

WRTR-168G
SpeedPlus Wireless-G AP/Router

User's Manual

Version 1.0

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1. Introduction

Thank you for purchasing your SpeedPlus Wireless-G AP/Router.
This user guide will assist you with the installation procedure.

Package Contents

Please make sure you have the following in the box:

- ◆ SpeedPlus Wireless-G AP/Router
- ◆ Quick Installation Guide
- ◆ User Manual CD-ROM
- ◆ Universal AC/DC Power Adapter
- ◆ RJ-45 Network Cable

Note: if anything is missing, please contact your vendor

2. Safety Notification

Your Wireless Router should be placed in a safe and secure location. To ensure proper operation, please keep the unit away from water and other damaging elements. Please read the user manual thoroughly before you install the device.

The device should only be repaired by authorized and qualified engineer.

Please do not try to open or repair the device yourself.

Do not place the device in a damp or humid location, i.e. a bathroom.

The device should be placed in a sheltered and non-slip location within a temperature range of +5 to +40 Celsius degree.

Please do not expose the device to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.

3. Hardware Installation

Front Panel

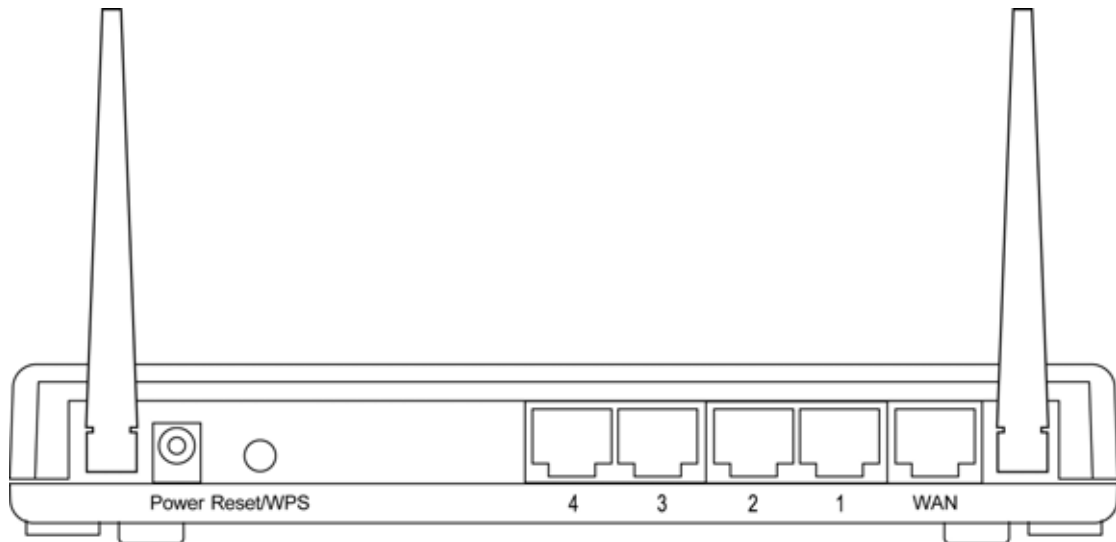
The front panel provides LED's for device status. Refer to the following table for the meaning of each feature.



LED Name	Light Status	Description
PWR	On	Router is switched on and correctly powered.
WLAN	On	Wireless WPS function is enabled.
	Off	Wireless network is switched off.
	Flashing	Wireless LAN activity (transferring or receiving data).
WAN 10/100M	On	WAN port (Internet) is running at 100Mbps.
	Off	WAN port (Internet) is running at 10Mbps.
	Flashing	WAN activity (transferring or receiving data).
WAN LNK/ACT	On	WAN port is connected.
	Off	WAN port is not connected.
	Flashing	WAN activity (transferring or receiving data).
LAN 10/100M	On	LAN port is running at 100Mbps.
	Off	LAN port is running at 10Mbps.
LAN LNK/ACT	On	LAN port is connected.
	Off	LAN port is not connected.
	Flashing	LAN activity (transferring or receiving data).

Rear Panel

The rear panel features 4 LAN ports, 1 WAN port and Reset/WPS button. Refer to the following table for the meaning of each feature.



Power	The POWER port is where you will connect the power adapter.
WAN	The WAN port is where you will connect your broadband Internet connection.
LAN 1,2,3,4	These ports (1, 2, 3, 4) connect the Router to your networked PCs and other Ethernet network devices.
RESET/WPS	Reset the router to factory default settings (clear all settings) or start WPS function. Press this button and hold for 10 seconds to restore all settings to factory defaults, and press this button for less than 5 seconds to start WPS function.

AP Router Default Settings

User	admin
Password	1234
IP Address	192.168.2.1
Subnet Mask	255.255.255.0
RF ESSID	default
Channel	11
Radio Band	Wide (Full speed to 300Mbps)
Mode	BGN Mixed
Encryption	Disabled
WPS Function	Enabled
DHCP Server	Enabled

Hardware Installation for Connection to Your Broadband Modem

1. Power off your network devices.
2. Locate an optimum location for the Router. The best place for the Router is usually at the center of your wireless network, with line of sight to all of your wireless devices.
3. Adjust the antennas. Normally, higher location of your Router will get better performance.
4. Using a standard Ethernet network cable, connect the Router's Internet port to your broadband modem.
5. Connect your network PCs or Ethernet devices to the Router's LAN ports using standard Ethernet network cable.
6. Connect the AC power adapter to the Router's Power port. Then connect the other end to an electrical outlet. Only use the power adapter supplied with the Router. Use of a different adapter may cause product damage.
7. The Hardware installation is complete; please refer to the following content for Router configuration.

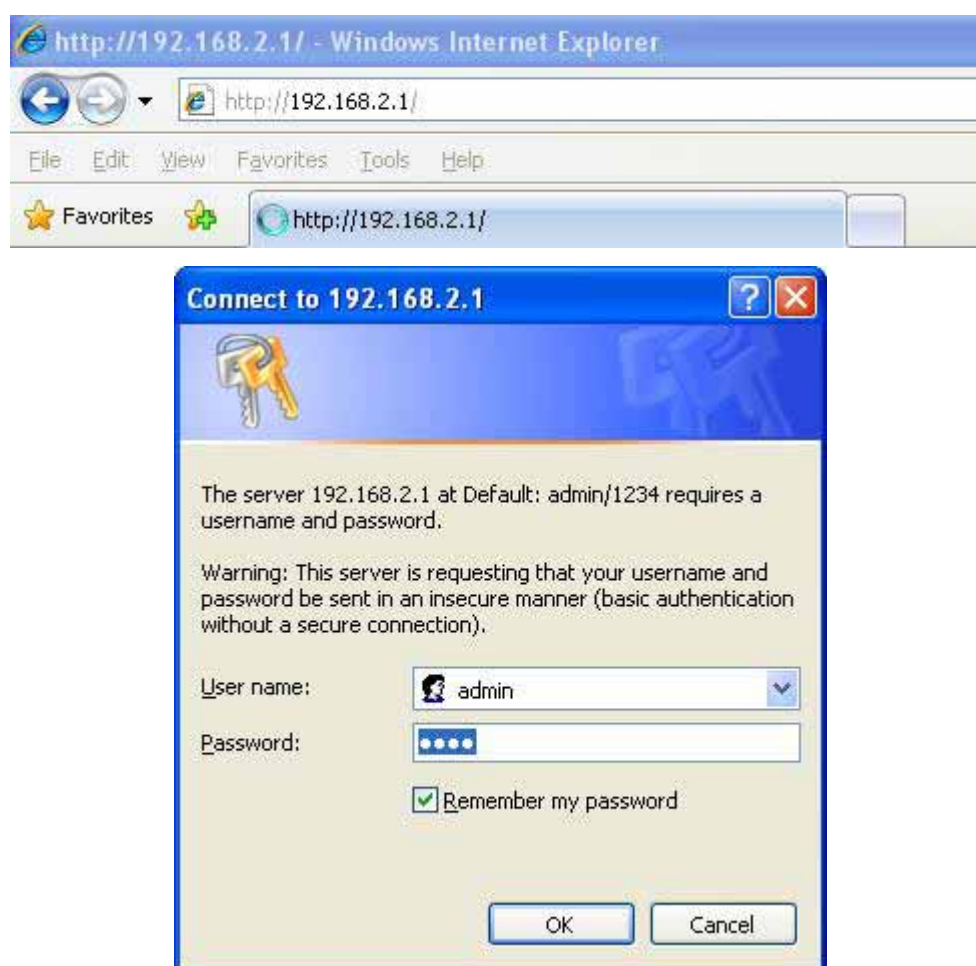
4. How to Configuring the AP/ Router

TURN ON POWER SUPPLY

Quick power cycle would cause system corruption. When power on, be careful not to shut down in about 5 seconds, because data is writing to the flash.

START UP & LOGIN

In order to configure the SpeedPlus Wireless-G AP/Router, you must use web browser and manually input `http://192.168.2.1` into the Address box and press Enter. The Main Page will appear.



In order to configure the SpeedPlus Wireless-G AP/Router, you must input the password into the **Password** box and leave blank on the **User Name** box. The default User name is “**admin**” and password is “**1234**”.

Once you have logged-in as administrator, it is a good idea to change the administrator password to ensure a secure protection to the SpeedPlus Wireless-G AP/Router. The Security Settings section described later in this manual describes how to change the password.

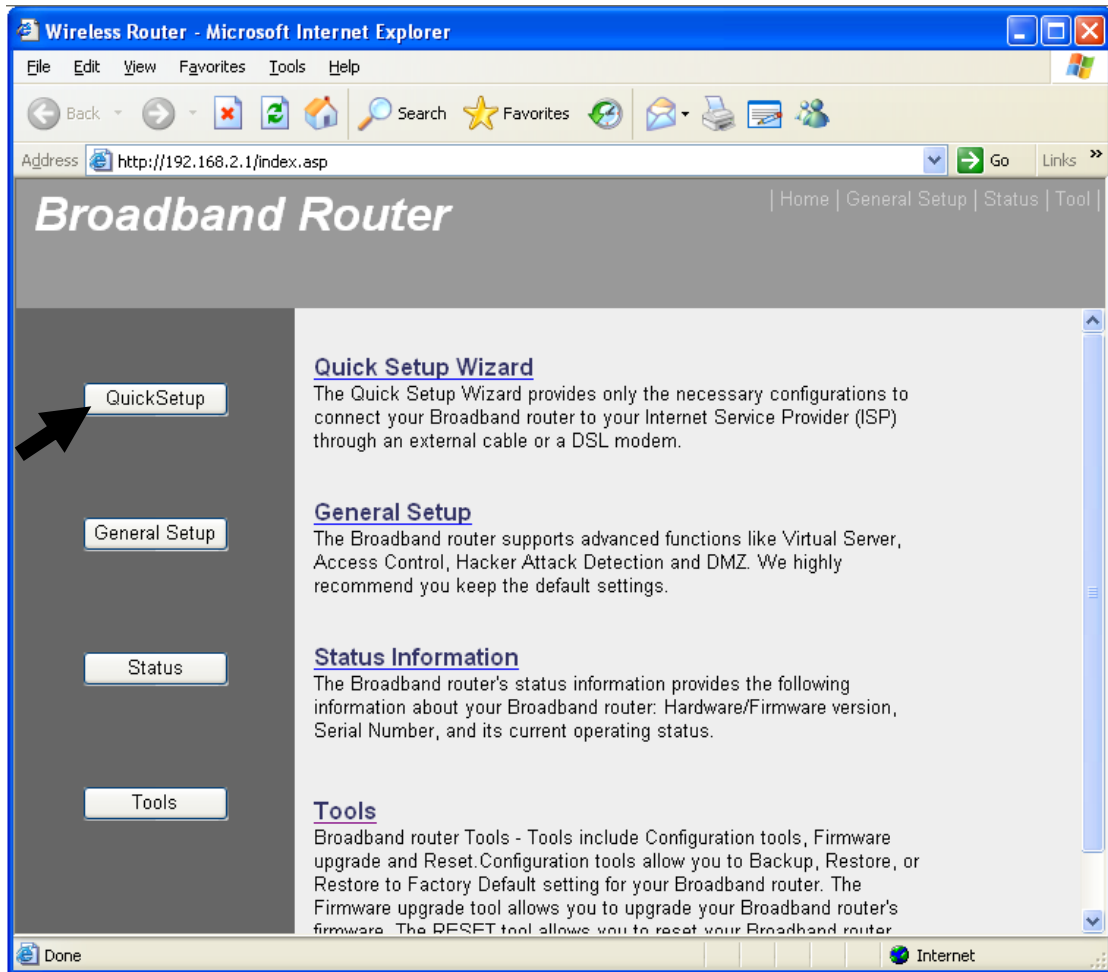
Once you have input the correct password and logged-in, the screen will change to the setup page screen.

4.1 Quick Setup

MAKE CORRECT NETWORK SETTINGS OF YOUR COMPUTER

To change the configuration, use Internet Explorer (IE) or Netscape Communicator to connect the WEB management **192.168.2.1**.

Please go to Quick Setup menu by clicking 'Quick Setup' button.



Most users will be able to configure the AP Router and get it working properly using the settings on this screen. Some Internet Service Providers (ISPs) will require that you enter broadband specific information into this device, such as User Name, Password, IP Address, Default Gateway Address, or DNS IP Address for Internet access. This information can be obtained from your ISP, if required.

And the following message will be displayed:

◆ Set Time Zone

Set Time Zone :	(GMT-06:00)Central Time (US & Canada)
Time Server Address :	192.43.244.18
Daylight Savings :	<input checked="" type="checkbox"/> Enable Function Times From January 1 To January 1

Next

Here are descriptions of every setup items:

Set Time Zone: Please press button, a drop-down list will be shown, and you can choose a time zone of the location you live.

Time Server Address: Input the IP address / host name of time server here

Daylight Savings: If the country you live uses daylight saves, please check 'Enable Function' box, and choose the duration of day light saving.

After you finish with all settings, please click 'Next' button.

◆ Broadband Type

Broadband Type

Specify the WAN connection type required by your Internet Service Provider. Specify a Cable modem, Fixed-IP xDSL, PPPoE xDSL or PPTP xDSL connection.

Cable Modem

A connection through a cable modem requires minimal configuration. When you set up an account with your Cable provider, the Cable provider and your Broadband router will automatically establish a connection, so you probably do not need to enter anything more.

Fixed-IP xDSL

Some xDSL Internet Service Providers may assign a Fixed IP Address for your Broadband router. If you have been provided with this information, choose this option and enter the assigned IP Address, Subnet Mask, Gateway IP Address and DNS IP Address for your Broadband router.

PPPoE xDSL

If you connect to the Internet using an xDSL Modem and your ISP has provided you with a Password and a Service Name, then your ISP uses PPPoE to establish a connection. You must choose this option and enter the required information.

PPTP xDSL

If you connect to the Internet using an xDSL Modem and your ISP has provided you with a Password, Local IP Address, Remote IP Address and a Connection ID, then your ISP uses PPTP to establish a connection. You must choose this option and enter the required information.

L2TP xDSL

Layer Two Tunneling Protocol is a common connection method used in xDSL connections.

Telstra Big Pond

If your Internet service is provided by Telstra Big Pond in Australia, you will need to enter your information below, This information is provided by Teistra BigPond.

◆ Setup procedure for 'Cable Modem':

Cable Modem

Host Name :	<input type="text"/>
MAC address :	000000000000

Clone Mac address

Back OK

Host Name:

Please input the host name of your computer, this is optional, and only required if your service provider asks you to do so.

MAC address:

Please input MAC address of your computer here, if your service provider only permits computer with certain MAC address to access internet. If you're using the computer which used to connect to Internet via cable modem, you can simply press 'Clone Mac address' button to fill the MAC address field with the MAC address of your computer.

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'.

◆ Setup procedure for 'Fixed-IP xDSL':

Fixed-IP xDSL
Enter the IP Address, Subnet Mask, Gateway IP Address and DNS IP Address provided to you by your ISP in the appropriate fields.

IP address assigned by your Service Provider :	<input type="text" value="172.1.1.1"/>
Subnet Mask :	<input type="text" value="255.255.0.0"/>
DNS address :	<input type="text"/>
Service Provider Gateway Address :	<input type="text" value="172.1.1.254"/>

IP address assigned by your Service Provider:

Please input IP address assigned by your service provider.

Subnet Mask:

Please input subnet mask assigned by your service provider.

DNS address:

Please input the IP address of DNS server provided by your service provider.

Service Provider Gateway Address:

Please input the IP address of DNS server provided by your service provider.

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'

◆ **Setup procedure for 'PPPoE xDSL':**

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

User Name :	<input type="text"/>
Password :	<input type="password"/>
Service Name :	<input type="text"/>
MTU :	<input type="text" value="1392"/> (512<=MTU Value<=1492)
Connection Type :	<input type="button" value="Connect on Demand"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000minutes)

User Name:

Please input user name assigned by your Internet service provider here.

Password:

Please input the password assigned by your Internet service provider here.

Service Name:

Please give a name to this Internet service, this is optional.

MTU:

Please input the MTU value of your network connection here. If you don't know, you can use default value.

Connection Type:

Please select the connection type of Internet connection you wish to use (detailed explanation listed below).

Idle Time Out:

Please input idle time out, (detailed explanation listed below).

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'

◆ **Setup procedure for 'PPTP xDSL':**

PPTP xDSL requires two kinds of setting: WAN interface setting (setup IP address) and PPTP setting (PPTP user name and password). Here we start from WAN interface setting:

• **WAN Interface Settings**

Obtain an IP address automatically

Host Name :	<input type="text"/>
MAC address :	<input type="text" value="000000000000"/> <input type="button" value="Clone Mac address"/>

Use the following IP address

IP address :	<input type="text" value="0.0.0.0"/>
Subnet Mask :	<input type="text" value="0.0.0.0"/>
Default Gateway :	<input type="text" value="0.0.0.0"/>

Select the type of how you obtain IP address from your service provider here. You can choose 'Obtain an IP address automatically' (equal to DHCP, please refer to 'Cable Modem' section above), or 'Use the following IP address' (i.e. static IP address).

WAN interface settings must be correctly set, or the Internet connection will fail even those settings of PPTP settings are correct. Please contact your Internet service provider if you don't know what you should fill in these fields.

Now please go to PPTP settings section:

• **PPTP Settings**

User ID :	<input type="text"/>
Password :	<input type="text"/>
PPTP Gateway :	<input type="text" value="0.0.0.0"/>
Connection ID :	<input type="text"/> (Optional)
MTU :	<input type="text" value="1392"/> (512<= MTU Value<=1492)
BEZEQ-ISRAEL :	<input type="checkbox"/> Enable (for BEZEQ network in ISRAEL use only)
Connection Type :	<input type="text" value="Continuous"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000minutes)

User ID:

Please input user ID (user name) assigned by your Internet service provider here.

Password:

Please input the password assigned by your Internet service provider here.

PPTP Gateway:

Please input the IP address of PPTP gateway assigned by your Internet service provider here.

Connection ID:

Please input the connection ID here, this is optional and you can leave it blank.

MTU:

Please input the MTU value of your network connection here. If you don't know, you can use default value.

BEZEQ-ISRAEL:

Setting item 'BEZEQ-ISRAEL' is only required to check if you're using the service provided by BEZEQ network in Israel.

Connection type:

Please select the connection type of Internet connection you wish to use, please refer to last section for detailed descriptions.

Idle Time Out:

Please input the idle time out of Internet connection you wish to use, and refer to last section for detailed descriptions.

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'

◆ **Setup procedure for 'L2TP xDSL':**

L2TP is another popular connection method for xDSL and other Internet connection types, and all required setting items are the same with PPTP connection.

Like PPTP, there are two kinds of required setting, we'll start from 'WAN Interface Settings':

• **WAN Interface Settings**

Obtain an IP address automatically

Host Name :

MAC address :

Use the following IP address

IP address :

Subnet Mask :

Default Gateway :

Please select the type of how you obtain IP address from your service provider here. You can choose 'Obtain an IP address automatically' (equal to DHCP, please refer to 'Cable Modem' section above), or 'Use the following IP address' (equal to static IP address, please refer to 'PPPoE xDSL' section above).

WAN interface settings must be correctly set, or the Internet connection will fail even those settings of PPTP settings are correct. Please contact your Internet service provider if you don't know what you should fill in these fields.

Now please go to L2TP settings section:

• L2TP Settings

User ID :	<input type="text"/>
Password :	<input type="password"/>
L2TP Gateway :	<input type="text"/>
MTU :	<input type="text" value="1392"/> (512<=MTU Value<=1492)
Connection Type :	<input type="text" value="Continuous"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000 minutes)

User ID:

Please input user ID (user name) assigned by your Internet service provider here.

Password:

Please input the password assigned by your Internet service provider here.

L2TP Gateway:

Please input the IP address of PPTP gateway assigned by your Internet service provider here.

MTU:

Please input the MTU value of your network connection here. If you don't know, you can use default value.

Connection type:

Please select the connection type of Internet connection you wish to use, please refer to last section for detailed descriptions.

Idle Time Out:

Please input the idle time out of Internet connection you wish to use, and refer to last section for detailed descriptions.

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'

◆ **Setup procedure for 'Telstra Big Pond':**

Telstra Big Pond (Australia Only)

If your Internet service is provided by Telstra Big Pond in Australia, you will need to enter your information below, This information is provided by Teistra BigPond.

User Name :	<input type="text"/>
Password :	<input type="password"/>
<input type="checkbox"/> User decide login server manually	
Login Server :	<input type="text" value="0.0.0.0"/>

User Name:

Please input the user name assigned by Telstra.

Password:

Please input the password assigned by Telstra.

User device login server manually:

Check this box to choose login server by yourself.

Login Server:

Please input the IP address of login server here.

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'

When all settings are finished, you'll see the following message displayed on your web browser:

Save setting successfully!

Please press APPLY button to restart the system for changes to take effect.

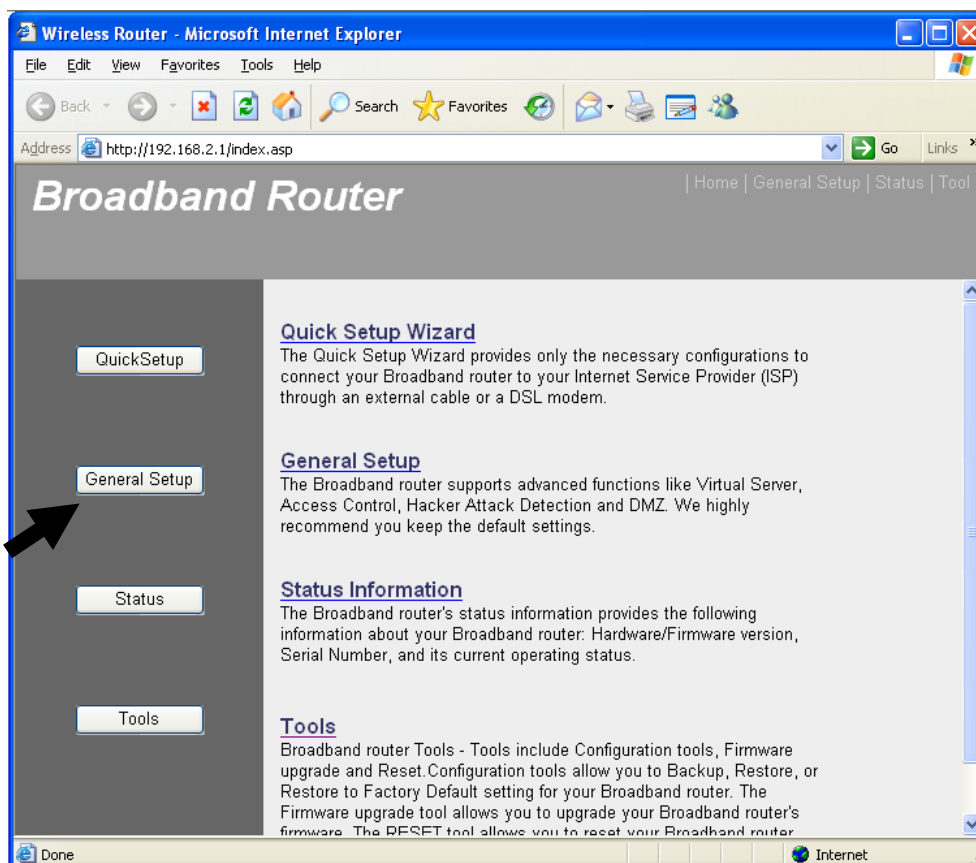
Please click 'Apply' button to prepare to restart the router, and you'll see this message:

System Restarting! Please wait for a while !

Please wait for about 30 seconds, then click 'OK!' button. You'll be back to router management interface again, and the router is ready with new settings.

4.2 General Setup

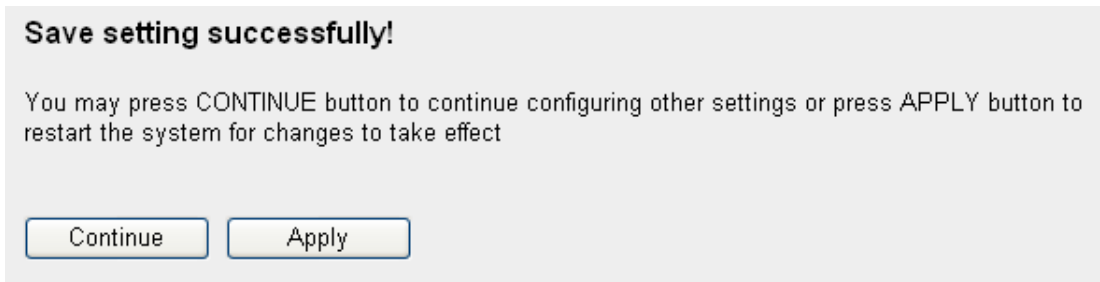
In this chapter, you'll know how to change the time zone, password, and remote management settings. Please start your web browser and log onto router web management interface, then click 'General Setup' button on the left, or click 'General Setup' link at the upper-right corner of web management interface.



◆ Time zone and time auto-synchronization:

Please follow the following instructions to set time zone and time auto-synchronization parameters:

Please click 'System' menu on the left of web management interface, then click 'Time Zone', and the following message will be displayed on your web browser: Please select time zone at 'Set time zone' drop-down list, and input the IP address or host name of time server. If you want to enable daylight savings setting, please check 'Enable Function' box, and set the duration of daylight setting. When you finish, click 'Apply'. You'll see the following message displayed on web browser:



Press 'Continue' to save the settings made and back to web management interface; press 'Apply' to save the settings made and restart the router so the settings will take effect after it reboots.

◆ **Change management password:**

Default password of this router is 1234, and it's displayed on the login prompt when accessed from web browser. There's a security risk if you don't change the default password, since everyone can see it. This is very important when you have wireless function enabled.

To change password, please follow the following instructions:

Please click 'System' menu on the left of web management interface, then click 'Password Settings', and the following message will be displayed on your web browser:

Here are descriptions of every setup items:

Current Password:

Please input current password here.

New Password:

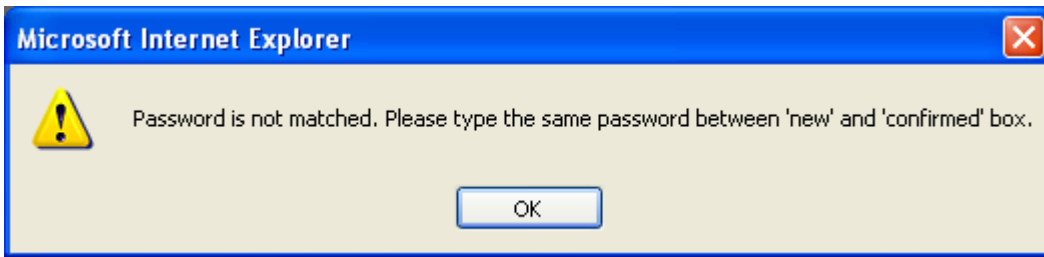
Please input new password here.

Confirmed Password:

Please input new password here again.

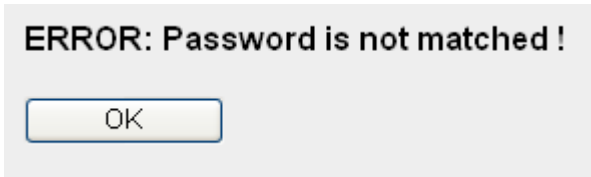
When you finish, click 'Apply'. If you want to keep original password unchanged, click 'Cancel'.

If the password you typed in 'New Password' (2) and 'Confirmed Password' (3) field are not the same, you'll see the following message:



Please retype the new password again when you see above message.

If you see the following message:



It means the content in 'Current Password' field is wrong, please click 'OK' to go back to previous menu, and try to input current password again.

If the current and new passwords are correctly entered, after you click 'Apply', you'll be prompted to input your new password:



Please use new password to enter web management interface again, and you should be able to login with new password.

◆ Remote Management

This router does not allow management access from Internet, to prevent possible security risks (especially when you defined a weak password, or didn't change default password). However, you can still management this router from a specific IP address by enabling the 'Remote Management' Function.

To do so, please follow the following instructions:

Please click 'System' menu on the left of web management interface, then click 'Remote Management', and the following message will be displayed on your web browser:

Host address	Port	Enabled
<input type="text" value="0.0.0.0"/>	<input type="text" value="8080"/>	<input type="checkbox"/>

Host Address:

Input the IP address of the remote host you wish to initiate a management access.

Port:

You can define the port number this router should expect an incoming request. If you're providing a web service (default port number is 80), you should try to use other port number. You can use the default port setting '8080', or something like '32245' or '1429'. (Any integer between 1 and 65534)

Enabled:

Select the field to start the configuration.

When you finish, click 'Apply'. If you want to keep original password unchanged, click 'Cancel'.

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Press 'Continue' to save the settings made and back to web management interface; press 'Apply' to save the settings made and restart the router so the settings will take effect after it reboots.

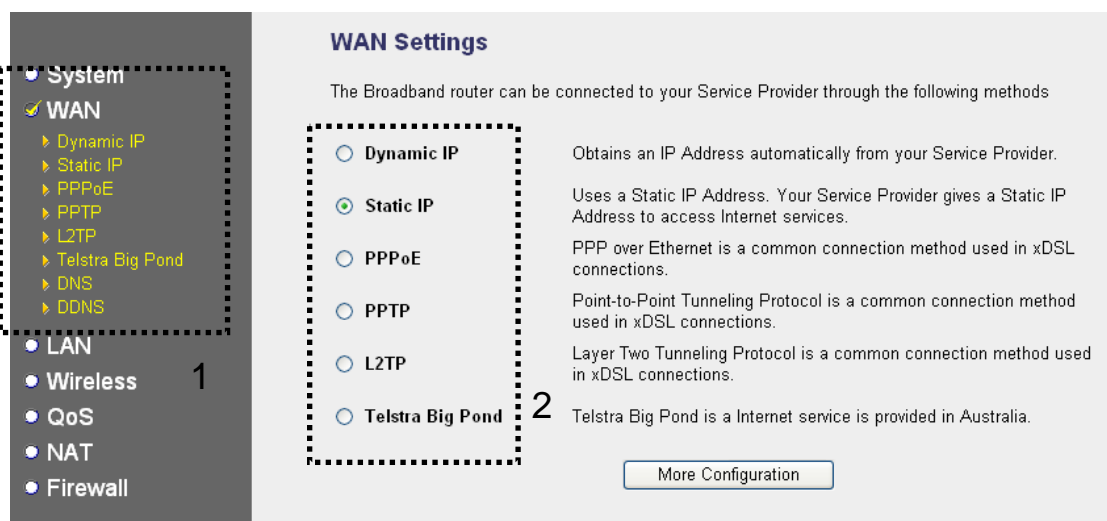
4.3 Setup Internet Connection (WAN Setup)

Internet connections setup can be done by using 'Quick Setup' menu described in chapter 4-1. However, you can setup WAN connections up by using WAN configuration menu. You can also set advanced functions like DDNS (Dynamic DNS) here.

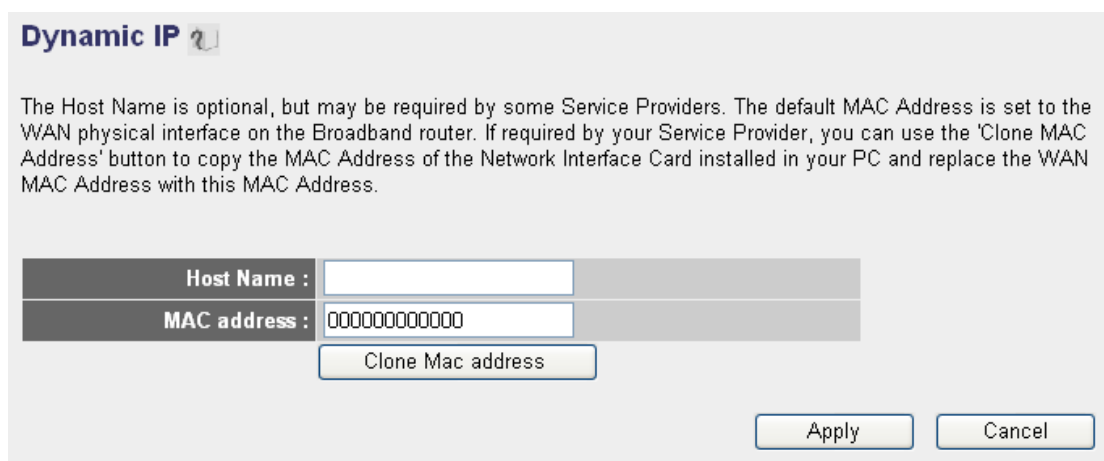
To start configuration, please follow the following instructions:

Please click 'WAN' menu on the left of web management interface, and the following message will be displayed on your web browser:

Please select an Internet connection method depend on the type of connection you're using. You can either click the connection method on the left (1) or right (2). If you select the connection method on the right, please click 'More Configuration' button after a method is selected.



Setup procedure for 'Dynamic IP':



Host Name:

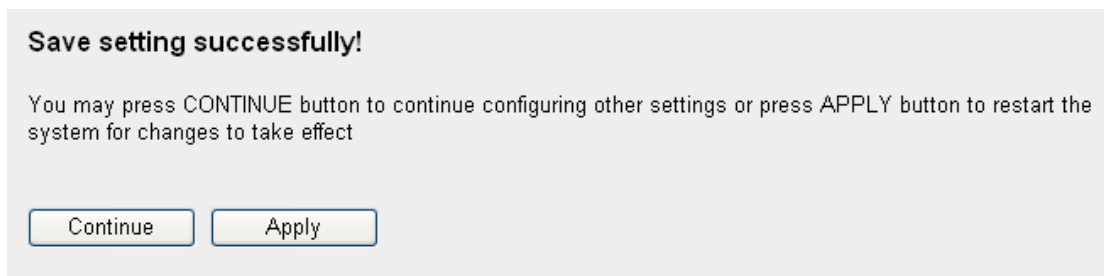
Please input the host name of your computer, this is optional, and only required if your service provider asks you to do so.

MAC address:

Please input MAC address of your computer here, if your service provider only permits computer with certain MAC address to access internet. If you're using the computer which used to connect to Internet via cable modem, you can simply press 'Clone Mac address' button to fill the MAC address field with the MAC address of your computer.

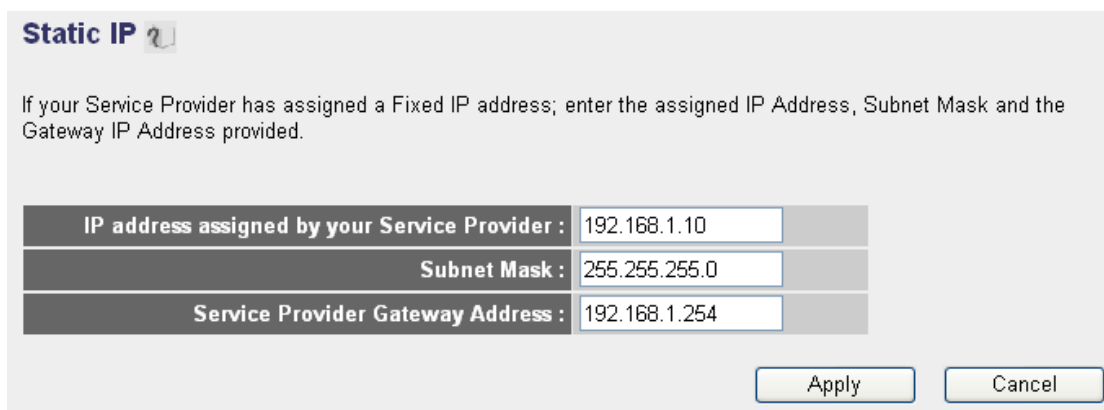
After you finish with all settings, please click 'Apply'; if you want to remove and value you entered, please click 'Cancel'.

After you click 'Apply', the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on router setup, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ Setup procedure for 'Static IP':



IP address assigned by your Service Provider:

Please input IP address assigned by your service provider.

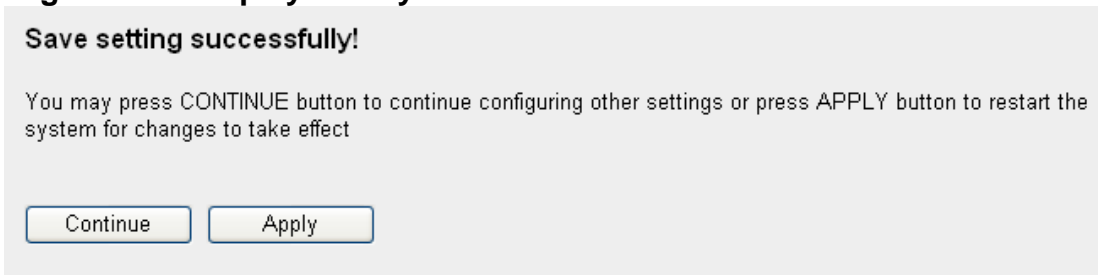
Subnet Mask:

Please input subnet mask assigned by your service provider.

Service Provider Gateway Address:

Please input the IP address of DNS server provided by your service provider.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Setup procedure for 'PPPoE xDSL':

PPPoE

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

User Name :	<input type="text"/>
Password :	<input type="password"/>
Service Name :	<input type="text"/>
MTU :	<input type="text" value="1392"/> (512<=MTU Value<=1492)
Connection Type :	<input type="button" value="Connect on Demand"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000minutes)

Back OK

User Name:

Please input user name assigned by your Internet service provider here.

Password:

Please input the password assigned by your Internet service provider here.

Service Name:

Please give a name to this Internet service, this is optional.

MTU:

Please input the MTU value of your network connection here. If you don't know, you can use default value.

Connection Type:

Please select the connection type of Internet connection you wish to use.

Continuous – The connection will be kept always on. If the connection is interrupted, the router will re-connect automatically.

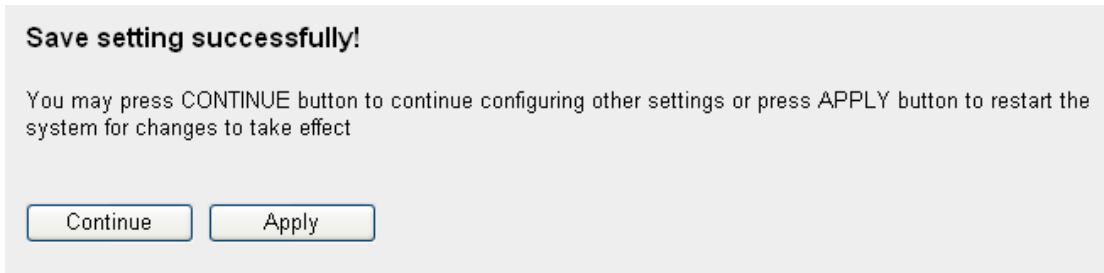
Connect On-Demand – Only connect when you want to surf the Internet. “Idle Time Out” is set to stop the connection when the network traffic is not sending or receiving after an idle time.

Manual – After you have selected this option, you will see the “Connect” button and “Disconnect” button, click “Connect” and the router will connect to the ISP. If you want to stop the connection, please click “Disconnect” button.

Idle Time Out:

If you have selected the connection type to “Connect-On-Demand”, please input the idle time out.

After you finish with all settings, please click ‘Apply’ button and the following message will be displayed on your web browser:



Please click ‘Continue’ to back to previous setup menu; to continue on other setup procedures, or click ‘Apply’ to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click ‘Cancel’ button.

◆ Setup procedure for ‘PPTP xDSL’:

PPTP xDSL requires two kinds of setting: WAN interface setting (setup IP address) and PPTP setting (PPTP user name and password). Here we start from WAN interface setting:

• **WAN Interface Settings**

Obtain an IP address automatically

Host Name :	<input type="text"/>
MAC address :	<input type="text" value="000000000000"/> <input type="button" value="Clone Mac address"/>

Use the following IP address

IP address :	<input type="text" value="0.0.0.0"/>
Subnet Mask :	<input type="text" value="0.0.0.0"/>
Default Gateway :	<input type="text" value="0.0.0.0"/>

Select the type of how you obtain IP address from your service provider here. You can choose 'Obtain an IP address automatically' (equal to DHCP, please refer to 'Cable Modem' section above), or 'Use the following IP address' (i.e. static IP address).

WAN interface settings must be correctly set, or the Internet connection will fail even those settings of PPTP settings are correct. Please contact your Internet service provider if you don't know what you should fill in these fields.

Now please go to PPTP settings section:

• **PPTP Settings**

User ID :	<input type="text"/>
Password :	<input type="text"/>
PPTP Gateway :	<input type="text" value="0.0.0.0"/>
Connection ID :	<input type="text"/> (Optional)
MTU :	<input type="text" value="1392"/> (512<= MTU Value<=1492)
BEZEQ-ISRAEL :	<input type="checkbox"/> Enable (for BEZEQ network in ISRAEL use only)
Connection Type :	<input type="text" value="Continuous"/> <input type="button" value="Connect"/> <input type="button" value="Disconnect"/>
Idle Time Out :	<input type="text" value="10"/> (1-1000minutes)

User ID:

Please input user ID (user name) assigned by your Internet service provider here.

Password:

Please input the password assigned by your Internet service provider here.

PPTP Gateway:

Please input the IP address of PPTP gateway assigned by your Internet service provider here.

Connection ID:

Please input the connection ID here, this is optional and you can leave it blank.

MTU:

Please input the MTU value of your network connection here. If you don't know, you can use default value.

BEZEQ-ISRAEL:

Setting item 'BEZEQ-ISRAEL' is only required to check if you're using the service provided by BEZEQ network in Israel.

Connection Type:

Please select the connection type of Internet connection you wish to use.

Continuous – The connection will be kept always on. If the connection is interrupted, the router will re-connect automatically.

Connect On-Demand – Only connect when you want to surf the Internet. "Idle Time Out" is set to stop the connection when the network traffic is not sending or receiving after an idle time.

Manual – After you have selected this option, you will see the "Connect" button and "Disconnect" button, click "Connect" and the router will connect to the ISP. If you want to stop the connection, please click "Disconnect" button.

Idle Time Out:

If you have selected the connection type to "Connect-On-Demand", please input the idle time out.

When you finish with all settings, please click 'OK; if you want to go back to previous menu, click 'Back'.

◆ **Setup procedure for 'L2TP xDSL':**

The screenshot displays the 'L2TP Settings' configuration window. It contains the following fields and controls:

- User ID :** A text input field.
- Password :** A text input field.
- L2TP Gateway :** A text input field.
- MTU :** A text input field containing '1392', with a note '(512<=MTU Value<=1492)' to its right.
- Connection Type :** A dropdown menu currently showing 'Continuous', with 'Connect' and 'Disconnect' buttons to its right.
- Idle Time Out :** A text input field containing '10', with a note '(1-1000 minutes)' to its right.

At the bottom right of the window, there are two buttons: 'Back' and 'OK'.

User ID:

Please input user ID (user name) assigned by your Internet service provider here.

Password:

Please input the password assigned by your Internet service provider here.

L2TP Gateway:

Please input the IP address of PPTP gateway assigned by your Internet service provider here.

MTU:

Please input the MTU value of your network connection here. If you don't know, you can use default value.

Connection Type:

Please select the connection type of Internet connection you wish to use.

Continuous – The connection will be kept always on. If the connection is interrupted, the router will re-connect automatically.

Connect On-Demand – Only connect when you want to surf the Internet. "Idle Time Out" is set to stop the connection when the network traffic is not sending or receiving after an idle time.

Manual – After you have selected this option, you will see the "Connect" button and "Disconnect" button, click "Connect" and the router will connect to the ISP. If you want to stop the connection, please click "Disconnect" button.

Idle Time Out:

If you have selected the connection type to "Connect-On-Demand", please input the idle time out.

When you finish with all settings, please click 'OK; if you want to go back to previous menu, click 'Back'.

◆ **Setup procedure for 'Telstra Big Pond':**

Telstra Big Pond (Australia Only)
If your Internet service is provided by Telstra Big Pond in Australia, you will need to enter your information below, This information is provided by Teistra BigPond.

User Name :

Password :

User decide login server manually

Login Server :

Back OK

User Name:

Please input the user name assigned by Telstra.

Password:

Please input the password assigned by Telstra.

User device login server manually:

Check this box to choose login server by yourself.

Login Server:

Please input the IP address of login server here.

After you finish with all settings, please click 'OK' button; if you want to go back to previous menu, click 'Back'

◆ Setup procedure for 'DNS':

If you select 'Dynamic IP' or 'PPPoE' as Internet connection method, at least one DNS server's IP address should be assigned automatically. However, if you have preferred DNS server, or your service provider didn't assign the IP address of DNS server because of any reason, you can input the IP address of DNS server here.

DNS ?

A Domain Name System (DNS) server is like an index of IP Addresses and Web Addresses. If you type a Web address into your browser, such as www.broadbandrouter.com, a DNS server will find that name in its index and find the matching IP address. Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect you to the Internet through dynamic IP settings, it is likely that the DNS server IP Address is also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP Address of that DNS server. The primary DNS will be used for domain name access first, in case the primary DNS access failures, the secondary DNS will be used.

Has your Internet service provider given you a DNS address?

DNS address :	192.168.0.2
Secondary DNS Address (optional) :	

Apply Cancel

DNS Address:

Please input the IP address of DNS server provided by your service provider.

Secondary DNS Address:

Please input the IP address of another DNS server provided by your service provider, this is optional.

After you finish with all settings, please click 'Apply' (3) button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Setup procedure for 'DDNS':

DDNS (Dynamic DNS) is an IP-to-Hostname mapping service for those Internet users who don't have a static (fixed) IP address. It will be a problem when such user wants to provide services to other users on Internet, because their IP address will vary every time when connected to Internet, and other user will not be able to know the IP address they're using at a certain time.

This router supports DDNS service of several service providers, for example:

DynDNS (<http://www.dyndns.org>)

TZO (<http://www.tzo.com>)

Please go to one of DDNS service provider's webpage listed above, and get a free DDNS account by the instructions given on their webpage.

DDNS ?

DDNS allows users to map the static domain name to a dynamic IP address. You must get a account, password and your static domain name from the DDNS service providers. Our products have DDNS support for www.dyndns.org and www.tzo.com now.

Dynamic DNS :	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Provider :	DynDNS
Domain Name :	<input type="text"/>
Account / E-Mail :	<input type="text"/>
Password / Key :	<input type="text"/>

Apply Cancel

Dynamic DNS:

If you want to enable DDNS function, please select 'Enabled'; otherwise please select 'Disabled'.

Provider:

Select your DDNS service provider here.

Domain Name:

Input the domain name you've obtained from DDNS service provider.

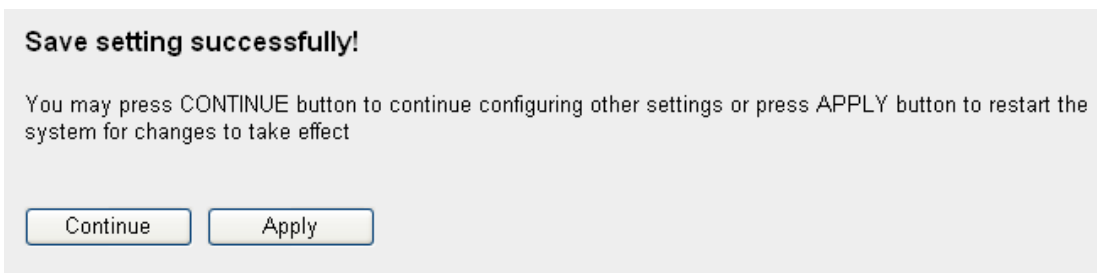
Account / E-Mail:

Input account or email of DDNS registration.

Password / Key:

Input DDNS service password or key.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

4.4 Wired LAN Configuration

Before all computers using wired Ethernet connection (i.e. those computers connect to this router's LAN port 1 to 4 by Ethernet cable) can communicate with each other and access internet, they must have a valid IP address.

There are two ways to assign IP addresses to computers: static IP address (set the IP address for every computer manually), and dynamic IP address (IP address of computers will be assigned by router automatically). It's recommended for most of computers to use dynamic IP address, it will save a lot of time on setting IP addresses for every computer, especially when there are a lot of computers in your network; for servers and network devices which will provide services to other computer and users that come from Internet, static IP address should be used, so other computers can locate the server.

Suggestions on IP address numbering plan:

If you have no idea on how to define an IP address plan for your network, here are some suggestions.

- 1. A valid IP address has 4 fields: a.b.c.d, for most of home and company users, it's suggested to use 192.168.c.d, where c is an integer between 0 and 254, and d is an integer between 1 and 254. This router is capable to work with up to 253 clients, so you can set 'd' field of IP address of router as 1 or 254 (or any number between 1 and 254), and pick a number between 0 and 254 for field 'c'.**
- 2. In most cases, you should use '255.255.255.0' as subnet mask, which allows up to 253 clients (this also meets router's capability of working with up to 253 clients).**
- 3. For all servers and network devices which will provide services to other people (like Internet service, print service, and file service), they should use static IP address. Give each of them a unique number between 1 and 253, and maintain a list, so everyone can locate those servers easily.**
- 4. For computers which are not dedicated to provide specific service to others, they should use dynamic IP address.**

If you don't really understand the descriptions listed above, don't worry! We will provide recommended setup values below.

Please follow the following instructions to set wired LAN parameters:

Please click 'LAN' menu on the left of web management interface, there are three setup groups here: 'LAN IP', 'DHCP Server', and 'Static DHCP Leases Table'. Here are setup instructions for each of them:

◆ **LAN IP section:**

• LAN IP	
IP address	<input type="text" value="192.168.2.1"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
802.1d Spanning Tree	<input type="button" value="Disabled"/> ▾
DHCP Server	<input type="button" value="Enabled"/> ▾

IP address:

Please input the IP address of this router.

Subnet Mask:

Please input subnet mask for this network.

802.1d Spanning Tree:

If you wish to activate 802.1d spanning tree function, select 'Enabled' for setup item '802.1d Spanning Tree', or set it to 'Disabled'

DHCP Server:

If you want to activate DHCP server function of this router, select 'Enabled', or set it to 'Disabled'.

◆ **DHCP Server:**

• DHCP Server	
Lease Time	<input type="button" value="One week"/> ▾
Start IP	<input type="text" value="192.168.2.240"/>
End IP	<input type="text" value="192.168.2.245"/>
Domain Name	<input type="text"/>

Lease Time:

Please choose a lease time (the duration that every computer can keep a specific IP address) of every IP address assigned by this router from dropdown menu.

Start IP:

Please input the start IP address of the IP range.

End IP:

Please input the end IP address of the IP range.

Domain Name:

If you wish, you can also optionally input the domain name for your network. This is optional.

◆ Static DHCP Leases Table:

This function allows you to assign a static IP address to a specific computer forever, so you don't have to set the IP address for a computer, and still enjoy the benefit of using DHCP server. Maximum 16 static IP addresses can be assigned here.

(If you set 'Lease Time' to 'forever' in 'DHCP Server' section, you can also assign an IP address to a specific computer permanently, however, you will not be able to assign a certain IP address to a specific computer, since IP addresses will be assigned in random order by this way).



The screenshot shows a configuration window for static DHCP leases. At the top, there is a checkbox labeled 'Enable Static DHCP Leases' which is checked. Below this, there is a table with a 'New' button on the left. The table has two columns: 'MAC address' and 'IP address'. The 'MAC address' field contains the text '001122334455' and the 'IP address' field contains '192.168.2.100'. To the right of the table are two buttons: 'Add' and 'Clear'.

Enable Static DHCP Leases:

Check this box to enable this function, otherwise uncheck it to disable this function.

MAC Address:

Input the MAC address of the computer or network device (total 12 characters, with character from 0 to 9, and from a to f, like '001122aabbcc')

IP address:

Input the IP address you want to assign to this computer or network device

'Add':

After you inputted MAC address and IP address pair, click this button to add the pair to static DHCP leases table.

After you clicked 'Add', the MAC address and IP address mapping will be added to 'Static DHCP Leases Table' section.

• **Static DHCP Leases Table**
It allows to entry 16 sets address only.

NO.	MAC address	IP address	Select
1	00:11:22:33:44:55	192.168.2.100	<input type="checkbox"/> 1

2

3

4

If you want to delete a specific item, please check the 'Select' box of a MAC address and IP address mapping (1), then click 'Delete Selected' button (2); if you want to delete all mappings, click 'Delete All' (3). If you want to deselect all mappings, click 'Reset' (4).

After you finish all LAN settings, please click 'Apply' button on the bottom of this page. After you click 'Apply', the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Please click 'Continue' to back to previous setup menu; to continue on router setup, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

4.5 Wireless LAN Configuration

If your computer, PDA, game console, or other network devices which is equipped with wireless network interface, you can use the wireless function of this router to let them connect to Internet and share resources with other computers with wired-LAN connection. You can also use the built-in security functions to protect your network from being intruded by malicious intruders.

Please follow the following instructions to set wireless parameters:

Please click 'Wireless' menu on the left of web management interface, and the following message will be displayed on your web browser. You must enable wireless function of this router, or the wireless interface of this router will not function. Please select 'Enable' (1), then click 'Apply' (2) button.

If you're coming here because you want to disable wireless function, please select 'Disable' (3), then click 'Apply' (2) button.

Wireless Settings

The gateway can be quickly configured as a wireless access point for roaming clients by setting the access identifier and channel number. It also supports data encryption and client filtering.

Enable or disable Wireless module function : Enable Disable

1 3

Apply

2

After you click 'Apply', the following message will be displayed on your web browser:

Save setting successfully!

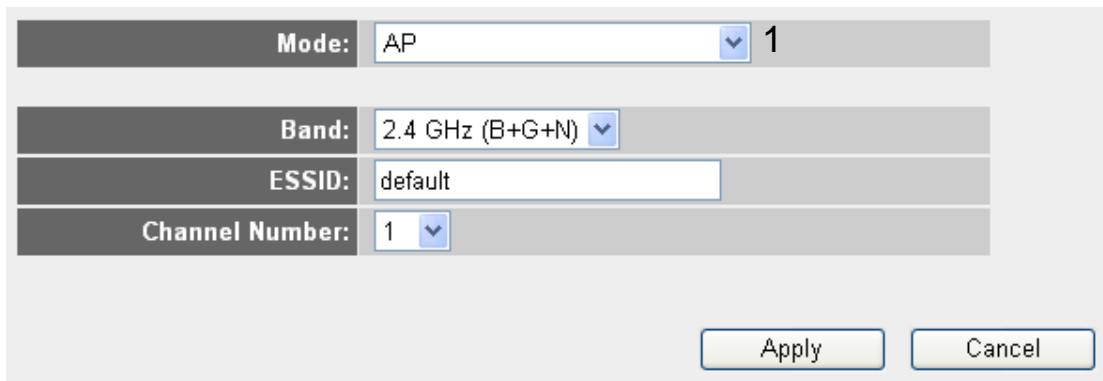
You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ Basic Wireless Settings

Please click 'Wireless' menu on the left of web management interface, then click 'Basic Settings', and the following message will be displayed on your web browser:



Mode:	AP	1
Band:	2.4 GHz (B+G+N)	
ESSID:	default	
Channel Number:	1	

Apply Cancel

This wireless router can be work in 6 modes:

1. *AP*: Standard wireless AP (access point).
2. *Station-Infrastructure*: Configure the router to Ethernet device such us TV, Game player, HDD&DVD to enable the Ethernet device be a wireless station.
3. *AP Bridge-Point to Point*: Connect this router with another wireless router, to expand the scope of network.
4. *AP Bridge-Point to Multi-Point*: Connect this router with up to four other wireless routers, to expand the scope of network.
5. *AP Bridge-WDS*: Connect this router with up to four WDS-capable wireless routers, to expand the scope of network.
6. *Universal Repeater*: The router can act as Station and AP at the same time. It can use Station function to connect to a Root AP and use AP function to service all wireless stations within its coverage.

Please select a proper operation mode you want to use from 'Mode' dropdown menu (1), and continue on other operation mode specific settings:

◆ Setup procedure for 'AP':

Please select the radio band you want to use from 'Band' dropdown menu (2), and the following message will be displayed:

Mode:	AP
Band:	2.4 GHz (B+G+N) 2
ESSID:	default
Channel Number:	1
Associated Clients:	Show Active Clients

Band:

Please select the radio band from one of following options:

1. 2.4 GHz (B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).
2. 2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 150Mbps).
3. 2.4 GHz (B+G): 2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).
4. 2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 54Mbps).
5. 2.4 GHz (B+G+N): 2.4GHz band, allows 802.11b, 802.11g, and 802.11n wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, maximum 54Mbps for 802.11g clients, and maximum 150Mbps for 802.11n clients).

NOTE: For 802.11b and 802.11g mode, the signals can be transmitted only by antenna 1 (The antenna in the right side of the rear panel).

For 802.11n mode: The router is operating in a 1T2R Spatial Multiplexing MIMO configuration. 1 antenna is for signal transmitting and 2 antennas are for signal receiving.

ESSID:

This is the name of wireless router. You can type any alphanumerical characters here, maximum 32 characters. ESSID is used to identify your own wireless router from others when there are other wireless routers in the same area. Default SSID is 'default', it's recommended to change default ESSID value to the one which is meaningful to you, like myhome, office_room1, etc.

Channel Number:

Please select a channel from the dropdown list of 'Channel Number', available channel numbers are 1 to 13 for European countries, 1 to 11 for USA. You can choose any channel number you want to use, and almost all wireless clients can locate the channel you're using automatically without any problem. However, it's still useful to remember the channel number you use, some wireless client supports manual channel number select, and this would help in certain scenario when there is some radio communication problem.

Associated Clients:

Click 'Show Active Clients' button, then an "Active Wireless Client Table" will pop up. You can see the status of all active wireless stations that are connecting to the access point.

◆ Setup procedure for 'Station-Infrastructure':

In this mode, you can connect the router to Ethernet device such as TV, Game player, HDD&DVD to enable the Ethernet device be a wireless station and join to a wireless network through an access point or AP router.

Mode:	Station-Infrastructure
Band:	2.4 GHz (B+G+N)
ESSID:	default
Site Survey:	Select Site Survey
WLAN MAC:	000000000000 <input type="button" value="Clone MAC"/>

Band:

Select the band you want to use.

ESSID:

This is the name of wireless network. You can type the SSID of the network you would like to connect here.

Site Survey:

When you use this wireless router as a wireless station for Ethernet network device to have wireless capability, you have to associate it with a working access point. Click 'Select Site

Survey' button, then a "Wireless Site Survey Table" will pop up. It will list all available access points near by. You can select one access point in the table and it will join wireless LAN through this access point.

WLAN MAC:

For some applications, you may need to designate a specific MAC address for the router. Please enter the MAC address here. If you are connecting the router to a computer, you can simply press 'Clone Mac address' button to fill the MAC address field with the MAC address of your computer.

◆ **Setup procedure for 'AP Bridge-Point to Point':**

In this mode, you can connect your wireless router with another, to combine two access points and expand the scope of wireless network, and all clients (wired only – AP will not accept wireless clients in this mode) of two wireless routers will think they're on the same physical network. This function is very convenient when you need to connect two networks between two buildings. Here are instructions about how to connect two wireless routers together:

Mode:	AP Bridge-Point to Point
Band:	2.4 GHz (B+G+N)
Channel Number:	1
MAC address 1 :	000000000000
Set Security :	<input type="button" value="Set Security"/>

Band:

Select the band you want to use; two wireless routers must use the same setting.

Channel Number:

Select the channel you want to use; two wireless routers must use the same setting.

MAC address:

Input the MAC address of another wireless router.

Set Security:

Click to set security settings for this connection.

◆ **Setup procedure for 'AP Bridge-Point to Multi-Point':**

In this mode, you can connect your wireless router with at least four wireless routers to expand the scope of wireless network, and all clients (wired only – AP will not accept

wireless clients in this mode) of the wireless routers will think they're on the same physical network.

Mode:	AP Bridge-Point to Multi-Point ▼
Band:	2.4 GHz (B+G+N) ▼
Channel Number:	1 ▼
MAC address 1 :	000000000000
MAC address 2 :	000000000000
MAC address 3 :	000000000000
MAC address 4 :	000000000000
Set Security :	<input type="button" value="Set Security"/>

Band:

Select the band you want to use, all the wireless routers must use the same setting.

Channel Number:

Select the channel you want to use, all the wireless routers must use the same setting.

MAC address 1 to 4:

Input the MAC address of other wireless routers.

Set Security:

Click to set security settings for this connection.

◆ **Setup procedure for 'AP Bridge – WDS'**

In this mode, you can expand the scope of network by combining up to four other access points together, and every access point can still accept wireless clients.

Mode:	AP Bridge-WDS ▼
Band:	2.4 GHz (B+G+N) ▼
ESSID:	default
Channel Number:	1 ▼
Associated Clients:	<input type="button" value="Show Active Clients"/>
MAC address 1 :	000000000000
MAC address 2 :	000000000000
MAC address 3 :	000000000000
MAC address 4 :	000000000000
Set Security:	<input type="button" value="Set Security"/>

Band:

Select the band you want to use, all the wireless routers must use the same setting.

ESSID:

Input the ESSID of your wireless router, the setting should be the same with other wireless routers for the convenience of roaming.

Channel Number:

Select the channel you want to use, all the wireless routers must use the same setting.

Associated Clients:

Click 'Show Active Clients' button, then an "Active Wireless Client Table" will pop up. You can see the status of all active wireless stations that are connecting to the access point.

MAC address 1 to 4:

Input the MAC address of other wireless routers.

Set Security:

Click to set security settings for this connection.

◆ Setup procedure for 'Universal Repeater'

In this mode, the router can act as a wireless repeater; it can be Station and AP at the same time. It can use Station function to connect to a Root AP and use AP function to service all wireless stations within its coverage.

The image shows a configuration interface for a wireless router in 'Universal Repeater' mode. The settings are as follows:

Mode:	Universal Repeater
Band:	2.4 GHz (B+G+N)
ESSID:	default
Channel Number:	1
Associated Clients:	Show Active Clients
Root AP SSID:	
Site Survey:	Select Site Survey

Band:

Select the band you want to use, all the wireless routers must use the same setting.

ESSID:

This is the name of wireless router. You can type any alphanumerical characters here, maximum 32 characters. ESSID is used to identify your own wireless router from others when there are other wireless routers in the same area. Default SSID is 'default', it's

recommended to change default ESSID value to the one which is meaningful to you, like myhome, office_room1, etc.

Channel Number:

Select the channel you want to use, all the wireless clients must use the same setting.

Associated Clients:

Click 'Show Active Clients' button, then an "Active Wireless Client Table" will pop up. You can see the status of all active wireless stations that are connecting to the access point.

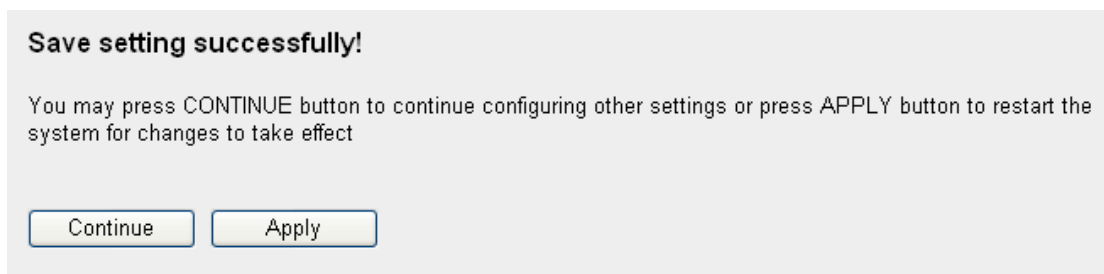
Root AP SSID:

In 'Universal Repeater' mode, this device can act as a station to connect to a Root AP. You should assign the SSID of the Root AP here or click 'Select Site Survey' button to choose a Root AP.

Site Survey:

Click 'Select Site Survey' button, then a "Wireless Site Survey Table" will pop up. It will list all available access points near by. You can select one access point in the table and the router will join wireless LAN through this access point.

After you finish the wireless setting, please click 'Apply' button, after you click 'Apply', the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on router setup, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ **Advanced Wireless Settings**

This router provides some advanced control of wireless parameters, if you want to configure these settings, please click 'Wireless' menu on the left of web management interface, then click 'Advanced Settings', and the following message will be displayed on your web browser:

Fragment Threshold:	<input type="text" value="2346"/> (256-2346)
RTS Threshold:	<input type="text" value="2347"/> (0-2347)
Beacon Interval:	<input type="text" value="100"/> (20- 1024 ms)
DTIM Period:	<input type="text" value="3"/> (1-10)
Data Rate:	Auto <input type="button" value="v"/>
N Data Rate:	Auto <input type="button" value="v"/>
Channel Width:	<input checked="" type="radio"/> Auto 20/40 MHz <input type="radio"/> 20 MHz
Preamble Type:	<input checked="" type="radio"/> Short Preamble <input type="radio"/> Long Preamble
Broadcast Essid:	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
CTS Protect:	<input type="radio"/> Auto <input type="radio"/> Always <input checked="" type="radio"/> None
Tx Power:	100 % <input type="button" value="v"/>
WMM:	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Fragment Threshold:

Set the Fragment threshold of wireless radio. **Do not modify default value if you don't know what it is, default value is 2346.**

RTS Threshold:

Set the RTS threshold of wireless radio. **Do not modify default value if you don't know what it is, default value is 2347.**

Beacon Interval:

Set the beacon interval of wireless radio. **Do not modify default value if you don't know what it is, default value is 100.**

DTIM Period:

Set the DTIM period of wireless radio. **Do not modify default value if you don't know what it is, default value is 3.**

Data Rate:

Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, **it's not necessary to change this value unless you know what will happen after modification.**

N Data Rate:

Same as above, but only for 802.11n clients.

Channel Width:

Set channel width of wireless radio. **Do not modify default value if you don't know what it is, default setting is 'Auto 20/40 MHz'.**

Preamble Type:

Set the type of preamble, **do not modify default value if you don't know what it is, default setting is 'Short Preamble'**.

Broadcast ESSID:

Decide if the wireless router will broadcast its own ESSID or not. You can hide the ESSID of your wireless router (set the option to 'Disable'), so only people those who know the ESSID of your wireless router can get connected.

CTS Protect:

Enabling this setting will reduce the chance of radio signal collisions between 802.11b and 802.11g/n wireless access points. It's recommended to set this option to 'Auto' or 'Always'. However, if you set to 'None', your wireless router should be able to work fine, too.

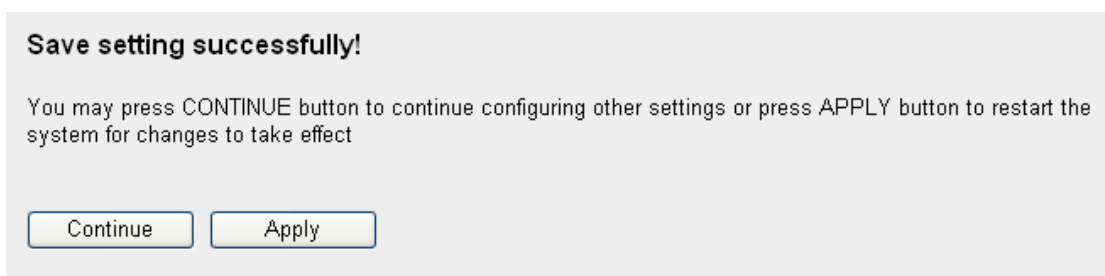
Tx Power :

You can set the output power of wireless radio. Unless you're using this wireless router in a really big space, you may not have to set output power to 100%. **This will enhance security (malicious / unknown users in distance will not be able to reach your wireless router).**

WMM:

The short of Wi-Fi MultiMedia, it will enhance the data transfer performance of multimedia contents when they're being transferred over wireless network. **If you don't know what it is / not sure if you need it, it's safe to set this option to 'Enable', however, default value is 'Disable'.**

After you finish these wireless settings, please click 'Apply' button, button, and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on router setup, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ **Wireless Security:**

It's very important to set wireless security settings properly! If you don't, hackers and malicious users can reach your network and valuable data without your consent and this will cause serious security problem.

To set wireless security settings, Please click 'Wireless' menu on the left of web management interface, then click 'Security Settings', then follow the following instructions to set wireless security settings:

Please select an encryption method from 'Encryption' dropdown menu, there are four options:

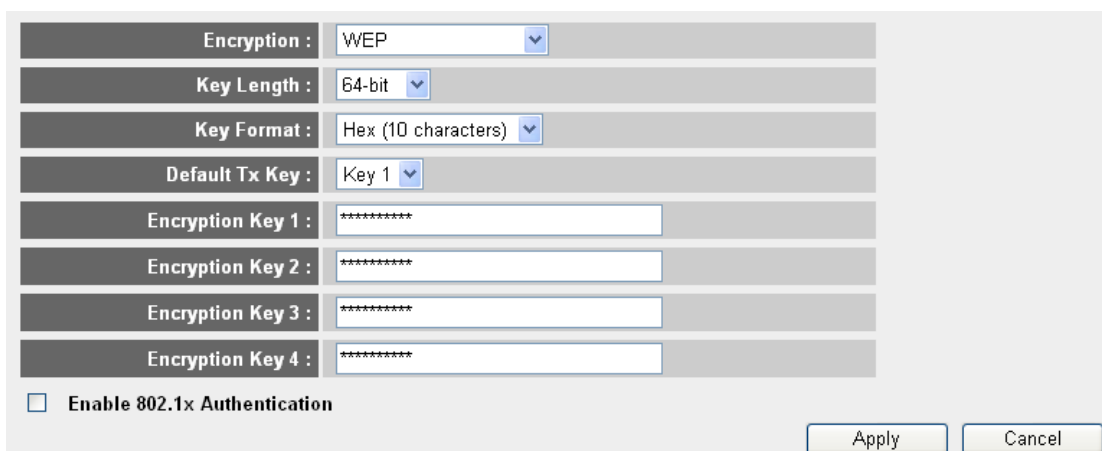
◆ **Disable wireless security**

When you select this mode, data encryption is disabled, and every wireless device in proximity will be able to connect your wireless router if no other security measure is enabled (like MAC address access control - see section 2-7-4, or disable ESSID broadcast).

Only use this option when you really want to allow everyone to use your wireless router, and you don't care if there's someone reads the data you transfer over network without your consent.

◆ **WEP - Wired Equivalent Privacy**

When you select this mode, the wireless router will use WEP encryption, and the following setup menu will be shown on your web browser:



The screenshot shows a web interface for configuring WEP. It features several rows of configuration options, each with a label and a dropdown or text input field. The options are: Encryption (set to WEP), Key Length (set to 64-bit), Key Format (set to Hex (10 characters)), Default Tx Key (set to Key 1), and four Encryption Key fields (Key 1 through Key 4), each containing a series of asterisks. At the bottom left, there is a checkbox labeled 'Enable 802.1x Authentication' which is currently unchecked. At the bottom right, there are two buttons: 'Apply' and 'Cancel'.

Key Length:

There are two types of WEP key length: 64-bit and 128-bit. Using '128-bit' is safer than '64-bit', but will reduce some data transfer performance.

Key Format:

There are two types of key format: ASCII and Hex. When you select a key format, the number of characters of key will be displayed. For example, if you select '64-bit' as key length, and 'Hex' as key format, you'll see the message at the right of 'Key Format' is 'Hex (10 characters)', which means the length of WEP key is 10 characters.

Default Tx Key:

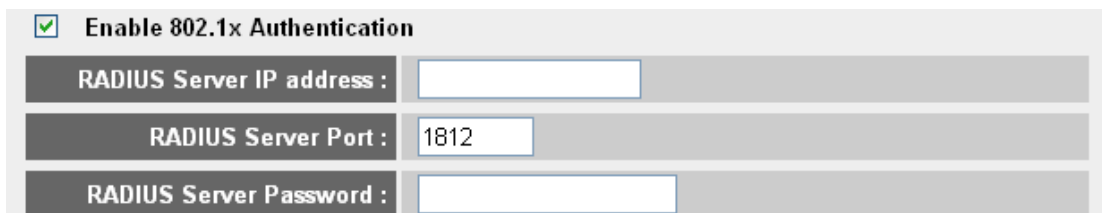
You can set up to four sets of WEP key, and you can decide which key is being used by default here. **If you don't know which one you should use, select 'Key 1'.**

Encryption Key 1 to 4:

Input WEP key characters here, the number of characters must be the same as the number displayed at 'Key Format' field. You can use any alphanumerical characters (0-9, a-z, and A-Z) if you select 'ASCII' key format, and if you select 'Hex' as key format, you can use characters 0-9, a-f, and A-F. You must enter at least one encryption key here, and if you entered multiple WEP keys, they should not be same with each other.

Enable 802.1x Authentication:

IEEE 802.1x is an authentication protocol. Every user must use a valid account to login to this wireless router before accessing the wireless LAN. The authentication is processed by a RADIUS server. This mode only authenticates user by IEEE 802.1x, but it does not encryption the data during communication. If there is a RADIUS server in you environment, please enable this function. Check this box and another sub-menu will appear:



<input checked="" type="checkbox"/> Enable 802.1x Authentication
RADIUS Server IP address : <input type="text"/>
RADIUS Server Port : <input type="text" value="1812"/>
RADIUS Server Password : <input type="text"/>

RADIUS Server IP address:

Please input the IP address of radius server here

RADIUS Server Port:

Please input the port number of radius server here.

RADIUS Server Password:

Please input the port number of radius password here.

After you finish WEP setting, please click 'Apply' button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue

Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ Wi-Fi Protected Access (WPA):

When you select this mode, the wireless router will use WPA encryption, and the following setup menu will be shown on your web browser:

Encryption :	WPA pre-shared key
WPA Unicast Cipher Suite :	<input checked="" type="radio"/> WPA(TKIP) <input type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
Pre-shared Key Format :	Passphrase
Pre-shared Key :	<input type="text"/>
	<input type="button" value="Apply"/> <input type="button" value="Cancel"/>

WPA Unicast Cipher Suite:

Please select a type of WPA cipher suite. Available options are: WPA (TKIP), WPA2 (AES), and WPA2 Mixed. You can select one of them, but you have to make sure your wireless client support the cipher you selected.

Pre-shared Key Format:

Select the type of pre-shared key, you can select Passphrase (8 or more alphanumerical characters, up to 63), or Hex (64 characters of 0-9, and a-f).

Pre-shared Key:

Please input the WPA passphrase here. **It's not recommended to use a word that can be found in a dictionary due to security reason.**

After you finish WPA Pre-shared key setting, please click 'Apply' button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue

Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ WPA RADIUS:

If you have a RADIUS server, this router can work with it and provide safer wireless authentication.

Encryption :	<input type="text" value="WPA RADIUS"/>
WPA Unicast Cipher Suite :	<input checked="" type="radio"/> WPA(TKIP) <input type="radio"/> WPA2(AES) <input type="radio"/> WPA2 Mixed
RADIUS Server IP address :	<input type="text"/>
RADIUS Server Port :	<input type="text" value="1812"/>
RADIUS Server Password :	<input type="text"/>
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>	

WPA Unicast Cipher Suite:

Please select a type of WPA cipher suite. Available options are: WPA (TKIP), WPA2 (AES), and WPA2 Mixed. You can select one of them, but you have to make sure your wireless client support the cipher you selected.

RADIUS Server IP address:

Please input the IP address of your Radius authentication server here.

RADIUS Server Port:

Please input the port number of your Radius authentication server here. **Default setting is 1812.**

RADIUS Server Password:

Please input the password of your Radius authentication server here.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue

Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ Wireless Access Control

This function will help you to prevent unauthorized users from connecting to your wireless router; only those wireless devices who have the MAC address you assigned here can gain access to your wireless router. You can use this function with other security measures described in previous section, to create a safer wireless environment.

Up to 20 MAC addresses can be assigned by using this function. Please click 'Wireless' menu on the left of web management interface, then click 'Access Control', and the following message will be displayed on your web browser:

• **MAC Address Filtering Table**
It allows to entry 20 sets address only.

NO.	MAC address	Comment	Select
1	11:22:33:44:55:66	LAB Computer	<input type="checkbox"/>

Delete Selected Delete All Reset

Enable Wireless Access Control

New MAC address : Comment: Add Clear

Apply Cancel

All allowed MAC addresses will be displayed in 'MAC Address Filtering Table' (1).

Delete Selected:

If you want to delete a specific MAC address entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one MAC addresses).

Delete All:

If you want to delete all MAC addresses listed here, please click 'Delete All' button.

Reset:

You can also click 'Reset' button to unselect all MAC addresses.

Enable Wireless Access Control:

To enforce MAC address filtering, you have to check 'Enable Wireless Access Control'. When this item is unchecked, wireless router will not enforce MAC address filtering of wireless clients.

MAC Address:

Input the MAC address of your wireless devices here, dash (-) or colon (:) are not required. (i.e. If the MAC address label of your wireless device indicates 'aa-bb-cc-dd-ee-ff' or 'aa:bb:cc:dd:ee:ff', just input 'aabbccddeeff'.

Comment:

You can input any text here as the comment of this MAC address, like 'ROOM 2A Computer' or anything. You can input up to 16 alphanumerical characters here. This is optional and you can leave it blank, however, it's recommended to use this field to write a comment for every MAC addresses as a memory aid.

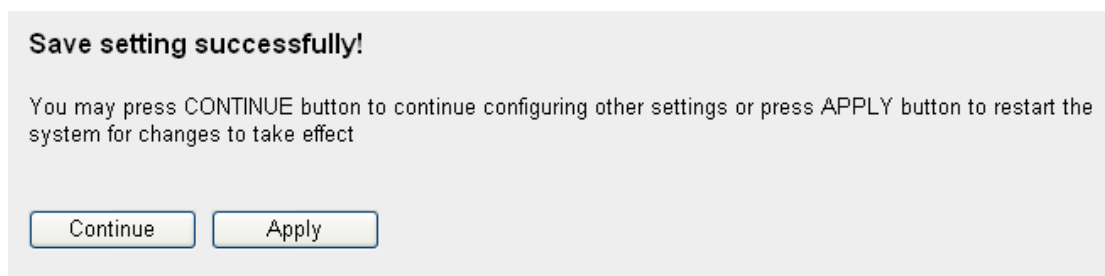
Add:

Click 'Add' button to add the MAC address and associated comment to the MAC address filtering table.

Clear:

Click 'Clear' to remove the value you inputted in MAC address and comment field.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Wi-Fi Protected Setup (WPS)

Wi-Fi Protected Setup (WPS) is the simplest way to build connection between wireless network clients and this wireless router. You don't have to select encryption mode and input a long encryption passphrase every time when you need to setup a wireless client, you only have to press a button on wireless client and this wireless router, and the WPS will do the rest for you.

This wireless router supports two types of WPS: Push-Button Configuration (PBC), and PIN code. If you want to use PBC, you have to push a specific button on the wireless client to start WPS mode, and switch this wireless router to WPS mode too. You can push Reset/WPS button of this wireless router, or click 'Start PBC' button in the web configuration interface to do this; if you want to use PIN code, you have to know the PIN code of wireless client and switch it to WPS mode, then provide the PIN code of the wireless client you wish to connect to this wireless router. The detailed instructions are listed follow:

Please click 'Wireless' menu on the left of web management interface, then click 'WPS', and the following message will be displayed on your web browser:

Enable WPS

- **Wi-Fi Protected Setup Information**

WPS Status:	Configured
Self PinCode:	44896843
SSID	default
Authentication Mode	WPA pre-shared key
Passphrase Key	*****
- **Device Configure**

Config Mode:	Registrar ▼
Configure via Push Button:	Start PBC
Configure via Client PinCode:	<input type="text"/> Start PIN

Enable WPS:

Check this box to enable WPS function, uncheck it to disable WPS.

Wi-Fi Protected Setup Information:

WPS-related system information will be displayed Setup Information here:

1. **WPS Status:** If the wireless security (encryption) function of this wireless router is properly set, you'll see 'Configured' message here. If wireless security function has not been set, you'll see 'unConfigured'.
2. **Self PIN code:** This is the WPS PIN code of this wireless router. This code is useful when you need to build wireless connection by WPS with other WPS-enabled wireless devices.
3. **SSID:** The SSID of this wireless router will be displayed here.
4. **Authentication Mode:** The wireless security authentication mode of this wireless router will be displayed here. If you don't enable security function of the wireless router before WPS is activated, the router will auto set the security to WPA (AES) and generate a set of passphrase key for WPS connection.
5. **Passphrase Key:** The wireless security key of the router will be displayed here.

Config Mode:

There are 'Registrar' and 'Enrollee' modes for the WPS connection. When 'Registrar' is enabled, the wireless clients will follow the router's wireless settings for WPS connection. When 'Enrollee' mode is enabled, the router will follow the wireless settings of wireless client for WPS connection.

Configure via Push Button:

Click 'Start PBC' to start Push-Button style WPS setup procedure. This wireless router will wait for WPS requests from wireless clients for 2 minutes. The 'WLAN' LED on the wireless router will be steady on for 2 minutes when this wireless router is waiting for incoming WPS request.

Configure via client PinCode:

Please input the PIN code of the wireless client you wish to connect, and click 'Start PIN' button. The 'WLAN' LED on the wireless router will be steady on when this wireless router is waiting for incoming WPS request.

4.6 Quality of Service (QoS)

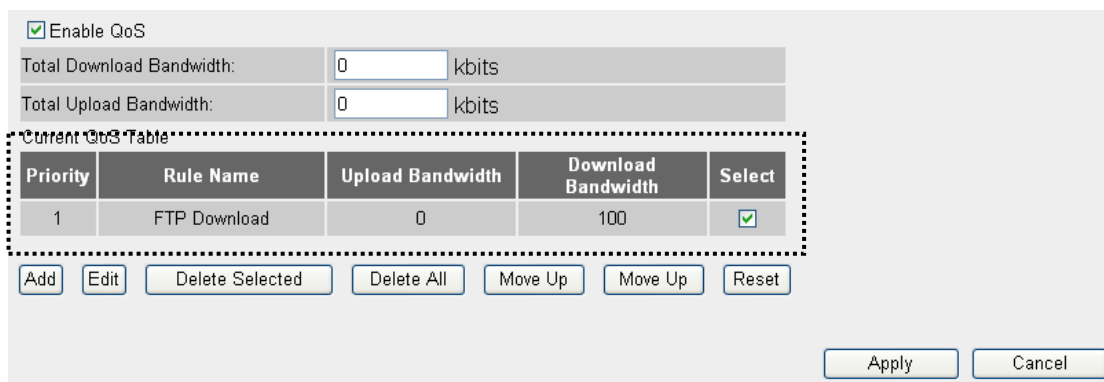
Quality of service provides an efficient way for computers on the network to share the internet bandwidth with a promised quality of internet service. Without QoS, all computers and devices on the network will compete with each other to get internet bandwidth, and some applications which require guaranteed bandwidth (like video streaming and network telephone) will be affected, therefore an unpleasing result will occur, like the interruption of video / audio transfer.

With this function, you can limit the maximum bandwidth or give a guaranteed bandwidth for a specific computer, to avoid said unpleasing result from happening.

◆ Basic QoS Settings

Please follow the following instructions to set QoS parameters:

Please click 'Qos' menu on the left of web management interface and the following message will be displayed on your web browser:



The screenshot shows a web management interface for QoS settings. At the top, there is a checkbox labeled 'Enable QoS' which is checked. Below it are two input fields: 'Total Download Bandwidth:' and 'Total Upload Bandwidth:', both containing the value '0' and followed by 'kbits'. Below these is a table titled 'Current QoS Table' with the following data:

Priority	Rule Name	Upload Bandwidth	Download Bandwidth	Select
1	FTP Download	0	100	<input checked="" type="checkbox"/>

Below the table are several buttons: 'Add', 'Edit', 'Delete Selected', 'Delete All', 'Move Up', 'Move Up', and 'Reset'. At the bottom right of the interface are 'Apply' and 'Cancel' buttons.

Enable QoS:

Check this box to enable QoS function, unselect this box if you don't want to enforce QoS bandwidth limitations.

Total Download Bandwidth:

You can set the limit of total download bandwidth in kbits. To disable download bandwidth limitation, input '0' here.

Total Upload Bandwidth:

You can set the limit of total upload bandwidth in kbits. To disable upload bandwidth limitation, input '0' here.

Current QoS Table:

All existing QoS rules will be displayed here.

Add:

Click 'add' button to add a new QoS rule, see 'Add a new QoS rule' below.

Edit:

If you want to modify the content of a specific rule, please check the 'select' box of the rule you want to edit, then click 'Edit' button. Only one rule should be selected a time! If you didn't select a rule before clicking 'Edit' button, you'll be prompted to add a new rule.

Delete Selected:

You can delete selected rules by clicking this button. You can select one or more rules to delete by check the 'select' the box of the rule(s) you want to delete a time. If the QoS table is empty, this button will be grayed out and can not be clicked.

Delete All:

By clicking this button, you can delete all rules currently in the QoS table. If the QoS table is empty, this button will be grayed out and can not be clicked.

Move Up:

You can pull up the priority of the QoS rule you selected by clicking this button.

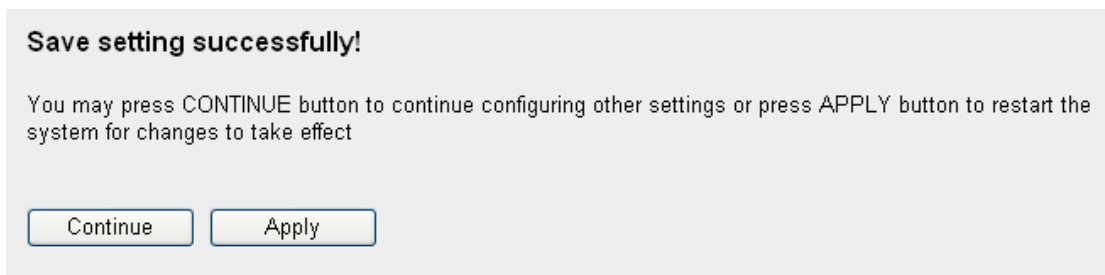
Move Down:

You can lower the priority of the QoS rule you selected by clicking this button.

Reset:

If you want to erase all values you just entered. Click 'Reset'.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:

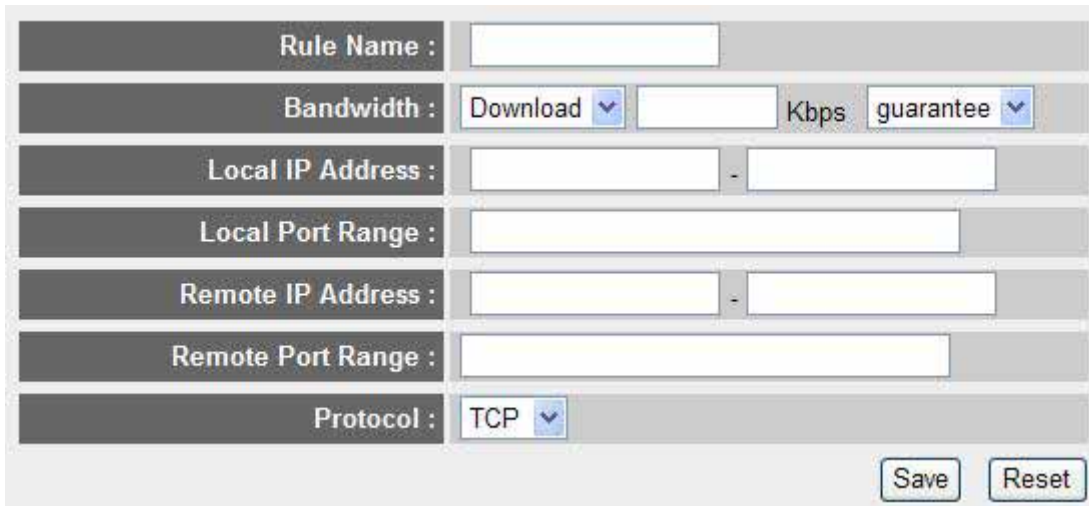


Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Add a new QoS rule

After you click 'Add' button in QoS menu, the following message will appear:



The screenshot shows a configuration form for adding a new QoS rule. The form has the following fields and controls:

- Rule Name :** A text input field.
- Bandwidth :** A dropdown menu set to 'Download', a text input field, the unit 'Kbps', and another dropdown menu set to 'guarantee'.
- Local IP Address :** Two text input fields separated by a hyphen.
- Local Port Range :** A single text input field.
- Remote IP Address :** Two text input fields separated by a hyphen.
- Remote Port Range :** A single text input field.
- Protocol :** A dropdown menu set to 'TCP'.
- At the bottom right, there are two buttons: 'Save' and 'Reset'.

Rule Name:

Please give a name to this QoS rule (up to 15 alphanumerical characters)

Bandwidth:

Set the bandwidth limitation of this QoS rule. You have to select the data direction of this rule (Upload or Download), and the speed of bandwidth limitation in Kbps, then select the type of QoS: 'guarantee' (guaranteed usable bandwidth for this rule) or 'max' (set the maximum bandwidth for the application allowed by this rule).

Local IP Address:

Specify the local (source) IP address that will be affected by this rule. Please input the starting IP address in the left field, and input the end IP address in the right field to define a range of IP addresses, or just input the IP address in the left field to define a single IP address.

Local Port Range:

Please input the range of local (source) port number that will be affected by this rule. If you want to apply this rule on port 80 to 90, please input '80-90'; if you want to apply this rule on a single port, just input the port number, like '80'.

Remote IP Address:

Specify the remote (destination) IP address that will be affected by this rule. Please input the starting IP address in the left field, and input the end IP address in the right field to

define a range of IP addresses, or just input the IP address in the left field to define a single IP address.

Remote Port Range:

Please input the range of remote (destination) port number that will be affected by this rule. If you want to apply this rule on port 80 to 90, please input '80-90'; if you want to apply this rule on a single port, just input the port number, like '80'. If the remote (destination) IP address and /or port number is universal, just leave it blank.

Protocol:

Please select the protocol type of this rule, available options are TCP and UDP. If you don't know what protocol your application uses, please try 'TCP' first, and switch to 'UDP' if this rule doesn't seem to work.

After you finish with all settings, please click 'save' button, you'll be brought back to previous menu, and the rule you just set will appear in current QoS table; if you did anything wrong, you'll get an error message when you click 'Save' button, please correct your input by the instructions given by the error message.

If you want to erase all values you just entered. Click 'Reset'

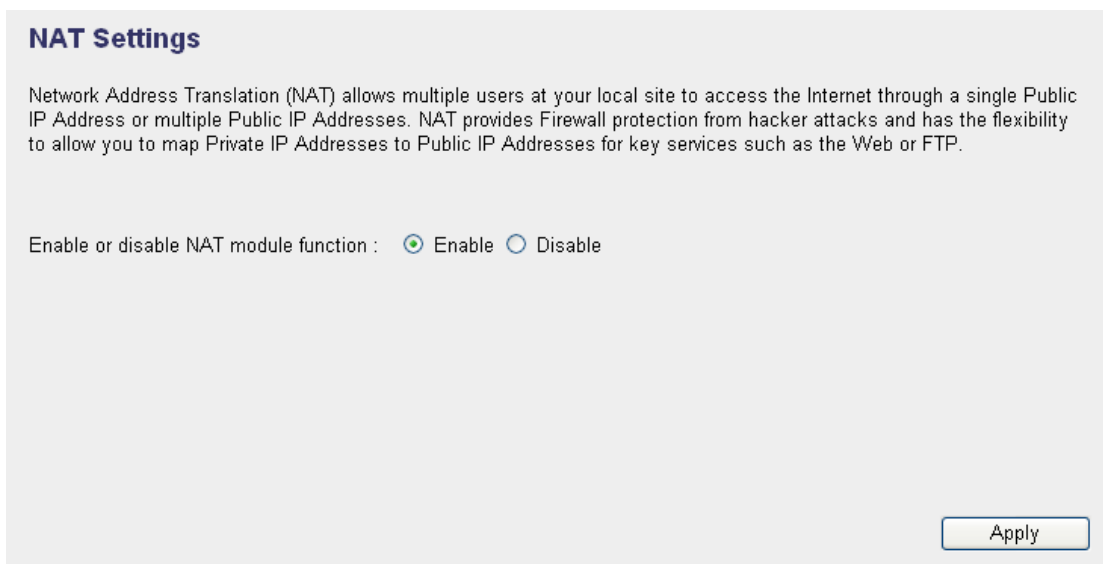
4.7 Network Address Translation (NAT)

Network address translations solve the problem of sharing a single IP address to multiple computers. Without NAT, all computers must be assigned with a valid Internet IP address to get connected to Internet, but Internet service providers only provide very few IP addresses to every user. Therefore it's necessary to use NAT technology to share a single Internet IP address to multiple computers on local network, so everyone can get connected to Internet.

Please follow the following instructions to set NAT parameters:

◆ Basic NAT Settings (Enable or disable NAT function)

Please click 'NAT' menu on the left of web management interface, and the following message will be displayed on your web browser:



The screenshot shows a web interface titled "NAT Settings". Below the title is a paragraph explaining that NAT allows multiple users to access the Internet through a single Public IP Address or multiple Public IP Addresses, and that it provides Firewall protection. Below this text, there is a label "Enable or disable NAT module function :" followed by two radio buttons: "Enable" (which is selected) and "Disable". At the bottom right of the interface is an "Apply" button.

To enable NAT function, please select 'Enable' for 'Enable NAT module function'; to disable, please select 'Disable'.

After you made the selection, please click 'Apply' button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue

Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ Port Forwarding

This function allows you to redirect a single port or consecutive ports of Internet IP address to the same port of the IP address on local network. The port number(s) of Internet IP address and private IP address (the IP address on local network) must be the same. If the port number of Internet IP address and private IP address is different, please use 'Virtual Server' function, described in next section.

Please click 'NAT' menu on the left of web management interface, then click 'Port Forwarding', and the following message will be displayed on your web browser:

Enable Port Forwarding

Private IP	Computer name	Type	Port Range	Comment
0.0.0.0	<< -----Select----- >>	Both		

Current Port Forwarding Table

NO.	Computer name	Private IP	Type	Port Range	Comment	Select
-----	---------------	------------	------	------------	---------	--------

Enable Port Forwarding:

Check this box to enable port mapping, and uncheck this box to disable port mapping.

Private IP:

Input the IP address of the computer on local network which provides internet service.

Computer Name:

Pull down the menu and all the computers connected to the router will be listed here. You can easily to select the computer name without checking the IP address of the computer.

Type:

Select the type of connection, TCP or UDP. If you're not sure, please select 'Both'.

Port Range:

Input the starting port number in the left field, and input the ending port number in the right field. If you only want to redirect a single port number, just fill the port number in the left field.

Comment:

Please input any text to describe this mapping, up to 16 alphanumeric characters.

Add:

Add the mapping to port forwarding table.

Reset:

Remove all inputted values.

Port Forwarding Table:

All existing port forwarding mappings will be displayed here.

Delete Selected:

Please select a port forwarding mapping by clicking the 'Select' box of the mapping, then click 'Delete Selected' button to remove the mapping. If there's no existing mapping, this button will be grayed out.

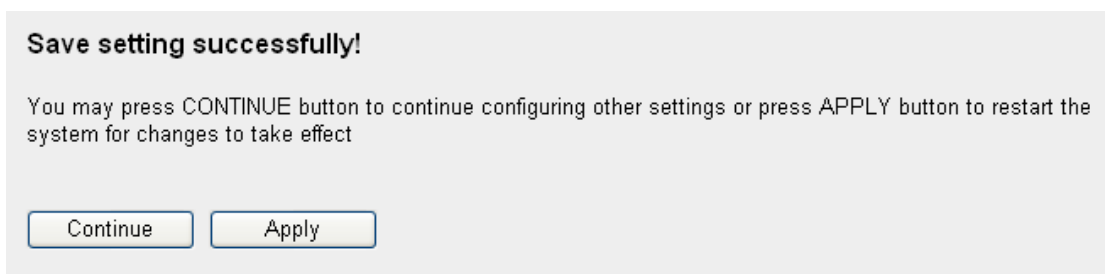
Delete All:

Delete all mappings existed in virtual server table.

Reset:

Unselect all mappings.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Virtual Server

This function allows you to redirect a port on Internet IP address (on WAN port) to a specified port of an IP address on local network, so you can setup an Internet service on the computer on local network, without exposing it on Internet directly. You can also build many sets of port redirection, to provide many different Internet services on different local computers via a single Internet IP address.

Please click 'NAT' menu on the left of web management interface, then click 'Virtual Server', and the following message will be displayed on your web browser:

Enable Virtual Server

Private IP	Computer name	Private Port	Type	Public Port	Comment
<input type="text"/>	<< -----Select----- >>	<input type="text"/>	Both	<input type="text"/>	<input type="text"/>

Current Virtual Server Table

NO.	Computer name	Private IP	Private Port	Type	Public Port	Comment	Select
-----	---------------	------------	--------------	------	-------------	---------	--------

Enable Virtual Server:

Check this box to enable virtual server, and uncheck this box to disable virtual server.

Private IP:

Input the IP address of the computer which provides Internet service.

Computer Name:

Pull down the menu and all the computers connected to the router will be listed here. You can easily to select the computer name without checking the IP address of the computer.

Private Port:

Input the port number of the IP address which provides Internet service.

Type:

Select the type of connection, TCP or UDP. If you're not sure, please select 'Both'.

Public Port:

Please select the port number of Internet IP address which will be redirected to the port number of local IP address defined above.

Comment:

Please input any text to describe this mapping, up to 16 alphanumerical characters.

Add:

Add the mapping to virtual server table.

Reset:

Remove all inputted values.

Virtual Server Table:

All existing virtual server mappings will be displayed here.

Delete Selected:

Please select a virtual server mapping by clicking the 'Select' box of the mapping, then click 'Delete Selected' button to remove the mapping. If there's no existing mapping, this button will be grayed out.

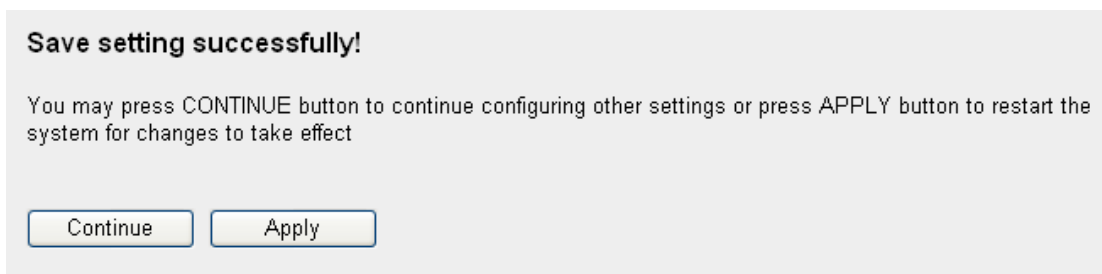
Delete All:

Delete all mappings existed in virtual server table.

Reset:

Unselect all mappings.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Port Mapping for Special Applications:

Some applications require more than one connection a time; these applications won't work with simple NAT rules. In order to make these applications work, you can use this function to let these applications work.

Enable

IP Address	Computer name	TCP Port to Open	UDP Port to Open	Comment
0.0.0.0	<< -----Select----- >>			
Popular Applications		Select Game		Add

Add Reset

Current Trigger-Port Table

NO.	Computer name	IP Address	TCP Port to Open	UDP Port to Open	Comment	Select
Delete Selected Delete All Reset						

Apply Cancel

Enable:

Check this box to enable special applications and uncheck this box to disable virtual server.

IP Address:

Input the IP address of the computer which you want to open the ports.

Computer Name:

Pull down the menu and all the computers connected to the router will be listed here. You can easily to select the computer name without checking the IP address of the computer.

TCP Port to Open:

This is the out going (Outbound) range of TCP port numbers for this particular application.

UDP Port to Open:

This is the out going (Outbound) range of UDP port numbers for this particular application.

Comment:

The description of this setting.

Popula Applications:

This section lists the more popular applications that require multiple connections. Select an application from the Popular Applications selection and click 'Add' to save the setting to 'Current Trigger-Port Table.'

Add:

Add the setting to the 'Current Trigger-Port Table.'

Reset:

Click 'Reset' will clear all above setting and you can set up again.

Current Trigger-Port:

All the settings for the special applications will be listed here. If you want to remove some Special Application settings from the " Current Trigger-Port Table", select the Special Application settings you want to remove in the table and then click "Delete Selected". If you

want remove all Special Application settings from the table, just click "Delete All" button. Click "Reset" will clear your current selections.

Delete Selected:

Please select a special application by clicking the 'Select' box of the mapping, then click 'Delete Selected' button to remove the setting. If there's no setting here, this button will be grayed out.

Delete All:

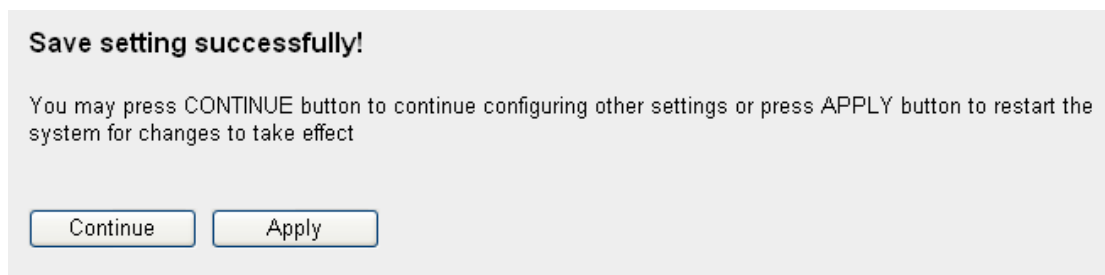
Delete all settings existed in trigger port table.

Reset:

Unselect all settings.

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

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while the router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ **UPnP Setting**

This function enables network auto-configuration for peer-to-peer communications, with this function, network devices will be able to communicate with other devices directly, and learn about information about other devices. Many network device and applications rely on UPnP function nowadays.

Please click 'NAT' menu on the left of web management interface, then click 'UPnP', and the following message will be displayed on your web browser:

UPnP Feature: Enable Disable

Apply Cancel

There is only one option in this page, please select 'Enable' or 'Disable' to enable or disable UPNP function, then click 'Apply' button, and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

4.8 Firewall

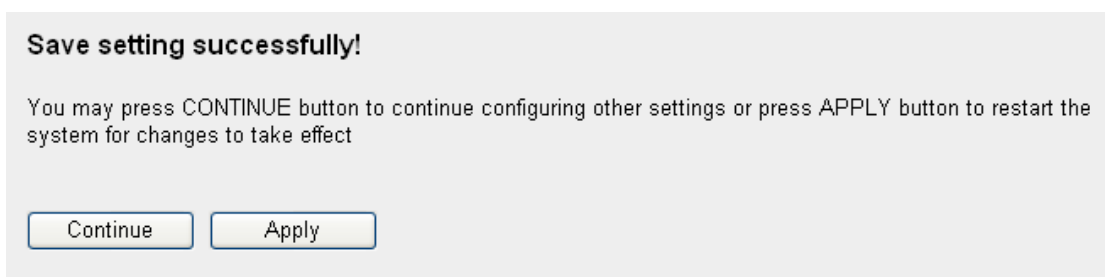
Excepting NAT, this router also provides firewall function to block malicious intruders from accessing your computers on local network. These functions include inbound attack prevention, and block outbound traffics, like block URLs which have pre-defined keywords.

Please follow the following instructions to enable or disable firewall function:

Please click 'Firewall' menu on the left of web management interface, and the following message will be displayed on your web browser:



Please select 'Enable' or 'Disable' to enable or disable firewall function of this router, the click 'Apply' button, and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

◆ Access Control

This function allows or denies computers with specific MAC address from connecting to the network; it can also allow or deny computers with specific IP address, protocol, or port.

Please click 'Firewall' menu on the left of web management interface, then click 'Access Control', and the following message will be displayed on your web browser:

The screenshot shows a web management interface for firewall settings. At the top, there are checkboxes for 'Enable MAC Filtering' and radio buttons for 'Deny' (selected) and 'Allow'. Below this is a form for adding a new entry to the MAC filtering table, with fields for 'Client PC MAC address', 'Computer name' (a dropdown menu), and 'Comment'. There are 'Add' and 'Reset' buttons. The 'MAC Filtering Table' is a table with columns: 'NO.', 'Computer name', 'Client PC MAC address', 'Comment', and 'Select'. Below the table are 'Delete Selected', 'Delete All', and 'Reset' buttons. The 'IP Filtering Table' section is also visible, with a checkbox for 'Enable IP Filtering Table (up to 20 computers)', radio buttons for 'Deny' (selected) and 'Allow', and a table with columns: 'NO.', 'Client PC Description', 'Client PC IP address', 'Client Service', 'Protocol', 'Port Range', and 'Select'. Below this table are 'Add PC', 'Delete Selected', and 'Delete All' buttons. At the bottom right, there are 'Apply' and 'Cancel' buttons.

Enable MAC Filtering:

Check this box to enable MAC address based filtering, and please select 'Deny' or 'Allow' to decide the behavior of MAC filtering table. If you select deny, all MAC addresses listed in filtering table will be denied from connecting to the network; if you select allow, only MAC addresses listed in filtering table will be able to connect to the network, and rejecting all other network devices.

Client PC MAC address:

Please input the MAC address of computer or network device here, dash (-) or colon (:) are not required. (i.e. If the MAC address label of your wireless device indicates 'aa-bb-cc-dd-ee-ff' or 'aa:bb:cc:dd:ee:ff', just input 'aabbccddeeff')

Computer Name:

Pull down the menu and all the computers connected to the router will be listed here. You can easily to select the computer name without checking the IP address of the computer.

Comment:

You can input any text here as the comment of this MAC address, like 'ROOM 2A Computer' or anything. You can input up to 16 alphanumerical characters here. This is optional and you can leave it blank, however, it's recommended to use this field to write a comment for every MAC addresses as a memory aid.

Add:

Click 'Add' button to add the MAC address and associated comment to the MAC address filtering table.

Reset:

Remove all inputted values.

MAC Filtering Table:

All existing MAC addresses in filtering table will be listed here.

Delete Selected:

If you want to delete a specific MAC address entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one MAC addresses).

Delete All:

If you want to delete all MAC addresses listed here, please click 'Delete All' button.

Reset:

You can also click 'Reset' button to unselect all MAC addresses.

Enable IP Filtering Table:

Check this box to enable IP address based filtering, and please select 'Deny' or 'Allow' to decide the behavior of IP filtering table. If you select deny, all IP addresses listed in filtering table will be denied from connecting to the network; if you select allow, only IP addresses listed in filtering table will be able to connect to the network, and rejecting all other network devices.

IP Filtering Table:

All existing IP addresses in filtering table will be listed here.

Add PC:

Click this button to add a new IP address to IP filtering table, up to 20 IP addresses can be added. **Please refer to section 'Add PC' below.**

Delete Selected:

If you want to delete a specific IP address entry, check the 'select' box of the IP address you want to delete, then click 'Delete Selected' button. (You can select more than one IP addresses).

Delete All:

If you want to delete all IP addresses listed here, please click 'Delete All' button.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Add PC

After button is clicked, the following message will be displayed on your web browser:

Client PC Description :	<input type="text"/>	
Client PC IP address :	<input type="text"/> - <input type="text"/>	
Client PC Service :		
Service Name	Detail Description	Select
WWW	HTTP, TCP Port 80, 3128, 8000, 8080, 8081	<input type="checkbox"/>
E-mail Sending	SMTP, TCP Port 25	<input type="checkbox"/>
News Forums	NNTP, TCP Port 119	<input type="checkbox"/>
E-mail Receiving	POP3, TCP Port 110	<input type="checkbox"/>
Secure HTTP	HTTPS, TCP Port 443	<input type="checkbox"/>
File Transfer	FTP, TCP Port 21	<input type="checkbox"/>
MSN Messenger	TCP Port 1863	<input type="checkbox"/>
Telnet Service	TCP Port 23	<input type="checkbox"/>
AIM	AOL Instant Messenger, TCP Port 5190	<input type="checkbox"/>
NetMeeting	H.323, TCP Port 389,522,1503,1720,1731	<input type="checkbox"/>
DNS	UDP Port 53	<input type="checkbox"/>
SNMP	UDP Port 161, 162	<input type="checkbox"/>
VPN-PPTP	TCP Port 1723	<input type="checkbox"/>
VPN-L2TP	UDP Port 1701	<input type="checkbox"/>
TCP	All TCP Port	<input type="checkbox"/>
UDP	All UDP Port	<input type="checkbox"/>
User Define Service		
Protocol:	<input type="text" value="Both"/>	
Port Range:	<input type="text"/>	
<input type="button" value="Add"/>	<input type="button" value="Reset"/>	

Client PC Description:

Please input any text to describe this IP address, up to 16 alphanumerical characters.

Client PC IP address:

Please input the starting IP address in the left field, and input the end IP address in the right field to define a range of IP addresses, or just input the IP address in the left field to define a single IP address.

Client PC Service:

Please check all services you want to allow or deny this IP address to use, you can check multiple services.

Protocol:

If the service you need is not listed above, you can create a new service on your own.

Please select TCP or UDP, if you're not sure, please select 'Both'.

Port Range:

Please input the port range of new service here. If you want to specify port 80 to 90, please input '80-90'; if you want to apply this rule on a single port, just input the port number, like '80'.

Add:

When you finish with all settings, please click 'Add' to save settings, you'll be brought back to previous menu, and the rule you just set will appear in current IP filtering table.

If you want to remove all settings in this page, click 'Reset' button.

◆ URL Blocking

If you want to prevent computers in local network from accessing certain website (like pornography, violence, or anything you want to block), you can use this function to stop computers in local network from accessing the site you defined here.

This function is useful for parents and company managers.

Please follow the following instructions to set URL blocking parameters:

Please click 'Firewall' menu on the left of web management interface, then click 'URL Blocking', and the following message will be displayed on your web browser:

Enable URL Blocking

URL/Keyword

Current URL Blocking Table

NO.	URL/Keyword	Select
1	www.playboy.com	<input type="checkbox"/>

Enable URL Blocking:

Check this box to enforce URL Blocking, uncheck it to disable URL Blocking.

URL/Keyword:

Input the URL (host name or IP address of website, like <http://www.blocked-site.com> or <http://11.22.33.44>), or the keyword which is contained in URL (like pornography, cartoon, stock, or anything).

Add:

Click 'Add' button to add the URL / keyword to the URL / Keyword filtering table.

Reset:

Click 'Reset' to remove the value you inputted in URL/Keyword field.

Current URL Blocking Table:

All existing URL/Keywords in filtering table will be listed here.

Delete Selected:

If you want to delete a specific URL/Keyword entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one MAC addresses).

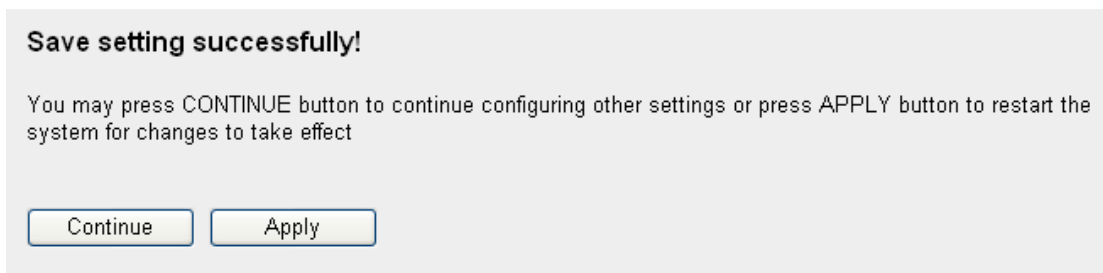
Delete All:

If you want to delete all URL/Keyword listed here, please click 'Delete All' button.

Reset:

You can also click 'Reset' button to unselect all URL/Keywords.

After you finish with all settings, please click 'Apply' button, and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ DoS Attack Prevention

Denial of Service (DoS) is a common attack measure, by transmitting a great amount of data or request to your Internet IP address and server, the Internet connection will become very slow, and server may stop responding because it is not capable to handle too much traffics.

This router has a built-in DoS attack prevention mechanism; when you activate it, the router will stop the DoS attack for you.

Please follow the following instructions to set DoS prevention parameters:

Please click 'Firewall' menu on the left of web management interface, then click 'DoS', and the following message will be displayed on your web browser:

Denial of Service Feature	
Ping of Death	<input type="checkbox"/>
Discard Ping From WAN	<input type="checkbox"/>
Port Scan	<input type="checkbox"/>
Sync Flood	<input type="checkbox"/>

Advance Settings

Apply Cancel

Ping of Death:

Ping of Death is a special packet, and it will cause certain computer to stop responding. Check this box and the router will filter this kind of packet out.

Discard Ping From WAN:

Ping is a common and useful tool to know the connection status of a specified remote network device, but some malicious intruder will try to fill your network bandwidth with a lot of PING request data packet, to make your internet connection become very slow, even unusable. Check this box and the router will ignore all inbound PING request, but when you activate this function, you will not be able to ping your own router from internet, too.

Port Scan:

Some malicious intruder will try to use a 'port scanner' to know how many ports of your Internet IP address are open, and they can collect a lot of valuable information by doing so. Check this box and the router will block all traffics which are trying to scan your Internet IP address.

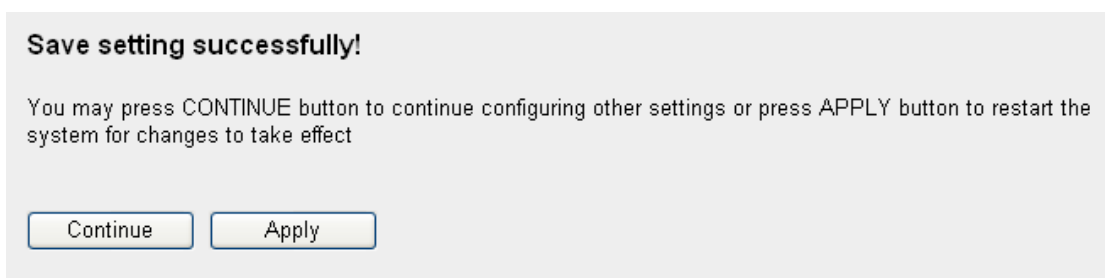
Sync Flood:

This is another kind of attack, which uses a lot of fake connection request to consume the memory of your server, and try to make your server become unusable. Check this box and the router will filter this kind of traffic out.

Advanced Settings:

Click this button and you can set advanced settings of the DoS prevention method listed above, **please see section ‘DoS – Advanced Settings’ below.**

After you finish with all settings, please click ‘Apply’ button and the following message will be displayed on your web browser:



Please click ‘Continue’ to back to previous setup menu; to continue on other setup procedures, or click ‘Apply’ to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click ‘Cancel’ button.

◆ DoS - Advanced Settings

When you click ‘Advanced’ button in DoS menu, the following message will be displayed on your web browser:

Denial of Service Feature

Ping of Death 5 Packet(S) Per Second Burst 5

Discard Ping From WAN

Port Scan

- NMAP FIN / URG / PSH
- Xmas tree
- Another Xmas tree
- Null scan
- SYN / RST
- SYN / FIN
- SYN (only unreachable port)

Sync Flood 5 Packet(S) Per Second Burst 5

Apply Cancel

Ping of Death:

Set the threshold of when this DoS prevention mechanism will be activated. Please check the box of Ping of Death, and input the frequency of threshold (how many packets per second, minute, or hour), you can also input the ‘Burst’ value, which means when this number of ‘Ping of Death’ packet is received in very short time, this DoS prevention mechanism will be activated.

Discard Ping From WAN:

Check the box to activate this DoS prevention mechanism.

Port Scan:

Many kind of port scan methods are listed here, please check one or more DoS attack methods you want to prevent.

Sync Flood:

Like Ping of Death, you can set the threshold of when this DoS prevention mechanism will be activated.

After you finish with all settings, please click ‘Apply’ button and the following message will be displayed on your web browser:

Save setting successfully!

You may press CONTINUE button to continue configuring other settings or press APPLY button to restart the system for changes to take effect

Continue Apply

Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

◆ Demilitarized Zone (DMZ)

Demilitarized Zone (DMZ) refers to a special area in your local network. This area resides in local network, and all computers in this area uses private IP address, too. But these private IP addresses are mapped to a certain Internet IP address, so other people on Internet can fully access those computers in DMZ.

Please follow the following instructions to set DMZ parameters:

Please click 'Firewall' menu on the left of web management interface, then click 'DMZ', and the following message will be displayed on your web browser:

Enable DMZ

Public IP address	Client PC IP address	Computer name
<input checked="" type="radio"/> Dynamic IP <input type="text" value="Session 1"/>	<input type="text"/>	<< -----Select----- >>
<input type="radio"/> Static IP <input type="text"/>	<input type="text"/>	<input type="text"/>

Current DMZ Table

NO.	Computer name	Public IP address	Client PC IP address	Select
-----	---------------	-------------------	----------------------	--------

Enable DMZ:

Check this box to enable DMZ function, uncheck this box to disable DMZ function.

Public IP address:

You can select 'Dynamic IP' or 'Static IP' here. If you select 'Dynamic IP', you have to select an Internet connection session from dropdown menu; if you select 'Static IP', please input the IP address that you want to map to a specific private IP address.

Client PC IP address:

Please input the private IP address that the Internet IP address will be mapped to.

Computer Name:

Pull down the menu and all the computers connected to the router will be listed here. You can easily to select the computer name without checking the IP address of the computer.

Add:

Click 'Add' button to add the public IP address and associated private IP address to the DMZ table.

Reset:

Click 'Clear' to remove the value you inputted in Public IP address and Client PC IP address field.

Current DMZ table:

All existing public IP address and private IP address mapping will be displayed here.

Delete Selected:

If you want to delete a specific DMZ entry, check the 'select' box of the DMZ entry you want to delete, then click 'Delete Selected' button. (You can select more than one DMZ entries).

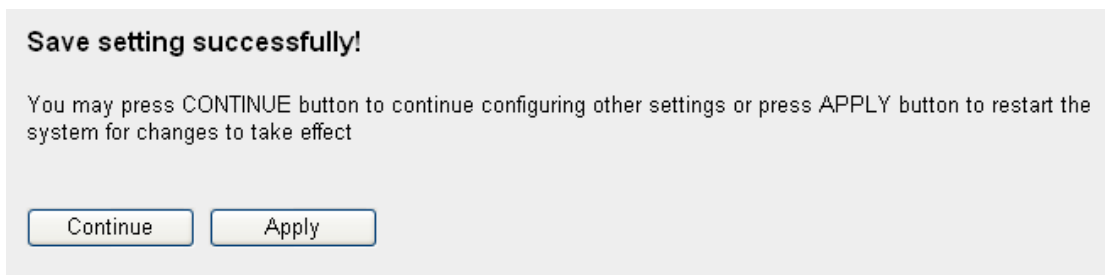
Delete All:

If you want to delete all DMZ entries listed here, please click 'Delete All' button.

Reset:

You can also click 'Reset' button to unselect all DMZ entries.

After you finish with all settings, please click 'Apply' button and the following message will be displayed on your web browser:



Please click 'Continue' to back to previous setup menu; to continue on other setup procedures, or click 'Apply' to reboot the router so the settings will take effect (Please wait for about 30 seconds while router is rebooting).

If you want to reset all settings in this page back to previously-saved value, please click 'Cancel' button.

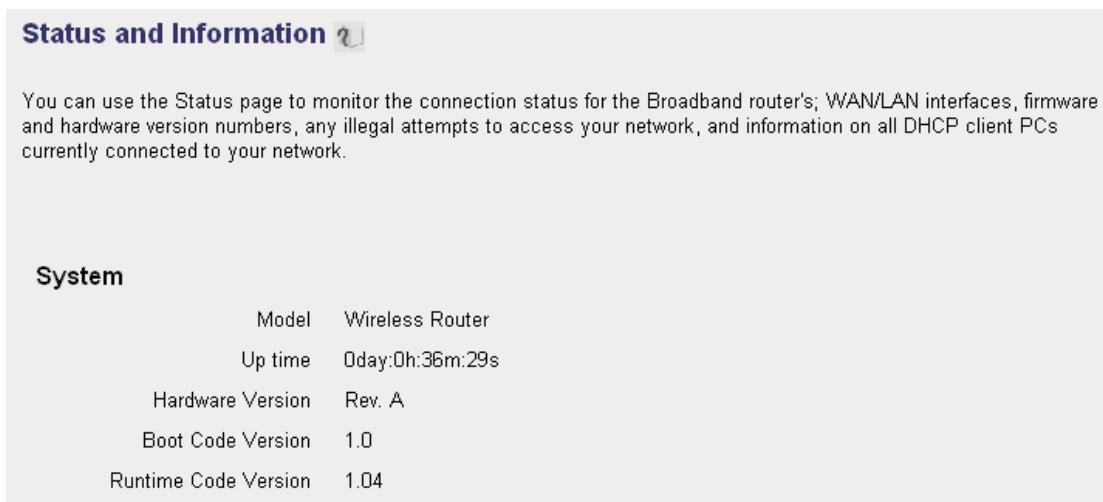
4.9 System Status

The functions described here will provide you with system related information. To enter system status menu, please either click 'Status' link located at the upper-right corner of web management interface, or click 'Status' button in main menu.

◆ System information and firmware version

You can use this function to know the system information and firmware version of this router.

Please click 'Status' link located at the upper-right corner of web management interface, and the following message will be displayed on your web browser



Status and Information ?

You can use the Status page to monitor the connection status for the Broadband router's; WAN/LAN interfaces, firmware and hardware version numbers, any illegal attempts to access your network, and information on all DHCP client PCs currently connected to your network.

System

Model	Wireless Router
Up time	0day:0h:36m:29s
Hardware Version	Rev. A
Boot Code Version	1.0
Runtime Code Version	1.04

NOTE: Information displayed here may vary.

◆ Internet Connection Status

You can use this function to know the status of current Internet connection.

Please click 'Internet Connection' menu on the left of web management interface, and the following message will be displayed on your web browser:

Attain IP Protocol :	Fixed IP connect
IP Address :	192.168.1.10
Subnet Mask :	255.255.255.0
Default Gateway :	192.168.1.254
MAC Address :	00:0E:2E:44:6B:02
Primary DNS :	192.168.0.2
Secondary DNS :	0.0.0.0

This information will vary depending on the connection status.

◆ Device Status

You can use this function to know the status of your router.

Please click 'Device Status' menu on the left of web management interface, and the following message will be displayed on your web browser:

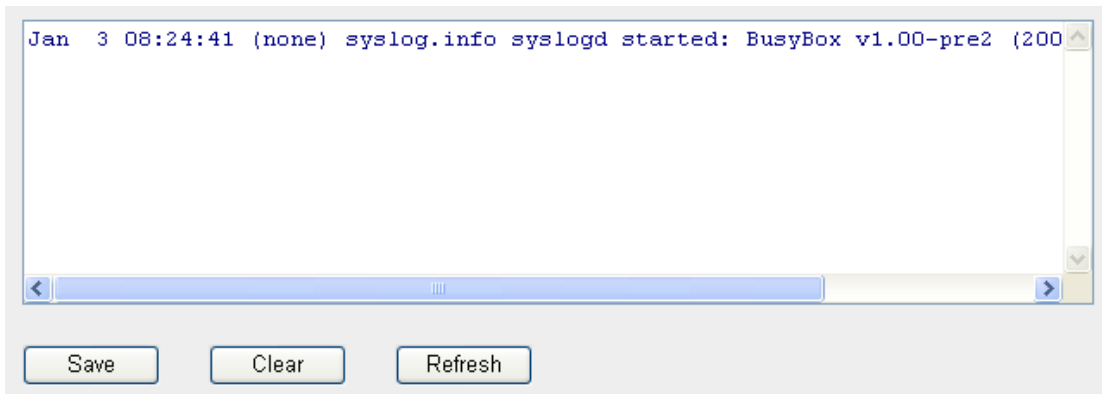
Wireless Configuration	
Mode	AP
ESSID	default
Channel Number	1
Security	WEP
LAN Configuration	
IP Address	192.168.2.1
Subnet Mask	255.255.255.0
DHCP Server	Disable
MAC Address	00:0e:2e:44:6b:01

This information will vary depending on the device status.

◆ System Log

All important system events are logged. You can use this function to check the event log of your router.

Please click 'System Log' menu on the left of web management interface, and the following message will be displayed on your web browser:



The system events will be displayed in this page, and here are descriptions of every buttons:

Save:

Save current event log to a text file.

Clear:

Delete all event logs displayed here.

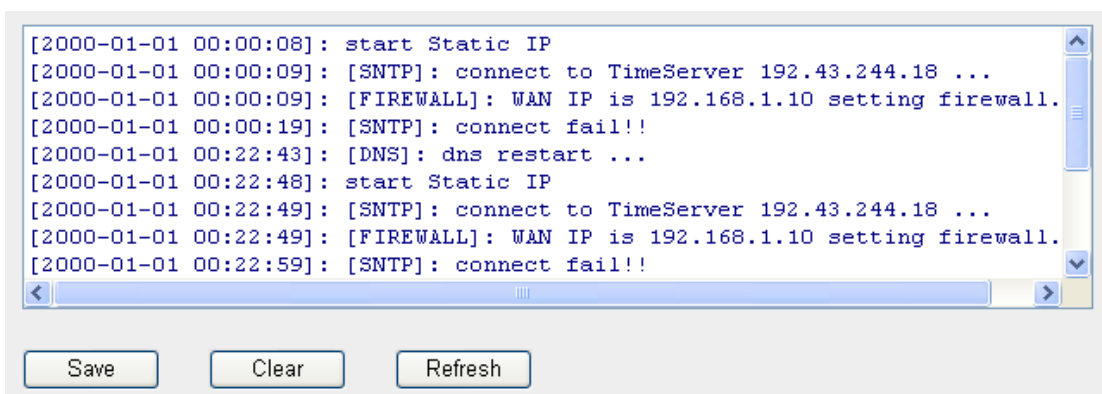
Refresh:

Refresh the event log display.

◆ **Security Log**

All information about network and system security is kept here, and you can use this function to check the security event log of your router.

Please click 'Security Log' menu on the left of web management interface, and the following message will be displayed on your web browser:



The system events will be displayed in this page, and here are descriptions of every buttons:

Save:

Save current event log to a text file.

Clear:

Delete all event logs displayed here.

Refresh:

Refresh the event log display.

◆ **Active DHCP client list:**

If you're using the DHCP server function of this router, you can use this function to check all active DHCP leases issued by this router.

Please click 'Active DHCP client' menu on the left of web management interface, and the following message will be displayed on your web browser:

IP Address	MAC Address	Time Expired(s)
192.168.2.240	00:10:60:db:52:9d	58

Refresh

All information about active DHCP leases issued by this router will be displayed here. You can click 'Refresh' button to display latest information.

◆ **Statistics:**

You can use this function to check the statistics of wireless, LAN, and WAN interface of this router.

Please click 'Statistics' menu on the left of web management interface, and the following message will be displayed on your web browser:

Wireless LAN	Sent Packets	0
	Received Packets	0
Ethernet LAN	Sent Packets	5119
	Received Packets	154638
Ethernet WAN	Sent Packets	98
	Received Packets	0

Refresh

You can click 'Refresh' button to display latest information

4.10 Tools Settings

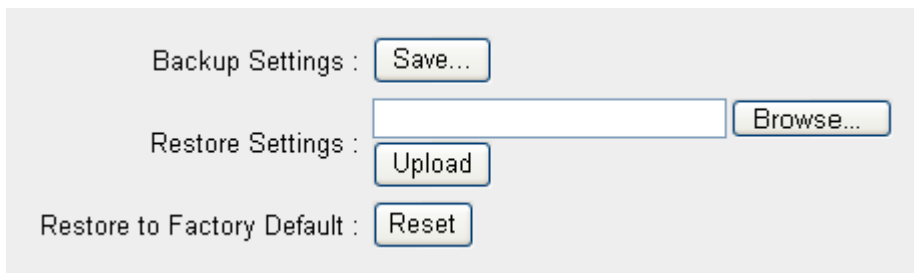
The Tools Settings section includes the basic configuration tools, such as Save, Restore Configuration Settings, and Upgrade Firmware.

◆ Configuration Backup and Restore

You can backup all configurations of this router to a file, so you can make several copied of router configuration for security reason.

To backup or restore router configuration, please follow the following instructions:

Please click 'Tool' located at the upper-right corner of web management interface, then click 'Configuration Tools' on the left of web management interface, then the following message will be displayed on your web browser:



The screenshot shows a web interface with three sections:

- Backup Settings :** A button labeled "Save..."
- Restore Settings :** A text input field followed by a "Browse..." button, and an "Upload" button below the input field.
- Restore to Factory Default :** A "Reset" button.

Backup Settings:

Press 'Save...' button, and you'll be prompted to download the configuration as a file, default filename is 'config.bin', you can save it as another filename for different versions, and keep it in a safe place.

Restore Settings:

Press 'Browse...' to pick a previously-saved configuration file from your computer, and then click 'Upload' to transfer the configuration file to router. After the configuration is uploaded, the router's configuration will be replaced by the file you just uploaded.

Restore to Factory Default:

Click this button to remove all settings you made, and restore the configuration of this router back to factory default settings.

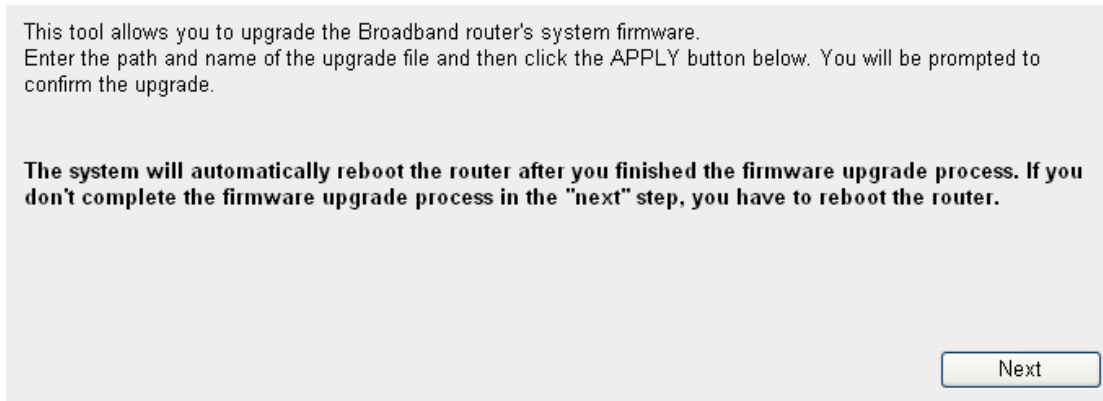
◆ Firmware Upgrade

The system software used by this router is called as 'firmware', just like any applications on your computer, when you replace the old application with a new one; your computer will be

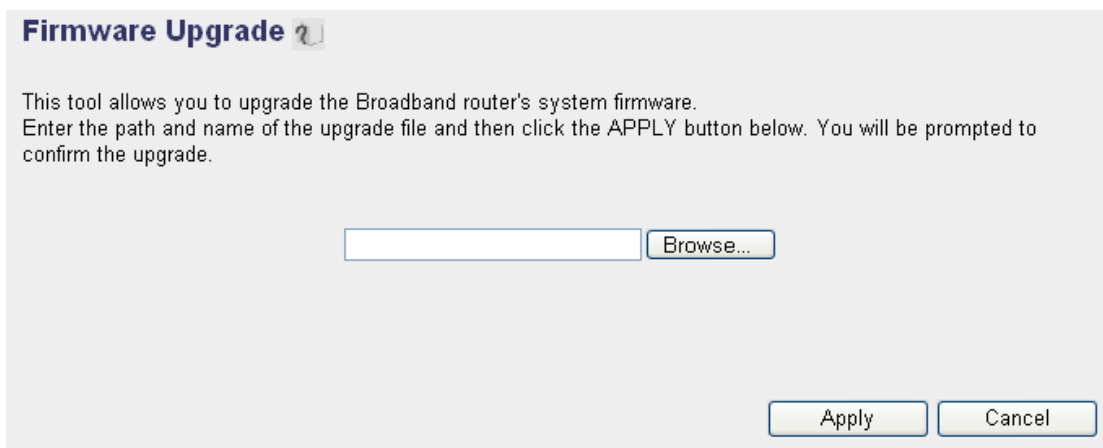
equipped with new function. You can also use this firmware upgrade function to add new functions to your router, even fix the bugs of this router.

To upgrade firmware, please follow the following instructions:

Please click 'Tool' located at the upper-right corner of web management interface, then click 'Firmware Upgrade' on the left of web management interface, then the following message will be displayed on your web browser:



Please click 'Next', and the following message will be displayed:



Click 'Browse' button first, you'll be prompted to provide the filename of firmware upgrade file. Please download the latest firmware file from our website, and use it to upgrade your router.

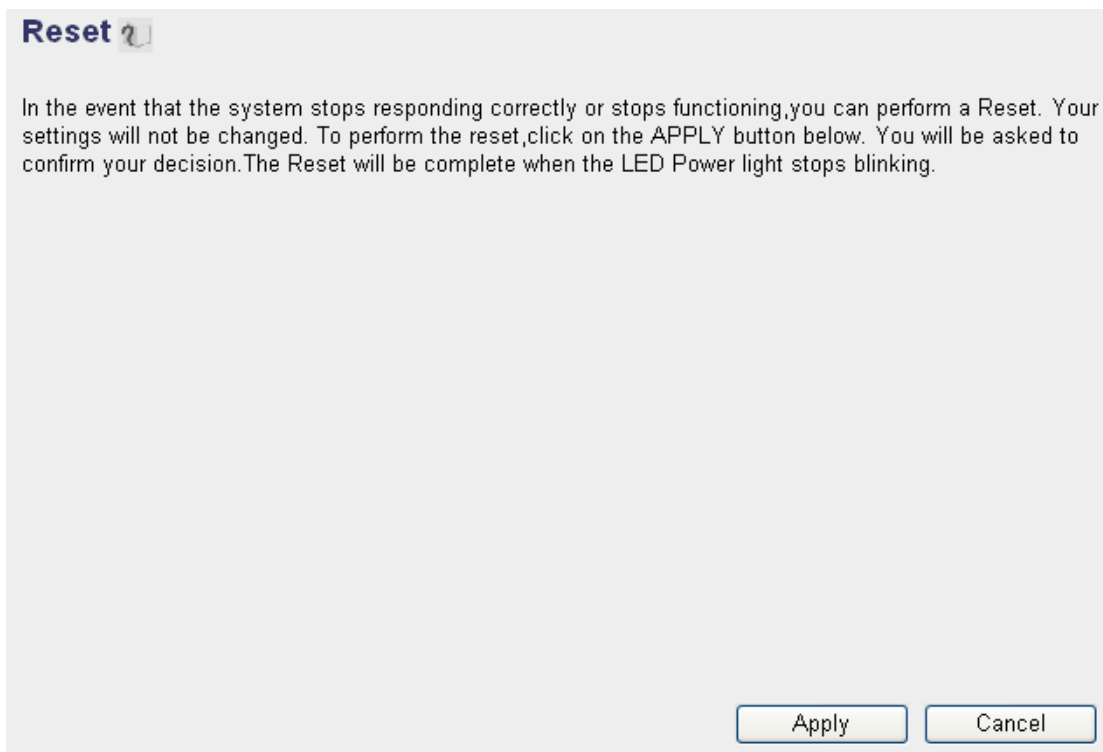
After a firmware upgrade file is selected, click 'Apply' button, and the router will start firmware upgrade procedure automatically. The procedure may take several minutes, please be patient.

NOTE: Never interrupt the upgrade procedure by closing the web browser or physically disconnect your computer from router. If the firmware you uploaded is corrupt, the firmware upgrade will fail, and you may have to return this router to the dealer of purchase to ask for help. (Warranty voids if you interrupted the upgrade procedure).

◆ System Reset

If you think the network performance is bad, or you found the behavior of the router is strange, you can perform a router reset, sometime it will solve the problem.

To do so, please click 'Tool' located at the upper-right corner of web management interface, then click 'Reset' on the left of web management interface, then the following message will be displayed on your web browser:



Please click 'Apply' to reset your router, and it will be available again after few minutes, please be patient.

5. Troubleshooting – Q & A

1. Router is not responding to me when I want to access it by web browser.

Answer:

1. Please check the connection of power cord and network cable of this router. All cords and cables should be correctly and firmly inserted to the router.
2. If all LEDs on this router are off, please check the status of A/C power adapter, and make sure it's correctly powered.
3. You must use the same IP address section which router uses.
4. Are you using MAC or IP address filter? Try to connect the router by another computer and see if it works; if not, please restore your router to factory default settings (pressing 'reset' button for over 10 seconds).
5. Set your computer to obtain an IP address automatically (DHCP), and see if your computer can get an IP address.
6. If you did a firmware upgrade and this happens, contact your dealer of purchase for help.
7. If all above solutions don't work, contact the dealer of purchase for help.

2. Can't get connected to Internet?

Answer:

1. Go to 'Status' -> 'Internet Connection' menu, and check Internet connection status.
2. Please be patient, sometime Internet is just that slow.
3. If you connect a computer to Internet directly before, try to do that again, and check if you can get connected to Internet with your computer directly attached to the device provided by your Internet service provider.
4. Check PPPoE / L2TP / PPTP user ID and password again.
5. Call your Internet service provide and check if there's something wrong with their service.
6. If you just can't connect to one or more website, but you can still use other internet services, please check URL/Keyword filter.
7. Try to reset the router and try again later.
8. Reset the device provided by your Internet service provider too.
9. Try to use IP address instead of hostname. If you can use IP address to communicate

with a remote server, but can't use hostname, please check DNS setting.

3. I can't locate my router by my wireless client.

Answer:

1. 'Broadcast ESSID' set to off?
2. All three antennas are properly secured.
3. Are you too far from your router? Try to get closer.
4. Please remember that you have to input ESSID on your wireless client manually, if ESSID broadcast is disabled.

4. File download is very slow or breaks frequently?

Answer:

1. Are you using QoS function? Try to disable it and try again.
2. Internet is slow sometimes, being patient.
3. Try to reset the router and see if it's better after that.
4. Try to know what computers do on your local network. If someone's transferring big files, other people will think Internet is really slow.
5. If this never happens before, call you Internet service provider to know if there is something wrong with their network.

5. I can't log onto web management interface: password is wrong

Answer:

1. Make sure you're connecting to the correct IP address of the router!
2. Password is case-sensitive. Make sure the 'Caps Lock' light is not illuminated.
3. If you really forget the password, do a hard reset.

6. Router become hot.

Answer:

1. This is not a malfunction, if you can keep your hand on the router's case.
2. If you smell something wrong or see the smoke coming out from router or A/C power adapter, please disconnect the router and A/C power adapter from utility power (make sure it's safe before you're doing this!), and call your dealer of purchase for help.

7. The date and time of all event logs are wrong.

Answer:

Adjust the internal clock of router.

Federal Communication Commission Interference Statement

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

If this device is going to be operated in 5.15 ~ 5.25GHz frequency range, then it is restricted in indoor environment only.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The WRTR-168G(FCC ID: RYK-WRTR168G) is limited in CH1~CH11 for 2.4 GHz by specified firmware controlled in U.S.A.

EC Declaration of Conformity

Name applicant:

8F., No.257, Sec. 2, Tiding Blvd., Neihu District, Taipei City 11493, Taiwan (R.O.C.)

Hereby declares under sole responsibility that product

Brand name:

SparkLAN

Product number:

WRTR-168G

Product description:

SpeedPlus Wireless-G AP/Router

To which this declaration relates complies with the requirements of the following standards:

EN 60950-1: 2001+A11:2004

EN 301 489-1 V1.6.1 (2005-09)

EN 301 489-17 V1.2.1 (2002-08)

EN 50385 (2002-08)

EN 300 328 V1.7.1 (2006-10)

This certifies that the designated product as described above complies with the directives described above and carries the CE marking accordingly.

This declaration has been signed under responsibility of the manufacturer / importer.

Test laboratory: Advanced Data Technology Corporation

Lab Address: No. 47, 14th Ling, Chia Pau Tsuen, Linko Hsiang 244, Taipei Hsien, Taiwan.
ROC

Name manufacturer / importer:

Sparklan Communications, Inc

Aug 31 ,2008

Mike Chen



President

Product article code:

WRTR-168G

Product description:

SpeedPlus Wireless-G AP/Router

Product manufacturer / importer:

Sparklan Communications, Inc.



Countries in which the product as described above may be used freely:

Austra, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK

Countries where usage of the product as described above is prohibited:

None.

Countries where usage of the product as described below is limited:

France: The use of other channels than the channels 10 through 13 is prohibited by law.