User Guide

TL-WR340G

TL-WR340GD

54M Wireless Router

Rev: 1.0.3
1910010251

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http://www.tp-link.com

FCC STATEMENT

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

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

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

1) This device may not cause harmful interference.
2) This device must accept any interference received, including interference that may cause undesired operation.

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

FCC RF 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

CE 1588 ⓘ

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

2400.0-2483.5 MHz

Country	Restriction	Reason/remark
Bulgaria		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		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		Only for indoor applications

Note：Please don’t use the product outdoors in France.

TP-LINK TP-LINK TECHNOLOGIES CO., LTD

DECLARATION OF CONFORMITY

For the following equipment:
Product Description: **54M Wireless Router**
Model No.: **TL-WR340G / TL-WR340GD**
Trademark: **TP-LINK**

We declare under our own responsibility that the above products satisfy all the technical regulations applicable to the product within the scope of Council Directives:

Directives 1999/5/EC

The above product is in conformity with the following standards or other normative documents:
ETSI EN 300 328 V1.7.1: 2006
ETSI EN 301 489-1 V1.8.1:2008& ETSI EN 301 489-17 V1.3.2:2008
EN 61000-3-2:2006
EN 61000-3-3:1995+A1:2001+A2:2005
EN60950-1:2006
Recommendation 1999/519/EC
EN62311:2008

Directives 2004/108/EC

The above product is in conformity with the following standards or other normative documents
EN 55022:2006 +A1:2007
EN 55024:1998+A1:2001+A2:2003
EN 61000-3-2:2006
EN 61000-3-3:1995+A1:2001+A2:2005

Directives 2006/95/EC

The above product is in conformity with the following standards or other normative documents
EN60950-1:2006

Person is responsible for marking this declaration:

Yang Hongliang
Product Manager of International Business

CONTENTS

Package Contents

The following contents should be found in your box:

- One TL-WR340G/TL-WR340GD 54Mbps Wireless Router
- One AC power Adapter for TL-WR340G/TL-WR340GD 54Mbps Wireless Router
- Quick Installation Guide
- One Resource CD for TL-WR340G/TL-WR340GD 54Mbps Wireless Router, 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.

Conventions

The Router or TL-WR340G/TL-WR340GD, or device mentioned in this User guide stands for TD-WR340G/TL-WR340GD 54M Wireless Router without any explanations.

Parameters provided in the pictures are just references for setting up the product, which may differ from the actual situation.

You can set the parameters according to your demand.

☞ **Note:**

The two devices of TL-WR340G and TL-WR340GD are shared with this User Guide, we use TL-WR340G for example.

The differences between them are:

- TL-WR340G router with an fixed antenna;
- TL-WR340GD router with a detachable antenna.

Chapter 1. Introduction

Thank you for choosing the TL-WR340G/TL-WR340GD 54Mbps Wireless Router.

1.1 Product Overview

Thank you for choosing the TL-WR340G/TL-WR340GD 54Mbps Wireless Router. This router provides dedicated solution for Small Office/Home Office (SOHO) networks. With your network all connected, your local wired or wireless network can share Internet access, files and fun for multiple PCs through one ISP account. In addition, this device supports Bridge mode which can make two APs communicate with each other wirelessly.

It is an easy Web-based setup for installation and management. Even though you may not be familiar with the router, this guide will make configuring the router easy. Before installing the router, please look through this guide to know all the router's functions.

1.2 Main Features

- Complies with IEEE 802.11g, IEEE 802.11b, IEEE 802.3, IEEE 802.3u standards.
- 1 10/100M Auto-Negotiation RJ45 WAN port, 4 10/100M Auto-Negotiation RJ45 LAN ports, supporting Auto MDI/MDIX.
- Shares data and Internet access for users, supporting PPPoE, Dynamic IP, Static IP, L2TP, PPTP, BigPond Cable Internet access.
- Ignores Ping packets from WAN or LAN ports.
- Connecting Internet on demand and disconnecting from the Internet when idle for PPPoE.
- Built-in NAT and DHCP server supporting static IP address distributing.
- Built-in firewall supporting IP address filtering, Domain Name filtering, and MAC address filtering.
- Provides WPA/WPA2, WPA-PSK/WPA2-PSK authentication, TKIP/AES encryption security.
- Provides 64/128/152-bit WEP encryption security and wireless LAN ACL (Access Control List).
- Supports Flow Statistics.
- Supports firmware upgrade.
- Supports Web management.
- Supports Virtual Server, Special Application and DMZ host.
- Supports UPnP, Dynamic DNS, Static Routing, VPN Pass-through.
- Supports ICMP-FLOOD, UDP-FLOOD, and TCP-SYN-FLOOD filter.

- Supports 54/48/36/24/18/12/9/6Mbps or 11/5.5/2/1Mbps data transfer rates.
- Supports connecting/disconnecting from the Internet on a specified time of day.
- Supports access control, parents and network administrators can establish restricted access policies based on time of day for children or staff.

Chapter 2. Hardware Installation

2.1 The Front Panel

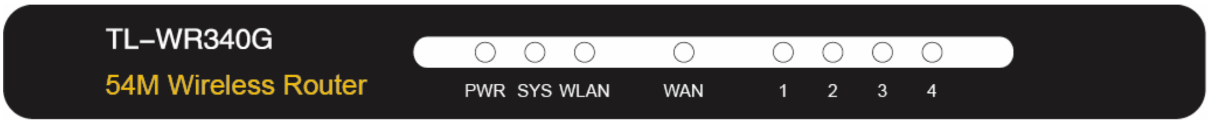


Figure 2-1

The Router's LEDs are located on the front panel (View from left to right).

LED Explanation:

Name	Status	Indication
PWR	Off	No Power
	On	Power on
SYS	Off	The Router has an error
	On	The Router is initializing
	Flashing	The Router is working properly
WLAN	Off	The Wireless function is disabled
	Flashing	The Wireless function is enabled
WAN/1-4 (LAN)	Off	There is no device linked to the corresponding port
	On	There are devices linked to the corresponding ports but no data transmitted or received.
	Flashing	Sending or receiving data over corresponding port

2.2 The Back Panel

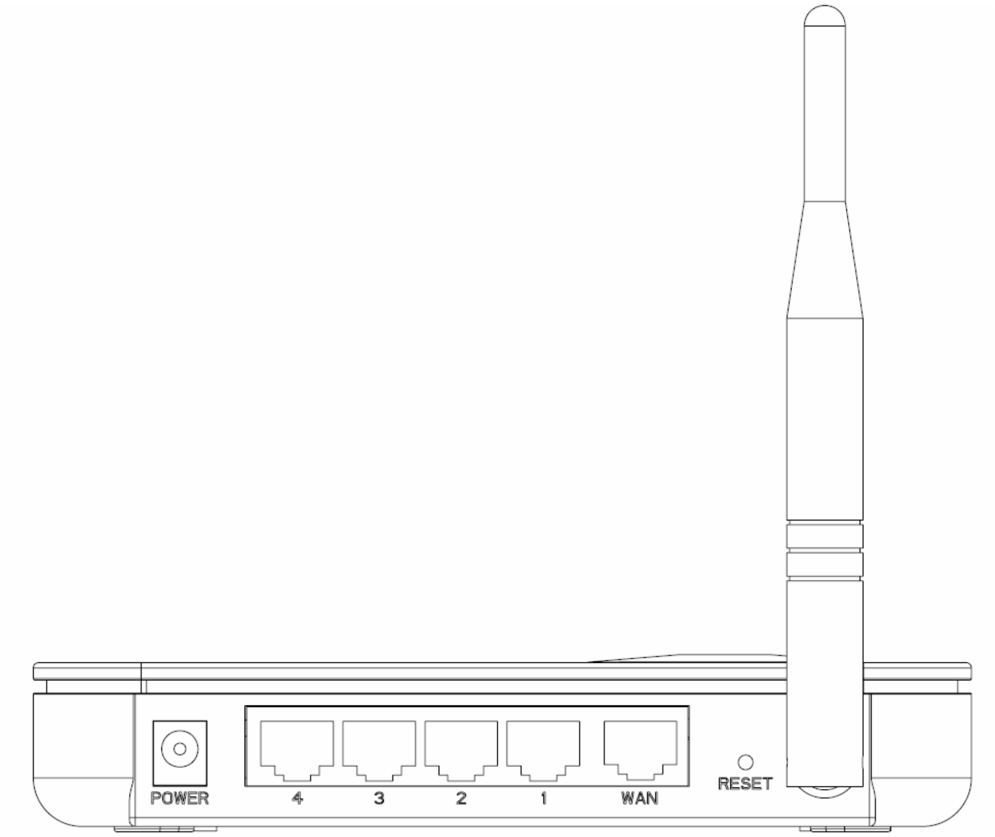


Figure 2-2

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

- **POWER:** The Power plug is where you will connect the power adapter.
- **1, 2, 3, 4 (LAN):** Through these ports, you can connect the Router to your PCs and the other Ethernet network devices.
- **WAN:** RJ45 WAN port for connecting the router to a cable/DSL Modem, or Ethernet.
- **RESET:** There are two ways to reset the Router's factory defaults. With the router powered on, use a pin to press and hold the Reset button until the SYS LED becomes quick-flash from slow-flash (about 5 seconds), and then release the button and wait the router to reboot to its factory default settings, or restore the default setting from “Management - Settings - Restore Default “of the Router's Web-based Utility.
- **Antenna:** Used for wireless operation and data transmit.

2.3 System Requirements

- Broadband Internet Access Service (DSL/Cable/Ethernet)
- One DSL/Cable Modem that has an RJ45 connector (you do not need it if you connect the router to the Ethernet)

- Each PC in the LAN needs a working Ethernet Adapter and an Ethernet cable with RJ45 connectors
- TCP/IP protocol must be installed on each PC
- Web browser, such as Microsoft Internet Explorer 5.0 or later, Netscape Navigator 6.0 or later

2.4 Installation Environment Requirements

- The Product should not be located where it will be exposed to moisture or excessive heat.
- Place the Router in a location where it can be connected to the various devices as well as to a power source.
- Make sure the cables and power cord are placed safely out of the way so they do not create a tripping hazard.
- Designed to go up to 100 meters indoors and up to 300 meters outdoors for wireless connection.
- The Router can be placed on a shelf or desktop.

2.5 Connecting the Device

Before installing the Router, please make sure your broadband service provided by your ISP is available. If there is any problem, please contact with your ISP. After that, please install the Router according to the following steps. Don't forget to pull out the power plug and keep your hands dry.

1. Locate an optimum location for the Router. The best place is usually near the center of the area in which your PC will be wirelessly connected. The place had better accord with the Installation Environment Requirements.
2. Adjust the direction of the antenna. Normally, upright is a good direction.
3. Connect the PC(s) and each Switch/Hub in your LAN to the LAN Ports on the router, shown in Figure 2-3. (If you have the wireless NIC and want to use wireless function, you can skip this step.)
4. Connect the DSL/Cable Modem to the WAN port on the router, shown in Figure 2-3.
5. Connect the AC power adapter to the AC power socket on the router, and the other end into an electrical outlet. The router will start to work automatically.
6. Power on your PC and Cable/DSL Modem.

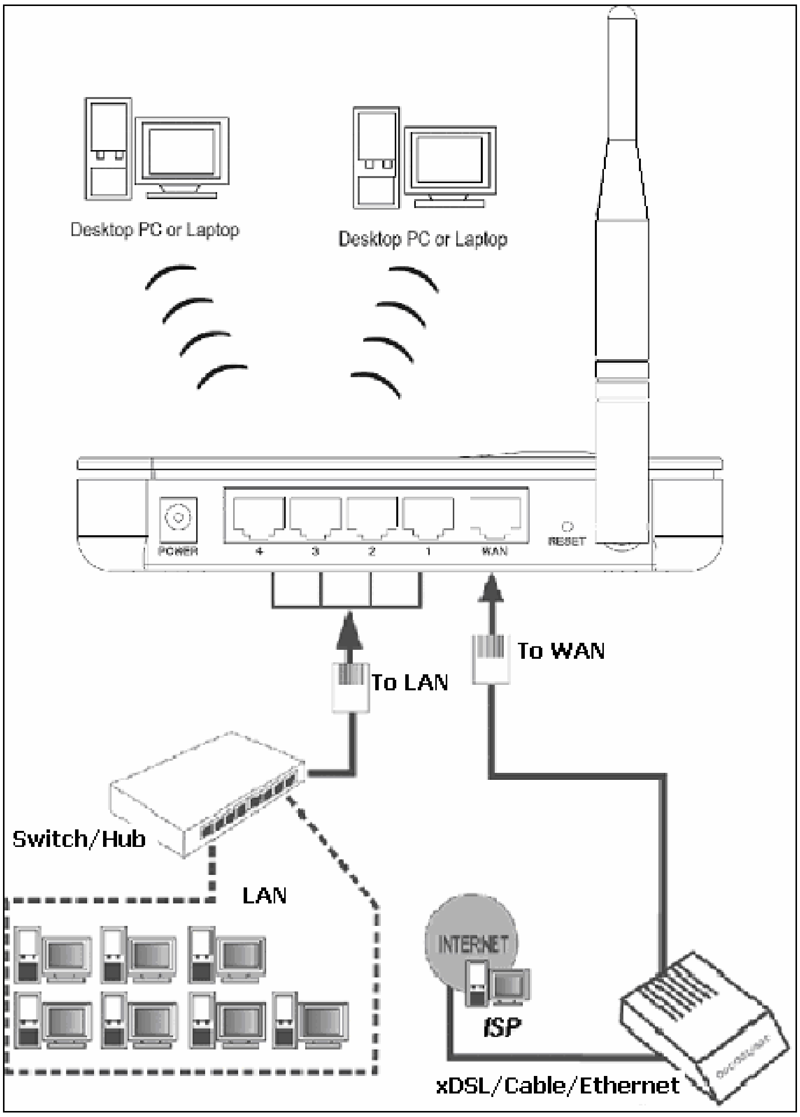


Figure 2-3 Hardware Installation of the Router

2.6 Configure PC

Your PC needs a network adapter. You may directly connect your adapter to the Router, or you may connect your adapter to a Hub/Switch, and then connect the Hub/Switch to the Router.

Follow the instructions below to configure a computer running Windows XP to be a DHCP client.

1. From the **Start** menu on your desktop, go to **Settings**, and then click on Network Connections.

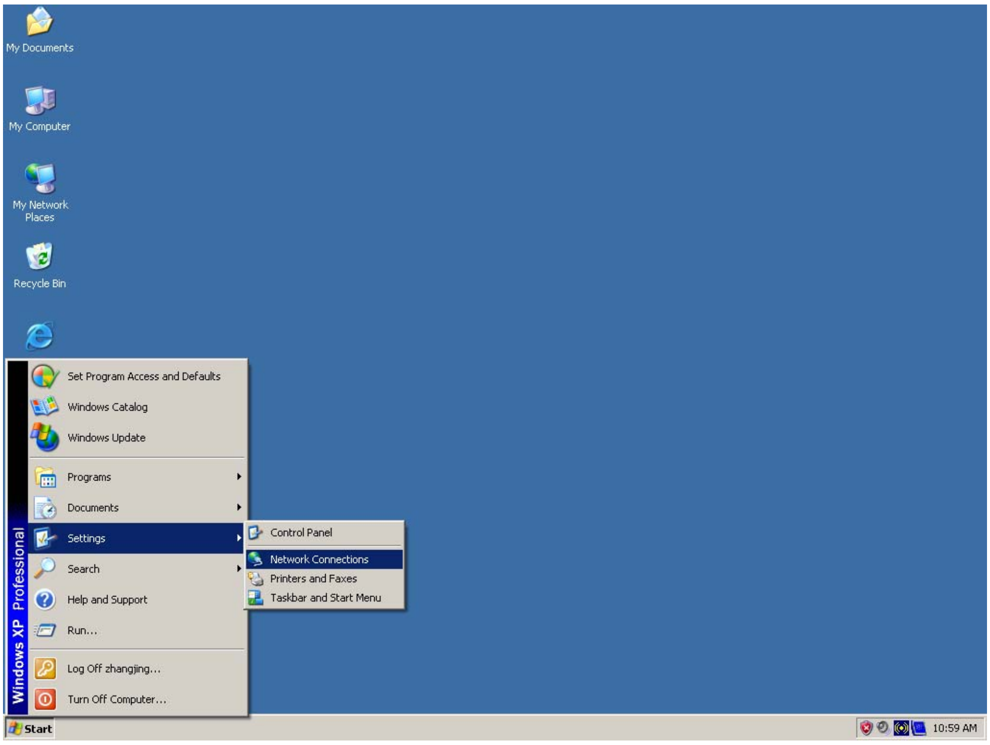


Figure 2-4

2. In the **Network Connections** window, right-click on LAN (Local Area Connection), then click Properties.

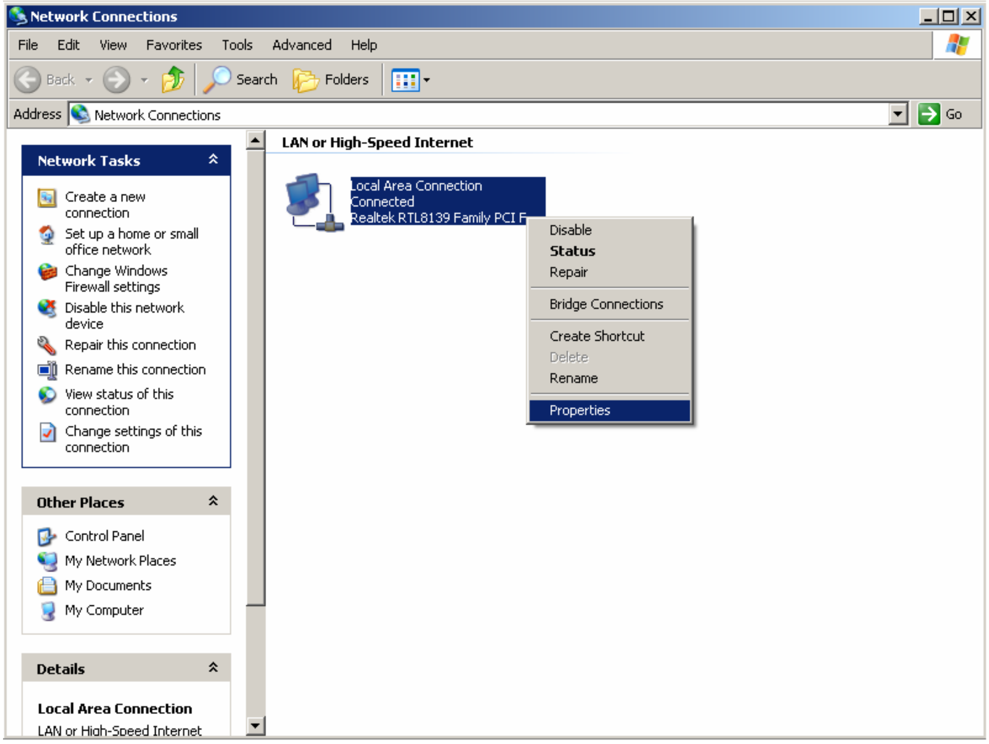
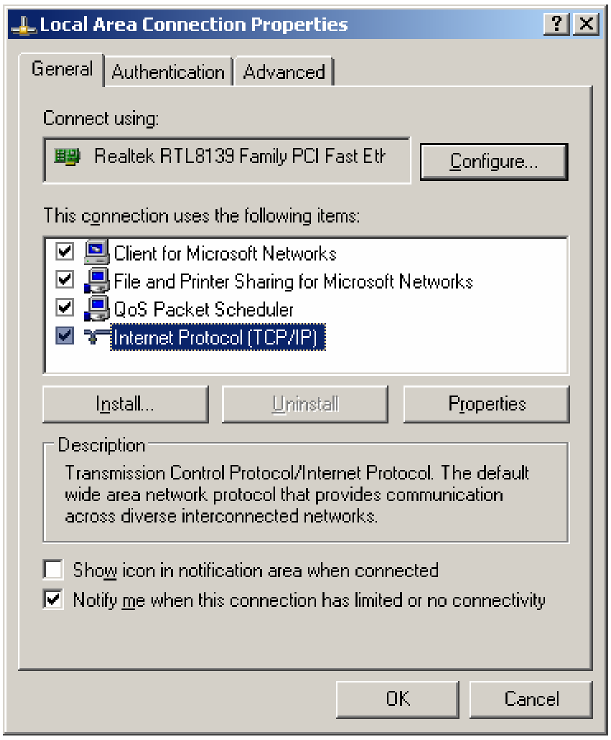


Figure 2-5

3. In the **General** tab of **Internet Protocol (TCP/IP) Properties** menu, highlight Internet Protocol (TCP/IP) under “This connection uses the following items:” by clicking on it once. Click on the Properties button.



Connect using:

Realtek RTL8139 Family PCI Fast Eth

This connection uses the following items:

- ☑ Client for Microsoft Networks
- ☑ File and Printer Sharing for Microsoft Networks
- ☑ QoS Packet Scheduler
- ☑ Internet Protocol (TCP/IP)

Description

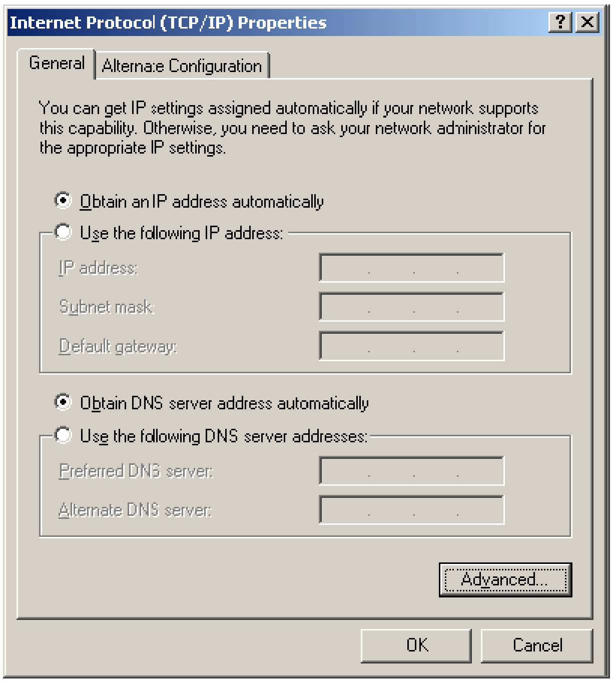
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☐ Show icon in notification area when connected

☑ Notify me when this connection has limited or no connectivity

Figure 2-6

4. Select "Obtain an IP address automatically" by clicking the radio-button. Click OK



You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically

○ Use the following IP address:

IP address:

Subnet mask:

Default gateway:

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server:

Alternate DNS server:

Figure 2-7

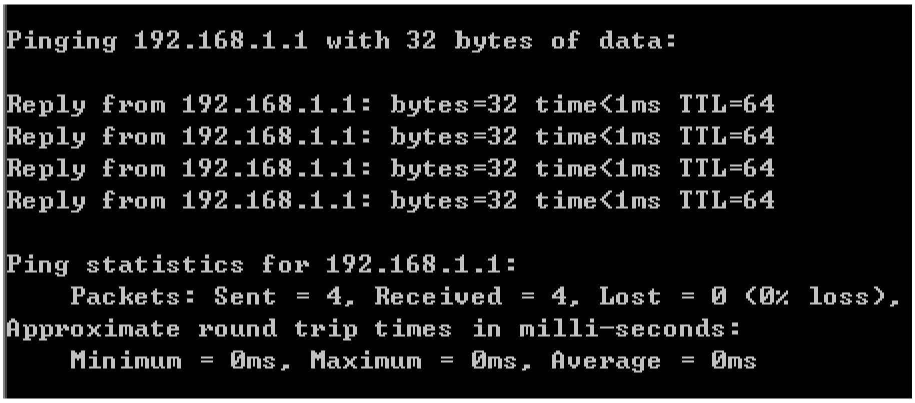
➢ Configure the IP address manually

1. Open TCP/IP Properties of the LAN card in your PC, enter the IP address as 192.168.1.* (* is any value between 2 to 254, Subnet mask is 255.255.255.0, Gateway is 192.168.1.1, DNS address is the value provided by ISP).

Now, you can run the Ping command in the command prompt to verify the network connection between your PC and the Router. The following example is in Windows XP Operating System.

2. Open a command prompt, From the Start menu on your desktop, select run tab, type **cmd** in the field, and type *ping 192.168.1.1* on the screen that appears, and then press Enter.

If the result displayed is similar to that shown in Figure below, the connection between your PC and the Router has been established.



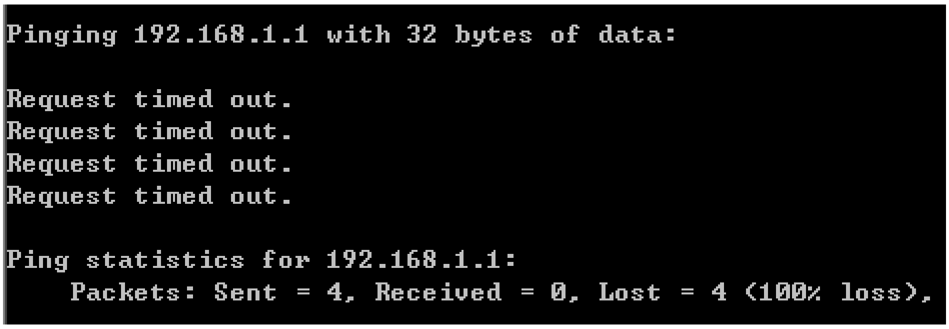
```
Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Figure 2-8

If the result displayed is similar to that shown in figure below, it means that your PC has not connected to the Router.



```
Pinging 192.168.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Figure 2-9

Please check it following these steps:

☞ **Note:**

➢ If the connection between your PC and the Router is correct?

The LEDs of LAN port which you link to on the devicer and LEDs on your PC's adapter should be lit.

➢ If the TCP/IP configuration for your PC is correct?

If the Router's IP address is 192.168.1.1, your PC's IP address must be within the range of 192.168.1.2 ~ 192.168.1.254.

Chapter 3. Software Configuration

This User Guide recommends using the “Quick Installation Guide” for first-time installation, For advanced users, if you want to know more about this device and make use of its functions adequately, you need to read this chapter and configure advanced settings though the Web-based Utility.

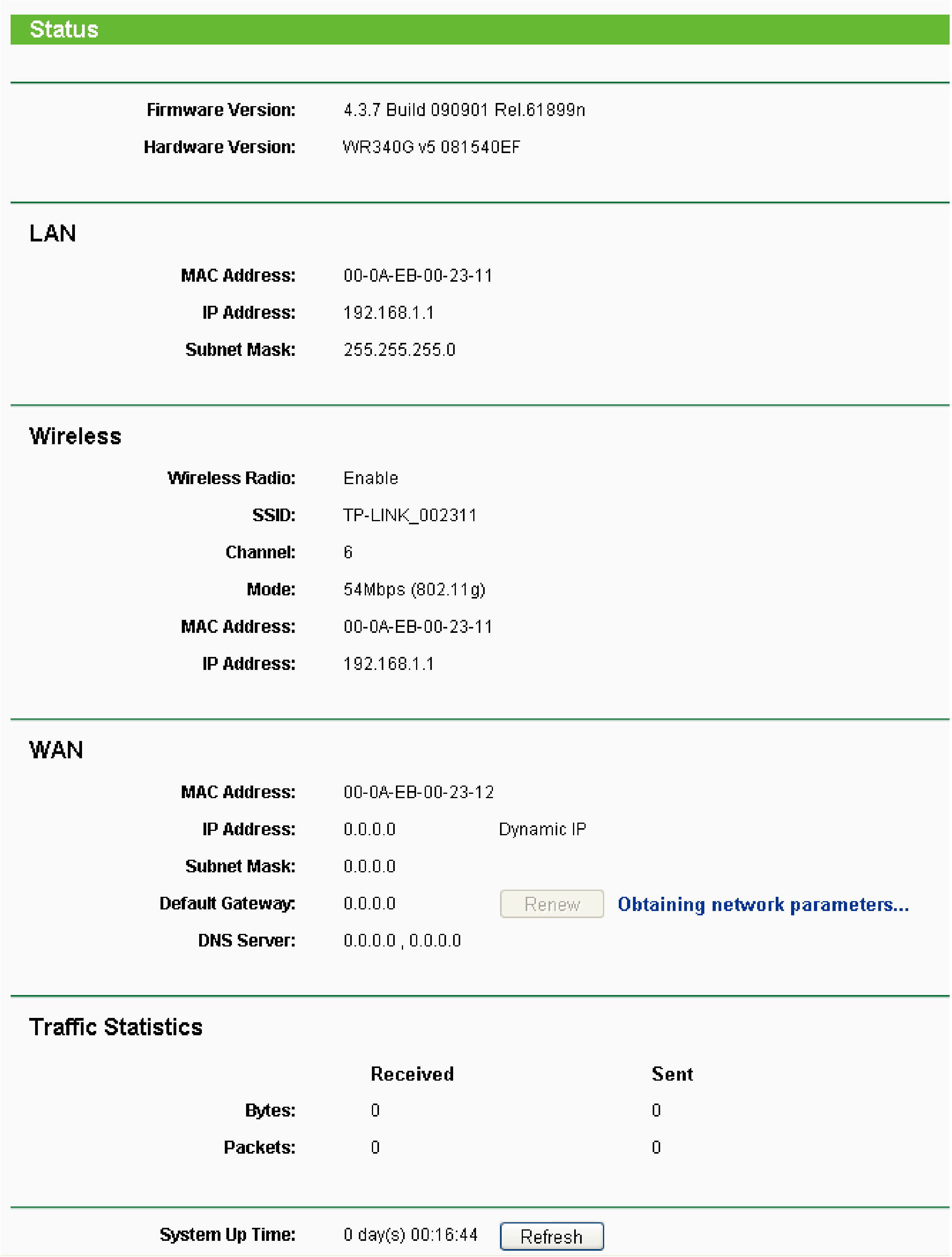
3.1 Login

After your successful login, you can configure and manage the device. There are main menus on the left of the web-based utility. Submenus will be available after you click one of the main menus. On the right of the web-based utility, there are the detailed explanations and instructions for the corresponding page. To apply any settings you have altered on the page, please click the **Save** button.

3.2 Status

The Status page displays the router's current status and configuration. All information is read-only.

- **LAN -** This field displays the current settings or information for the LAN, including the **MAC address, IP address and Subnet Mask.**
- **Wireless -** This field displays basic information or status for wireless function, including **Wireless Radio, SSID, Channel, Mode, Wireless MAC address, and IP address.**
- **WAN -** These parameters apply to the WAN port of the router, including **MAC address, IP address, Subnet Mask, Default Gateway, DNS server** and **WAN connection type**. If PPPoE is chosen as the WAN connection type, the **Disconnect** button will be shown here while you are accessing the Internet. You can also cut the connection by clicking the button. If you have not connected to the Internet, just click **Connect** to establish the connection.
- **Traffic Statistics -** This field displays the router's traffic statistics.
- **System Up Time -** The total up time of the router from when it was switched on or reset.



Status

Firmware Version: 4.3.7 Build 090901 Rel.61899n

Hardware Version: WR340G v5 081540EF

LAN

MAC Address: 00-0A-EB-00-23-11

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Wireless

Wireless Radio: Enable

SSID: TP-LINK_002311

Channel: 6

Mode: 54Mbps (802.11g)

MAC Address: 00-0A-EB-00-23-11

IP Address: 192.168.1.1

WAN

MAC Address: 00-0A-EB-00-23-12

IP Address: 0.0.0.0 Dynamic IP

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0 Obtaining network parameters...

DNS Server: 0.0.0.0 , 0.0.0.0

Traffic Statistics

	Received	Sent
Bytes:	0	0
Packets:	0	0

System Up Time: 0 day(s) 00:16:44

Figure 3-1 Router Status

3.3 Quick Setup

Please refer to **Quick Installation Guide**

3.4 Network

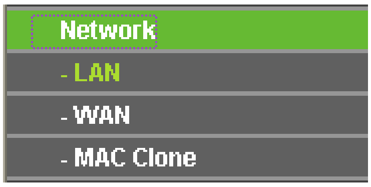
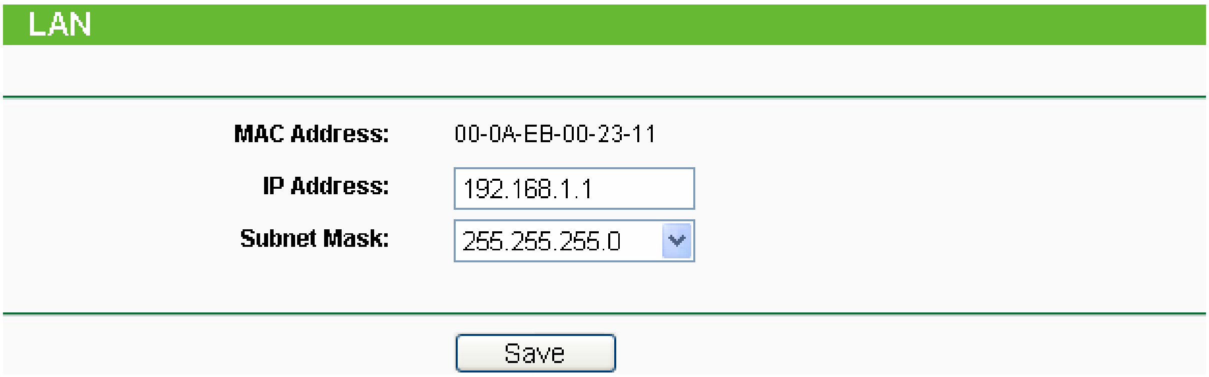


Figure 3-2 the Network menu

There are three submenus under the Network menu (shown in Figure 3-2): **LAN**, **WAN** and **MAC Clone.** Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

3.4.1 LAN

You can configure the IP parameters of LAN on this page.



LAN

MAC Address: 00-0A-EB-00-23-11

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Figure 3-3 LAN

- **MAC Address -** The physical address of the router, as seen from the LAN. The value can't be changed.
- **IP Address -** Enter the IP address of your router in dotted-decimal notation (factory default: 192.168.1.1).
- **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.

If the new LAN IP Address you set is not in the same subnet, the IP Address pool of the DHCP server will not take effect, until they are re-configured.

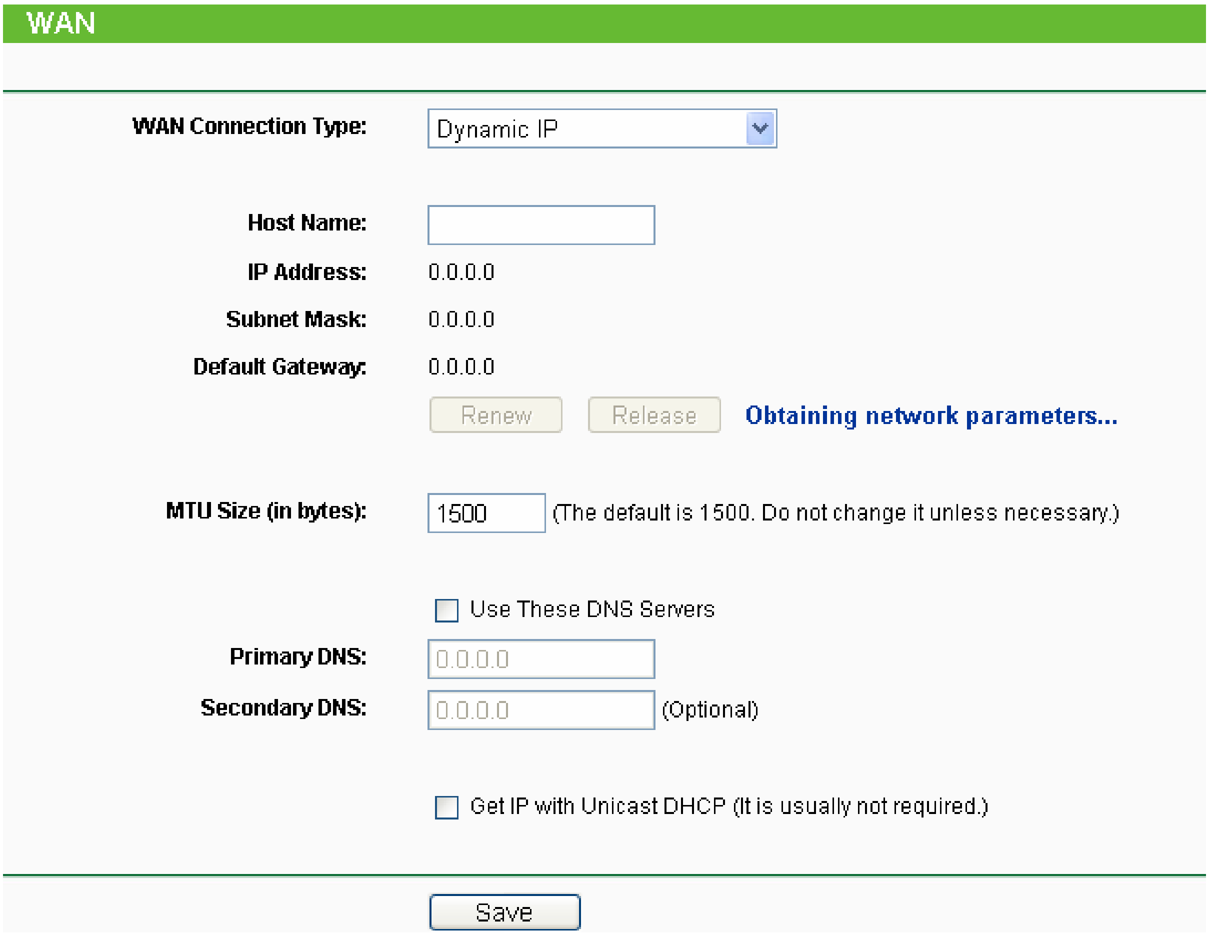
If the new LAN IP Address you set is not in the same subnet, the Virtual Server and DMZ Host will change accordingly at the same time.

3.4.2 WAN

You can configure the WAN port parameters on this page.

First, please choose the WAN Connection Type (Dynamic IP/Static IP/PPPoE/802.1X + Dynamic IP/802.1X + Static IP/BigPond Cable/L2TP/PPTP) for Internet. The default type is **Dynamic IP**. If you aren't given any login parameters (fixed IP Address, logging ID, etc), please select **Dynamic IP**. If you are given a fixed IP (static IP), please select **Static IP**. If you are given a user name and a password, please select the type of your ISP provided (PPPoE/BigPond/L2TP/PPTP). If you are not sure which connection type you use currently, please contact your ISP to obtain the correct information.

1. If you choose **Dynamic IP,** the router will automatically get IP parameters from your ISP. You can see the page as follows (Figure 3-4):



WAN

WAN Connection Type: Dynamic IP

Host Name:

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0

Renew Release Obtaining network parameters...

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

□ Use These DNS Servers

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0 (Optional)

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

Save

Figure 3-4 WAN – Dynamic IP

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. For some ISPs you need to reduce the MTU. But this is rarely required, and should not be done unless you are sure it is necessary for your ISP connection.

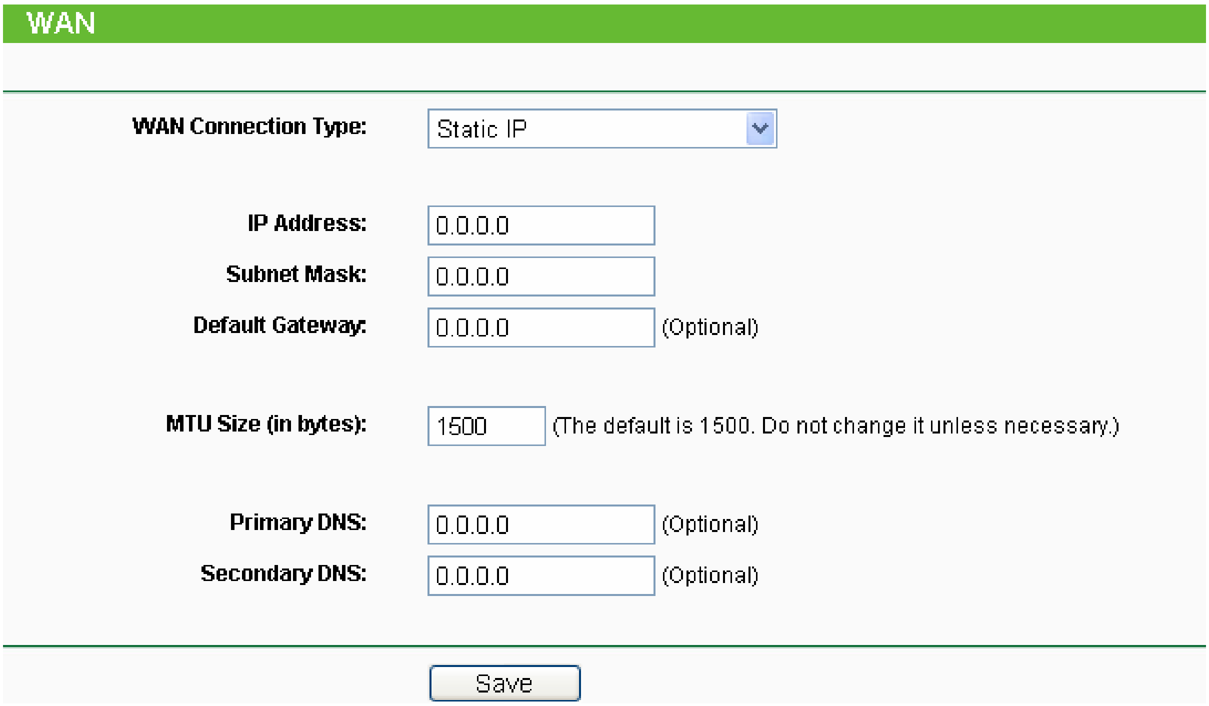
  If your ISP gives you one or two DNS addresses, select **Use These DNS Servers** and enter the primary and secondary addresses into the correct fields. Otherwise, the DNS servers will be assigned dynamically from your ISP.

☞ **Note:**

If you get address and find error when you go to a Web site, it is likely that your DNS servers are set up improperly. You should contact your ISP to get DNS server addresses.

- **Get IP with Unicast DHCP -** A few ISPs' DHCP servers do not support the broadcast applications. If you cannot get the IP Address normally, you can choose this option. (This is rarely required.)

2. If you choose **Static IP,** you should have fixed IP parameters specified by your ISP. The Static IP settings page will appear, shown in Figure 3-5:



WAN

WAN Connection Type: Static IP

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 it unless necessary.)

Primary DNS: 0.0.0.0 (Optional)

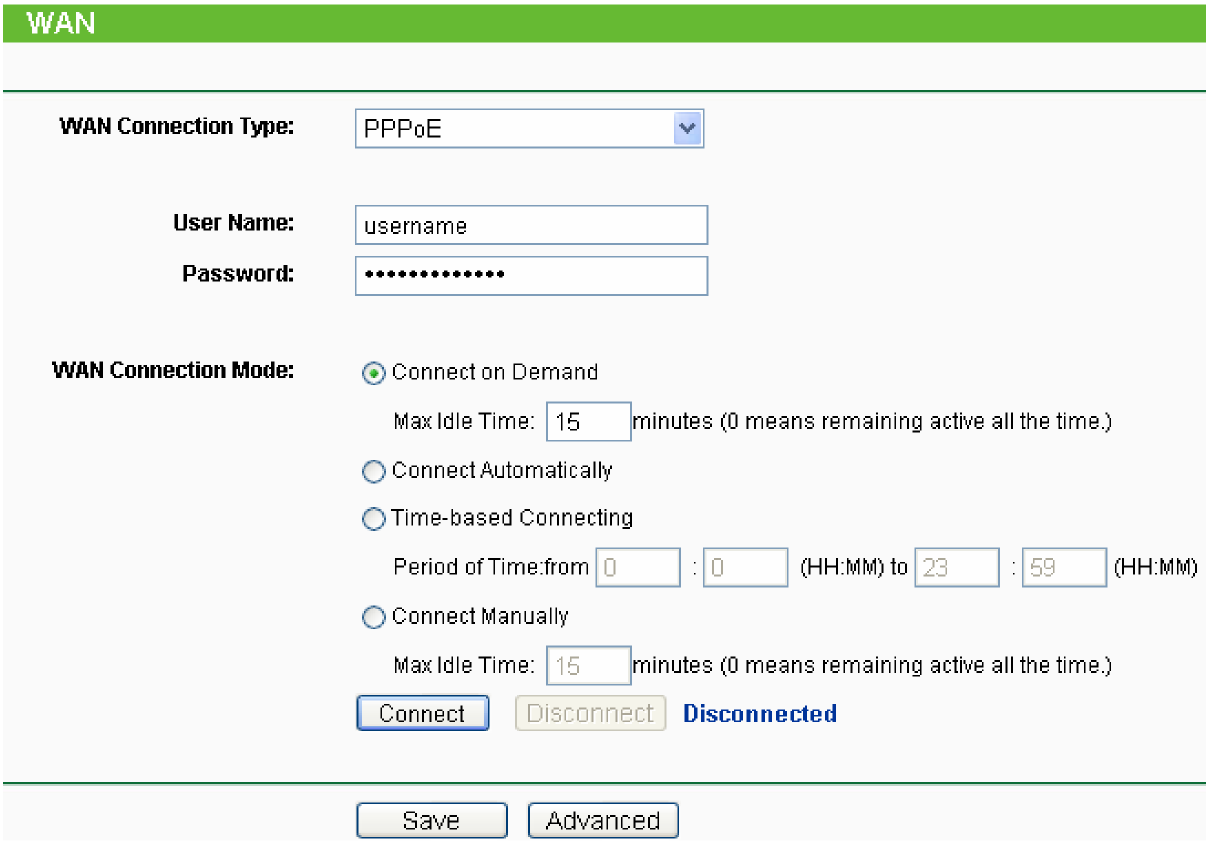
Secondary DNS: 0.0.0.0 (Optional)

Figure 3-5 WAN - Static IP

You should type the following parameters into the spaces provided:

- **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. For some ISPs you may need to modify the MTU. But this is rarely required, and should not be done unless you are sure it is necessary for your ISP connection.
- **Primary DNS -** (Optional) Enter the DNS address in dotted-decimal notation provided by your ISP.
- **Secondary DNS -** (Optional) Type another DNS address in dotted-decimal notation provided by your ISP if provided.

3. If you choose **PPPoE,** you should enter the following parameters (Figure 3-6):



WAN

WAN Connection Type: PPPoE

User Name: username

Password: ••••••••••••••

WAN Connection Mode:

● Connect on Demand

Max Idle Time: 15 minutes (0 means remaining active all the time.)

○ Connect Automatically

○ Time-based Connecting

Period of Time:from 0 : 0 (HH:MM) to 23 : 59 (HH:MM)

○ Connect Manually

Max Idle Time: 15 minutes (0 means remaining active all the time.)

Disconnected

Figure 3-6 WAN - PPPoE

- **User Name/Password -** Enter the User Name and Password provided by your ISP. These fields are case-sensitive.
- **Connect on Demand -** You can configure the router to disconnect 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.

  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.
- **Connect Automatically -** Connect automatically after the router is disconnected. To use this option, click the radio button.
- **Time-based Connecting -** You can configure the router to make it connect or disconnect based on time. Enter the start time in HH:MM format for connecting and end time in HH:MM format for disconnecting in the **Period of Time** fields.

☞ **Note:**

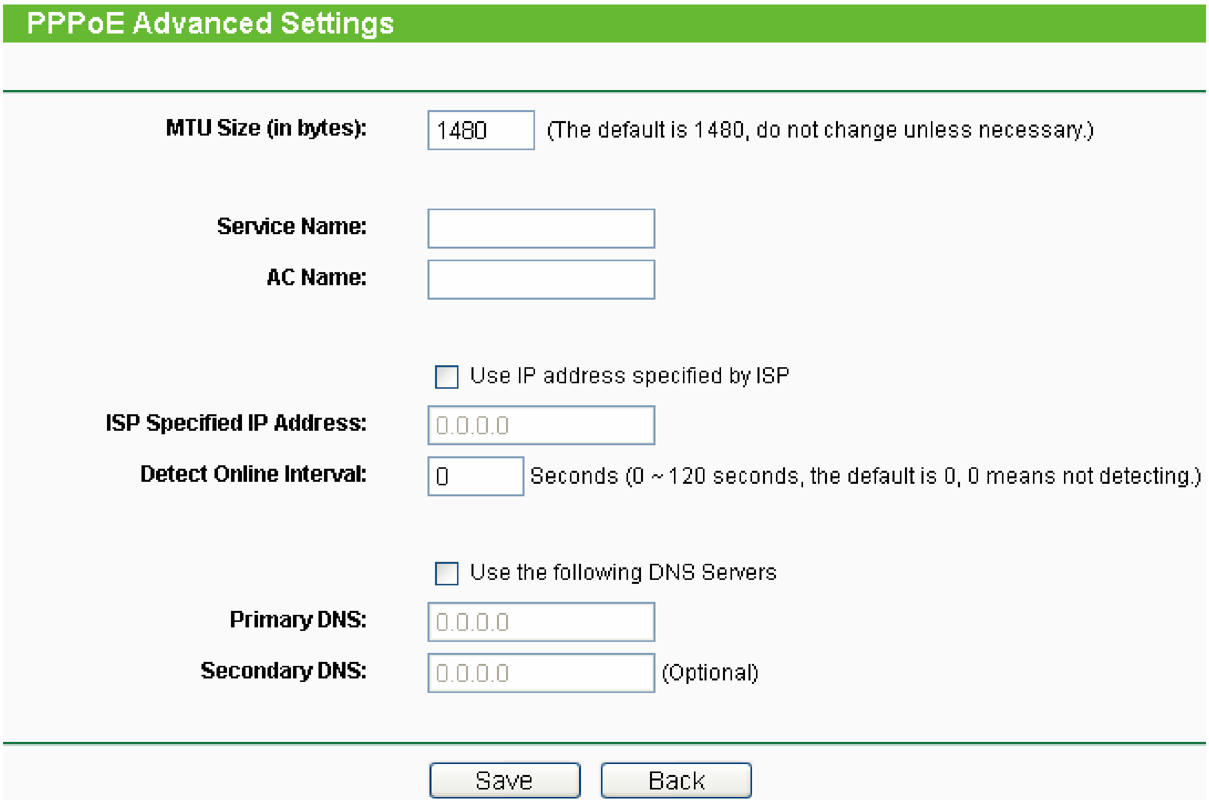
Only when you have configured the system time on System Tools -> Time page, will the Time-based Connecting function can take effect.

- **Connect Manually -** You can configure the router to make it connect or disconnect manually. After a specified period of inactivity (**Max Idle Time**), the router will disconnect from the 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 time 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.

Click the **Connect** button to connect immediately. Click the **Disconnect** button to disconnect immediately.

Click the **Advanced Settings** button to set up the advanced option, the page shown in Figure 3-7 will then appear:



PPPoE Advanced Settings

MTU Size (in bytes):	1480 (The default is 1480, do not change unless necessary.)
Service Name:	
AC Name:	
	□ Use IP address specified by ISP
ISP Specified IP Address:	0.0.0.0
Detect Online Interval:	0 Seconds (0 ~ 120 seconds, the default is 0, 0 means not detecting.)
	□ Use the following DNS Servers
Primary DNS:	0.0.0.0
Secondary DNS:	0.0.0.0 (Optional)

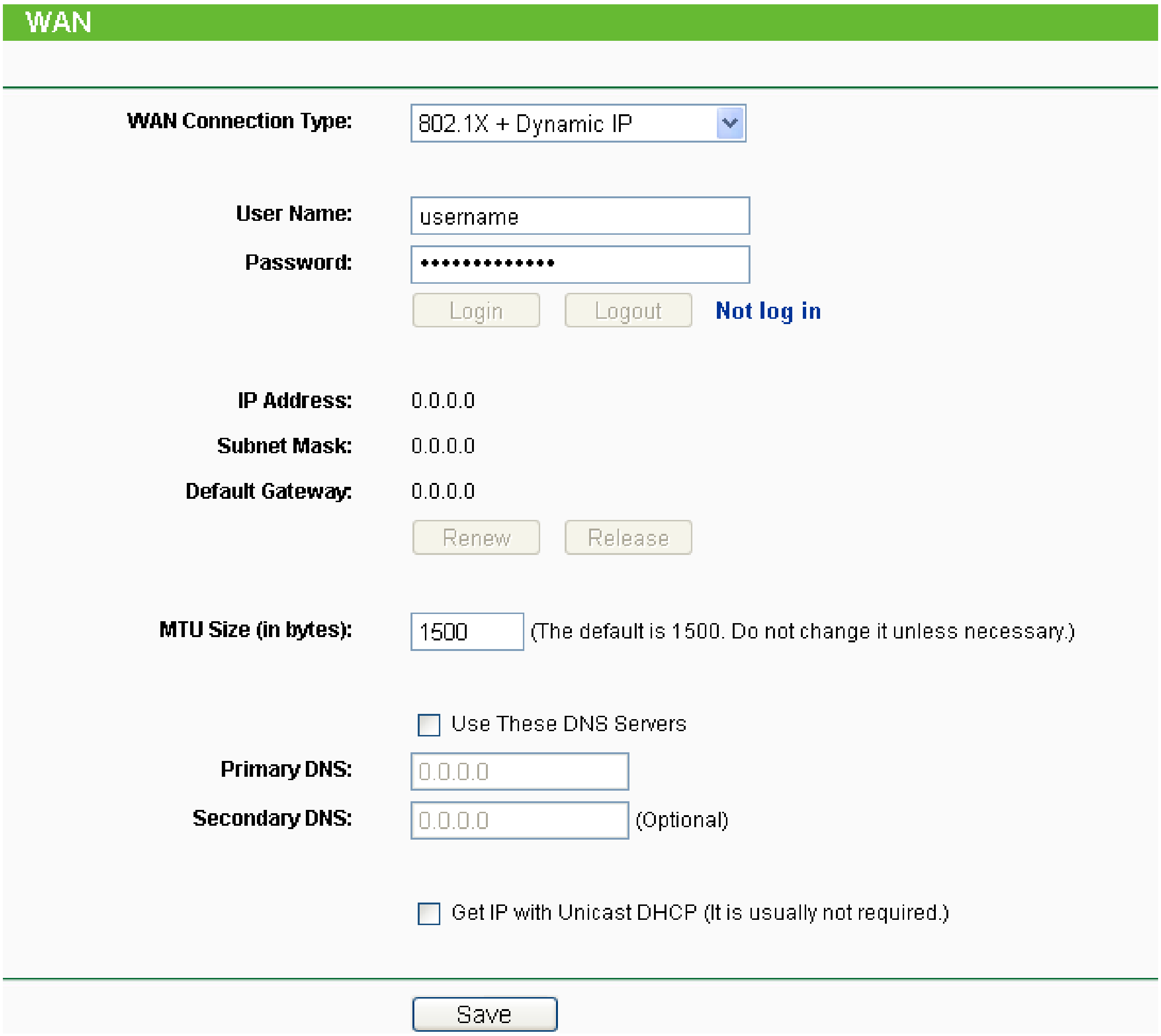
Figure 3-7 PPPoE Advanced Settings

- **Packet MTU -** The default MTU size is 1480 bytes, which value is usually fine. For some ISPs, you need modify the MTU. This should not be done unless you are sure it is necessary for your ISP.
- **Service Name/AC Name -** The service name and AC (Access Concentrator) name, these should not be configured unless you are sure it is necessary for your ISP.
- **ISP Specified IP Address -** If you know that your ISP does not automatically transmit your IP address to the router during login, click “**Use the IP Address specified by ISP**” check box and enter the IP Address in dotted-decimal notation, which your ISP provided.

- **Detect Online Interval -** The default value is 0, you can input the value between 0 and 120. The router will detect Access Concentrator online at every interval between seconds. If the value is 0, it means, do not detect.
- **DNS IP address -** If you know that your ISP does not automatically transmit DNS addresses to the router during login, click "**Use the following DNS servers**" checkbox 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.

4. If you choose **802.1X + Dynamic IP,** you should enter the follow parameters(Figure 3-8) :



WAN

WAN Connection Type: 802.1X + Dynamic IP

User Name: username

Password: •••••••••••••

Not log in

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0

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

□ Use These DNS Servers

Primary DNS: 0.0.0.0

Secondary DNS: 0.0.0.0 (Optional)

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

Figure 3-8 802.1X + Dynamic IP Settings

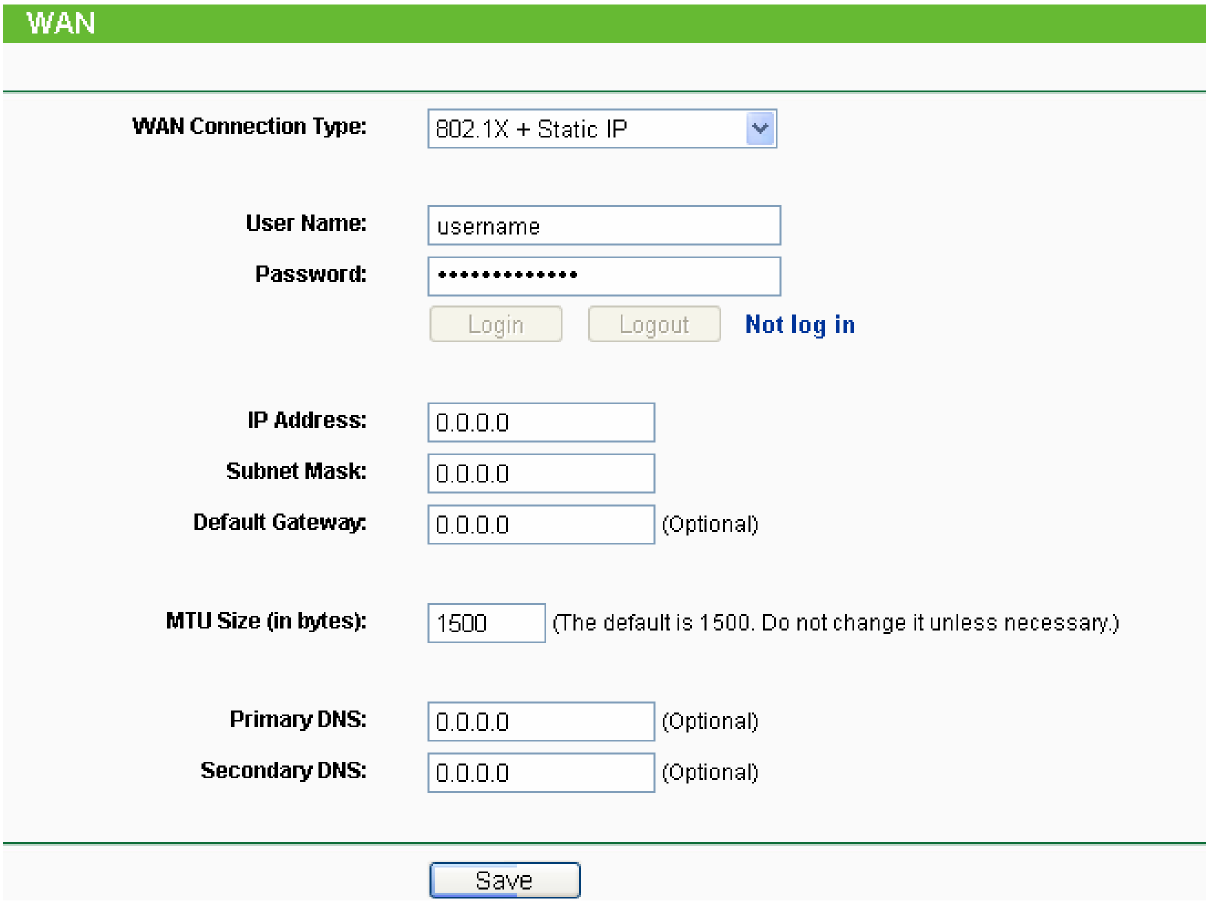
- **User Name -** Enter the user name for 802.1X authentication provided by your ISP
- **Password -** Enter the password for 802.1X authentication provided by your ISP.

Click **Login** to start 802.1X authentication.

Click **Logout** to end 802.1X authentication.

- **Host Name** - This field is required to be filled by some service provider.

5. If you choose **802.1X + Static IP,** you should enter the follow parameters(Figure 3-9) :



WAN

WAN Connection Type: 802.1X + Static IP

User Name: username

Password: ••••••••••••••

Not log in

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 it unless necessary.)

Primary DNS: 0.0.0.0 (Optional)

Secondary DNS: 0.0.0.0 (Optional)

Figure 3-9 802.1X + Static IP Settings

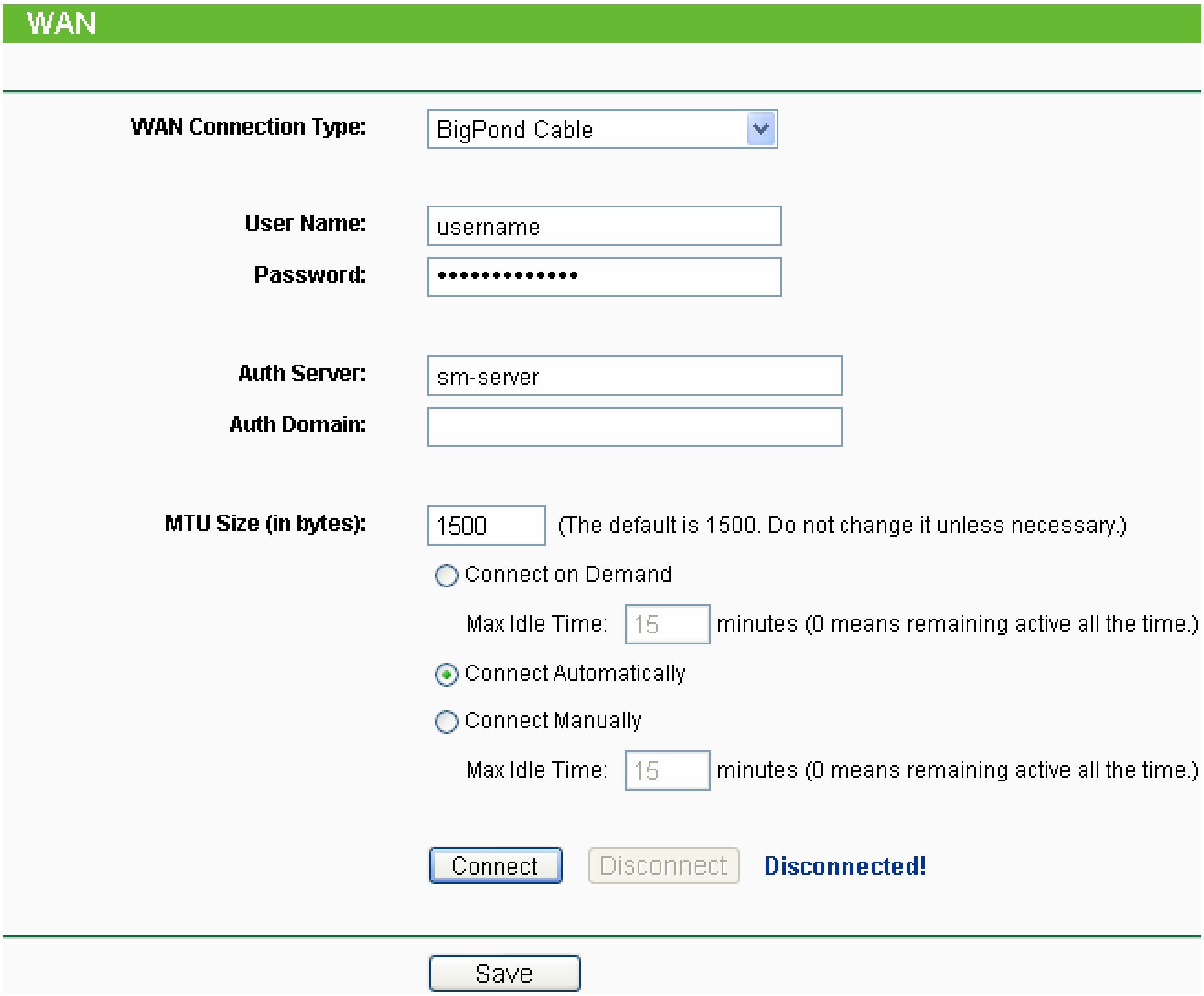
- **User Name -** Enter the user name for 802.1X authentication provided by your ISP
- **Password -** Enter the password for 802.1X authentication provided by your ISP.

Click **Login** to start 802.1X authentication.

Click **Logout** to end 802.1X authentication.

- **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.
- **Default Gateway** - (Optional) Enter the default gateway IP address in dotted-decimal notation provided by your ISP.

6. If you choose **BigPond Cable,** you should enter the following parameters (Figure 3-10):



WAN

WAN Connection Type: BigPond Cable

User Name: username

Password: •••••••••••••

Auth Server: sm-server

Auth Domain:

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

○ Connect on Demand

Max Idle Time: 15 minutes (0 means remaining active all the time.)

● Connect Automatically

○ Connect Manually

Max Idle Time: 15 minutes (0 means remaining active all the time.)

Figure 3-10 BigPond Settings

- **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. Eg,

  NSW / ACT - **nsw.bigpond.net.au**

  VIC / TAS / WA / SA / NT - **vic.bigpond.net.au**

  QLD - **qld.bigpond.net.au**
- **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.

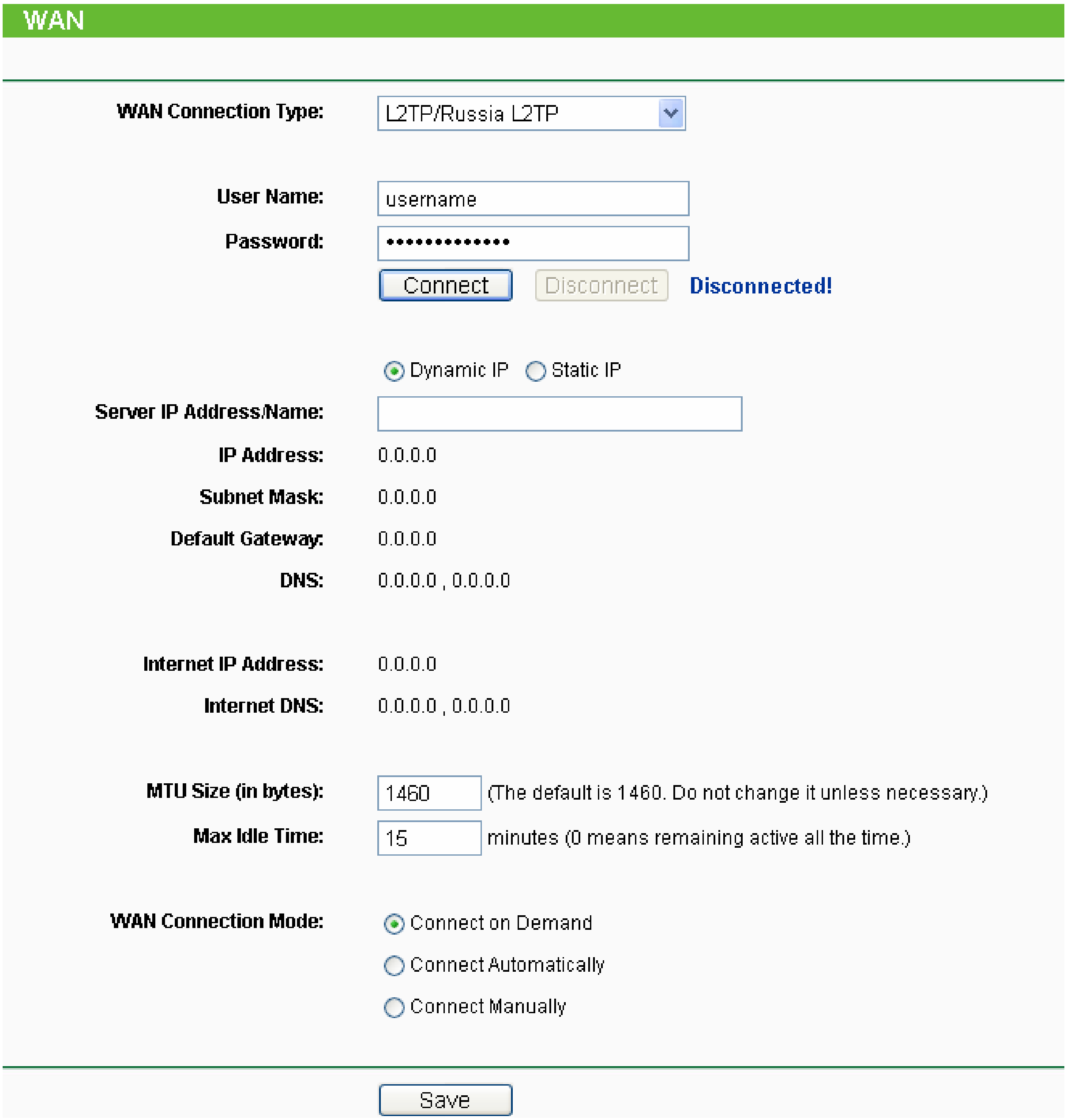
  Caution: Sometimes the connection cannot be disconnected although you specify a time to Max Idle Time, since some applications are visiting the Internet continually in the background.

- **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.

Click the **Connect** button to connect immediately. Click the **Disconnect** button to disconnect immediately.

7. If you choose **L2TP/Russia L2TP**, you should enter the following parameters (Figure 3-11):



WAN

WAN Connection Type: L2TP/Russia L2TP

User Name: username

Password: ••••••••••••••

Disconnected!

● Dynamic IP ○ Static IP

Server IP Address/Name:

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0

DNS: 0.0.0.0 , 0.0.0.0

Internet IP Address: 0.0.0.0

Internet DNS: 0.0.0.0 , 0.0.0.0

MTU Size (in bytes): 1460 (The default is 1460. Do not change it unless necessary.)

Max Idle Time: 15 minutes (0 means remaining active all the time.)

WAN Connection Mode:
● Connect on Demand
○ Connect Automatically
○ Connect Manually

Figure 3-11 L2TP/Russia L2TP Settings

- **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.

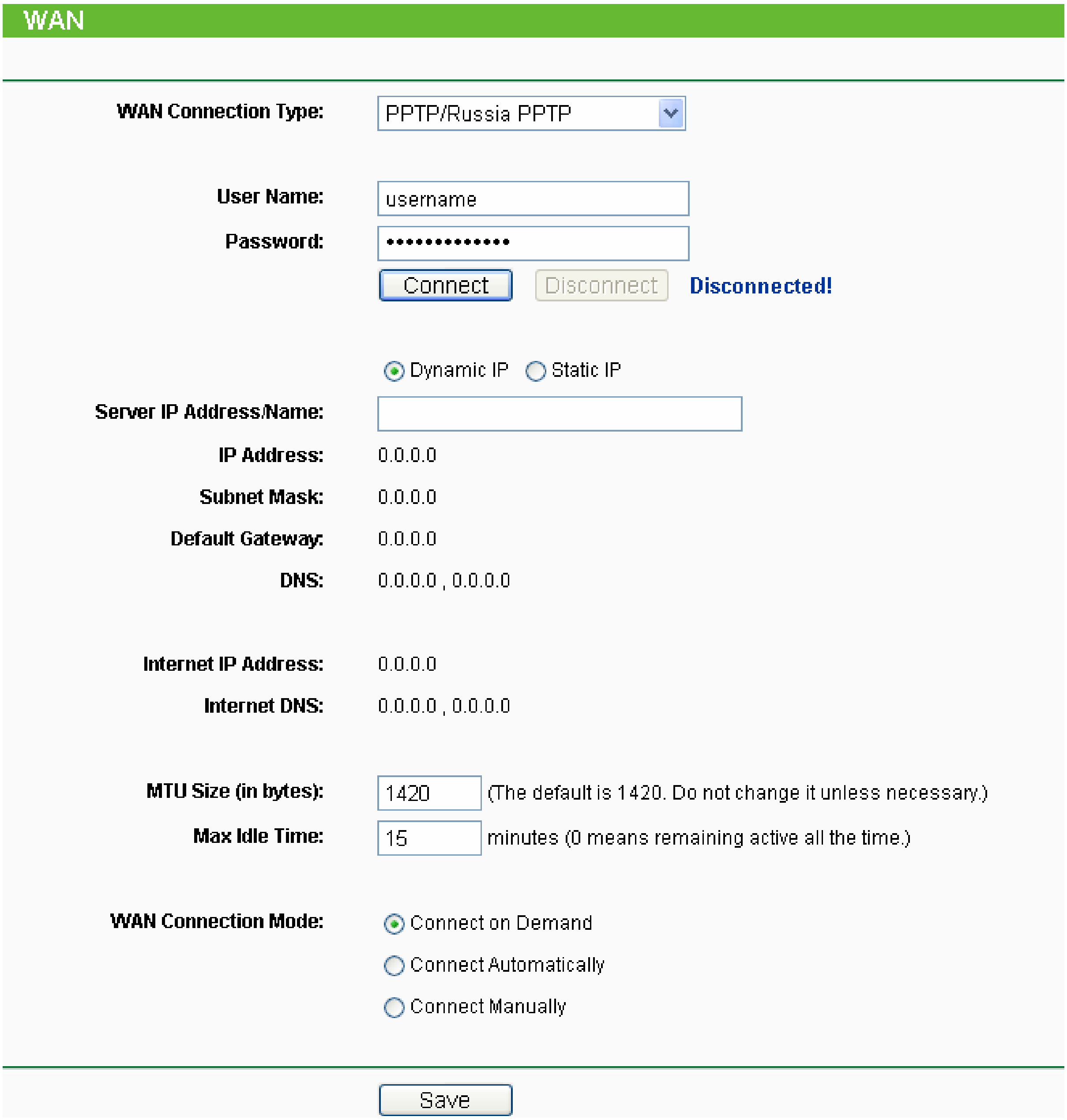
- **Connect on Demand -** You can configure the router to disconnect from your Internet connection after a specified period of inactivity (**Max Idle Time**). If your Internet connection has been terminated due to inactivity, **Connect on Demand** enables the router to automatically re-establish your 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.

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.

- **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.

8. If you choose **PPTP/Russia PPTP**, you should enter the following parameters (Figure 3-12):



WAN

WAN Connection Type: PPTP/Russia PPTP

User Name: username

Password: ••••••••••••••

Disconnected!

● Dynamic IP ○ Static IP

Server IP Address/Name:

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway: 0.0.0.0

DNS: 0.0.0.0 , 0.0.0.0

Internet IP Address: 0.0.0.0

Internet DNS: 0.0.0.0 , 0.0.0.0

MTU Size (in bytes): 1420 (The default is 1420. Do not change it unless necessary.)

Max Idle Time: 15 minutes (0 means remaining active all the time.)

WAN Connection Mode:
● Connect on Demand
○ Connect Automatically
○ Connect Manually

Figure 3-12 PPTP/Russia PPTP Settings

- **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.

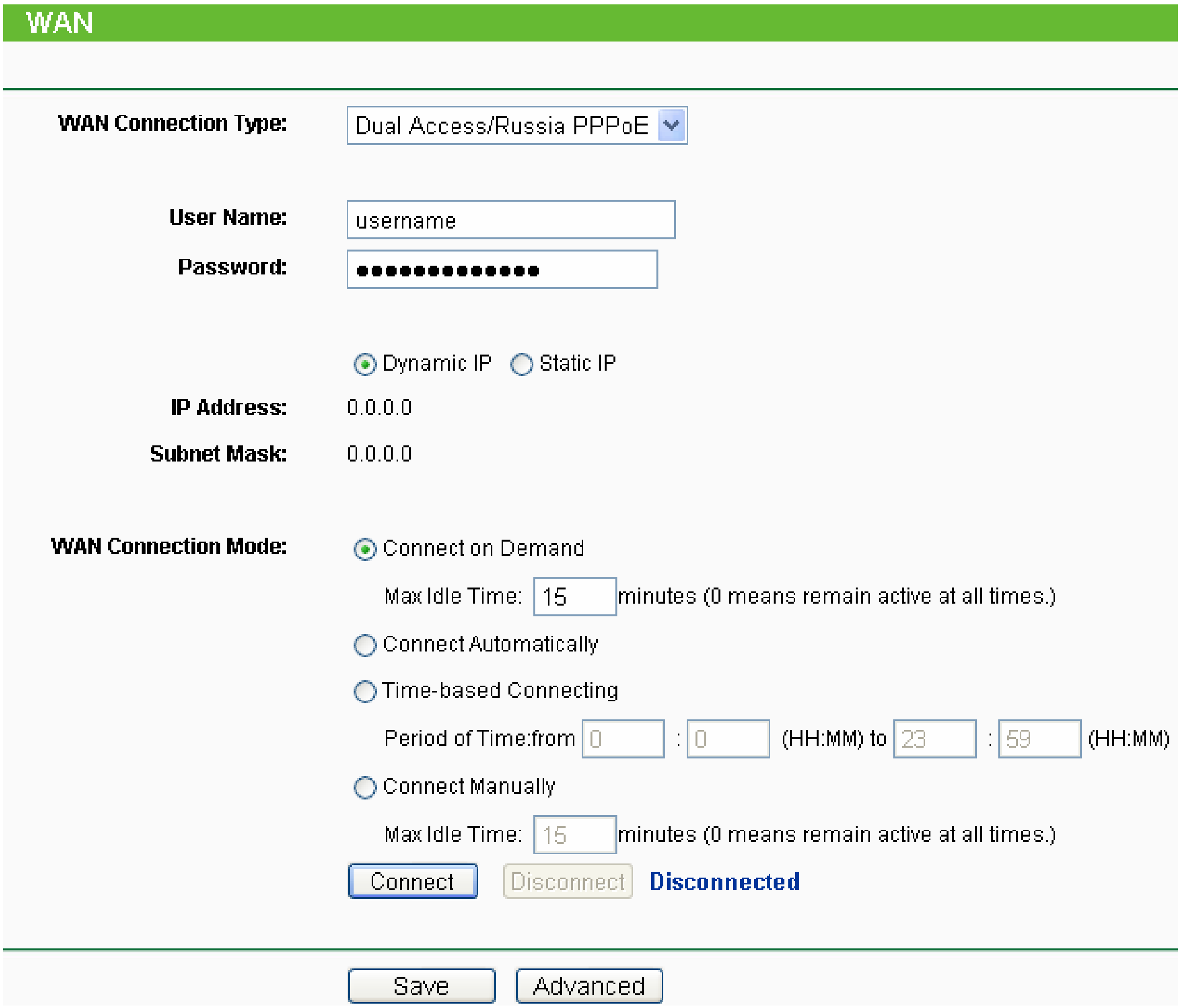
- **Connect on Demand -** You can configure the router to disconnect from your Internet connection after a specified period of inactivity (**Max Idle Time**). If your Internet connection has been terminated due to inactivity, **Connect on Demand** enables the router to automatically re-establish your 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.

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.

- **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.

9. If you choose **Dual Access/Russia PPPoE**, you should enter the following parameters (Figure 3-13):



WAN

WAN Connection Type: Dual Access/Russia PPPoE

User Name: username

Password: ●●●●●●●●●●●●●●

● Dynamic IP ○ Static IP

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

WAN Connection Mode: ● Connect on Demand

Max Idle Time: 15 minutes (0 means remain active at all times.)

○ Connect Automatically

○ Time-based Connecting

Period of Time:from 0 : 0 (HH:MM) to 23 : 59 (HH:MM)

○ Connect Manually

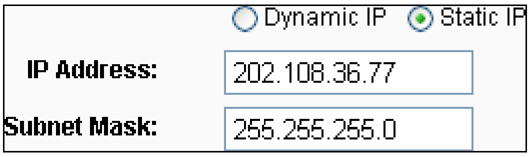
Max Idle Time: 15 minutes (0 means remain active at all times.)

Figure 3-13 Dual Access/Russia PPPoE Settings

- **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.

If you choose **Dynamic IP,** the router will automatically get IP parameters from your ISP.

If you choose **Static IP,** you should have fixed IP parameters specified by your ISP.



○ Dynamic IP ● Static IP

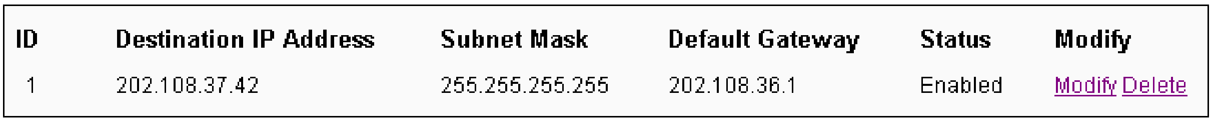
IP Address: 202.108.36.77

Subnet Mask: 255.255.255.0

- **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.

☞ **Note:**

You must add a static routing entry for this Static IP. For example, if the IP Address provided by your ISP is 202.108.36.77, the address of the network or host is 202.108.37.42, you must add a static routing entry as shown below.



ID	Destination IP Address	Subnet Mask	Default Gateway	Status	Modify
1	202.108.37.42	255.255.255.255	202.108.36.1	Enabled	Modify Delete

- **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.

  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.

- **Connect Automatically -** Connect automatically after the router is disconnected. To use this option, click the radio button.
- **Time-based Connecting -** You can configure the router to make it connect or disconnect based on time. Enter the start time in HH:MM format for connecting and end time in HH:MM format for disconnecting in the **Period of Time** fields.

☞ **Note:**

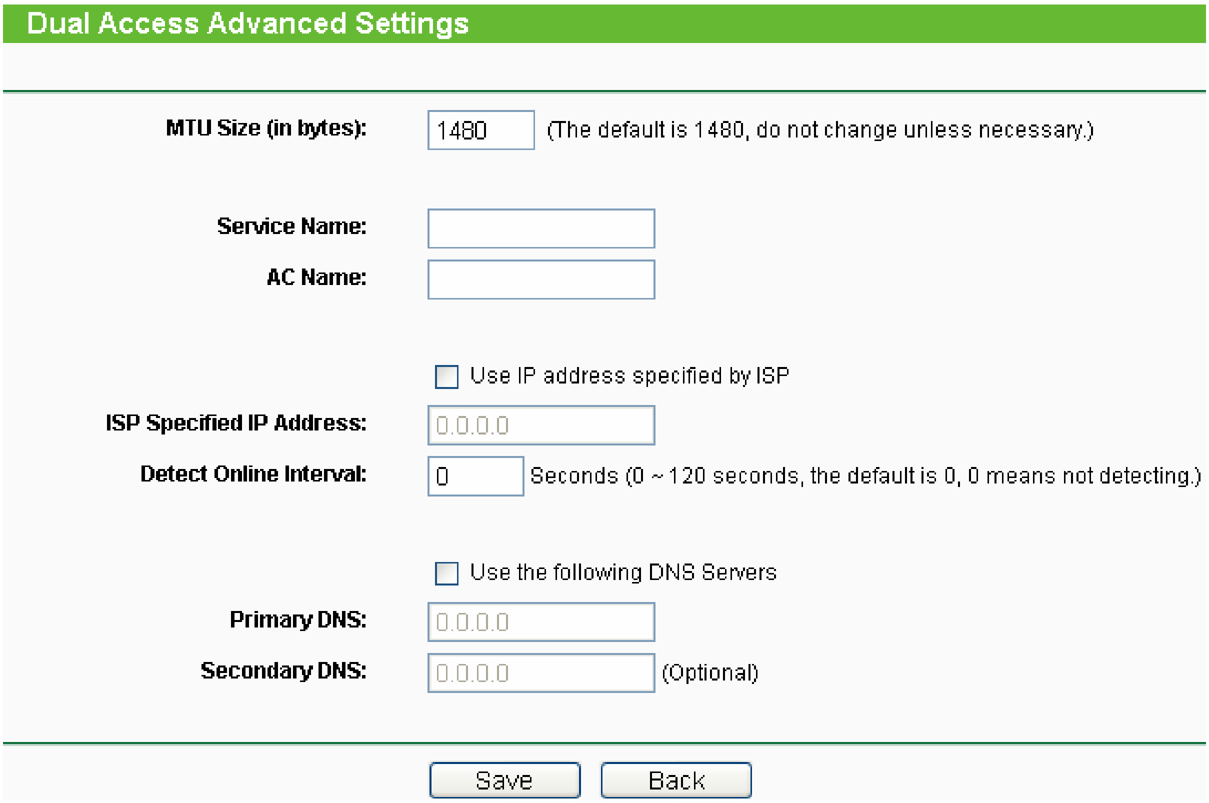
Only when you have configured the system time on System Tools -> Time page, will the Time-based Connecting function can take effect.

- **Connect Manually -** You can 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.

Click the **Connect** button to connect immediately. Click the **Disconnect** button to disconnect immediately.

Click the **Advanced Settings** button to set up the advanced option, the page shown in Figure 3-7 will then appear:



Dual Access Advanced Settings

MTU Size (in bytes):	1480 (The default is 1480, do not change unless necessary.)
Service Name:	
AC Name:	
	□ Use IP address specified by ISP
ISP Specified IP Address:	0.0.0.0
Detect Online Interval:	0 Seconds (0 ~ 120 seconds, the default is 0, 0 means not detecting.)
	□ Use the following DNS Servers
Primary DNS:	0.0.0.0
Secondary DNS:	0.0.0.0 (Optional)

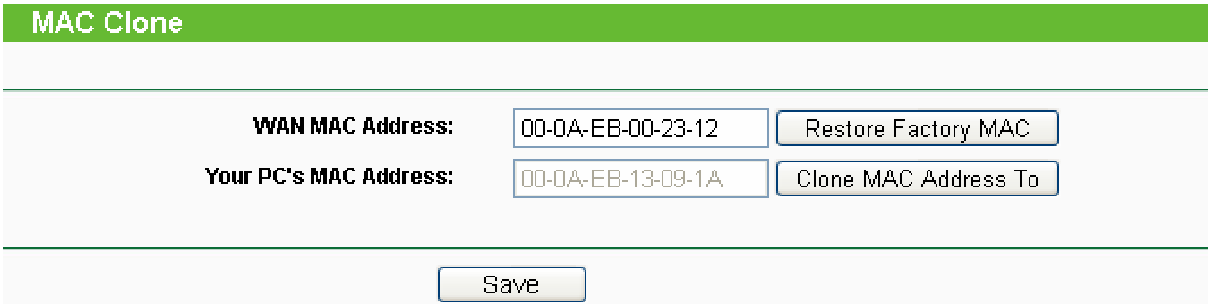
Figure 3-14 PPPoE Advanced Settings

- **Packet MTU -** The default MTU size is 1480 bytes, which value is usually fine. For some ISPs, you need modify the MTU. This should not be done unless you are sure it is necessary for your ISP.
- **Service Name/AC Name -** The service name and AC (Access Concentrator) name, these should not be configured unless you are sure it is necessary for your ISP.
- **ISP Specified IP Address -** If you know that your ISP does not automatically transmit your IP address to the router during login, click "**Use the IP Address specified by ISP**" check box and enter the IP Address in dotted-decimal notation, which your ISP provided.
- **Detect Online Interval -** The default value is 0, you can input the value between 0 and 120. The router will detect Access Concentrator online at every interval between seconds. If the value is 0, it means, do not detect.
- **DNS IP address -** If you know that your ISP does not automatically transmit DNS addresses to the router during login, click "**Use the following DNS servers**" checkbox 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.

3.4.3 MAC Clone

You can configure the MAC address of the WAN port on this page, Figure 3-15:



MAC Clone

WAN MAC Address: 00-0A-EB-00-23-12

Your PC's MAC Address: 00-0A-EB-13-09-1A

Figure 3-15 MAC Address Clone

Some ISPs require that you register the MAC Address of your adapter, which is connected to your cable/DSL Modem or Ethernet during installation. Changes are rarely needed here.

- **WAN MAC Address -** This field displays the current MAC address of the WAN port, which is used for the WAN port. If your ISP requires that you register the MAC address, please enter the correct MAC address into this field. The format for the MAC Address is XX-XX-XX-XX-XX-XX (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** 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 feature.

If you click the **Save** button, the router will prompt you to reboot.

3.5 Wireless

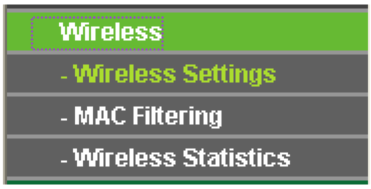
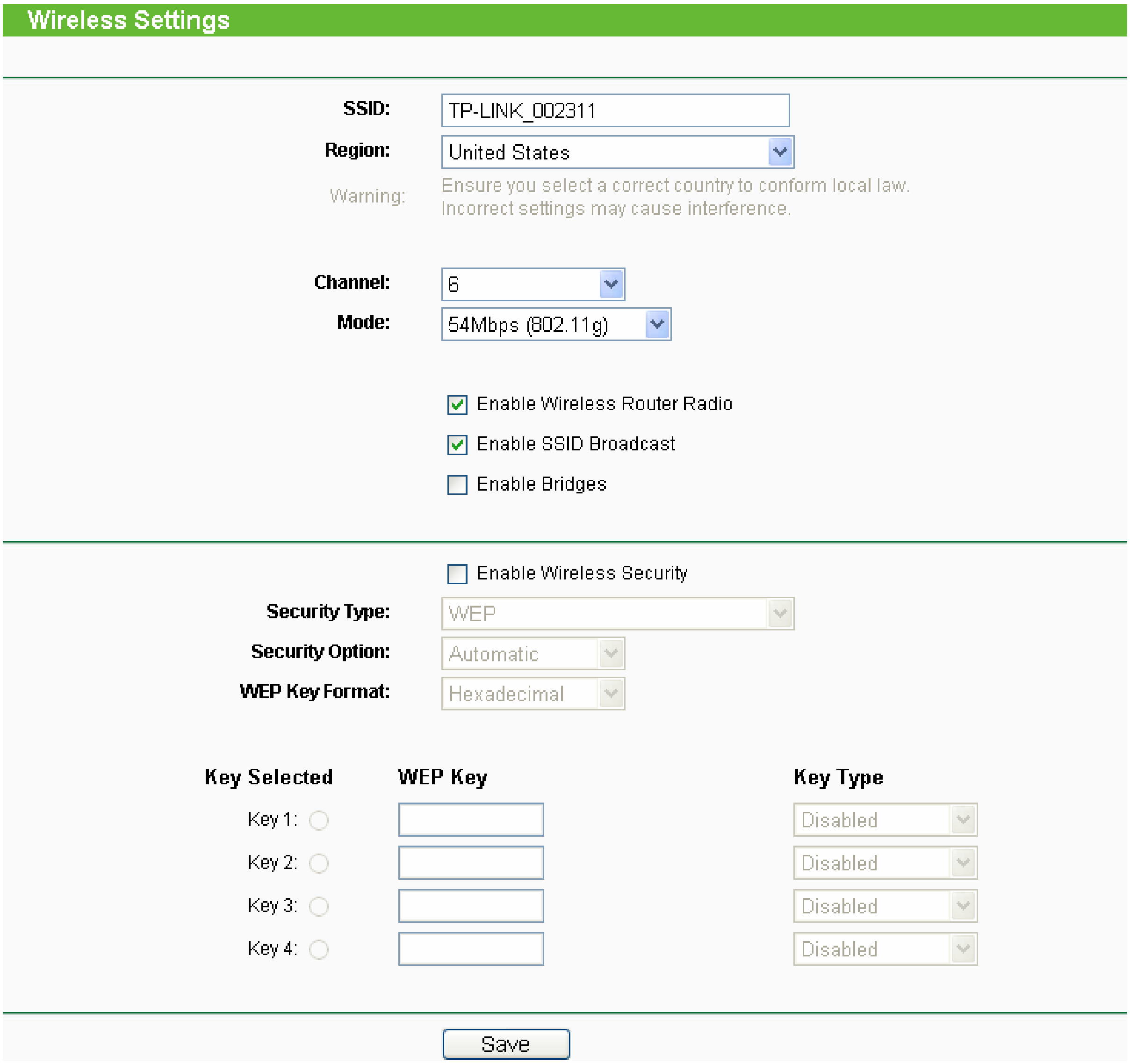


Figure 3-16 Wireless menu

There are three submenus under the Wireless menu (shown in Figure 3-16): **Wireless Settings**, **MAC Filtering** and **Wireless Statistics.** Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

3.5.1 Wireless Settings

The basic settings for the wireless network are set on this page, Figure 3-17:



Wireless Settings

SSID: TP-LINK_002311

Region: United States

Warning: Ensure you select a correct country to conform local law. Incorrect settings may cause interference.

Channel: 6

Mode: 54Mbps (802.11g)

☑ Enable Wireless Router Radio

☑ Enable SSID Broadcast

□ Enable Bridges

□ Enable Wireless Security

Security Type: WEP

Security Option: Automatic

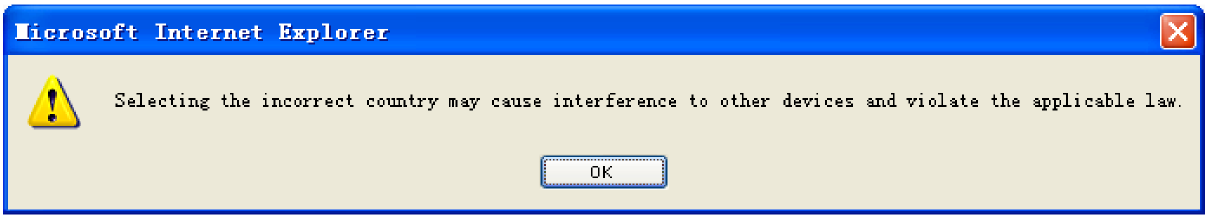
WEP Key Format: Hexadecimal

Key Selected	WEP Key	Key Type
Key 1: ○		Disabled
Key 2: ○		Disabled
Key 3: ○		Disabled
Key 4: ○		Disabled

Figure 3-17 Wireless Settings

- **SSID -** Enter a value of up to 32 characters. The same name (SSID) must be assigned to all wireless devices in your network. The default SSID is TP-LINK, but it is recommended strongly that you change your networks name (SSID) to a different value. This value is case-sensitive. For example, *TP-LINK* is NOT the same as *tp-link*.
- **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.

  The default region is United States. When you select your local region from the pull-down list, Click the **Save** button**,** then the Note Dialog appears. Click OK.



Microsoft Internet Explorer

Selecting the incorrect country may cause interference to other devices and violate the applicable law.

Figure 3-18 Note Dialog

☞ **Note:**

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

➢ **Channel -** This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.

➢ **Mode -** Select the desired wireless mode. The options are:

- **54Mbps (802.11g) -** Both 802.11g and 802.11b wireless stations can connect to the router.
- **11Mbps (802.11b) -** Only 802.11b wireless stations can connect to the router.

☞ **Note:**

The default is "54Mbps (802.11g)", which allows both 802.11g and 802.11b wireless stations to connect to the router.

➢ **Enable Wireless Router Radio -** The wireless radio of this Router can be enabled or disabled to allow wireless stations access. If enabled, wireless stations will be able to access the router. Otherwise, wireless stations will not be able to access.

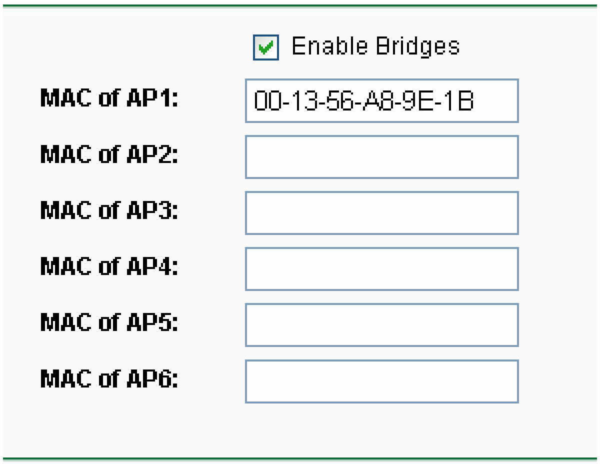
➢ **Enable SSID Broadcast -** If you select the **Enable SSID Broadcast** checkbox, the Wireless Router SSID will broadcast its name (SSID) on the air.

➢ **Enable Bridges** – If you select the **Enable Bridges** checkbox, you can input MAC address of other APs to communicate with them wirelessly in Bridge mode.

- MAC of AP (1-6): Input the MAC address of the AP which you want to communicate with. There are six entries can be configured.

The APs can communicate with each other in Bridge mode unless they know each other's MAC address. For example, if the router whose MAC address is 00-13-56-A8-9E-1A wants to communicate with an AP whose MAC address is 00-13-56-A8-9E-1B in Bridge mode, you should do as following:

1. Select **Enable Bridges** and input 00-13-56-A8-9E-1B as following screen shown.



☑ Enable Bridges

MAC of AP1:	00-13-56-A8-9E-1B
MAC of AP2:	
MAC of AP3:	
MAC of AP4:	
MAC of AP5:	
MAC of AP6:	

2. Access the AP's Web-based utility and configure the AP under Bridge mode, then input 00-13-56-A8-9E-1A in corresponding Blank.

- **Enable Wireless 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 this option to encrypt your wireless network. The encryption settings are described below.

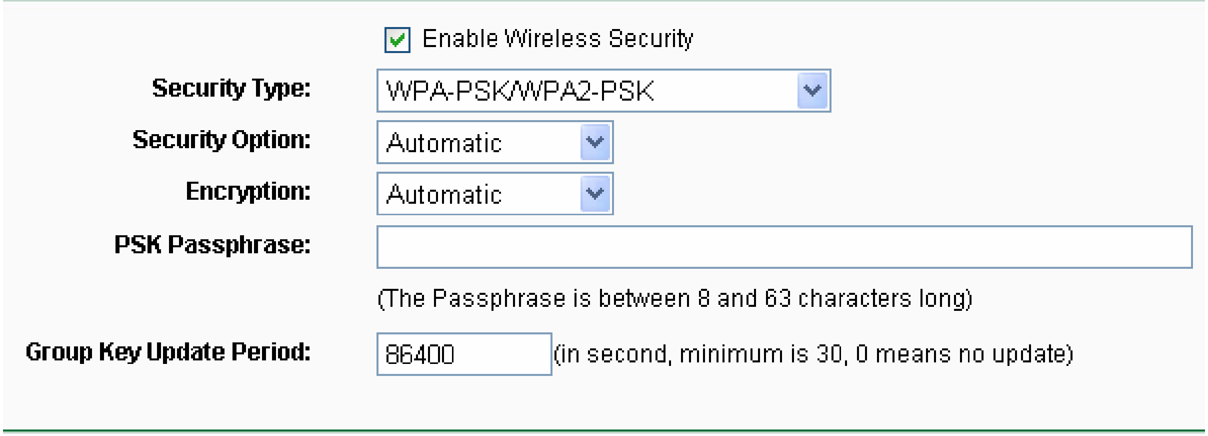
- **Security Type -** You can select one of the following authentication types:
  - **WEP -** Select WEP authentication type based on 802.11 authentications.
  - **WPA-PSK/WPA2-PSK -** Select WPA/WPA2 authentication type based on pre-shared passphrase.
  - **WPA /WPA2 -** Select WPA/WPA2 authentication type based on Radius Server.

- **Security Options -** You can select one of the following Security options:
  - When you select **WEP** for authentication type you can select the following authentication options:
  - **Automatic -** Select Shared Key or Open System authentication type automatically based on the wireless station request.
  - **Shared Key -** Select 802.11 Shared Key authentication.
  - **Open System -** Select 802.11 Open System authentication.
  - When you select **WPA-PSK/WPA2-PSK** for authentication type you can select **Automatic**, **WPA –PSK** or **WPA2-PSK** as authentication options.
  - When you select **WPA/WPA2** as an authentication type you can select **Automatic WPA** or **WPA2** as authentication option.

- **WEP Key Format -** You can select **ASCII** or **Hexadecimal** format. ASCII Code Format stands for any combination of keyboard characters in the specified length. Hexadecimal format stands for any combination of hexadecimal digits (0-9, a-f, A-F) in the specified length.

- **WEP Key settings -** Select which of the four keys will be used and enter the matching WEP key information for your network in the selected key radio button. These values must be 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 the WEP key entry is invalid.
    - For **64-bit** encryption **-** You can enter 10 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 5 ASCII characters.
    - For **128-bit** encryption **-** You can enter 26 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 13 ASCII characters.
    - For **152-bit** encryption **-** You can enter 32 hexadecimal digits (any combination of 0-9, a-f, A-F, zero key is not permitted) or 16 ASCII characters.
- **Encryption -** When you select **WPA-PSK/WPA2-PSK** or **WPA/WPA2** for **Security Type** you can select **Automatic**, **TKIP** or **AES** as **Encryptions.**



☑ Enable Wireless Security

Security Type: WPA-PSK/WPA2-PSK

Security Option: Automatic

Encryption: Automatic

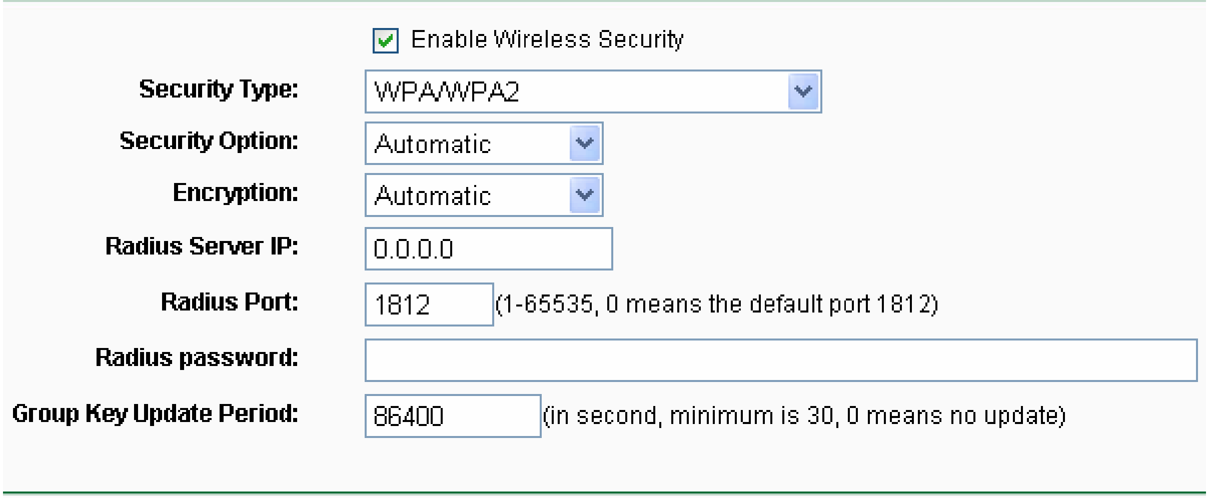
PSK Passphrase:

(The Passphrase is between 8 and 63 characters long)

Group Key Update Period: 86400 (in second, minimum is 30, 0 means no update)

Figure 3-19 WPA-PSK/WPA2-PSK

- **WPA-PSK/WPA2-PSK Passphrase -** You can enter a WPA or WPA2 passphrase between 8 and 63 characters long.
- **Group Key Update Period -** Specify the group key update interval in seconds. The value can be either 0 seconds or from 30 seconds and up, 1-29 seconds are not usable figures. Enter 0 to disable the update.



☑ Enable Wireless Security

Security Type: WPA/WPA2

Security Option: Automatic

Encryption: Automatic

Radius Server IP: 0.0.0.0

Radius Port: 1812 (1-65535, 0 means the default port 1812)

Radius password:

Group Key Update Period: 86400 (in second, minimum is 30, 0 means no update)

Figure 3-20 WPA/WPA2

- **Radius Server IP -** Enter the IP address of the Radius Server
- **Radius Port -** Enter the port number that the radius service used.
- **Radius Password -** Enter the password for the Radius Server.

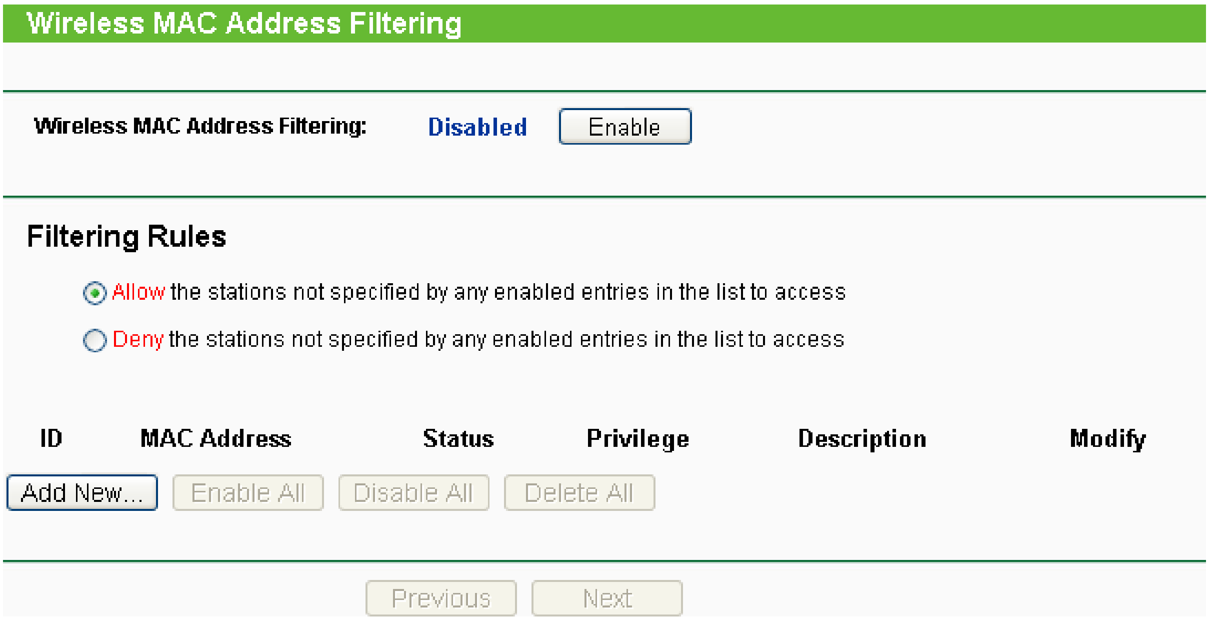
Be sure to click the **Save** button to save your settings on this page.

☞ **Note:**

The router will reboot automatically after you click save.

3.5.2 MAC Filtering

The Wireless MAC Filtering for wireless networks are set on this page, Figure 3-21:



Wireless MAC Address Filtering

Wireless MAC Address Filtering: Disabled

Filtering Rules

● Allow the stations not specified by any enabled entries in the list to access

○ Deny the stations not specified by any enabled entries in the list to access

ID	MAC Address	Status	Privilege	Description	Modify

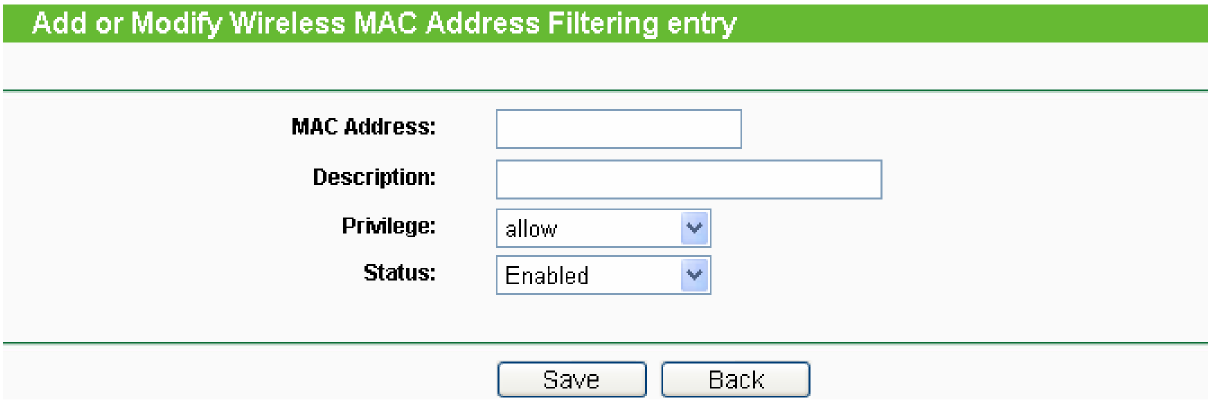
Figure 3-21 Wireless MAC address Filtering

The Wireless MAC Address Filtering feature allows you to control wireless stations accessing the router, which depend on the station's MAC addresses.

- **MAC Address -** The wireless station's MAC address that you want to access.
- **Status -** The status of this entry either **Enabled** or **Disabled**.
- **Privilege -** Select the privileges for this entry.   You may select one of the following **Allow** / **Deny**.
- **Description -** A simple description of the wireless station.

First, you must decide whether the unspecified wireless stations can access the router or not. If you desire that the unspecified wireless stations can access the router, please select the radio button **Allow the stations not specified by any enabled entries in the list to access**, otherwise, select the radio button **Deny the stations not specified by any enabled entries in the list to access**.

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, shown in Figure 3-20:



Add or Modify Wireless MAC Address Filtering entry

MAC Address:

Description:

Privilege: allow

Status: Enabled

Figure 3-22 Add or Modify Wireless MAC Address Filtering entry

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-B0-00-0B.
2. Enter a simple description of the wireless station in the **Description** field. For example: Wireless station A.
3. **Privilege** - Select the privileges for this entry, one of **Allow** / **Deny**. **Allow** means allowing the station to access the AP. **Deny** means denying the station to access the AP.
4. **Status** - Select **Enabled** or **Disabled** for this entry on the **Status** pull-down list.
5. 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**.
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

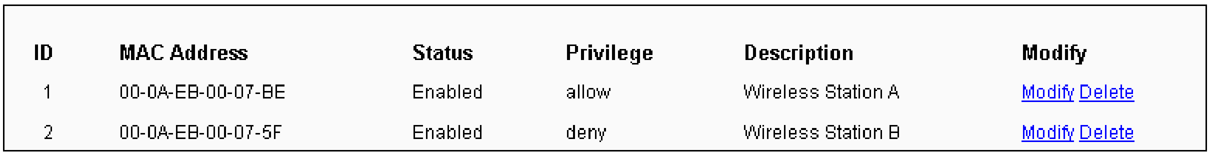
Click the **Next** button to go to the next page and click the **Previous** button to return to the previous page.

For example: If you desire that the wireless station A with MAC address 00-0A-EB-00-07-BE be able to access the router. The wireless station B with MAC address 00-0A-EB-00-07-5F not be able to access the router, while all other wireless stations cannot access the router, you should configure the **Wireless MAC Address Filtering** list by following these steps:

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 and enter the MAC address 00-0A-EB-00-07-BE in the **MAC Address** field, enter wireless station A in the **Description** field, select **Allow** in the **Privilege** pull-down list and select **Enabled** in the **Status** pull-down list. Click the **Save** and the **Return** button.
5. Click the **Add New...** button and enter the MAC address 00-0A-EB-00-07-5F in the **MAC Address** field, enter wireless station B in the **Description** field, select **Deny** in the **Privilege** pull-down list and select **Enabled** in the **Status** pull-down list. Click the **Save** and the **Return** button.

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



ID	MAC Address	Status	Privilege	Description	Modify
1	00-0A-EB-00-07-BE	Enabled	allow	Wireless Station A	Modify Delete
2	00-0A-EB-00-07-5F	Enabled	deny	Wireless Station B	Modify Delete

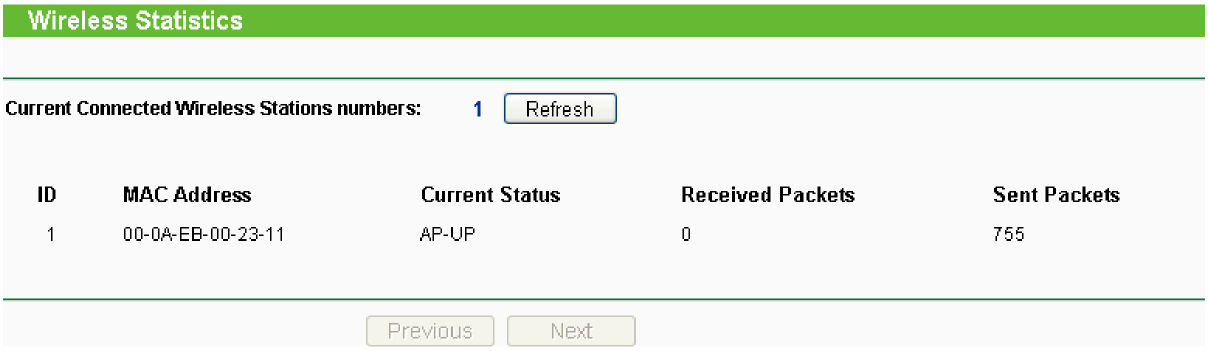
☞ **Note:**

If you select the radio button Allow the stations not specified by any enabled entries in the list to access for Filtering Rules, the wireless station B will still not be able to access the router, however, other wireless stations that are not in the list will be able to access the router.

If you enable the function and select the Deny the stations not specified by any enabled entries in the list to access for Filtering Rules, and there are not any enable entries in the list, thus, no wireless stations can access the router.

3.5.3 Wireless Statistics

This page shows **MAC Address**, **Current Status**, **Received Packets** and **Sent Packets** for each connected wireless station.



Current Connected Wireless Stations numbers: 1

ID	MAC Address	Current Status	Received Packets	Sent Packets
1	00-0A-EB-00-23-11	AP-UP	0	755

Figure 3-23 The router attached wireless stations

- **MAC Address -** The connected wireless station's MAC address
- **Current Status -** The connected wireless station's running status, one of STA-AUTH / STA-ASSOC / AP-UP / WPA / WPA-PSK /WPA2/WPA2-PSK/None
- **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.

3.6 DHCP

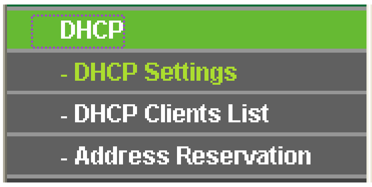
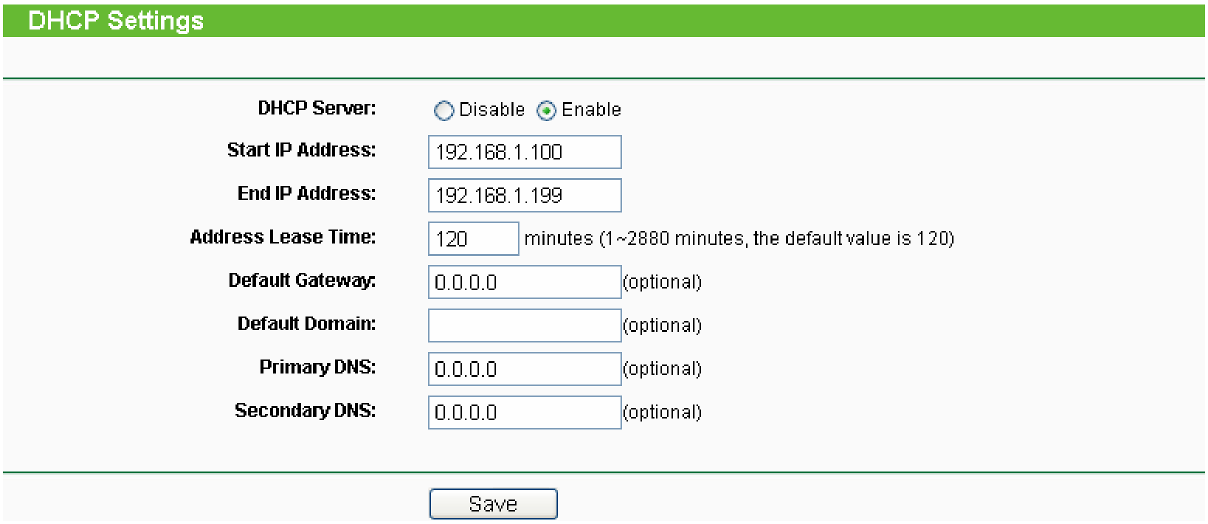


Figure 3-24 The DHCP menu

There are three submenus under the DHCP menu (shown in Figure 3-24): **DHCP Settings**, **DHCP Clients List** and **Address Reservation.** Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

3.6.1 DHCP Settings

The router is set up by default as a DHCP (Dynamic Host Configuration Protocol) server, which provides the TCP/IP configuration for all the PC(s) that are connected to the router on the LAN. The DHCP Server can be configured on the page (shown in Figure 3-25):



DHCP Settings

DHCP Server:	○ Disable ● Enable
Start IP Address:	192.168.1.100
End IP Address:	192.168.1.199
Address Lease Time:	120 minutes (1~2880 minutes, the default value is 120)
Default Gateway:	0.0.0.0 (optional)
Default Domain:	(optional)
Primary DNS:	0.0.0.0 (optional)
Secondary DNS:	0.0.0.0 (optional)

Figure 3-25 DHCP Settings

- **DHCP Server - Enable** or **Disable** the DHCP server. If you disable the Server, you must have another DHCP server within your network or else you must manually configure the computer.
- **Start IP Address -** This field specifies the first of the addresses in the IP address pool. 192.168.1.100 is the default start address.
- **End IP Address -** This field specifies the last of the addresses in the IP address pool. 192.168.1.199 is the default end address.

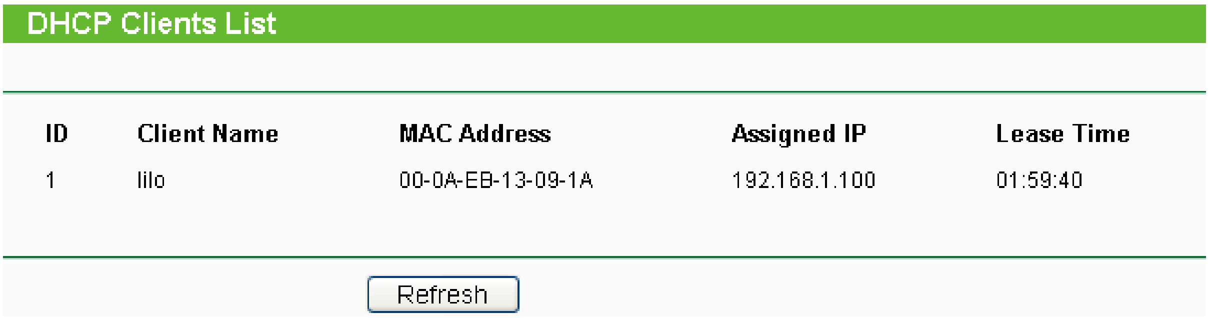
- **Address Lease Time -** The **Address Lease Time** is the amount of time in which a network user will be allowed connection to the router with their current dynamic IP Address. Enter the amount of time, in minutes. The user will be "leased" this dynamic IP Address. The range of the time is 1 ~ 2880 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 192.168.1.1
- **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. This function will take effect until the router reboots.

3.6.2 DHCP Clients List

This page shows **Client Name, MAC Address, Assigned IP,** and **Lease Time** for each DHCP Client attached to the router (Figure 3-26):



DHCP Clients List

ID	Client Name	MAC Address	Assigned IP	Lease Time
1	lilo	00-0A-EB-13-09-1A	192.168.1.100	01:59:40

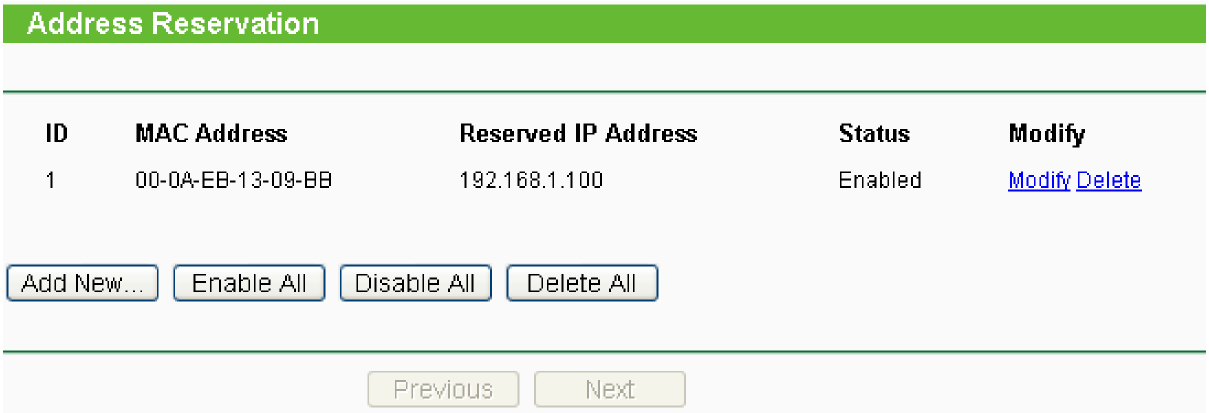
Figure 3-26 DHCP Clients List

- **Index -** 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. Before the time is up, DHCP client will request to renew the lease automatically.

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

3.6.3 Address Reservation

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. This page is used for address reservation (shown in Figure 3-27).



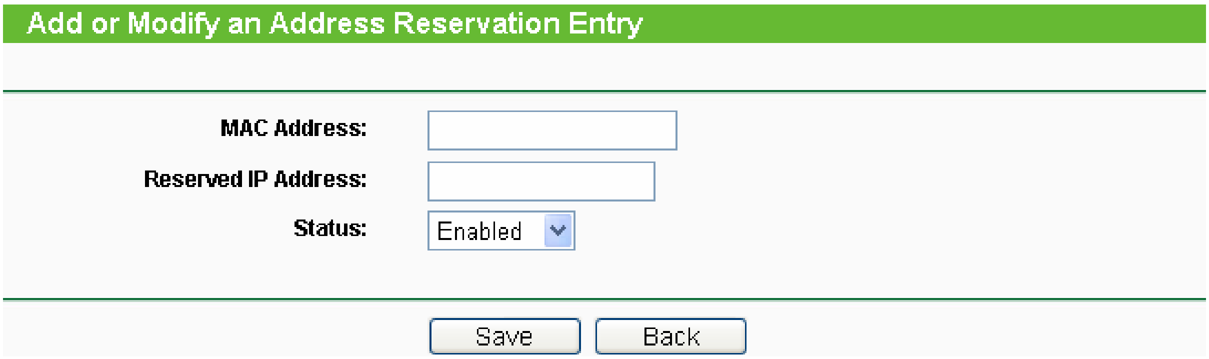
ID	MAC Address	Reserved IP Address	Status	Modify
1	00-0A-EB-13-09-BB	192.168.1.100	Enabled	Modify Delete

Figure 3-27 Address Reservation

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

To Reserve IP addresses:

1. Click the **Add New button**. (Pop-up Figure 3-28)
2. Enter the MAC address (The format for the MAC Address is XX-XX-XX-XX-XX-XX.) and IP address in dotted-decimal notation of the computer you wish to add.
3. Click the **Save** button when finished.



MAC Address:

Reserved IP Address:

Status: Enabled

Figure 3-28 Add or Modify an Address Reservation 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**.
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 and Click the **Previous** button to return the previous

☞ **Note:**

The function won't take effect until the router reboots.

3.7 Forwarding

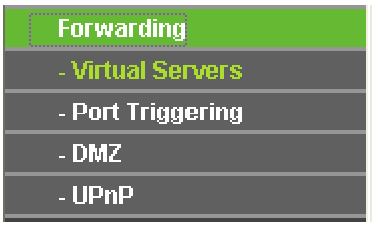
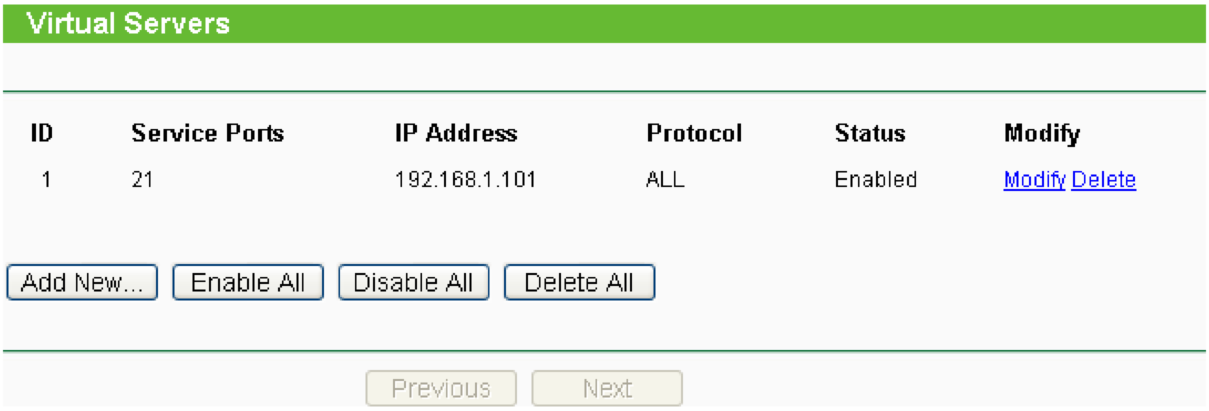


Figure 3-29 The Forwarding menu

There are four submenus under the Forwarding menu (shown in Figure 3-29): **Virtual Servers**, **Port Triggering**, **DMZ** and **UPnP**. Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

3.7.1 Virtual Servers

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 change when using the DHCP function. You can set up virtual servers on this page, shown in Figure 3-30:


Virtual Servers

ID	Service Ports	IP Address	Protocol	Status	Modify
1	21	192.168.1.101	ALL	Enabled	Modify Delete

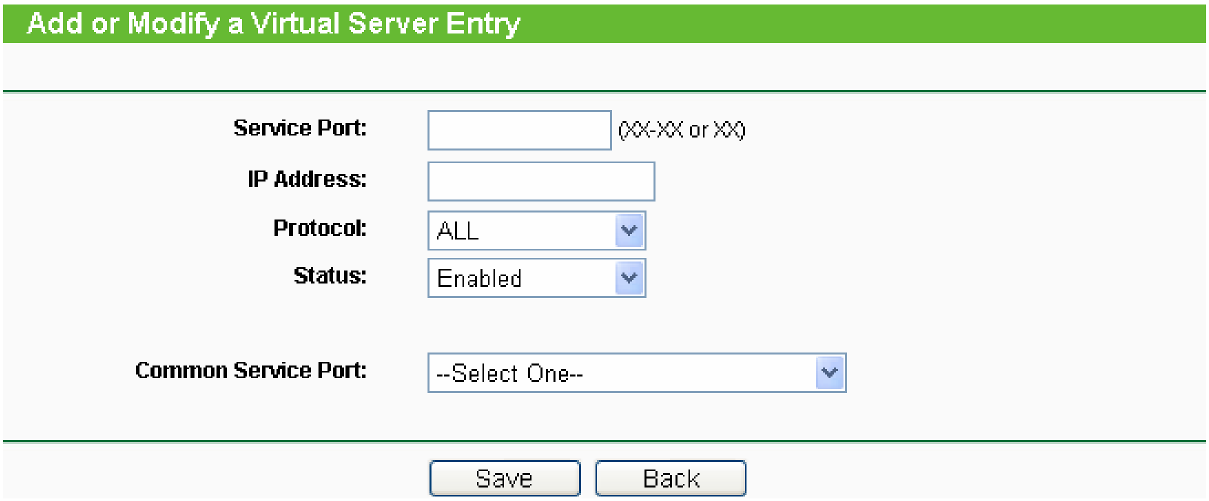
Figure 3-30 Virtual Servers

- **Service Port -** The numbers of External Ports. You can type a service port or a range of service ports (the format is XXX – YYY, XXX is the start port, YYY is the end port).
- **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**. (pop-up Figure 3-31)
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 **Server IP Address** box.
4. Select the protocol used for this application, either **TCP** or **UDP**, or **All**.
5. Select the **Enable** checkbox to enable the virtual server.
6. Click the **Save** button.



Add or Modify a Virtual Server Entry

Service Port: (XX-XX or XX)

IP Address:

Protocol: ALL

Status: Enabled

Common Service Port: --Select One--

Figure 3-31 Add or Modify a Virtual Server Entry

☞ **Note:**

It is possible that you have a computer or server that has more than one type of available service. If so, select another service, and enter the same IP Address for that computer or server.

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**.
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

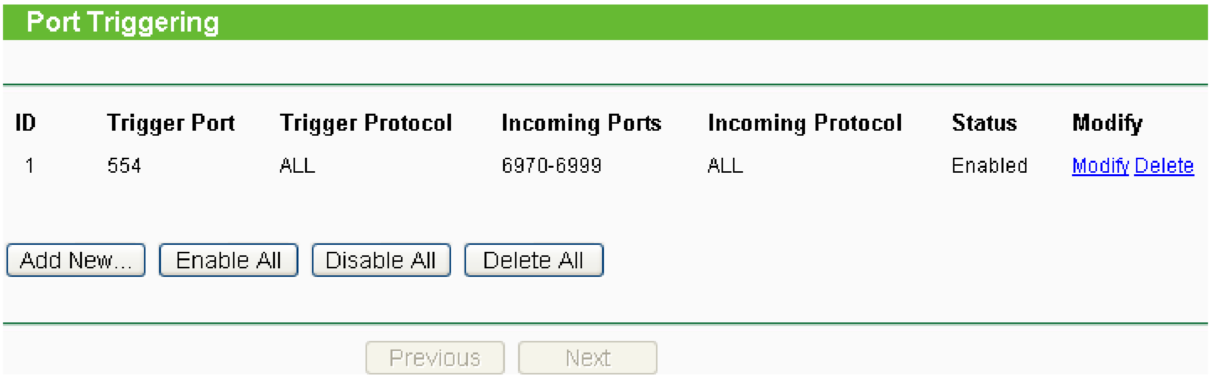
Click the **Next** button to go to the next page and Click the **Previous** button to return the previous page.

☞ **Note:**

If you set the virtual server of service port as 80, you must set the Web management port on Security –> Remote Management page to be any value except 80 such as 8080. Or else there will be a conflict to disable the virtual server.

3.7.2 Port Triggering

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 an NAT router. You can set up Port Triggering on this page shown in Figure 3-32:



Port Triggering

ID	Trigger Port	Trigger Protocol	Incoming Ports	Incoming Protocol	Status	Modify
1	554	ALL	6970-6999	ALL	Enabled	Modify Delete

Figure 3-32 Port Triggering

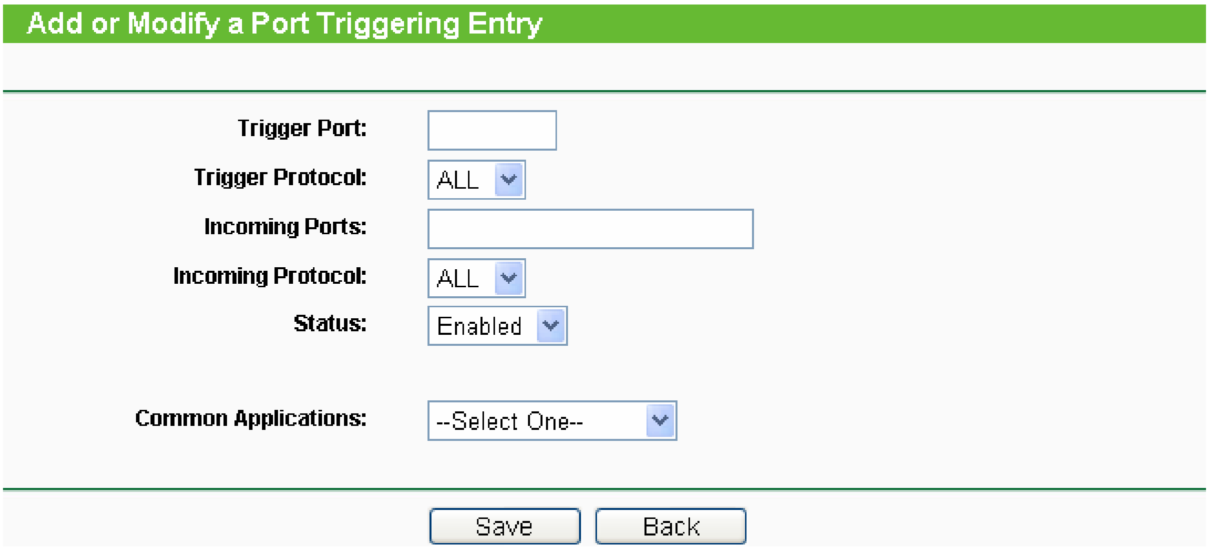
Once configured, operation is as follows:

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, enter the following data on the **Port Triggering** screen.

1. Click the **Add New button**. (pop-up Figure 3-33)
2. Enter a port number used by the application when it generates an outgoing request.
3. Select the protocol used for **Trigger Port** from the pull-down list, either **TCP**, **UDP**, or **All.**
4. Enter the range of port numbers used by the remote system when it responds to the PC's request.
5. Select the protocol used for **Incoming Ports Range** from the pull-down list, either **TCP** or **UDP**, or **All.**
6. Select the **Enable** checkbox to enable.
7. Click the **Save** button to save the new rule.



Add or Modify a Port Triggering Entry

Trigger Port:	
Trigger Protocol:	ALL
Incoming Ports:	
Incoming Protocol:	ALL
Status:	Enabled
Common Applications:	--Select One--

Figure 3-33 Add or Modify a Triggering Entry

There are many popular applications in the **Popular Application** list. You can select it, and the application will fill in the **Trigger Port**, **incoming Ports Range** boxes and select the **Enable** checkbox. It has the same effect as adding a new rule.

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**.
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

☞ **Note:**

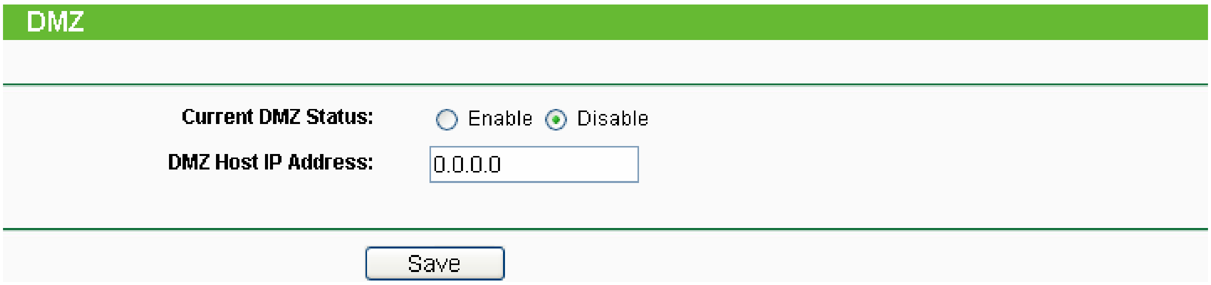
When the trigger connection is released, the according opening ports will be closed.

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

Incoming Port Range cannot overlap each other.

3.7.3 DMZ

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 change when using the DHCP function. You can set up DMZ host on this page shown in figure 5-29:



Current DMZ Status: ○ Enable ● Disable

DMZ Host IP Address: 0.0.0.0

Figure 3-34 DMZ

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

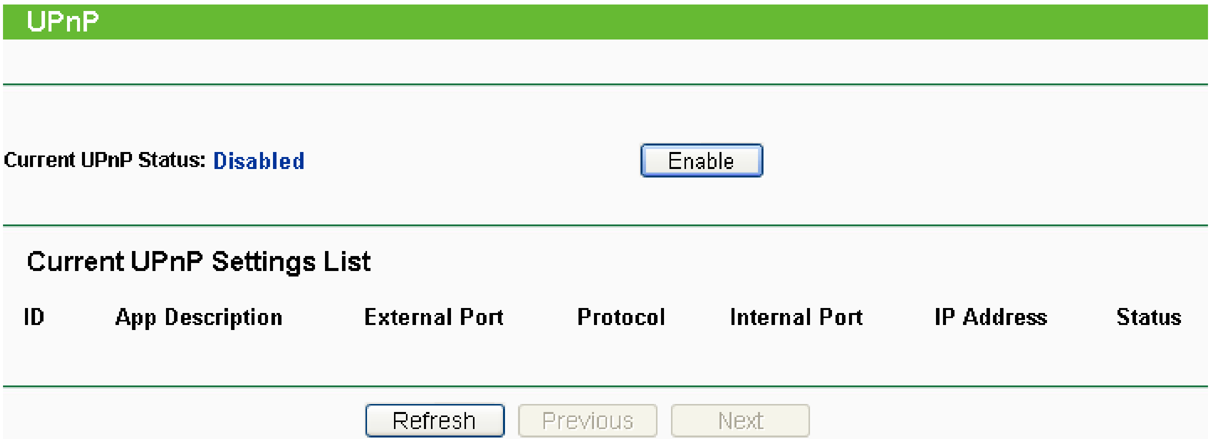
1. Click the **Enable** radio button
2. Enter the local host IP Address in the **DMZ Host IP Address** field

☞ **Note:**

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

3.7.4 UPnP

The Universal Plug and Play (UPnP) feature allows the 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. You can configure UPnP on this page that shown in Figure 3-35:



Current UPnP Status: Disabled

Current UPnP Settings List

ID	App Description	External Port	Protocol	Internal Port	IP Address	Status

Figure 3-35 UPnP Settings

- **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 disabled 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 -** Either Enabled or Disabled, “Enabled” means that port is still active. Otherwise, the port is inactive.

Click **Refresh** to update the Current UPnP Settings List.

3.8 Security

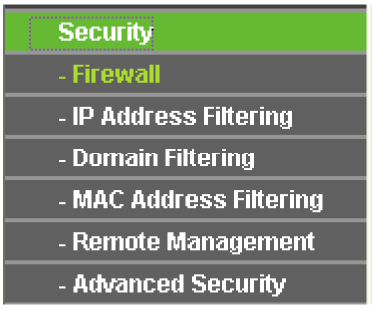
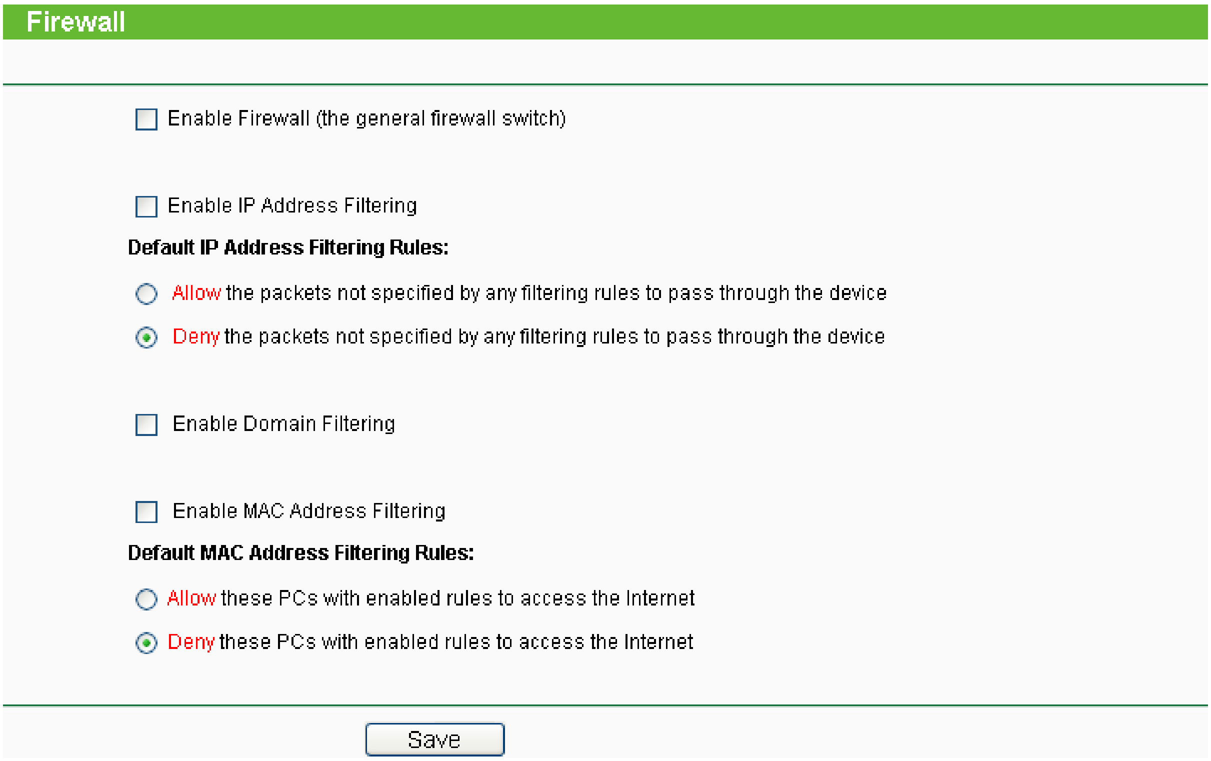


Figure 3-36 The Security menu

There are six submenus under the Security menu (shown in Figure 3-36): **Firewall**, **IP Address Filtering, Domain Filtering, MAC Filtering, Remote Management** and **Advanced Security.** Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

3.8.1 Firewall

Using the Firewall page (shown in Figure 3-37), you can turn the general firewall switch on or off. The default setting for the switch is off. If the general firewall switch is off, even if IP Address Filtering, DNS Filtering and MAC Filtering are enabled, their settings are ineffective.



Firewall

□ Enable Firewall (the general firewall switch)

□ Enable IP Address Filtering

Default IP Address Filtering Rules:

○ Allow the packets not specified by any filtering rules to pass through the device

● Deny the packets not specified by any filtering rules to pass through the device

□ Enable Domain Filtering

□ Enable MAC Address Filtering

Default MAC Address Filtering Rules:

○ Allow these PCs with enabled rules to access the Internet

● Deny these PCs with enabled rules to access the Internet

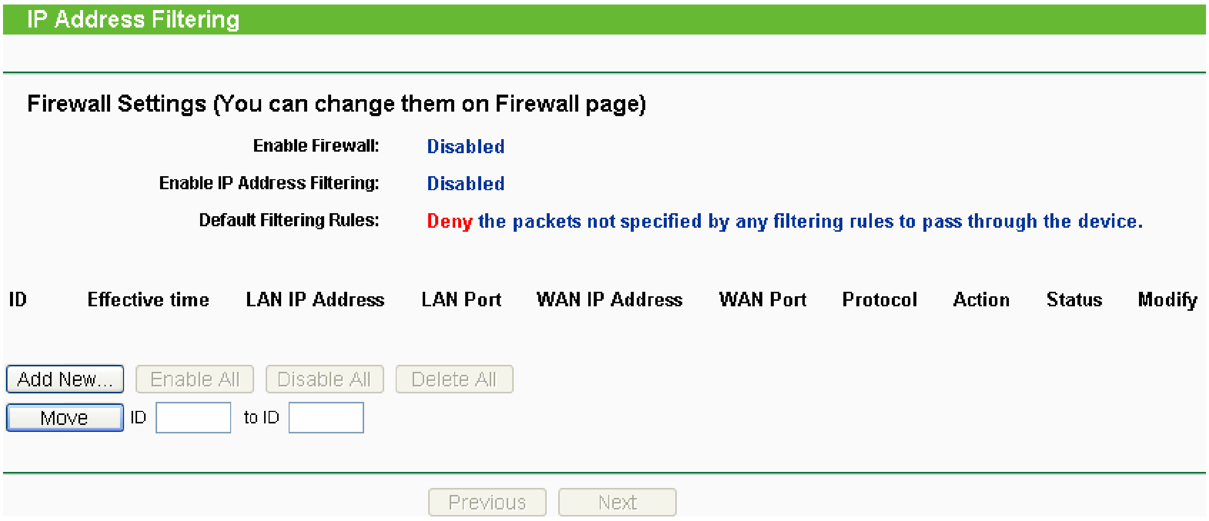
Figure 3-37 Firewall Settings

- **Enable Firewall -** the general firewall switch is on or off.

- **Enable IP Address Filtering -** set IP Address Filtering is enabled or disabled. There are two default filtering rules of IP Address Filtering, either Allow or Deny passing through the router.
- **Enable Domain Filtering -** set Domain Filtering is enabled or disabled.
- **Enable MAC Filtering -** set MAC Address Filtering is enabled or disabled. You can select the default filtering rules of MAC Address Filtering, either Allow or Deny accessing the router.

3.8.2 IP Address Filtering

The IP address Filtering feature allows you to control Internet Access by specific users on your LAN based on their IP addresses. The IP address filtering is set on this page, Figure 3-38:



IP Address Filtering

Firewall Settings (You can change them on Firewall page)

Enable Firewall: Disabled

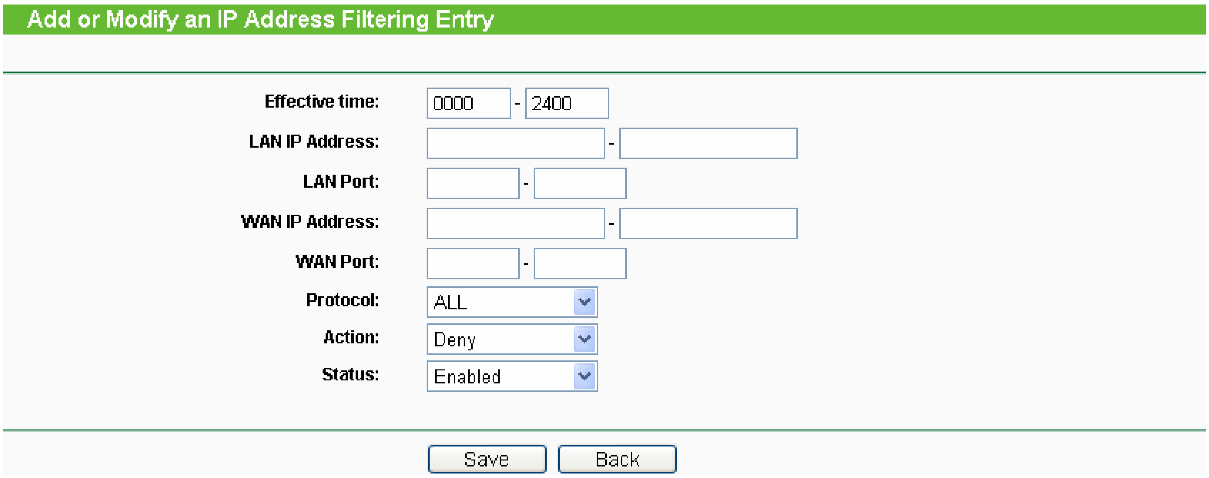
Enable IP Address Filtering: Disabled

Default Filtering Rules: Deny the packets not specified by any filtering rules to pass through the device.

ID	Effective time	LAN IP Address	LAN Port	WAN IP Address	WAN Port	Protocol	Action	Status	Modify

Figure 3-38 IP address Filtering

To disable the IP Address Filtering feature, keep the default setting, **Disabled**. To set up an IP Address Filtering entry, click **Enable** Firewall and **Enable** IP Address Filtering on the Firewall page, and click the **Add New…** button. The page "**Add or Modify an IP Address Filtering entry**" will appear shown in Figure 3-39:



Add or Modify an IP Address Filtering Entry

Effective time: 0000 - 2400

LAN IP Address: -

LAN Port: -

WAN IP Address: -

WAN Port: -

Protocol: ALL

Action: Deny

Status: Enabled

Figure 3-39 Add or Modify an IP Address Filtering Entry

To create or modify an IP Address Filtering entry, please follow these instructions:

1. **Effective Time -** Enter a range of time in HHMM format, which point to the range time for the entry to take effect. For example, 0803 - 1705, the entry will take effect from 08:03 to 17:05.

2. **LAN IP Address -** Enter a LAN IP Address or a range of LAN IP addresses in the field, in dotted-decimal notation format. For example, 192.168.1.20 - 192.168.1.30. Keep the field open, which means all LAN IP Addresses have been put into the field.
3. **LAN Port -** Enter a LAN Port or a range of LAN ports in the field. For example, 1030 - 2000. Keep the field open, which means all LAN ports have been put into the field.
4. **WAN IP Address -** Enter a WAN IP Address or a range of WAN IP Addresses in the field, in dotted-decimal notation format. For example, 61.145.238.6 – 61.145.238.47. Keep the field open, which means all WAN IP Addresses have been put into the field.
5. **WAN Port -** Enter a WAN Port or a range of WAN Ports in the field. For example, 25 – 110. Keep the field open, which means all WAN Ports have been put into the field.
6. **Protocol -** Select which protocol is to be used, either **TCP, UDP**, or **All** (all protocols supported by the router).
7. **Action -** Select either **Allow** or **Deny** through the router.
8. **Status -** Select **Enabled** or **Disabled** for this entry on the **Status** pull-down list.
9. 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**.
2. Modify the information.
3. Click the **Save** button.

Click the **Enable All** button to make all entries enabled

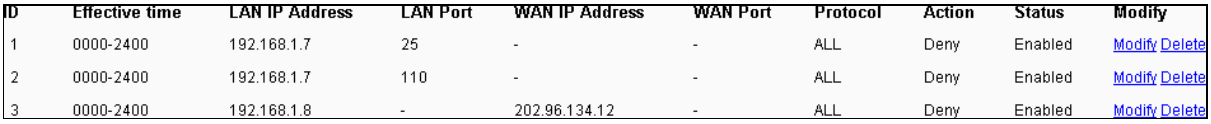
Click the **Disabled All** button to make all entries disabled.

Click the **Delete All** button to delete all entries

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 the next page and click the **Previous** button to return to the previous page.

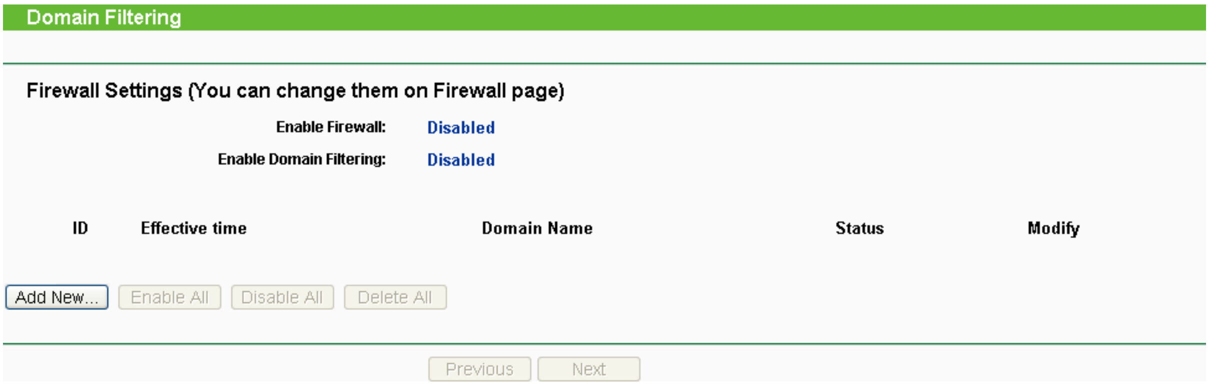
For example: If you desire to block E-mail received and sent by the IP Address 192.168.1.7 on your local network, and to make the PC with IP Address 192.168.1.8 unable to visit the website of IP Address 202.96.134.12, while other PC(s) have no limit you should specify the following IP address filtering list:



ID	Effective time	LAN IP Address	LAN Port	WAN IP Address	WAN Port	Protocol	Action	Status	Modify
1	0000-2400	192.168.1.7	25	-	-	ALL	Deny	Enabled	Modify Delete
2	0000-2400	192.168.1.7	110	-	-	ALL	Deny	Enabled	Modify Delete
3	0000-2400	192.168.1.8	-	202.96.134.12	-	ALL	Deny	Enabled	Modify Delete

3.8.3 Domain Filtering

The Domain Filtering page (shown in Figure 3-40) allows you to control access to certain websites on the Internet by specifying their domains or key words.



Domain Filtering

Firewall Settings (You can change them on Firewall page)

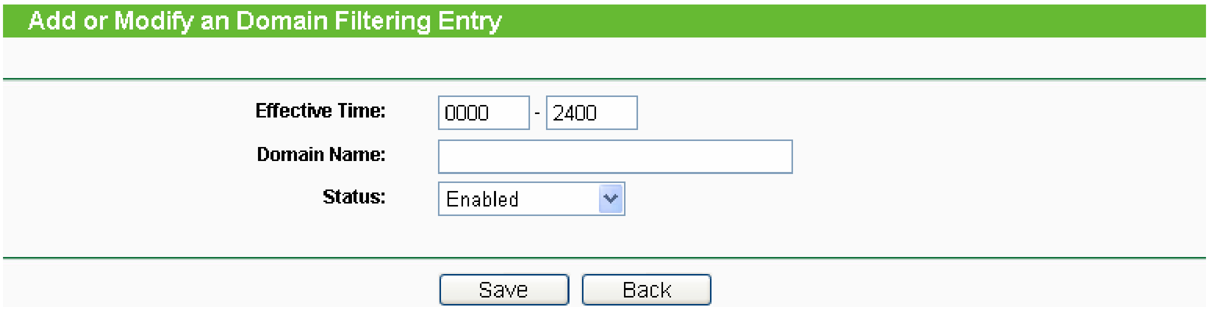
Enable Firewall: Disabled

Enable Domain Filtering: Disabled

ID	Effective time	Domain Name	Status	Modify

Figure 3-40 Domain Filtering

Before adding a Domain Filtering entry, you must ensure that **Enable** Firewall and **Enable** Domain Filtering have been selected on the Firewall page. To Add a Domain filtering entry, click the **Add New…** button. The page "**Add or Modify a Domain Filtering entry** " will appear, shown in Figure 3-41:



Add or Modify an Domain Filtering Entry

Effective Time: 0000 - 2400

Domain Name:

Status: Enabled

Figure 3-41 Add or Modify a Domain Filtering entry

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

1. **Effective Time -** Enter a range of time in HHMM format specifying the time for the entry to take effect. For example, if you enter: 0803 - 1705, than the entry will take effect from 08:03 to 17:05.
2. **Domain Name -** Type the domain or key word as desired in the field. A blank in the domain field means all websites on the Internet. For example: www.xxyy.com.cn, .net.
3. **Status -** 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**.
2. Modify the information.
3. Click the **Save** button.

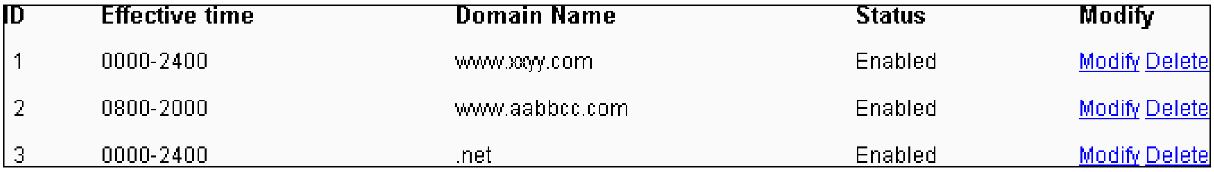
Click the **Enabled All** button to make all entries enabled.

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 and the **Previous** button to return to the previous page.

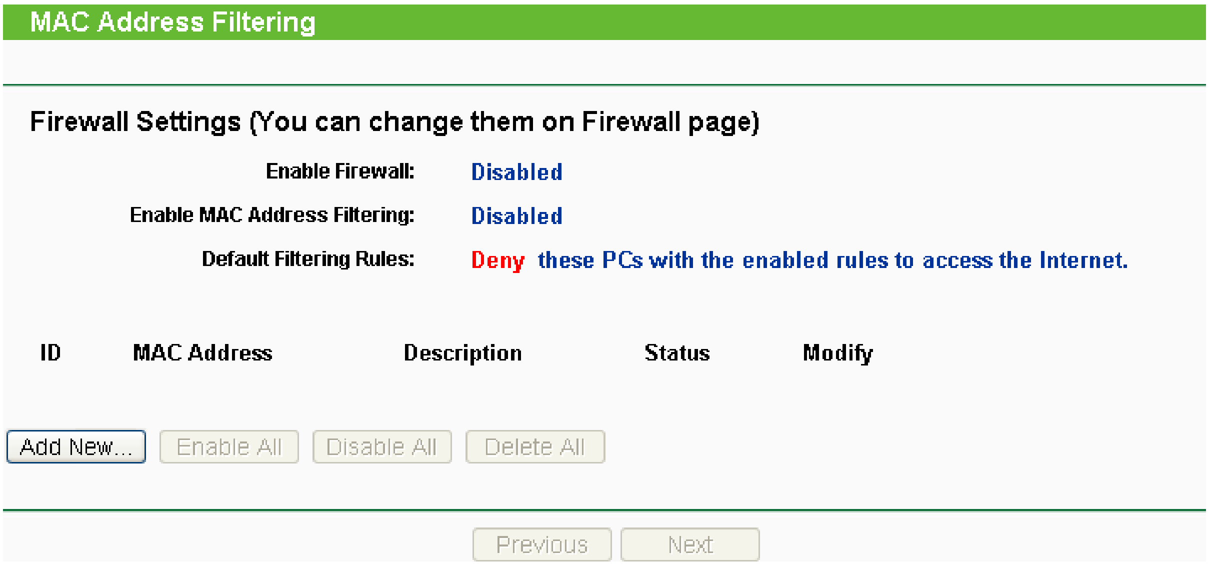
For example: if you want to block the PC(s) on your LAN to access websites www.xxyy.com.cn, www.aabbcc.com and websites with .net in the end on the Internet while no limit for other websites, you should specify the following Domain filtering list:



ID	Effective time	Domain Name	Status	Modify
1	0000-2400	www.xxyy.com	Enabled	Modify Delete
2	0800-2000	www.aabbcc.com	Enabled	Modify Delete
3	0000-2400	.net	Enabled	Modify Delete

3.8.4 MAC Address Filtering

Like the IP Address Filtering page, the MAC Address Filtering page (shown in Figure 3-42) allows you to control access to the Internet by users on your local network based on their MAC Address.



MAC Address Filtering

Firewall Settings (You can change them on Firewall page)

Enable Firewall: Disabled

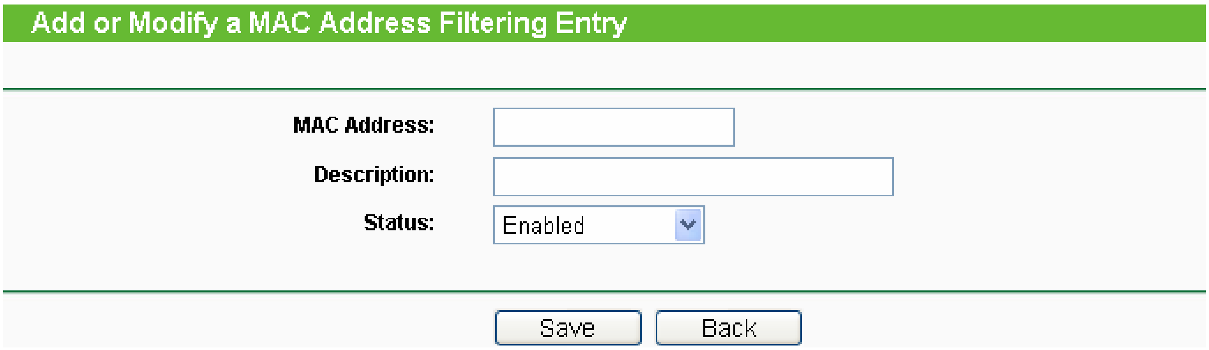
Enable MAC Address Filtering: Disabled

Default Filtering Rules: Deny these PCs with the enabled rules to access the Internet.

ID	MAC Address	Description	Status	Modify

Figure 3-42 MAC address Filtering

Before setting up MAC Filtering entries, you must ensure that **Enable** Firewall and **Enable** MAC Filtering have been selected on the Firewall page. To Add a MAC Address filtering entry, clicking the **Add New…** button. The page "**Add or Modify a MAC Address Filtering entry**" will appear, shown in Figure 3-43:



Add or Modify a MAC Address Filtering Entry

MAC Address:

Description:

Status: Enabled

Figure 3-43 Add or Modify a MAC Address Filtering entry

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: 00-0E-AE-B0-00-0B.
2. Type the description of the PC in the **Description** field. Fox example: John's PC.
3. **Status** - Select **Enabled** or **Disabled** for this entry on the **Status** pull-down list.
4. Click the **Save** button to save this entry.

To add additional entries, repeat steps 1-4.

When finished, click the **Return** button to return to the **MAC Address Filtering** page.

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**.
2. Modify the information.
3. Click the **Save** button.

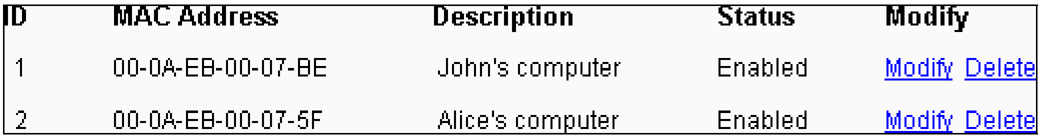
Click the **Enable All** button to make all entries enabled.

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 and click the **Previous** button to return to the previous page.

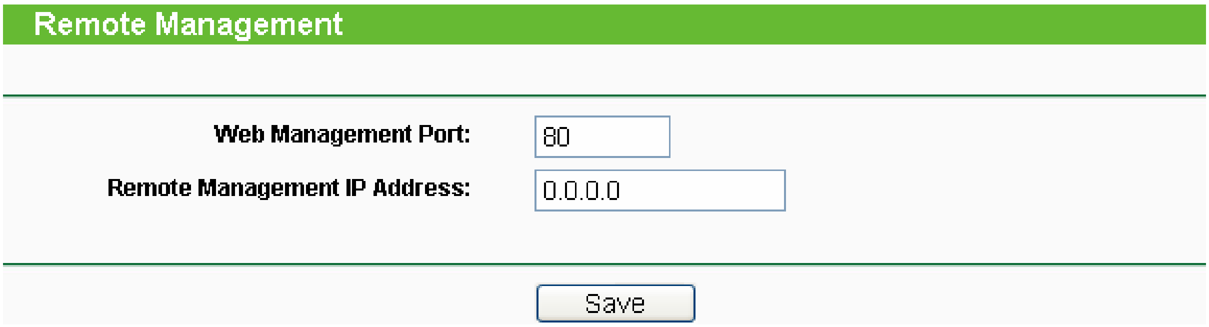
Fox example: If you want to block the PC with MAC addresses 00-0A-EB-00-07-BE and 00-0A-EB-00-07-5F to access the Internet, first, enable the **Firewall** and **MAC Address Filtering** on the **Firewall** page, then, you should specify the Default MAC Address Filtering Rule "**Deny these PC(s) with effective rules to access the Internet**" on the Firewall page and the following MAC address filtering list on this page:



ID	MAC Address	Description	Status	Modify
1	00-0A-EB-00-07-BE	John's computer	Enabled	Modify Delete
2	00-0A-EB-00-07-5F	Alice's computer	Enabled	Modify Delete

3.8.5 Remote Management

You can configure the Remote Management function on this page shown in Figure 3-44. This feature allows you to manage your Router from a remote location, via the Internet.



Remote Management

Web Management Port: 80

Remote Management IP Address: 0.0.0.0

Figure 3-44 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 interface to a custom port by entering that number in this box provided. Choose a number between 1024 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. The default IP Address is 0.0.0.0. It means this function is disabled. To enable this function, change the default IP Address to another IP Address as desired.

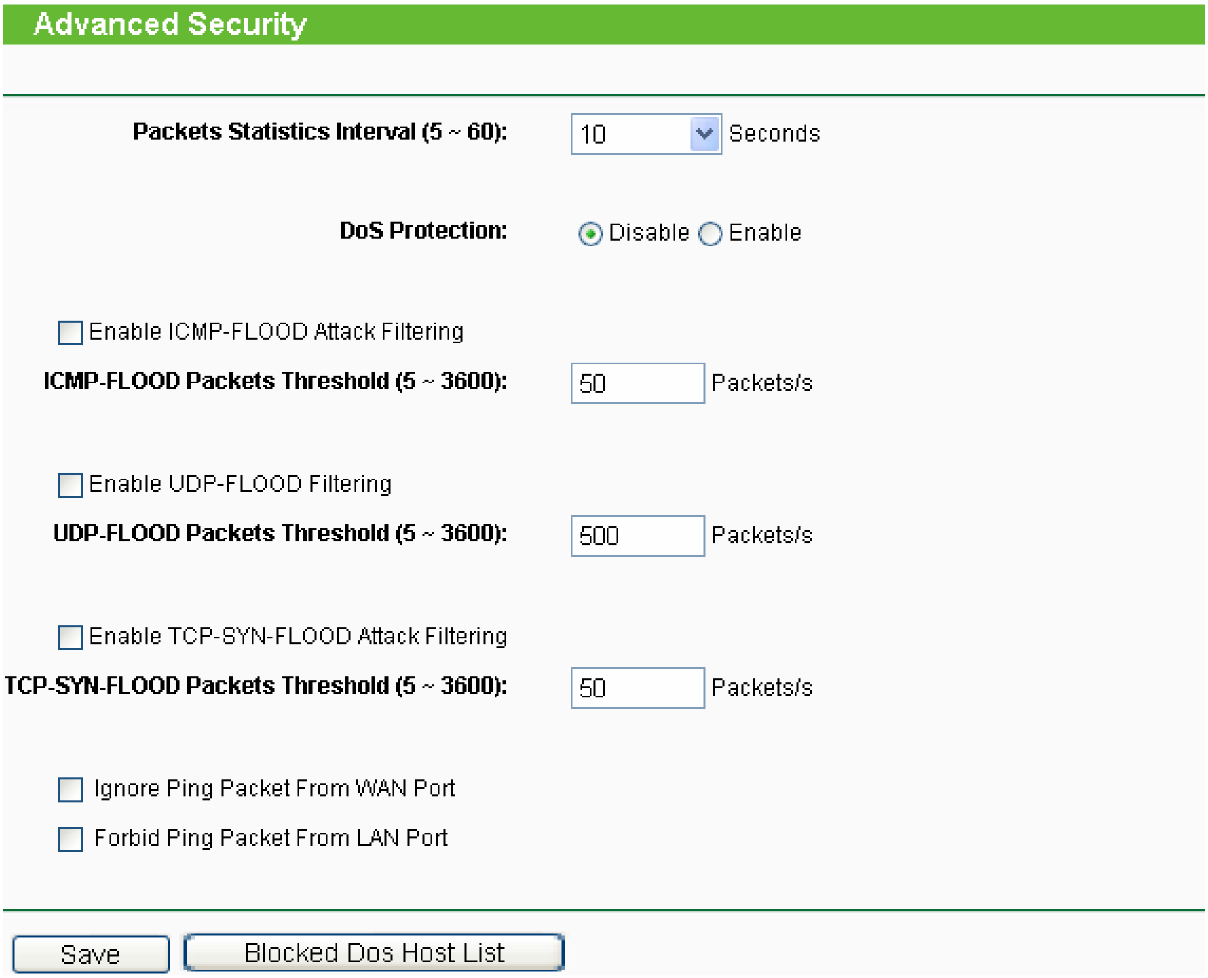
To access the router, you will type your router's WAN IP Address into your browser's Address (in IE) or Location (in Navigator) box, followed by a colon and the custom port number. For example, if your Router's WAN address is 202.96.12.8 and you use port number 8080, enter in your browser: http://202.96.12.8:8080. You will be asked for the router's password. After successfully entering the 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.

3.8.6 Advanced Security

Using Advanced Security page (shown in Figure 3-45), you can protect the router from being attacked by TCP-SYN Flood, UDP Flood and ICMP-Flood from LAN.



Advanced Security

Packets Statistics Interval (5 ~ 60): 10 Seconds

DoS Protection: ● Disable ○ Enable

□ Enable ICMP-FLOOD Attack Filtering

ICMP-FLOOD Packets Threshold (5 ~ 3600): 50 Packets/s

□ Enable UDP-FLOOD Filtering

UDP-FLOOD Packets Threshold (5 ~ 3600): 500 Packets/s

□ Enable TCP-SYN-FLOOD Attack Filtering

TCP-SYN-FLOOD Packets Threshold (5 ~ 3600): 50 Packets/s

□ Ignore Ping Packet From WAN Port

□ Forbid Ping Packet From LAN Port

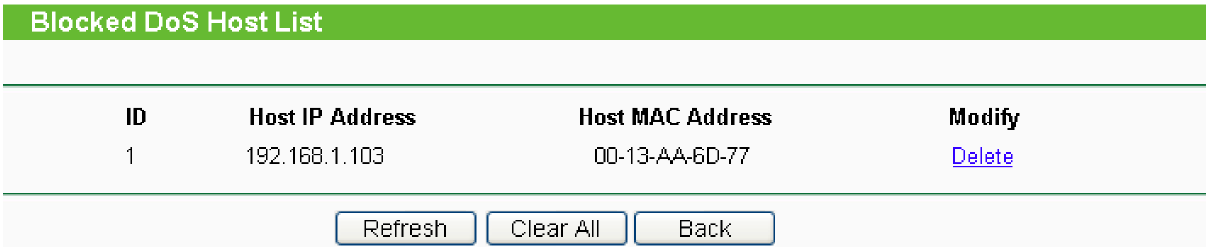
Figure 3-45 Advanced Security settings

- **Packets Statistic 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** value indicates the time section of the packets statistic. The result of the statistic used for analysis by **SYN Flood**, **UDP Flood** and **ICMP-Flood**.
- **DoS protection - Enable** or **Disable** the DoS protection function. Only when it is enabled, will the flood filters be effective.
- **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 packets. When the current **ICMP-FLOOD** Packets numbers is beyond the set value, the router will start up 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 50. Enter a value between 5 ~ 3600 packets. When the current **UPD-FLOOD** Packets numbers is beyond the set value, the router will start up 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 packets. When the current **TCP-SYN-FLOOD** Packets numbers is beyond the set value, the router will start up the blocking function immediately.
- **Ignore Ping Packet from WAN Port - Enable** or **Disable** ignore ping packet from WAN port. The default is disabled. If enabled, the ping packet from the Internet cannot access the router.
- **Forbid Ping Packet from LAN Port -** Enable or Disable forbidding Ping Packet to access the router from the LAN port. The default value is disabled. If enabled, the ping packet from the LAN port cannot access the router. (Defends against some viruses)

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

Click the **Blocked DoS Host Table** button to display the DoS host table by blocking. The page will appear that shown in Figure 3-46:



Blocked DoS Host List

ID	Host IP Address	Host MAC Address	Modify
1	192.168.1.103	00-13-AA-6D-77	Delete

Figure 3-46 Thwarted DoS Host Table

This page shows **Host IP Address** and **Host MAC Address** for each host blocked by the router.

- **Host IP Address-** The IP address that blocked by DoS are displayed here.
- **Host MAC Address -** The MAC address that blocked by DoS are displayed here.

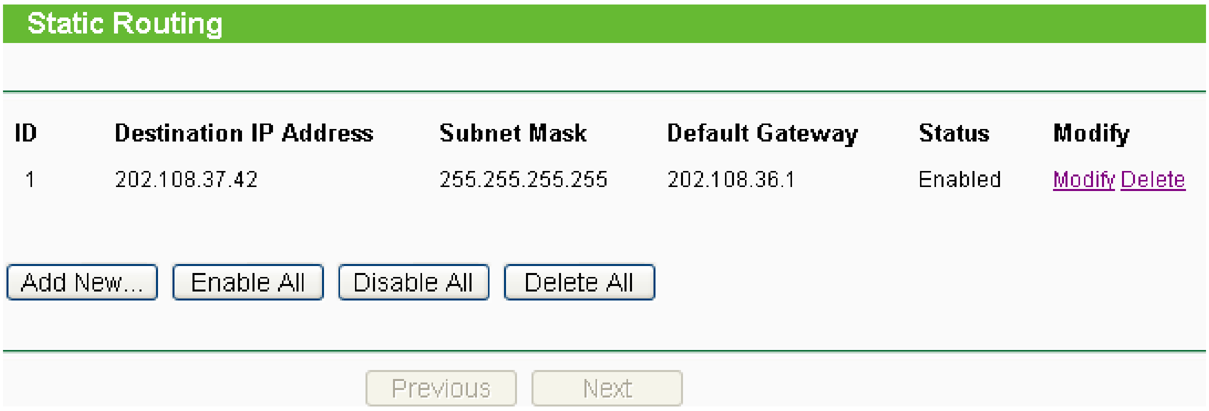
To update this page and to show the current blocked host, click on the **Refresh** button.

Click the **Clear All** button to clear all displayed entries. After the table is empty the blocked host will regain the capability to access Internet.

Click the **Return** button to return to the **Advanced Security** page.

3.9 Static Routing

A static route is a pre-determined path that network information must travel to reach a specific host or network. To add or delete a route, work in the area under the Static Routing page (shown in Figure 3-47).



Static Routing

ID	Destination IP Address	Subnet Mask	Default Gateway	Status	Modify
1	202.108.37.42	255.255.255.255	202.108.36.1	Enabled	Modify Delete

Figure 3-47 Static Routing

To add static routing entries:

1. Click the **Add New** button. (pop-up Figure 3-48)

2. Enter the following data:

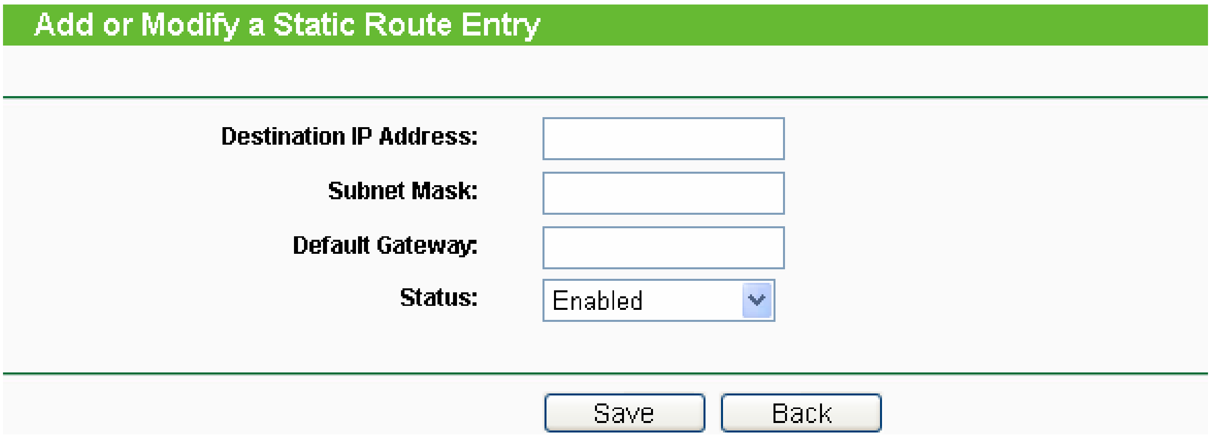
- **Destination IP Address -** The **Destination IP Address** is the address of the network or host that you want to assign to a static route.

- **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 save it.



Add or Modify a Static Route Entry

Destination IP Address:

Subnet Mask:

Default Gateway:

Status: Enabled

Figure 3-48 Add or Modify a Static Route 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**.
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

3.10 IP & MAC Binding Setting

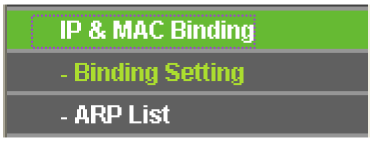
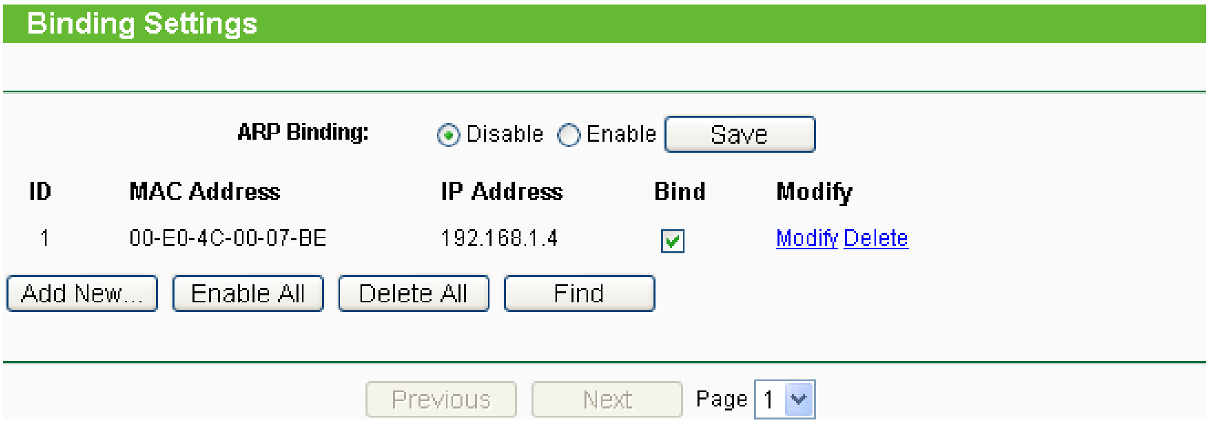


Figure 3-49 the IP & MAC Binding menu

There are two submenus under the IP &MAC Binding menu (shown in Figure 3-49): **Binding Setting** and **ARP List**. Click any of them, and you will be able to scan or configure the corresponding function. The detailed explanations for each submenu are provided below.

3.10.1 Binding Setting

This page displays the IP & MAC Binding Setting table; you can operate it in accord with your desire. (shown in Figure 3-50).



Binding Settings

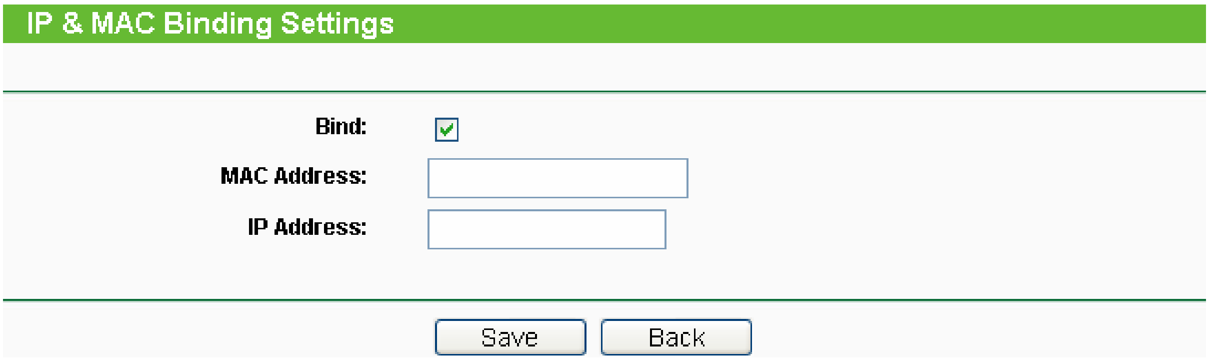
ARP Binding: ● Disable ○ Enable

ID	MAC Address	IP Address	Bind	Modify
1	00-E0-4C-00-07-BE	192.168.1.4	☑	Modify Delete

Figure 3-50 IP & MAC 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 - Whether or not enable the arp binding.
- Modify - Edit or delete item.

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 (shown in Figure 3-51).



IP & MAC Binding Settings

Bind: ☑

MAC Address:

IP Address:

Figure 3-51 IP & MAC Binding Setting (Add & Modify)

To add IP & MAC Binding entries:

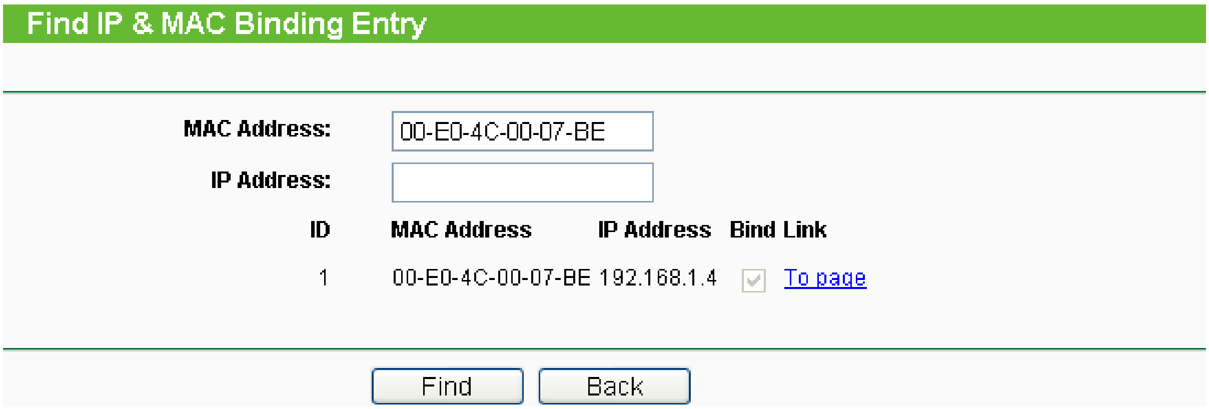
1. Click the **Add New..** button.
2. Enter the MAC Address and IP Address.
3. Select the Bind checkbox.
4. Click the **Save** button to save it.

To modify or delete an existing entry:

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

To find an existing entry:

1. Click the **Find** button (shown in Figure 3-51).
2. Enter the MAC Address or IP Address.
3. Enter the **Find** button in the next page (shown in Figure 3-52).



Find IP & MAC Binding Entry

MAC Address: 00-E0-4C-00-07-BE

IP Address:

ID	MAC Address	IP Address	Bind	Link
1	00-E0-4C-00-07-BE	192.168.1.4	☑	To page

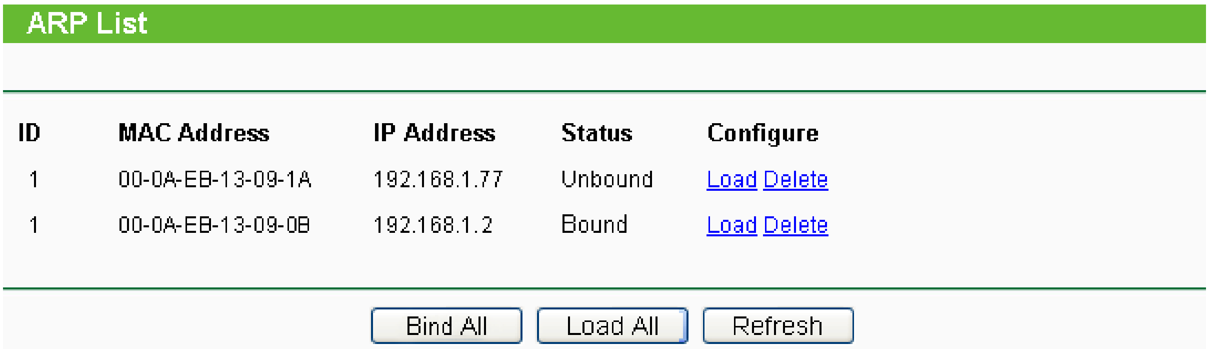
Figure 3-52 Find IP & MAC Binding Entry

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

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

3.10.2 ARP List

To manage the computer, you could observe the computers in the LAN by checking the relationship of MAC address and IP address on the ARP list, and you could configure the items on the ARP list also. This page displays the ARP List; it shows all the existing IP & MAC Binding entries (shown in Figure 3-53).



ARP List

ID	MAC Address	IP Address	Status	Configure
1	00-0A-EB-13-09-1A	192.168.1.77	Unbound	Load Delete
1	00-0A-EB-13-09-0B	192.168.1.2	Bound	Load Delete

Figure 3-53 ARP List

- ➢ 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.
- ➢ Status - Enabled or Disabled of the MAC address and IP address binding.
- ➢ Configure - Load or delete item.
- ➢ Load - Load the item to the IP & MAC Binding list.
- ➢ Delete - Delete the item.

1. Click the **Bind All** button to bind all the current items, available after enable.
2. Click the **Load All** button to load all items to the IP & MAC Binding list.
3. Click the **Refresh** button to refresh all items.

☞ **Note:**

An item could not be loaded to the IP & MAC Binding list if the IP address of the item has been loaded before. Error warning will prompt as well. Likewise, "Load All" only loads the items without interference to the IP & MAC Binding list

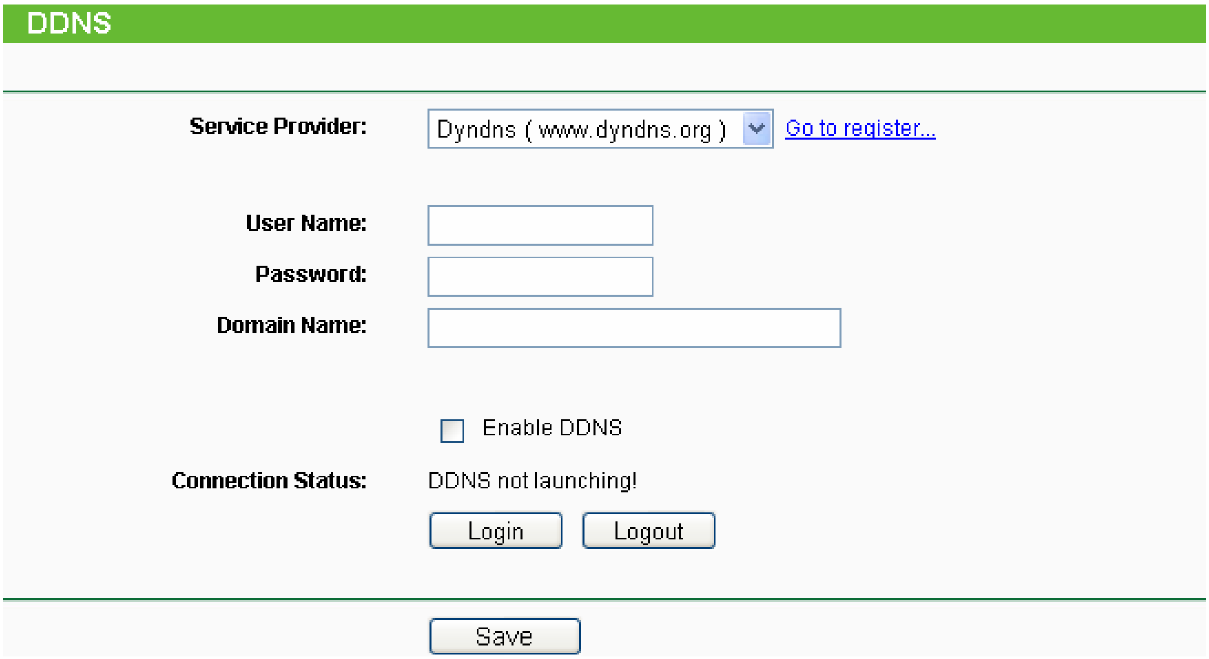
3.11 Dynamic DNS

The router offers a Dynamic Domain Name System (**DDNS**) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP Address. It is useful when you are hosting your own website, FTP server, or other server behind the router. Before using this feature, you need to sign up for DDNS service providers such as www.dyndns.org, www.oray.net or www.comexe.cn. The Dynamic DNS client service provider will give you a password or key.

To set up for DDNS, follow these instructions:

3.11.1 Dyndns.org DDNS

If your selected dynamic DNS Service Provider is www.dyndns.org, the page will appear as shown in Figure 3-54:



DDNS

Service Provider: Dyndns (www.dyndns.org) Go to register...

User Name:

Password:

Domain Name:

□ Enable DDNS

Connection Status: DDNS not launching!

Figure 3-54 Dyndns.org DDNS Settings

To set up for DDNS, follow these instructions:

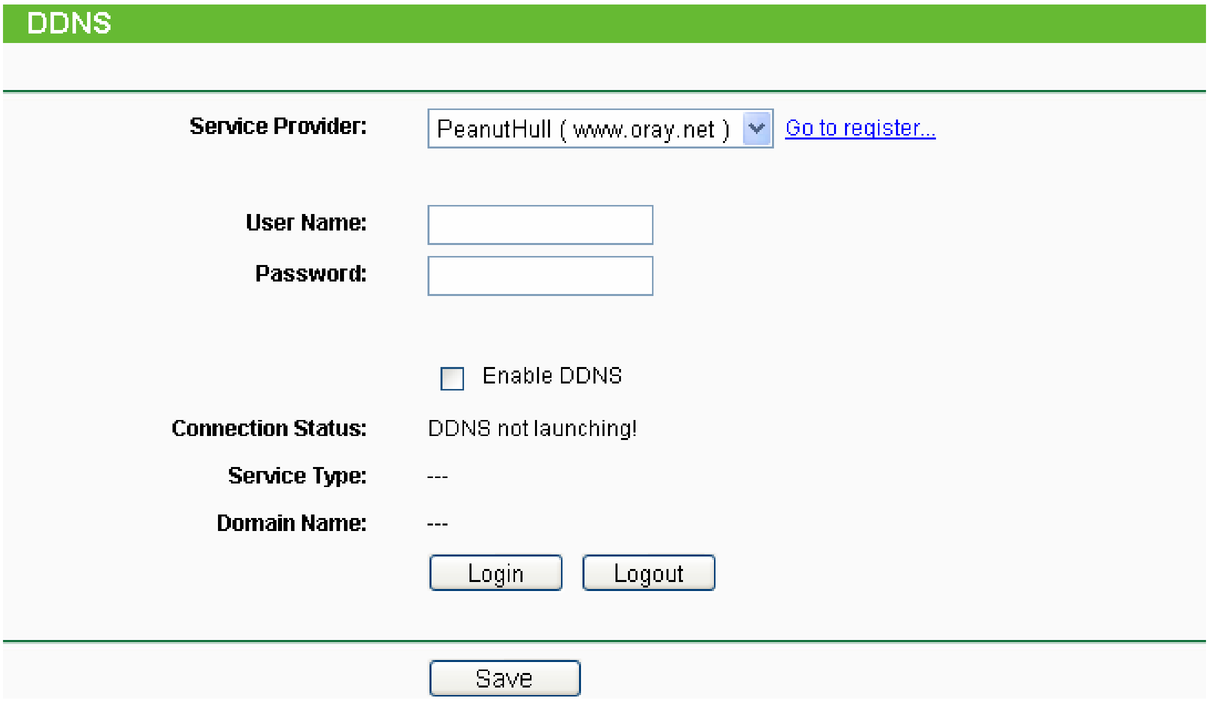
1. Type the **domain names** your dynamic DNS service provider gave.
2. Type the **User Name** for your DDNS account.
3. Type the **Password** for your DDNS account.
4. Click the **Login** button to login to the DDNS service.

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

Click **Logout** to logout of the DDNS service.

3.11.2 Oray.net DDNS

If your selected dynamic DNS **Service Provider** is www.oray.net, the page will appear as shown in Figure 3-55:



DDNS

Service Provider: PeanutHull (www.oray.net)

User Name:

Password:

□ Enable DDNS

Connection Status: DDNS not launching!

Service Type: ---

Domain Name: ---

Figure 3-55 Oray.net DDNS Settings

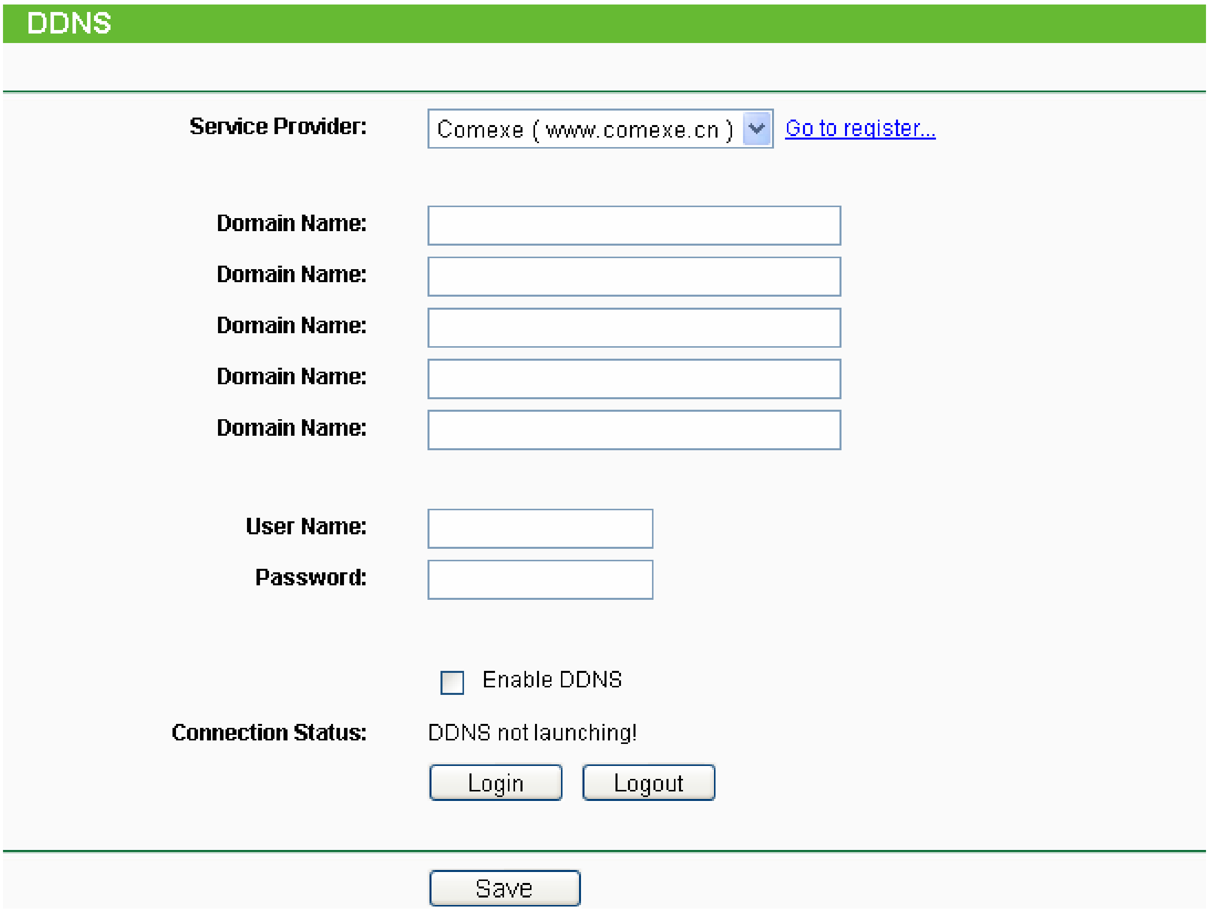
To set up for DDNS, follow these instructions:

1. Type the **User Name** for your DDNS account.
2. Type the **Password** for your DDNS account.
3. Click the **Login** button to login the DDNS service.
   - **Connection Status -** The status of the DDNS service connection is displayed here.
   - **Domain Name -** The domain names are displayed here.

Click **Logout** to logout the DDNS service.

3.11.3 Comexe.cn DDNS

If your selected dynamic DNS **Service Provider** is www.comexe.cn, the page will appear as shown in Figure 3-56:



DDNS

Service Provider: Comexe (www.comexe.cn)

Domain Name:

Domain Name:

Domain Name:

Domain Name:

Domain Name:

User Name:

Password:

□ Enable DDNS

Connection Status: DDNS not launching!

Figure 3-56 Comexe.cn DDNS Settings

To set up for DDNS, follow these instructions:

1. Type the **domain names** your dynamic DNS service provider gave.
2. Type the **User Name** for your DDNS account.
3. Type the **Password** for your DDNS account.
4. Click the **Login** button to login to the DDNS service.

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

Click **Logout** to logout of the DDNS service.

3.12 System Tools

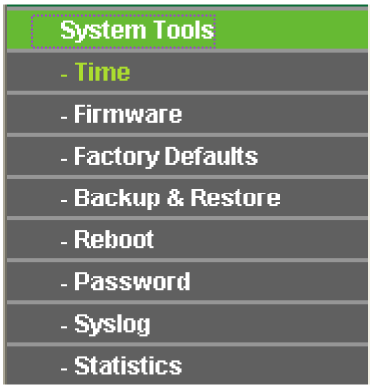
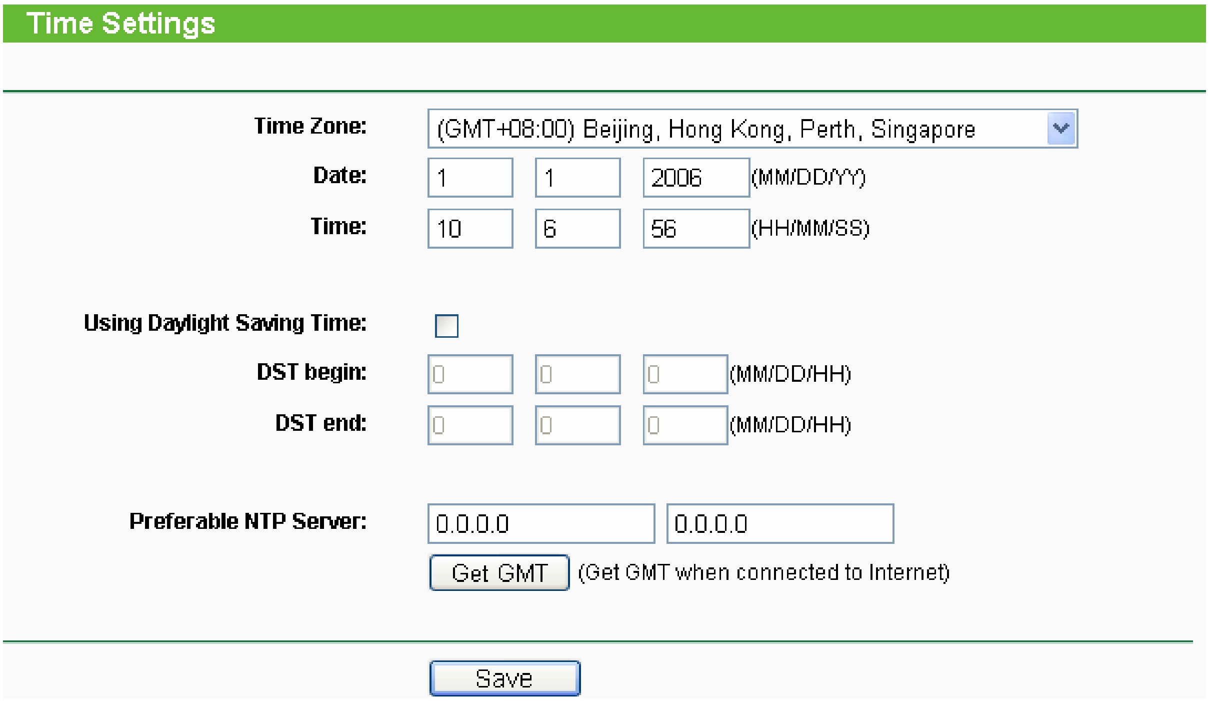


Figure 3-57 The System Tools menu

There are eight submenus under the System Tools menu (shown in Figure 3-57): **Time**, **Firmware**, **Factory Defaults, Backup and Restore, Reboot, Password, Log** and **Statistics.** Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.

3.12.1 Time

You can set time manually or get GMT from the Internet for the router on this page (shown in Figure 3-58):


Time Settings

Time Zone:	(GMT+08:00) Beijing, Hong Kong, Perth, Singapore			
Date:	1	1	2006	(MM/DD/YY)
Time:	10	6	56	(HH/MM/SS)
Using Daylight Saving Time:	□			
DST begin:	0	0	0	(MM/DD/HH)
DST end:	0	0	0	(MM/DD/HH)
Preferable NTP Server:	0.0.0.0	0.0.0.0		

Figure 3-58 Time settings

- **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.

Time setting follows these steps below:

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

Click the **Get GMT** button to get GMT time from Internet if you have connected to Internet.

If you're using Daylight saving time, please follow the steps below.

1. Select **using daylight saving time**.
2. Enter daylight saving beginning time and end time in the right blanks.
3. Click **Save**.

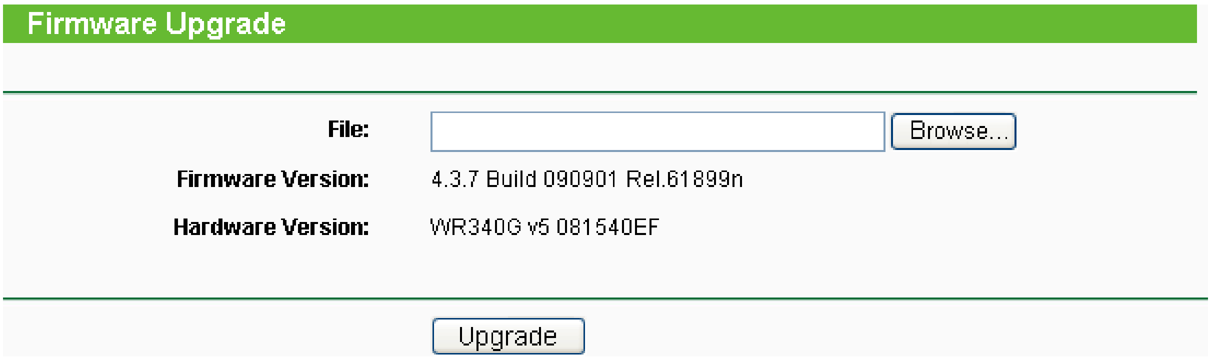
☞ **Note:**

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

- The time will be lost if the router is turned off.
- The router will obtain GMT automatically from Internet if it has already connected to Internet.

3.12.2 Firmware

The page (shown in Figure 3-59) allows you to upgrade the latest version firmware to keep your router up-to-date.



Firmware Upgrade

File:

Firmware Version: 4.3.7 Build 090901 Rel.61899n

Hardware Version: WR340G v5 081540EF

Figure 3-59 Firmware Upgrade

New firmware is posted at www.tp-link.com and can be downloaded for free. If the router is not experiencing difficulties, there is no need to upgrade firmware, unless the new firmware supports a new feature you need.

☞ **Note:**

When you upgrade the router's firmware, you will lose current configuration settings, so make sure you backup the router's settings before you upgrade its firmware.

To upgrade the router's firmware, follow these instructions:

1. Download the latest firmware upgrade file from the TP-LINK website www.tp-link.com.
2. Click **Browse** to view the folders and select the downloaded file.
3. Click the **Upgrade** button.

- **Firmware Version -** Displays the current firmware version.

- **Hardware Version -** Displays the current hardware version. The hardware version of the upgrade file must accord with the current hardware version.

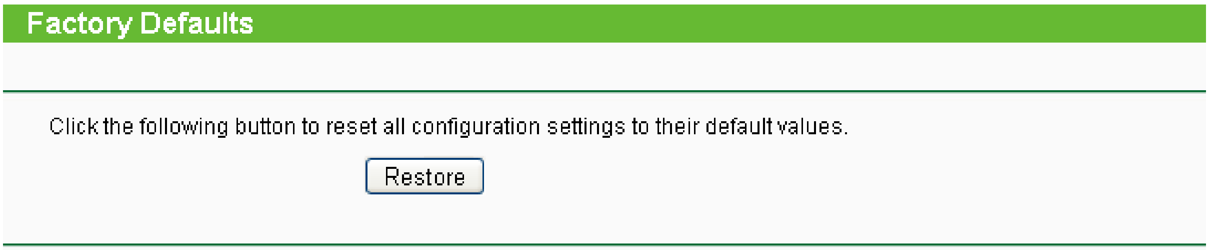
☞ **Note:**

Do not turn off the router or press the Reset button while the firmware is being upgraded.

The router will reboot after the Upgrading has been finished.

3.12.3 Factory Defaults

This page (shown in Figure 3-60) allows you to restore the factory default settings for the router.



Factory Defaults

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

Figure 3-60 Restore Factory Default

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

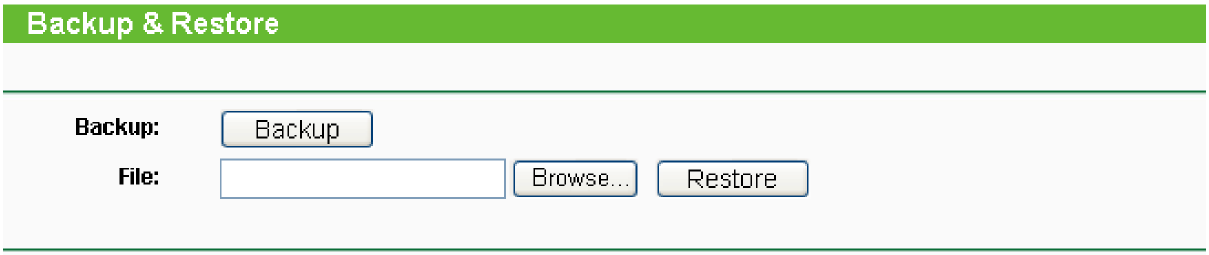
- The default User Name: admin
- The default Password: admin
- The default IP Address: 192.168.1.1
- The default Subnet Mask: 255.255.255.0

☞ **Note:**

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

3.12.4 Backup & Restore

This page (shown in Figure 3-61) allows you to save current configuration of router as backup or restore the configuration file you saved before.



Backup & Restore

Figure 3-61 Backup & Restore Configuration

- Click the **Backup** button to save all configuration settings as a backup file in your local computer.
- To restore the router's configuration, follow these instructions:

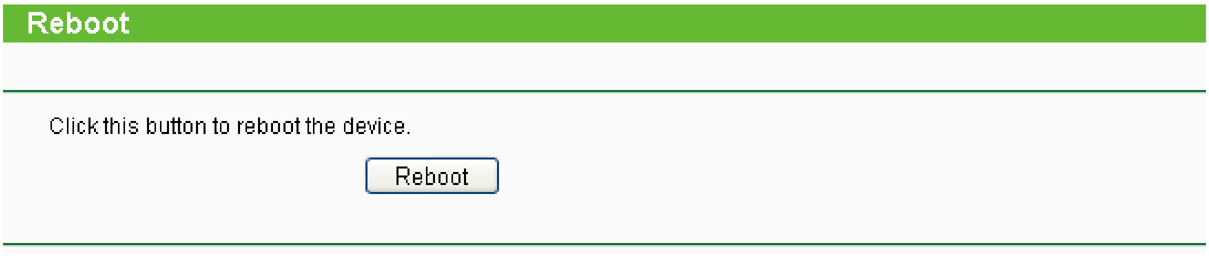
1 Click the **Browse** button to select the backup file which you want to restore.
2 Click the **Restore** button.

☞ **Note:**

The current configuration will be covered with the uploading configuration file. The restoration process lasts for 20 seconds and the router will restart automatically. Keep the router on during the restoring process, to prevent any damage.

3.12.5 Reboot

This page (shown in Figure 3-62) allows you to reboot the router.



Reboot

Click this button to reboot the device.

Figure 3-62 Reboot the router

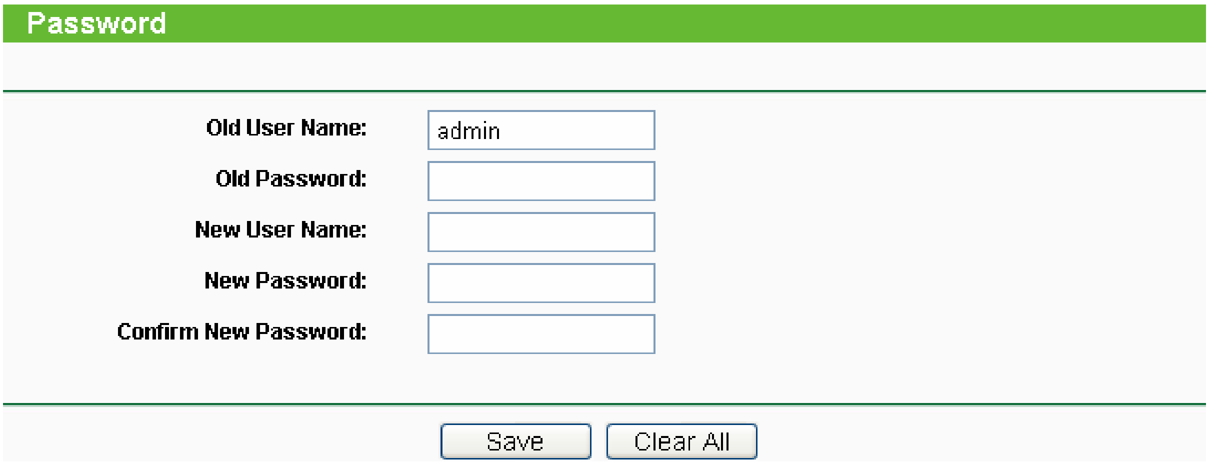
Click the **Reboot** button to reboot the router.

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

- Change LAN IP Address. (System will reboot automatically)
- MAC Clone (system will reboot automatically)
- DHCP service function.
- Static address assignment of DHCP server.
- Web Service Port of the router.
- Upgrade the firmware of the router (system will reboot automatically).
- Restore the router's settings to factory default (system will reboot automatically).

3.12.6 Password

This page (shown in Figure 3-63) allows you to change the factory default user name and password of the router.



Password

Old User Name:	admin
Old Password:	
New User Name:	
New Password:	
Confirm New Password:	

Figure 3-63 Password

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

☞ **Note:**

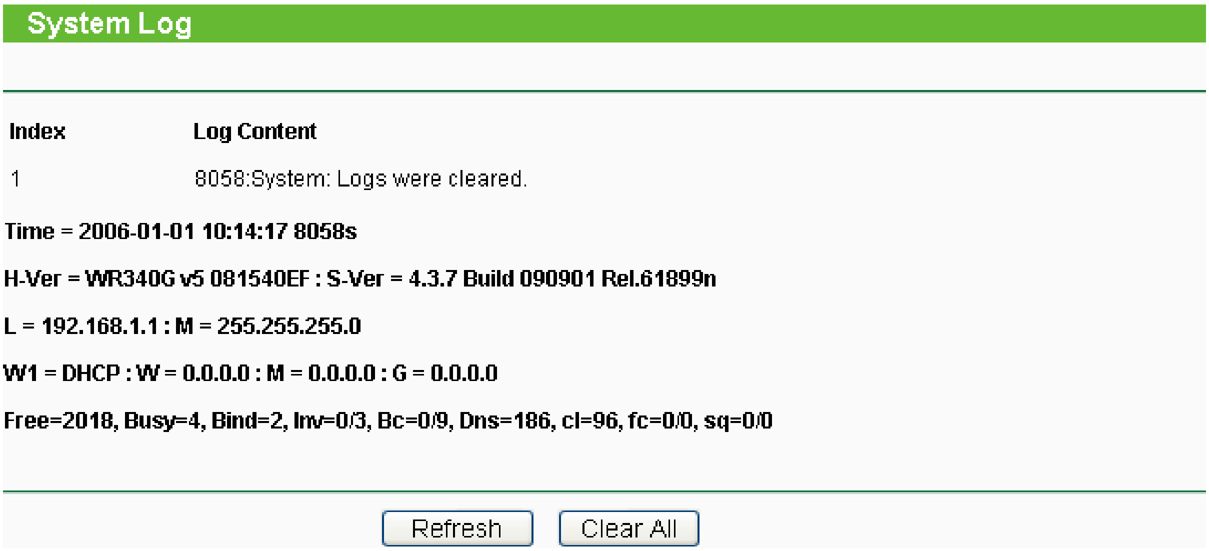
The new user name and password must not exceed 14 characters in length and must not include any spaces. Enter the new Password twice to confirm it.

Click the **Save** button when finished.

Click the **Clear All** button to clear all.

3.12.7 Syslog

This page (shown in Figure 3-64) allows you to query the logs of the router.



System Log

Index	Log Content
1	8058:System: Logs were cleared.

```
Time = 2006-01-01 10:14:17 8058s
H-Ver = WR340G v5 081540EF : S-Ver = 4.3.7 Build 090901 Rel.61899n
L = 192.168.1.1 : M = 255.255.255.0
W1 = DHCP : W = 0.0.0.0 : M = 0.0.0.0 : G = 0.0.0.0
Free=2018, Busy=4, Bind=2, Inv=0/3, Bc=0/9, Dns=186, cl=96, fc=0/0, sq=0/0
```

Figure 3-64 System Log

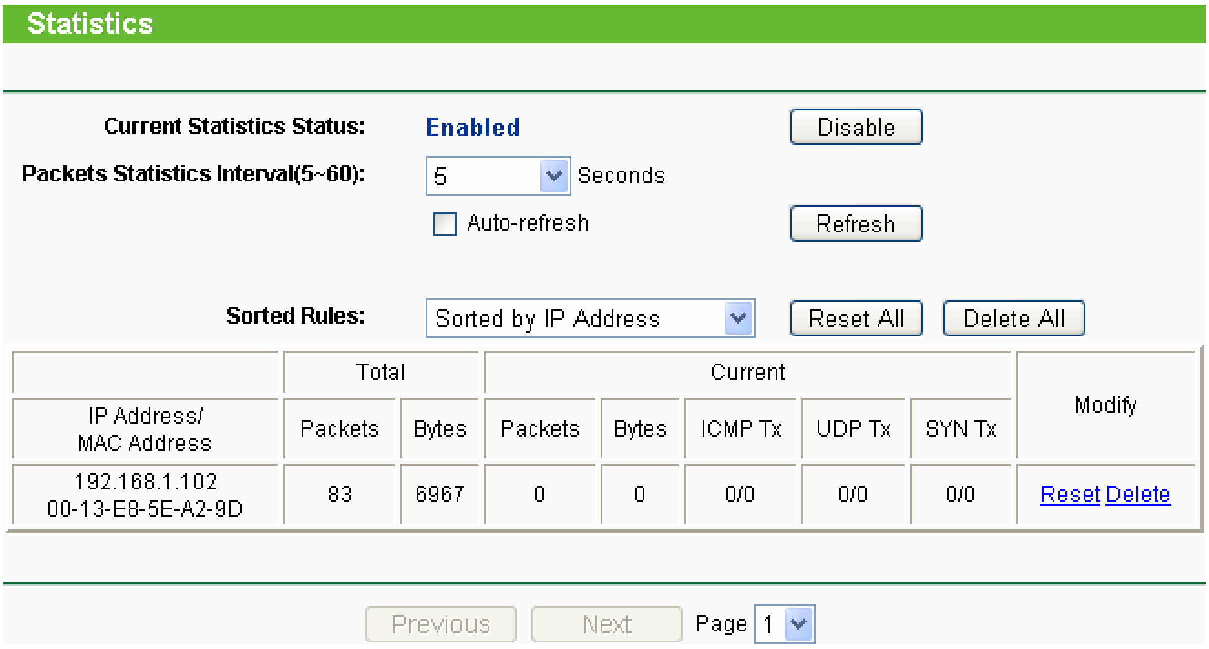
The router can keep logs of all traffic. You can query the logs to find what happened to the router.

Click the **Refresh** button to refresh the logs.

Click the **Clear Log** button to clear all the logs.

3.12.8 Statistics

The Statistics page (shown in Figure 3-65) displays the network traffic of each PC in LAN, including total traffic and traffic of the last **Packets Statistic interval** seconds.



Statistics

Current Statistics Status: Enabled [Disable]

Packets Statistics Interval(5~60): 5 Seconds

□ Auto-refresh [Refresh]

Sorted Rules: Sorted by IP Address [Reset All] [Delete All]

	Total		Current					Modify
IP Address/ MAC Address	Packets	Bytes	Packets	Bytes	ICMP Tx	UDP Tx	SYN Tx	
192.168.1.102 00-13-E8-5E-A2-9D	83	6967	0	0	0/0	0/0	0/0	Reset Delete

Figure 3-65 Statistics

- **Current Statistics Status -** Enable or Disable. The default value is disabled. To enable, click the **Enable** button. If disabled, the function of DoS protection in Security settings will be ineffective.
- **Packets Statistics Interval -** 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.
- **Sorted Rules -** Here displays sort as desired.

Statistics Table:

IP Address		The IP Address displayed with statistics
Total	**Packets**	The total amount of packets received and transmitted by the router.
	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.
	Bytes	The total amount of bytes received and transmitted in the last **Packets Statistic interval** seconds.
	ICMP Tx	The total amount of the ICMP packets transmitted to WAN in the last **Packets Statistic interval** seconds.
	UDP Tx	The total amount of the UDP packets transmitted to WAN in the last **Packets Statistic interval** seconds.
	TCP SYN Tx	The total amount of the TCP SYN packets transmitted to WAN in the last **Packets Statistic interval** seconds.

Click the **Save** button to save the **Packets Statistic interval** value.

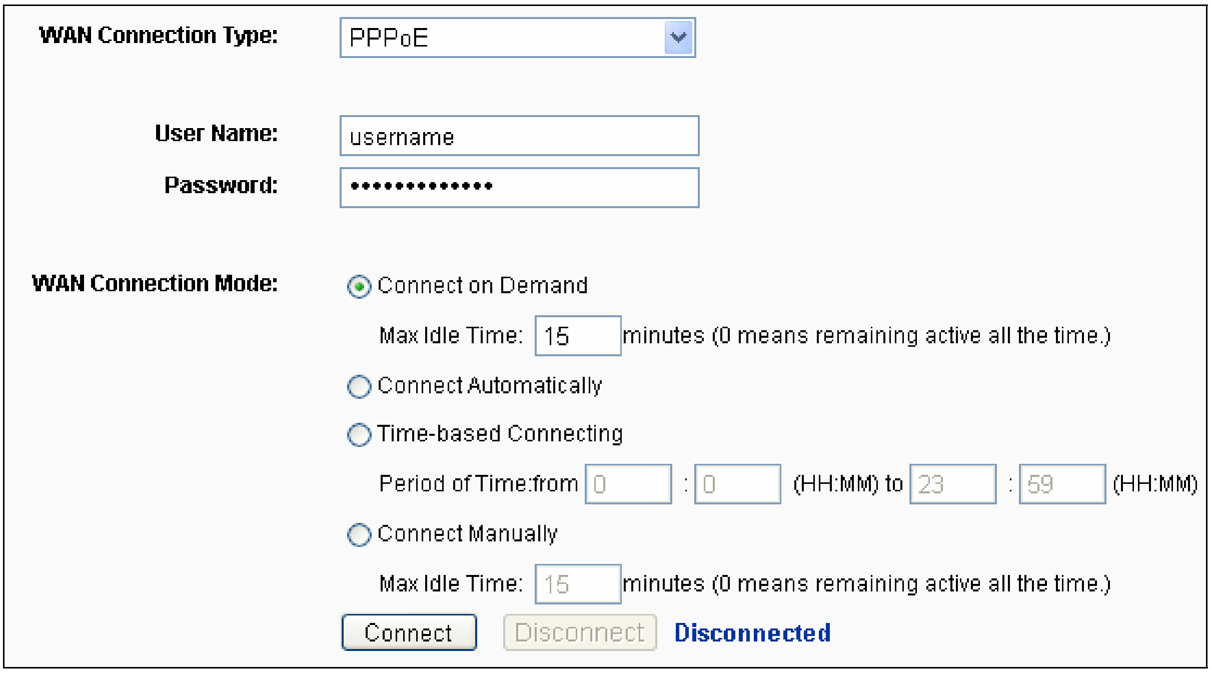
Click the **Auto-refresh** checkbox to refresh automatically.

Click the **Refresh** button to refresh immediately.

Appendix A: FAQ

1. How do I configure the router to access Internet by ADSL users?

1) First, configure the ADSL Modem configured in RFC1483 bridge model.
2) Connect the Ethernet cable from your ADSL Modem to the WAN port on the router. The telephone cord plugs into the Line port of the ADSL Modem.
3) Login to the router, click the "Network" menu on the left of your browser, and click "WAN" submenu. On the WAN page, select "PPPoE" for WAN Connection Type. Type user name in the "User Name" field and password in the "Password" field, finish by clicking "Connect".



WAN Connection Type: PPPoE

User Name: username

Password: ••••••••••••••

WAN Connection Mode:

● Connect on Demand

Max Idle Time: 15 minutes (0 means remaining active all the time.)

○ Connect Automatically

○ Time-based Connecting

Period of Time:from 0 : 0 (HH:MM) to 23 : 59 (HH:MM)

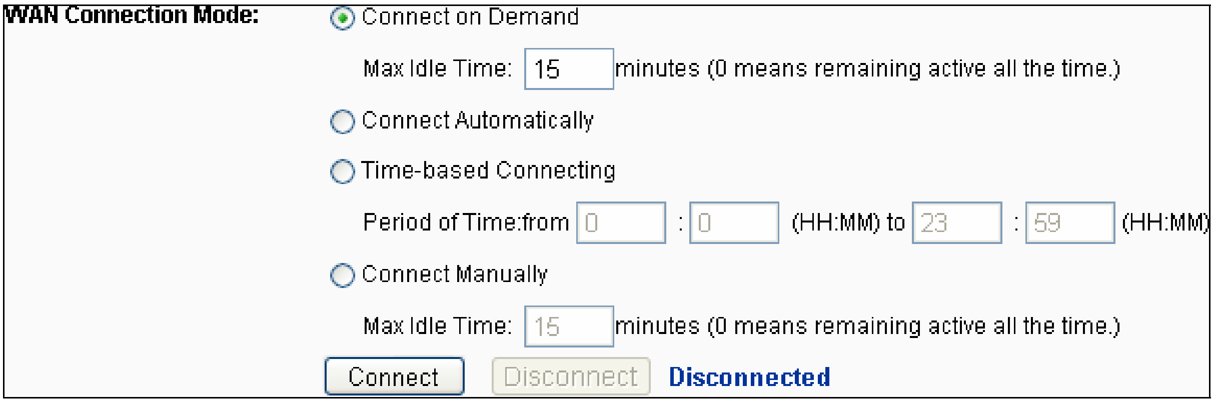
○ Connect Manually

Max Idle Time: 15 minutes (0 means remaining active all the time.)

Disconnected

PPPoE Connection Type

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 number for "Max Idle Time" to avoid wasting paid time. Otherwise, you can select "Connect Automatically" for Internet connection mode.



WAN Connection Mode:

● Connect on Demand

Max Idle Time: 15 minutes (0 means remaining active all the time.)

○ Connect Automatically

○ Time-based Connecting

Period of Time:from 0 : 0 (HH:MM) to 23 : 59 (HH:MM)

○ Connect Manually

Max Idle Time: 15 minutes (0 means remaining active all the time.)

Disconnected

PPPoE Connection Mode

☞ **Note:**

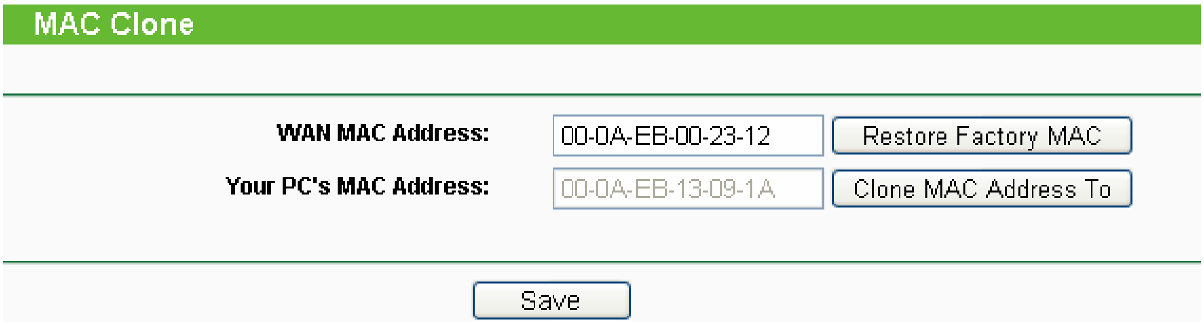
Sometimes the connection cannot be disconnected although you specify a time to Max Idle Time, since some applications is visiting the Internet continually in the background.

If you are a Cable user, please configure the router following the above steps.

2. How do I configure the router to access Internet by Ethernet users?

1) Login to the router, click the “Network” menu on the left of your browser, and click "WAN" submenu. On the WAN page, select “Dynamic IP” for "WAN Connection Type", 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 MAC register, login to the router and click the "Network" menu link on the left of your browser, and then click "MAC Clone" submenu link. On the "MAC Clone" page, if your PC’s MAC address is proper MAC address, click the "Clone MAC Address" button and your PC’s MAC address will fill in the "WAN MAC Address" field. Or else, type the MAC Address into the "WAN MAC Address" field. The format for the MAC Address is XX-XX-XX-XX-XX-XX. Then click the "Save" button. It will take effect after rebooting.



MAC Clone

WAN MAC Address: 00-0A-EB-00-23-12

Your PC's MAC Address: 00-0A-EB-13-09-1A

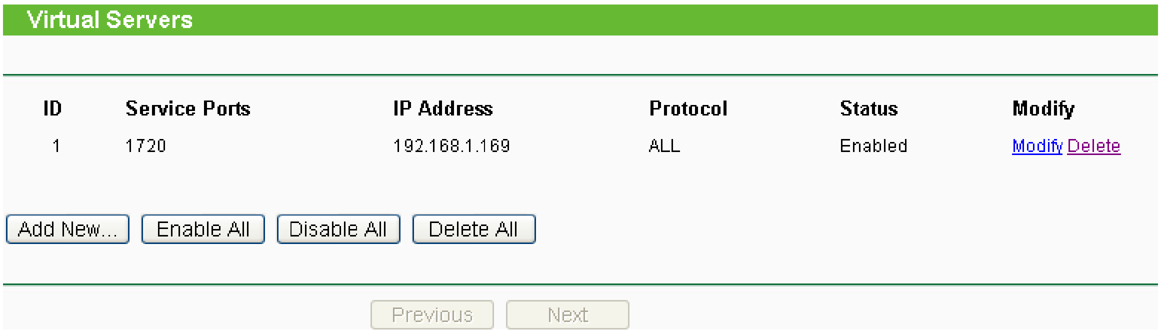
MAC Clone

3. I want to use Netmeeting, what do I need to do?

1) If you start Netmeeting as a sponsor, you don’t need to do anything with the router.

2) If you start as a response, you need to configure Virtual Server or DMZ Host.

3) How to configure Virtual Server: Login to the router, click the “Forwarding” menu on the left of your browser, and click "Virtual Servers" submenu. On the "Virtual Server" page, click **Add New,** then on the “Add or Modify a Virtual Server” page, enter “1720” into the blank behind the “Service Port”, and your IP address behind the IP Address, assuming 192.168.1.169 for an example, remember to “Enable” and “Save”.



Virtual Servers

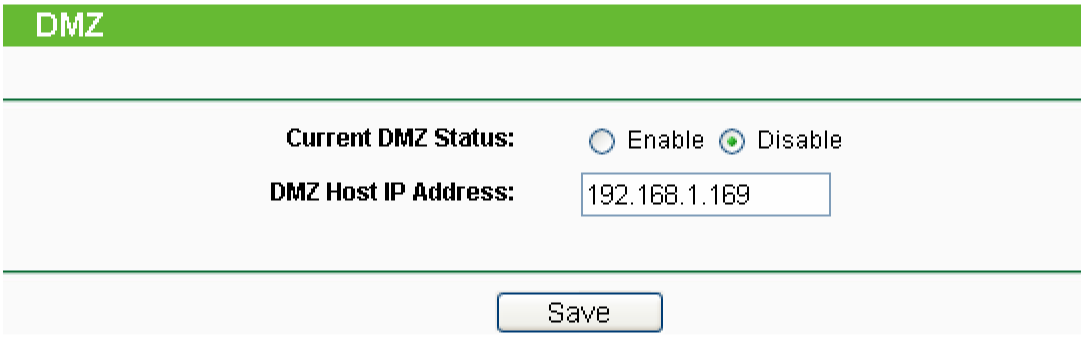
ID	Service Ports	IP Address	Protocol	Status	Modify
1	1720	192.168.1.169	ALL	Enabled	Modify Delete

Virtual Servers

☞ **Note:**

Your opposite side should call your WAN IP, which is displayed on the “Status” page.

4) How to enable DMZ Host: Login to the router, click the “Forwarding” menu on the left of your browser, and click "DMZ" submenu. On the "DMZ" page, click “Enable” radio and type your IP address into the “DMZ Host IP Address” field, using 192.168.1.169 as an example, remember to click the "Save” button.



DMZ

Current DMZ Status: ○ Enable ● Disable

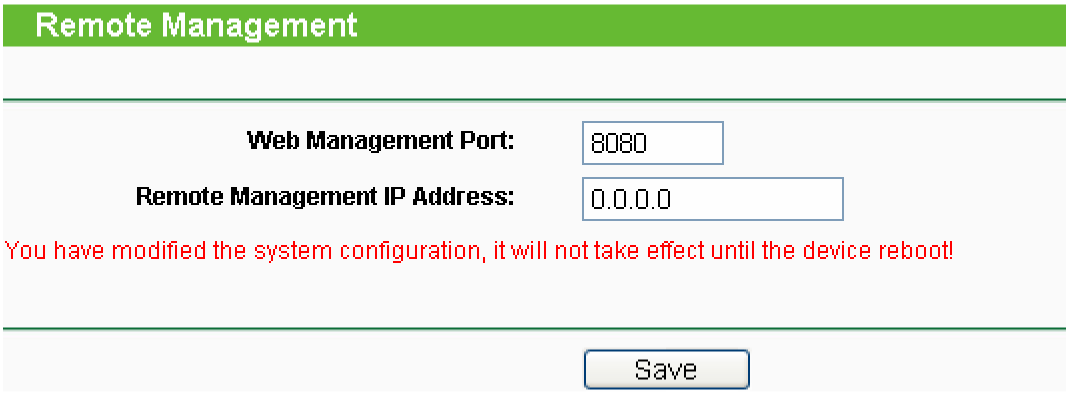
DMZ Host IP Address: 192.168.1.169

DMZ

4. I want to build a WEB Server on the LAN, what should I do?

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.

To change the WEB management port number: Login to the router, click the “Security” menu on the left of your browser, and click "Remote Management" submenu. On the "Remote Management" page, type a port number except 80, such as 8080, into the "Web Management Port" field. Click “Save” and reboot the router.



Remote Management

Web Management Port: 8080

Remote Management IP Address: 0.0.0.0

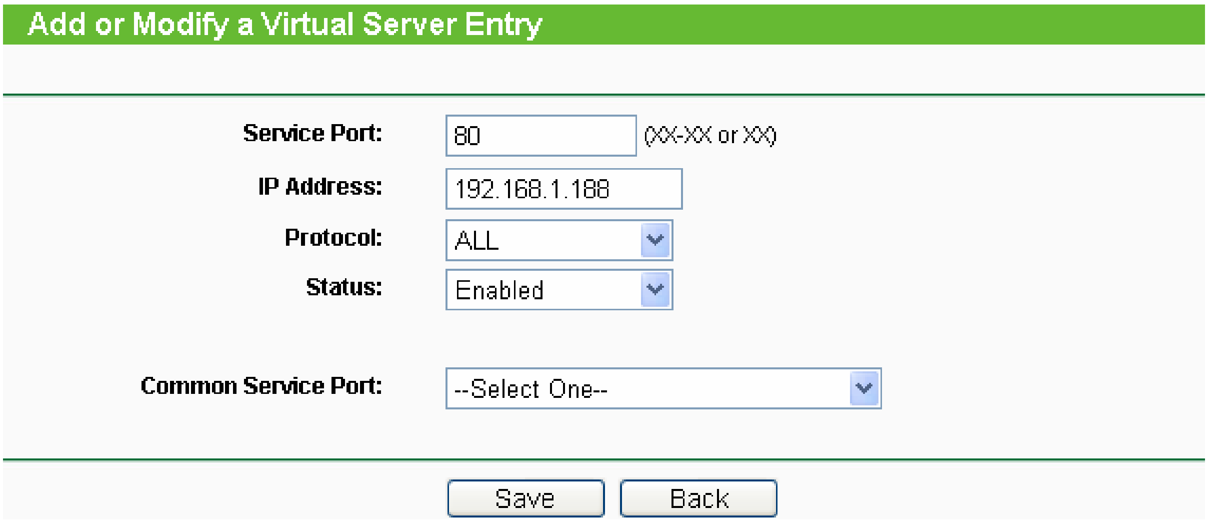
You have modified the system configuration, it will not take effect until the device reboot!

Remote Management

☞ **Note:**

If the above configuration takes effect, to configure to the router by typing http://192.168.1.1:8080 in the address field of the web browser.

Login to the router, click the “Forwarding” menu on the left of your browser, and click the "Virtual Servers" submenu. On the "Virtual Server" page, enter “80” into the blank below the “Service Port”, and your IP address below the IP Address, assuming 192.168.1.188 for an example, remember to “Enable” and “Save”.



Add or Modify a Virtual Server Entry

Service Port:	80 (XX-XX or XX)
IP Address:	192.168.1.188
Protocol:	ALL
Status:	Enabled
Common Service Port:	--Select One--

Virtual Server

Appendix B: Specifications

General	
Standards and Protocols	IEEE 802.3,IEEE 802.3u, IEEE 802.11b and IEEE 802.11g TCP/IP, PPPoE, DHCP, ICMP, NAT, SNTP
Safety & Emission	FCC、CE
LEDs	Power, SYS, WLAN, WAN, 1-4
Ports	One 10/100M Auto-Negotiation WAN RJ45 port, Four 10/100M Auto-Negotiation LAN RJ45 ports supporting Auto MDI/MDIX
Wireless	
Modulation	IEEE 802.11b: DQPSK, DBPSK, DSSS, and CCK IEEE 802.11g: BPSK, QPSK, 16QAM, 64QAM, OFDM
Frequency	2400 ~ 2483.5MHz
Channels	13
Wireless Data Rates	IEEE 802.11b: 11, 5.5, 2, and 1Mbps IEEE 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps
Media Access Protocol	CSMA/CA with ACK
Security	WEP/WPA/WPA2
Physical and Environment	
Working Temperature	0℃~40℃ (32℉~104℉)
Storage Temperature	-40℃~70℃（-40℉~158℉）
Working Humidity	10% ~ 90% RH, Non-condensin
Storage Humidity	5% ~ 90% RH, Non-condensing

Appendix C: Glossary

Access Point - A device that allows wireless-equipped computers and other devices to communicate with a wired network. Also used to expand the range of a wireless network.

Ad-hoc Network - An ad-hoc network is a group of computers, each with a wireless adapter, connected as an independent IEEE 802.11 wireless LAN. Ad-hoc wireless computers operate on a peer-to-peer basis, communicating directly with each other without the use of an access point. Ad-hoc mode is also referred to as an Independent Basic Service Set (IBSS) or as peer-to-peer mode, and is useful at a departmental scale or SOHO operation.

AES (Advanced Encryption Standard) - A security method that uses symmetric 128-bit block data encryption.

ATM (Asynchronous Transfer Mode) - ATM is a cell based transfer mode that requires variable length user information to be segmented and reassembled to/from short, fixed length cells. It uses two different methods for carrying connectionless network interconnect traffic, routed and bridged Protocol Data Units (PDUs), over an ATM network.

Bridging - A device that connects different networks.

Browser - An application program that provides a way to look at and interact with all the information on the World Wide Web.

DDNS (Dynamic Domain Name System) - Allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (e.g., www.xyz.com) and a dynamic IP address.

Default Gateway - A device that forwards Internet traffic from your local area network.

DHCP - A networking protocol that allows administrators to assign temporary IP addresses to network computers by “leasing” an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.

DMZ (Demilitarized Zone) - Removes the Router's firewall protection from one PC, allowing it to be “seen” from the Internet.

DNS (Domain Name Server) - The IP address of your ISP's server, which translates the names of websites into IP addresses.

☞ **Note:**

Now, all the configurations are finished, it will take effect after reboot.