiving power and is operating normally.
	Off	There is no power currently being supplied to the unit.
System	On	The Router is initializing or may have a system error.
	Blinking	The Router is working properly.
	Off	The Router has a system error.
WLAN	On/Blinking	The Wireless function is enabled.
	Off	The Wireless function is disabled.
WAN LAN (1-4)	On	There is a device linked to the corresponding port, but there is no activity.
	Blinking	There is an active device linked to the corresponding port.
	Off	There is no device linked to the corresponding port.
WPS	On	A wireless device has been successfully added to the network by WPS. The LED will remain on for about 5 minutes.
	Slow Blinking	A wireless device is connecting to the network by WPS. This process lasts for about 2 minutes.
	Off	WPS is not in progress.



NOTE: After a device is successfully added to the network by WPS, the WPS LED will remain on for about 5 minutes and then turn off.

REAR PANEL

Figure 2: Rear Panel



The following items are located on the rear panel (from left to right).

WIRELESS ANTENNAS Receives and transmits wireless data.

POWER The Power socket is where you connect the power adapter. Use the power adapter provided with the Router.

RESET BUTTON There are two ways to reset the Router to its factory defaults:

- ◆ Use the Factory Defaults function on the "System Tools - Factory Defaults" page in the Router's Web-based interface.
- ◆ Use the Factory Default Reset button: With the Router powered on, use a pin to press and hold the Reset button for about 5 seconds until the System LED turns to quick flashing from slow flashing. Then release the button and wait for the Router to reboot to its factory default settings.

ETHERNET WAN PORT This WAN port is where you connect the DSL/cable Modem.

ETHERNET LAN PORTS LAN1,2,3,4: These ports (1, 2, 3, 4) connect the Router to local PCs.

SYSTEM REQUIREMENTS

You must meet the following minimum requirements:

- ◆ Broadband Internet Access Service (DSL/Cable/Ethernet)
- ◆ One DSL/Cable Modem that has an RJ-45 connector.
- ◆ PCs with working Ethernet adapters and Ethernet cables with RJ-45 connectors.
- ◆ TCP/IP protocol on each PC.
- ◆ Web browser, such as Microsoft Internet Explorer, Mozilla Firefox, or Apple Safari.

INSTALLATION ENVIRONMENT REQUIREMENTS

- ◆ Place the Router in a well ventilated place far from any heater or heating vent
- ◆ Avoid direct exposure to any strong light (such as sunlight)
- ◆ Keep at least 2 inches (5 cm) of clear space around the Router
- ◆ Operating Temperature: 0 °C ~ 40 °C (32 °F ~ 104 °F)
- ◆ Operating Humidity: 10% ~ 90% RH, Non-condensing

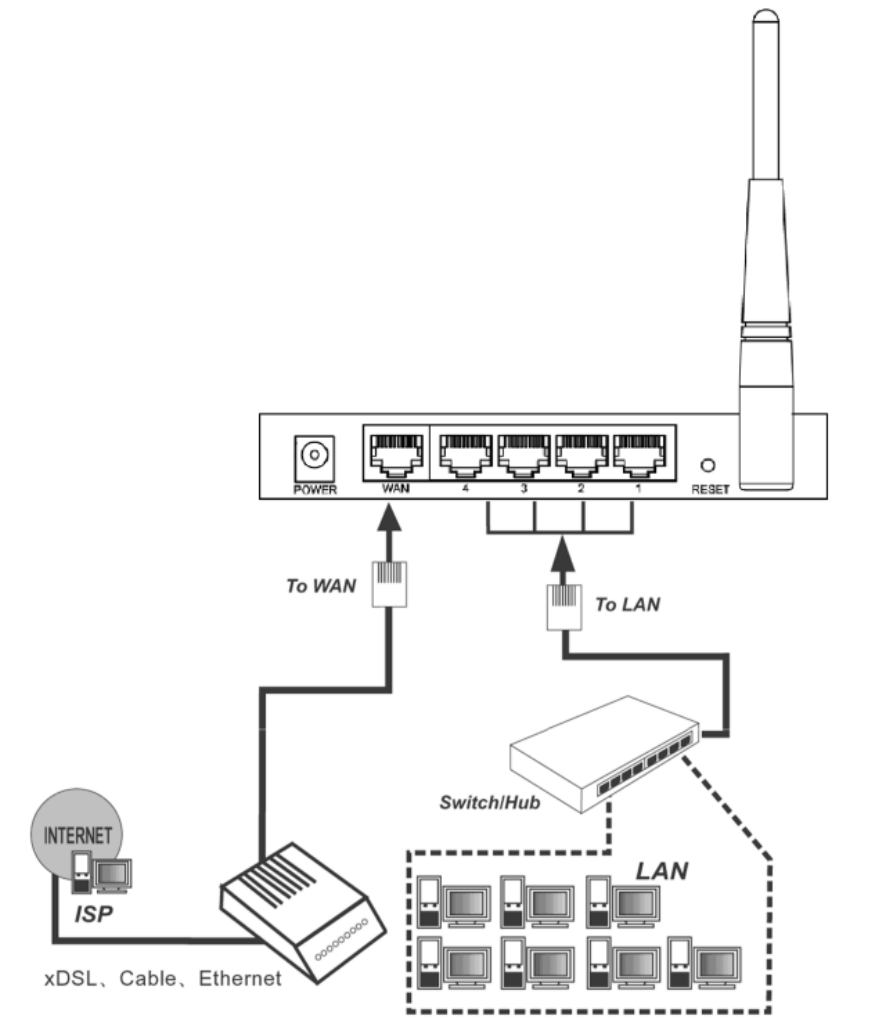
CONNECTING THE ROUTER

Before installing the Router, make sure your PC is successfully connected to the Internet through the broadband service. If there are any problems, first contact your ISP. After that, install the Router according to the following steps.

1. Power off your PC, Cable/DSL Modem, and the Router.
2. Locate an optimum location for the Router. The best place is usually at the center of your network. The place must meet the Installation Environment Requirements.

3. Adjust the direction of the antennas. Normally, upright is the best direction.
4. Connect PCs and any switch in your LAN to the LAN Ports on the Router, as shown in [Figure 3](#).
5. Connect the DSL/Cable Modem to the WAN port on the Router, as shown in [Figure 3](#).
6. Connect the AC power adapter to the power socket on the Router, and the other end into an electrical outlet. The Router will start to work automatically.
7. Power on your PC and Cable/DSL Modem.

Figure 3: Hardware Installation



This chapter shows you how to quickly configure the basic functions of your Router using the Quick Setup Wizard.

TCP/IP CONFIGURATION

The default IP address of the Router is 192.168.2.1. And the default Subnet Mask is 255.255.255.0. These values can be changed as you desire. In this guide, all the default values are used for descriptions.

Connect local PCs to the LAN ports of the Router. And then you can configure the IP address for your PC in the following two ways.

CONFIGURE THE IP ADDRESS MANUALLY

1. Set up the TCP/IP Protocol for your PC. If you need instructions on how to do this, refer to Appendix B: ["Configuring the PC" on page 118](#).
2. Configure the network parameters. The IP address is 192.168.2.xxx ("xxx" is any number from 2 to 254), Subnet Mask is 255.255.255.0, and Gateway is 192.168.2.1 (the Router's default IP address).

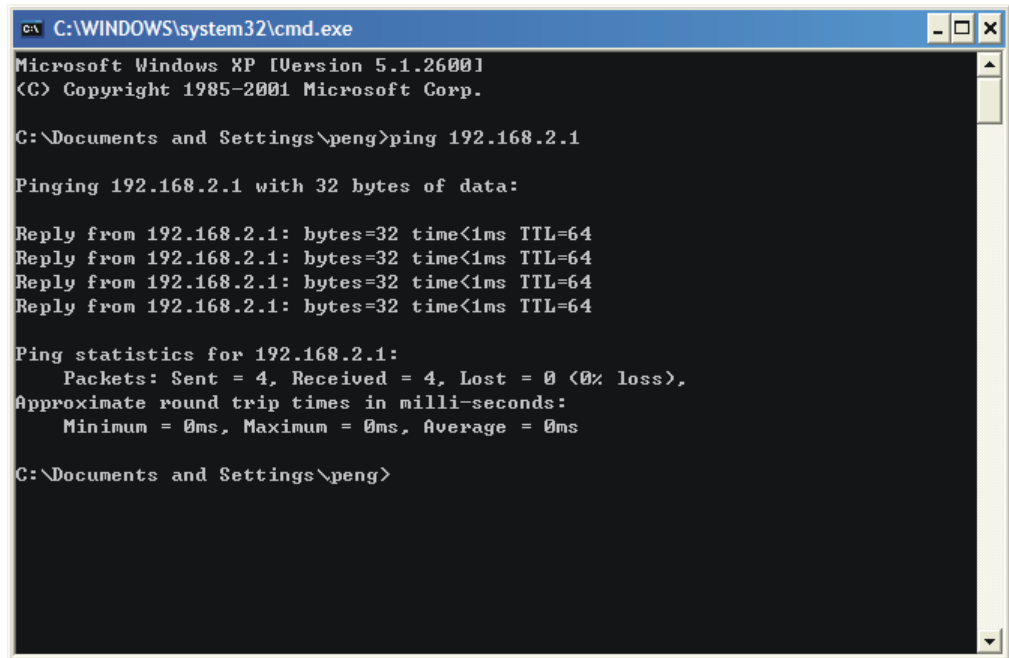
OBTAIN AN IP ADDRESS AUTOMATICALLY

1. Set the TCP/IP Protocol to "Obtain an IP address automatically" mode on your PC. If you need instructions as to how to do this, refer to Appendix B: ["Configuring the PC" on page 118](#).
2. Then the built-in DHCP server will assign IP address for the PC.

Now you can run the Ping command at the command prompt to verify the network connection between your PC and the Router. The following example is for Windows 2000.

Open a command prompt and type "ping 192.168.2.1", and then press Enter.

If the result displayed is similar to the [Figure 4 on page 25](#), it means a connection between your PC and the Router has been established.

Figure 4: Success Result of a Ping Command

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\peng>ping 192.168.2.1

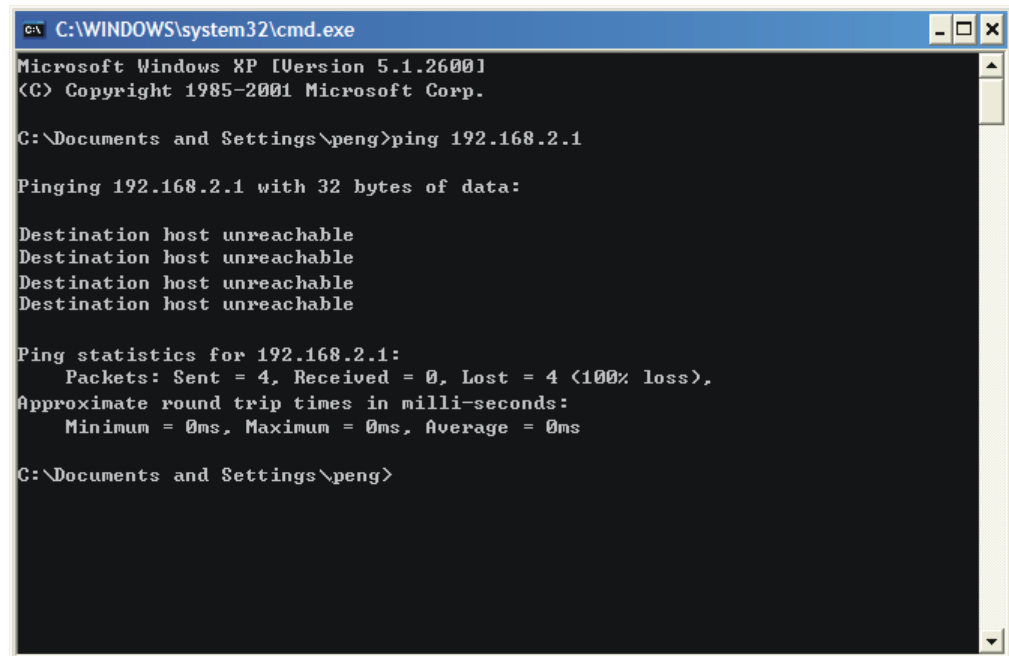
Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time<1ms TTL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Documents and Settings\peng>
```

If the result displayed is similar to [Figure 5](#), it means the connection between your PC and the Router has failed.

Figure 5: Failure of a Ping Command

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\peng>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Destination host unreachable
Destination host unreachable
Destination host unreachable
Destination host unreachable

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Documents and Settings\peng>
```

Follow these steps to check the connection:

1. Is the connection between your PC and the Router correct?

The LAN port LED on the Router and the LED on your PC's adapter should be on.

2. Is the TCP/IP configuration for your PC correct?

If the Router's IP address is 192.168.2.1, your PC's IP address must be within the range of 192.168.2.2 ~ 192.168.2.254.

QUICK INSTALLATION GUIDE

Using the Web-based utility, it is easy to configure and manage the Router. The Web-based utility can be used on any Windows, Macintosh, or UNIX system with a Web browser, such as Microsoft Internet Explorer, Mozilla Firefox, or Apple Safari.

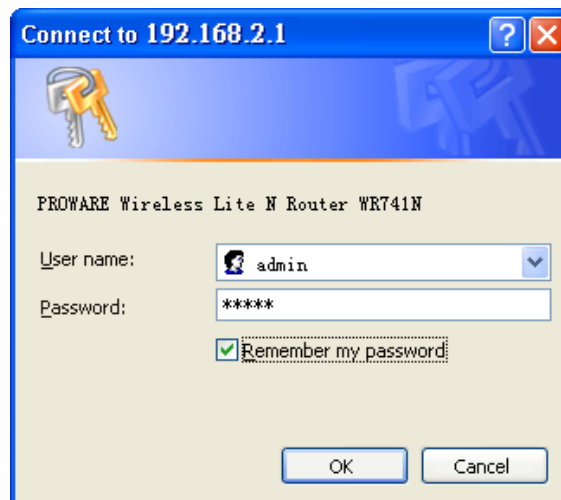
1. To access the configuration utility, open a web-browser and type in the default address `http://192.168.2.1` in the address field of the browser.

Figure 6: Log in to the Router



After a moment, a login window appears similar to [Figure 7](#). Enter "admin" for the User Name and "smcadmin" for the Password, both in lower case letters. Then click the OK button or press the Enter key.

Figure 7: Windows Login

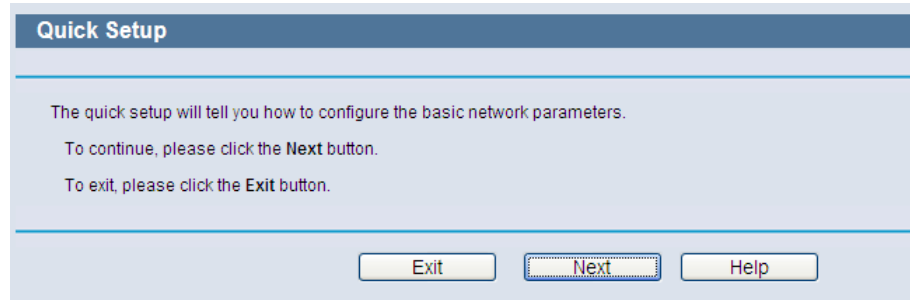




NOTE: If the above screen does not display, it means that your Web-browser has been set to a proxy. Go to Tools menu>Internet Options>Connections>LAN Settings, and in the screen that displays, cancel the “Using Proxy” checkbox, and click OK.

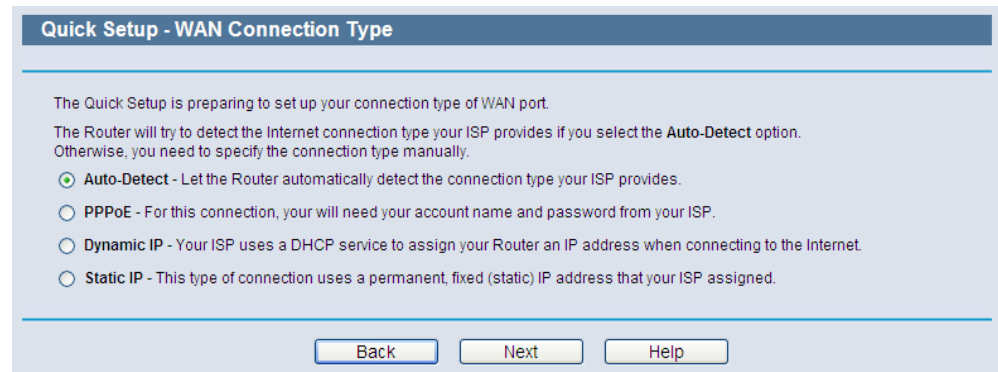
2. After successfully logging in, click “Quick Setup” to quickly configure your Router.

Figure 8: Quick Setup



3. Click Next. The WAN Connection Type page will appear, as shown in Figure 9.

Figure 9: Choose the WAN Connection Type



The Router provides an auto-detect function and supports three popular ways (PPPoE, Dynamic IP, and Static IP) to connect to the Internet. It is recommended that you make use of the auto-detect function. If you are sure of what kind of connection type your ISP provides, you can select the type and click Next to go on configuring.

4. If you select auto-detect, the Router will automatically detect the connection type your ISP provides. Make sure the cable is securely plugged into the WAN port before detection. The appropriate configuration page will be displayed when an active Internet service is successfully detected by the Router.

- a. If the connection type detected is PPPoE, the screen shown in [Figure 10](#) will display.

Figure 10: Quick Setup – PPPoE

- **User Name and Password** — Enter the User Name and Password provided by your ISP. These fields are case sensitive. If you have difficulty with this process, contact your ISP.
- b. If the connection type detected is Dynamic IP, the screen shown in [Figure 12](#) will display. You can then continue with the wireless configuration.
 - c. If the connection type detected is Static IP, the screen shown in [Figure 11](#) will display.

Figure 11: Quick Setup - Static IP

- **IP Address** - This is the WAN IP address as seen by external users on the Internet (including your ISP). Enter the IP address into the field.
- **Subnet Mask** - The Subnet Mask is used for the WAN IP address, it is usually 255.255.255.0.
- **Default Gateway** - Enter the gateway IP address into the box, if required.
- **Primary DNS** - Enter the DNS Server IP address into the box, if required.

- **Secondary DNS** - If your ISP provides another DNS server, enter it into this field.
5. Click Next to continue. The Wireless settings page will appear, as shown in [Figure 12](#).

Figure 12: Quick Setup – Wireless

The screenshot shows the 'Quick Setup - Wireless' configuration page. It includes the following fields and options:

- Wireless Radio:** Enable (dropdown)
- SSID:** SMC (text input)
- Region:** United States (dropdown)
- Channel:** Auto (dropdown)
- Mode:** 11b/g/n mixed (dropdown)
- Channel Width:** Auto (dropdown)
- Max Tx Rate:** 300Mbps (dropdown)
- Wireless Security:**
 - Disable Security
 - WPA-PSK/WPA2-PSK
 - WEP
 - No Change
- PSK Password:** (text input) (You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)
- WEP Password:** (text input) **Key Type:** 152bit (dropdown) (You can enter 5/13/16 ASCII characters depending on the key type 64/128/152bit.)

Navigation buttons: Back, Next, Help

- **Wireless Radio** - Enable or disable the wireless radio choosing from the pull-down list.
- **SSID** - Enter a value of up to 32 characters. The same name of SSID (Service Set Identification) must be assigned to all wireless devices in your network. Considering your wireless network security, the default SSID is set to "SMC". This value is case-sensitive. For example, "TEST" is NOT the same as "test".
- **Region** - Select your region from the pull-down list. This field specifies the region where the wireless function of the Router can be used. It may be illegal to use the wireless function of the Router in a region other than one of those specified in this field. If your country or region is not listed, contact your local government agency for assistance.
- **Channel** - This field determines which operating frequency will be used. The default channel is set to Auto, so the AP will choose the best channel automatically. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.

- **Mode** - This field determines the wireless mode in which the Router works.
- **Channel Width** - Select any channel width from the pull-down list. The default setting is automatic, which can adjust the channel width for your clients automatically.
- **Max Tx Rate** - You can limit the maximum transmission rate of the Router through this field.
- **Disable Security** - The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the Router without encryption. It is recommended strongly that you choose one of following options to enable security.
- **WPA-PSK/WPA2-PSK** - Select WPA based on pre-shared passphrase.
 - PSK Password - You can enter ASCII or Hexadecimal characters.

For **ASCII**, the key can be made up of any numbers 0 to 9 and any letters A to Z, the length should be between 8 and 63 characters.

For **Hexadecimal**, the key can be made up of any numbers 0 to 9 and letters A to F, the length should be between 8 and 64 characters.

Please also note the key is case sensitive, this means that upper and lower case keys will affect the outcome. It would also be a good idea to write down the key and all related wireless security settings.

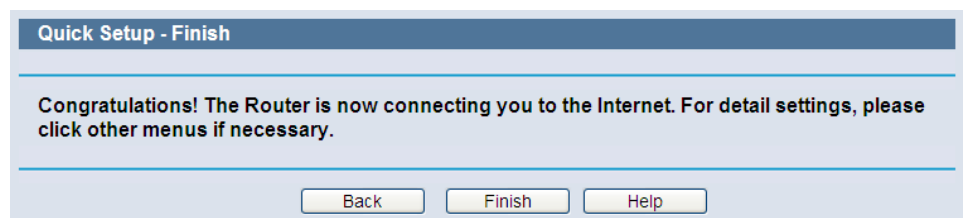
- **No Change** - If you chose this option, wireless security configuration will not change.

These settings are only for basic wireless parameters. For advanced settings, please refer to "[Wireless](#)" on page 56.

6. Click the Next button. You will then see the Finish page.

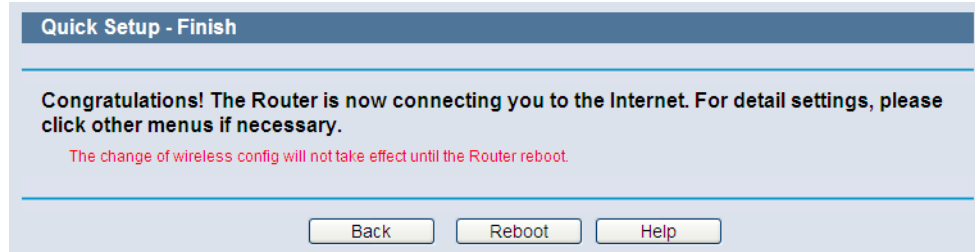
If you don't make any changes on the **Wireless** page, you will see the **Finish** page, as shown in [Figure 13](#). Click the **Finish** button to finish the **Quick Setup**.

Figure 13: Quick Setup – Finish



If there is something changed on the Wireless page, you will see the Finish page as shown in [Figure 14](#). Click the Reboot button to make your wireless configuration to take effect and finish the Quick Setup.

Figure 14: Quick Setup - Finish



4

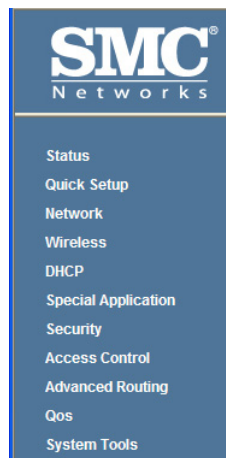
CONFIGURING THE ROUTER

This chapter shows each Web page's key functions and the configuration method.

LOGIN

After successful login, you see the main menu on the left of the Web page. On the right, there are the corresponding explanations and instructions.

Figure 15: The Main Menu



The detailed explanations for each Web page's key functions are listed below.

STATUS

The Status page provides the current status information about the Router. All information is read-only.

Figure 16: Status

Status			
Firmware Version:	V1.0.0.0 Build 110429 Rel.41891n		
Hardware Version:	SMCWBR14-N5 A1		
LAN			
MAC Address:	D8-5D-4C-DF-21-C0		
IP Address:	192.168.2.1		
Subnet Mask:	255.255.255.0		
Wireless			
Wireless Radio:	Enable		
Name (SSID):	SMC		
Channel:	Auto (Current channel 4)		
Mode:	11b/g/n mixed		
Channel Width:	Automatic		
Max Tx Rate:	300Mbps		
MAC Address:	D8-5D-4C-DF-21-C0		
WDS Status:	Disable		
WAN			
MAC Address:	D8-5D-4C-DF-21-C1		
IP Address:	0.0.0.0	Dynamic IP	
Subnet Mask:	0.0.0.0		
Default Gateway:	0.0.0.0		
DNS Server:	0.0.0.0, 0.0.0.0		
WAN port is unplugged!			
Traffic Statistics			
		Received	Sent
Bytes:	0	0	0
Packets:	0	0	0
System Up Time:	2 days 00:58:17		<input type="button" value="Refresh"/> <input type="button" value="Help"/>

QUICK SETUP

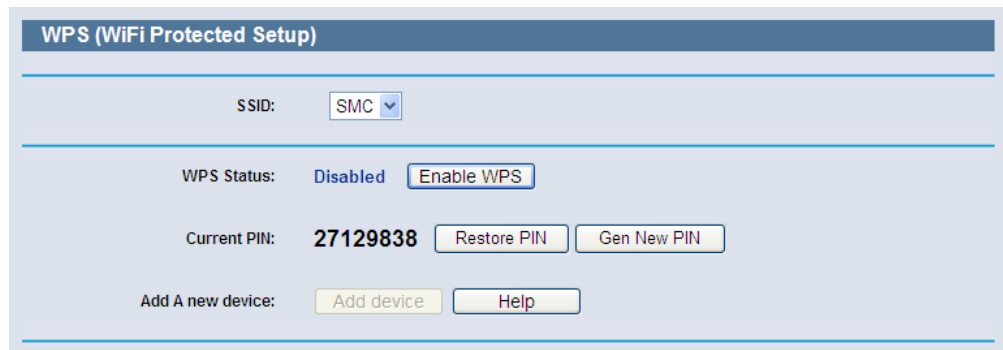
Refer to “Quick Installation Guide” on page 24.

WPS

This section shows how to quickly add a new wireless device to an existing network using **WPS** (Wi-Fi Protected Setup).

Select “**WPS**” from the menu. The following screen (Figure 17) displays.

Figure 17: WPS (Wi-Fi Protected Setup)



The screenshot shows the WPS configuration interface. At the top, the title is "WPS (WiFi Protected Setup)". Below this, there is a section for "SSID:" with a dropdown menu showing "SMC". The next section is "WPS Status:" which is currently "Disabled" and has an "Enable WPS" button. Below that is "Current PIN:" showing "27129838" with "Restore PIN" and "Gen New PIN" buttons. At the bottom, there is an "Add A new device:" section with "Add device" and "Help" buttons.

- ◆ **WPS Status** - Enables or disables the WPS function.
- ◆ **Current PIN** - Displays the current value of the Router's PIN. The default PIN of the Router can be found on the label or in the User Guide.
- ◆ **Restore PIN** - Restores the PIN of the Router to its default value.
- ◆ **Gen New PIN** - Click this button to create a new random value for the Router's PIN. You can ensure the network security by generating a new PIN.
- ◆ **Add device** - You can manually add a new device to the existing network by clicking this button.

ADDING A NEW DEVICE: If the wireless adapter supports Wi-Fi Protected Setup (WPS), you can establish a wireless connection between wireless adapter and Router using either the Push Button Configuration (PBC) method or the PIN method.



NOTE: To make a successful connection using WPS, you should also perform the corresponding WPS configuration on the new device.

For the configuration of the new device, here takes the Wireless Adapter of our company for example.

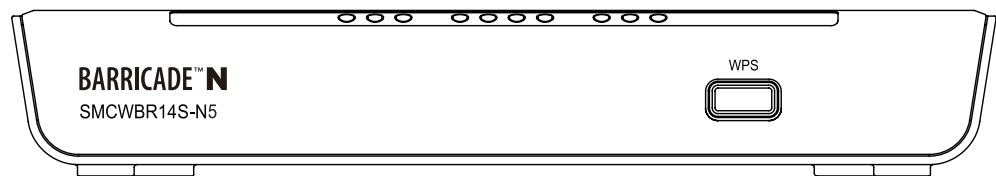
PUSH BUTTON CONFIGURATION (PBC)

If the wireless adapter supports Wi-Fi Protected Setup and the Push Button Configuration (PBC) method, you can add it to the network by PBC with the following two methods.

METHOD ONE:

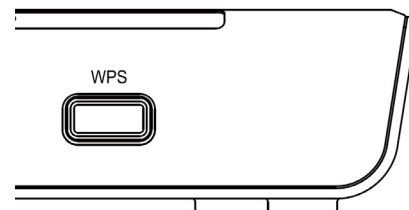
1. Press the WPS button on the front panel of the Router.

Figure 18: Front Panel



2. Press and hold the WPS button of the wireless client adapter directly for 2 or 3 seconds.

Figure 19: WPS Button



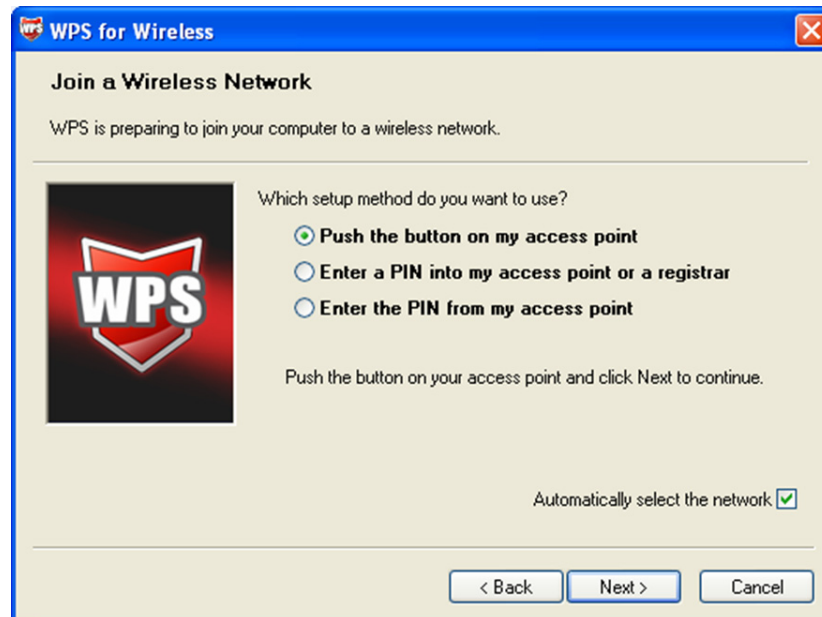
3. Wait a while until the next screen appears. Click Finish to complete the WPS configuration.

Figure 20: The WPS Configuration Screen of Wireless Adapter

**METHOD TWO:**

1. Press the WPS button on the front panel of the Router.
2. To configure the wireless adapter, select "**Push the button on my access point**" in the WPS configuration utility. Then click Next.

Figure 21: The WPS Configuration Screen of Wireless Adapter



3. Wait until the next screen appears. Click Finish to complete the WPS configuration.

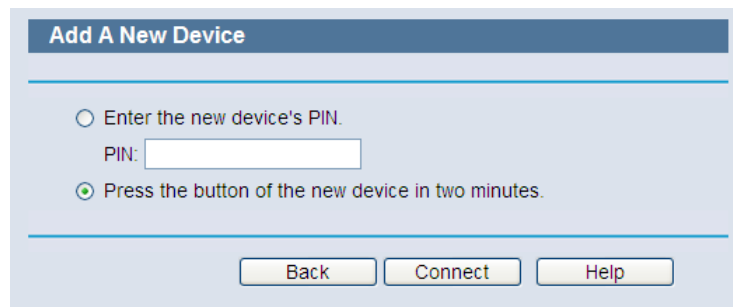
Figure 22: The WPS Configuration Screen of Wireless Adapter



METHOD THREE:

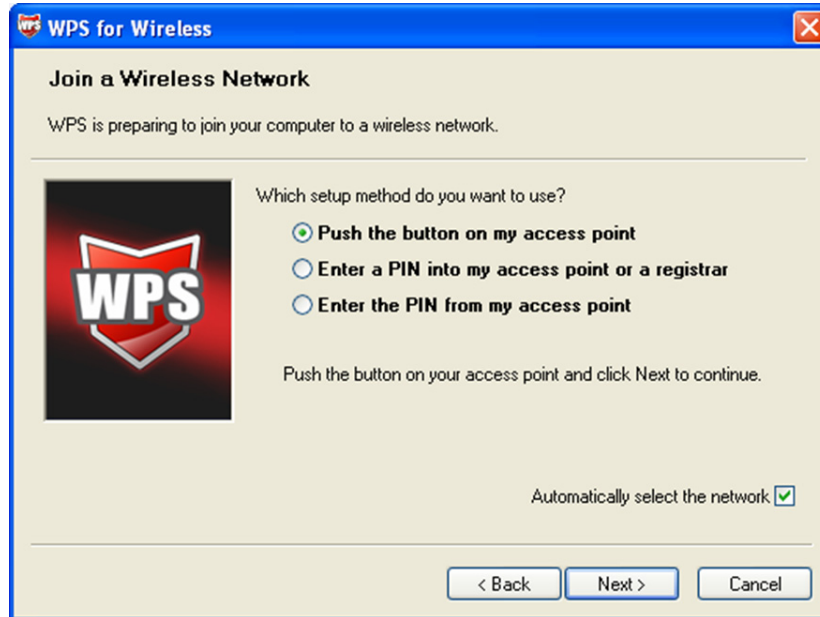
1. Keep the default WPS Status as Enabled and click the "Add device" button in Figure 17, then the following screen will appear.

Figure 23: Add A New Device



2. Select "**Press the button of the new device in two minutes**" and click **Connect**.
3. For the configuration of the wireless adapter, please choose "Push the button on my access point" in the WPS configuration as below, and click Next.

Figure 24: The WPS Configuration Screen of Wireless Adapter



4. Wait until the next screen appears. Click Finish to complete the WPS configuration.

Figure 25: The WPS Configuration Screen of Wireless Adapter



PIN CONFIGURATION

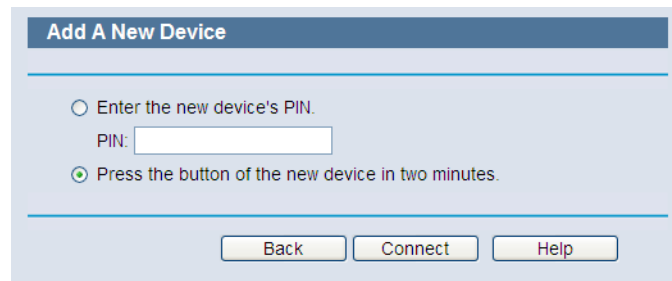
If the new device supports Wi-Fi Protected Setup and the PIN method, you can add it to the network by PIN with the following two methods.

METHOD ONE:

Enter the PIN into the Router.

1. Keep the default WPS Status as Enabled and click the "Add device" button in [Figure 17](#). The following screen will appear.

Figure 26: Add Device



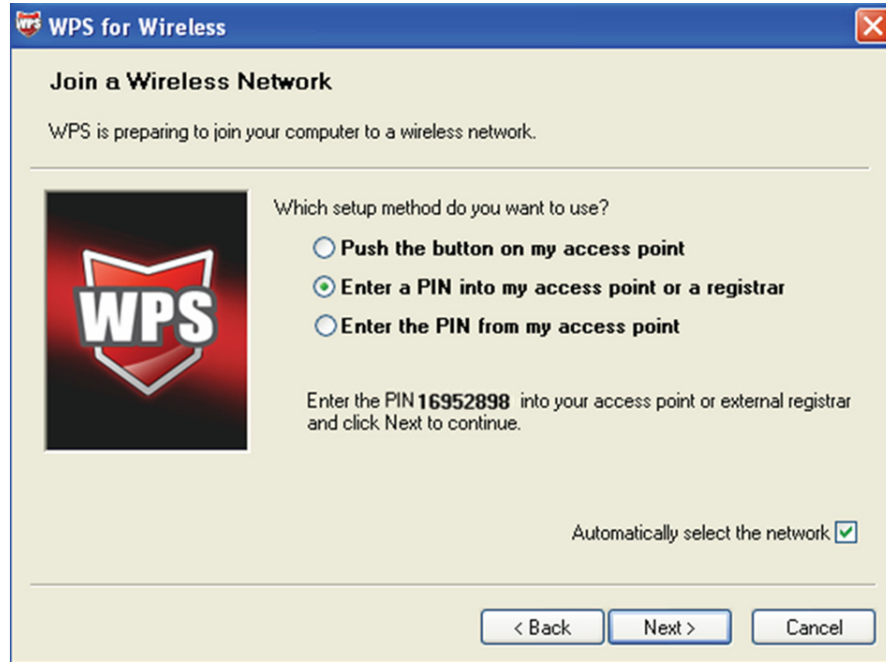
The screenshot shows a web interface titled "Add A New Device". It contains two radio button options. The first option is "Enter the new device's PIN." with a text input field labeled "PIN:". The second option is "Press the button of the new device in two minutes." and is selected with a green dot. At the bottom, there are three buttons: "Back", "Connect", and "Help".

2. Select "**Enter the new device's PIN**" and enter the PIN code of the wireless adapter in the field after **PIN**, as shown in the figure above. Then click **Connect**.



NOTE: The PIN code of the adapter is always displayed on the WPS configuration screen.

3. For the configuration of the wireless adapter, select "**Enter a PIN into my access point or a registrar**" in the WPS configuration, and click Next.

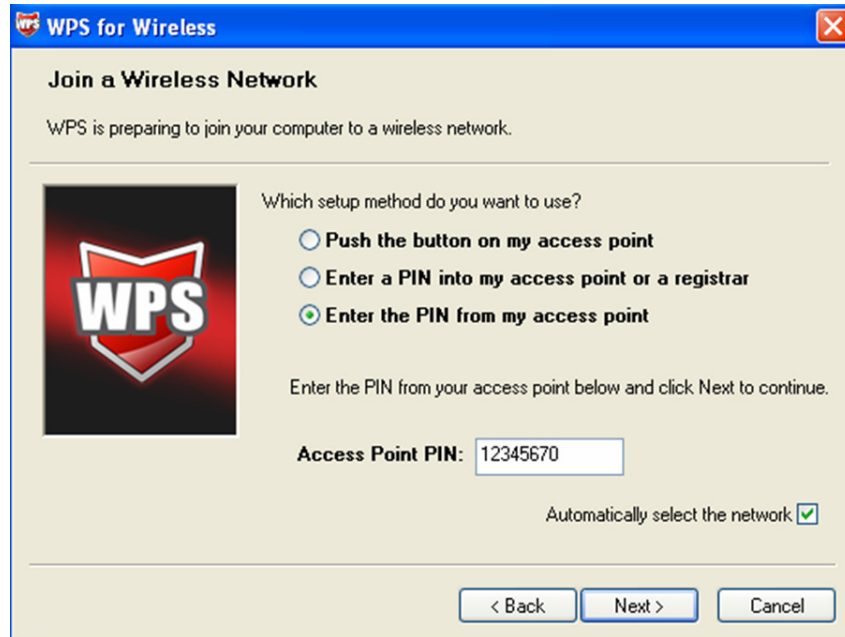
Figure 27: The WPS Configuration Screen of Wireless Adapter

NOTE: In this example, the default PIN code of this adapter is 16952898, as shown in the above figure.

METHOD TWO:

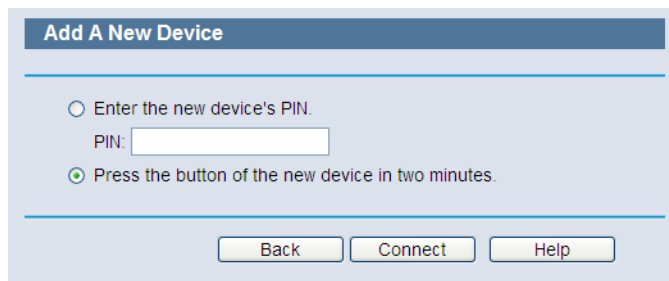
Enter the PIN from my Router.

1. Read the Current PIN code of the Router in [Figure 28](#). (This example uses a PIN code 12345670 for the Router.)
2. For the configuration of the wireless adapter, select "Enter a PIN from my access point" in the WPS configuration as below. Enter the PIN code of the Router into the field after "Access Point PIN". Then click Next.

Figure 28: The WPS Configuration Screen of Wireless Adapter

NOTE: The default PIN code of the Router can be found on its label or in the WPS configuration screen, as in [Figure 17](#).

You will see the following screen when the new device is successfully connected to the network.

Figure 29: Add a New Device

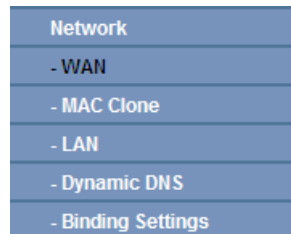
NOTE: The WPS LED on the Router will turn on green for five minutes when a device has been successfully added to the network.

NOTE: The WPS function cannot be configured when the wireless function of the Router is disabled. Make sure the wireless function is enabled before configuring WPS.

NETWORK

There are five submenus under the Network menu (shown in [Figure 30](#)): **WAN**, **MAC Clone**, **LAN**, **Dynamic DNS**, and **MAC Clone**. Click any of them to configure the corresponding function.

Figure 30: The Network Menu



WAN Select "**Network>WAN**", you can configure the IP parameters of the WAN on the screen below.

1. If your ISP provides the DHCP service, choose **Dynamic IP**, and the Router will automatically receive IP parameters from your ISP. You can see the page as follows ([Figure 31](#)).

Figure 31: WAN-Dynamic IP

WAN

WAN Connection Type:

IP Address:

Subnet Mask:

Default Gateway:

WAN port is unplugged!

MTU Size (in bytes): (The default is 1500, do not change unless necessary.)

Use These DNS Servers

Primary DNS:

Secondary DNS: (Optional)

Host Name:

Get IP with Unicast DHCP (It is usually not required.)

This page displays the WAN IP parameters assigned dynamically by your ISP, including IP address, Subnet Mask, Default Gateway, etc. Click the

Renew button to renew the IP parameters from your ISP. Click the Release button to release the IP parameters.

- ◆ **MTU Size** - The normal **MTU** (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. It is not recommended that you change the default MTU Size unless required by your ISP.
- ◆ **Use These DNS Servers** - If your ISP gives you one or two DNS addresses, select Use These DNS Servers and enter the primary and secondary addresses into the correct fields. Otherwise, the DNS servers will be assigned dynamically from your ISP.



NOTE: If you find an error when you go to a Web site after entering the DNS addresses, it is likely that your DNS servers are set up improperly. You should contact your ISP to check the DNS server addresses.

- ◆ **Get IP with Unicast DHCP** - Some ISP DHCP servers do not support broadcast applications. If you cannot get the IP Address normally, you can choose this option. (It is rarely required.)

Click the Save button to save your settings.

2. If your ISP provides a static or fixed IP Address, Subnet Mask, Gateway and DNS setting, select Static IP. The Static IP settings page will appear, shown in [Figure 32](#).

Figure 32: WAN-Static IP

The screenshot shows the WAN configuration interface. At the top, the title is "WAN". Below it, the "WAN Connection Type" is set to "Static IP" in a dropdown menu, with a "Detect" button to its right. The configuration fields are as follows:

- IP Address:** 0.0.0.0
- Subnet Mask:** 0.0.0.0
- Default Gateway:** 0.0.0.0 (Optional)
- MTU Size (in bytes):** 1500 (The default is 1500, do not change unless necessary.)
- Primary DNS:** 0.0.0.0 (Optional)
- Secondary DNS:** 0.0.0.0 (Optional)

At the bottom of the form, there are two buttons: "Save" and "Help".

- ◆ **IP Address** - Enter the IP address in dotted-decimal notation provided by your ISP.
- ◆ **Subnet Mask** - Enter the subnet Mask in dotted-decimal notation provided by your ISP, usually is 255.255.255.0.

- ◆ **Default Gateway** - (Optional) Enter the gateway IP address in dotted-decimal notation provided by your ISP.
- ◆ **MTU Size** - The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. It is not recommended that you change the default MTU Size unless required by your ISP.
- ◆ **Primary/Secondary DNS** - (Optional) Enter one or two DNS addresses in dotted-decimal notation provided by your ISP.

Click the Save button to save your settings.

3. If your ISP provides a PPPoE connection, select PPPoE option. And you should enter the following parameters (Figure 33):

Figure 33: WAN-PPPoE

The screenshot shows the WAN configuration interface. At the top, the title is 'WAN'. Below it, the 'WAN Connection Type' is set to 'PPPoE' with a 'Detect' button. The 'PPPoE Connection' section has three input fields: 'User Name' with the value 'username', 'Password' with masked characters, and 'Confirm Password' with masked characters. The 'Secondary Connection' section has three radio buttons: 'Disabled' (selected), 'Dynamic IP', and 'Static IP (For Dual Access)'. The 'Wan Connection Mode' section has four radio buttons: 'Connect on Demand' (selected), 'Connect Automatically', 'Time-based Connecting', and 'Connect Manually'. Under 'Connect on Demand', there is a 'Max Idle Time' of 15 minutes. Under 'Time-based Connecting', there is a 'Period of Time' from 0:00 to 23:59. Under 'Connect Manually', there is a 'Max Idle Time' of 15 minutes. At the bottom of the form, there are three buttons: 'Connect', 'Disconnect', and 'Disconnected!'. At the very bottom of the page, there are three buttons: 'Save', 'Advanced', and 'Help'.

- ◆ **User Name/Password** - Enter the User Name and Password provided by your ISP. These fields are case-sensitive.
- ◆ **Secondary Connection** - It is available only for PPPoE Connection. If your ISP provides an extra Connection type such as Dynamic/Static IP to connect to a local area network, then you can check the radio button of Dynamic/Static IP to activate this secondary connection.
 - **Disabled** - The Secondary Connection is disabled by default, so there is PPPoE connection only. This is recommended.

- **Dynamic IP** - You can check this radio button to use Dynamic IP as the secondary connection to connect to the local area network provided by ISP.
- **Static IP** - You can check this radio button to use Static IP as the secondary connection to connect to the local area network provided by ISP.
- ◆ **Connect on Demand** - In this mode, the Internet connection can be terminated automatically after a specified inactivity period (Max Idle Time) and be re-established when you attempt to access the Internet again. If you want your Internet connection keeps active all the time, please enter "0" in the Max Idle Time field. Otherwise, enter the number of minutes you want to have elapsed before your Internet access disconnects.
- ◆ **Connect Automatically** - The connection can be re-established automatically when it was down.
- ◆ **Time-based Connecting** - The connection will only be established in the period from the start time to the end time (both are in HH:MM format).



NOTE: Only when you have configured the system time on System Tools -> Time page, will the Time-based Connecting function can take effect.

- ◆ **Connect Manually** - You can click the Connect/ Disconnect button to connect/disconnect immediately. This mode also supports the Max Idle Time function as Connect on Demand mode. The Internet connection can be disconnected automatically after a specified inactivity period and re-established when you attempt to access the Internet again.



CAUTION: Sometimes the connection cannot be terminated although you specify a time to Max Idle Time, since some applications are visiting the Internet continually in the background.

4. If you want to do some advanced configurations, please click the Advanced button, and the page shown in [Figure 34](#) will then appear:

Figure 34: WAN-PPPoE Advanced Settings

PPPoE Advanced Settings

MTU Size (in bytes): (The default is 1480, do not change unless necessary.)

Service Name:

AC Name:

Use IP address specified by ISP

ISP Specified IP Address:

Detect Online Interval: Seconds (0 ~ 120 seconds, the default is 0, 0 means not detecting.)

Use the following DNS Servers

Primary DNS:

Secondary DNS: (Optional)

- ◆ **MTU Size** - The default MTU size is “1480” bytes, which is usually fine. It is not recommended that you change the default MTU Size unless required by your ISP.
- ◆ **Service Name/AC Name** - The service name and AC (Access Concentrator) name, which should not be configured unless you are sure it is necessary for your ISP. In most cases, leaving these fields blank will work.
- ◆ **ISP Specified IP Address** - If your ISP does not automatically assign IP addresses to the Router during login, please click “Use IP address specified by ISP” check box and enter the IP address provided by your ISP in dotted-decimal notation.
- ◆ **Detect Online Interval** - The Router will detect Access Concentrator online at every interval. The default value is “0”. You can input the value between “0”and “120”. The value “0” means no detect.
- ◆ **DNS IP address** - If your ISP does not automatically assign DNS addresses to the Router during login, please click “Use the following DNS servers” check box and enter the IP address in dotted-decimal notation of your ISP’s primary DNS server. If a secondary DNS server address is available, enter it as well.

Click the Save button to save your settings.

5. If your ISP provides BigPond Cable (or Heart Beat Signal) connection, please select BigPond Cable. And you should enter the following parameters (Figure 35):

Figure 35: WAN-BigPond Cable

The screenshot shows the WAN configuration interface for a BigPond Cable connection. The 'WAN Connection Type' is set to 'BigPond Cable'. The 'User Name' field contains 'username' and the 'Password' field is masked with dots. The 'Auth Server' field contains 'sm-server' and the 'Auth Domain' field is empty. The 'MTU Size (in bytes)' is set to '1500' with a note: '(The default is 1500, do not change unless necessary.)'. There are three radio button options for connection mode: 'Connect on Demand' (selected), 'Connect Automatically', and 'Connect Manually'. Each mode has a 'Max Idle Time' field set to '15' minutes. At the bottom, there are buttons for 'Connect', 'Disconnect', and 'Disconnected!'. At the very bottom, there are 'Save' and 'Help' buttons.

- ◆ **User Name/Password** - Enter the User Name and Password provided by your ISP. These fields are case-sensitive.
- ◆ **Auth Server** - Enter the authenticating server IP address or host name.
- ◆ **Auth Domain** - Type in the domain suffix server name based on your location.

For example:

NSW / ACT - nsw.bigpond.net.au
 VIC / TAS / WA / SA / NT - vic.bigpond.net.au
 QLD - qld.bigpond.net.au

- ◆ **MTU Size** - The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 Bytes. It is not recommended that you change the default MTU Size unless required by your ISP.
- ◆ **Connect on Demand** - In this mode, the Internet connection can be terminated automatically after a specified inactivity period (**Max Idle Time**) and be re-established when you attempt to access the Internet again. If you want your Internet connection keeps active all the time, please enter "0" in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet access disconnects.
- ◆ **Connect Automatically** - The connection can be re-established automatically when it was down.

- ◆ **Connect Manually** - You can click the **Connect/Disconnect** button to connect/disconnect immediately. This mode also supports the Max Idle Time function as Connect on Demand mode. The Internet connection can be disconnected automatically after a specified inactivity period and re-established when you attempt to access the Internet again. Click the Connect button to connect immediately. Click the Disconnect button to disconnect immediately.



CAUTION: Sometimes the connection cannot be terminated although you specify a time to Max Idle Time because some applications are visiting the Internet continually in the background.

6. If your ISP provides L2TP connection, please select L2TP option. And you should enter the following parameters (Figure 36):

Figure 36: WAN-L2TP

- ◆ **User Name/Password** - Enter the User Name and Password provided by your ISP. These fields are case-sensitive.
- ◆ **Dynamic IP/ Static IP** - Choose either as you are given by your ISP. Click the Connect button to connect immediately. Click the Disconnect button to disconnect immediately.

- ◆ **Connect on Demand** - You can configure the Router to disconnect from your Internet connection after a specified period of inactivity (**Max Idle Time**). If your Internet connection has been terminated due to inactivity, **Connect on Demand** enables the Router to automatically re-establish your connection as soon as you attempt to access the Internet again. If you wish to activate **Connect on Demand**, click the radio button. If you want your Internet connection to remain active at all times, enter 0 in the **Max Idle Time** field. Otherwise, enter the number of minutes you want to have elapsed before your Internet connection terminates.
- ◆ **Connect Automatically** - Connect automatically after the Router is disconnected. To use this option, click the radio button.
- ◆ **Connect Manually** - You can configure the Router to make it connect or disconnect manually. After a specified period of inactivity (**Max Idle Time**), the Router will disconnect from your Internet connection, and you will not be able to re-establish your connection automatically as soon as you attempt to access the Internet again. To use this option, click the radio button. If you want your Internet connection to remain active at all times, enter "0" in the Max Idle Time field. Otherwise, enter the number in minutes that you wish to have the Internet connecting last unless a new link is requested.



CAUTION: Sometimes the connection cannot be disconnected although you specify a time to Max Idle Time, since some applications is visiting the Internet continually in the background.

7. If your ISP provides PPTP connection, please select PPTP option. And you should enter the following parameters ([Figure 37](#)):

Figure 37: WAN-PPTP

The screenshot shows the WAN configuration interface for a PPTP/Russia PPTP connection. The 'WAN Connection Type' is set to 'PPTP/Russia PPTP'. The 'User Name' field contains 'username' and the 'Password' field is masked with dots. There are 'Connect' and 'Disconnect' buttons, with a 'Disconnected!' status indicator. The 'Dynamic IP' radio button is selected, and the 'Server IP Address/Name' field is empty. Below this, fields for 'IP Address', 'Subnet Mask', 'Gateway', and 'DNS' all contain '0.0.0.0'. The 'Internet IP Address' and 'Internet DNS' fields also contain '0.0.0.0'. The 'MTU Size (in bytes)' is set to '1420' with a note: '(The default is 1420, do not change unless necessary.)'. The 'Max Idle Time' is set to '15' minutes. The 'WAN Connection Mode' has three radio buttons: 'Connect on Demand' (selected), 'Connect Automatically', and 'Connect Manually'. At the bottom, there are 'Save' and 'Help' buttons.

- ◆ **User Name/Password** - Enter the User Name and Password provided by your ISP. These fields are case-sensitive.
- ◆ **Dynamic IP/ Static IP** - Choose either as you are given by your ISP and enter the ISP's IP address or the domain name. If you choose static IP and enter the domain name, you should also enter the DNS assigned by your ISP. And click the Save button. Click the Connect button to connect immediately. Click the Disconnect button to disconnect immediately.
- ◆ **Connect on Demand** - You can configure the Router to disconnect from your Internet connection after a specified period of inactivity (Max Idle Time). If your Internet connection has been terminated due to inactivity, Connect on Demand enables the Router to automatically re-establish your connection as soon as you attempt to access the Internet again. If you wish to activate Connect on Demand, click the radio button. If you want your Internet connection to remain active at all times, enter 0 in the Max Idle Time field. Otherwise, enter the number of minutes you want to have elapsed before your Internet connection terminates.
- ◆ **Connect Automatically** - Connect automatically after the Router is disconnected. To use this option, click the radio button.

- ◆ **Connect Manually** - You can configure the Router to make it connect or disconnect manually. After a specified period of inactivity (Max Idle Time), the Router will disconnect from your Internet connection, and you will not be able to re-establish your connection automatically as soon as you attempt to access the Internet again. To use this option, click the radio button. If you want your Internet connection to remain active at all times, enter "0" in the Max Idle Time field. Otherwise, enter the number in minutes that you wish to have the Internet connecting last unless a new link is requested.



CAUTION: Sometimes the connection cannot be disconnected although you specify a time to Max Idle Time, since some applications are visiting the Internet continually in the background.



NOTE: If you do not know how to choose the appropriate connection type, click the Detect button to allow the Router to automatically search your Internet connection for servers and protocols. The connection type will be reported when an active Internet service is successfully detected by the Router. This report is for your reference only. To make sure the connection type your ISP provides, please refer to the ISP. The various types of Internet connections that the Router can detect are as follows:

- PPPoE - Connections which use PPPoE that requires a user name and password.
- Dynamic IP - Connections which use dynamic IP address assignment.
- Static IP - Connections which use static IP address assignment.

The Router can not detect PPTP/L2TP/BigPond connections with your ISP. If your ISP uses one of these protocols, then you must configure your connection manually.

MAC CLONE Choose menu "**Network->MAC Clone**", you can configure the MAC address of the WAN on the screen below, [Figure](#) :

Figure 38: MAC Address Clone

MAC Clone	
WAN MAC Address:	D8-5D-4C-DF-21-C1 <input type="button" value="Restore Factory MAC"/>
Your PC's MAC Address:	00-23-54-EF-1D-AF <input type="button" value="Clone MAC Address"/>
<input type="button" value="Save"/> <input type="button" value="Help"/>	

Some ISPs require that you register the MAC Address of your adapter. Changes are rarely needed here.

- ◆ **WAN MAC Address** - This field displays the current MAC address of the WAN port. If your ISP requires you to register the MAC address, please enter the correct MAC address into this field in XX-XX-XX-XX-XX-XX format (X is any hexadecimal digit).
- ◆ **Your PC's MAC Address** - This field displays the MAC address of the PC that is managing the Router. If the MAC address is required, you can click the Clone MAC Address To button and this MAC address will fill in the WAN MAC Address field.

Click **Restore Factory MAC** to restore the MAC address of WAN port to the factory default value.

Click the **Save** button to save your settings.



NOTE: Only the PC on your LAN can use the MAC Address Clone function.

LAN Choose menu "**Network-> LAN**", you can configure the IP parameters of the LAN on the screen as below.

Figure 39: LAN

- ◆ **MAC Address** - The physical address of the Router, as seen from the LAN. The value cannot be changed.
- ◆ **IP Address** - Enter the IP address of your Router or reset it in dotted-decimal notation (factory default: 192.168.2.1).
- ◆ **Subnet Mask** - An address code that determines the size of the network. Normally use 255.255.255.0 as the subnet mask.



NOTE: If you change the IP Address of LAN, you must use the new IP Address to login the Router.

NOTE: If the new LAN IP Address you set is not in the same subnet, the IP Address pool of the DHCP server will change accordingly at the same time, while the Virtual Server and DMZ Host will not take effect until they are re-configured.

DYNAMIC DNS Choose menu “Dynamic DNS”, and you can configure the Dynamic DNS function.

The Router offers the DDNS (Dynamic Domain Name System) feature, which allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (named by yourself) and a dynamic IP address, and then your friends can connect to your server by entering your domain name no matter what your IP address is. Before using this feature, you need to sign up for DDNS service providers such as www.comexe.cn, www.dyndns.org, or www.no-ip.com. The Dynamic DNS client service provider will give you a password or key.

COMEXE.CN DDNS

If the dynamic DNS Service Provider you select is www.comexe.cn, the page will appear as shown in [Figure 40](#).

Figure 40: Dyndns.org DDNS Settings

The screenshot shows the DDNS configuration interface. It includes the following elements:

- Service Provider:** A dropdown menu currently showing "Dyndns (www.dyndns.org)" and a "Go to register..." link.
- User Name:** A text input field containing "username".
- Password:** A text input field with masked characters (dots).
- Domain Name:** An empty text input field.
- Enable DDNS:** An unchecked checkbox.
- Connection Status:** Displays "DDNS not launching!" with "Login" and "Logout" buttons.
- Save and Help:** Buttons at the bottom of the form.

To set up for DDNS, follow these instructions:

1. Type the Domain Name received from your dynamic DNS service provider.
2. Type the User Name for your DDNS account.
3. Type the Password for your DDNS account.
4. Click the Login button to log in to the DDNS service.

- ◆ **Connection Status** -The status of the DDNS service connection is displayed here.

NO-IP.COM DDNS

If the dynamic DNS Service Provider you select is www.no-ip.com, the page will appear as shown in [Figure 41](#).

Figure 41: No-ip.com DDNS Settings

- ◆ **Connection Status** - The status of the DDNS service connection is displayed here.

- ◆ Click **Logout** to log out the DDNS service.

To set up for DDNS, follow these instructions:

1. Type the User Name for your DDNS account.
2. Type the Password for your DDNS account.
3. Type the Domain Name you received from dynamic DNS service provider.
4. Click the Login button to log in the DDNS service.

BINDING SETTING This page displays the **IP & MAC Binding Setting table**; you can configure it as needed (as shown in [Figure 42](#)).

Figure 42: Binding Setting

- ◆ **MAC Address** - The MAC address of the controlled computer in the LAN.
- ◆ **IP Address** - The assigned IP address of the controlled computer in the LAN.
- ◆ **Bind** - Check this option to enable ARP binding for a specific device.
- ◆ **Modify** - To modify or delete an existing entry.

When you want to add or modify an IP & MAC Binding entry, you can click the “Add New” button or “Modify” button, and then you will go to the next page. This page is used for adding or modifying an IP & MAC Binding entry (as shown in [Figure 43](#)).

Figure 43: IP & MAC Binding Setting (Add & Modify)

To add IP & MAC Binding entries, follow the steps below.

1. Click the **Add New...** button as shown in [Figure 42](#).
2. Enter the MAC Address and IP Address.
3. Select the Bind checkbox.
4. Click the Save button to save it.

To modify or delete an existing entry, follow the steps below.

1. Find the desired entry in the table.
2. Click Modify or Delete in the Modify column.

To find an existing entry, follow the steps below.

1. Click the Find button as shown in [Figure 44](#).
2. Enter the MAC Address or IP Address.
3. Click the Find button in the page as shown in [Figure 44](#).

Figure 44: Find IP & MAC Binding Entry

The screenshot shows the 'Binding Settings' page. At the top, there is a header 'Binding Settings'. Below it, there is a section for 'ARP Binding' with radio buttons for 'Disable' (selected) and 'Enable', and a 'Save' button. Below this is a table with the following columns: ID, MAC Address, IP Address, Bind, and Modify. The table contains one entry with ID 1, MAC Address 00-14-5E-91-19-E9, IP Address 192.168.2.3, and Bind checked. Below the table are buttons for 'Add New..', 'Enable All', 'Disable All', 'Delete All', and 'Find'. At the bottom, there are navigation buttons for 'Previous', 'Next', 'Current No. 1', 'Page', and 'Help'.

ID	MAC Address	IP Address	Bind	Modify
1	00-14-5E-91-19-E9	192.168.2.3	<input checked="" type="checkbox"/>	Modify Delete

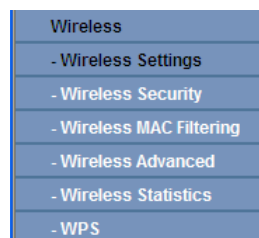
Click the "Enable All" button to make all entries enabled.

Click the "Delete All" button to delete all entries.

WIRELESS

There are six submenus under the Wireless menu (shown in [Figure 45](#)): **Wireless Settings**, **Wireless Security**, **Wireless MAC Filtering**, **Wireless Advanced**, **Wireless Statistics**, and **WPS**. Click any of them, and you will be able to configure the corresponding function.

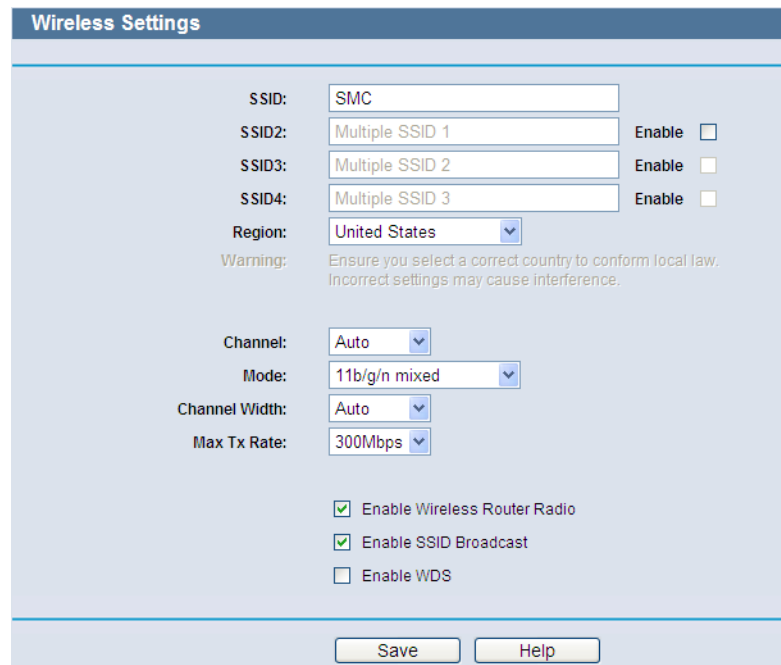
Figure 45: Wireless Menu



WIRELESS SETTINGS Choose menu **Wireless -> Wireless Setting**; you can configure the basic settings for the wireless network on this page.

The wireless settings section displays configuration settings for the access point functionality of the Wireless AP/router. It includes the following sections:

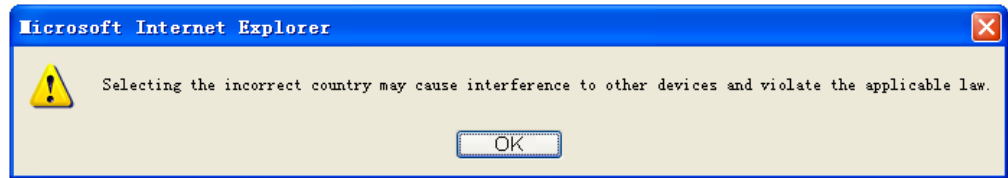
Figure 46: Wireless Settings



- ◆ **SSID** - Enter a value of up to 32 characters. The same SSID (Service Set Identification) must be assigned to all wireless devices in your network. The default SSID is set to be "SMC". This value is case-sensitive. For example, "TEST" is NOT the same as "test".
- ◆ **SSID (2-4)** - Up to four SSIDs for each BSS can be set, the names can be up to 32 characters. The multi-SSID function is available only when Enable is checked.
- ◆ **Region** - Select your region from the pull-down list. This field specifies the region where the wireless function of the Router can be used. It may be illegal to use the wireless function of the Router in a region other than one of those specified in this field. If your country or region is not listed, please contact your local government agency for assistance.

When you select your local region from the pull-down list, click the Save button, then the Note Dialog appears. Click OK.

Figure 47: Note Dialog



NOTE: Limited by local law regulations, the version for North America does not have a region selection option.

- ◆ **Channel** - This field determines which operating frequency will be used for wireless operation. The default setting is Auto, so the AP will choose the best channel automatically. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- ◆ **Mode** - Select the operating mode. The default is **11b/g/n mixed**.
 - **11b only** - Select if all of your wireless clients are 802.11b.
 - **11g only** - Select if all of your wireless clients are 802.11g.
 - **11n only** - Select only if all of your wireless clients are 802.11n.
 - **11b/g mixed** - Select if you are using both 802.11b and 802.11g wireless clients.
 - **11b/g/n mixed** - Select if you are using a mix of 802.11b, 11g, and 11n wireless clients.

When 802.11g mode is selected, only 802.11g wireless stations can connect to the Router. When 802.11n mode is selected, only 802.11n wireless stations can connect to the Router. It is strongly recommended to set the mode to 11b/g/n mixed, then all 802.11b, 802.11g, and 802.11n wireless stations can connect to the Router.
- ◆ **Channel width** - Select any channel width from the pull-down list. The default setting is automatic, which can adjust the channel width for your clients automatically.



NOTE: If 11b only, 11g only, or 11bg mixed is selected in the Mode field, the Channel Width selecting field will turn grey and the value will become 20M, which cannot be changed.

- ◆ **Max Tx Rate** - You can limit the maximum transmit rate of the Router through this field.
- ◆ **Enable Wireless Router Radio** - The wireless radio of this Router can be enabled or disabled to allow wireless stations access.
- ◆ **Enable SSID Broadcast** - When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID

broadcast by the Router. If you select the Enable SSID Broadcast checkbox, the Wireless Router will broadcast its name (SSID) on the air.

- ◆ **Enable WDS** - Check this box to enable WDS. With this function, the Router can bridge two or more WLANs. If this checkbox is selected, you will have to set the following parameters as shown in [Figure 48](#). Make sure the following settings are correct.

Figure 48: Enable WDS

The screenshot shows a configuration panel for WDS. At the top, the 'Enable WDS' checkbox is checked. Below this are several input fields and dropdown menus:

- SSID(to be bridged): [Empty text box]
- BSSID(to be bridged): [Empty text box] Example:00-1D-0F-11-22-33
- Survey: [Survey button]
- Key type: [None dropdown]
- WEP Index: [1 dropdown]
- Auth type: [open dropdown]
- Password: [Empty text box]

WIRELESS SECURITY Choose menu "**Wireless->Wireless Security**"; you can then configure the security settings of your wireless network.

There are five wireless security modes supported by the Router: WEP (Wired Equivalent Privacy), WPA (Wi-Fi Protected Access), WPA2 (Wi-Fi Protected Access 2), WPA2-PSK (Pre-Shared Key), and WPA-PSK (Pre-Shared Key).

Figure 49: Wireless Security

- ◆ **Disable Security** - If you do not want to use wireless security, select this check box. However, it is strongly recommended to choose one of the following modes to enable security.
- ◆ **WEP** - This security is based on the IEEE 802.11 standard. If you select this check box, you will find a notice in red, as shown in [Figure 50](#).

Figure 50: WEP

- **Type** - you can choose the type for the WEP security on the pull-down list. The default setting is Automatic, which can select Open

System or Shared-Key authentication type automatically based on the wireless station's capability and request.

- **WEP Key Format** - Hexadecimal and ASCII formats are provided. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length. ASCII format stands for any combination of keyboard characters in the specified length.
- **WEP Key**- Select which of the four keys will be used and enter the matching WEP key that you create. Make sure these values are identical on all wireless stations in your network.
- **Key Type** - You can select the WEP key length (64-bit, or 128-bit, or 152-bit.) for encryption. "Disabled" means this WEP key entry is invalid.
 - **64-bit** - You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not promoted) or 5 ASCII characters.
 - **128-bit** - You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not promoted) or 13 ASCII characters.
 - **152-bit** - You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not promoted) or 16 ASCII characters.



NOTE: If you do not set the key, the wireless security function is still disabled even if you have selected Shared Key as the Authentication Type.

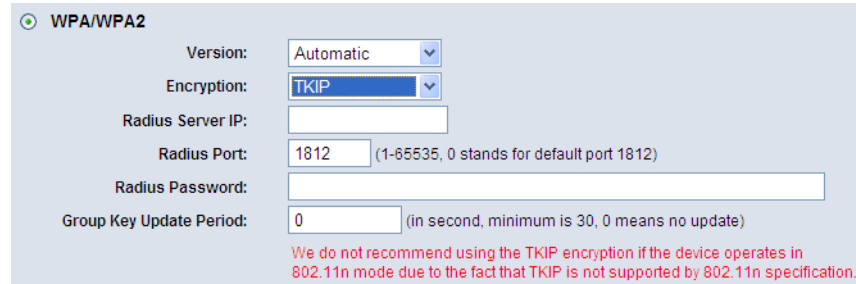
◆ **WPA /WPA2** - Authentication that uses a RADIUS Server.

- **Version** - you can choose the version of the WPA security on the pull-down list. The default setting is Automatic, which can select WPA (Wi-Fi Protected Access) or WPA2 (WPA version 2) automatically based on the wireless station's capability and request.
- **Encryption** - You can select either Automatic, TKIP, or AES.



NOTE: If you check the WPA/WPA2 radio button and choose TKIP encryption, you will find a notice in red, as shown in [Figure 51](#).

Figure 51: WPA/WPA2



WPA/WPA2

Version: Automatic

Encryption: TKIP

Radius Server IP:

Radius Port: 1812 (1-65535, 0 stands for default port 1812)

Radius Password:

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

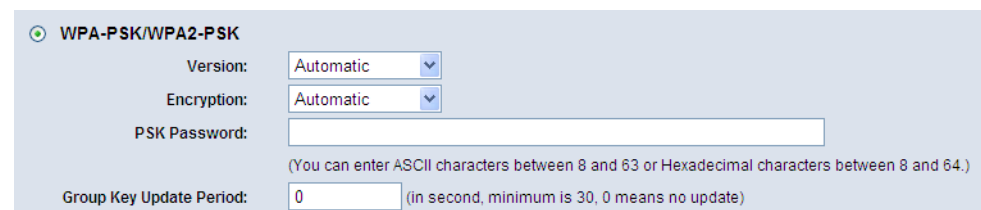
We do not recommend using the TKIP encryption if the device operates in 802.11n mode due to the fact that TKIP is not supported by 802.11n specification.

- **Radius Server IP** - Enter the IP address of the RADIUS Server.
 - **Radius Port** - Enter the port that the RADIUS service uses.
 - **Radius Password** - Enter the password for the RADIUS server.
 - **Group Key Update Period** - Specify the group key update interval in seconds. The value should be 30 or above. Enter 0 to disable the update.
- ◆ **WPA-PSK/WPA2-PSK** - The WPA/WPA2 authentication type based on a pre-shared passphrase.
- **Version** - You can choose the version of the WPA-PSK security from the drop-down list. The default setting is Automatic, which can select WPA-PSK (Pre-shared key of WPA) or WPA2-PSK (Pre-shared key of WPA2) automatically based on the wireless station's capability and request.
 - **Encryption** - When WPA-PSK or WPA is set as the Authentication Type, you can select either Automatic, TKIP, or AES as the encryption type.



NOTE: If you check the WPA-PSK/WPA2-PSK radio button and choose TKIP encryption, you will find a notice in red, as shown in [Figure 52](#).

Figure 52: WPA-PSK



WPA-PSK/WPA2-PSK

Version: Automatic

Encryption: Automatic

PSK Password:

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

Group Key Update Period: 0 (in second, minimum is 30, 0 means no update)

- **PSK Passphrase** - You can enter between 8 and 63 ASCII characters, or 8 to 64 Hexadecimal characters.

- **Group Key Update Period** - Specify the group key update interval in seconds. The value should be 30 or above. Enter 0 to disable the update.

Be sure to click the Save button to save your settings on this page.

WIRELESS MAC FILTERING

Choose **Wireless -> MAC Filtering** from the menu; you can then control wireless access by configuring the Wireless MAC Address Filtering function, as shown in [Figure 53](#).

Figure 53: Wireless MAC Address Filtering

The screenshot shows the 'Wireless MAC Filtering' configuration interface. At the top, there's a header 'Wireless MAC Filtering'. Below it, an 'SSID' dropdown menu is set to 'SMC'. Underneath, the 'Wireless MAC Filtering' status is currently 'Disabled', with an 'Enable' button next to it. The 'Filtering Rules' section contains two radio buttons: 'Allow' (which is selected) and 'Deny'. Below the rules is a table with columns: ID, MAC Address, Status, Description, and Modify. At the bottom of the table are buttons for 'Add New...', 'Enable All', 'Disable All', and 'Delete All'. At the very bottom of the page are 'Previous', 'Next', and 'Help' buttons.

To filter wireless users by MAC Address, click Enable. The default setting is Disable.

- ◆ **MAC Address** - The wireless station's MAC address that you want to filter.
- ◆ **Status** - The status of this entry, either Enabled or Disabled.
- ◆ **Description** - A simple description of the wireless station.

To Add a Wireless MAC Address filtering entry, click the "Add New" button. The "Add or Modify Wireless MAC Address Filtering entry" page will appear, as shown in [Figure 54](#):

Figure 54: Add or Modify Wireless MAC Address Filtering Entry

The screenshot shows a web interface for adding or modifying a wireless MAC address filtering entry. The form is titled "Add or Modify Wireless MAC Address Filtering entry". It contains three input fields: "MAC Address" (a text box), "Description" (a text box), and "Status" (a pull-down menu with "Enabled" selected). At the bottom of the form are two buttons: "Save" and "Back".

To add or modify a MAC Address Filtering entry, follow these instructions:

1. Enter the appropriate MAC Address into the MAC Address field. The format of the MAC Address is XX-XX-XX-XX-XX-XX (X is any hexadecimal digit). For example: 00-0A-EB-00-07-8A.
2. Provide a simple description of the wireless station in the Description field. For example: Wireless station A.
3. Select Enabled or Disabled for this entry on the Status pull-down list.
4. Click the Save button to save this entry.

To modify or delete an existing entry:

1. Click the Modify in the entry you want to modify. If you want to delete the entry, click the Delete button.
2. Modify the information.
3. Click the Save button.

Click the Enable All button to make all entries enabled.

Click the Disabled All button to make all entries disabled.

Click the Delete All button to delete all entries.

Click the Next button to go to the next page.

Click the Previous button to return to the previous page.

For example: If you want wireless station A (MAC address 00-0A-EB-00-07-8A) and wireless station B (MAC address 00-0A-EB-00-23-11) to be able to access the Router, but not all the other wireless stations, you can configure the Wireless MAC Address Filtering list as follows:

1. Click the Enable button to enable this function.
2. Select the radio button: Deny the stations not specified by any enabled entries in the list to access for Filtering Rules.

3. Delete all or disable all entries if there are any entries already.
4. Click the Add New button.
 - a. Enter the MAC address 00-0A-EB-00-07-8A /00-0A-EB-00-23-11 in the MAC Address field.
 - b. Enter wireless station A/B in the Description field.
 - c. Select Enabled in the Status pull-down list.
 - d. Click the Save Button.
 - e. Click the Back button.

The filtering rules that are configured should look similar to the following list:

Figure 55: Filtering Rules

Filtering Rules				
<input type="radio"/> Allow the stations not specified by any enabled entries in the list to access.				
<input checked="" type="radio"/> Deny the stations not specified by any enabled entries in the list to access.				
ID	MAC Address	Status	Description	Modify
1	00-0A-EB-00-07-8A	Enabled		Modify Delete
2	00-0A-EB-00-23-11	Enabled		Modify Delete

WIRELESS ADVANCED Choose **Wireless -> Wireless Advanced** from the menu; you can then configure the advanced settings of your wireless network.

Figure 56: Wireless Advanced

Wireless Advanced

Transmit Power:

Beacon Interval : (40-1000)

RTS Threshold: (1-2346)

Fragmentation Threshold: (256-2346)

DTIM Interval: (1-255)

Enable WMM

Enable Short GI

Enable AP Isolation

The change of wireless config will not take effect until the Router reboots, please [click here](#) to reboot.

- ◆ **Transmit Power** - Here you can specify the transmit power of the Router. You can select High, Middle, or Low. High is the default setting and is recommended.
- ◆ **Beacon Interval** - Enter a value between 20-1000 milliseconds for the Beacon Interval. The beacons are packets sent by the router to synchronize a wireless network. The Beacon Interval value determines the time interval of beacons. The default value is 100.
- ◆ **RTS Threshold** - Specifies the RTS (Request to Send) Threshold. If a packet is larger than the specified RTS Threshold size, the router will send RTS frames to a particular receiving station and negotiate the sending of a data frame. The default value is 2346.
- ◆ **Fragmentation Threshold** - This value determines the maximum size before packets are fragmented. Setting the Fragmentation Threshold too low may result in poor network performance since excessive packets may be sent. The default setting is 2346 and is recommended.
- ◆ **DTIM Interval** - This value determines the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the Router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. You can specify the value between 1-255 Beacon Intervals. The default value is 1, which indicates the DTIM Interval is the same as Beacon Interval.
- ◆ **Enable WMM** - The WMM function guarantees that packets with high-priority messages are transmitted before other packets. It is strongly recommended to enable this feature.
- ◆ **Enable Short GI** - This function is recommended, since it increases the data capacity by reducing the guard interval time.
- ◆ **Enabled AP Isolation** - This function can isolate wireless stations on your network from each other. Wireless devices will be able to communicate with the Router, but not with each other. To use this function, check this box. AP Isolation is disabled by default.



NOTE: If you are not familiar with the settings on this page, it is strongly recommended to keep the default values; otherwise it may result in lower wireless network performance.

WIRELESS STATISTICS Select **Wireless -> Wireless Statistics** from the menu; you can see the MAC Address, Current Status, Received Packets, and Sent Packets for each connected wireless station.

Figure 57: Wireless Statistics

Wireless Statistics				
Current Connected Wireless Stations numbers:		2	<input type="button" value="Refresh"/>	
ID	MAC Address	Current Status	Received Packets	Sent Packets
1	34-15-9E-63-6F-78	STA-ASSOC	1571	34
2	00-1F-3C-22-66-4A	STA-ASSOC	3289	686
		<input type="button" value="Previous"/>	<input type="button" value="Next"/>	<input type="button" value="Help"/>

- ◆ **MAC Address** - The connected wireless station's MAC address.
- ◆ **Current Status** - The connected wireless station's running status, one of STA-AUTH / STA-ASSOC / STA-JOINED / WPA / WPA-PSK / WPA2 / WPA2-PSK / AP-UP / AP-DOWN / Disconnected.
- ◆ **Received Packets** - Packets received by the station.
- ◆ **Sent Packets** - Packets sent by the station.

You cannot change any of the values on this page. To update this page and to show the current connected wireless stations, click on the Refresh button.

If the numbers of connected wireless stations go beyond one page, click the Next button to go to the next page, and click the Previous button to return the previous page.



NOTE: This page will be refreshed automatically every 5 seconds.

WPS This section shows how to quickly add a new wireless device to an existing network using **WPS** (Wi-Fi Protected Setup).

1. Select **WPS** from the menu. You will see the next screen, as shown in [Figure](#) .

Figure 58: WPS (Wi-Fi Protected Setup)

The screenshot shows the WPS configuration interface. At the top, the title is "WPS (WiFi Protected Setup)". Below this, there is a section for "SSID:" with a dropdown menu showing "SMC". The next section is "WPS Status:" which is currently "Disabled" and has an "Enable WPS" button. Below that is "Current PIN:" showing the value "27129838" and two buttons: "Restore PIN" and "Gen New PIN". The final section is "Add A new device:" with two buttons: "Add device" and "Help".

- **WPS Status** - Enable or disable the WPS function here.
- **Current PIN** - The current value of the Router's PIN is displayed here. The default PIN of the Router can be found in the label or User Guide.
- **Restore PIN** - Restore the PIN of the Router to its default.
- **Gen New PIN** - Click this button, and then you can get a new random value for the Router's PIN. You can ensure the network security by generating a new PIN.
- **Add device** - You can add a new device to the existing network manually by clicking this button.

TO ADD A NEW DEVICE:

If the wireless adapter supports Wi-Fi Protected Setup (WPS), you can establish a wireless connection between wireless adapter and Router using either Push Button Configuration (PBC) method or PIN method.



NOTE: To make a successful connection using WPS, you should also perform the corresponding WPS configuration on the new device.

For the configuration of a new device, this example uses an SMC Wireless Adapter.

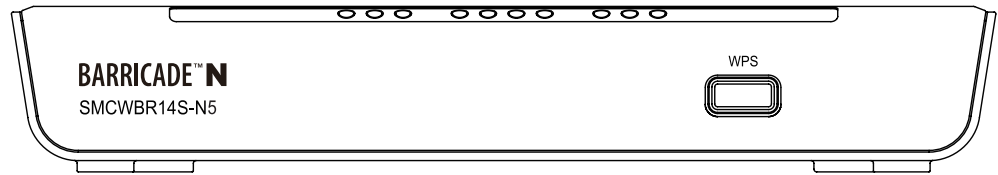
By PBC

If the wireless adapter supports Wi-Fi Protected Setup and the Push Button Configuration (PBC) method, you can add it to the network by PBC with the following two methods.

Method One:

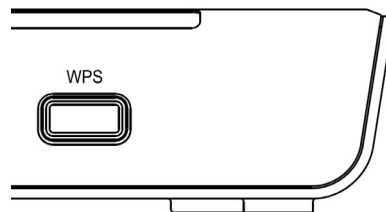
1. Press the WPS button on the front panel of the Router.

Figure 59: Front Panel



2. Press and hold the WPS button of the wireless client for 2 or 3 seconds.

Figure 60: WPS Button



3. Wait until the next screen appears. Click Finish to complete the WPS configuration.

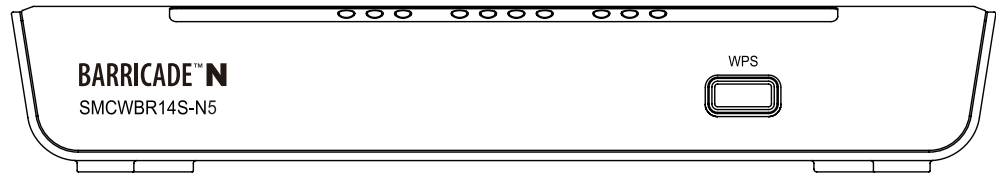
Figure 61: The WPS Configuration Screen of Wireless Adapter



Method Two:

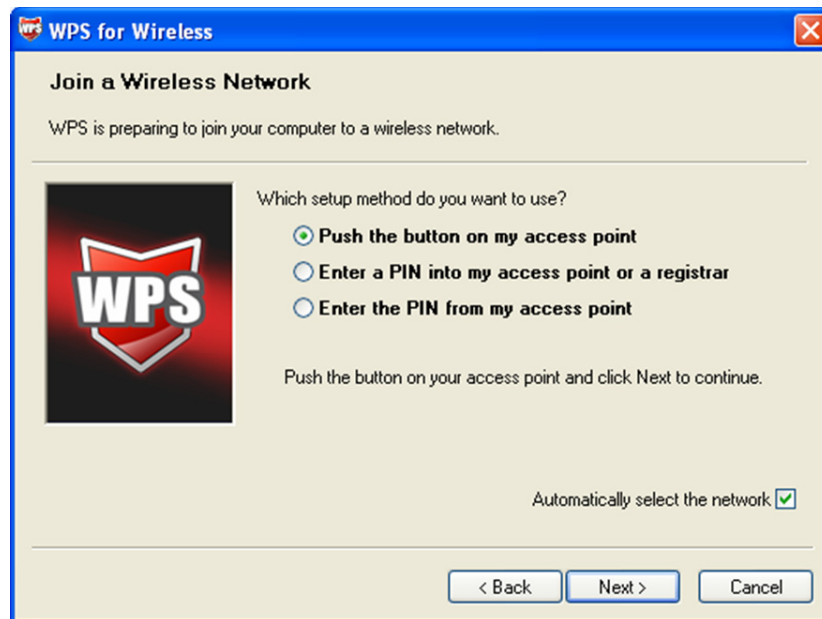
1. Press the WPS button on the front panel of the Router.

Figure 62: Front Panel



2. For the configuration of the wireless adapter, select **“Push the button on my access point”** in the WPS configuration, as below, and click Next.

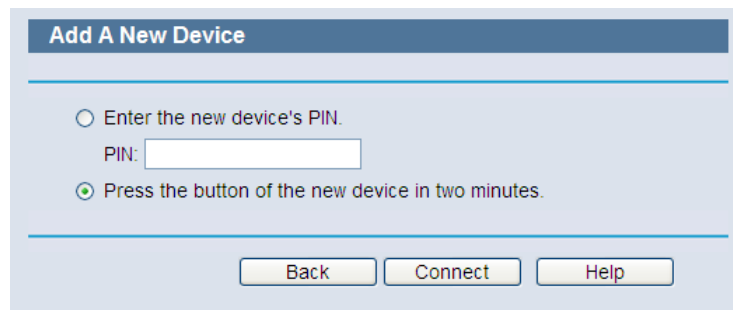
Figure 63: The WPS Configuration Screen of Wireless Adapter



3. Wait until the next screen appears. Click Finish to complete the WPS configuration.

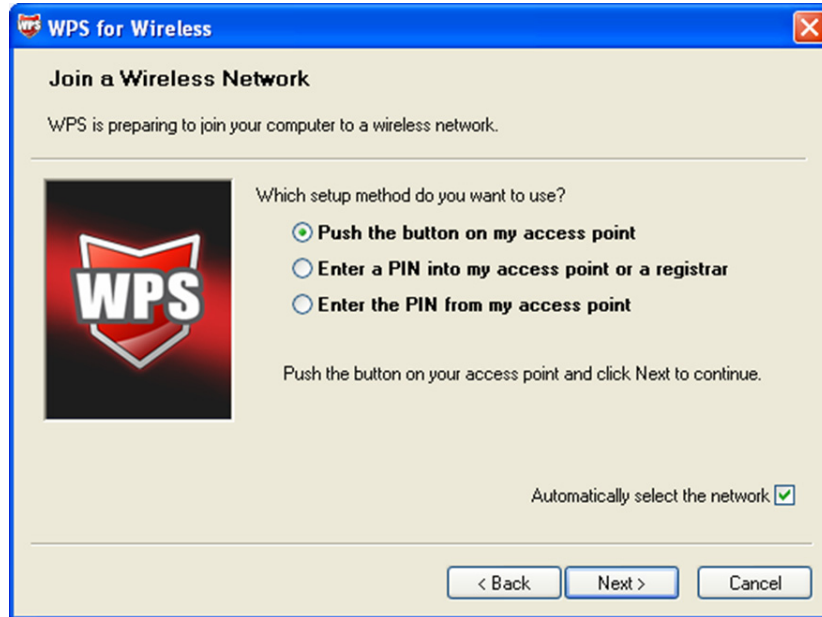
Figure 64: The WPS Configuration Screen of Wireless Adapter**Method Three:**

1. Keep the default WPS Status as Enabled and click the "Add device" button in [Figure 58](#), then the following screen will appear.

Figure 65: Add A New Device

2. Select "Press the button of the new device in two minutes" and click **Connect**.
3. For the configuration of the wireless adapter, select "Push the button on my access point" in the WPS configuration utility, as below, and click Next.

Figure 66: The WPS Configuration Screen of Wireless Adapter



4. Wait until the next screen appears. Click Finish to complete the WPS configuration.

Figure 67: The WPS Configuration Screen of Wireless Adapter



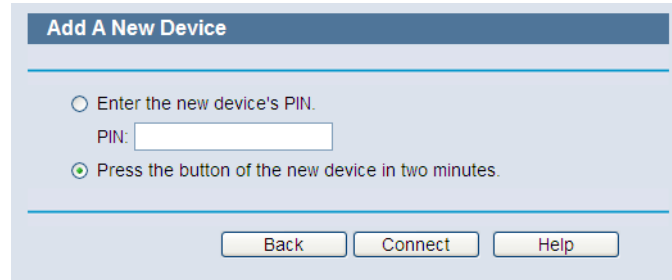
By PIN

If the new device supports Wi-Fi Protected Setup and the PIN method, you can add it to the network by PIN with the following two methods.

Method One: Enter the PIN into my Router.

1. Keep the default WPS Status as Enabled and click the “Add device” button in [Figure 58](#), then the following screen will appear.

Figure 68: Add Device



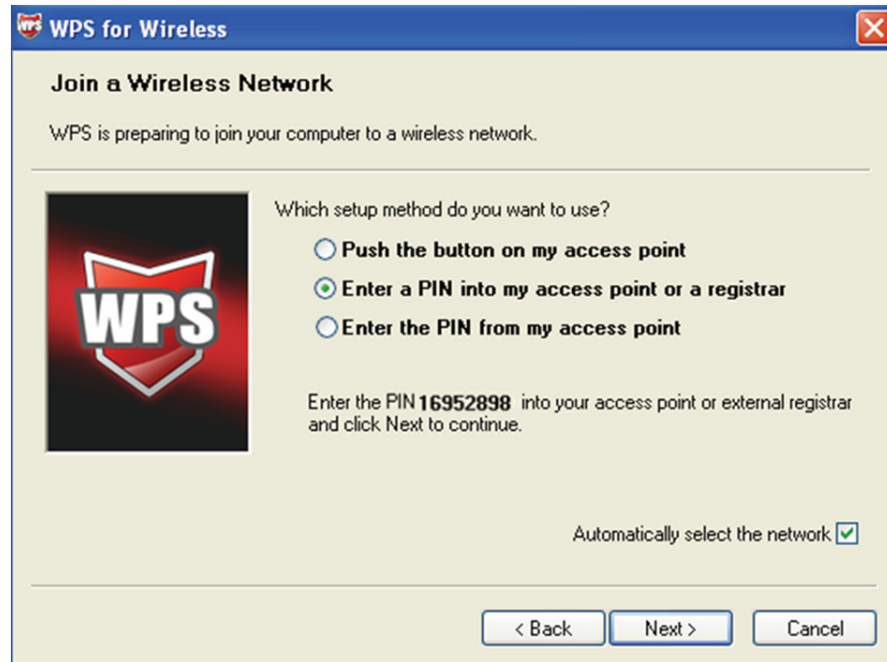
The screenshot shows a web interface titled "Add A New Device". It contains two radio button options. The first option is "Enter the new device's PIN." with a text input field labeled "PIN:". The second option is "Press the button of the new device in two minutes." and is selected. At the bottom, there are three buttons: "Back", "Connect", and "Help".

2. Select “Enter the new device's PIN” and enter the PIN code of the wireless adapter in the field after **PIN**, as shown in the figure above. Then click **Connect**.



NOTE: The PIN code of the adapter is always displayed on the WPS configuration screen.

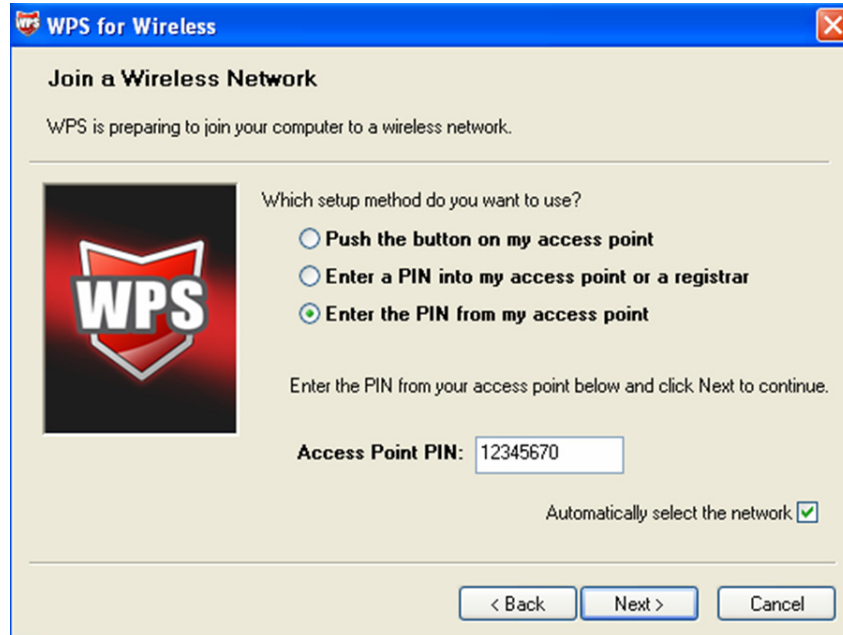
3. For the configuration of the wireless adapter, selected “Enter a PIN into my access point or a registrar” in the WPS configuration, as below, and click Next.

Figure 69: The WPS Configuration Screen of Wireless Adapter

NOTE: In this example, the default PIN code of the adapter is 16952898, as shown in the above figure.

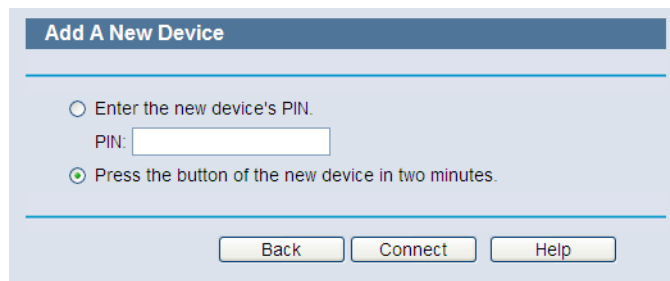
Method Two: Enter the PIN from my Router.

1. Read the Current PIN code of the Router in [Figure 58](#) (each Router has its unique PIN code. This example has the Router PIN code 12345670).
2. For the configuration of the wireless adapter, select “Enter a PIN from my access point” in the WPS configuration utility, as below, and enter the PIN code of the Router into the field after “Access Point PIN”. Then click Next.

Figure 70: The WPS Configuration Screen of Wireless Adapter

NOTE: The default PIN code of the Router can be found on its label, or in the WPS configuration screen, as shown in [Figure 58](#).

You will see the following screen when the new device is successfully connected to the network.

Figure 71: Add a New Device

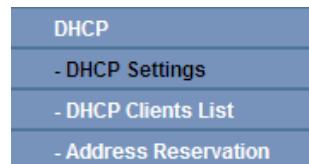
NOTE: The WPS LED on the Router will turn on green for five minutes when a device has been successfully added to the network.

NOTE: The WPS function cannot be configured if the wireless function of the Router is disabled. Make sure the wireless function is enabled before configuring WPS.

DHCP

There are three submenus under the DHCP menu (shown in [Figure 72](#)): DHCP Settings, DHCP Clients List, and Address Reservation. Click any of them, and you will be able to configure the corresponding function.

Figure 72: The DHCP Menu



DHCP SETTINGS Select **DHCP -> DHCP Settings** from the menu. You can configure the DHCP Server on the page, as shown in [Figure 73](#). The Router is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for all the PCs that are connected to the Router on the LAN.

Figure 73: DHCP Settings

- ◆ **DHCP Server** - Enable or Disable the DHCP server. If you disable the Server, you must have another DHCP server in your network or you must configure computers manually.
- ◆ **Start IP Address** - Specify an IP address for the DHCP Server to start with when assigning IP addresses. 192.168.2.100 is the default start address.
- ◆ **End IP Address** - Specify an IP address for the DHCP Server to end with when assigning IP addresses. 192.168.2.199 is the default end address.

- ◆ **Address Lease Time** - The amount of time a network user will be allowed connection to the Router with their current dynamic IP Address. Enter the amount of time in minutes and the user will be "leased" this dynamic IP Address. After the time is up, the user will be automatically assigned a new dynamic IP address. The range of the time is 1 ~ 2880 minutes. The default value is 120 minutes.
- ◆ **Default Gateway** - (Optional.) Suggest to input the IP address of the LAN port of the Router, default value is 192.168.2.1
- ◆ **Default Domain** - (Optional.) Input the domain name of your network.
- ◆ **Primary DNS** - (Optional.) Input the DNS IP address provided by your ISP. Or consult your ISP.
- ◆ **Secondary DNS** - (Optional.) Input the IP address of another DNS server if your ISP provides two DNS servers.



NOTE: To use the DHCP server function of the Router, you must configure all computers on the LAN as "Obtain an IP Address automatically" mode.

DHCP CLIENTS LIST Select **DHCP -> DHCP Clients List** from the menu; you can view the information about the clients attached to the Router in the next screen (shown in [Figure 74](#)).

Figure 74: DHCP Clients List

DHCP Clients List			
ID	Client Name	MAC Address	Assigned IP
1	thf-nb	00-1F-3C-22-66-4A	192.168.2.103
2	Unknown	E0-F8-47-B4-E6-C8	192.168.2.104
3	allen-chu-nb3	00-1E-65-6A-22-1C	192.168.2.105
4	angel_peng-02	D8-5D-4C-8A-C0-FD	192.168.2.106
5	Unknown	34-15-9E-63-6F-78	192.168.2.107
6	dongmax-pc1	00-13-F7-D0-CF-4D	192.168.2.108

- ◆ **ID** - The index of the DHCP Client.
- ◆ **Client Name** - The name of the DHCP client.
- ◆ **MAC Address** - The MAC address of the DHCP client.
- ◆ **Assigned IP** - The IP address that the Router has allocated to the DHCP client.

- ◆ **Lease Time** - The time of the DHCP client leased. After the dynamic IP address has expired, a new dynamic IP address will be automatically assigned to the user.

You cannot change any of the values on this page. To update this page and to show the current attached devices, click the Refresh button.

ADDRESS RESERVATION

Select **DHCP -> Address Reservation** from the menu; you can view and add reserved addresses for clients from the next screen (shown in [Figure 75](#)). When you specify a reserved IP address for a PC on the LAN, that PC will always receive the same IP address each time when it accesses the DHCP server. Reserved IP addresses should be assigned to servers that require permanent IP settings.

Figure 75: Address Reservation

ID	MAC Address	Reserved IP Address	Status
1	00-19-66-80-53-BD	192.168.2.100	Enabled

- ◆ **MAC Address** - The MAC address of the PC for which you want to reserve an IP address.
- ◆ **Assigned IP Address** - The reserved IP address for the PC.
- ◆ **Status** - The status of this entry either Enabled or Disabled.

To Reserve IP addresses:

1. Click the "Add New" button (as shown in [Figure 76](#)).
2. Enter the MAC address (in XX-XX-XX-XX-XX-XX format.) and IP address in dotted-decimal notation of the computer you wish to add.
3. Click the Save button when finished.

Figure 76: Add or Modify an Address Reservation Entry

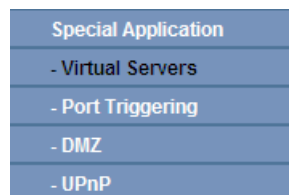
The screenshot shows a web interface for adding or modifying an address reservation entry. It features a title bar at the top, followed by three input fields: 'MAC Address:', 'Reserved IP Address:', and 'Status:'. The 'Status' dropdown menu is currently set to 'Enabled'. Below the input fields are three buttons: 'Save', 'Back', and 'Help'.

To modify or delete an existing entry:

1. Click **Modify** in the entry you want to modify. If you want to delete the entry, click the **Delete**.
2. Modify the information.
3. Click the **Save** button.
4. Click the **Enable/Disable All** button to enable/disable all entries.
5. Click the **Delete All** button to delete all entries.
6. Click the **Next** button to go to the next page and click the **Previous** button to return the previous page.

SPECIAL APPLICATION

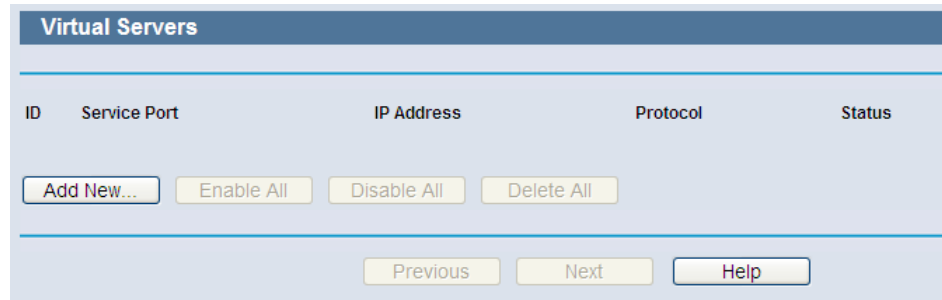
There are four submenus under the Special Application menu (shown in [Figure 77](#)): **Virtual Servers**, **Port Triggering**, **DMZ**, and **UPnP**. Click any of them and you will be able to configure the corresponding function.

Figure 77: The Special Application Menu

VIRTUAL SERVERS Select **Special Application->Virtual Servers** from the menu; you can view and add virtual servers in the next screen (as shown in [Figure 78](#)). Virtual servers can be used for setting up public services on your LAN, such as DNS, Email and FTP. A virtual server is defined as a service port, and all requests from the Internet to this service port will be redirected to the computer specified by the server IP. Any PC that was used for a virtual

server must have a static or reserved IP Address because its IP Address may be changed when using the DHCP function.

Figure 78: Virtual Servers



- ◆ **Service Port** - The number of an external port. You can type a service port or a range of service ports (in XXX – YYY format, XXX is the start port number, YYY is the end port number).
- ◆ **IP Address** - The IP Address of the PC providing the service application.
- ◆ **Protocol** - The protocol used for this application, either TCP, UDP, or All (all protocols supported by the Router).
- ◆ **Status** - The status of this entry either Enabled or Disabled.

To setup a virtual server entry:

1. Click the **Add New...** button. (Figure 79)
2. Select the service you want to use from the **Common Service Port** list. If the Common **Service Port** list does not have the service that you want to use, type the number of the service port or service port range in the **Service Port** box.
3. Type the IP Address of the computer in the **IP Address** box.
4. Select the protocol used for this application, either **TCP**, **UDP**, or **All**.
5. Select the **Enable** check box to enable the virtual server.
6. Click the **Save** button.

Figure 79: Add or Modify a Virtual Server Entry


NOTE: If your computer or server has more than one type of available service, please select another service, and enter the same IP Address for that computer or server.

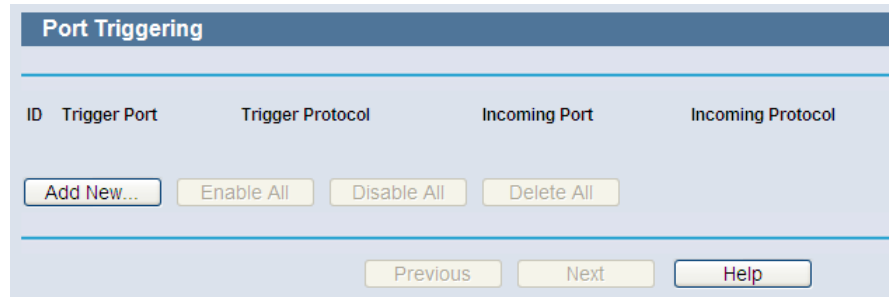
To modify or delete an existing entry:

1. Click **Modify** for the entry you want to modify. If you want to delete the entry, click **Delete**.
2. Modify the information.
3. Click the Save button.
4. Click the **Enable/Disable All** button to enable/disable all entries.
5. Click the **Delete All** button to delete all entries.
6. Click the Next button to go to the next page and click the Previous button to return the previous page.



NOTE: If you set the service port of the virtual server as 80, you must set the Web management port on "**Security -> Remote Management**" page to be any other value except 80, such as 8080. Otherwise there will be a conflict, which will disable the virtual server.

PORT TRIGGERING Select **Special Application -> Port Triggering** from the menu; you can view and add port triggering in the next screen (shown in [Figure 80](#)). Some applications require multiple connections, like Internet games, video conferencing, Internet calling and so on. These applications cannot work with a pure NAT Router. Port Triggering is used for some of these applications that can work with a NAT Router.

Figure 80: Port Triggering

Once the Router is configured, the operation is as follows:

1. A local host makes an outgoing connection using a destination port number defined in the Trigger Port field.
 2. The Router records this connection, opens the incoming port or ports associated with this entry in the Port Triggering table, and associates them with the local host.
 3. When necessary the external host will be able to connect to the local host using one of the ports defined in the Incoming Ports field.
- ◆ **Trigger Port** - The port for outgoing traffic. An outgoing connection using this port will "Trigger" this rule.
 - ◆ **Trigger Protocol** - The protocol used for Trigger Ports, either TCP, UDP, or All (all protocols supported by the Router).
 - ◆ **Incoming Ports Range** - The port or port range used by the remote system when it responds to the outgoing request. A response using one of these ports will be forwarded to the PC that triggered this rule. You can input at most 5 groups of ports (or port section). Every group of ports must be set apart with ",". For example, 2000-2038, 2050-2051, 2085, 3010-3030.
 - ◆ **Incoming Protocol** - The protocol used for Incoming Ports Range, either TCP or UDP, or ALL (all protocols supported by the Router).
 - ◆ **Status** - The status of this entry either Enabled or Disabled.

To add a new rule, follow the steps below.

1. Click the "Add New" button, the next screen will pop-up as shown in [Figure 81](#).
2. Select a common application from the Common Applications drop-down list, then the Trigger Port field and the Incoming Ports field will be automatically filled. If the Common Applications do not have the application you need, enter the Trigger Port and the Incoming Ports manually.

3. Select the protocol used for Trigger Port from the Trigger Protocol drop-down list, either TCP, UDP, or All.
4. Select the protocol used for Incoming Ports from the Incoming Protocol drop-down list, either TCP or UDP, or All.
5. Select Enable in Status field.
6. Click the Save button to save the new rule.

Figure 81: Add or Modify a Triggering Entry

The screenshot shows a web-based configuration form titled "Add or Modify a Port Triggering Entry". The form contains the following fields and controls:

- Trigger Port:
- Trigger Protocol:
- Incoming Ports:
- Incoming Protocol:
- Status:
- Common Applications:

At the bottom of the form, there are three buttons: "Save", "Back", and "Help".

To modify or delete an existing entry:

1. Click **Modify** in the entry you want to modify. If you want to delete the entry, click **Delete**.
2. Modify the information.
3. Click the Save button.
4. Click the **Enable All** button to make all entries enabled
5. Click the **Disabled All** button to make all entries disabled.
6. Click the **Delete All** button to delete all entries



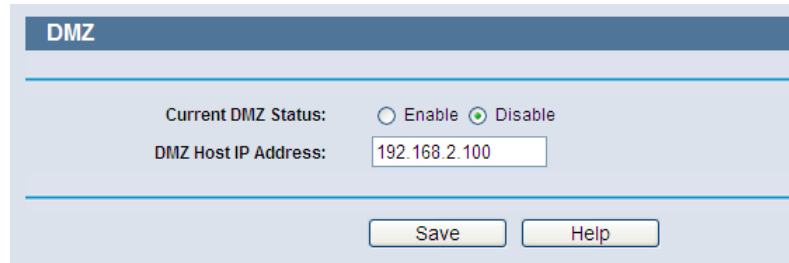
NOTE: When the trigger connection is released, the according opening ports will be closed.

NOTE: Each rule allowed to be used only by one host on LAN synchronously. The trigger connection of other hosts on LAN will be refused.

NOTE: Incoming Port Ranges cannot overlap each other.

DMZ Select **Special Application -> DMZ** from the menu; you can view and configure the DMZ host in the screen (shown in [Figure 82](#)). The DMZ host feature allows one local host to be exposed to the Internet for a special-purpose service such as Internet gaming or videoconferencing. DMZ host forwards all the ports at the same time. Any PC whose port is being forwarded must have its DHCP client function disabled and should have a new static IP Address assigned to it because its IP Address may be changed when using the DHCP function.

Figure 82: DMZ



To assign a computer or server to be a DMZ server:

1. Click the Enable radio button
2. Enter the local host IP Address in the DMZ Host IP Address field
3. Click the Save button.



NOTE: After you set the DMZ host, the firewall related to the host will not work.

UPnP Select **Special Application -> UPnP** from the menu; you can view the information about UPnP (Universal Plug and Play) in the screen (shown in [Figure 83](#)). The UPnP feature allows devices, such as Internet computers, to access the local host resources or devices as needed. UPnP devices can be automatically discovered by the UPnP service application on the LAN.

Figure 83: UPnP

UPnP

Current UPnP Status: Enabled

Current UPnP Settings List

ID	App Description	External Port	Protocol	Internal Port	IP Address	Status
1	Skype UDP at 10.2.78.153:30614	30614	UDP	30614	10.2.78.153	Enabled
2	Skype TCP at 10.2.78.153:30614	30614	TCP	30614	10.2.78.153	Enabled
3	Skype UDP at 10.2.76.45:44255 (	44255	UDP	44255	10.2.76.45	Enabled
4	Skype TCP at 10.2.76.45:44255 (	44255	TCP	44255	10.2.76.45	Enabled
5	Skype UDP at 10.2.76.14:30924 (	30924	UDP	30924	10.2.76.14	Enabled
6	Skype TCP at 10.2.76.14:30924 (	30924	TCP	30924	10.2.76.14	Enabled
7	Skype UDP at 10.2.78.64:46775 (	46775	UDP	46775	10.2.78.64	Enabled
8	Skype TCP at 10.2.78.64:46775 (	46775	TCP	46775	10.2.78.64	Enabled

- ◆ **Current UPnP Status** - UPnP can be enabled or disabled by clicking the Enable or Disable button. As allowing this may present a risk to security, this feature is enabled by default.
- ◆ **Current UPnP Settings List** - This table displays the current UPnP information.
 - **App Description** - The description provided by the application in the UPnP request
 - **External Port** - External port, which the router opened for the application.
 - **Protocol** - Shows which type of protocol is opened.
 - **Internal Port** - Internal port, which the router opened for local host.
 - **IP Address** - The UPnP device that is currently accessing the router.
 - **Status** - The port's status displayed here. "Enabled" means that port is still active. Otherwise, the port is inactive.

Click Refresh to update the Current UPnP Settings List.

SECURITY

There are two submenus under the Security menu as shown in [Figure 84](#): Basic Security and Advanced Security. Click any of them, and you will be able to configure the corresponding function.

Figure 84: The Security menu



BASIC SECURITY Select **Security -> Basic Security** from the menu; you can configure the basic security in the screen as shown in [Figure 85](#).

Figure 85: Basic Security

- ◆ **Firewall** - A firewall protects your network from the outside world. Here you can enable or disable the Router's firewall.
 - **SPI Firewall** - SPI (Stateful Packet Inspection, also known as dynamic packet filtering) helps to prevent cyber attacks by tracking states per session. It validates that the traffic passing through the session conforms to the protocol. SPI Firewall is enabled by factory default. If you want all the computers on the LAN exposed to the outside world, you can disable it.

- ◆ **VPN** - VPN Passthrough must be enabled if you want to allow VPN tunnels using IPSec, PPTP, or L2TP protocols to pass through the Router's firewall.
 - **PPTP Passthrough** - Point-to-Point Tunneling Protocol (PPTP) allows the Point-to-Point Protocol (PPP) to be tunneled through an IP network. To allow PPTP tunnels to pass through the Router, keep the default, Enabled.
 - **L2TP Passthrough** - Layer 2 Tunneling Protocol (L2TP) is the method used to enable Point-to-Point sessions via the Internet on the Layer 2 level. To allow L2TP tunnels to pass through the Router, keep the default, Enabled.
 - **IPSec Passthrough** - Internet Protocol Security (IPSec) is a suite of protocols for ensuring private, secure communications over Internet Protocol (IP) networks, through the use of cryptographic security services. To allow IPSec tunnels to pass through the Router, keep the default, Enabled.
- ◆ **ALG** - It is recommended to enable Application Layer Gateway (ALG) because ALG allows customized Network Address Translation (NAT) traversal filters to be plugged into the gateway to support address and port translation for certain application layer "control/data" protocols such as FTP, TFTP, H323 etc.
 - **FTP ALG** - To allow FTP clients and servers to transfer data across NAT, keep the default Enable.
 - **TFTP ALG** - To allow TFTP clients and servers to transfer data across NAT, keep the default Enable.
 - **H323 ALG** - To allow Microsoft NetMeeting clients to communicate across NAT, keep the default Enable.

Click the Save button to save your settings.

ADVANCED SECURITY Select **Security -> Advanced Security** from the menu; you can protect the Router from being attacked by TCP-SYN Flood, UDP Flood and ICMP-Flood in the screen, as shown in [Figure 86](#).

Figure 86: Advanced Security

- ◆ **Packets Statistics Interval (5~60)** - The default value is 10. Select a value between 5 and 60 seconds from the drop-down list. The Packets Statistics Interval value indicates the time section of the packets statistics. The result of the statistics is used for analysis by SYN Flood, UDP Flood and ICMP-Flood.
- ◆ **DoS Protection** - Denial of Service protection. Check the Enable or Disable button to enable or disable the DoS protection function. Only when it is enabled, will the flood filters be enabled.



NOTE: Dos Protection will take effect only when the Traffic Statistics in “**System Tool > Traffic Statistics**” is enabled.

- ◆ **Enable ICMP-FLOOD Attack Filtering** - Enable or Disable the ICMP-FLOOD Attack Filtering.
- ◆ **ICMP-FLOOD Packets Threshold (5~3600)** - The default value is 50. Enter a value between 5 ~ 3600. When the current ICMP-FLOOD Packets number is beyond the set value, the Router will startup the blocking function immediately.
- ◆ **Enable UDP-FLOOD Filtering** - Enable or Disable the UDP-FLOOD Filtering.

- ◆ **UDP-FLOOD Packets Threshold (5~3600)** - The default value is 500. Enter a value between 5 ~ 3600. When the current UDP-FLOOD Packets number is beyond the set value, the Router will startup the blocking function immediately.
- ◆ **Enable TCP-SYN-FLOOD Attack Filtering** - Enable or Disable the TCP-SYN-FLOOD Attack Filtering.
- ◆ **TCP-SYN-FLOOD Packets Threshold (5~3600)** - The default value is 50. Enter a value between 5 ~ 3600. When the current TCP-SYN-FLOOD Packets numbers is beyond the set value, the Router will startup the blocking function immediately.
- ◆ **Ignore Ping Packet From WAN Port** - Enable or Disable Ignore Ping Packet From WAN Port. The default setting is disabled. If enabled, the ping packet from the Internet cannot access the Router.
- ◆ **Forbid Ping Packet From LAN Port** - Enable or Disable Forbid Ping Packet From LAN Port. The default setting is disabled. If enabled, the ping packet from LAN cannot access the Router. This function can be used to defend against some viruses.

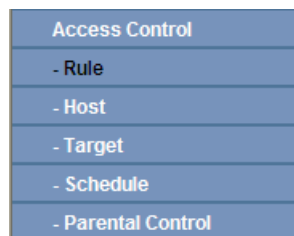
Click the **Save** button to save the settings.

Click the **Blocked DoS Host List** button to display the DoS host table by blocking.

ACCESS CONTROL

There are five submenus under the Access Control menu as shown in [Figure 87](#): Rule, Host, Target, Schedule, and Parental Control. Click any of them, and you will be able to configure the corresponding function.

Figure 87: Access Control



RULE Select **Access Control->Rule** from the menu; you can view and set access control rules in the screen, as shown in [Figure 88](#).

Figure 88: Access Control Rule Management

- ◆ **Enable Internet Access Control** - Select the check box to enable the Internet Access Control function, so the Default Filter Policy can take effect.
- ◆ **Rule Name** - Here displays the name of the rule and this name is unique.
- ◆ **Host** - Here displays the host selected in the corresponding rule.
- ◆ **Target** - Here displays the target selected in the corresponding rule.
- ◆ **Schedule** - Here displays the schedule selected in the corresponding rule.
- ◆ **Action** - Here displays the action the Router takes to deal with the packets. It could be Allow or Deny. Allow means that the Router permits the packets to go through the Router. Deny means that the Router rejects the packets to go through the Router.
- ◆ **Status** - This field displays the status of the rule. Enabled means the rule will take effect, Disabled means the rule will not take effect.
- ◆ **Modify** - Here you can edit or delete an existing rule.

To add a new rule, please follow the steps below.

1. Click the "Add New" button and the next screen will pop-up, as shown in [Figure 89](#).
2. Give a name (e.g. Rule_1) for the rule in the Rule Name field.
3. Select a host from the Host drop-down list or choose "Click Here To Add New Host List".

4. Select a target from the Target drop-down list or choose "Click Here To Add New Target List".
5. Select a schedule from the Schedule drop-down list or choose "Click Here To Add New Schedule".
6. In the Action field, select Deny or Allow.
7. In the Status field, select Enabled or Disabled to enable or disable your entry.

Click the Save button.

Click the Enable All button to enable all the rules in the list.

Click the Disable All button to disable all the rules in the list.

Click the Delete All button to delete all the entries in the table.

You can change the entry's order as desired. Fore entries are before hind entries. Enter the ID number in the first box you want to move and another ID number in second box you want to move to, and then click the Move button to change the entry's order.

Click the Next button to go to the next page, or click the Previous button return to the previous page.

Figure 89: Add or Modity Internet Access Control Entry

The screenshot shows a web form titled "Add or Modify Internet Access Control Entry". The form contains the following fields and options:

- Rule Name:** A text input field.
- Host:** A dropdown menu with a link "Click Here To Add New Host List" to its right.
- Target:** A dropdown menu with "Any Target" selected and a link "Click Here To Add New Target List" to its right.
- Schedule:** A dropdown menu with "Anytime" selected and a link "Click Here To Add New Schedule" to its right.
- Action:** A dropdown menu with "Deny" selected.
- Status:** A dropdown menu with "Enabled" selected.

At the bottom of the form, there are three buttons: "Save", "Back", and "Help".

For example: If you desire to allow the host with MAC address 00-11-22-33-44-AA to access www.google.com only from 18:00 to 20:00 on Saturday and Sunday, and forbid other hosts in the LAN to access the Internet, you should follow the settings below:

1. Click "Access Control->Host" in the left to enter the Host Settings page. Add a new entry with the Host Description is Host_1 and MAC Address is 00-11-22-33-44-AA.

2. Click "Access Control->Target" in the left to enter the Target Settings page. Add a new entry with the Target Description is Target_1 and Domain Name is www.google.com.
3. Click "Access Control->Schedule" in the left to enter the Schedule Settings page. Add a new entry with the Schedule Description is Schedule_1, Day is Sat and Sun, Start Time is 1800 and Stop Time is 2000.
4. Click "Access Control->Rule" in the left to return to the Access Control Rule Management page. Select "Enable Internet Access Control" and choose "Deny the packets not specified by any access control policy to pass through the Router".
5. Click the "Add New" button to add a new rule as follows:
 - In Rule Name field, create a name for the rule. Note that this name should be unique, for example Rule_1.
 - In Host field, select Host_1.
 - In Target field, select Target_1.
 - In Schedule field, select Schedule_1.
 - In Action field, select Allow.
 - In Status field, select Enable.
 - Click Save to complete the settings.

Then you will go back to the Access Control Rule Management page and see the following list.

HOST Select **Access Control->Host** from the menu; you can view and set a Host list in the screen, as shown in [Figure 90](#). The host list is necessary for the Access Control Rule.

Figure 90: Host Settings

Host Settings			
ID	Host Description	Information	Modify
1	Host_1	MAC: 00-11-22-33-44-AA	Edit Delete

Current No. Page

- ◆ **Host Description** - Displays the description of the host and this description is unique.

- ◆ **Information** - Displays the information about the host. It can be IP or MAC.
- ◆ **Modify** - To modify or delete an existing entry.

To add a new entry, please follow the steps below.

1. Click the "Add New" button.
2. In the Mode field, select IP Address or MAC Address.
 - If you select IP Address, the screen in [Figure 91](#) is displayed.
 - In the Host Description field, create a unique description for the host (e.g. Host_1).
 - In LAN IP Address field, enter the IP address.
 - If you select MAC Address, the screen in [Figure 92](#) is displayed.
 - In Host Description field, create a unique description for the host (e.g. Host_1).
 - In MAC Address field, enter the MAC address.
3. Click the Save button to complete the settings.

Click the **Delete All** button to delete all the entries in the table.

Click the Next button to go to the next page, or click the Previous button return to the previous page.

Figure 91: Add or Modify an IP Host Entry

The screenshot shows a web interface for adding or modifying a host entry. The title is "Add or Modify a Host Entry". The form contains the following fields and controls:

- Mode:** A dropdown menu currently set to "IP Address".
- Host Description:** A text input field containing the text "Host_1".
- LAN IP Address:** A text input field containing "192.168.2.1", followed by a hyphen "-" and another empty text input field.

At the bottom of the form, there are three buttons: "Save", "Back", and "Help".

Figure 92: Add or Modify a MAC Host Entry

For example: If you desire to restrict the internet activities of host with MAC address 00-11-22-33-44-AA, you should first follow the settings below:

1. Click "Add New" button in [Figure 90](#) to enter the "Add or Modify a Host Entry" page.
2. In Mode field, select MAC Address from the drop-down list.
3. In Host Description field, create a unique description for the host (e.g. Host_1).
4. In MAC Address field, enter 00-11-22-33-44-AA.
5. Click Save to complete the settings.

Then you will go back to the Host Settings page and see the following list.

TARGET Select **Access Control -> Target** from the menu; you can view and set a Target list in the screen, as shown in [Figure 93](#). The target list is necessary for Access Control Rules.

Figure 93: Target Settings

- ◆ **Target Description** - Here displays the description about the target and this description is unique.
- ◆ **Information** - The target can be IP address, port, or domain name.
- ◆ **Modify** - To modify or delete an existing entry.

To add a new entry, follow the steps below.

1. Click the "Add New" button.
2. In Mode field, select IP Address or Domain Name.
 - a. If you select IP Address, the screen in [Figure 94](#) is shown.
 - In Target Description field, create a unique description for the target (e.g. Target_1).
 - In IP Address field, enter the IP address of the target.
 - Select a common service from Common Service Port drop-down list, so that the Target Port will be automatically filled. If the Common Service Port drop-down list doesn't have the service you want, specify the Target Port manually.
 - In Protocol field, select TCP, UDP, ICMP or ALL.
 - b. If you select Domain Name, the screen in [Figure 95](#) is shown.
 - In Target Description field, create a unique description for the target (e.g. Target_1).
 - In Domain Name field, enter the domain name, either the full name or the keywords (for example google) in the blank. Any domain name with keywords in it (www.google.com, www.google.cn) will be blocked or allowed. You can enter 4 domain names.
3. Click the Save button.

Click the Delete All button to delete all the entries in the table.

Click the Next button to go to the next page, or click the Previous button return to the previous page.

Figure 94: Add or Modify an IP Access Target Entry

The screenshot shows a web form titled "Add or Modify an Access Target Entry". The form contains the following fields and controls:

- Mode:** A dropdown menu with "IP Address" selected.
- Target Description:** A text input field.
- IP Address:** Two text input fields separated by a hyphen, representing a range of IP addresses.
- Target Port:** Two text input fields separated by a hyphen, representing a range of ports.
- Protocol:** A dropdown menu with "ALL" selected.
- Common Service Port:** A dropdown menu with "--please select--" selected.

At the bottom of the form, there are three buttons: "Save", "Back", and "Help".

Figure 95: Add or Modify a Domain Name Access Target Entry

For example: If you desire to restrict the internet activities of a host with MAC address 00-11-22-33-44-AA in the LAN to access www.google.com only, you should first follow the settings below:

1. Click the "Add New" button in Figure 93 to enter the Add or Modify an Access Target Entry page.
2. In Mode field, select Domain Name from the drop-down list.
3. In Target Description field, create a unique description for the target (e.g. Target_1).
4. In Domain Name field, enter www.google.com.
5. Click Save to complete the settings.

Then you will go back to the Target Settings page and see the following list.

Figure 96: Target Setting

ID	Target Description	Information	Modify
1	Target_1	www.google.com	Edit Delete

SCHEDULE Select **Access Control -> Schedule** from the menu; you can view and set a schedule list in the next screen, as shown in [Figure 97](#). The schedule list is necessary for Access Control Rules.

Figure 97: Schedule Settings

ID	Schedule Description	Day	Time	Modify
<input type="button" value="Add New..."/> <input type="button" value="Delete All"/>				
<input type="button" value="Previous"/> <input type="button" value="Next"/> Current No. <input type="text" value="1"/> Page <input type="button" value="Help"/>				

- ◆ **Schedule Description** - Here displays the description of the schedule and this description is unique.
- ◆ **Day** - Here displays the day(s) in a week.
- ◆ **Time** - Here displays the time period in a day.
- ◆ **Modify** - Here you can edit or delete an existing schedule.

To add a new schedule, follow the steps below.

1. Click the "Add New" button shown in [Figure 97](#) and the next screen will pop-up as shown in [Figure 98](#).
2. In Schedule Description field, create a unique description for the schedule (e.g. Schedule_1).
3. In Day field, select the day or days you need.
4. In Time field, you can select all day-24 hours or you may enter the Start Time and Stop Time in the corresponding field.
5. Click Save to complete the settings.

Click the Delete All button to delete all the entries in the table.

Click the Next button to go to the next page, or click the Previous button return to the previous page.

Figure 98: Advanced Schedule Settings

Advance Schedule Settings

Note: The Schedule is based on the time of the Router.

Schedule Description:

Day: Everyday Select Days

Mon Tue Wed Thu Fri Sat Sun

Time: all day-24 hours:

Start Time: (HHMM)

Stop Time: (HHMM)

For example: If you desire to restrict the internet activities of host with MAC address 00-11-22-33-44-AA to access www.google.com only from 18:00 to 20:00 on Saturday and Sunday, you should first follow the settings below:

1. Click the "Add New" button shown in [Figure 98](#) to enter the Advanced Schedule Settings page.
2. In Schedule Description field, create a unique description for the schedule (e.g. Schedule_1).
3. In Day field, check the Select Days radio button and then select Sat and Sun.
4. In Time field, enter 1800 in Start Time field and 2000 in Stop Time field.
5. Click Save to complete the settings.

Then you will go back to the Schedule Settings page and see the following list.

PARENTAL CONTROL Select **Parental Control** from the menu; you can then configure the parental control in the displayed page, as shown in [Figure 99](#). The Parental Control function can be used to limit children's access to certain websites and restrict the time of surfing.

Figure 99: Parental Control Settings

- ◆ **Parental Control** - Check Enable if you want this function to take effect, otherwise check Disable.
- ◆ **MAC Address of Parental PC** - In this field, enter the MAC address of the controlling PC, or you can make use of the "Copy To Above" button below.
- ◆ **MAC Address of Your PC** - This field displays the MAC address of the PC that is managing this Router. If the MAC Address of your adapter is registered, you can click the "Copy To Above" button to fill this address to the MAC Address of Parental PC field above.
- ◆ **Website Description** - Description of the allowed website for the child PC.
- ◆ **Schedule** - The time period allowed for the PC controlled to access the Internet. For detailed information, please go to "**Access Control -> Schedule**".
- ◆ **Modify** - Here you can edit or delete an existing entry.

To add a new entry, please follow the steps below.

1. Click the "Add New" button and the next screen will pop-up, as shown in [Figure 100](#).
2. Enter the MAC address of the PC (e.g. 00-11-22-33-44-AA) you want to control in the "MAC Address of Child PC" field. Or you can choose the MAC address from the "All Address in Current LAN" drop-down list.

3. Give a description (e.g. Allow Google) for the website allowed to be accessed in the Website Description field.
4. Enter the allowed domain name of the website, either the full name or the keywords (e.g. google) in the Allowed Domain Name field. Any domain name with keywords in it (www.google.com.cn) will be allowed.
5. Select from the "Effective Time" drop-down list the schedule (e.g. Schedule_1) you want the entry to take effect. If there are not suitable schedules for you, click the Schedule in red below to go to the Advance Schedule Settings page and create the schedule you need.
6. In the Status field, you can select Enabled or Disabled to enable or disable your entry.
7. Click the Save button.
Click the Enable All button to enable all the rules in the list.
Click the Disable All button to disable all the rules in the list.
Click the Delete All button to delete all the entries in the table.
Click the Next button to go to the next page, or click the Previous button return to the previous page.

Figure 100: Add or Modify Parental Control Entry

The Schedule is based on the time of the Router. The time can be set in "System Tools -> [Time settings](#)".

MAC Address of Child PC:

All MAC Address In Current LAN:

Website Description:

Allowed Domain Name:

Effective Time:

The time schedule can be set in "Access Control -> [Schedule](#)".

Status:

For example: If you desire that the child PC with MAC address 00-11-22-33-44-AA can access www.google.com on Saturday only while the parent PC with MAC address 00-11-22-33-44-BB is without any restriction, you should follow the settings below.

1. Click **Parental Control** on the menu to enter the Parental Control Settings page. Check Enable and enter the MAC address 00-11-22-33-44-BB in the "MAC Address of Parental PC" field.
2. Click **Access Control -> Schedule** on the left to enter the Schedule Settings page. Click the "Add New" button to create a new schedule with Schedule Description "Schedule_1," Day is "Sat" and Time is all day-24 hours.
3. Click "Parental Control" menu on the left to go back to the Add or Modify Parental Control Entry page:
 - Click the "Add New" button.
 - Enter 00-11-22-33-44-AA in the MAC Address of Child PC field.
 - Enter "Allow Google" in the Website Description field.
 - Enter "www.google.com" in the Allowed Domain Name field.
 - Select "Schedule_1" you create just now from the Effective Time drop-down list.
 - In Status field, select Enable.
4. Click Save to complete the settings.

Then you will go back to the Parental Control Settings page and see the following list, as shown in [Figure 101](#).

Figure 101: Parental Control Settings

Parental Control Settings

Non-Parental PCs not listed will not be able to access the Internet.

Parental Control: Disable Enable

MAC Address of Parental PC:

MAC Address of Your PC:

ID	MAC address	Website Description	Schedule	Status	Modify
1	00-11-22-33-44-BB	Allow Google	Permanent	Enabled	Edit Delete

Current No. Page

ADVANCED ROUTING

Select **static routing** from the menu; you can configure the static route in the next screen (Figure 102). A static route is a pre-determined path that network information must travel to reach a specific host or network.

Figure 102: Static Routing

ID	Destination Network	Subnet Mask	Default Gateway	Status	Modify
----	---------------------	-------------	-----------------	--------	--------

Buttons: Add New..., Enable All, Disable All, Delete All, Previous, Next, Help

To add static routing entries:

1. Click Add New.

Figure 103: Add or Modify a Static Route Entry

ID	Destination Network	Subnet Mask	Default Gateway	Status	Modify
----	---------------------	-------------	-----------------	--------	--------

Buttons: Add New..., Enable All, Disable All, Delete All, Previous, Next, Help

2. Enter the following data:
 - ◆ **Destination IP Address** - The Destination IP Address is the address of the network or host that you want to assign to a static route.
 - ◆ **Subnet Mask** - The Subnet Mask determines which portion of an IP Address is the network portion, and which portion is the host portion.
 - ◆ **Gateway** - This is the IP Address of the gateway device that allows for contact between the Router and the network or host.
3. Select Enabled or Disabled for this entry on the Status pull-down list.
4. Click the Save button to make the entry take effect.

Other configurations for the entries:

Click the Delete button to delete the entry.

Click the Enable All button to enable all the entries.

Click the Disable All button to disable all the entries.

Click the Delete All button to delete all the entries.

Click the Previous button to view the information in the previous screen.

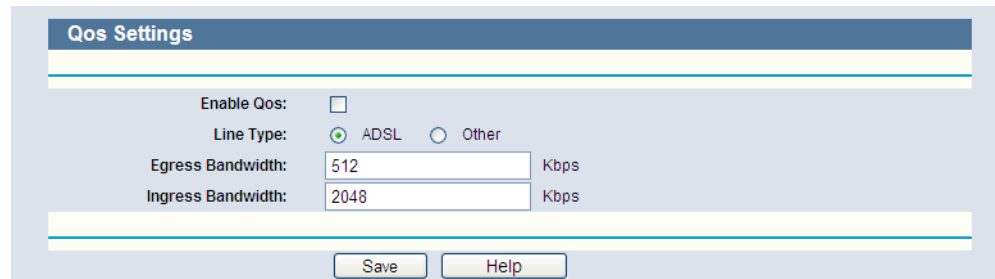
Click the Next button to view the information in the next screen.

QoS SETTINGS

There are two submenus under the QoS menu, as shown in [Figure 104](#). Click any of them and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

QoS SETTINGS Select **QoS->QoS Settings** from the menu; you can configure the Egress Bandwidth and Ingress Bandwidth in the next screen. The values you configure should be less than 100000 Kbps. For optimal control of the bandwidth, please select the right Line Type and ask your ISP for the total bandwidth of the egress and ingress.

Figure 104: QoS Settings



- ◆ **Enable QoS** - Check this box so that the QoS settings can take effect.
- ◆ **Line Type** - Select the right type for you network connection. If you do not know which type to choose, ask your ISP for the information.
- ◆ **Egress Bandwidth** - The upload speed through the WAN port.
- ◆ **Ingress Bandwidth** - The download speed through the WAN port.

RULES LIST Select **QoS->Rules List** from the menu; you can view and configure the QoS rules in the screen below.

- ◆ **Description** - This is the information about the rules such as address range.

- ◆ **Egress bandwidth** - This field displays the maximum and minimum upload bandwidth through the WAN port, the default is 0.
- ◆ **Ingress bandwidth** - This field displays the maximum and minimum download bandwidth through the WAN port, the default is 0.
- ◆ **Enable** - This displays the status of the rule.
- ◆ **Modify** - Click Modify to edit the rule. Click Delete to delete the rule.

To add/modify a QoS rule, follow the steps below.

1. Click "Add New," as shown in [Figure 105](#), you will see a new screen shown in [Figure 106](#).
2. Enter the information like the screen shown below.
3. Click the Save button.

Figure 105: QoS Rule List

ID	Description	Egress Bandwidth(Kbps)		Ingress Bandwidth(Kbps)		Enable	Modify
		Min	Max	Min	Max		
The current list is empty.							

Now is the page

Figure 106: QoS Rule Settings

QoS Rule Settings

Enable:

IP Range: -

Port Range: -

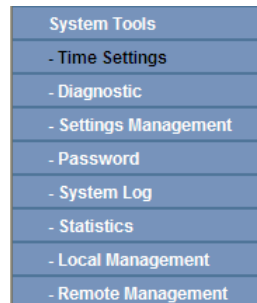
Protocol:

	Min Bandwidth(Kbps)	Max Bandwidth(Kbps)
Egress Bandwidth:	<input type="text" value="0"/>	<input type="text" value="0"/>
Ingress Bandwidth:	<input type="text" value="0"/>	<input type="text" value="0"/>

SYSTEM TOOLS

Select **System Tools**, and you can see the submenus under the main menu: Time Settings, Diagnostic, Settings Management, Password, System Log, Statistics, Local Management, and Remote Management. Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

Figure 107: The System Tools Menu



TIME SETTINGS Select **System Tools->Time Setting** from the menu; you can configure the time on the following screen.

Figure 108: Time Settings

Time Settings

Time zone: (GMT+08:00) Taipei

Date: 1 2 2000 (MM/DD/YY)

Time: 0 17 33 (HH/MM/SS)

NTP Server I: 0.0.0.0 (Optional)

NTP Server II: 0.0.0.0 (Optional)

Get GMT

Note: Click the "GET GMT" to update the time from the internet with the pre-defined servers or entering the customized server(IP Address or Domain Name) in the above frames.

Save Help

- ◆ **Time Zone** - Select your local time zone from this pull down list.
- ◆ **Date** - Enter your local date in MM/DD/YY into the right blanks.
- ◆ **Time** - Enter your local time in HH/MM/SS into the right blanks.
- ◆ **NTP Server Prior** - Enter the address for the NTP Server, then the Router will get the time from the NTP Server preferentially. In addition, the Router includes some common NTP Servers, so it can get the time automatically once it connects the Internet.

To configure the system manually:

1. Select your local time zone.
2. Enter date and time in the right blanks.
3. Click Save to save the configuration.

To configure the system automatically:

1. Select your local time zone.
2. Enter the IP address for NTP Server Prior.
3. Click the Get GMT button to get system time from Internet if you have connected to the Internet.



NOTE: This setting will be used for some time-based functions such as the firewall. You must specify your time zone once you login to the router successfully, otherwise these functions will not take effect.

NOTE: The time will be lost if the router is turned off.

NOTE: The router will obtain GMT automatically from Internet if it has been already connected to the Internet.

DIAGNOSTIC Select **System Tools->Diagnostic** from the menu; you can use Ping or Traceroute functions to check connectivity of your network in the following screen.

Figure 109: Diagnostic Tools

- ◆ **Diagnostic Tool** - Check the radio button to select one diagnostic tool.
 - **Ping** - This diagnostic tool troubleshoots connectivity, reachability, and name resolution to a given host or gateway.
 - **Traceroute** - This diagnostic tool tests the performance of a connection.



NOTE: You can use ping/traceroute to test both numeric IP address or domain name. If pinging/tracerouting the IP address is successful, but pinging/tracerouting the domain name is not, you might have a name resolution problem. In this case, ensure that the domain name you are specifying can be resolved by using Domain Name System (DNS) queries.

- ◆ **IP Address/Domain Name** - Type the destination IP address (such as 202.108.22.5) or Domain name (such as http://www.smc.com)
- ◆ **Pings Count** - The number of Ping packets for a Ping connection.
- ◆ **Ping Packet Size** - The size of Ping packet.
- ◆ **Ping Timeout** - Set the waiting time for the reply of each Ping packet. If there is no reply in the specified time, the connection is overtime.

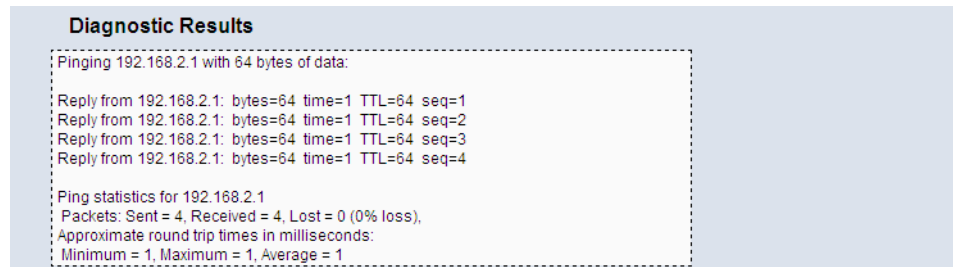
- ◆ **Traceroute Max TTL** - The max number of hops for a Traceroute connection.

Click **Start** to check the connectivity of the Internet.

The Diagnostic Results page displays the result of diagnosis.

If the result is similar to the following screen, the connectivity of the Internet is fine.

Figure 110: Diagnostic Results



NOTE: Only one user can use this tool at one time. Options "Number of Pings", "Ping Size" and "Ping Timeout" are used for the Ping function. Option "Tracert Hops" is used for the Tracert function.

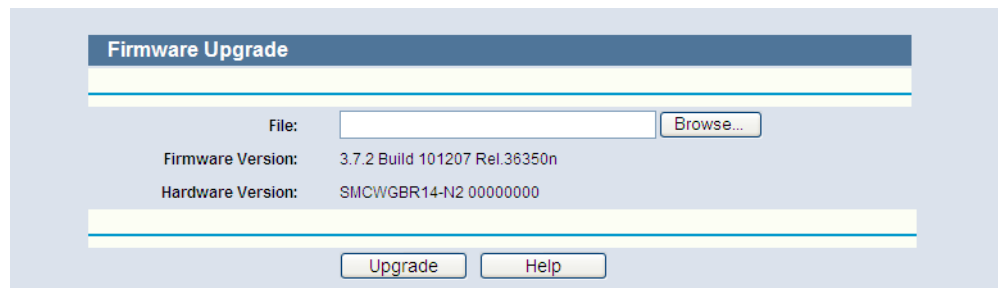
SETTINGS MANAGEMENT

The Settings Management page includes Firmware Upgrade, Factory Defaults, Backup & Restore, and Reboot.

FIRMWARE UPGRADE

Select **System Tools->Firmware Upgrade** from the menu; you can update the latest version of firmware for the Router on the following screen.

Figure 111: Firmware Upgrade



- ◆ **Firmware Version** - This displays the current firmware version.

- ◆ **Hardware Version** - This displays the current hardware version. The hardware version of the upgrade file must accord with the Router's current hardware version.

To upgrade the Router's firmware, follow the instructions below:

1. Download a more recent firmware upgrade file from the SMC website (<http://www.smc.com>).
2. Type the path and file name of the update file into the File field. Or click the Browse button to locate the update file.
3. Click the Upgrade button.



NOTE: New firmware versions are posted at <http://www.smc.com> and can be downloaded for free. There is no need to upgrade the firmware unless the new firmware has a new feature you want to use. However, when experiencing problems caused by the Router rather than the configuration, you can try to upgrade the firmware.

NOTE: When you upgrade the Router's firmware, you may lose its current configuration, so before upgrading the firmware write down some of your customized settings to avoid losing them.

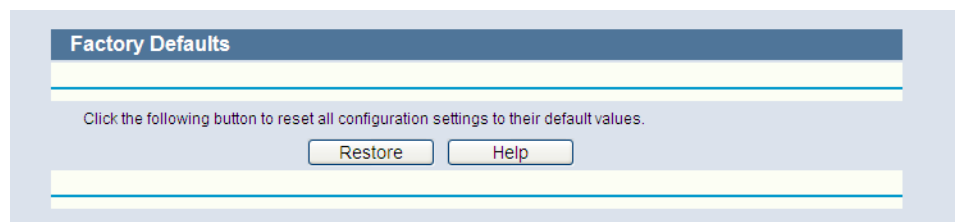
NOTE: Do not turn off the Router or press the Reset button while the firmware is being upgraded, otherwise, the Router may be damaged.

NOTE: The Router will reboot after the upgrading has been finished.

FACTORY DEFAULTS

Select **System Tools-> Factory Defaults** from the menu; you can restore the configuration of the Router to factory defaults on the following screen.

Figure 112: Restore Factory Default



Click the Restore button to reset all configuration settings to their default values.

- ◆ The default User Name: admin
- ◆ The default Password: smcadmin
- ◆ The default IP Address: 192.168.2.1

- ◆ The default Subnet Mask: 255.255.255.0

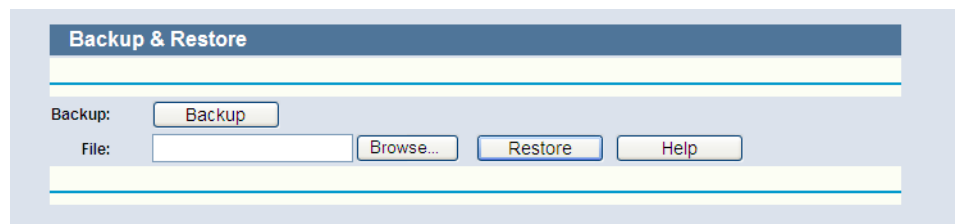


NOTE: Any settings you have saved will be lost when the default settings are restored.

BACKUP & RESTORE

Select **System Tools-> Backup & Restore** from the menu; you can save the current configuration of the Router as a backup file and restore the configuration via a backup file as shown in [Figure 113](#).

Figure 113: Backup & Restore Configuration



- ◆ Click the Backup button to save all configuration settings as a backup file in your local computer.
- ◆ To upgrade the Router's configuration, follow these instructions.
 - Click the Browse... button to locate the update file for the Router, or enter the exact path to the Setting file in the text box.
 - Click the Restore button.

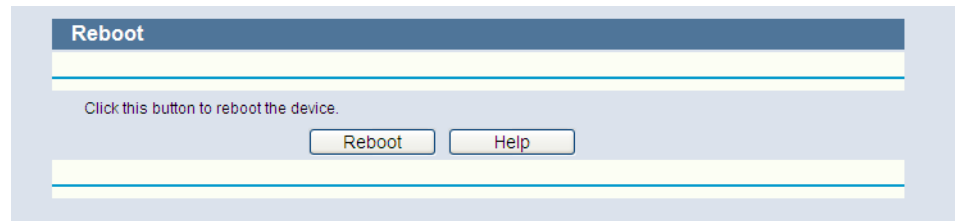


NOTE: The current configuration will be covered by the uploading configuration file. The upgrade process lasts for 20 seconds and the Router will restart automatically. Keep the Router on during the upgrading process to prevent any damage.

REBOOT

Select **System Tools->Reboot** from the menu; you can click the Reboot button to reboot the Router via the next screen.

Figure 114: Reboot

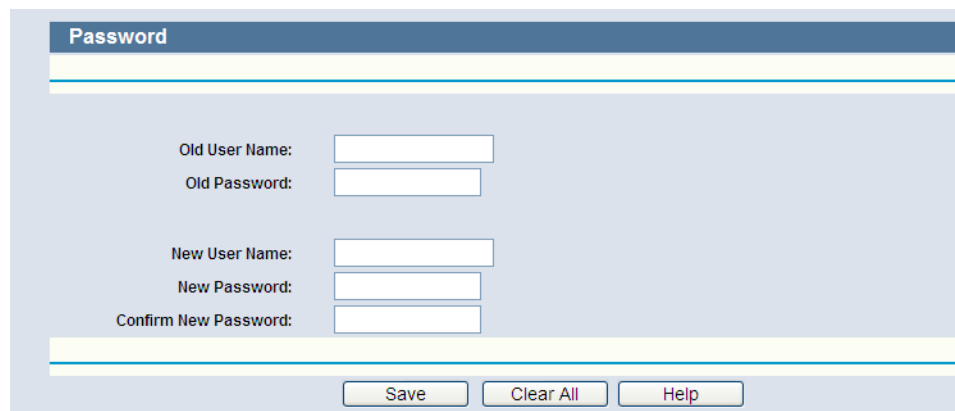


Some settings of the Router will take effect only after rebooting, which include

- ◆ Change of the LAN IP Address (system will reboot automatically).
- ◆ Change of DHCP Settings.
- ◆ Change of Wireless configurations.
- ◆ Change of the Web Management Port.
- ◆ Upgrade of the Router firmware (system will reboot automatically).
- ◆ Restore the Router's settings to factory defaults (system will reboot automatically).
- ◆ Update the configuration from a file (system will reboot automatically).

PASSWORD Select **System Tools->Password** from the menu; you can change the factory default user name and password of the Router in the next screen as shown in [Figure 115](#).

Figure 115: Password

The screenshot shows a web interface titled "Password". At the top, there is a blue header bar with the word "Password" in white. Below the header, there is a light blue background area. The form contains six input fields arranged in two columns. The left column has labels: "Old User Name:", "Old Password:", "New User Name:", "New Password:", and "Confirm New Password:". The right column has corresponding empty input boxes. At the bottom of the screen, there is a light blue footer bar with three buttons: "Save", "Clear All", and "Help".

It is strongly recommended that you should change the factory default user name and password of the Router, because all users who try to access the Router's Web-based utility or Quick Setup will be prompted for the Router's default user name and password.



NOTE: The new user name and password must not exceed 14 characters in length and not include any spaces. Enter the new Password twice to confirm.

Click the Save button when finished.

Click the Clear All button to clear all.

SYSTEM LOG Select **System Tools->System Log** from the menu; you can view the logs of the Router.

Figure 116: System Log

The screenshot shows the 'System Log' interface. At the top, there is a header 'System Log'. Below it, there are configuration options: 'Auto Mail Feature: Disabled' with a 'Mail Settings' button, 'Log Type: All' (dropdown), and 'Log Level: ALL' (dropdown). A table displays log entries with columns for Index, Time, Type, Level, and Log Content. Below the table, there is system information including the time, hardware version (H-Ver), software version (S-Ver), build number, and release date. At the bottom, there are four buttons: 'Refresh', 'Save Log', 'Mail Log', and 'Clear Log'.

Index	Time	Type	Level	Log Content
1	1st day 18:02:35	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 0
2	1st day 18:02:39	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 1
3	1st day 18:02:41	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 1
4	1st day 18:02:43	DHCP	NOTICE	DHCP DHCP Service unavailable, recv no OFFER
5	1st day 18:35:53	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 0
6	1st day 18:35:55	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 0
7	1st day 18:35:57	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 0
8	1st day 18:36:01	DHCP	NOTICE	DHCP Send DISCOVER with request ip 0 and unicast flag 1

Time = 2000-01-02 2:25:46 95147s
H-Ver = SMCWGBR14-N2 00000000 : S-Ver = 3.7.2 Build 101207 Rel.36350n
L = 192.168.2.1 : M = 255.255.255.0
W1 = DHCP : W = 0.0.0.0 : M = 0.0.0.0 : G = 0.0.0.0

- ◆ **Auto Mail Feature** - Indicates whether auto mail feature is enabled or not.
- ◆ **Mail Settings** - Set the receiving and sending mailbox address, server address, validation information as well as the timetable for Auto Mail Feature, as shown in [Figure 117](#).

- ◆ **Log Type** - By selecting the log type, only logs of this type will be shown.
- ◆ **Log Level** - By selecting the log level, only logs of this level will be shown.
- ◆ **Refresh** - Refresh the page to show the latest log list.
- ◆ **Save Log** - Click to save all the logs in a txt file.
- ◆ **Mail Log** - Click to send an email of current logs manually according to the address and validation information set in Mail Settings.
- ◆ **Clear Log** - All the logs will be deleted from the Router permanently, not just from the page.

Figure 117: Mail Account Settings

- ◆ **From** - Your mail box address. The Router would connect it to send logs.
- ◆ **To** - Recipient's address. The destination mailbox where the logs would be received.
- ◆ **SMTP Server** - Your smtp server. It corresponds with the mailbox filled in the From field. You can log on the relevant website for Help if you are not clear with the address.
- ◆ **Authentication** - Most SMTP Server requires Authentication. It is required by most mailboxes that need User Name and Password to log in.



NOTE: Only when you select Authentication, do you have to enter the User Name and Password in the following fields.

- ◆ **User Name** - Your mail account name filled in the From field. The part after @ is excluded.
- ◆ **Password** - Your mail account password.
- ◆ **Confirm The Password** - Enter the password again to confirm.
- ◆ **Enable Auto Mail Feature** - Select it to mail logs automatically. You could mail the current logs either at a specified time everyday or by intervals, but only one could be the current effective rule. Enter the desired time or intervals in the corresponding field as shown in [Figure 117](#).

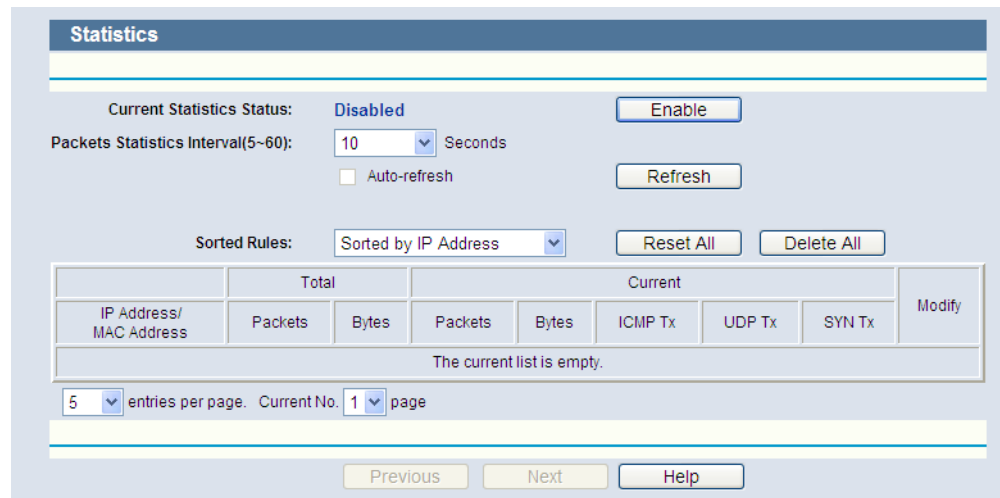
Click Save to keep your settings.

Click Back to return to the previous page.

Click the Next button to go to the next page, or click the Previous button return to the previous page.

STATISTICS Select **System Tools->Statistics** from the menu; you can view the statistics of the Router, including total traffic and current traffic of the last Packets Statistic Interval.

Figure 118: Statistics



- ◆ **Current Statistics Status** - Enable or Disable. The default value is disabled. To enable, click the Enable button.
- ◆ **Packets Statistics Interval (5-60)** - The default value is 10. Select a value between 5 and 60 seconds in the pull-down list. The Packets Statistic interval indicates the time section of the packets statistic.

Select the Auto-refresh checkbox to refresh automatically.

Click the Refresh button to refresh immediately.

- ◆ **Sorted Rules** - Select a rule from the pull-down list to display the corresponding statistics..

Click Reset All to reset the values of all the entries to zero.

Click Delete All to delete all entries in the table.

Statistics Table:

IP/MAC Address - The IP/MAC Address displayed with statistics

Total Packets - The total amount of packets received and transmitted by the Router.

Total Bytes - The total amount of bytes received and transmitted by the Router.

Current Packets - The total amount of packets received and transmitted in the last Packets Statistic interval seconds.

Current Bytes - The total amount of bytes received and transmitted in the last Packets Statistic interval seconds.

Current ICMP Tx - The total amount of the ICMP packets transmitted to WAN in the last Packets Statistic interval seconds.

Current UDP Tx - The total amount of the UDP packets transmitted to WAN in the last Packets Statistic interval seconds.

Current TCP SYN Tx - The total amount of the TCP SYN packets transmitted to WAN in the last Packets Statistic interval seconds.

There are 5 entries on each page. Click Previous to return to the previous page and Next to the next page.

LOCAL MANAGEMENT Select **Security->Local Management** from the menu; you can configure the management rules in the screen, as shown in [Figure 119](#). The management feature allows you to deny computers in the LAN from accessing the Router.

Figure 119: Local Management

By default, the radio button “All the PCs on the LAN are allowed to access the Router’s Web-Based Utility” is checked. If you want to allow PCs with specific MAC Addresses to access the Setup page of the Router’s Web-Based Utility locally from inside the network, check the radio button “Only the PCs listed can browse the built-in web pages to perform Administrator tasks”, and then enter each MAC Address in a separate field. The format for the MAC Address is XX-XX-XX-XX-XX-XX (X is any hexadecimal digit). Only the PCs with MAC address listed can use the password to browse the built-in web pages to perform Administrator tasks while all the others will be blocked.

After click the Add button, your PC’s MAC Address will be placed in the list above.

Click the Save button to save your settings.



NOTE: If your PC is blocked but you want to access the Router again, use a pin to press and hold the Reset Button (hole) on the back panel for about 5 seconds to reset the Router’s factory defaults, then access the Router’s Web-Based Utility.

REMOTE MANAGEMENT Select **Security->Remote Management** from the menu; you can configure the Remote Management function in the screen, as shown in [Figure 120](#). This feature allows you to manage your Router from a remote location via the Internet.

Figure 120: Remote Management

- ◆ **Web Management Port** - Web browser access normally uses the standard HTTP service port 80. This Router's default remote management web port number is 80. For greater security, you can change the remote management web port to a custom port by entering that number in the box provided. Choose a number between 1 and 65534, but do not use the number of any common service port.
- ◆ **Remote Management IP Address** - This is the current address you will use when accessing your Router from the Internet. This function is disabled when the IP address is set to the default value of 0.0.0.0. To enable this function change 0.0.0.0 to a valid IP address. If set to 255.255.255.255, then all the hosts can access the Router from internet.



NOTE: To access the Router, you should type your Router's WAN IP address into your browser's address (in IE) or Location (in Navigator) box, followed by a colon and the custom port number. For example, if your Router's WAN address is 202.96.12.8, and the port number used is 8080, please enter `http://202.96.12.8:8080` in your browser. Later, you may be asked for the Router's password. After successfully entering the username and password, you will be able to access the Router's web-based utility.

NOTE: Be sure to change the Router's default password to a very secure password.

A

CONFIGURING THE PC

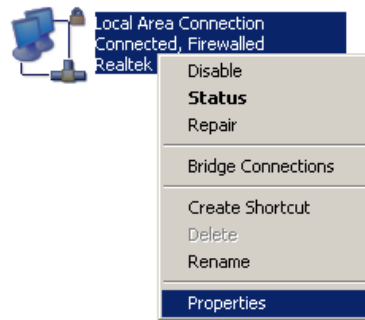
The section shows how to install and configure TCP/IP settings correctly in Windows XP. First make sure your Ethernet Adapter is working, refer to the adapter's manual if needed.

INSTALL TCP/IP COMPONENTS

1. On the Windows taskbar, click the Start button, point to Settings, and then click Control Panel.
2. Click the Network and Internet Connections icon, and then click on the Network Connections tab in the following window.
3. Right click the icon that is shown below, then select Properties from the menu.

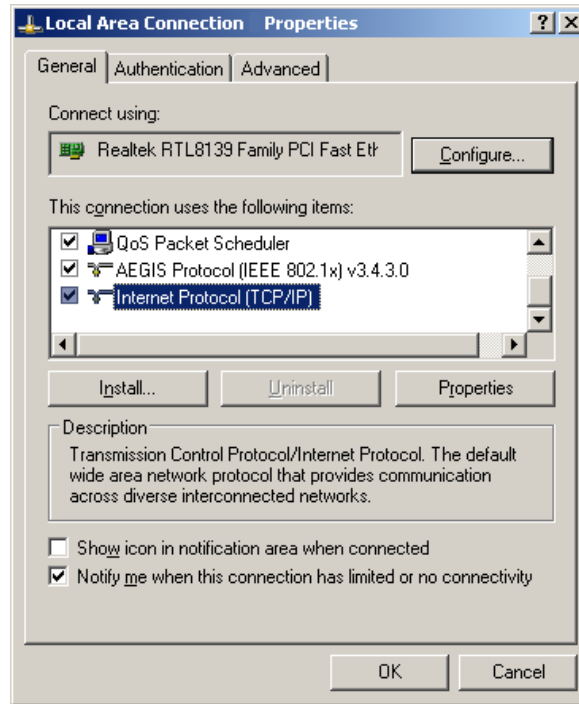
Figure 121: TCP/IP

LAN or High-Speed Internet



4. In the window that is shown below, double click on "Internet Protocol (TCP/IP)."

Figure 122: Internet Protocol



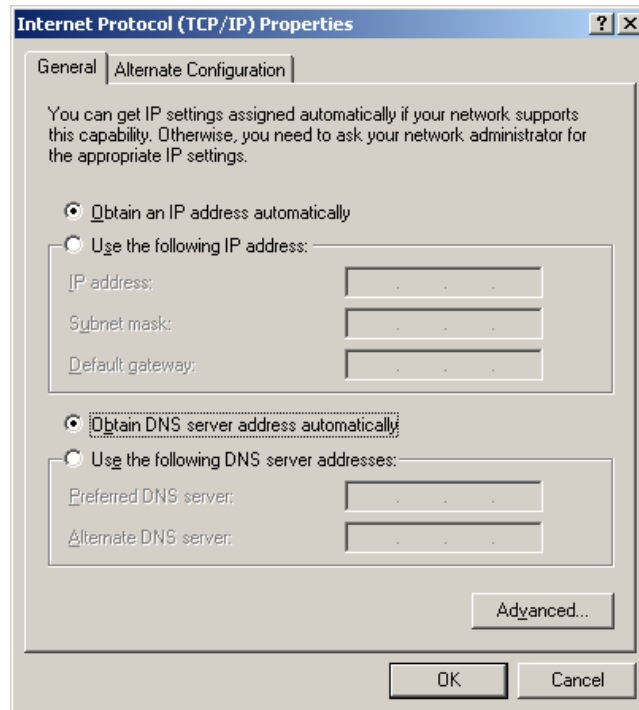
5. The following TCP/IP Properties window will display and the IP Address tab is open on this window by default.

Now you have two ways to configure the TCP/IP protocol below:

- a. Set the IP address automatically.

Select "Obtain an IP address automatically," and "Obtain DNS server automatically," as shown in the Figure below:

Figure 123: Internet Protocol Properties

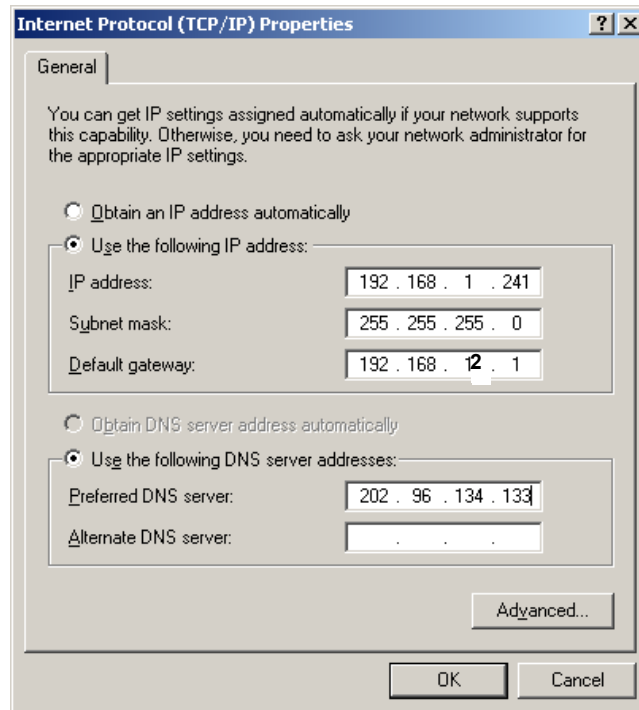


b. Set the IP address manually.

Select “Use the following IP address” radio button and enter the following items:

- If the Router’s LAN IP address is 192.168.2.1, type an IP address such as 192.168.2.x (where x is from 2 to 254), and Subnet mask as 255.255.255.0.
- Type the Router’s LAN IP address (the default IP is 192.168.2.1) into the Default gateway field.
- Select “Use the following DNS server addresses” radio button. In the “Preferred DNS Server” field, type the DNS server IP address that has been provided by your ISP.

Figure 124: Setting the IP Address Manually



6. Click OK to keep your settings.

HOW DO I CONFIGURE THE ROUTER FOR INTERNET ACCESS BY ADSL USERS?

1. Configure the ADSL Modem in RFC1483 bridge mode.
2. Connect Ethernet cable from the ADSL Modem to the WAN port on the Router. The telephone cord plugs into the Line port of the ADSL Modem.
3. Log in to the Router, click "Network" on the web page menu and then click "WAN" on the submenu.
 - a. On the WAN page, select "PPPoE" for the WAN connection type.
 - b. Type the user name in the "User Name" field and the password in the "Password" field.
 - c. Finish by clicking "Connect".

Figure 125: PPPoE Connection Type

PPPoE Connection:

User Name:

Password:

Confirm Password:

4. If your ADSL lease is in "pay-according-time" mode, select "Connect on Demand," or "Connect Manually" for Internet connection mode. Type an appropriate value for the "Max Idle Time" to avoid wasting paid time. Otherwise, you can select "Auto-connecting" for Internet connection mode.

Figure 126: PPPoE Connection Mode

Wan Connection Mode:

Connect on Demand
 Max Idle Time: minutes (0 means remain active at all times.)

Connect Automatically

Time-based Connecting
 Period of Time: from : (HH:MM) to : (HH:MM)

Connect Manually
 Max Idle Time: minutes (0 means remain active at all times.)

Disconnected!



NOTE: Sometimes the connection cannot be disconnected although you have specified a Max Idle Time, since some applications may be visiting the Internet continually in the background.

NOTE: If you are a Cable user, configure the Router following the above steps.

HOW DO I CONFIGURE THE ROUTER FOR INTERNET ACCESS BY ETHERNET USERS?

1. Log in to the Router, click "Network" on the web page menu, and then click "WAN" on the submenu.
 - a. On the WAN page, select "Dynamic IP" for the WAN connection type.
 - b. Finish by clicking **Save**.
2. Some ISPs require that you register the MAC Address of your adapter, which is connected to your cable/DSL Modem during installation. If your ISP requires this, log in to the Router and click the "Network" menu link, and then click the "MAC Clone" submenu link.
 - a. On the "MAC Clone" page, click the "Clone MAC Address" button if your PC's MAC address is a proper MAC address. Your PC's MAC address will fill in the "WAN MAC Address" field.

Otherwise, type the MAC Address into the "WAN MAC Address" field. The format for the MAC Address is XX-XX-XX-XX-XX-XX.

- b. Click the **Save** button. Settings take effect after rebooting.

Figure 127: MAC Clone

MAC Clone	
WAN MAC Address:	<input type="text" value="D8-5D-4C-DF-21-C1"/> <input type="button" value="Restore Factory MAC"/>
Your PC's MAC Address:	<input type="text" value="00-23-54-EF-1D-AF"/> <input type="button" value="Clone MAC Address"/>
<input type="button" value="Save"/> <input type="button" value="Help"/>	

I WANT TO USE NETMEETING, WHAT DO I NEED TO DO?

1. If you start Netmeeting as a host, you do not need to change anything on the Router.
2. If you start as a response, you need to configure a Virtual Server or DMZ Host, and make sure the H323 ALG is enabled.
3. Configure a Virtual Server:
 - a. Log in to the Router, click "Forwarding" on the menu, and then click "Virtual Servers" on the submenu.
 - b. On the "Virtual Servers" page, click "Add New".
 - c. On the "Add or Modify a Virtual Server Entry" page, enter "1720" for the "Service Port".
 - d. Enter your IP address in the "IP Address" field (for example, 192.168.2.169).
 - e. Set to Enable and then Save.

Figure 128: Virtual Servers

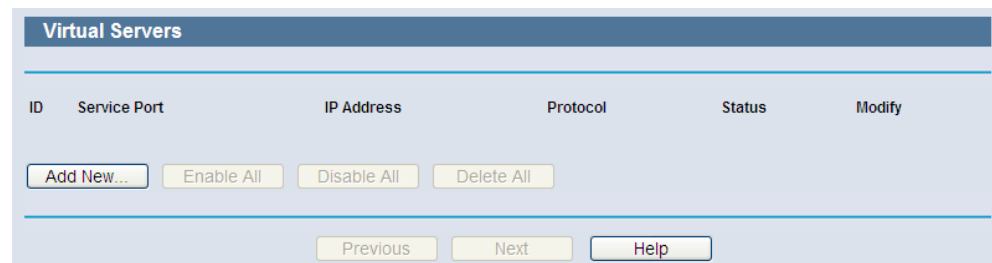


Figure 129: Add or Modify a Virtual Server Entry

Service Port: (XX-XX or XX)
 IP Address:
 Protocol:
 Status:
 Common Service Port:



NOTE: The other party should call your WAN IP, which is displayed on the "Status" page.

4. Enable a DMZ Host:

- a.** Log in to the Router, click "Forwarding" on the menu, and then click "DMZ" on the submenu.
- b.** On the "DMZ" page, click the Enable radio button.
- c.** Type your IP address into the "DMZ Host IP Address" field (for example, 192.168.2.169).
- d.** Click the Save button.

Figure 130: DMZ

A screenshot of a web interface for configuring DMZ. The page has a dark blue header with the word "DMZ" in white. Below the header, there is a light blue background. On the left, the text "Current DMZ Status:" is followed by two radio buttons: "Enable" (which is unselected) and "Disable" (which is selected). Below this, the text "DMZ Host IP Address:" is followed by a text input field containing the IP address "192.168.2.100". At the bottom of the form, there are two buttons: "Save" and "Help".

5. Enable the H323 ALG:

- a.** Log in to the Router, click "Security" on the menu, and then click "Basic Security" on the submenu.
- b.** On the "Basic Security" page, check the Enable radio button next to H323 ALG.
- c.** Click the Save button.

Figure 131: Basic Security

Basic Security

Firewall

SPI Firewall: Enable Disable

VPN

PPTP Passthrough: Enable Disable

L2TP Passthrough: Enable Disable

IPSec Passthrough: Enable Disable

ALG

FTP ALG: Enable Disable

TFTP ALG: Enable Disable

H323 ALG: Enable Disable

RTSP ALG: Enable Disable

Save Help

I WANT TO BUILD A WEB SERVER ON THE LAN, WHAT SHOULD I DO?

1. Change the Web management port number:

Because the Web Server port 80 will interfere with the Web management port 80 on the Router, you must change the Web management port number to avoid interference.

- a. Log in to the Router, click "Security" on the menu, and then click "Remote Management" on the submenu.
- b. On the "Remote Management" page, type a port number except 80, such as 88, into the "Web Management Port" field.
- c. Click Save and reboot the Router.

Figure 132: Remote Management

Remote Management

Remote Management: Enable Disable

Web Management Port:

Remote Management IP Address: (Enter 255.255.255.255 for all)

Save Help



NOTE: When the above configuration takes effect, you can configure the Router by typing "http://192.168.2.1:88" (the Router's LAN IP address: Web Management Port) in the address field of the Web browser.

2. Configure a Virtual Server:

- a. Log in to the Router, click "Forwarding" on the menu, and then click "Virtual Servers" on the submenu.
- b. On the "Virtual Servers" page, click "Add New".
- c. On the "Add or Modify a Virtual Server" page, enter "80" into the field for the "Service Port".
- d. Enter your IP address in the "IP Address" field (for example, 192.168.2.188).
- e. Set to Enable and then Save.

Figure 133: Virtual Servers

ID	Service Port	IP Address	Protocol	Status
<input type="button" value="Add New..."/> <input type="button" value="Enable All"/> <input type="button" value="Disable All"/> <input type="button" value="Delete All"/>				
<input type="button" value="Previous"/> <input type="button" value="Next"/> <input type="button" value="Help"/>				

Figure 134: Add or Modify a Virtual Server Entry

Service Port: (XX-XX or XX)
 IP Address:
 Protocol:
 Status:
 Common Service Port:

WIRELESS STATIONS CANNOT CONNECT TO THE ROUTER

1. Make sure the "Wireless Router Radio" is enabled.
2. Make sure that the SSID of wireless stations is the same as the Router's SSID.
3. Make sure wireless stations have the right encryption key for the Router security.
4. If the wireless connection is ready, but you cannot access the Router, check the IP Address of your wireless station.

STANDARDS IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX
802.11b
802.11g
Compatible with 802.11n

PROTOCOL TCP/IP, PPPoE, DHCP, ICMP, NAT, SNTP

PORTS One 10/100 Mbps Auto-Negotiation RJ-45 WAN port
Four 10/100 Mbps Auto-Negotiation RJ-45 LAN ports
All ports support Auto MDI/MDIX

CABLING TYPE 10BASE-T: UTP Category 3, 4, 5 cable (maximum 100 m)
EIA/TIA-568 100 STP (maximum 100 m)
100BASE-TX: UTP Category 5, 5e cable (maximum 100 m)
EIA/TIA-568 100 STP (maximum 100 m)

LED INDICATORS Power, System, WLAN, WAN, LAN (1-4), WPS

FREQUENCY BAND 2.4~2.4835 GHz

RADIO DATA RATE 11b: 11/5.5/2/1 Mbps (Automatic)
11g: 54/48/36/24/18/12/9/6 Mbps (Automatic)
11n: up to 300 Mbps (Automatic)

CHANNELS 1~13

FREQUENCY EXPANSION DSSS (Direct Sequence Spread Spectrum)

MODULATION DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM

SECURITY WEP/WPA/WPA2/WPA2-PSK/WPA-PSK

SENSITIVITY @PER 130 Mbps: -68dBm@10% PER
108 Mbps: -68dBm@10% PER
54 Mbps: -68dBm@10% PER
11 Mbps: -85dBm@8% PER
6 Mbps: -88dBm@10% PER
1 Mbps: -90dBm@8% PER

ANTENNA GAIN 3dBi

TEMPERATURE Operating: 0 °C to 40 °C (32 to 104 °F)
Storage: -40 °C to 70 °C (-40 to 158 °F)

HUMIDITY Operating: 10% to 90% (non-condensing)
Storage: 5%-90% (non-condensing)

GLOSSARY

IEEE 802.11B A wireless standard that supports wireless communications in the 2.4 GHz band using Direct Sequence Spread Spectrum (DSSS). The standard provides for data rates of 1, 2, 5.5, and 11 Mbps.

IEEE 802.11G A wireless standard that supports wireless communications in the 2.4 GHz band using Orthogonal Frequency Division Multiplexing (OFDM). The standard provides for data rates of 6, 9, 12, 18, 24, 36, 48, 54 Mbps. IEEE 802.11g is also backward compatible with IEEE 802.11b.

IEEE 802.11N A wireless standard that supports wireless communications in the 2.4 GHz band using Orthogonal Frequency Division Multiplexing (OFDM). The standard provides for data rates of 27, 54, 81, 108, 162, 216, 243, 270, 300 Mbps. IEEE 802.11n is also backward compatible with IEEE 802.11b/g.

DDNS (DYNAMIC DOMAIN NAME SYSTEM) The capability of assigning a fixed host and domain name to a dynamic Internet IP Address.

DHCP Dynamic Host Configuration Protocol: Provides a framework for passing configuration information to hosts on a TCP/IP network. DHCP is based on the Bootstrap Protocol (BOOTP), adding the capability of automatic allocation of reusable network addresses and additional configuration options.

DMZ (DEMILITARIZED ZONE) A Demilitarized Zone allows one local host to be exposed to the Internet for a special-purpose service such as Internet gaming or videoconferencing.

DNS (DOMAIN NAME SYSTEM) An Internet Service that translates the names of websites into IP addresses.

DOMAIN NAME A descriptive name for an address or group of addresses on the Internet.

DSL (DIGITAL SUBSCRIBER LINE) A technology that allows data to be sent or received over existing traditional phone lines.

ISP (INTERNET SERVICE PROVIDER)	A company that provides access to the Internet.
MTU (MAXIMUM TRANSMISSION UNIT)	The size in bytes of the largest packet that can be transmitted.
NAT (NETWORK ADDRESS TRANSLATION)	NAT technology translates IP addresses of a local area network to a different IP address for the Internet.
PPPoE (POINT TO POINT PROTOCOL OVER ETHERNET)	PPPoE is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.
SSID	A Service Set Identification is a thirty-two character (maximum) alphanumeric key identifying a wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name.
WEP (WIRED EQUIVALENT PRIVACY)	A data privacy mechanism based on a 64-bit, 128-bit, or 152-bit shared-key algorithm, as described in the IEEE 802.11 standard.
Wi-Fi	A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see http://www.wi-fi.net), an industry standards group promoting interoperability among 802.11b devices.
WLAN (WIRELESS LOCAL AREA NETWORK)	A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.

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