Evolve AP799 Wireless Router

User Manual

Contents

About User Manual

This user manual mainly describes how to install and configure the Evolve AP799 Wireless Router.

Organization

This user manual is organized as follows:

Chapter	Description
Chapter 1 :Safety Precautions	Provides safety precaution information.
Chapter 2 :Overview	Provides a general overview of the wireless router, and the packing list.
Chapter 3 :Hardware Description and Hardware Installation	Mainly describes the front panel and the rear panel of the wireless router and the procedures for hardware installation.
Chapter 4 :TCP/IP Settings and Wireless Connection Introduction	Provides the information about how to configure the TCP/IP settings and how to connect the wireless router wirelessly.
Chapter 5 Logging In to the Web Page	Describes how to log in to the wireless router.
Chapter 6 :Web Configuration	Mainly describes how to navigate through the Web pages and how to configure the parameters.
Chapter 7 :Troubleshooting	Provides the troubleshooting information.

Features

- Support IEEE802.11b, IEEE802.11g, IEEE802.11n, IEEE802.3, IEEE802.3u, IEEE802.11i, and IEEE802.11e
- Transmission data rate is up to 150 Mbps
- Support WEP and WPA for transmitting data securely
- Support DHCP Server
- Support NetSniper
- Support manually setting static and dynamic routing
- Support firmware version upgrade via Web page
- Support restoring factory default settings
- Support virtual server
- Support DMZ (demilitarized zone)
- Support DNS proxy and forwarding
- Support IP bandwidth settings
- Support MAC and IP filter
- Support authentication modes of wireless security
- Support 3 types of WAN connection modes, including Dynamic IP (DHCP), Static IP, and PPPoE
- Support remote access control
- Support firewall
- Support system status display
- Support backuping and restoring configuration file
- Support system log

1 Safety Precautions

Before operating the wireless router, read the following precaution information carefully:

- Use the type of power that user manual marks.
- Use the power adapter that is packed within the device package.
- Pay attention to the power load of the outlet or the prolonged lines. An overburden power outlet or damaged lines and plugs may cause electric shock or fire accident. Check the power cords regularly. If you find any damage, replace it at once.
- Proper space left for heat dissipation is necessary to avoid any damage caused by overheating to the device. The long and thin holes on the router are designed for heat dissipation, to ensure that the device works normally. Do not cover these cooling holes.
- Do not put this device close to a place where a heat source exits or high temperature occurs. Avoid the device from direct sunshine.
- Do not put this device close to a place where is over damp or watery. Do not spill any liquid on this device.
- Do not connect this device to any PC or electronic product, unless our customer engineer or your broadband provider instructs you to do this, because any wrong connection may cause any power or fire risk.
- Do not place this device on an unstable surface or support.

2 Overview

2.1 Product Introduction

The Evolve AP799 Wireless Router (also called AP hereinafter) is a high-performance network access device. It is fully compatible with IEEE802.11b, IEEE802.11g and IEEE802.11n standards. It can provide reliable and convenient access service for the individual user, and SOHO (Small Office, Home Office).

2.2 Packing list

Please check whether your packing list includes the following items:

- Evolve AP799 Wireless Router x 1
- AC adapter (100V~240V, 12V/0.5A) x 1
- Ethernet cable x 1
- Utility CD x 1

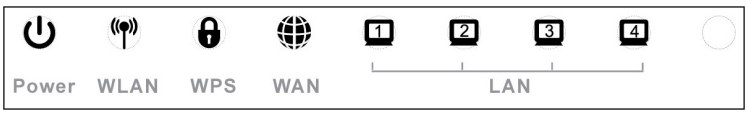
3 Hardware Description and Hardware Installation

3.1 Front Panel and LED Status

Note:

The figures in this document are for reference only.

There are 8 LED indicators on the front panel of the wireless router. By observing their status, you can judge whether the device runs normally.

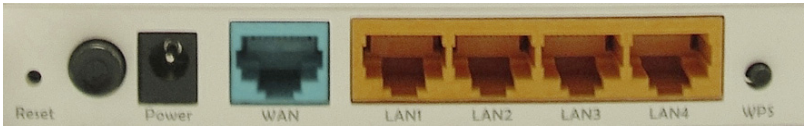


The following table describes the status of LED indicators on the front panel.

LED Indicator	Color	Status	Description
Power	Green	On	Power is on.
	-	Off	Power is off or the device is down.
WLAN	Green	On	Radio switch is turned on.
	Green	Blink	Data is being transmitted.
	-	Off	Radio switch is shut off.
WPS	Green	On	Connection succeeds under Wi-Fi Protected Setup.
	Green	Blink	Negotiation is in progress under Wi-Fi Protected Setup.
	-	Off	Wi-Fi Protected Setup is disabled.
WAN	Green	On	Connection succeeds.
	Green	Blink	Data is being transmitted.
	-	Off	No WAN connection.
LAN1/LAN2/ LAN3/LAN4	Green	On	LAN connection succeeds.
	Green	Blink	Data is being transmitted.

LED Indicator	Color	Status	Description
	-	Off	No LAN connection.

3.2 Rear Panel and Interface Description



The following table describes the interfaces or the buttons on the rear panel.

Interface/Button	Description
Reset	Press **Reset** gently for 3 seconds with a fine needle inserted into the hole and then release the button. The system reboots and returns to the factory defaults.
Power	Power socket, for connecting the power adapter.
WAN	WAN interface, for connecting WAN or the uplink network devices.
LAN1/LAN2/ LAN3/LAN4	LAN interfaces, for connecting hub, switch, or computer on LAN.
WPS	This button is used for enabling WPS PBC mode. If WPS is enabled, press this button, and then AP starts to accept the negotiation of PBC mode.

Note:

*Do not press **Reset** unless you want to clear the current settings. The **Reset** button is in a small circular hole on the rear panel. If you want to restore the default settings, please press **Reset** gently for 3 seconds with a fine needle inserted into the hole and then release the button. The system reboots and returns to the factory default settings.*

Warning:

The power specification is 12V DC, 500 mA. If the power adapter does not match the specification, it may damage the device.

3.3 Hardware Installation

3.3.1 System Requirements

Before installing the device, please make sure that the following items are ready.

- One Ethernet RJ45 cable (10Base-T/100Base-T)
- One wireless router
- A PC is installed with the TCP/IP protocol and the PC can access the Internet.

3.3.2 Before You Begin

Before you install the device, please pay attention to the following items:

- When the device is connected to a computer, hub, router or switch, the Ethernet cable should be less than 100 meters.
- Do not place this device on an unstable surface or support. Do not put this device on the ground.
- Keep the device clean. Avoid the device from direct sunshine. Avoid any metal in the device.
- Place the device in the center of the area, and try to optimize the wireless coverage.

3.3.3 Connecting the Device

To connect the device, do as follows:

Step 1 Connect one end of the RJ45 cable to the AP's LAN interface.
Step 2 Connect the other end of the RJ45 cable to your PC.
Step 3 Connect the power adapter to the AP's power socket.

3.4 Operation Range

The operation range of AP depends on the actual environment. When the device is placed in the house or in the office, the overall arrangements are different. So the path and effect for signal transmission are different. For example, the outdoor straight transmission distance for some devices in the open air is up to 150 meters, and the indoor straight transmission distance is up to 100 meters.

3.5 Roaming

Suppose that several APs run in the same network. Each AP acts as one BSS, and has its coverage range. One wireless client terminal (e.g. notebook PC or PDA) can realize roaming from one AP to another AP correctly. In that case, the wireless client terminal can communicate with the other devices within multiple APs' coverage.

In order to realize the wireless client roaming among different APs, you need to set the APs properly. Do as follows:

- Set the same SSID for different APs.
- The SSIDs of all the computers and PDAs should be consistent with that of APs.
- All the BSSs must use the same wireless channel.
- If the encryption function is enabled, all the APs should configure the same encryption mode and the encryption key for establishing connection.
- APs must keep the wireless signal covering the whole operation environment and the wireless signal should be continuous. Please put the APs to the appropriate places for a better network coverage.

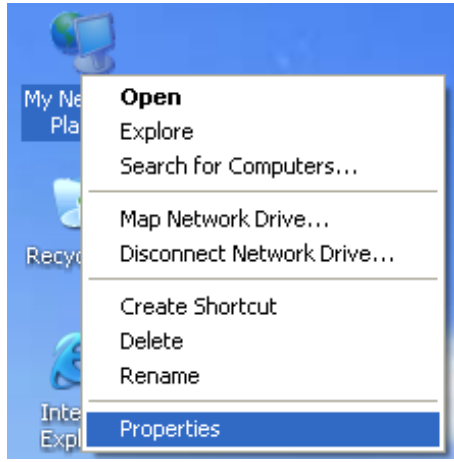
4 TCP/IP Settings and Wireless Connection Introduction

Web management tool allows you to configure AP. The recommended browser is Internet Explorer 5.0 version or above.
The following sections describe how to set the Internet connection, local Ethernet connection, and wireless connection, and how to access the Web page.

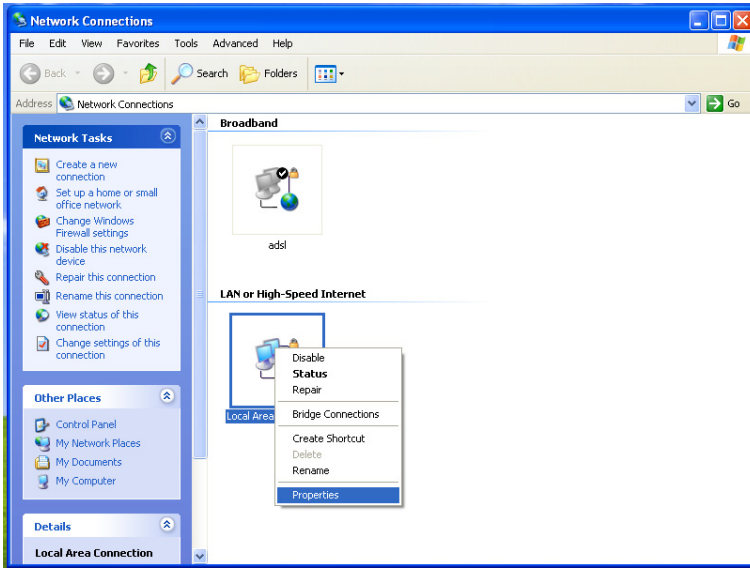
4.1 TCP/IP Settings

By default, the IP address of LAN interface of is 192.168.1.1.The subnet mask is 255.255.255.0. The DHCP Server is enabled.
It is recommended you set the network adapter to be **Obtain an IP address automatically**. Your PC acquires IP address, subnet mask, gateway, and DNS address automatically via the AP. If you know the setting of the current LAN interface, you can manually set the TCP/IP properties of the network adapter, so that your PC can communicate with AP.
You may manually set the network adapter by following the steps below:

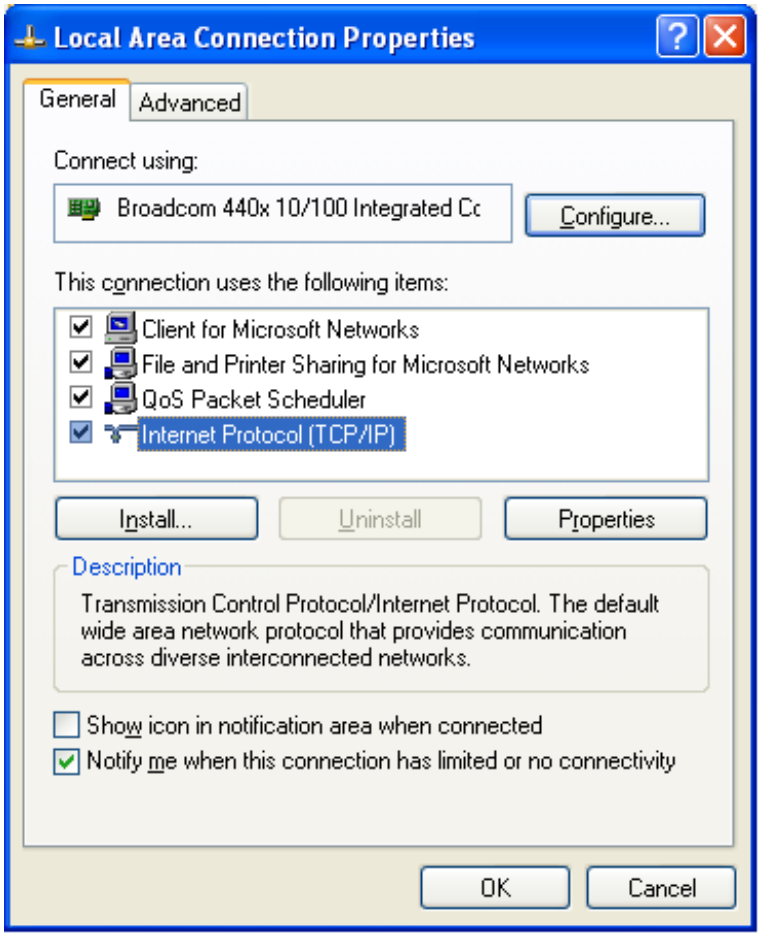
Step 1 Right-click the icon of **My Network Places** (for example, Windows XP) and select **Properties** in the menu. The **Network Connections** page appears.



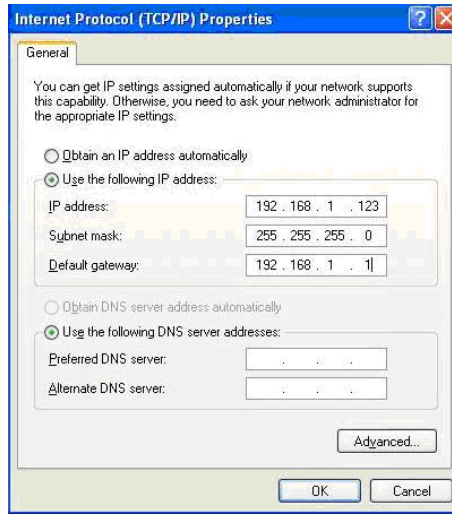
Step 2 Right-click the network adapter icon and choose **Properties** from the menu. The **Local Area Connections Properties** appears. (**Note:** *If there are several network cards on your PC, it may not display the* ***Local Area Connections Properties*** *page. It may display other dialog boxes.*)



Step 3 Double-click the **Internet Protocol (TCP/IP)** to display the **Internet Protocol (TCP/IP) Properties** page.

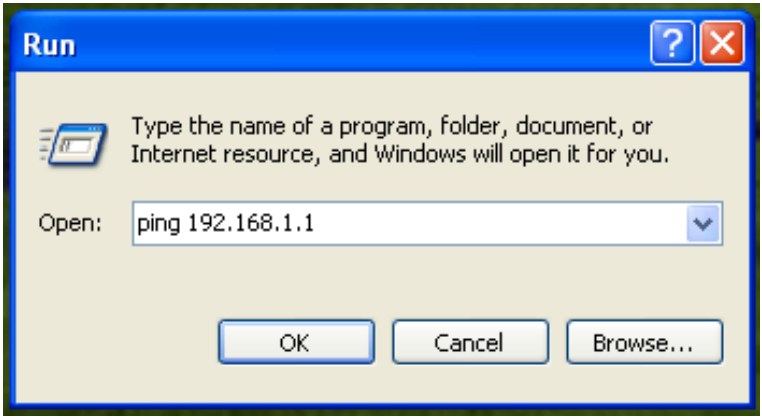


Step 4 Select **Use the following IP address** and enter the IP address of the network adapter. The IP address should belong to the IP network segment 192.168. 1.X (X is a number between 2 and 254).



Step 5 Set the subnet mask and then click **OK** to finish manual setting.

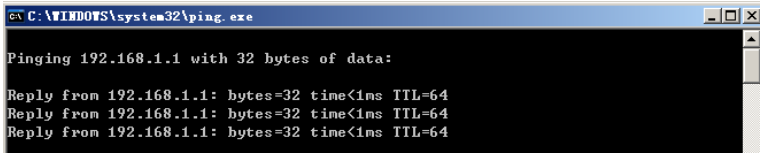
Step 6 After finishing setting, you may ping the default IP address of the AP, to check whether the current connection between PC and the AP is normal. Click **RUN…** on the lower left corner of desktop, and then enter **ping 192.168.1.1** in the dialog box. See the following figure:



Note:

"192.168.1.1" is the default IP address of the LAN interface. If this IP address is changed and you need to ping the IP address of AP, you should enter the current IP address in the dialog box above.

Step 7 If PC can ping through the default IP address of AP, it indicates that the connection between your PC and the AP is normal. See the following figure:

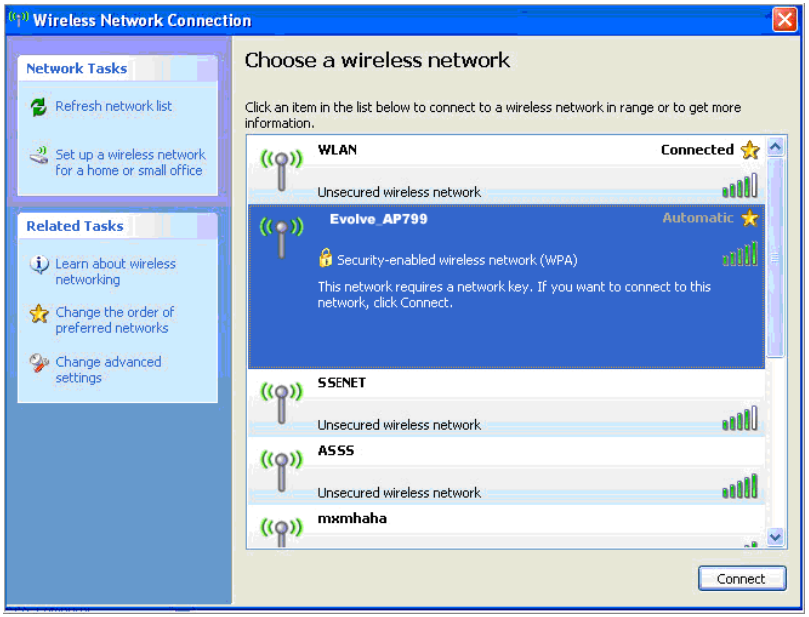


4.2 Wireless Connection Introduction

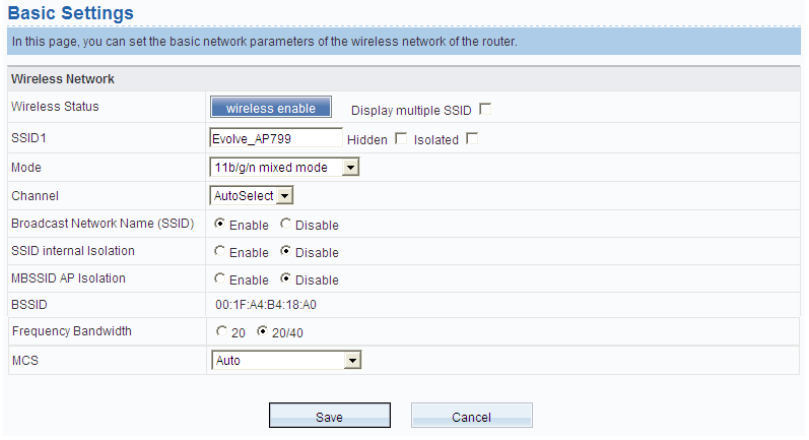
By default, the AP function of the wireless router is enabled. User that uses the wireless network adapter can follow the steps below to finish the wireless connection settings.

Step 1 Enable your wireless network adapter on your PC, and make sure that the **Wireless Zero Configuration** tool is available. Right-click the **Wireless Network Connection** icon and select **View Available Wireless Networks**.

Step 2 In the **Wireless Network Connection** page, click **Refresh network list** and the network list will be refreshed. The default SSID of the wireless router is **Evolve_AP799**. Choose the wireless router that you want to connect, and then click the **Connect** button. The default wireless security mode is **Disable**, and you can connect the wireless router directly without entering an encryption key. If the wireless router is encrypted, you need to enter the correct key to connect to the wireless router.



Step 3 If you are not sure of the available SSID, please log in to the router's Web page, and view the SSID in the **Basic Settings** page of the wireless settings. For more information about the wireless settings, please refer to 6.4 Wireless Settings.

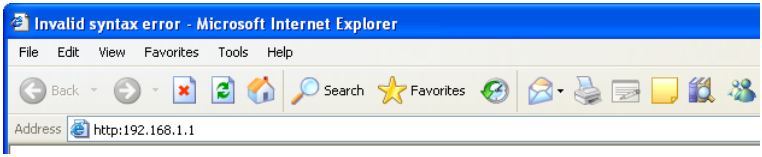


Note:

After your wireless network card connects to the wireless router successfully, usually, you should set the network adapter to be ***Obtain an IP address automatically.***

5 Logging In to the Web Page

Open the browser, and enter the ***http://192.168.1.1/*** in the IE address bar.



Select the proper language type, and enter the user name (***admin***, by default) and password (***admin***, by default) in the login page.

After clicking **Login** in the login page, you can log in to the Web page of AP.

After logging in to the Web page, you can view, configure and modify the router settings. In order to make the settings and changes take effect, sometimes, you need to reboot the wireless router.

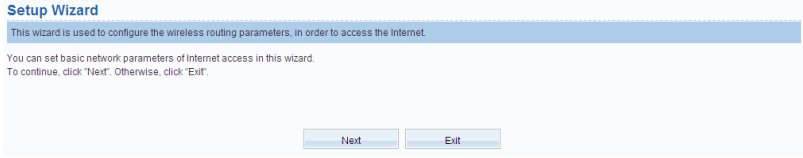
Caution:

If you are managing the wireless router by Web pages, do not cut off the power supply, otherwise, it may damage the device.

6 Web Configuration

6.1 Setup Wizard

After logging in to the Web page, choose **Setup Wizard** on the left pane of the page to display the **Setup Wizard** page.



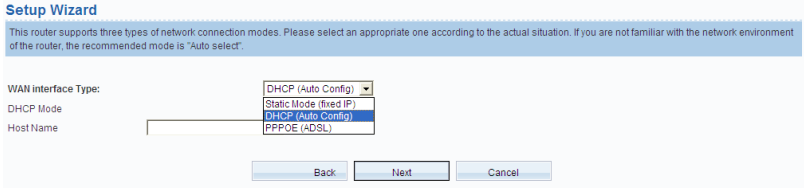
You can set the basic network parameters for accessing the Internet by this wizard. If you are not familiar with this product or do not have much network knowledge, you can follow the on-screen instructions and complete the settings easily.

If you are an expert in wireless network, you can exit the wizard and set the functions of the wireless router in the corresponding pages.

To continue, click **Next**.

To exit the wizard, click **Exit**.

After clicking **Next**, the following page appears.



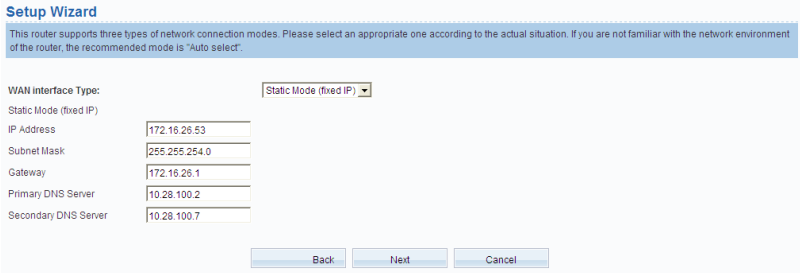
This page provides three types of WAN connection types, including **Static Mode (fixed IP)**, **DHCP (Auto Config)**, and **PPPoE (ADSL)**.

Note:

If you do not insert the network cable into the WAN interface of the wireless router, the page above will not appear.

- **Static Mode (fixed IP)**

If you select the **Static Mode (fixed IP)**, the following page appears.



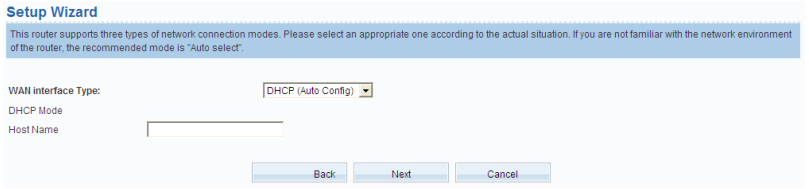
The parameters in this page are described as follows:

Field	Description
IP Address	Enter the WAN IP address provided by the ISP. It is an essential parameter, and you cannot leave it to be blank.
Subnet Mask	Enter the subnet mask provided by the ISP. The subnet mask may vary according to the network types. Generally, it is set to be 255.255.255.0 (C Cat.)
Gateway	Enter the gateway provided by the ISP.
Primary DNS Server	The ISP usually provides at least one DNS address. If It

Field	Description
	provides two DNS addresses, enter one of them to the field of **Secondary DNS Server**.
Secondary DNS Server	Enter the DNS server address provided by the ISP.

- **DHCP (Auto Config)**

If you select the **DHCP (Auto Config)**, the wireless router acquires the network parameters via the WAN interface, such as the IP address, subnet mask, gateway, and DNS server address.

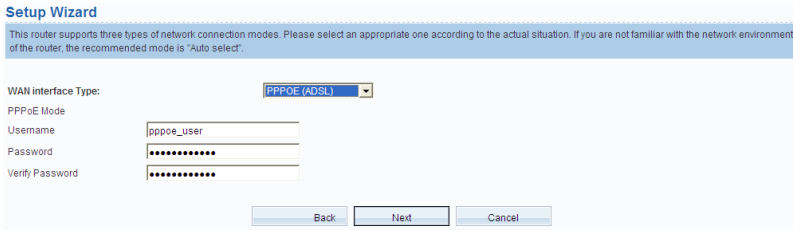


Note:

*In the **Running Status** page, you can view the network parameters assigned by the DHCP server, such as the IP address, subnet mask, gateway, and DNS server address.*

- **PPPoE (ADSL)**

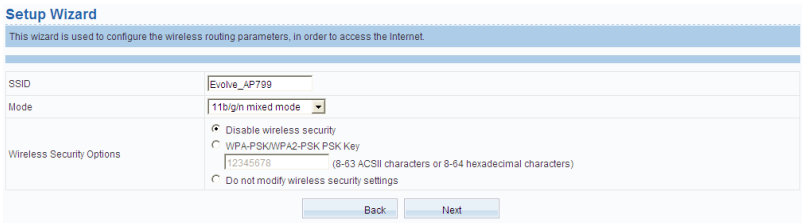
If you select the **PPPoE (ADSL)**, the following page appears.



The parameters in this page are described as follows:

Field	Description
Username	Enter the user name provided by the ISP.
Password	Enter the password provided by the ISP.
Verify Password	Enter the password again.

After setting the WAN connection type, click **Next** to display the following page.



The parameters in this page are described as follows:

Field	Description
SSID	The maximum character length for SSID is 32

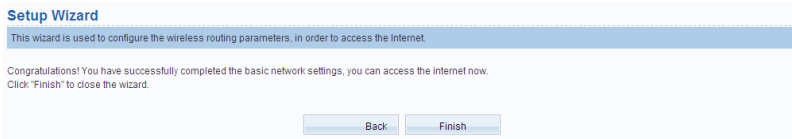
Field	Description
	characters. The legal characters include letter, number, underline or the combination of these characters.
Mode	Select a proper network mode from the drop-down list. ● 11b/g mixed mode ● 11b only ● 11g only ● 11b/g/n mixed mode (default)
Wireless Security Options	● **Disable Wireless Security**: Enable or disable the wireless security. ● **WPA-PSK/WPA2-PSK PSK Key**: Enable or disable the encryption function. When selecting this option, you need to enter a key in the field of **WPA-PSK/WPA2-PSK PSK Key**. An encryption key should consist of 8-63 ACSII characters or 8-64 hexadecimal characters. ● **Do not modify wireless security settings**: When selecting this option, the wireless router will keep the previous wireless security settings. If the wireless

Field	Description
	security settings have never been modified, after selecting this option, it will keep the default wireless security settings.

Note:

All the characters on the keyboard are ASCII code. Hexadecimal characters include the digits 0-9 and the letters such as A, B, C, and D.

After finishing the wireless settings, click **Next** to display the following page.



Click **Finish** to complete the wizard settings.

6.2 Running Status

Choose **Running Status** to display the **Running Status** page.

Running Status

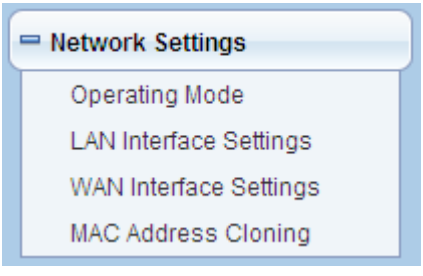
Wireless Router Running Status

LAN Interface Status	
MAC Address	00:1F:A4:B4:18:A0
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Wireless Status	
Enabling Status	Disable
SSID	Evolve_AP799
Channel	9
Mode	11b/g/n
MAC Address	
WAN	
MAC Address	00:1F:A4:B4:18:A0
IP Address	
Subnet Mask	
Gateway	
DNS	
WAN Interface Traffic Statistics	
Received/Transmitted Bytes	0/3564
Packets	0
Running Time	1 min, 57 secs

This page displays the information about current running status of the wireless router, including the information about LAN, wireless, and WAN interfaces, and the statistical information of the WAN interface.

6.3 Network Settings

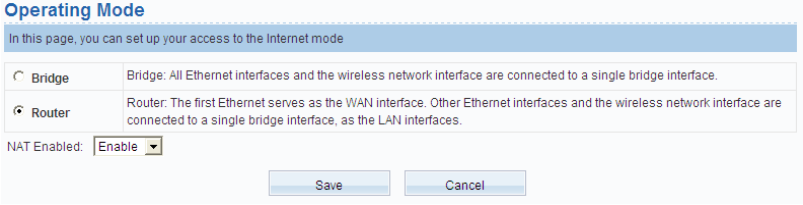
In the **Router** mode, the following figure shows the submenus of the **Network Settings**:



The submenus of **Network Settings** include **Operating Mode**, **LAN Interface Settings**, **WAN Interface Settings** and **MAC Address Cloning**.

6.3.1 Operating Mode

Choose **Operating Mode** to display the **Operating Mode** page.



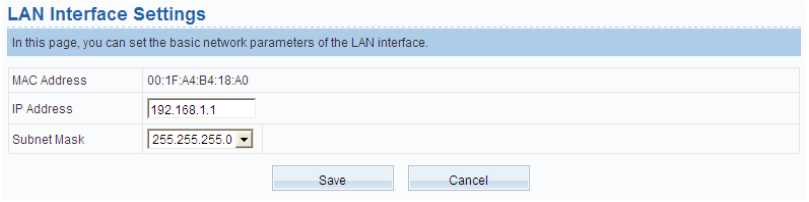
The AP provides two types of operation modes, including **Bridge** and **Router**.
The parameters in this page are described as follows:

Mode	Description
Bridge	In the Bridge mode, the AP acts as a hub.
Router	In the Router mode, the AP allows routing between WAN and LAN, or WAN and wireless network.
NAT Enabled	This function can only be used only in the **Router** mode. After NAT is enabled, the device can provide address translation between the interior network and the exterior network for LAN and wireless network.

After finishing setting, click **Save** to save the settings.

6.3.2 LAN Interface Settings

Choose **Network Settings** > **LAN Interface Settings** to display the **LAN Interface Settings** page.



In this page, you are allowed to configure the parameters of the LAN interface. If necessary, you can change the IP address of the LAN interface according to the actual network environment.

The parameters in this page are described as follows:

Field	Description
MAC Address	Display the MAC address of the LAN interface. It cannot be modified.
IP Address	The IP address for the LAN user to access the wireless router. The default value is 192.168.1.1. You can change it if necessary.
Subnet Mask	The subnet mask that the wireless router provides to the LAN user. You can enter a different subnet mask according to the actual network status.

After finishing setting, click **Save** to save the settings.

Note:

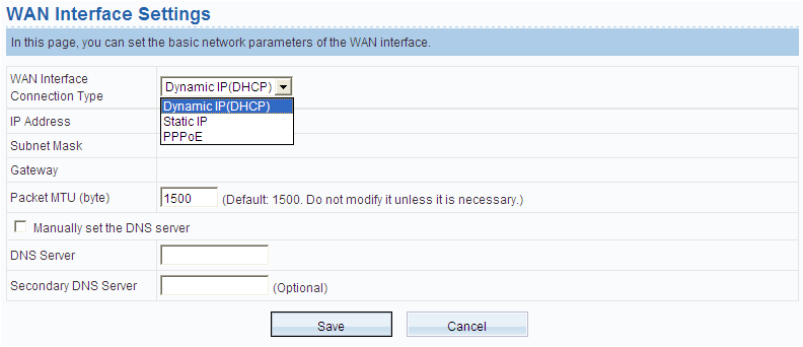
- *If you have changed the IP address of the LAN interface, you need to enter the new IP address to log in to the Web page, and the default gateways of all the hosts in LAN must be set to be the new IP address, for accessing the*

Internet.

- *The subnet masks of all the hosts in LAN must be set to be the same as the subnet mask in this page.*

6.3.3 WAN Interface Settings

Choose **Network Settings** > **WAN Interface Settings** to display the **WAN Interface Settings** page.

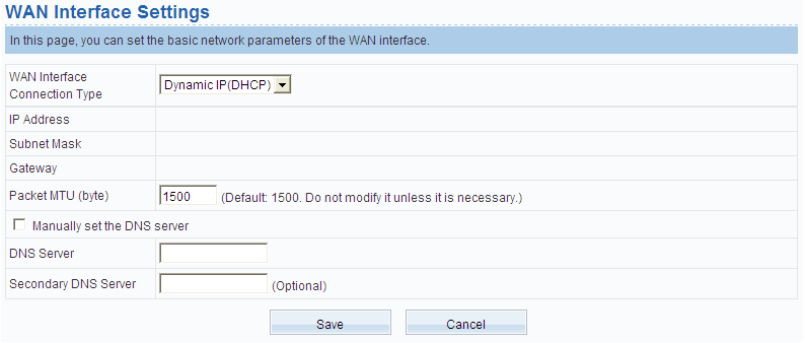


This page is used to configure the WAN connection parameters. This page provides 5 types of WAN interface connection types, including **Dynamic IP (DHCP)**, **Static IP**, and **PPPoE**. In this page, you may choose the proper WAN interface connection type and configure the parameters related to the connection type.

- **Dynamic IP (DHCP)**

If you select **Dynamic IP (DHCP)**, the wireless router acquires the network parameters via the WAN interface, such as the IP address, subnet mask, and

gateway. If the ISP does not provide any network parameter, please select this WAN interface connection type.



The parameters in this page are described as follows:

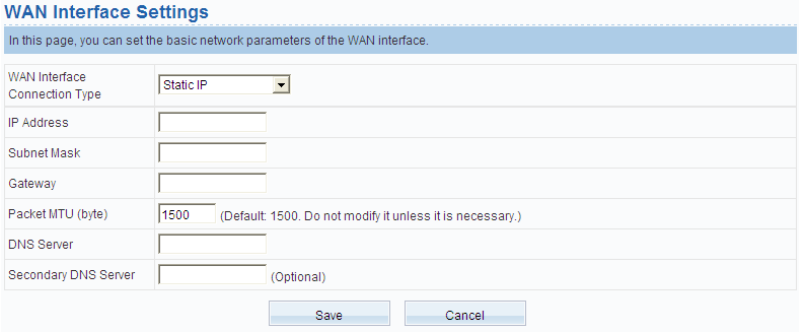
Field	Description
WAN Interface Connection Type	Select **Dynamic IP (DHCP)** in the drop-down list.
IP Address	Display the IP address assigned by the DHCP server.
Subnet Mask	Display the subnet mask assigned by the DHCP server.
Gateway	Display the gateway assigned by the DHCP server.
Packet MTU (byte)	The default value of MTU (Maximum Transmission Unit) is 1500. Usually, do not change the MTU value. You may consult your ISP whether this value needs to be modified.
Manually set the DNS server	Whether to manually set the DNS server.
DNS Server	Displays the DNS server address provided by the ISP. After enabling **Manually set the DNS server**, you may set at least one DNS server. When connecting, the wireless router will adopt the DNS server that is set manually first.
Secondary DNS	Displays the DNS server address provided by the ISP. After

Field	Description
Server	enabling **Manually set the DNS server**, you may enter the second DNS server if necessary.

After finishing setting, click **Save** to save the settings.

- **Static IP**

If the ISP provides the information of the WAN interface, please select the **Static IP** connection type. If you are not sure of the detailed settings, please consult your ISP.



The parameters in this page are described as follows:

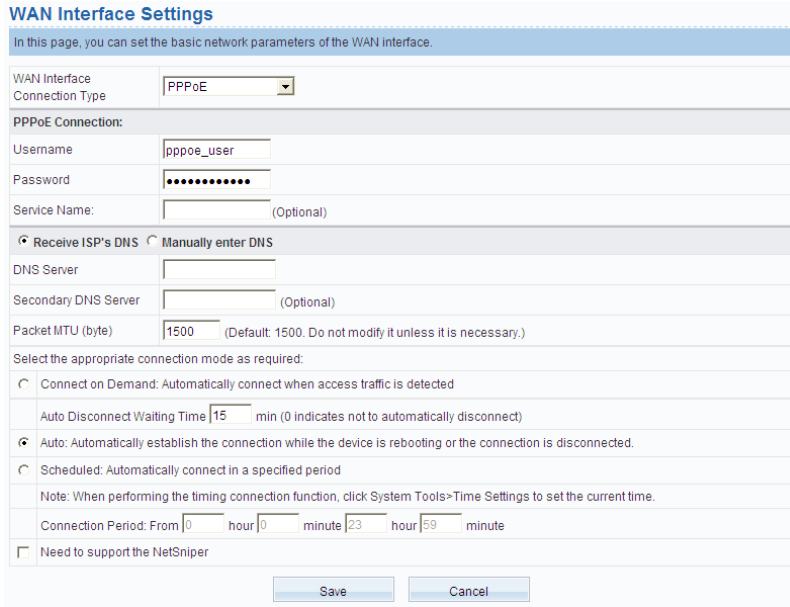
Field	Description
WAN Interface Connection Type	Select **Static IP** from the drop-down list.
IP Address	Enter the WAN IP address provided by the ISP. You are not allowed to leave it to be blank.
Subnet Mask	Enter the WAN subnet mask provided by the ISP. The subnet mask may vary according to the network types. Generally, it is set to be 255.255.255.0 (C Cat.)
Gateway	Enter the gateway provided by the ISP. It is the IP address for

Field	Description
	connecting the ISP.
Packet MTU (byte)	The default value of MTU (Maximum Transmission Unit) is 1500. Usually, do not change the MTU value. You may consult your ISP whether this value needs to be modified.
DNS Server	The ISP usually provides at least one DNS address. If It provides two DNS addresses, enter one of them to the field of **Secondary DNS Server**.
Secondary DNS Server	Enter the DNS server address provided by the ISP.

After finishing setting, click **Save** to save the settings.

- **PPPoE**

If the ISP provides the PPPoE connection type, it also provides the username and the password for you to access the Internet.



The parameters in this page are described as follows:

Field	Description
WAN Interface Connection Type	Select **PPPoE** from the drop-down list.
Username	Enter the user name provided by the ISP.
Password	Enter the password provided by the ISP.
Service Name	Specify the PPPoE server name if there are multiple PPPoE servers. It is optional.
Receive ISP's DNS/ Manually enter DNS	● **Receive ISP's DNS**: Enable or disable this function. After enabling this function, the wireless router

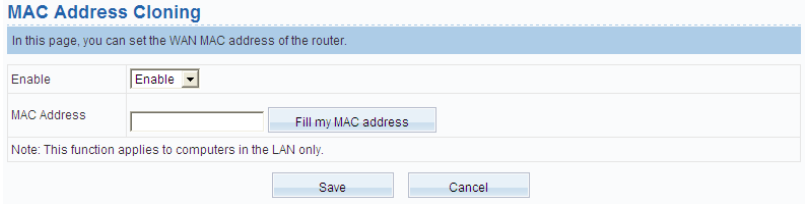
Field	Description
	automatically acquires the DNS server address by the ISP. ● **Manually enter DNS**: Enable or disable this function. After enabling this function, you need to enter at least one DNS address.
DNS Server	Enter the DNS server address.
Secondary DNS Server	Enter the DNS server address. (Optional)
Packet (MTU) (byte)	The default value of MTU (Maximum Transmission Unit) is 1500. It is recommended to keep the default MTU value. You may consult your ISP whether this value needs to be modified.
Select the appropriate connection mode as required:	The wireless router provides 3 types of connection modes. ● **Connect on Demand**: After selecting this option, when there is a network access request from LAN, system automatically establishes the network connection. If there is no any network request from LAN during **Auto Disconnect Waiting Time**, system will automatically disconnect the connection. For the users who pay the network fee according to the on-line time, it is recommended you had better adopt this connection mode, and it can help you to reduce your network fee. ● **Auto**: When selecting **Auto**, system automatically establishes the connection after startup. In the process of operating the wireless router, the network connection will be disconnected for some external reasons, and then system will try to establish the connection every other interval (e.g. 10s) until the connection succeeds. If your network service is monthly payment, it is recommended you use this

Field	Description
	connection mode. ● **Scheduled**: When selecting **Scheduled**, you need to set the **Connection Period** first. System will start to establish the connection at the specified time and end the connection at the specified end time. Selecting this option can control the on-line time of user in the internal network.
Auto Disconnect Waiting Time	If there is no any network request from LAN during **Auto Disconnect Waiting Time**, the system automatically disconnects the connection for protecting your network resources. The default value is 15 minutes. When the value is set to be 0, it indicates that the connection will not be automatically disconnected. You need to set this parameter only in the **Connect on Demand** mode.
Need to support the NetSniper	Enable or disable the NetSniper function. The NetSniper can automatically detect the private proxy server system or the illegal routers, and control their IP packets.

After finishing the settings, click **Save** to save the settings.

6.3.4 MAC Address Cloning

Choose **Network Settings** > **MAC Address Cloning** to display the **MAC Address Cloning** page.



This page is used to configure the WAN MAC address of the wireless router.

The parameters in this page are described as follows:

Field/Button	Description
Enable	Enable or disable the MAC address cloning.
MAC Address	Display the MAC address of the WAN interface. Some ISPs require user to bind the MAC address, and they will provide a valid MAC address for user. In that case, you need to enter the MAC address in this field. Do not change the MAC address, unless the ISP requires you to do so.
Fill my MAC address	Click this button to clone the host MAC address to the field of **MAC Address**. Do not clone the MAC address, unless the ISP requires you to do so.

After finishing the settings, click the **Save** button to save the settings.

Note:

The MAC cloning function is only for the hosts in the LAN.

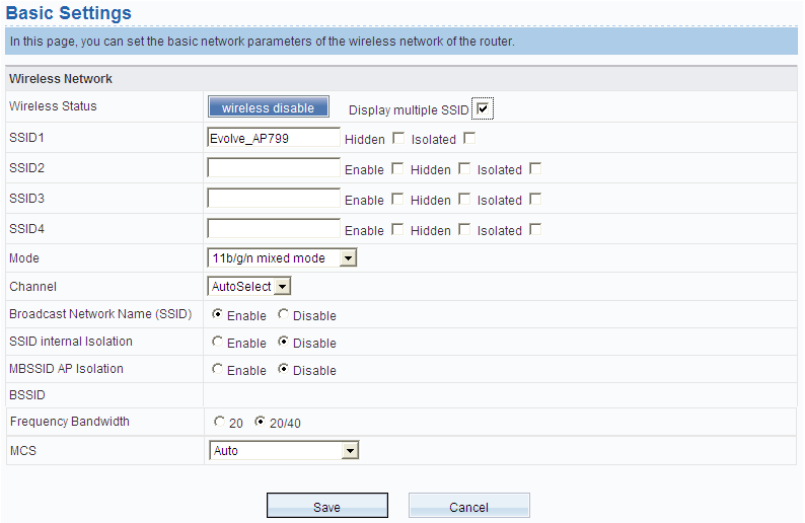
6.4 Wireless Settings

In the router mode, the following figure shows the submenus of the **Wireless Settings**:

The submenu items of the **Wireless Settings** are **Basic Settings**, **Wireless Security Settings**, **Wireless MAC Address Filter**, **Advanced Wireless Settings**, **Wireless Client List**, **WPS Settings**, and **WDS Settings**.

6.4.1 Basic Settings

Choose **Wireless Settings** > **Basic Settings** to display the **Basic Settings** page.



This page is used to configure the wireless basic parameters.

The parameters in this page are described as follows:

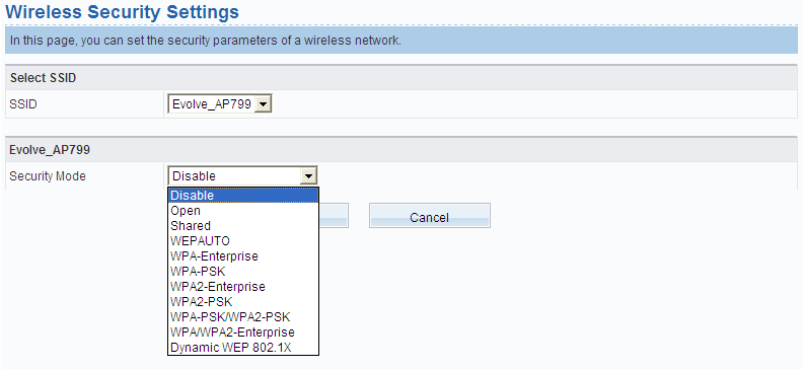
Field	Description
Wireless Status	Enable or disable the wireless function.
Display multiple SSID	If it is selected, all SSIDs fields are displayed. If it is not selected, only SSID1 is displayed.
SSID1-4	The maximum entry length of SSID is 32-character. The legal characters include letter, number, underline or the combination of these characters. The default SSID is **Evolve_AP799**. You can select to enable, hide, or isolate an SSID by selecting the corresponding check box next to the specific SSID.
Mode	Select a proper network mode from the drop-down list.

Field	Description
	● 11b/g mixed mode ● 11b only ● 11g only ● 11b/g/n mixed mode (default)
Channel	Select a proper channel from the drop-down list. The default channel is **AutoSelect**.
Broadcast Network Name (SSID)	Whether to broadcast SSID. After enabling this function, the wireless router will broadcast its SSID, and the wireless client can scan the SSID.
SSID internal isolation	Enable or disable the isolation among AP clients. If this function is enabled, the client terminals that connect to the same AP cannot communicate with each other.
MBSSID AP Isolation	Enable or disable the isolation among different SSIDs. After enabling this function, the client terminals with different SSIDs can not communicate with each other.
BSSID	Display the MAC address of the wireless interface.
Frequency Bandwidth	You may select 20 or 20/40.
MCS	You may select the MCS value from 0 to 7. The default MCS is **Auto**.

After finishing the settings, click the **Save** button to save the settings.

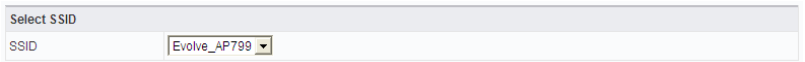
6.4.2 Wireless Security Settings

Choose **Wireless Settings** > **Wireless Security Settings** to display the **Wireless Security Settings** page.



This page allows you to configure the wireless security modes and set the encryption keys, to prevent unauthorized access and monitoring.

- **Select SSID**

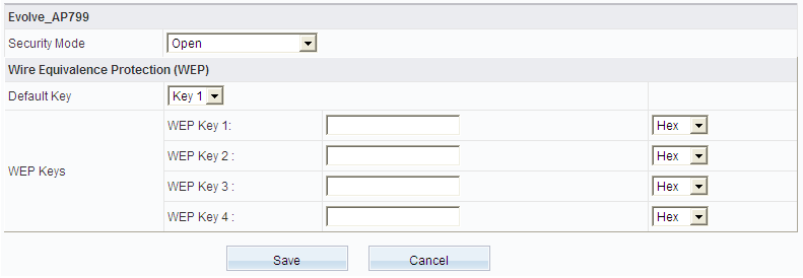


SSID: Select a SSID that you want to configure.

- **Security Mode**

This page provides 10 types of security modes, including Open, Shared, WEPAUTO, WPA-Enterprise, WPA-PSK, WPA2-Enterprise, WPA2-PSK, WPA-PSK/WPA2-PSK, WPA/WPA2-Enterprise, and Dynamic WEP 802.1X.

- Open Mode



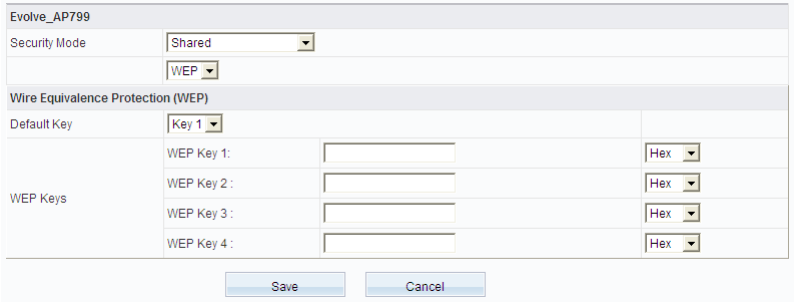
The parameters of **Open** mode are described as follows:

Field	Description
Security Mode	Select the **Open** mode in the drop-down list.
Default Key	Select a key as the default key.
WEP Keys (WEP Key1/2/3/4)	Set 64-bit or 128-bit key. The key format is Hex or ASCII.

Note:

When selecting the Hex format, you need to set 5-bit or 13-bit hex characters as the WEP key. Hex characters include the digits (0-9), and the letters (A-Z). When selecting the ASCII format, the WEP key should be set to be 10-bit or 26-bit ASCII characters.

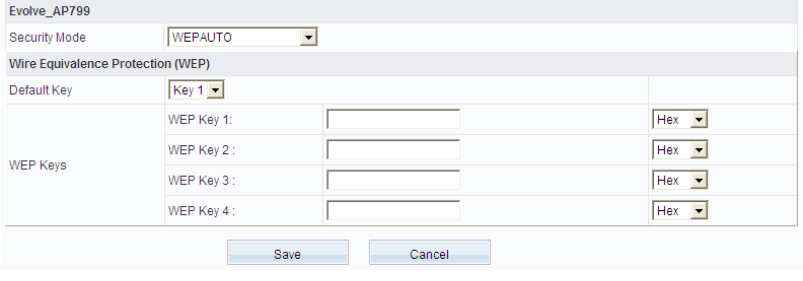
- Shared Mode



The parameters of **Shared** mode are described as follows:

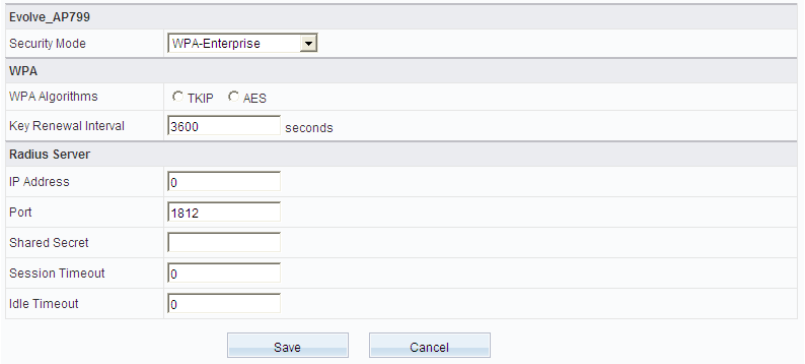
Field	Description
Security Mode	Select the **Shared** mode in the drop-down list. The **Shared** mode only supports WEP.
Default Key	Select a key as the default key.
WEP Keys (WEP Key1/2/3/4)	Set 64-bit or 128-bit key. The key format is **Hex** or **ASCII**.

- WEPAUTO Mode



The parameter description of **WEPAUTO** mode, please refer to the **Open** mode.

- WPA-Enterprise Mode

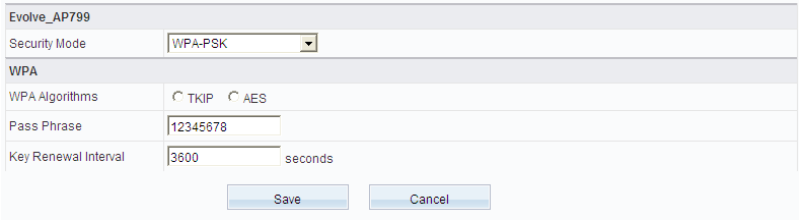


The parameters of **WPA-Enterprise** mode are described as follows:

Field	Description
Security Mode	Select the **WPA-Enterprise** in the drop-down list.
WPA Algorithms	You may select **TKIP** or **AES**.
Key Renewal Interval	Set the key renewal interval. The value 0 indicates that system does not renew the key.
IP Address	Enter the IP address of the RADIUS server. RADIUS server is used to authenticate the hosts in the wireless network.
Port	The port number that the RADIUS server uses. The default port number is 1812. You may change it according to the server setting.
Shared	Set the shared key for accessing the RADIUS server.

Field	Description
Secret	
Session Timeout	If this value is 0, it indicates that there is no session time limit.
Idle Timeout	Set the idle timeout.

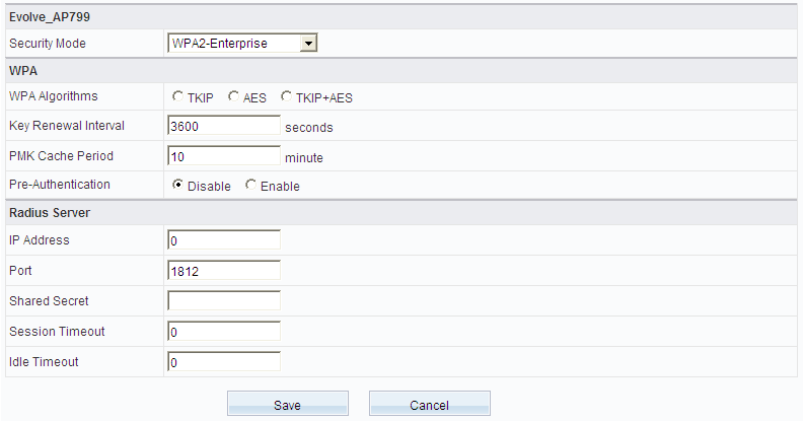
- WPA-PSK Mode



The parameters of **WPA-PSK** mode are described as follows:

Field	Description
Security Mode	Select the **WPA-PSK** mode in the drop-down list.
WPA Algorithms	Select **TKIP** or **AES**.
Pass Phrase	Set 8-bit to 64-bit key in ASCII characters.
Key Renewal Interval	Set the key renewal interval. The value 0 indicates that system does not renew the key.

- WPA2-Enterprise Mode

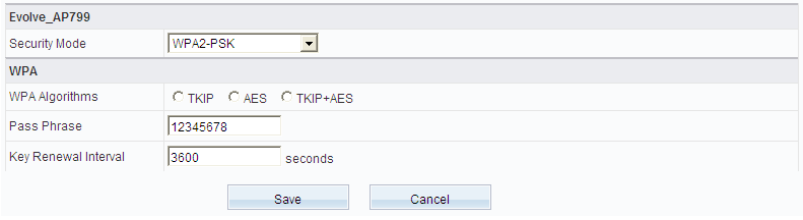


The parameters of **WPA2-Enterprise** mode are described as follows:

Field	Description
Security Mode	Select the**WPA2-Enterprise** in the drop-down list.
WPA Algorithms	You may select **TKIP**, **AES**, or **TKIP+AES**.
Key Renewal Interval	Set the key renewal interval. The value 0 indicates that system does not renew the key.
PMK Cache Period	Set the PMK (Pairwise Master Key) cache period. PMK scheme allows the roaming users that pass through the 802.11X/EAP handshake protocol to roam to the previous AP again. PMK can decrease the roaming delay and improve the roaming speed.
Pre-Authentication	Enable or disable pre-authentication.
IP Address	Enter the IP address of the RADIUS server. RADIUS server is used to authenticate the hosts in the wireless network.
Port	The port number that the RADIUS server uses. The default port number is 1812. You may change it

Field	Description
	according to the server setting.
Shared Secret	Set the shared key for accessing the RADIUS server.
Session Timeout	If this value is 0, it indicates that there is no session time limit.
Idle Timeout	Set the idle timeout.

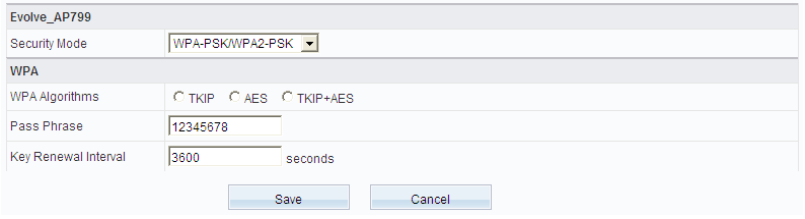
- WPA2-PSK Mode



The parameters of **WPA2-PSK** mode are described as follows:

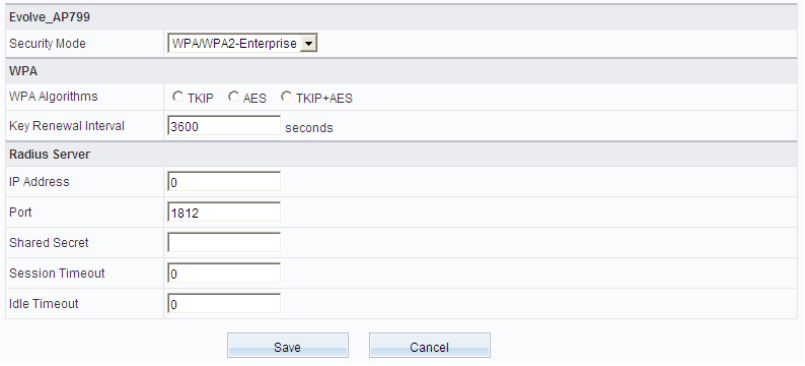
Field	Description
Security Mode	Select the **WPA2-PSK** in the drop-down list.
WPA Algorithms	You may select **TKIP**, **AES**, or **TKIP+AES**.
Pass Phrase	Set 8-bit to 64-bit key in ASCII characters.
Key Renewal Interval	Set the key renewal interval. The value 0 indicates that system does not renew the key.

- WPA-PSK/WPA2-PSK Mode



The parameter description of **WPA-PSK/WPA2-PSK** mode, please refer to the **WPA2-PSK** mode.

- WPA/WPA2-Enterprise Mode

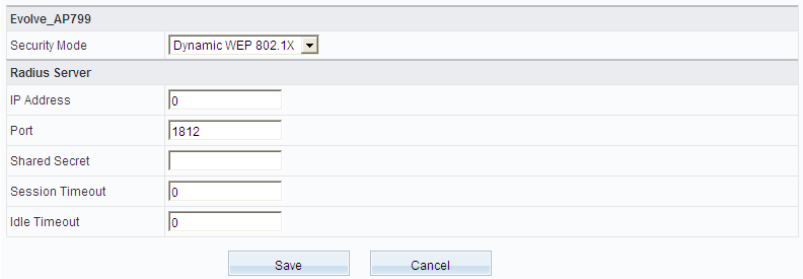


The parameters of **WPA/WPA2-Enterprise** mode are described as follows:

Field	Description
Security Mode	Select the **WPA/WPA2-Enterprise** in the drop-down list.
WPA Algorithms	You may select **TKIP**, **AES**, or **TKIP+AES**.
Key Renewal	Set the key renewal interval. The value 0 indicates

Field	Description
Interval	that system does not renew the key.
IP Address	Enter the IP address of the RADIUS server. RADIUS server is used to authenticate the hosts in the wireless network.
Port	The port number that the RADIUS server uses. The default port number is 1812. You may change it according to the server setting.
Shared Secret	Set the shared key for accessing the RADIUS server.
Session Timeout	If this value is 0, it indicates that there is no session time limit.
Idle Timeout	Set the idle timeout.

- Dynamic WEP 802.1X



The parameters of **Dynamic WEP 802.1X** mode are described as follows:

Field	Description
Security Mode	Select the **Dynamic WEP 802.1X** in the drop-down list.
IP Address	Enter the IP address of the RADIUS server. RADIUS server is used to authenticate the hosts in the

Field	Description
	wireless network.
Port	The port number that the RADIUS server uses. The default port number is 1812. You may change it according to the server setting.
Shared Secret	Set the shared key for accessing the RADIUS server.
Session Timeout	If this value is 0, it indicates that there is no session time limit.
Idle Timeout	Set the idle timeout.

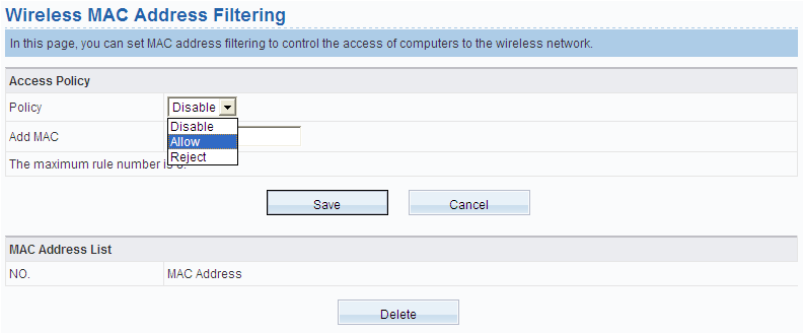
Note:

In order to connect to the wireless router successfully, the wireless settings (e.g. SSID) and the security settings (e.g. encryption key) of the hosts in the wireless network should be consistent with that of the wireless router.

6.4.3 Wireless MAC Address Filter

The wireless MAC address filtering function is used to allow or reject the hosts in the wireless network to access the WAN, for controlling the on-line permission of the users in the wireless network.

Choose **Wireless Settings** > **Wireless MAC Address Filter** to display the **Wireless MAC Address Filtering** page.



This page is used to allow or reject the wireless clients to access the wireless network of the wireless router.

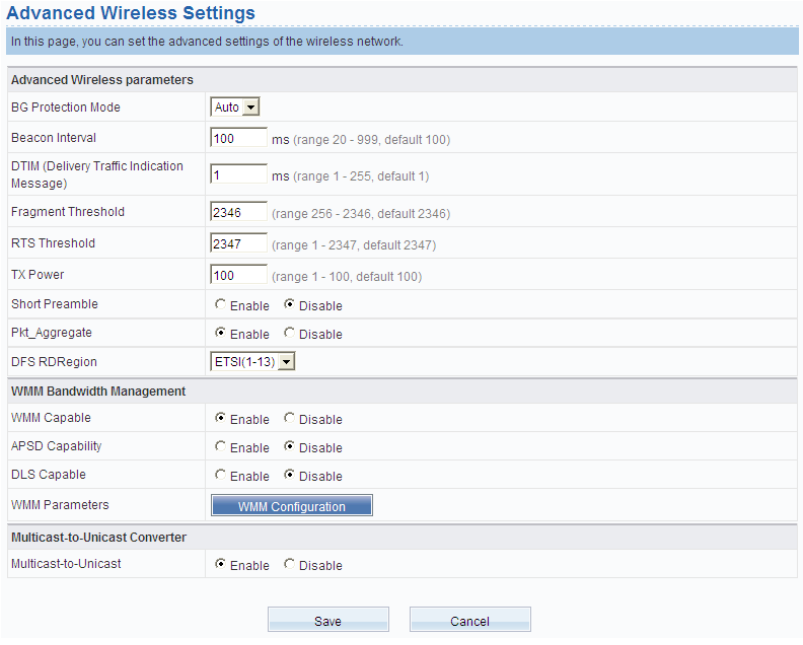
The parameters in this page are described as follows:

Field	Description
Policy	The filtering policies include **Disable**, **Allow**, and **Reject**. ● **Disable**: Disable the wireless MAC address filtering function. ● **Allow**: Allow the wireless clients with the MAC addresses in the **MAC Address List** to access the wireless network of the wireless router. ● **Reject**: Reject the wireless clients with the MAC addresses in the **MAC Address List** to access the wireless network of the wireless router.
Add MAC	Add a MAC address of the wireless client.

After finishing the settings, click the **Save** button to save the settings.

6.4.4 Advanced Wireless Settings

Choose **Wireless Settings** > **Advanced Wireless Settings** to display the **Advanced Wireless Settings** page.



This page allows you to configure the advanced wireless settings.

- **Parameter Description**

The parameters in this page are described as follows:

Field	Description

Field	Description
BG Protection Mode	You may select **On**, **Off**, or **Auto**. The default BG protection mode is **Auto**.
Beacon Interval	By default, wireless beacon signal sends data to station every other 100 ms. The range is 20~999.
DTIM (Delivery Traffic Indication Message)	The default DTIM is 1ms. The range is 1~255.
Fragment Threshold	Set the fragmentation threshold. Packets larger than the size set in this field will be fragmented. Too many data packets will lower the wireless network performance. The **Fragment Threshold** value should not be set too low. The default value is 2346.
RTS Threshold	Set the RTS (Request to send threshold.) threshold. When the packet size is large than the preset RTS size, the wireless router will send a RTS to the destination station to start negotiation. When receiving the RTS frame, the wireless station will send back a CTS frame to the wireless router, to indicate that they can communicate with each other. The default value is 2347.
TX Power	Set the Tx power of the wireless router. The default value is 100. The value 100 indicates full power.

Field	Description
Short Preamble	Enable or disable short preamble. The default setting is **Disable**. Preamble defines the length of CRC correction block for the wireless devices. Short preamble adopts 56-bit synchronization field. The network whose network traffic is dense should use shorter preambles. Short Preamble is mainly applied to the efficiency improvement of real- time applications, such as streaming video, and Voice-Over-IP telephony.
Pkt_Aggregate	Enable or disable the Pkt_Aggregate function. Pkt_Aggregate can aggregate multiple data packets together for improving the transmission efficiency.
DFS RDRegion	Set the register region. Different register regions limit the ranges of different frequency.
WMM capable	Enable or disable WMM. After enabling WMM, the wireless router can process different types of wireless data according to their priority levels.
APSD Capability	Enable or disable APSD. After enabling APSD, it can decrease the consumption of the power supply device.
DLS Capable	Enable or disable DLS.
WMM Parameters	Click the **WMM Configuration** button to display the configuration page of WMM parameters.
Multicast-to-Unicast	After enabling this function, the transmission quality of the

Field	Description
	wireless multicast stream can be improved.

After finishing the settings, click the **Save** button to save the settings.

Note:

The advanced wireless setting is only for advanced user. For the common user, do not change any setting in this page.

● WMM Configuration

- WMM Access Categories

At present, WMM defines traffic into 4 access categories.

Access Category	Description	802.1d Tags
WMM Voice Priority	Highest priority Allows multiple concurrent VoIP calls, with low latency and toll voice quality	7, 6
WMM Video Priority	Prioritize video traffic above other data traffic One 802.11g or 802.11a channel can support 3-4 SDTV streams or 1 HDTV streams	5, 4
WMM Best Effort Priority	Traffic from legacy devices, or traffic from applications or devices that lack QoS capabilities Traffic less sensitive to latency, but affected by long delays, such as Internet surfing	0, 3
WMM Background Priority	Low priority traffic (file downloads, print jobs) that does not have strict latency and throughput requirements	2, 1

AC_VO: Voice (highest priority)

AC_VI: Video (high priority)

AC_BE: Best effort (medium priority)

AC_BK: Background (low priority)

802.11 uses DCF (Distributed Coordination Function) scheme of the CSMA/CA

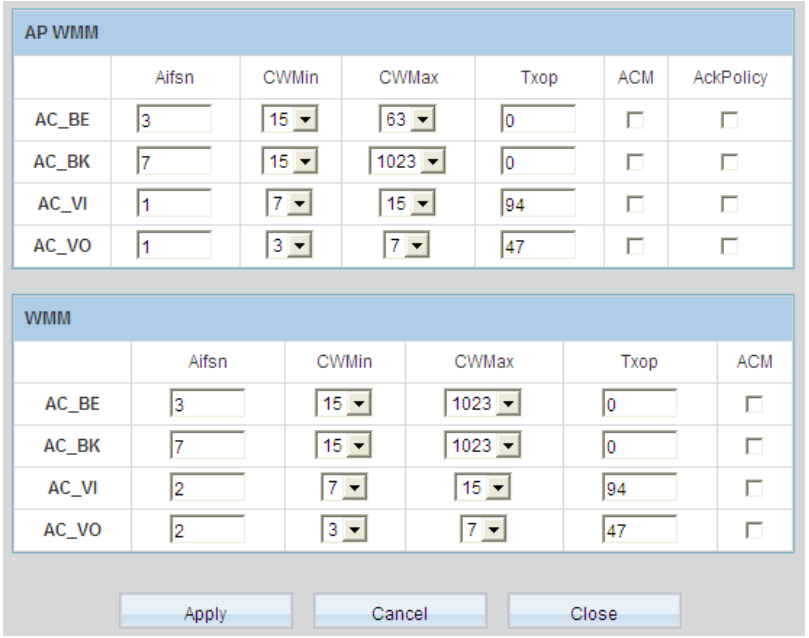
(Carrier Sense Multiple Access / Collision Avoidance) protocol to reduce the chances of packets collision while one more devices access the wireless media at the same time. A client wishing to transmit has to first listen to the channel for a predetermined amount of time so as to check for any activity on the channel. If the channel is sensed "idle", then the client is permitted to transmit. If the channel is sensed as "busy", the station has to defer its transmission. The random interval provides a fair transmission chance for all the devices.

When each priority queue waits for sending packets, it has to wait a fixed time AIFSN and a random time CW. They define time values by multiple time slots. For 802.11b, its time slot is 20ms. The time slot of 802.11a and 802.11g is 9 ms. CW insures the random delay time of DCF, so that the packets collision among the devices with the same access category can be avoided. If collision occurs, CW is doubled until it exceeds its maximum value. After every successful transmission, CW returns to the minimum value.

The priority queue that succeeds in the competition of sending packets will acquire Txop time to send packets. If the txop value is 0, it is limited to be a MSDC (MAC Service Data Unit).

- **Setting the WMM Parameters**

Click the **WMM Configuration** button in the **Advanced Wireless Settings** page, and the following page appears.



In this page, you can configure the WMM parameters of access point and station.

Note:

The wireless router provides the standard WMM settings. If you want to modify the parameters above, please refer to the WMM settings of your WMM products.

The parameters in this page are described as follows:

Field	Description
Aifsn	Aifsn (Arbitrary Inter-Frame Space Number). This parameter influences the delay time of WMM access category. If you use voice or video service, you'd

Field	Description
	better set this parameter to be smaller in the fields of AC_VI and AC_VO. If it is E-mail or Web service, you should set a bigger value in the fields of AC_BE and AC_BK.
Cwmin	Cwmin (Mini. Contention Window) also influences the delay time of WMM access category. The difference between AC_VI and AC_VO should be smaller, but the difference between AC_BE and AC_BK should be bigger.
Cwmax	Cwmax (Max.Contention Window)
Txop	Txop (Opportunity to Transmit) may optimize the WMM access. Compared to the WMM access that needs a higher priority, such as AC_VI and AC_VO, this value should be bigger.
ACM	ACM (Admission Control Mandatory) parameter only reacts on AC_VI and AC_VO. If you set this value to be 0, it indicates that AP is in the charge of the access commands. If this value is 1, it means the client is in the charge of the access commands.
Ackpolicy	When WMM packets are transmitting, AP will receive an echo request. If you set this value is 0, it means AP does not send back an echo request, which will bring positive effect for WMM. If this value is 1, AP generates the response to the request.

Note:

Usually, you do not need to modify the WMM parameters.

- **DLS (Direct Link Setup) Configuration**

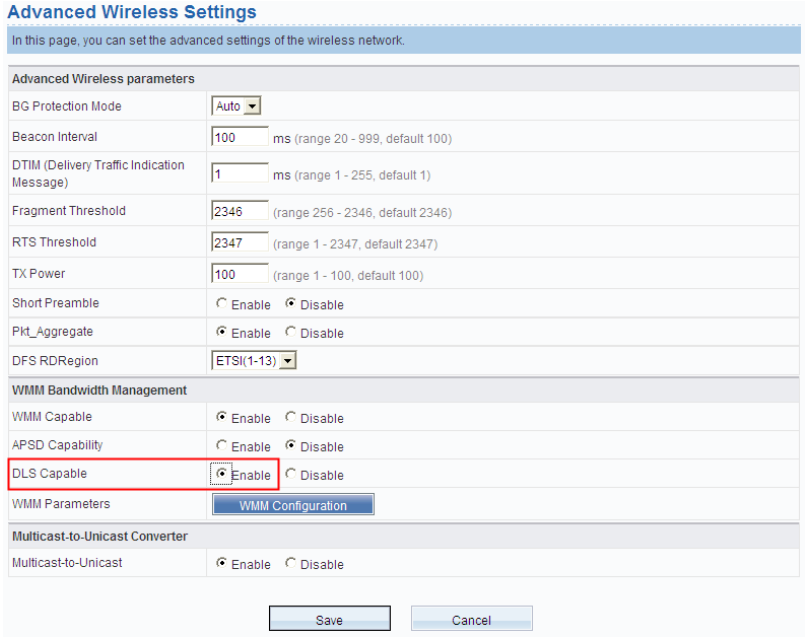
The wireless router provides DLS function. Suppose that there are two WMM devices. Enter the MAC address of a WMM device in the DLS setting of the other

device, and then connect the two WMM devices to the wireless router. In this way, these two WMM devices can transmit message directly.

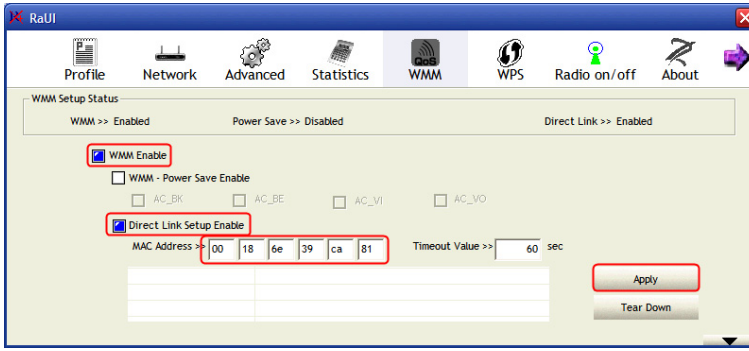
If you want to configure WMM DLS, do as follows:

Step1 Prepare two wireless network cards (A and B) and one wireless router.

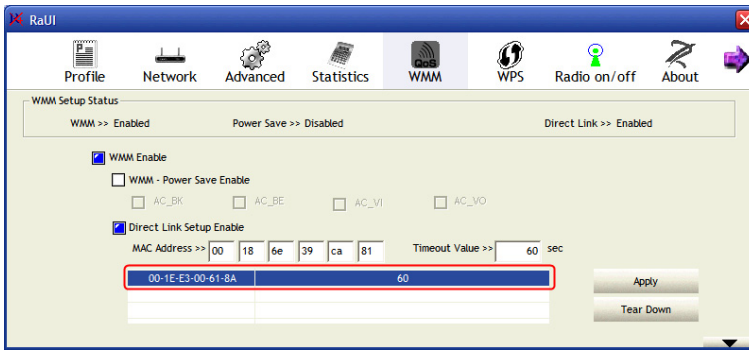
Step2 Enable the DLS function in the **Advanced Wireless Settings** page of the wireless router.



Step3 Enable the DLS function of wireless network cards. Enter the MAC address of wireless card A in the **WMM** page of the wireless network card B, and then click the **Apply** button.

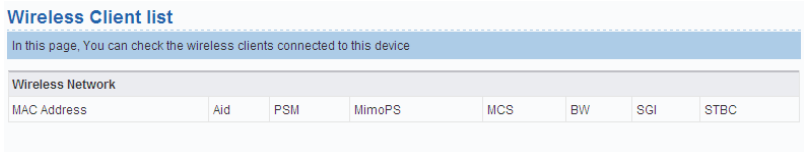


Step4 If DLS succeeds, you can view the MAC address of wireless card A in the **WMM** page of wireless card B, and vice versa.



6.4.5 Wireless Client List

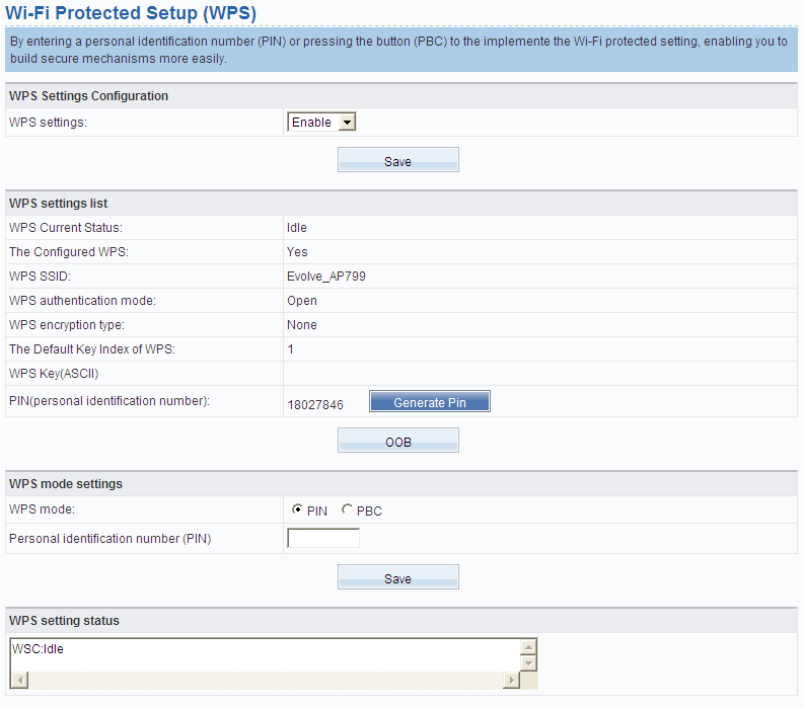
Choose **Wireless Settings** > **Wireless Client List** to display the **Wireless Client List** page.



In this page, you can view the information of the clients that access the wireless router.

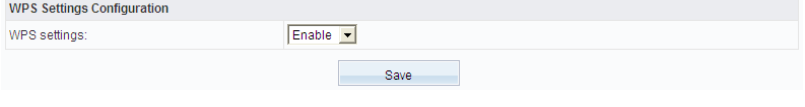
6.4.6 WPS Settings

Choose **Wireless Settings** > **WPS Settings** to display the **Wi-Fi Protected Setup (WPS)** page.



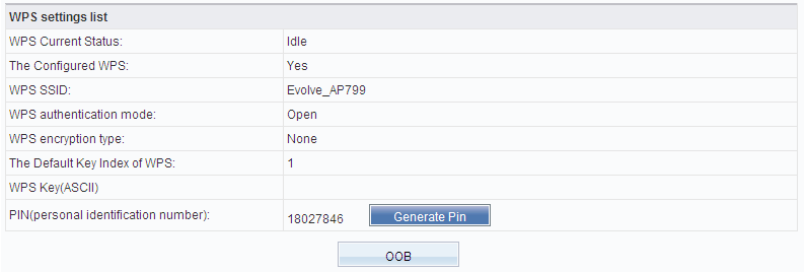
In this page, you can configure the WPS settings.

- **WPS Settings Configuration**



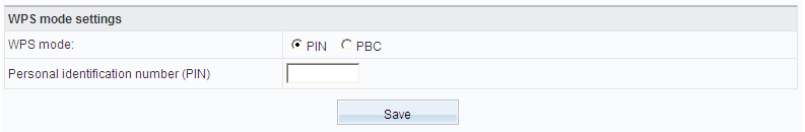
WPS settings: Enable or disable the WPS.
After enabling WPS, you can configure the parameters related to WPS.

- **WPS Settings List**



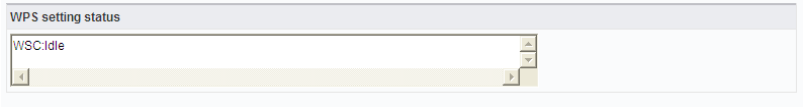
WPS settings list displays the preset WPS information, such as WPS current status, WPS authentication mode, and WPS encryption type.
Click the **OOB** button in the **Wi-Fi Protected Setup (WPS)** page, system will resynchronize out-of-band LSDB (Link State DataBase).

- **WPS Mode Settings**



WPS modes include PIN and PBC. For more details, please refer to **WPS Application**.

- **WPS Setting Status**



The figure above displays WPS current status.

- **WPS Application**

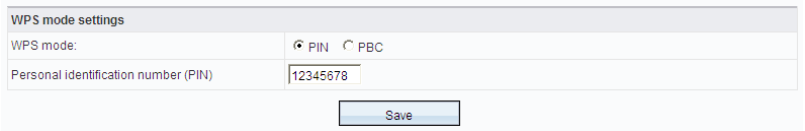
This page provides two WPS modes, including PIN and PBC modes.
At present, WPS supports three types of operation modes, including **Enrollee** mode, **Registrar** mode, and **PBC** mode. **Enrollee** and **Registrar** modes need to apply PIN code negotiation.

- Enrollee Mode

Step 1 Select the enrollee mode on the wireless client, the software of wireless client will generate a random PIN code, for example, 12345678.

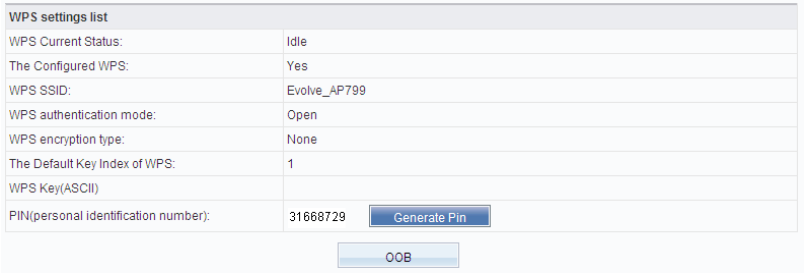
Step 2 In the **Wi-Fi Protected Setup (WPS)** page, enter the PIN code of wireless client, for example, 12345678.

Step 3 Click the **Save** button in the **Wi-Fi Protected Setup (WPS)** page to submit the setting.

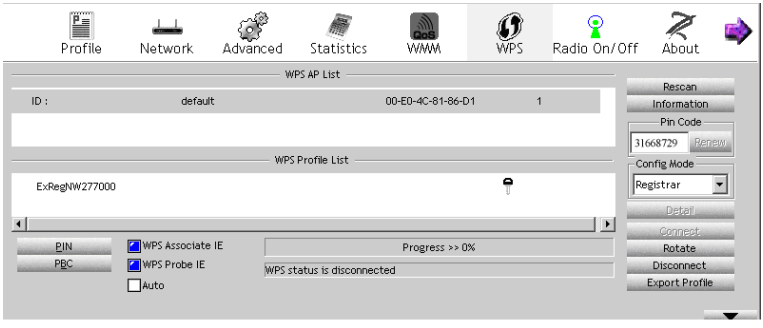


- Registrar Mode

Step 1 View the AP PIN in the **Wi-Fi Protected Setup (WPS)** page, for example, 31668729.

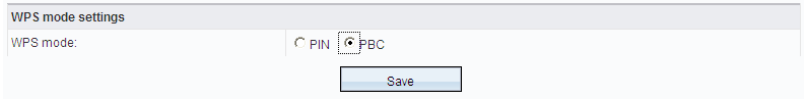


Step 2 Select the **Registrar** mode on the wireless client and enter the PIN code of the wireless router. See the following figure:



- PBC Mode

Step 1 In the **Wi-Fi Protected Setup (WPS)** page, select the **PBC** mode, and then click the **Save** button. You may press the **WPS** button on the rear panel.

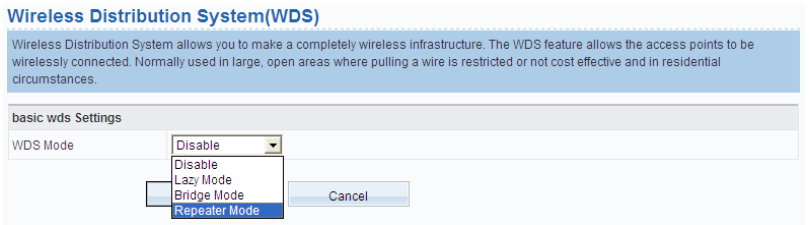


Step 2 Enable the PBC function on the wireless client. In that case, the wireless router and wireless client will automatically establish connection.

6.4.7 WDS Settings

Wireless Distribution System (WDS) is a system that enables the wireless interconnection of access points in an IEEE 802.11 network. It allows a wireless network to be expanded using multiple access points without the need for a wired backbone to link them, as is traditionally required. The notable advantage of WDS over other solutions is that it preserves the MAC addresses of client packets across links between access points.

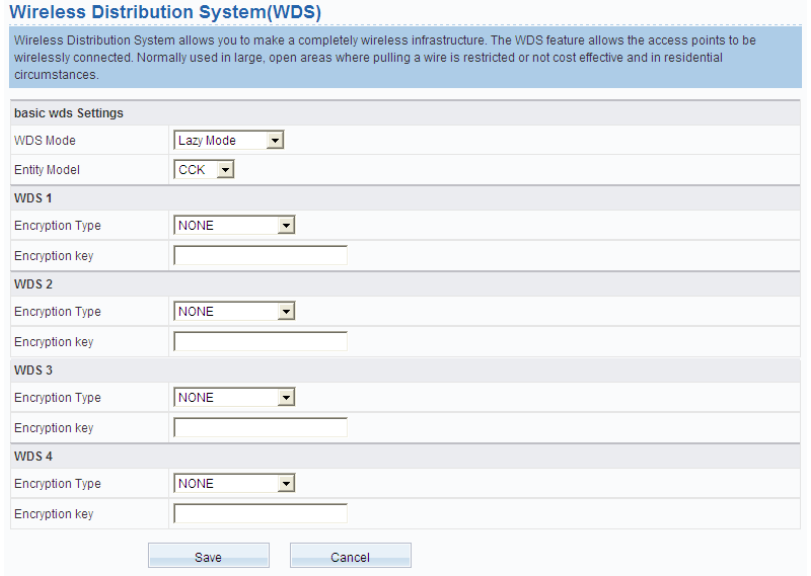
Choose **Wireless Settings** > **WDS Settings** to display the **Wireless Distribution System (WDS)** page.



This page provides three types of WDS modes, including **Lazy Mode**, **Bridge Mode**, and **Repeater Mode**. You may also disable WDS.

- **Lazy Mode**

  - Parameter Description



The parameters of **Lazy Mode** are described as follows:

Field	Description
WDS Mode	Select the **Lazy Mode** in the drop-down list.
Entity Model	The physical modes in the drop-down list include CCK, OFDM, and HTMIX
Encryption Type	The encryption types you can select include NONE, WEP 64bits, WEP 128bits, WPA-PSK (TKIP), and WPA2-PSK (AES).
Encryption Key	Set the encryption key.

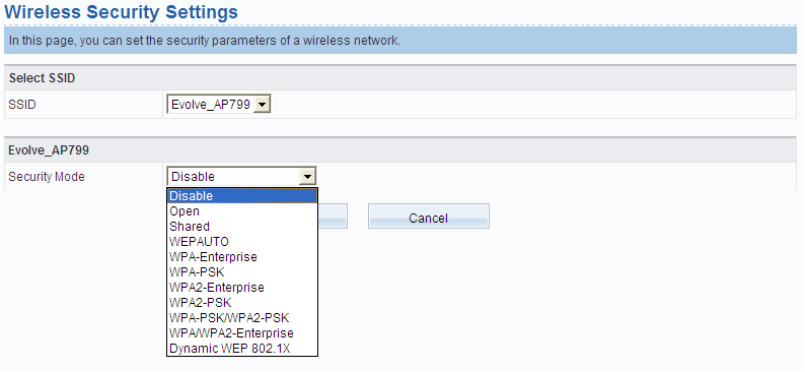
- Lazy Mode Configuration

In the lazy mode, the wireless router automatically connects to the WDS devices that use the same SSID, channel, encryption mode, and the physical mode. You do not need to manually enter other MAC addresses of the peer routers.

To configure the **Lazy Mode**, do as follows:

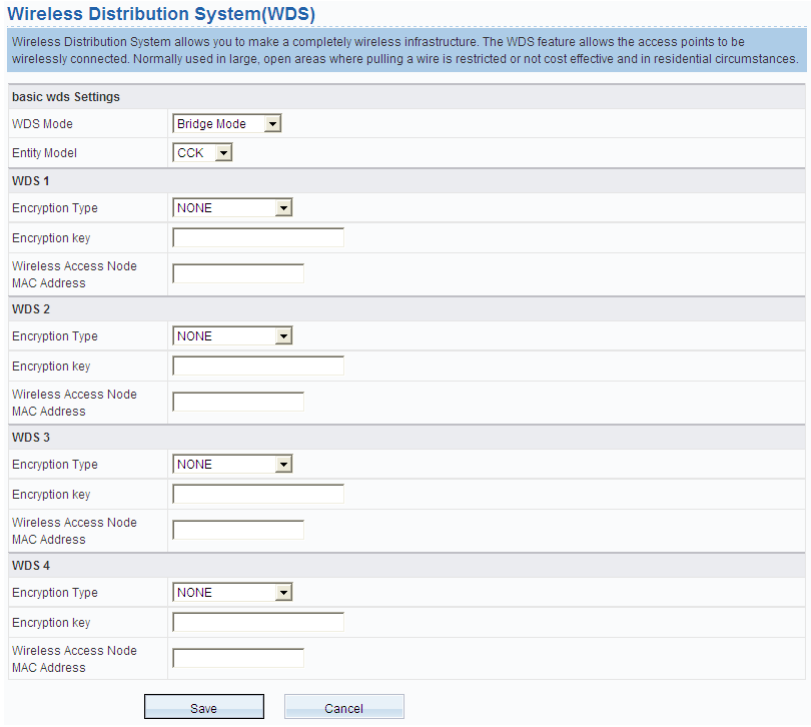
Step 1 In the **Wireless Distribution System (WDS)** page, set the WDS mode to be **Lazy Mode**, and set the entity model and encryption type to accord with the peer router (A router that needs to connect to the this wireless router by WDS). After finishing the settings, click the **Save** button to save the settings. The wireless router will work in the **Lazy** mode.

Step 2 Enter the **Wireless Security Settings** page, and set the security mode of the wireless router to accord with the peer router.



- **Bridge Mode**

  - Parameter Description



The parameters of **Bridge Mode** are described as follows:

Field	Description
WDS Mode	Select the **Bridge Mode** in the drop-down list.
Entity Model	The physical modes in the drop-down list include CCK, OFDM, and HTMIX.
Encryption Type	The encryption types you can select include NONE, WEP 64bits, WEP 128bits, WPA-PSK (TKIP), and WPA2-PSK (AES).

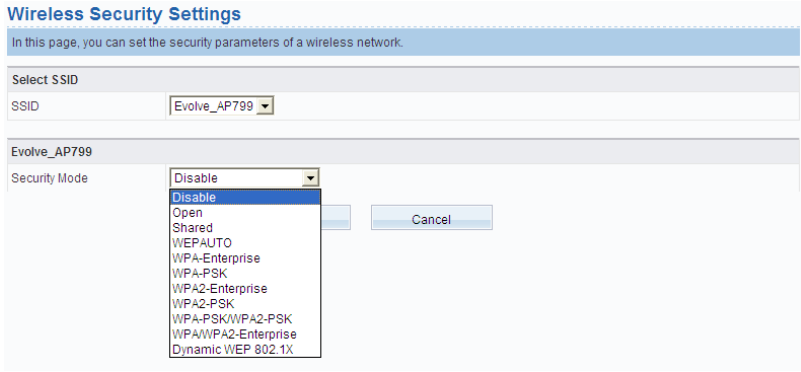
Field	Description
Encryption Key	Set the encryption key.
Wireless Access Node MAC Address	The MAC address of another wireless router that connects to this wireless router by WDS.

- Bridge Mode Configuration

In the bridge mode, you can use the wireless router to connect to other routers, for extending wireless coverage. Meanwhile, it can also decrease the working load of the AP that accesses the Internet. In that case, the wireless card does not directly communicate with the wireless device that accesses the Internet, but it directly communicates with the wireless router.

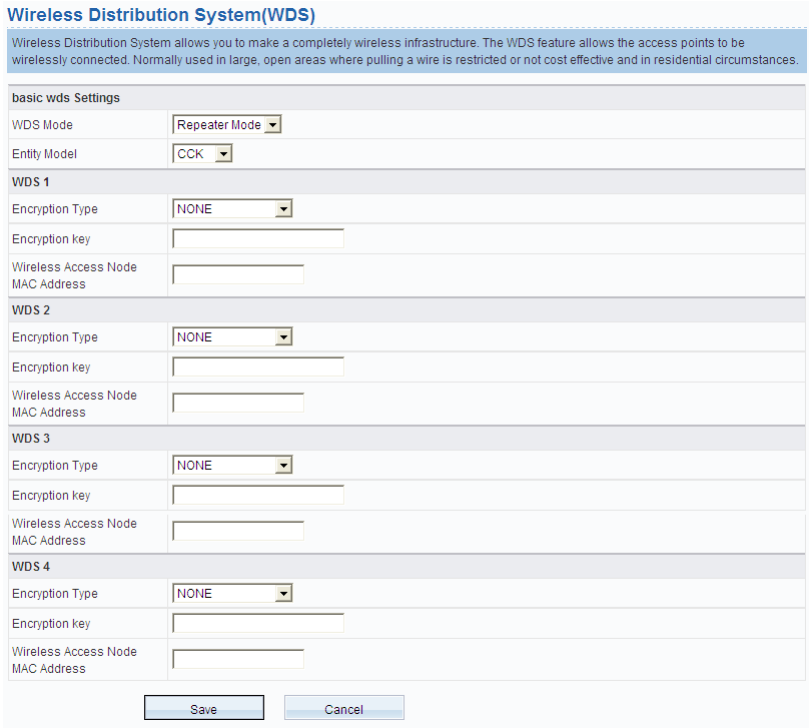
Step 1 In the **Wireless Distribution System (WDS)** page, select the WDS mode to be **Bridge Mode**. Set the entity model and encryption type to accord with the peer router, and then enter the MAC address of the peer router. After finishing the settings, click the **save** button to save the settings. The wireless router will work in the **Bridge** mode.

Step 2 Choose **Wireless Settings** > **Wireless Security Settings** to display the **Wireless Security Settings** page. Set the security mode of the wireless router to accord with the peer router.



- **Repeater Mode**

  - Parameter Description

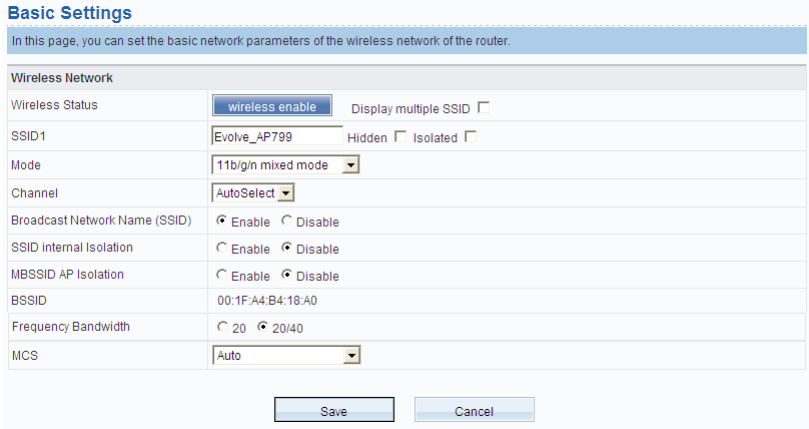


The parameter description of the **Repeater Mode**, please refer to the **Bridge Mode**.

  - Repeater Mode Configuration

In the **Repeater** mode, you can use the wireless router to connect to the primary router, for extending the wireless coverage.

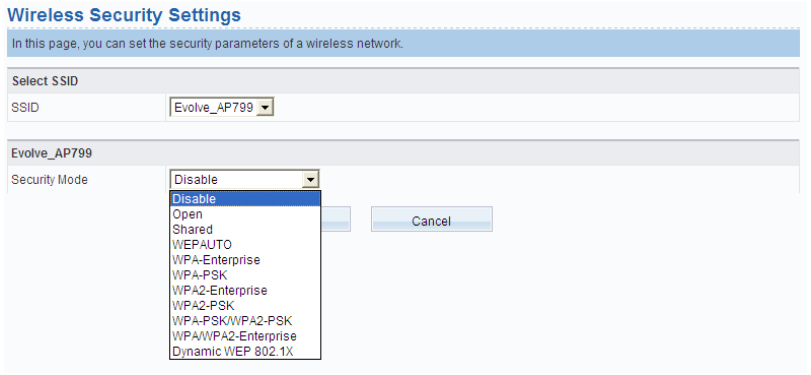
Step 1 Choose **Wireless Settings** > **Basic Settings** to display the **Basic Settings** page.



Step 2 In this page, set the channel of the wireless router to accord with the peer router.

Step 3 In the **Wireless Distribution System (WDS)** page, set the WDS mode to be **Repeater Mode**, set the entity model and encryption type to accord with the peer router, and then enter the MAC address of the peer AP. After finishing the settings, click the **Save** button to save the settings. The wireless router will work in the **Repeater** mode.

Step 4 Choose **Wireless Settings** > **Wireless Security Settings** to display the **Wireless Security Settings** page.



Step 5 In this page, set the security mode of the wireless router to accord with the peer router.

Note:

In the WDS mode, do not set any mixed modes, for example, WPA-PSK/WPA2-PSK.

In the WDS mode, do not set any mixed modes, for example, WPA-PSK/WPA2-PSK.

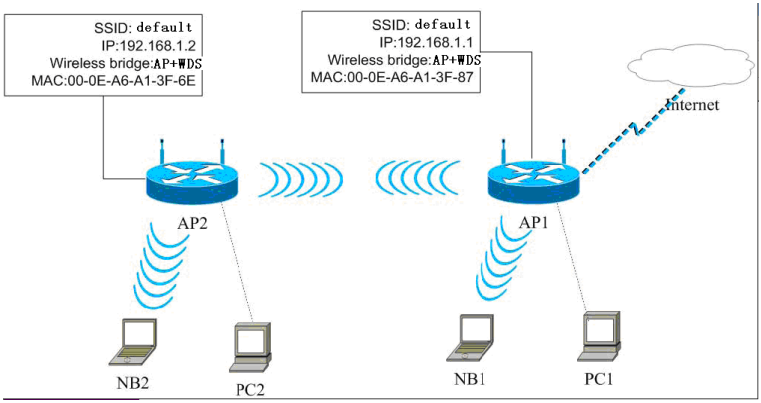
*Do not set all the WDS APs to be **Lazy Mode**, please ensure that at least one WDS AP acts as Root Bridge and enter the MAC address of the wireless router to the other routers.*

For better compatibility, please try to adopt the products with the same model to connect to the wireless router.

- **Establishing a Network by WDS Bridge Mode**

The following description shows how to use the WDS bridge mode of two devices to establish a network. You may add more devices to establish a network.

Suppose that there are two APs. One is AP1, and the other is AP2. Enable the DHCP server of AP1 and AP2.



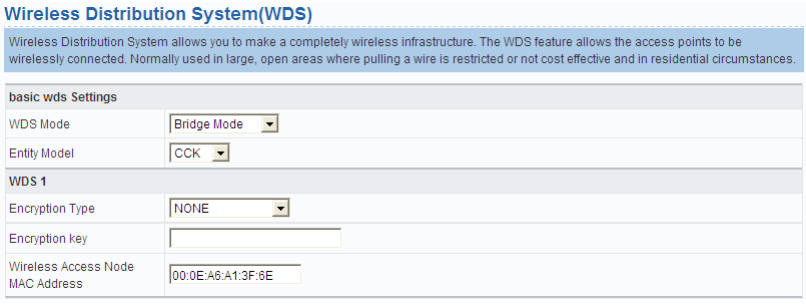
The following table shows the settings of AP1 and AP2.

	Access Point 1	Access Point 2
SSID	default	default
LAN IP Address	192.168.1.1	192.168.1.2
Encryption	NONE	NONE
Wireless Bridge	WDS Mode	WDS Mode
MAC Address	00:0E:A6:A1:3F:87	00:0E:A6:A1:3F:6E
Allow Anonymous	No	No
DHCP Server	Yes	No

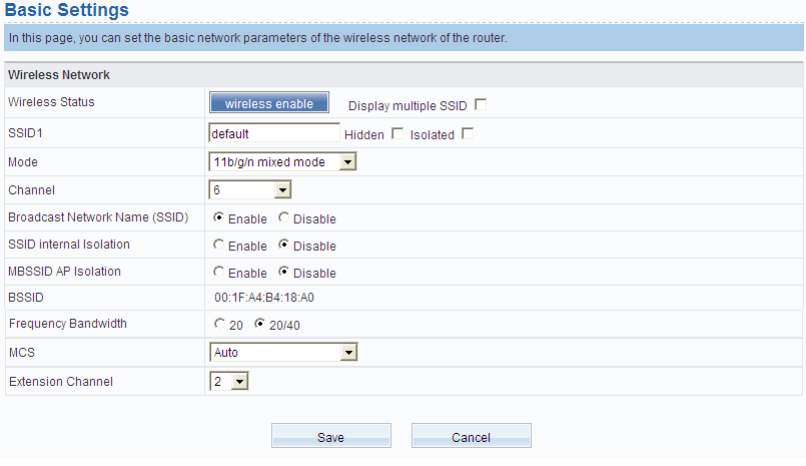
- Configuring AP1

Step 1 Enter http://192.168.1.1 in the IE address bar, and then enter the user name (by default, **admin**) and the password (by default, **admin**) to log in to the Web page.

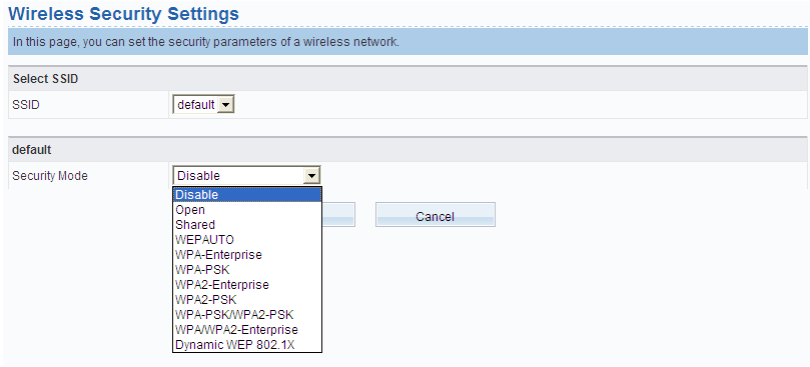
Step 2 In the **Wireless Distribution System (WDS)** page, set the WDS mode to be **Bridge Mode**, and enter the MAC address of the AP2.



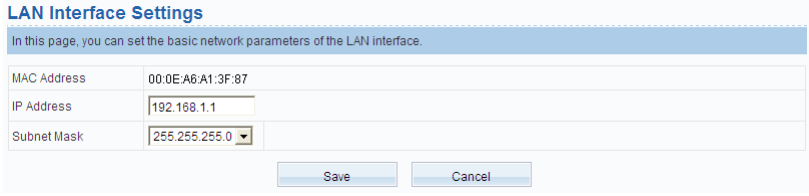
Step 3 Choose **wireless Settings** > **Basic Settings** to display the **Basic Settings** page. In this page, set the SSID of AP1. AP1 and AP2 must use the same SSID and channel.



Step 4 Enter the **Wireless Security Settings** page, and disable the security mode.

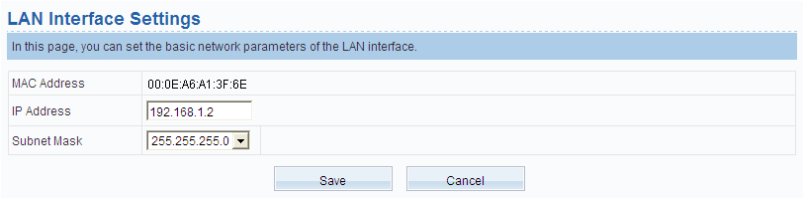


Step 5 Choose **Network Settings** > **LAN Interface Settings** to display the **LAN Interface Settings** page. Set the IP address of AP1 to be 192.168.1.1 and then click the **Save** button to save the settings.

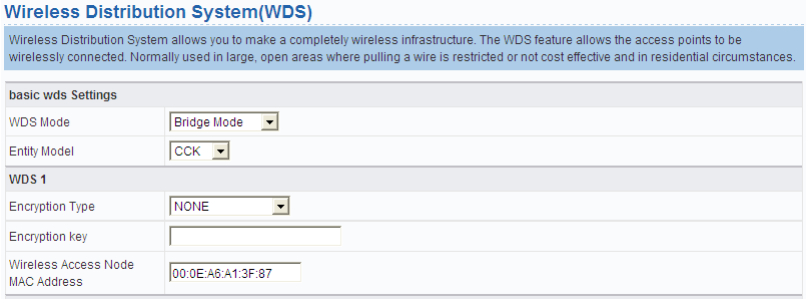


- Configuring AP2

Step 1 Choose **Network Settings** > **LAN Interface Settings** to display the **LAN Interface Settings** page. Set the IP address of AP2 to be **192.168.1.2**.

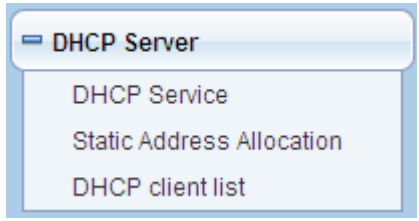


Step 2 In the **Wireless Distribution System (WDS)** page, set the WDS mode to be the **Bridge Mode** and enter the MAC address of the AP1. Then click the **Save** button to save the settings.



6.5 DHCP Server

The following figure shows the submenus of the **DHCP Server**.

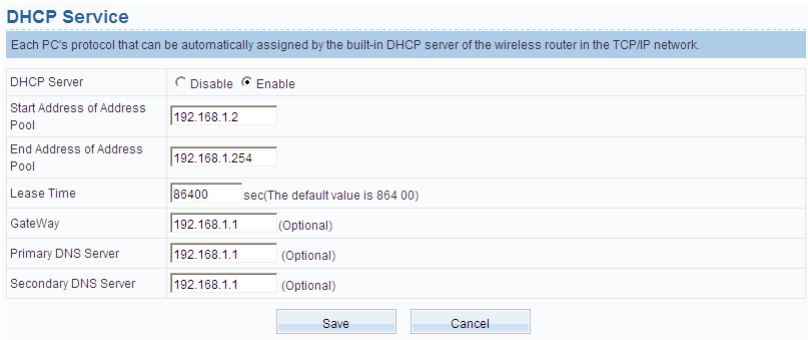


The submenus of the **DHCP Server** include **DHCP Service**, **Static Address Allocation**, and **DHCP client list**.

6.5.1 DHCP Service

The built-in DHCP server can automatically assign the network parameters such as the IP address, to the hosts in the LAN. User does not need to manually set the IP address, subnet mask, gateway, and DNS server.

Choose **DHCP Server** > **DHCP Service** to display the **DHCP Service** page.



This page is used to configure the DHCP server.
The parameters in this page are described as follows:

Field	Description
DHCP Server	Enable or disable the DHCP server. When disabling the DHCP server, you do not need to set the other parameters in this page.
Start Address of Address Pool	The starting IP address that the DHCP server automatically assigns to the hosts in the LAN.
End Address of Address Pool	The end IP address that the DHCP server automatically assigns to the hosts in the LAN.
Lease Time	The lease time is the valid time of the IP address that the DHCP server assigns to the hosts. During the valid period of the IP address, the DHSP server will not assign this IP address to other hosts.
Gateway	Enter the IP address of the LAN interface. The default gateway is 192.168.1.1. It is optional.
Primary DNS Server	Enter the primary DNS server address (optional). If you are not sure of the DNS server address, please consult your ISP.
Secondary DNS Server	Enter the Secondary DNS server address (optional). If you are not sure of the DNS server address, please consult your ISP.

After finishing setting, click the **Save** button to save the settings.

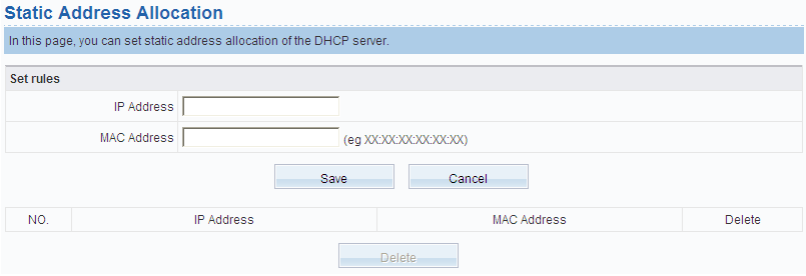
Note:
If you want to use the DHCP function of the wireless router, you need to set the ***Internet Protocol (TCP/IP)*** *to be* ***Obtain an IP address automatically****.*

6.5.2 Static Address Allocation

The static address allocation function of the wireless router can reserve the static IP addresses for the computers with the specific MAC addresses. When a computer

whose MAC address is in the allocation table of static address requests the DHCP server for an IP address, the DHCP server assigns the reserved IP address to the computer.

Choose **DHCP Server** > **Static Address Allocation** to display the **Static Address Allocation** page.



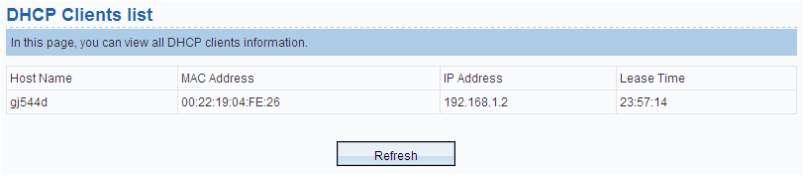
The paramters in this page are described as follows:

Filed	Description
IP Address	Set the IP address that is reserved for a host on the LAN side.
MAC Address	Enter the MAC address of the host on the LAN side.

After finishing setting, click the **Save** button to save the settings.

6.5.3 DHCP Client List

Choose **DHCP Server** > **DHCP Client list** to display the **DHCP Clients list** page.



In this page, you can view all the network information of the hosts assigned by the DHCP server in the LAN, such as the host name, MAC address, and IP address.

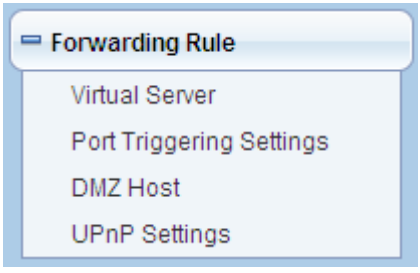
Click the **Refresh** button to refresh the client list.

The parameters in this page are described as follows:

Field	Description
Host Name	Display the host name.
MAC Address	Display the MAC address of the host.
IP Address	Display the IP address assigned by the DHCP server.
Lease Time	Display the lease time of the IP address. Before the lease time of the IP address is over, the client software will automatically apply for the lease time.

6.6 Forwarding Rule

The following figure shows the submenus of the **Forwarding Rule**.

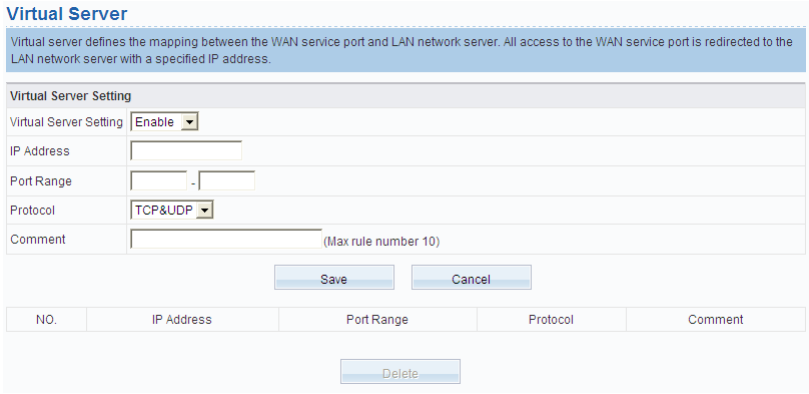


The submenus of the **Forwarding Rule** include **Virtual Server**, **Port Triggering Settings**, **DMZ Host**, and **UPnP Settings**.

6.6.1 Virtual Server

Firewall can prevent unexpected traffic in the Internet from your host in the LAN. The virtual server can create a channel that can pass through the firewall. In that case, the host in the Internet can communicate with a host in your LAN within certain port range.

Choose **Forwarding Rule** > **Virtual Server** to display the **Virtual Server** page.



In this page, you are allowed to add or delete a virtual server.

The parameters of **Virtual Server** are described as follows:

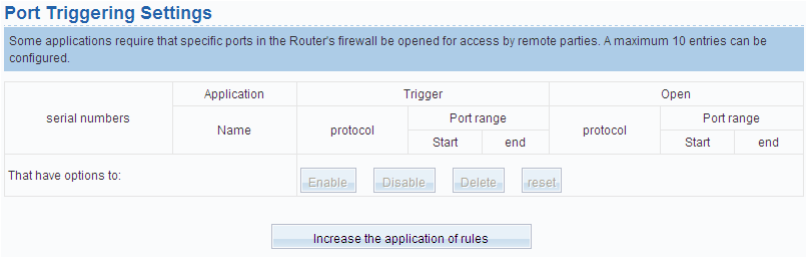
Field	Description
Virtual Server Setting	Enable or disable the virtual server settings.
IP Address	Enter the IP address of the host that provides virtual service in the LAN.
Port Range	Set the service port range that the wireless router provides to the WAN. The WAN user acquires the service via the port. The port range format is “the starting port - the end port”.
Protocol	Select the protocol for the virtual service. You may select TCP, UDP or TCP&UDP.
Comment	Enter the comment about the virtual server.

After finishing setting, click the **Save** button to save the settings.

6.6.2 Port Triggering Settings

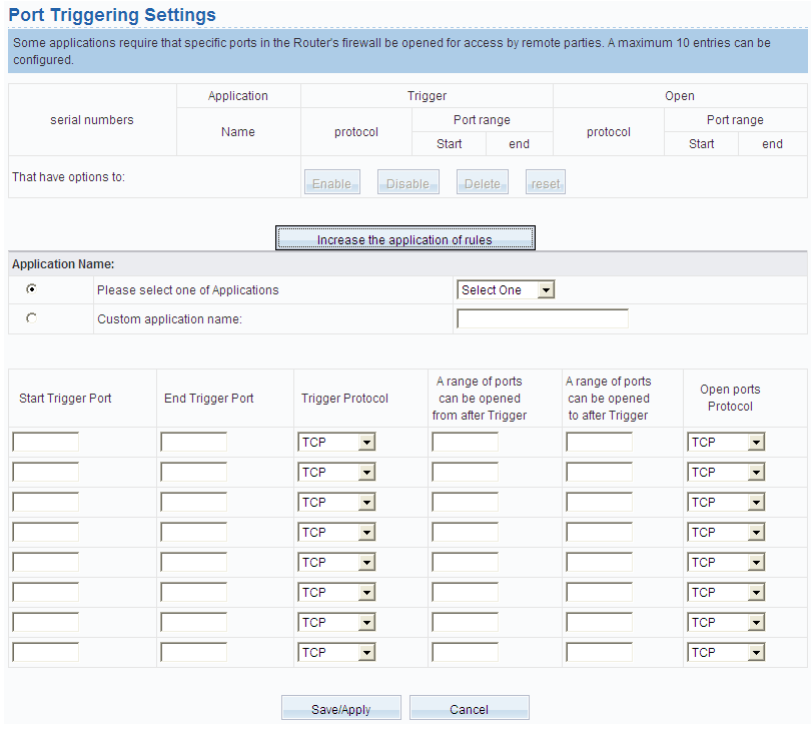
Some applications need multiple connections, such as network game, video conference, and IP phone. Because of firewall, these applications cannot work under simple NAT mode, but port forwarding can realize that. When an application generates a connection to the triggered port, all the corresponding ports will be opened, for establishing connection and providing service.

Choose **Forwarding Rule** > **Port Triggering Settings** to display the **Port Triggering Settings** page.



In this page, you are allowed to view the preset rules, add or delete a rule, and enable or disable a selected rule.

Click the **Increase the application of rules** button to display the following page.



The parameters for adding an application rule in this page are described as follows:

Field	Description
Application Name	It provides two options according to the added rules. ● **Please select one of applications**: If you select one of applications in the drop-down list, system will automatically

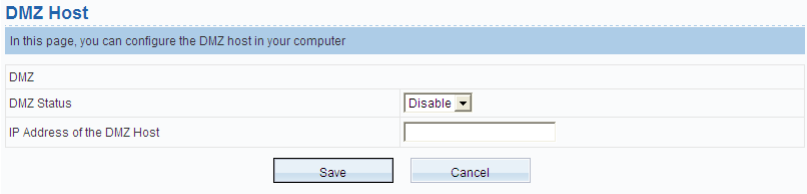
Field	Description
	configure the Start Trigger Port, End Trigger Port, Trigger Protocol and so on. ● **Custom application name**: if you select this option, you need to manually set the parameters such as the Start Trigger Port, End Trigger Port, and Open Ports Protocol.
Start Trigger Port	The start port number that LAN user uses to trigger the open port.
End Trigger Port	The end port number that LAN user uses to trigger the open port.
Trigger Protocol	Select the application protocol. You may select TCP/UDP, TCP, or UDP.
A range of ports can be opened from after Trigger	The start port number that is opened to WAN.
A range of ports can be opened to after Trigger	The end port number that is opened to WAN.
Open ports Protocol	Select the proper protocol that is opened to WAN. You may select TCP/UDP, TCP, or UDP.

After finishing setting, click the **Save/Apply** button to save and apply the settings.

6.6.3 DMZ Host

DMZ allows all the ports of a PC in your LAN to be exposed to the Internet. Set the IP address of the PC to be DMZ host, so that the DMZ host will not be blocked by firewall and the host can realize bidirectional limitless communication with the Internet users and servers.

Choose **Forwarding Rule** > **DMZ Host** to display the **DMZ Host** page.



The parameters of **DMZ Host** are described as follows:

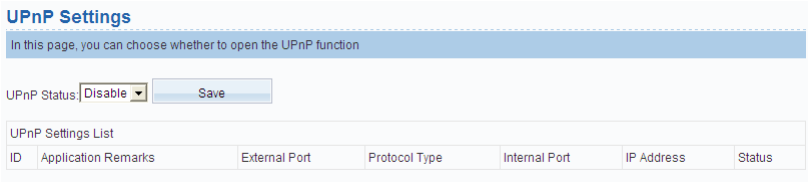
Field	Description
DMZ Status	Enable or disable the DMZ settings.
IP Address of the DMZ Host	Enter the IP address of the DMZ host.

After finishing the settings, click the **save** button to save the settings.

6.6.4 UPnP Settings

The hosts can generate the request for port conversion via the UPnP (Universal Plug and Play) protocol, so that the external hosts can access the resources on the internal hosts. For example, MSN Messenger on Windows ME and Windows XP systems can make use of the UPnP protocol to make the limited NAT function back to normal when using audio and video call.

Choose **Forwarding Rule** > **UPnP Settings** to display the **UPnP Settings** page.



This page is used to enable or disable the UPnP settings, view the preset the UPnP rules, and delete the selected rules.

Note:

Only when the applications support UPnP protocol, can you use this function. UPnP function needs operation system support such as Windows ME, Windows XP, and Windows Vista, and application software support.

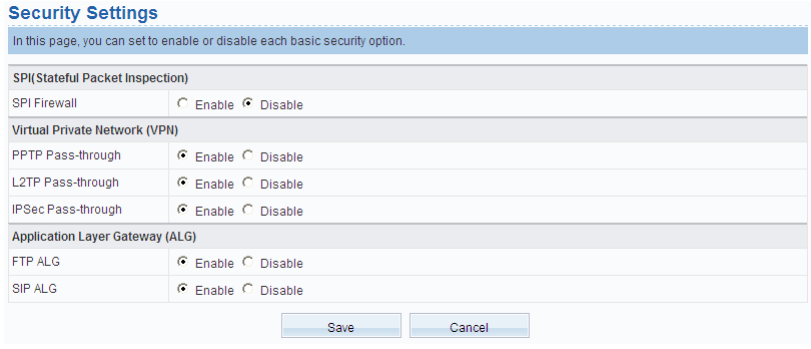
6.7 Security Options

The following figure shows the submenus of the **Security Options**.

The submenus of the **Security Options** include **Security Settings**, **Advanced Security Settings**, **LAN Web Management**, and **Remote Web Management**.

6.7.1 Security Settings

Choose **Security Options** > **Security Settings** to display the **Security Settings** page.



In this page, you are allowed to set Stateful Packet Inspection (SPI), Virtual Private Network (VPN), and Application Layer Gateway (ALG).

The parameters in this page are described as follows:

Field	Description
SPI (Stateful Packet Inspection)	When the SPI firewall is enabled, only the users in the internal network generate the requests, and then the connection is established. In addition, all the requests from the external network will be rejected by the SPI firewall. When the SPI firewall is disabled, all the requests from the internal network and external network can generate the connections, which will make the hosts in the internal network be exposed to the external network. Therefore, disabling the SPI firewall will cause the security problem. It is recommended you enable the SPI firewall.
Virtual Private Network (VPN)	VPN provides the secure communication method for the remote computers via the WAN. If the hosts in the internal network need to use the VPN protocols such as PPTP, L2TP, and IPSec to connect to the remote VPN network, you should enable the corresponding passthrough function.

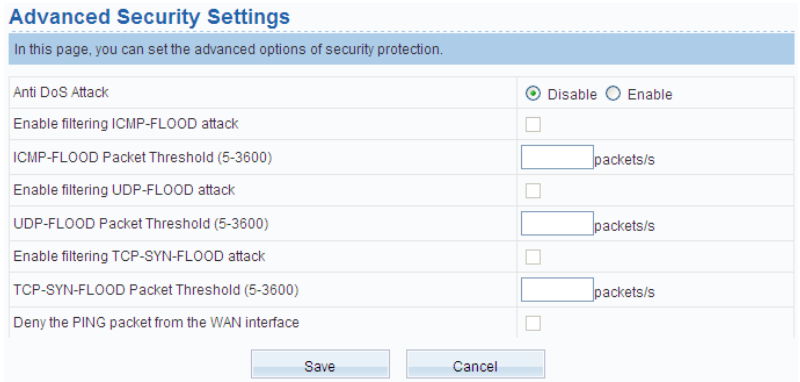
Field	Description
Application Layer Gateway (ALG)	ALG provides network address and port conversion for some application layer protocols such as FTP, and SIP that adopt “control/data” mode when passing through the NAT gateway. It is recommended you enable the ALG functions.

After finishing setting, click the **Save** button to save the settings.

6.7.2 Advanced Security Settings

The goal of DoS (Denial of service) attack is using a large quantity of illusive information to exhaust the resources of the destination host. The destination host is forced to process the illusive traffic, which affects the processing of the legal traffic. If the DoS attack is from the multiple source addresses, it is also called DDoS (Distribution Denial of service) attack. Generally, all the source addresses of the DoS attack and DDoS attack are fraudulent.

Choose **Security Options** > **Advanced Security Settings** to display the **Advanced Security Settings** page.



In this page, you are allowed to set the advanced options of security protection.

In this page, you should enable the Anti DoS Attack first, and then you are allowed to set the parameters in this page.

The parameters in this page are described as follows:

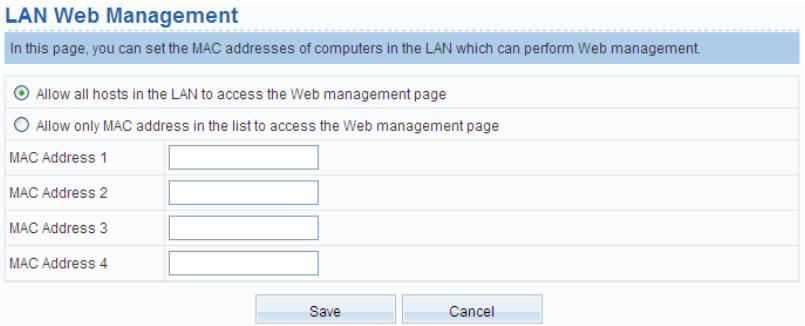
Field	Description
Anti DoS Attack	Enable or disable the anti DoS attack. After enabling this function, you are allowed to set the following options.
Enable filtering ICMP-FLOOD attack	Enable or disable filtering ICMP-FLOOD attack.
ICMP-FLOOD Packet Threshold (5-3600)	After enabling the filtering ICMP-FLOOD attack, if the ICMP packet number reaches the preset threshold value in the specified interval, the measure for preventing ICMP-FLOOD takes effect.
Enable filtering UDP-FLOOD attack	Enable or disable filtering UDP-FLOOD attack.
UDP-FLOOD Packet Threshold (5-3600)	After enabling the filtering UDP -FLOOD attack, if the UDP packet number reaches the specified threshold value in the specified interval, the measure for preventing UDP -FLOOD takes effect.
Enable filtering TCP-SYN-FLOOD attack	Enable or disable filtering TCP-SYN-FLOOD attack.
TCP-SYN-FLOOD	After enabling the filtering TCP-SYN-FLOOD attack, if the

Field	Description
Packet Threshold (5-3600)	TCP-SYN packet number reaches the specified threshold value in the specified interval, the measure for preventing TCP-SYN-FLOOD takes effect.
Deny the PING packet from the WAN interface	After enabling this function, the computers in the WAN cannot PING through the wireless router.

After finishing setting, click the **Save** button to save and apply the settings.

6.7.3 LAN Web Management

Choose **Security Options** > **LAN Web Management** to display the **LAN Web Management** page.



In this page, you can set whether the hosts in the LAN are allowed to access the Web management page.

The parameters in this page are described as follows:

Parameter	Description
Allow all hosts in the LAN to access the Web management page	Whether allow all hosts in the LAN to access the Web management page
Allow only MAC addresses in the list to access the Web management page	Whether allow only MAC addresses in the list to access the Web management page. After enabling this function, add the MAC addresses to the list.
MAC Address1, 2, 3, 4	Enter the MAC address in the fields of MAC Address1, 2, 3, 4.

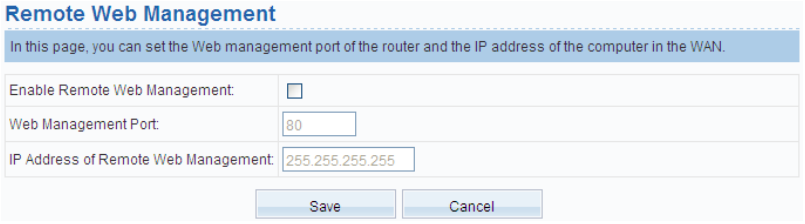
After finishing setting, click the **Save** button to save and apply the settings.

Note:

*If you select the option "**Allow only MAC addresses in the list to access the Web management page**", but not add the MAC Address of management PC to the list, you will not be able to manage the wireless router via the current PC after clicking the **Save** button. In that case, if you want to manage the wireless router again, please press the **Reset** button of the wireless router to restore the factory default settings.*

6.7.4 Remote Web Management

Choose **Security Options** > **Remote Web Management** to display the **Remote Web Management** page.



In this page, you can set whether users are allowed to manage the wireless router remotely via the WAN. This feature allows you to perform the management tasks from the remote hosts.

The parameters in this page are described as follows:

Field	Description
Enable Remote Web Management	Enable or disable remote Web management.
Web Management Port	The Web management port for accessing the Web page of the wireless router.
IP Address of Remote Web Management	The IP address of the computer that are allowed to access the Web page of the wireless router to perform the remote Web management.

After finishing setting, click the **Save** button to save and apply the settings.

Note:

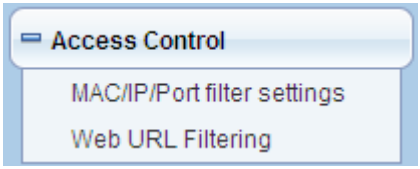
The default Web management port is 80. If you change the default Web management port, you have to log in to the Web page by "IP address: port". You need to reboot the wireless router to make the settings take effect.

The default IP address for remote management is "0.0.0.0". By default, all the computers in the WAN can not access the Web page of the wireless router to

perform the remote Web management. If you change the IP address for remote management, for example, the default IP address is changed to be "202, 96,12,8", only the hosts with the specified IP address (e.g. "202, 96,12,8") are allowed to access the Web page. If you change the IP address for remote management to be "255.255.255.255", in the case, all the hosts in the WAN can access the Web page of the wireless router to perform the remote Web management.

6.8 Access Control

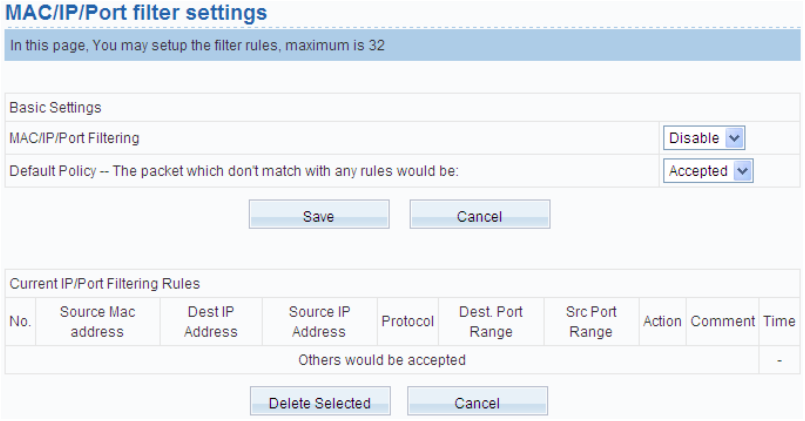
The following figure shows the submenus of the **Access Control**.



The submenus of the **Access Control** include **MAC/IP/Port Filter Settings**, and **Web URL Filtering**.

6.8.1 MAC/IP/Port Filter Settings

Choose **Access Control** > **MAC/IP/Port Filter Settings** to display the **MAC/IP/Port Filter Settings** page.

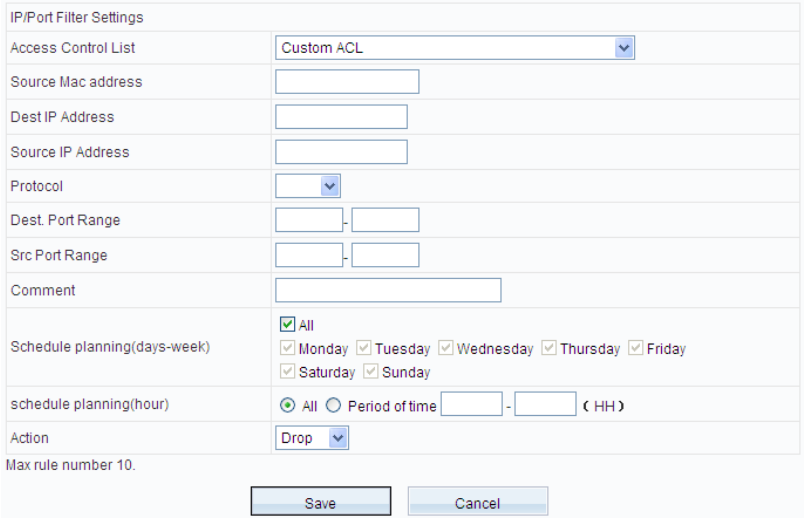


In this page, you are allowed to set the MAC/IP/Port filtering rules and vierw the preset rules.

The paramters in this page are described as follows:

Field	Description
MAC/IP/Port Filtering	Enable or disable MAC/IP/Port filtering. The default setting is **Disable**.
Default Policy	● **Accepted**: When selecting this option, the wireless router will accept all the packets that do not match any rule. ● **Dropped**: When selecting this option, the wireless router will reject all the packets that do not match any rule.

After enabling the MAC/IP/Port filtering, click the **Save** button to display the following page for adding a new rule.



When the data packets match the following parameters, the data packets will be discarded.

The parameters for adding a new rule (e.g. Custom ACL) are described as follows:

Field	Description
Access Control list	Select a filter service in the drop-down list.
Source MAC Address	The MAC addresses included in the data packets.
Dest IP Address	The destination IP address.
Source IP Address	The source IP address.
Protocol	The protocol types of data packets include TCP, UDP, and ICMP.

Field	Description
Dest Port Range	The destination port range is 1~65535.
Src Port Range	The source port range is 1~65535.
Comment	Comment about the rule.
Schedule Planning (days-week)	Set the day when filter takes effect.
Schedule Planning (Hour)	Set the time when filter takes effect.
Action	Enable or disable the rule. ● **Accept**: Enable the rule. ● **Drop**: Disable the rule.

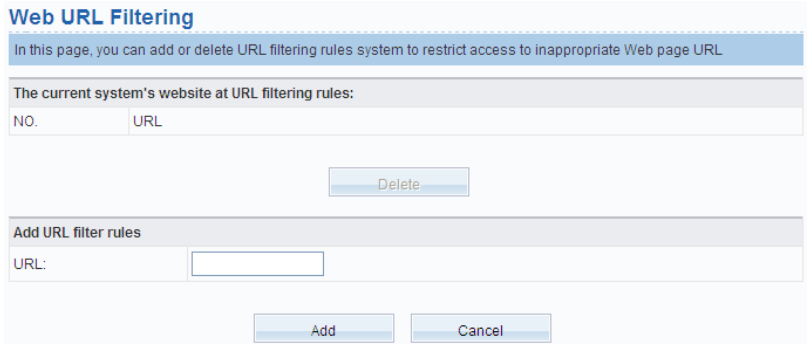
After finishing setting, click the **Save** button to save and apply the settings.

Note:

When the hosts in the LAN match the MAC address or IP address, the rules of Custom ACL take effect.

6.8.2 Web URL Filtering

Choose **Access Control** > **Web URL Filtering** to display the **Web URL Filtering** page.



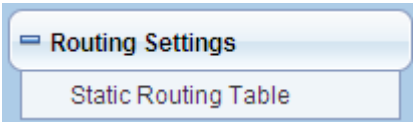
This page is used to prevent the LAN users from accessing some Websites in the WAN.

Enter the URL that needs to be filtered and then click the **Add** button to add a new rule.

If you want to delete a rule, select the rule, and then click the **Delete** button to delete the rule.

6.9 Routing Settings

The following figure shows the submenus of the **Routing Settings**.

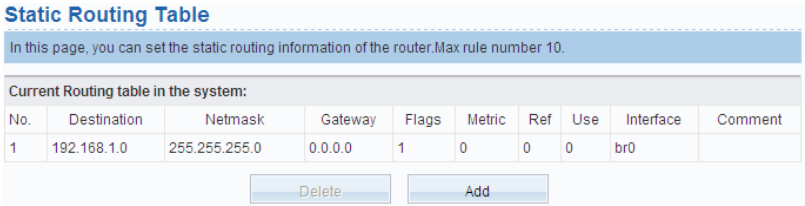


The submenus of the **Routing Settings** include **Static Routing Table**.

6.9.1 Static Routing Table

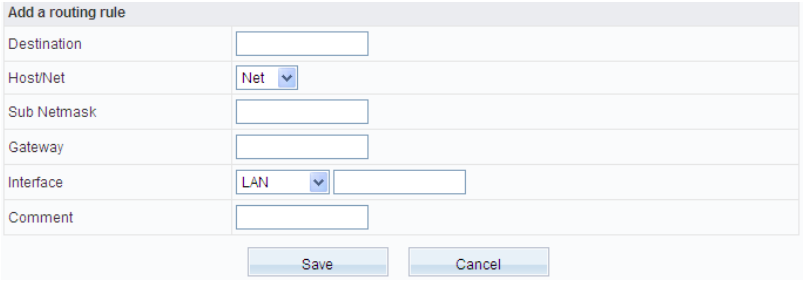
Static routing is a kind of special routing. Applying the proper static routing rules in network can reduce the problems of routing selection and the overload of data stream, and increase the transport speed of data packets. You can create a routing rule by setting the destination IP address, subnet mask, and gateway. The destination IP address and subnet mask can determine a destination network or a host, and then the wireless router will transmit the data packets to the destination network or the host via the gateway.

Choose **Routing Settings** > **Static Routing Table** to display the **Static Routing Table** page.



In this page, you can add or delete a routing rule, for limiting the LAN users to access some WAN websites.

Click the **Add** button to display the following page.



The parameters for adding a routing rule are described as follows:

Field	Description
Destination	The destination address of the routing rule.
Host/Net	You may select **Host** or **Net**.
Gateway	The IP address that the routing rule passes.
Sub Netmask	When the range is **Net**, you can set this option.
Gateway	The IP address that the routing rule passes.
Interface	The local legal interface that the routing rule passes. You may select **LAN**, **WAN** or **Custom**.
Comment	Comment about the rule.

After finishing setting, click the **Save** button to save the settings.

If you want to delete a self-defined rule, select the rule, and then click the **Delete** button to delete the rule.

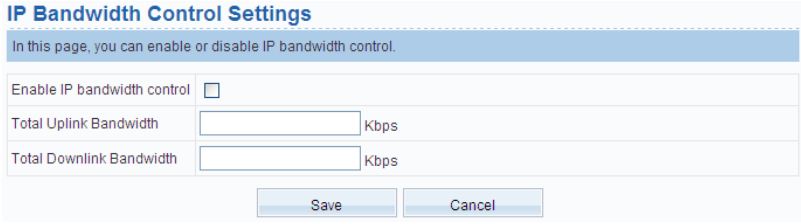
6.10 IP Bandwidth Control

The following figure shows the submenus of the **IP Bandwidth Control**.

The submenus of the **IP Bandwidth Control** include **IP Bandwidth Control Settings** and **IP Bandwidth Control List**.

6.10.1 IP Bandwidth Control Settings

Choose **IP Bandwidth Control** > **IP Bandwidth Control Settings** to display the **IP Bandwidth Control Settings** page.



After enabling IP bandwidth control, you can set the following parameters.

Field	Description
Enable IP bandwidth control	Enable or disable IP bandwidth control.
Total Uplink Bandwidth	Set the total uplink bandwidth.
Total Downlink Bandwidth	Set the total downlink bandwidth.

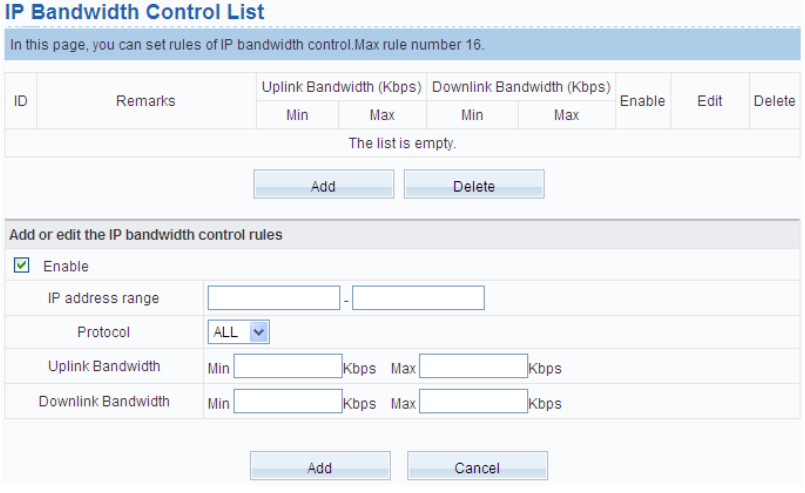
After finishing setting, click the **Save** button to save the settings.

Note:

In order to make QoS achieve the best result, please consult your ISP about the total bandwidth of upstream and downstream.

6.10.2 IP Bandwidth Control List

Choose **IP Bandwidth Control** > **IP Bandwidth Control List** to display the **IP Bandwidth Control List** page.



In this page, you can view the preset IP bandwidth control rules, add or delete the rules.

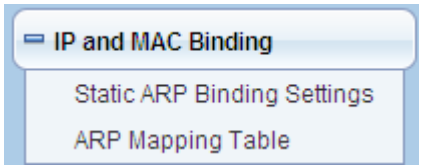
The parameters in this page are described as follows:

Field	Description
Enable	Enable or disable the rule.
IP address range	Enter the address range of the internal hosts. When this field is blank or the value is “0.0.0.0”, it indicates this value is invalid.
Protocol	Select the protocol type that the transmission layer adopts. You may select All (match randomly), TCP or UDP in the drop-down list.
Uplink Bandwidth	Set the minimum and maximum uplink bandwidth.
Downlink Bandwidth	Set the minimum and maximum downlink bandwidth.

After finishing setting, click the **Add** button to add the rule.

6.11 IP and MAC Binding

The following figure shows the submenus of the **IP and MAC Binding**.



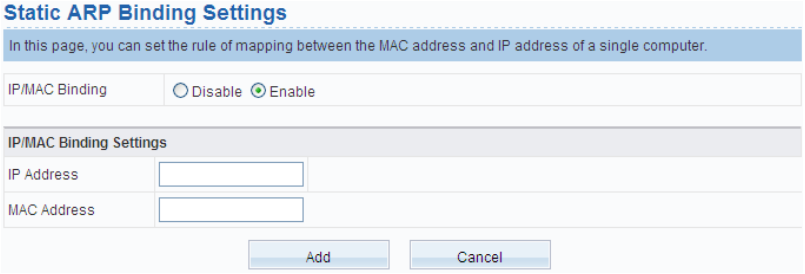
The submenus of the **IP and MAC Binding** include **Static ARP Binding Settings** and **ARP Mapping Table**.

6.11.1 Static ARP Binding Settings

ARP binding is a valid method for preventing ARP cheating by binding the host IP address and the corresponding MAC address together. Setting the static ARP binding

entry can protect the network security of the users in the internal network. When a host sends the ARP request to the wireless router, the wireless router will check the static ARP binding list according to the IP address of the host. If the host MAC address matches the MAC address in the list, the wireless router will accept the request; otherwise, it rejects the request.

Choose **IP and MAC Binding** > **Static ARP Binding Settings** to display the **Static ARP Binding Settings** page.



In this page, you are allowed to enable or disable the IP/MAC binding, and set the IP/MAC binding rule.

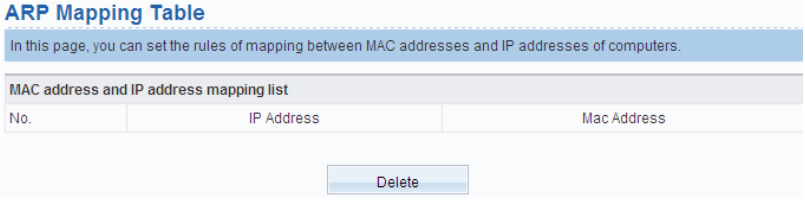
The parameters in this page are described as follows:

Field	Description
IP Address	Enter the host IP address for binding.
MAC Address	Enter the MAC address for binding.

After finishing setting, click the **Add** button to add a new rule.

6.11.2 ARP Mapping Table

Choose **IP and MAC Binding** > **ARP Mapping Table** to display the **ARP Mapping Table** page.

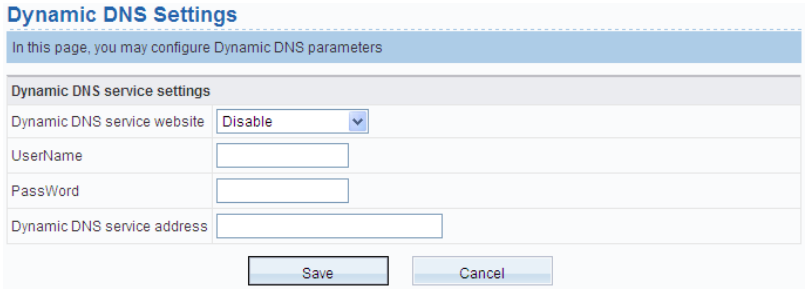


In this page, you are allowed to view the preset ARP mapping rules or delete the preset rules.

6.12 Dynamic DNS Settings

DDNS is mainly realized the resolution between the fixed DNS and dynamic IP address. For the users using the dynamic IP addresses, when acquiring the new IP addresses after accessing the Internet, the DDNS software will send the IP address to the DDNS server provided by the DDNS provider, and refresh the DDNS database. When other users in the Internet access the DNS, the DDNS server will return the correct IP address.

Choose **Dynamic DNS Settings** to display the **Dynamic DNS Settings** page.



In this page, you are allowed to modify the DDNS settings.

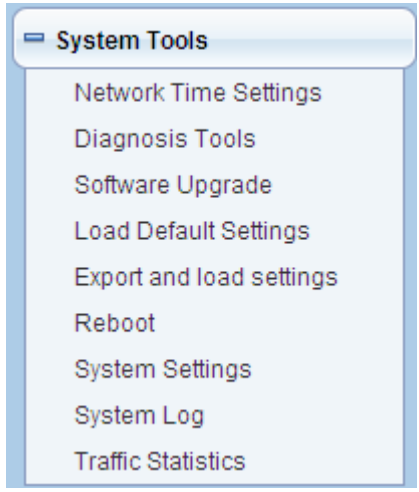
The paramteres in this page are described as follows:

Field	Description
Dynamic DNS service website	You may select Dyndns.org, freedns.afraid.org, www.zoneedit.com, and www.no-ip.com in the drop-down list.
Username	Enter your DDNS username.
Password	Enter your DDNS password.
Dynamic DNS service address	Enter the domain name of the DDNS.

After finishing setting, click the **Save** button to save the settings.

6.13 System Tools

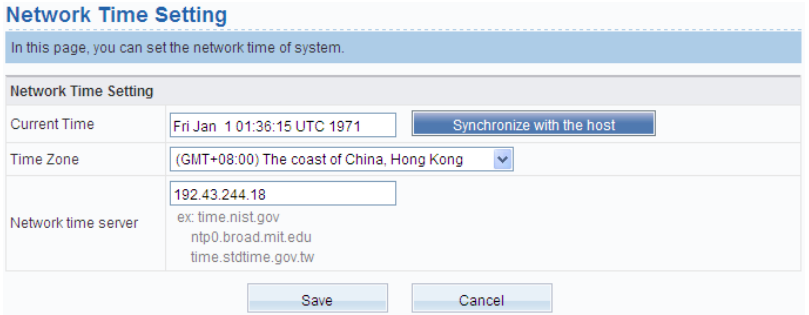
The following figure shows the submenus of the **System Tools**.



The submenus of the **System Tools** include **Network Time Settings**, **Diagnosis Tools**, **Software Upgrade**, **Load Default Settings**, **Export and load settings**, **Reboot**, **System Settings**, **System Log** and **Traffic Statistics**.

6.13.1 Network Time Settings

Choose **System Tools** > **Network Time Settings** to display the **Network Time Setting** page.



This page is used to set the network time of the wireless router.

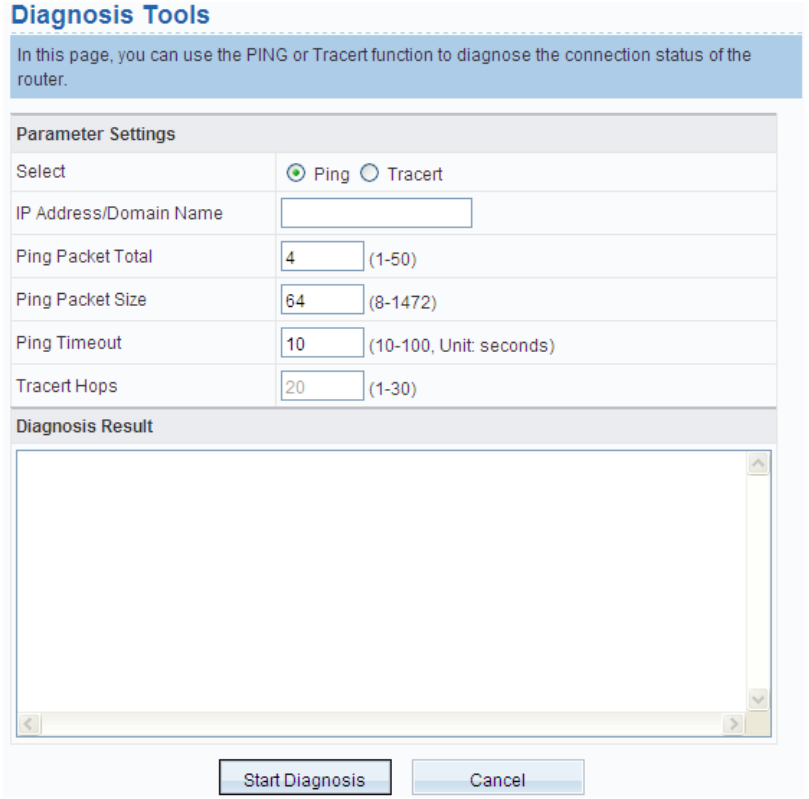
The parameters in this page are described as follows:

Field	Description
Current Time	Display the current system time.
Synchronize with the host	Click the **Synchronize with the host** button, and then the wireless router can synchronize its time with your PC.
Time Zone	Select your proper time zone.
Network time server	Enter the URL of the network time server. After setting the URL of the network time server, the wireless router can synchronize its time with the time server.

After finishing setting, click the **Save** button to save the settings.

6.13.2 Diagnosis Tools

Choose **System Tools** > **Diagnosis Tools** to display the **Diagnosis Tools** page.



In this page, you can check the connection status between the wireless router and other hosts (including the network devices) by Ping or Tracert function.

The parameters in this page are described as follows:

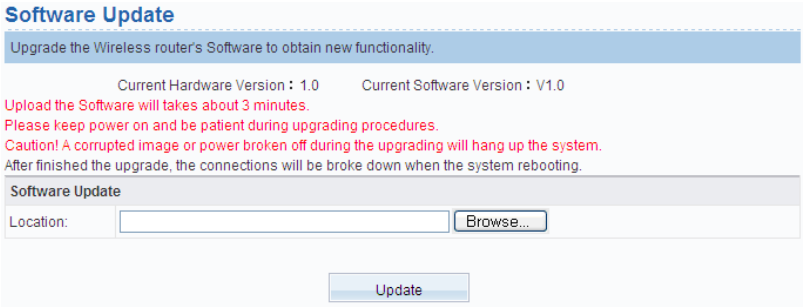
Field	Description

Field	Description
Select	Select Ping or Tracert to check the connection status of the wireless router. ● **Ping**: Ping is used to check whether the wireless router connects to the host successfully or whether the connection is delayed. ● **Tracert**: Tracert is used to check the number of the routers that the wireless router passes through when connecting to the host.
IP Address/Domain Name	The IP address or domain name of the host.
Ping Packet Total	The Ping packet number of the Ping operation. The recommended value is 4.
Ping Packet Size	The Ping packet size of the Ping operation. The recommended value is 64.
Ping Timeout	Set the Ping timeout. If the preset interval is over, and no echo is sent back, it indicates that the Ping operation fails.
Tracert Hops	Set the tracert hops. It is the maximum router number between the wireless router and the host.

After finishing setting, click the **Start Diagnosis** button to save and apply the settings, and the diagnosis result is displayed in the field of **Diagnosis Result**.

6.13.3 Software Upgrade

Choose **System Tools** > **Software Upgrade** to display the **Software Update** page.



If you want to update the software of the wireless router, click the **Browse…** button to choose the correct software, and then click the **Update** button. System begins to update the software.

After finishing the updating process, system reboots and automatically enters the Web page.

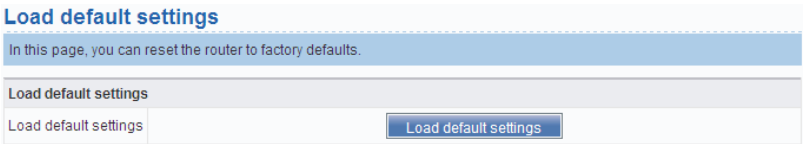
Note:

Updating the software will make the wireless router return to the factory default settings. In order to avoid the settings loss, please save the settings before updating the software.

*During updating, do not cut off the power or press the **Reset** button.*

6.13.4 Load Default Settings

Choose **System Tools** > **Load Default Settings** to display the **Load default settings** page.

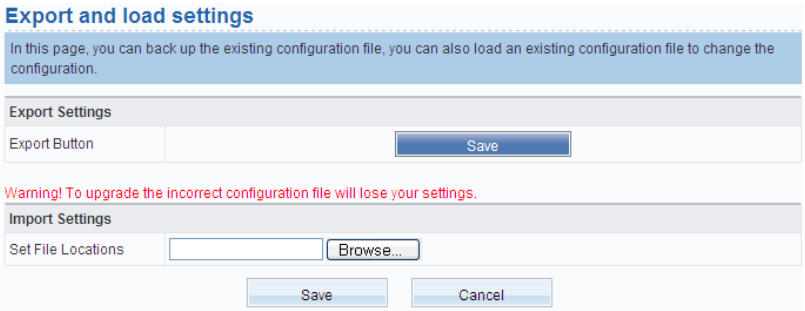


In this page, click the **Load default settings** button, and then system returns to the factory default settings.

6.13.5 Export and Load Settings

By exporting the configuration file, you can save the settings of the wireless router to your PC. By backuping the original settings before updating the software, you can avoid data loss of the original settings. You can also load the saved or a new configuration file.

Choose **System Tools** > **Export and Load Settings** to display the **Export and Load Settings** page.



This page is used to save and load a configuration file.

The parameters in this page are described as follows:

Field	Description
Export Button	Click the **Save** button to select the path for saving the settings, and then save the settings to your PC.
Set File Locations	Click the **Browse…** button to select the settings on your PC, and then click the **Save** button to load the settings to the

Field	Description
	wireless router.

Note:

After loading a new configuration file, the original settings on the wireless router will lose. Therefore, please backup the original settings before loading the new configuration file. If you load the incorrect configuration file, you may import the original settings on your PC.

While loading the configuration file, do not power off the wireless router, otherwise, it may damage the device.

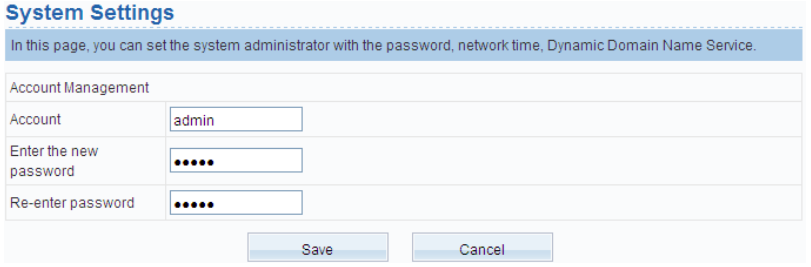
6.13.6 Reboot

Choose **System Tools** > **Reboot** to display the **Reboot** page.

In this page, click the **Reboot** button to reboot the wireless router.

6.13.7 System Settings

Choose **System Tools** > **System Settings** to display the **System Settings** page.



This page is used to set the administrator password.

Field	Description
Account	Display the username.
Enter the new password	Enter the new password.
Re-enter password	Enter the new password again.

After finishing setting, click the **Save** button to save the settings.

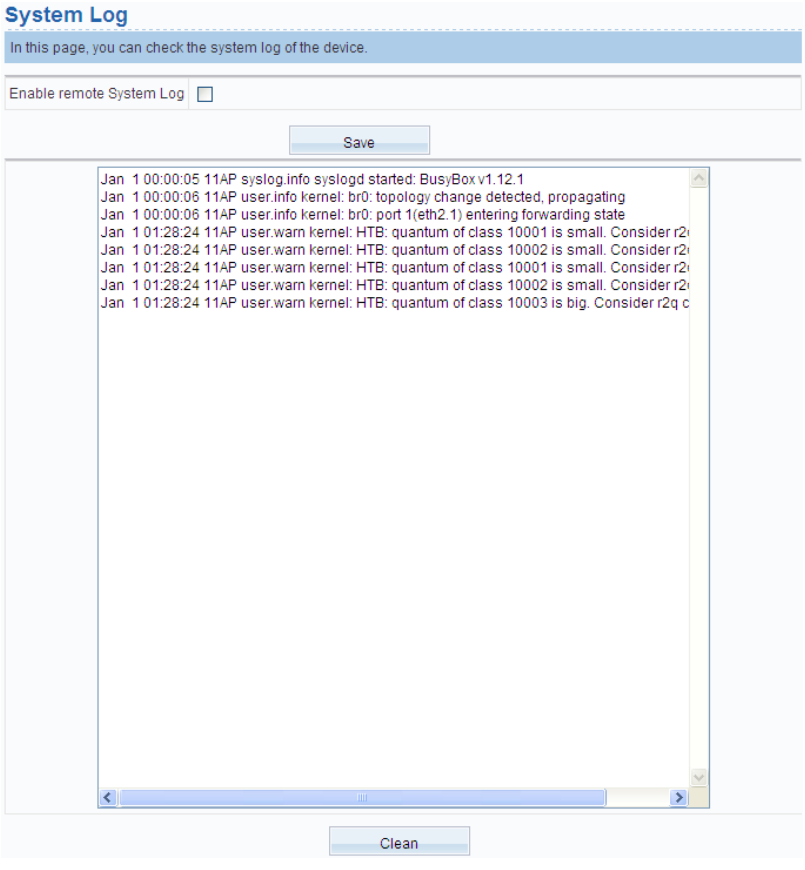
Note:

*If you forget the password, you can press the **Reset** button for 3 seconds, and then the wireless router returns to the factory default settings. The default username and the password are **admin**, respectively.*

For the sake of the data security, it is strong recommended you change the default username and password.

6.13.8 System Log

Choose **System Tools** > **System Log** to display the **System Log** page.



In this page, you are allowed to set the log server and view the system log.

After enabling the remote log server and entering the IP address of the server, click the **Save** button, and then the log information can be sent to the remote log server.

6.13.9 Traffic Statistics

Choose **System Tools** > **Traffic Statistics** to display the **Traffic Statistics** page.

Traffic Statistics

In this page, you can check the wireless router statistics.

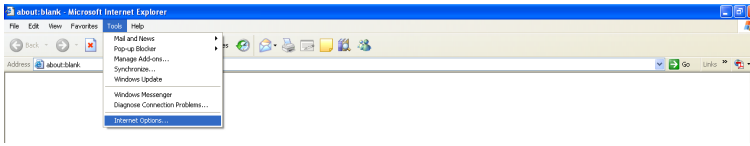
Memory	
Total Memory Capacity:	13900 kB
The remaining amount of memory:	4136 kB
WAN / LAN:	
The packet numbers that the wide area network receives:	0
The data amount that the wide area network receives:	0
The packet numbers that the wide area network transmits:	372
The data amount that the wide area network transmits:	220968
The packet numbers that the local area network receives:	6446
The data amount that the Local area network receives:	426061
The packet numbers that the local area network transmits:	10664
The data amount that the local area network transmits:	9252747
All of the interface:	
Name	eth2
Rx Packet	10539
Rx Byte	787689
Tx Packet	15124
Tx Byte	9782357
Name	lo
Rx Packet	0
Rx Byte	0
Tx Packet	0
Tx Byte	0

This page displays the memory status, the numbers of transmitted and received data packets of the WAN and LAN.

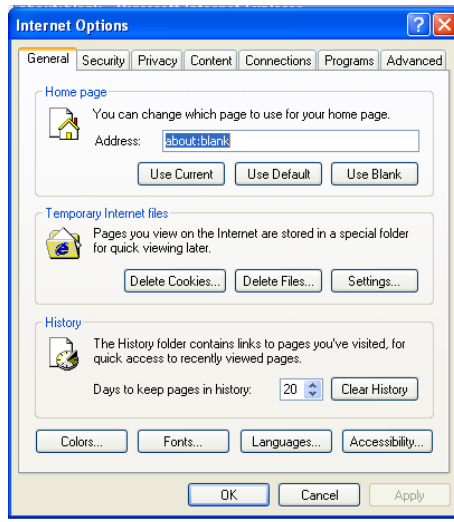
7 Troubleshooting

Failure to configure the router through a web browser

(1) Open Web browser (i.e. IE) and select **Tools** > **Internet Options**.



(2) Click **Delete Cookies…** and **Delete Files…** respectively.



Failure to establish wireless network connection

- Beyond the wireless coverage
  (1) Place AP near to the client.
  (2) Try to change the channel setting

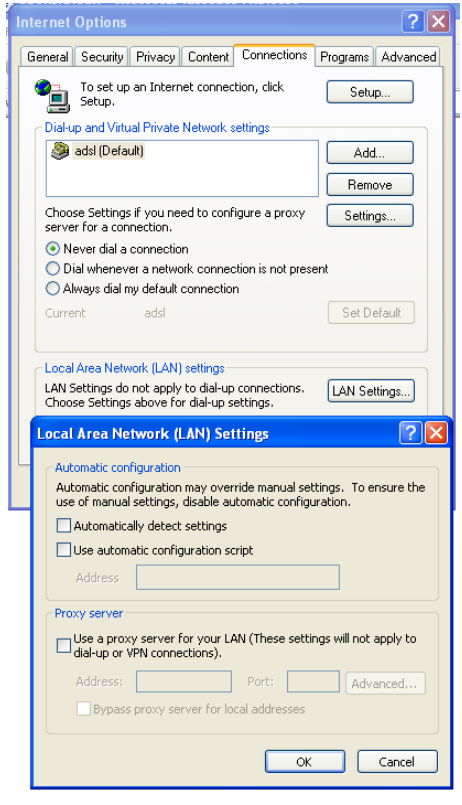
- Authentication problem
  (1) Use the cable to connect PC to AP.
  (2) Check the network security setting.
  (3) Try to reset the device by pressing **Reset**.
- Can not search the router.
  (1) Try to reset the router and test AP again.
  (2) Check the setting of the wireless network card.
  (3) Check the SSID and the encryption setting.

Failure to connect to the Internet through the wireless router

(1) Place the device to the wireless area where user can access the Internet.
(2) Check whether the wireless network card can connect to the right base.
(3) Check whether the wireless channel accords with the channel that your country or zone states.
(4) Check the encryption configuration.
(5) Check whether your ADSL cable is connected to the correct interfaces.
(6) Replace a network cable to connect to the device.

Failure to access the Internet

(1) Check whether the LEDs status on the ADSL modem and the wireless router is normal.
(2) Check whether the WAN indicator is on. If the WAN indicator is off, please check whether the cable connected to the WAN interface is loose.
(3) When the Link indicator keeps on but does not blink, it indicates that the router has accessed the Internet.
(4) Reboot your computer.
(5) Set the AP again.
(6) Check whether the WAN LED is on.
(7) Check the encryption setting of wireless network.
(8) Check whether the PC that connects to the router can acquire the IP address via the wireless network or the cable network.
(9) Check the LAN settings of your Internet options, and do not use a proxy server for your LAN. See the following figure:


Internet Options
General
Security
Privacy
Content
Connections
Programs
Advanced
To set up an Internet connection, click Setup.
Setup...
Dial-up and Virtual Private Network settings
adsl (Default)
Add...
Remove
Choose Settings if you need to configure a proxy server for a connection.
Settings...
Never dial a connection
Dial whenever a network connection is not present
Always dial my default connection
Current
adsl
Set Default
Local Area Network (LAN) settings
LAN Settings do not apply to dial-up connections. Choose Settings above for dial-up settings.
LAN Settings...
Local Area Network (LAN) Settings
Automatic configuration
Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.
Automatically detect settings
Use automatic configuration script
Address
Proxy server
Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).
Address:
Port:
Advanced...
Bypass proxy server for local addresses
OK
Cancel