EVOLVE

WR150N

Wireless router with built in 4-ports switch

User guide

EN

1. ACKNOWLEDGEMENTS

Thank you very much for purchasing this WR150N Wireless Router. This guide will introduce the features of this device and tell you how to connect, use and configure the Router to connect with Internet. Please follow the instructions in this guide to avoid affecting the Router's performance by improper operation.

2. PRODUCT OVERVIEW

2.1 Introduction

WR150N is a combined wired/wireless network connection device that integrates with internet-sharing router and 4-port switch. It allows users to access Internet by DHCP/PPPoE/Static IP and can expand the wireless coverage. WR150N can be also used as a repeater and a Wireless AP. Generally, it is a high performance and cost-effective solution for home and small offices.

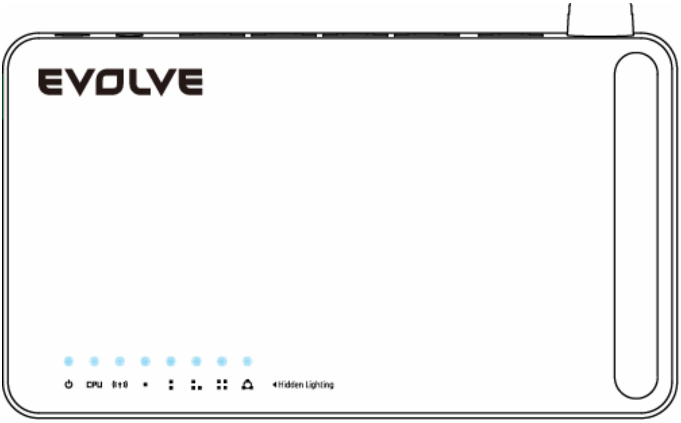
2.2 Features

- Complies with IEEE 802.11n and IEEE 802.11g/b standards for 2.4GHz Wireless LAN
- Up to 150Mbps wireless speed
- Supports PPPoE, Dynamic IP and static IP broadband functions
- Supports 64/128-bit WEP and TKIP/AES encryption
- IP/MAC/URL filtering makes access and time control more flexibly
- WDS mode makes it simple for WLAN expansion
- Supports WMM for improved audio and video streaming
- Multi-SSID allows you to create multiple SSIDs for different purpose
- Connects to secure network easily and fast using WPS
- Repeater function allows more PCs to surf Internet
- Supports port bandwidth control
- Easy to install and configure

2.3 Panel Layout

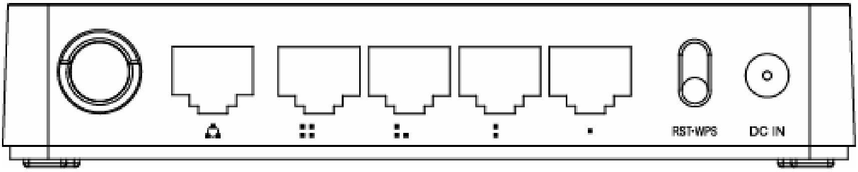
2.3.1 Front Panel

The front panel of Router WR150N consists of 8 LEDs, which is designed to indicate connection status.



POWER	This indicator lights blue when the hub is receives power, otherwise it is off.
CPU	This indicator blinks blue when Router powered on.
WLAN	This indicator lights blue when there are wireless devices connected and transmitting data to WLAN Router.
WAN	When the WAN port is connected successfully the indicator lights blue.
	During transmitting or receiving data through the WAN port the indicator blinks blue.
1/2/3/4 LAN	When one of the LAN ports has a successful connection, the corresponding indicator lights blue.
	During transmitting or receiving data through the LAN port the indicator blinks blue.

2.3.2 Rear Panel
The figure below shows the rear panel of the router.



DC IN	The Power socket is where you will connect the power adapter.
RST/WPS	**RST:** With the router powered on, press and hold the button until the CPU LED becomes quick-flash from slow-flash. And then release the button and wait the router to reboot to its factory default settings.
	WPS: If you have client devices you can press this button to quickly establish a router and client devices and automatically configure wireless security for your wireless network.
WAN	This port is where you will connect the DSL/cable Modem, or Ethernet.
1/2/3/4 LAN	This port connects the router to local PC.

***Note:** Press and hold RST/WPS button for about less than 5 seconds and the CPU LED indicator changes its lighting, it is WPS working. If more than 5 seconds and the CPU LED not response, the router will reboot to default factory settings.*

3. HARDWARE INSTALLATION

3.1 Hardware Installation
For those computers you wish to connect with Internet by this router, each of the computers must be properly connected with the router through provided UTP LAN Cables:
- 1. Connect the provided UTP LAN cable to one of the router's LAN port.

- 2. Connect the other end of the UTP LAN cable to your computer's LAN port.
- 3. Connect the second UTP LAN cable to router's WAN port.
- 4. Connect the other end of the UTP LAN cable to ADSL or Modem port.
- 5. Plug the Power Adapter into the Router and then into an outlet.
- 6. Turn on your computer.
- 7. Check and confirm that the Power LED and LAN LED on the router are ON.

3.2 Check the Installation

The control LEDs of the WLAN Router are clearly visible and the status of the network link can be seen instantly:

- 1. With the power source on, once the device is connected to the broadband modem, the Power, CPU, LAN, WLAN and WAN port LEDs of the WLAN Router will blinks for one second indicating a normal status.
- 2. When the WAN Port is connected to the ADSL/Cable modem, the WAN LED will light up.
- 3. When the LAN Port is connected to the computer system, the LAN LED will light up.

3.3 Set up the Computer

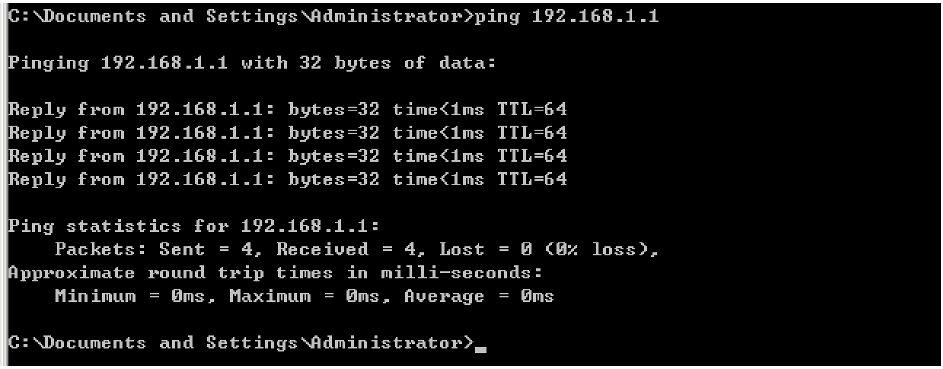
The default IP address of the Router is 192.168.1.1, the default Subnet Mask is 255.255.255.0. Both of these parameters can be changed as you want. In this guide, we will use the default values for description.

Connect the local PC to the LAN port on the Router. There are then two ways to configure the IP address for your PC.

-1. Configure the IP address manually
Configure the network parameters. The IP address is 192.168.1.xxx ("xxx" range from 2 to 254). The Subnet Mask is 255.255.255.0 and Gateway is 192.168.1.1 (Router's default IP address).

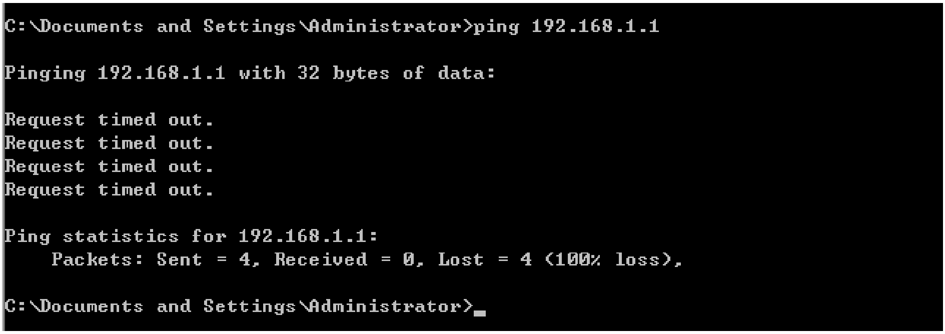
- 2. Obtain an IP address automatically
Set up the TCP/IP Protocol in **Obtain an IP address automatically** mode on your PC.

Now, you can run the Ping command in the **command prompt** to verify the network connection between your PC and the Router. Open a command prompt, and type in **ping 192.168.1.1**, then press **Enter.**



```
C:\Documents and Settings\Administrator>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

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

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

C:\Documents and Settings\Administrator>_
```

If the result displayed is similar to that shown in above figure, it means that the connection between your PC and the Router has been established.



```
C:\Documents and Settings\Administrator>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

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

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

C:\Documents and Settings\Administrator>_
```

If the result displayed is similar to that shown in the above figure, it means that your PC has not connected to the Router successfully. Please check it following below steps:

- **1. Is the connection between your PC and the Router correct?**
  If correct, the LAN port on the Router and LED on your PC's adapter should be lit.

- **2. Is the TCP/IP configuration for your PC correct?**
  Since the Router's IP address is 192.168.1.1, your PC's IP address must be within the range of 192.168.1.2 ~ 192.168.1.254, the Gateway must be 192.168.1.1.

4. CONNECTING TO INTERNET

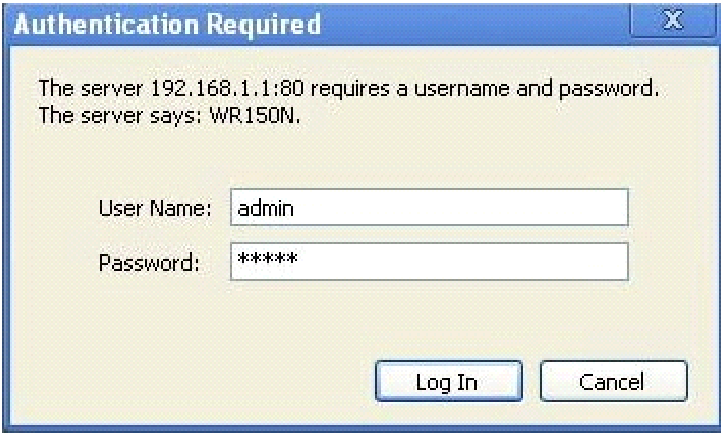
This chapter introduces how to configure the basic functions of your router to access Internet.

4.1 Accessing Web page

Connect to the Router by typing 192.168.1.1 in the address field of Web Browser. Then press **Enter** key.

192.168.1.1

It will show up the following page that requires you to enter valid User Name and Password:



Authentication Required

The server 192.168.1.1:80 requires a username and password.
The server says: WR150N.

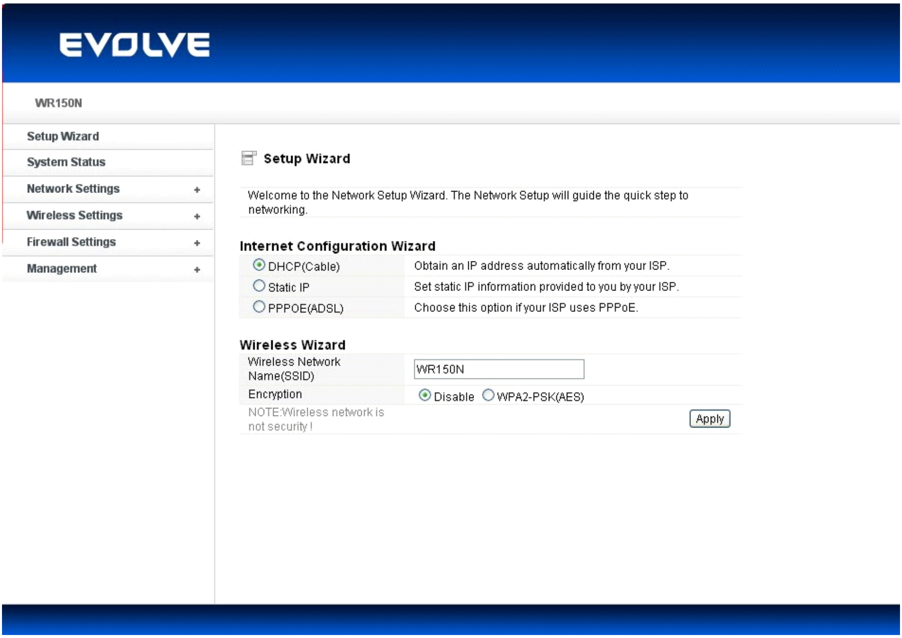
User Name: admin

Password: *****

Enter **admin** for User Name and Password, both in lower case letters. Then click **OK** button or press **Enter** key.

Note: *If the above screen does not prompt, it means that your web-browser has been set to using a proxy. Go to* ***Tools menu****>****Internet Options****>****Connections****>****LAN Settings****, in the screen that appears, cancel the* ***Using Proxy checkbox****, and click* ***OK*** *to finish it.*
If the User Name and Password are correct, you can configure the router using the web browser.

Now you have logged into the web interface of the router.



Setup Wizard

Welcome to the Network Setup Wizard. The Network Setup will guide the quick step to networking.

Internet Configuration Wizard

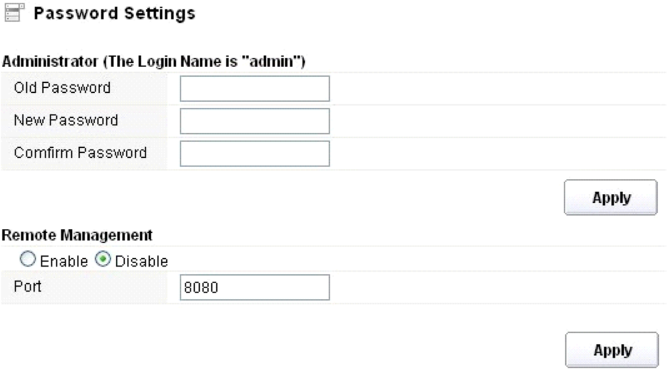
● DHCP(Cable)	Obtain an IP address automatically from your ISP.
○ Static IP	Set static IP information provided to you by your ISP.
○ PPPOE(ADSL)	Choose this option if your ISP uses PPPoE.

Wireless Wizard

Wireless Network Name(SSID)	WR150N
Encryption	● Disable ○ WPA2-PSK(AES)
NOTE:Wireless network is not security !	Apply

4.2 Changing Password

First, we recommend that you change the password to protect the security of your router. Please go to **Management**-**Password** change the password required to log into your Router.



Password Settings

Administrator (The Login Name is "admin")

Old Password	
New Password	
Comfirm Password	

Apply

Remote Management

○ Enable ● Disable

Port	8080

Apply

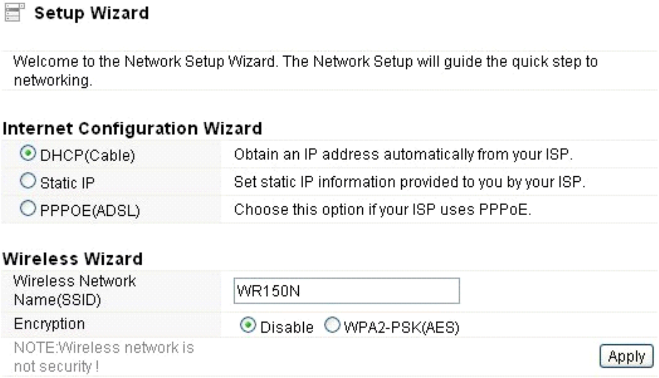
Old Password: please enter the current password of this router.
New Password: new password is used for administrator authentication.
Confirm Password: new password should be re-entered to verify its accuracy.

Note*: password length is 8 characters maximum, characters after the 8th position will be truncated.*

The **Remote Management** part we will discuss later. Now just keep the setting not change and click **Apply**.

4.3 Setup Wizard

After you login the web page of this router, the first page you can see is **Setup Wizard**. It is provided as part of the web configuration utility. Users can simply finish the settings on this page to get the Wireless Router ready to access Internet.



Setup Wizard

Welcome to the Network Setup Wizard. The Network Setup will guide the quick step to networking.

Internet Configuration Wizard

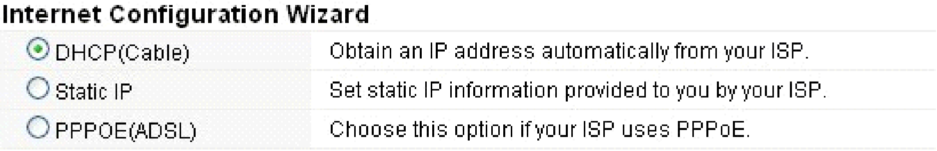
● DHCP(Cable)	Obtain an IP address automatically from your ISP.
○ Static IP	Set static IP information provided to you by your ISP.
○ PPPOE(ADSL)	Choose this option if your ISP uses PPPoE.

Wireless Wizard

Wireless Network Name(SSID)	WR150N
Encryption	● Disable ○ WPA2-PSK(AES)
NOTE:Wireless network is not security !	Apply

4.3.1 Internet Configuration Wizard

This interface is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. There are three methods provided to allow you to access Internet. Please choose the appropriate one according to the information provided by your ISP (Internet Service Provider).



Internet Configuration Wizard

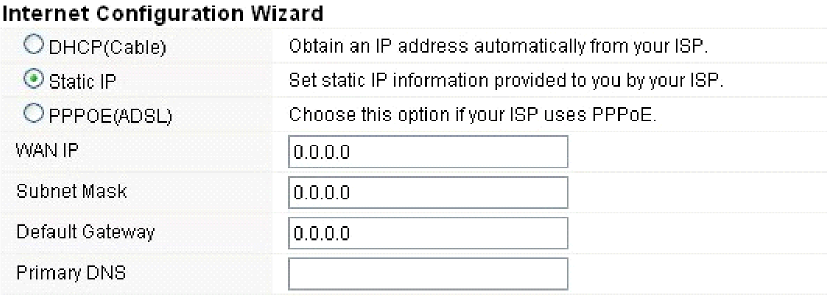
● DHCP(Cable)	Obtain an IP address automatically from your ISP.
○ Static IP	Set static IP information provided to you by your ISP.
○ PPPOE(ADSL)	Choose this option if your ISP uses PPPoE.

4.3.1.1 DHCP (Cable)

If you choose DHCP (Cable), you will get a dynamic IP address from your ISP automatically and you don't need to do any settings.

4.3.1.2 Static IP

If your ISP has provided the fixed IP that enable you to access Internet, please choose this option and provide below information.



Internet Configuration Wizard

○ DHCP(Cable)	Obtain an IP address automatically from your ISP.
● Static IP	Set static IP information provided to you by your ISP.
○ PPPOE(ADSL)	Choose this option if your ISP uses PPPoE.
WAN IP	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Primary DNS	

WAN IP Address: the IP address provided by your ISP.

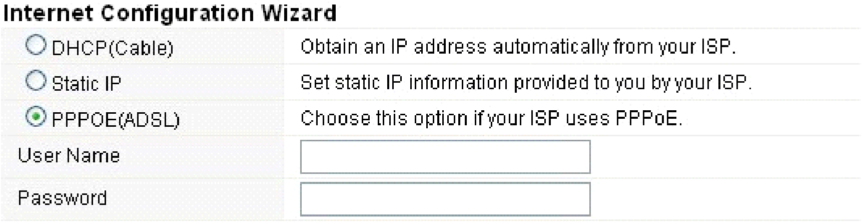
Subnet Mask: This is used to define the device IP classification for the chosen IP address range. 255.255.255.0 is a typical net mask value for Class C networks. Generally it is provided by your ISP.

Default Gateway: This is the IP address of the host router that resides on the external network and provides the point of connection to the next hop towards the Internet. This can be a DSL modem, Cable modem, or a WISP gateway router. The router will direct all the packets to the gateway if the destination host is not within the local network.

Primary DNS Address: The Domain Name System (DNS) is an Internet “phone book”, which translates domain names to IP addresses. These fields identify the server IP addresses where the DNS requested are forwarded by this router.

4.3.1.3 PPPoE (ADSL)

Point-to-Point Protocol over Ethernet (PPPoE) is a virtual private and secure connection between two systems that enables encapsulated data transport. It relies on two widely accepted standards: PPP and Ethernet. It connects users through an Ethernet to the Internet with a common broadband medium, such as wireless device or cable modem. All the users over the Ethernet can share a common connection. If you use ADSL virtual dial-up to connect Internet, please choose this option.



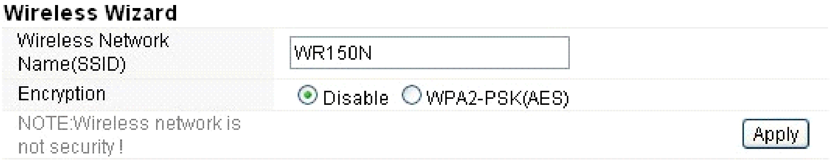
Internet Configuration Wizard

○ DHCP(Cable)	Obtain an IP address automatically from your ISP.
○ Static IP	Set static IP information provided to you by your ISP.
● PPPOE(ADSL)	Choose this option if your ISP uses PPPoE.
User Name	
Password	

User Name: a specific valid ADSL user name provided by your ISP.
Password: the corresponding valid password provided by your ISP.

4.3.2 Wireless Wizard

This part is provided for wireless parameter settings. If setup correctly, you can access Internet wirelessly.



Wireless Wizard

Wireless Network Name(SSID)	WR150N
Encryption	● Disable ○ WPA2-PSK(AES)
NOTE:Wireless network is not security !	Apply

Wireless Network Name (SSID): define a name for you wireless network.
Encryption: this step in fact is to set a password for your wireless network to prevent others from using your WLAN.

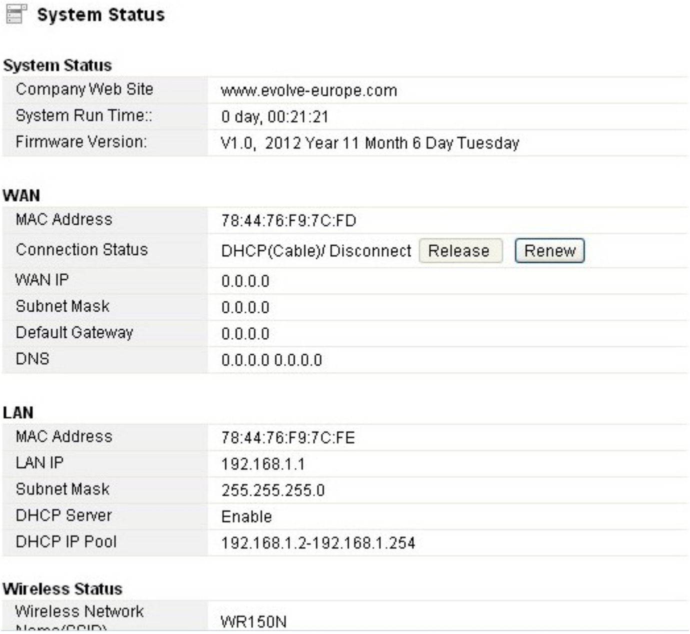
***Note**: After you set the Encryption, please remember your Wireless Network Name (SSID). Then search for the SSID on your PC to build a wireless connection with the device. So you can enjoy the wireless function of this Router.*

5. ADVANCED SETTINGS

This chapter allows users to configure advanced settings includes settings for Wireless, Network, Firewall and Management. These settings are only for more technically advanced users who have sufficient knowledge about wireless LAN. Also they should not be changed unless you know what effect the changes will have on your wireless router.

5.1 System Status

The System Status provides current status of this Router, including LAN and WAN interface information, and Wireless settings. Also, you could get the current running firmware version or firmware related information from this presentation.



System Status

System Status

Company Web Site	www.evolve-europe.com
System Run Time::	0 day, 00:21:21
Firmware Version:	V1.0, 2012 Year 11 Month 6 Day Tuesday

WAN

MAC Address	78:44:76:F9:7C:FD
Connection Status	DHCP(Cable)/ Disconnect Release Renew
WAN IP	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
DNS	0.0.0.0 0.0.0.0

LAN

MAC Address	78:44:76:F9:7C:FE
LAN IP	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enable
DHCP IP Pool	192.168.1.2-192.168.1.254

Wireless Status

Wireless Network Name(SSID)	WR150N

System Information

- **Company Website:** our company's website.
- **System Run Time:** shows how long the system has run.
- **Firmware Version:** displays the current firmware version of the Router.

WAN

- **MAC Address:** displays the MAC address of the WAN interface.
- **Connection Status:** displays the connection type of the WAN port.
- **WAN IP:** shows the IP address of the WAN interface.
- **Subnet Mask:** displays the subnet mask of the WAN interface.
- **Default Gateway:** displays the assigned IP address of the default gateway.
- **DNS:** shows the DNS address.

LAN

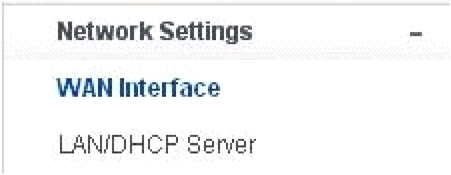
- **MAC Address:** shows the MAC address of the LAN interface.
- **LAN IP:** displays the IP address of the LAN interface.
- **Subnet Mask:** shows the subnet mask address of the LAN interface.
- **DHCP Server:** displays the current status of DHCP server of the LAN interface.
- **DHCP IP Pool:** the IP address range that the DHCP server can assign to every PC connected to this device.

Wireless

- **Wireless Network Name(SSID):** displays name of your WLAN.
- **Wireless Mode:** shows the IEEE standards it complies with.
- **Channel:** shows the frequency/Channel it works in.
- **Broadcast SSID:** shows you have enabled or disabled to broadcast your WLAN's SSID.

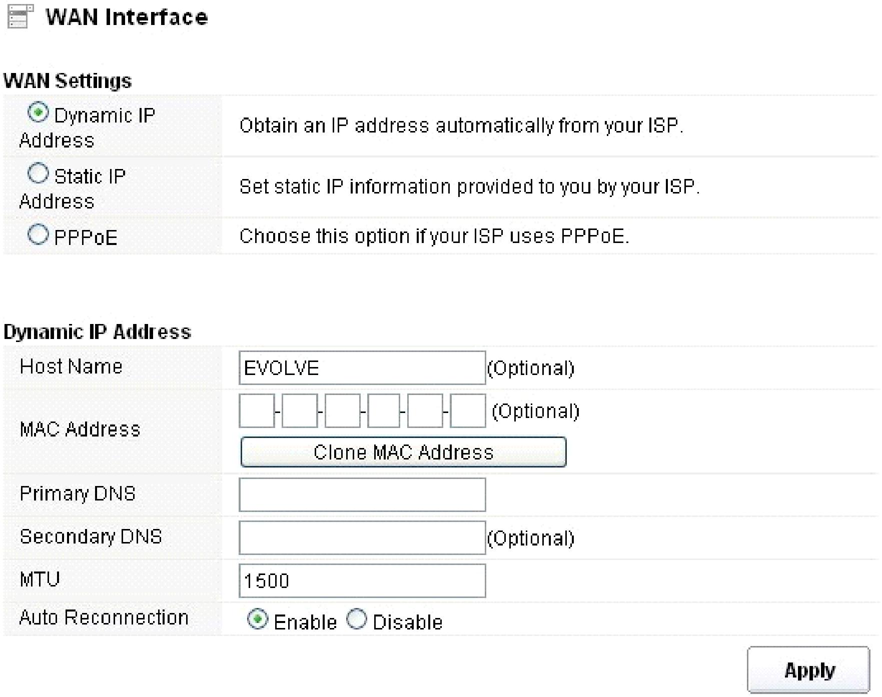
The form on the bottom of this page displays the total packets your router has received or sent.

5.2 Network Settings



5.2.1 WAN Interface

This page is used to configure the parameters for the WAN port of your Access Point. Since we have discussed this setting on **Setup Wizard**, here we introduce the **MTU** value.



WAN Interface

WAN Settings

● Dynamic IP Address	Obtain an IP address automatically from your ISP.
○ Static IP Address	Set static IP information provided to you by your ISP.
○ PPPoE	Choose this option if your ISP uses PPPoE.

Dynamic IP Address

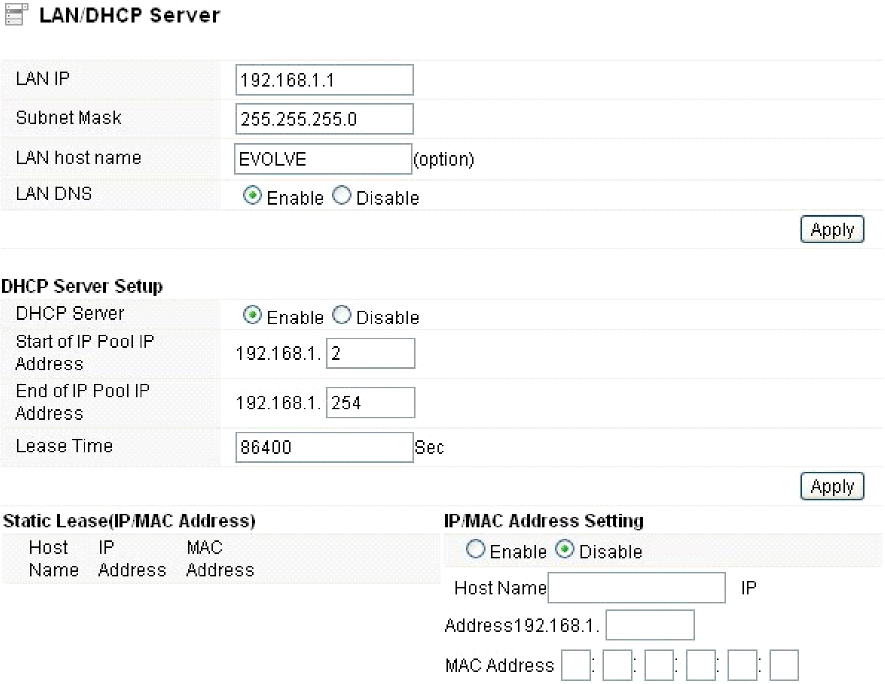
Host Name	EVOLVE (Optional)
MAC Address	_-_-_-_-_-_ (Optional) Clone MAC Address
Primary DNS	
Secondary DNS	(Optional)
MTU	1500
Auto Reconnection	● Enable ○ Disable

MTU: It means Max Transmit Unit for packet. When using slow links, large packets can cause some delays thereby increasing lag and latency. The default value is 1500.

Auto Reconnection: this function is enabled by default.

5.2.2 LAN/DHCP Server

Local Area Network (LAN) is a group of subnets regulated and ruled by router. The design of network structure is related to what type of public IP addresses coming from your ISP. This page allows you to configure the parameters for LAN which connects to the LAN port of your Access Point.



LAN/DHCP Server

LAN IP	192.168.1.1
Subnet Mask	255.255.255.0
LAN host name	EVOLVE (option)
LAN DNS	● Enable ○ Disable

DHCP Server Setup

DHCP Server	● Enable ○ Disable
Start of IP Pool IP Address	192.168.1. 2
End of IP Pool IP Address	192.168.1. 254
Lease Time	86400 Sec

Static Lease(IP/MAC Address)

Host Name	IP Address	MAC Address

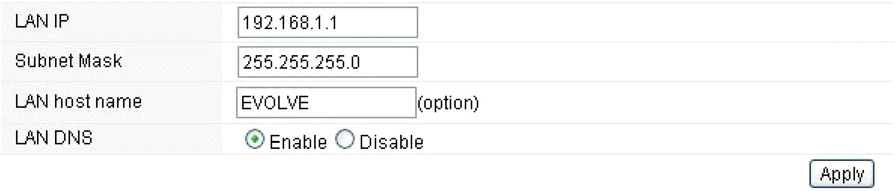
IP/MAC Address Setting

○ Enable ● Disable

Host Name □ IP Address192.168.1. □

MAC Address □:□:□:□:□:□

5.2.2.1 LAN

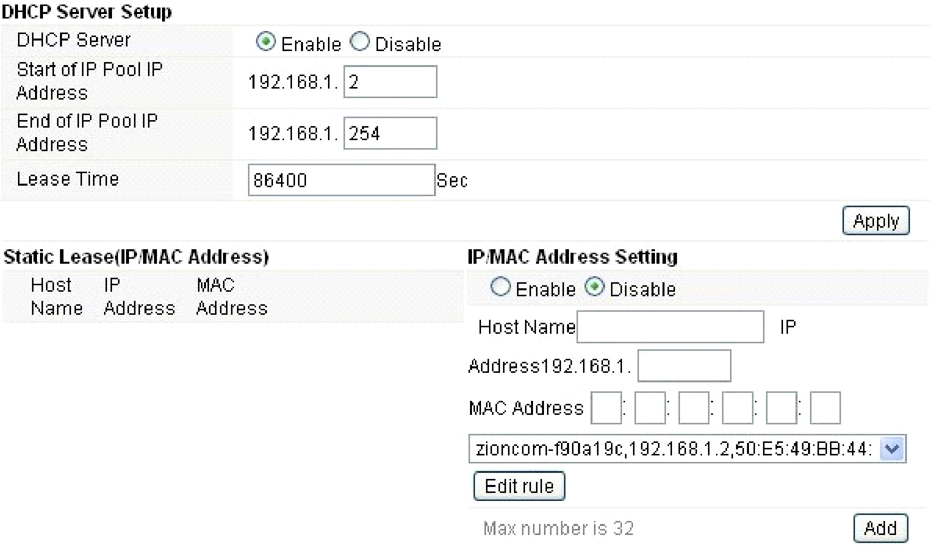


LAN IP	192.168.1.1
Subnet Mask	255.255.255.0
LAN host name	EVOLVE (option)
LAN DNS	● Enable ○ Disable

IP Address: This is the IP addresses to be represented by the LAN (including WLAN) interface that is connected to the internal network. This IP will be used for the routing of the internal network (it will be the Gateway IP for all the devices connected on the internal network).
Subnet Mask: This is used to define the device IP classification for the chosen IP address range. 255.255.255.0 is a typical netmask value for Class C networks which support IP address range from 192.0.0.x to 223.255.255.x. Class C network netmask uses 24 bits to identify the network and 8 bits to identify the host.
LAN host name: this is optional, by default, it is EVOLVE.
LAN DNS: you can choose to enable or disable this function. By default, it is Enable selected.

5.2.2.2 DHCP Server Setup

Dynamic Host Configuration Protocol (DHCP) is a local area network protocol. If you enable this function, you will get a dynamic IP address from your ISP automatically. DHCP server means that all the computers connected to this router will get IP address dynamically.



DHCP Server Setup

DHCP Server	● Enable ○ Disable
Start of IP Pool IP Address	192.168.1. 2
End of IP Pool IP Address	192.168.1. 254
Lease Time	86400 Sec

Static Lease(IP/MAC Address)

Host Name	IP Address	MAC Address

IP/MAC Address Setting

○ Enable ● Disable

Host Name IP

Address192.168.1.

MAC Address : : : : :

zioncom-f90a19c,192.168.1.2,50:E5:49:BB:44:

Max number is 32

Start of IP Pool IP Address: displays the start IP Address of the range that will be assigned to each computer connected with the router.

End of IP Pool IP Address: displays the ending IP Address of the range that will be assigned to each computer connected with the router.

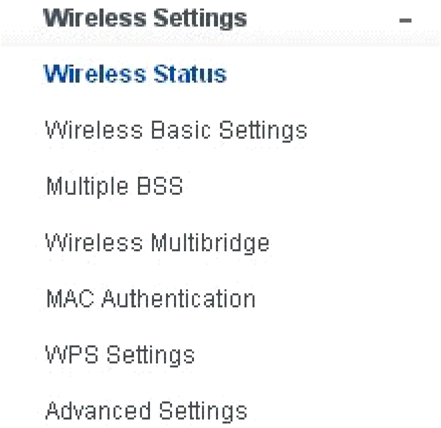
Lease Time: the IP addresses given out by the DHCP server will only be valid for the duration specified by the lease time. Increasing the time ensure client operation without interrupt, but could introduce potential conflicts. Lowering the lease time will avoid potential address conflicts, but might cause more slight interruptions to the client while it will acquire new IP addresses from the DHCP server. The time is expressed in seconds.

Static Lease (IP/MAC Address):

Static Lease function allows you reserve IP addresses, and assign the same IP address to the network device with the specified MAC address any time it requests an IP address. This is almost the same as when a device has a static IP address except that the device must still request an IP address from the DHCP server. You can enable or disable this function.

Host Name: this represents the name of your IP address.
IP Address: displays the IP Address that you want to assign to network device.
MAC Address: the MAC Address of the computer that reserves the IP address.

5.3 Wireless



Wireless Settings –

Wireless Status

Wireless Basic Settings

Multiple BSS

Wireless Multibridge

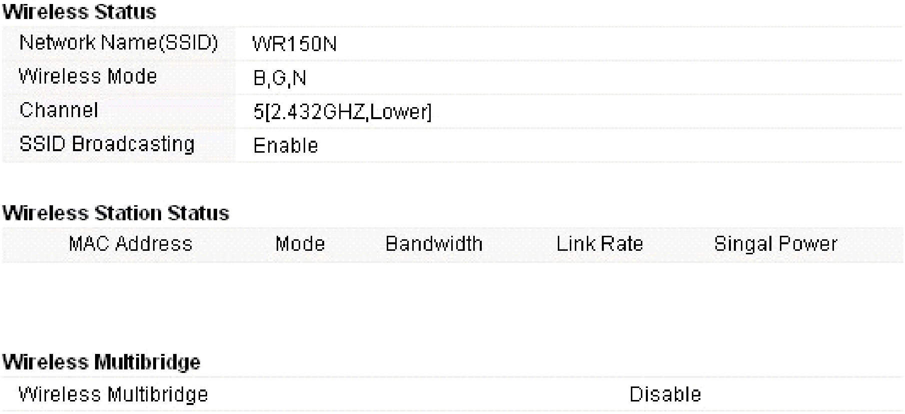
MAC Authentication

WPS Settings

Advanced Settings

5.3.1 Wireless Status

This page displays the current wireless status of the router.



Wireless Status

Network Name(SSID)	WR150N
Wireless Mode	B,G,N
Channel	5[2.432GHZ,Lower]
SSID Broadcasting	Enable

Wireless Station Status

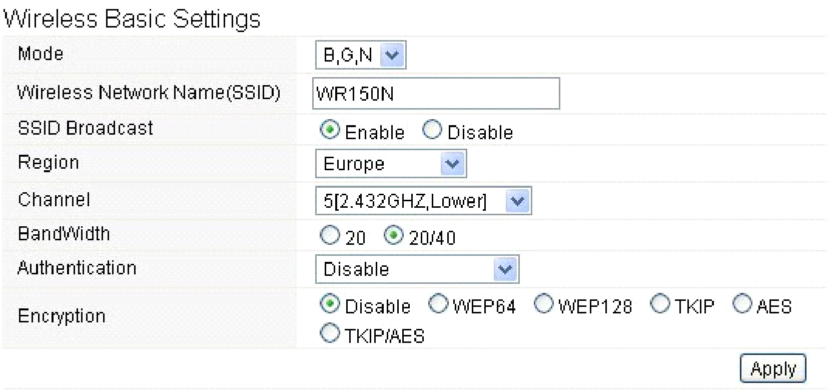
MAC Address	Mode	Bandwidth	Link Rate	Singal Power

Wireless Multibridge

Wireless Multibridge	Disable

5.3.2 Wireless Basic Settings

On this page, you could configure the parameters for Wireless LAN clients that may connect to your Access Point.



Wireless Basic Settings

Mode	B,G,N
Wireless Network Name(SSID)	WR150N
SSID Broadcast	● Enable ○ Disable
Region	Europe
Channel	5[2.432GHZ,Lower]
BandWidth	○ 20 ● 20/40
Authentication	Disable
Encryption	● Disable ○ WEP64 ○ WEP128 ○ TKIP ○ AES ○ TKIP/AES

Mode: This option allows you to choose the radio standard for operation of your Router. 802.11b and 802.11g are old 2.4GHz mode, while 802.11n is the latest standard based on faster Orthogonal Frequency Division Multiplexing (OFDM) modulation. Here, by default, the B, G, N Mode is selected, this mode offers better compatibility.

Wireless Network Name (SSID): The name of the wireless network.

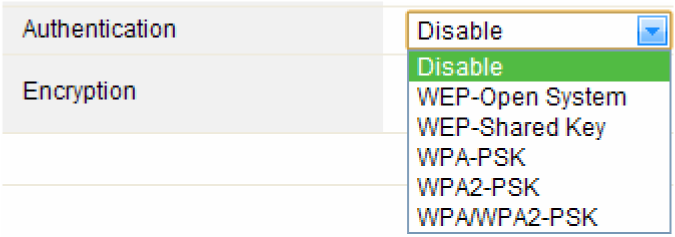
SSID Broadcast: you can choose to enable or disable to broadcast your SSID.

Region: this device supports 5 regions: USA, Canada, China, Japan and Europe. You can choose one based on your position.

Channel: This option provides selectable channel numbers.

Bandwidth: This is the spectral width of the radio channel. Supported wireless channel spectrum widths:
20MHz is the standard channel spectrum width.
40MHz is the channel spectrum with the width of 40MHz.

Authentication: you can choose one encryption method for your wireless LAN.

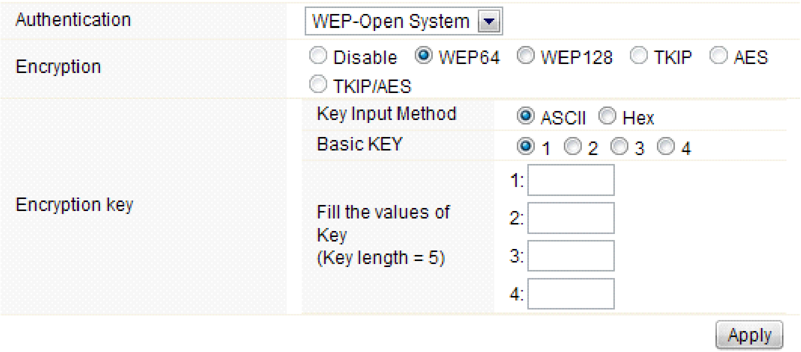


Authentication: Disable

Encryption

5.3.2.1 WEP

WEP (Wired Equivalent Privacy) is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. Enabling WEP allows you to increase security by encryption data being transferred over your wireless network. WEP is the oldest security algorithm, and there are few applications that can decrypt the WEP key in less than 10 minutes.



Authentication	WEP-Open System ▾	
Encryption	○ Disable ● WEP64 ○ WEP128 ○ TKIP ○ AES ○ TKIP/AES	
Encryption key	Key Input Method	● ASCII ○ Hex
	Basic KEY	● 1 ○ 2 ○ 3 ○ 4
	Fill the values of Key (Key length = 5)	1: □ 2: □ 3: □ 4: □

Authentication: One of the following authentication modes should be selected if WEP security method is used:

Open System - station is authenticated automatically by AP.
Shared Key - station is authenticated after the challenge, generated by AP.

Encryption: 64-bit (selected by default) or 128-bit WEP Key length should be selected. The 128-bit option will provide a bit higher level of wireless security.

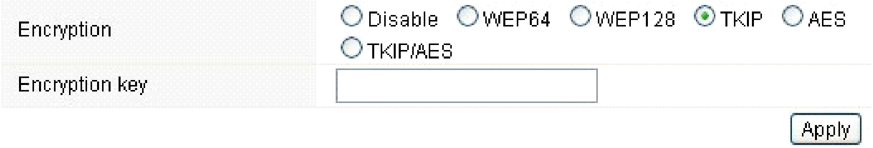
For 64-bit-specify WEP key as 10 Hex (0-9, A-F or a-f) characters (e.g. 00112233AA) or 5 ASCII characters.
For 128-bit-specify WEP key as 26 Hex (0-9, A-F or a-f) characters (e.g. 00112233445566778899AABBCC) or 13 ASCII characters.

Encryption Key

Key Input Method: Hexadecimal (selected by default) or ASCII option specifies the character format for the WEP key.

5.3.2.2 WPA/WPA2

Wi-Fi Protected Access (WPA) is the most dominating security mechanism in industry. It is separated into two categories: WPA-personal or called WPA Pre-Share Key (WPA/PSK), and WPA-Enterprise or called WPA/802.1x.



Encryption	○ Disable ○ WEP64 ○ WEP128 ● TKIP ○ AES ○ TKIP/AES
Encryption key	□

WPA2: it means Wi-Fi Protected Access 2, it is the current most secure method of wireless security and required for 802.11n performance. This mode allows you to choose **TKIP+AES** Algorithm. If you choose Enterprise related modes, you are required to enter **RADIUS Server.**

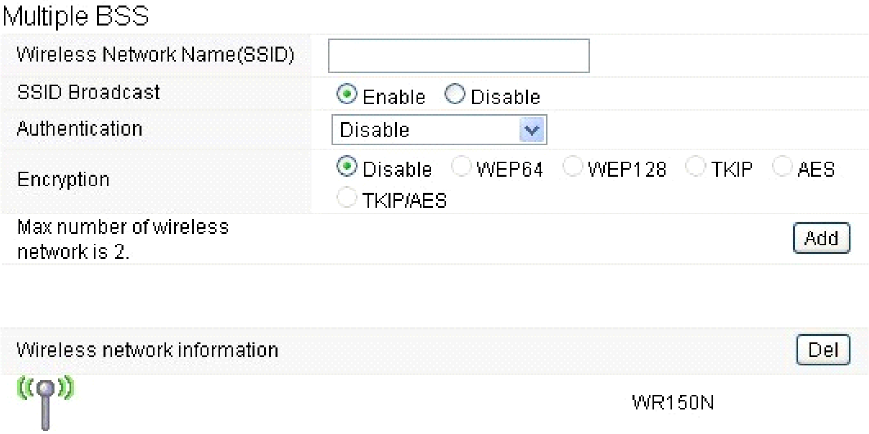
WPA Algorithms
TKIP--Temporal Key Integrity Protocol is one cipher for data encryption supported by WPA.

AES--also know as CCMP, Counter Mode with Cipher Block Chaining Message Authentication Code

Protocol, which uses the Advanced Encryption Standards (AES) algorithm.
Encryption key: This is a pre-defined key used for encryption during data transmission. It has two formats: Passphrase and Hex (64 characters). Then you need to enter the Pre-Shared Key, either 8~63 ASCII characters, such as 012345678..(or 64 Hexadecimal
digits leading by 0x, such as “0x321253abcde…”).

Note: *Since WEP has been proved vulnerable, you may consider using WPA2 for the most secure connection. You should select the appropriate security mechanism according to your needs. No matter which security suite you select, they all will enhance the over-the-air data protection and/or privacy on your wireless network.*

5.3.3 Multiple BSS



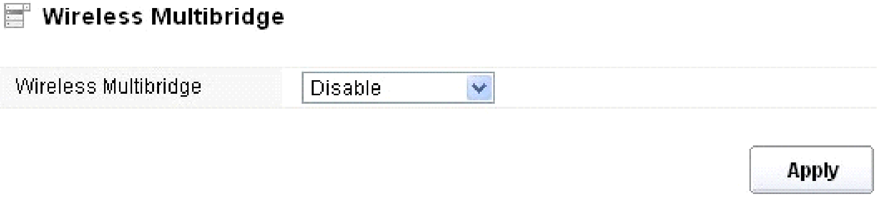
Multiple BSS

Wireless Network Name(SSID)	
SSID Broadcast	● Enable ○ Disable
Authentication	Disable
Encryption	● Disable ○ WEP64 ○ WEP128 ○ TKIP ○ AES ○ TKIP/AES
Max number of wireless network is 2.	Add

Wireless network information	Del
	WR150N

Wireless Network Name (SSID): define one more SSID for your WLAN. **SSID Broadcast:** choose to enable or disable this function. **Authentication:** please choose one encryption method for this SSID. **Encryption:** please refer to **Wireless Basic Settings**.

5.3.4 Wireless Multibridge



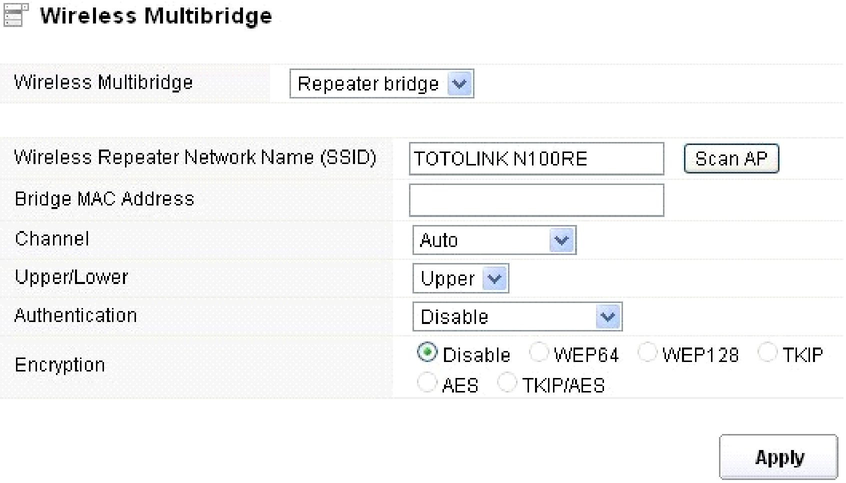
Wireless Multibridge

Wireless Multibridge	Disable

Apply

5.3.4.1 Repeater bridge/Repeater

These two Repeater methods can help you to expand the wireless coverage and allow more terminals to access Internet.



Wireless Multibridge

Wireless Multibridge	Repeater bridge

Wireless Repeater Network Name (SSID)	TOTOLINK N100RE	Scan AP
Bridge MAC Address		
Channel	Auto	
Upper/Lower	Upper	
Authentication	Disable	
Encryption	● Disable ○ WEP64 ○ WEP128 ○ TKIP ○ AES ○ TKIP/AES	

Apply

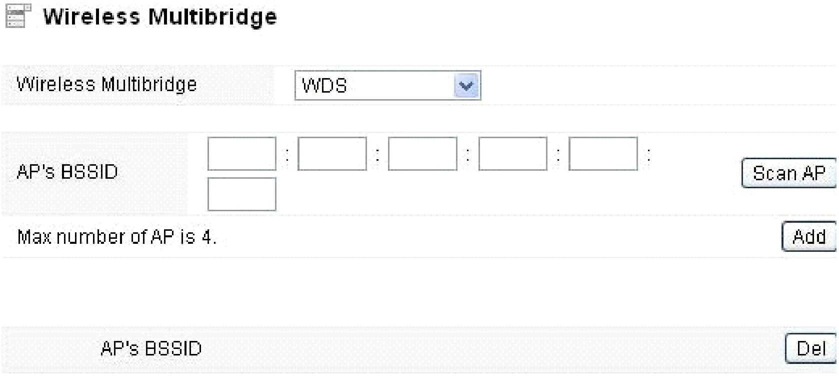
Wireless Repeater Network Name (SSID): choose the SSID you want to implement the repeater function.
Bridge MAC Address: or you can enter the MAC address.
Channel: select one channel according to the main Router and your method.
Upper/Lower: you can keep it the default setting.
Authentication: select one encryption method for this repeater function.
Encryption: please refer to **Wireless Basic Settings**.

5.3.4.2 WDS

WDS means Wireless Distribution System. It is a protocol for connecting two access points wirelessly. Usually, it can be used for the following application:

- Provide bridge traffic between two LANs though the air.
- Extend the coverage range of a WLAN.

To meet the above requirement, you must set these APs in the same channel and set MAC address of other APs which you want to communicate with in the table and then enable the WDS.



Wireless Multibridge

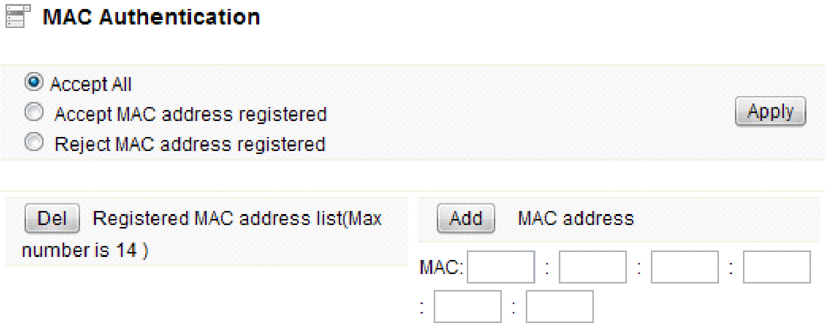
Wireless Multibridge	WDS

AP's BSSID	: : : : :	Scan AP
Max number of AP is 4.		Add

AP's BSSID	Del

5.3.5 MAC Authentication

You can control the PC to connect with the wireless Router through MAC authentication



MAC Authentication

● Accept All
○ Accept MAC address registered
○ Reject MAC address registered

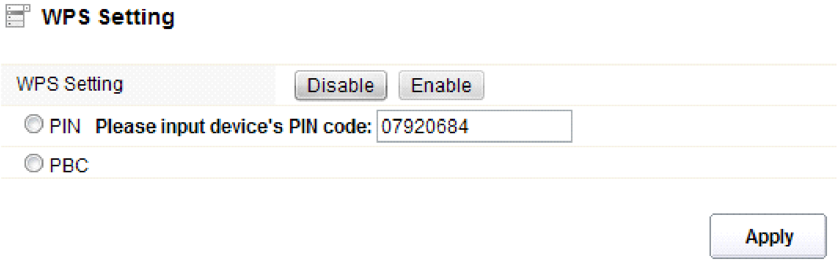
Registered MAC address list(Max number is 14)

MAC address

MAC: : : : : :

5.3.6 WPS Settings

WPS (Wi-Fi Protected Setup) provides easy procedure to make network connection between wireless station and wireless access point with the encryption of WPA and WPA2. It is enabled by default.



WPS Setting

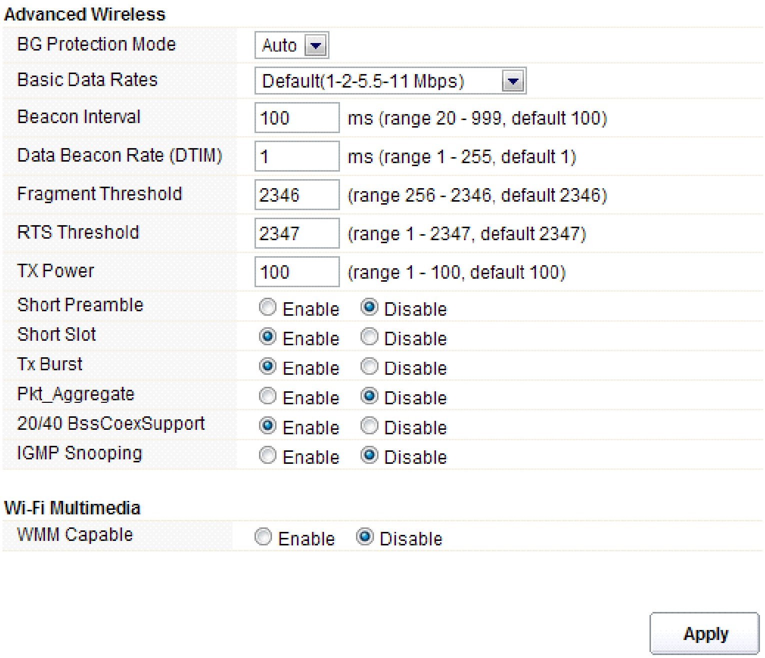
WPS Setting

○ PIN **Please input device's PIN code:** 07920684

○ PBC

Pin Number: if you choose to configure WPS by PIN, then set the Pin number here.
PBC: you can choose this option as well.

5.3.7 Advanced Settings



Advanced Wireless

BG Protection Mode	Auto ▾
Basic Data Rates	Default(1-2-5.5-11 Mbps) ▾
Beacon Interval	100 ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	1 ms (range 1 - 255, default 1)
Fragment Threshold	2346 (range 256 - 2346, default 2346)
RTS Threshold	2347 (range 1 - 2347, default 2347)
TX Power	100 (range 1 - 100, default 100)
Short Preamble	○ Enable ● Disable
Short Slot	● Enable ○ Disable
Tx Burst	● Enable ○ Disable
Pkt_Aggregate	○ Enable ● Disable
20/40 BssCoexSupport	● Enable ○ Disable
IGMP Snooping	○ Enable ● Disable

Wi-Fi Multimedia

WMM Capable	○ Enable ● Disable

BG Protection Mode: Background Protection Mode, by default, it is Auto selected.

Basic Data Rates: you can choose the wireless data rate. This router provides three options. Be default, it is Default (1-2-5.5-11Mbps).

Beacon Interval: By default, it is set to 100ms. Higher Beacon interval will improve the device's wireless performance and is also power-saving for client side. If this value set lower than 100ms, it will speed up the wireless client connection.

Data Beacon Rate (DTIM): by default, its value is 1.

Fragment Threshold: specifies the maximum size for a packet before data is fragmented into multiple packets. The range is 256-2346 bytes. Setting the Fragment Threshold too low may result in poor network performance. The use of fragment can increase the reliability of frame transmissions. Because of sending smaller frames, collisions are much less likely to occur. However, lower values of the Fragment Threshold will result in lower throughput as well. Minor or no modifications of the Fragmentation Threshold value is recommended while default setting of 2346 is optimum in most of the wireless network use cases.

RTS Threshold: determines the packet size of a transmission and, through the use of an access point, helps control traffic flow. The range is 0-2347 bytes. The default value is 2347, which means that RTS is disabled.

RTS/CTS (Request to Send / Clear to send) are the mechanism used by the 802.11 wireless networking protocols to reduce frame collisions introduced by the hidden terminal problem. RTS/CTS packet size threshold is 0-2347 bytes. If the packet size the node wants to transmit is larger than the threshold, the RTS/CTS handshake gets triggered. If the packet size is equal to or less than threshold the data frame gets sent immediately.

System uses Request to Send/Clear to send frames for the handshake that provide collision reduction for an access point with hidden stations. The stations are sending a RTS frame first while data is sent only after a handshake with an AP is completed. Stations respond with the CTS frame to the RTS, which provide clear media for the requesting station to send the data. CTS collision control management has a time interval defined during which all the other stations hold off the transmission and wait until the requesting station will finish transmission.

TX Power: display the data transmission rate power.

Short Preamble: this option is to define the length of the sync field in an 802.11 packet. Most modern wireless network uses shot preamble with 56 bit sync filed. By default, it is disabled.

Short Slot: by default, this is enabled.

Tx Burst: enable this function will make it easy for you to enhance the performance in data transmission.

Pkt_Aggregate: by default, this is disabled.

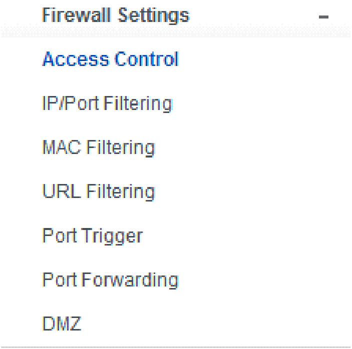
20/40 BssCoexSupport: by default, it is enabled. Support 20/40 at the same time.

IGMP Snooping: if you enable this function, multicast traffic will be forwarded to ports that have members of that group. Disabling IGMP snooping will make multicast traffic treated in the same manner as broadcast traffic.

WMM Capable: by default, it is disabled.

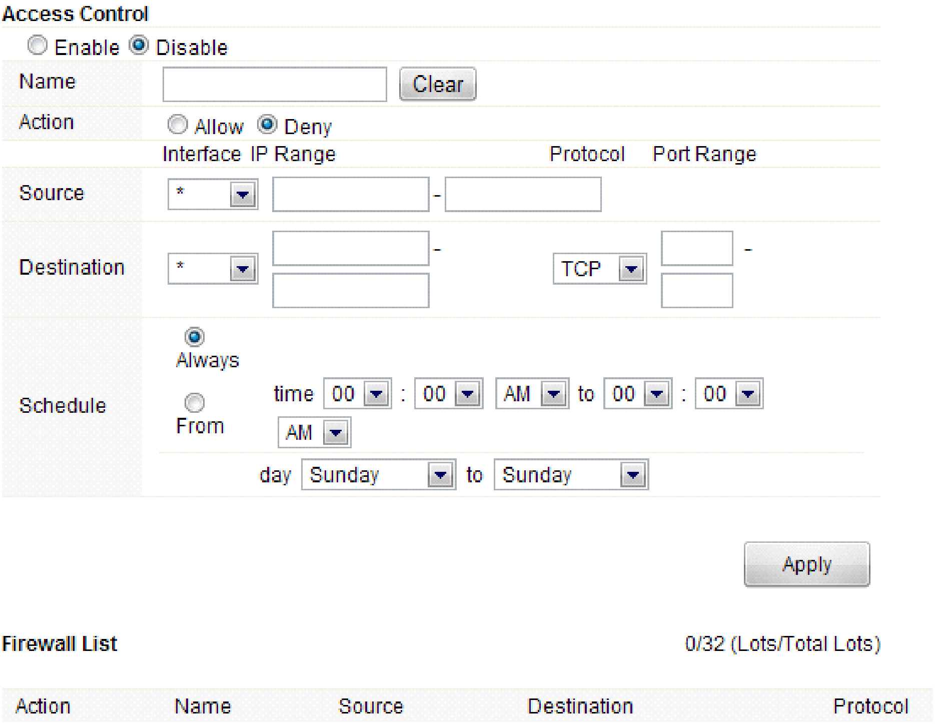
WMM is an abbreviation of Wi-Fi Multimedia. It defines the priority levels for four access categories derived from 802.1d (prioritization tabs). The categories are designed with specific types of traffic, voice, video, best effort and low priority data.

5.4 Firewall



While the broadband users demand more bandwidth for multimedia, interactive applications, or distance learning, security has been always the most concerned. The firewall of this router helps to protect you local network against attack from unauthorized outsiders. It also restricts users in the local network from accessing the Internet. Furthermore, it can filter out specific packets that trigger the router to build an unwanted outgoing connection.

5.4.1 Access Control



Access Control

○ Enable ● Disable

Name Clear

Action ○ Allow ● Deny

Interface IP Range Protocol Port Range

Source * -

Destination * - TCP -

Schedule ● Always ○ From time 00 : 00 AM to 00 : 00 AM

day Sunday to Sunday

Apply

Firewall List 0/32 (Lots/Total Lots)

Action	Name	Source	Destination	Protocol

First, you can choose to enable or disable this function according to your needs.

Name: Enter the name of the router.

Action: you could choose to allow or deny the following addresses entered by you.

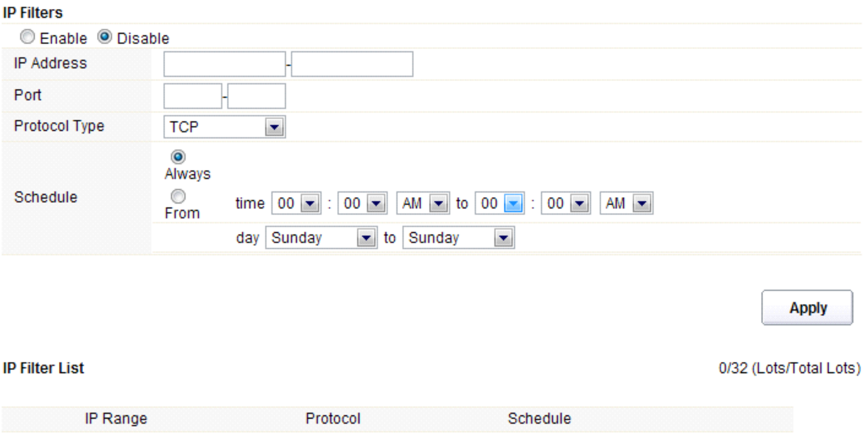
Source: select the interface of the address, and enter the starting IP address that you want to deny or allow.

Destination: select the interface of the address, and enter the ending IP address that you want to deny or allow. About the Port Range, choose the protocol and enter IP range.

Schedule: this router has a built-in real time clock which can update itself manually or automatically by means of Network Time Protocol (NTP). As a result, you can not only schedule the router to dialup to the Internet at a specified time, but also restrict Internet access to certain hours so that users can connect to the Internet only during certain hours, say, business hours. The schedule is also applicable to other functions. You have to set your time before set schedule.

5.4.2 IP/Port Filtering

Depending on whether there is an existing Internet connection, or in other words “the WAN link status is up or down”. You can restrict certain types of data packets from your local network to Internet through the Gateway on this page.



IP Filters

○ Enable ● Disable

IP Address	-
Port	-
Protocol Type	TCP
Schedule	● Always ○ From time 00 : 00 AM to 00 : 00 AM day Sunday to Sunday

Apply

IP Filter List 0/32 (Lots/Total Lots)

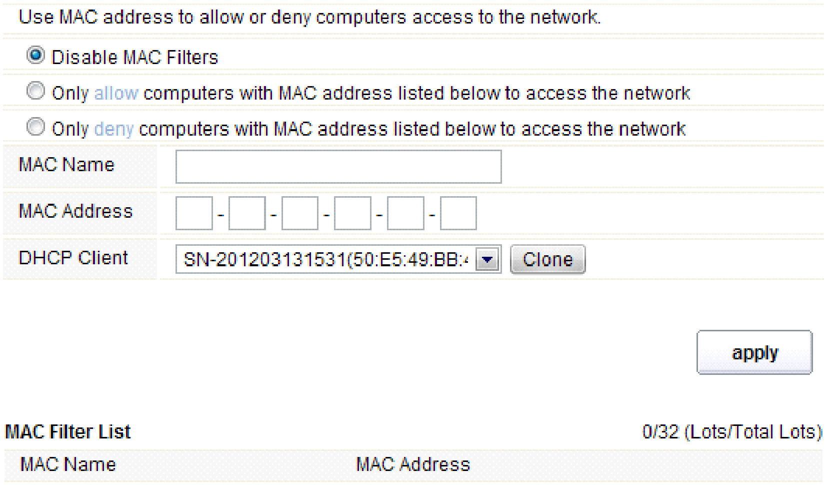
IP Range	Protocol	Schedule

You can select to enable or disable IP/Port Filtering function. By default, it is disabled.

IP Address: the IP address range that you want to filter.
Port: the Port address that you want to filter.
Protocol Type: choose which particular protocol type should be filtered. Here you can choose UDP/TCP.
Schedule: you can choose to always enable this filter function or create a schedule.
IP Filter List: this table will list the detailed information about the IP addresses that you want to filter.

5.4.3 MAC Filtering

On this page, you can add some MAC addresses to be filtered to isolate users' access from wired LAN.



Use MAC address to allow or deny computers access to the network.

● Disable MAC Filters

○ Only allow computers with MAC address listed below to access the network

○ Only deny computers with MAC address listed below to access the network

MAC Name	
MAC Address	- - - - -
DHCP Client	SN-201203131531(50:E5:49:BB:4 Clone

apply

MAC Filter List 0/32 (Lots/Total Lots)

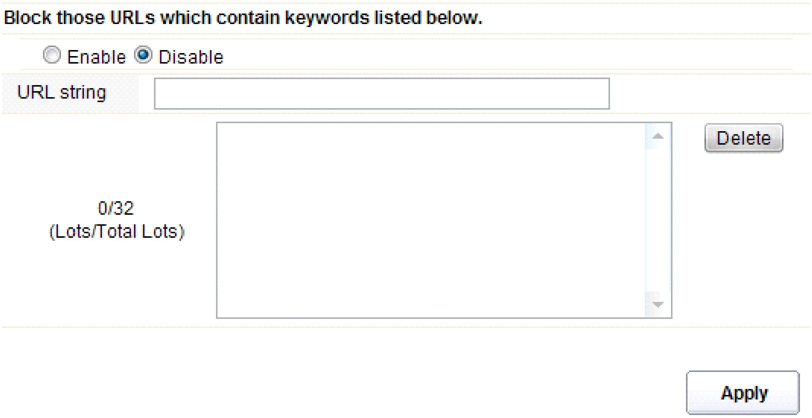
MAC Name	MAC Address

This router allows you to disable MAC Filtering function or allow/deny MAC address listed.

MAC Name: the name of the computer with the MAC you entered.
MAC Address: you can enter the MAC addresses that you want to deny or allow.
DHCP Client: display the information about one DHCP client.
MAC Filter List: this table will list the detailed information about the MAC addresses that will be filtered.

5.4.4 URL Filtering

This page is used to deny LAN users from accessing the internet. Block those URLs which contain keywords listed.



Block those URLs which contain keywords listed below.

○ Enable ● Disable

URL string

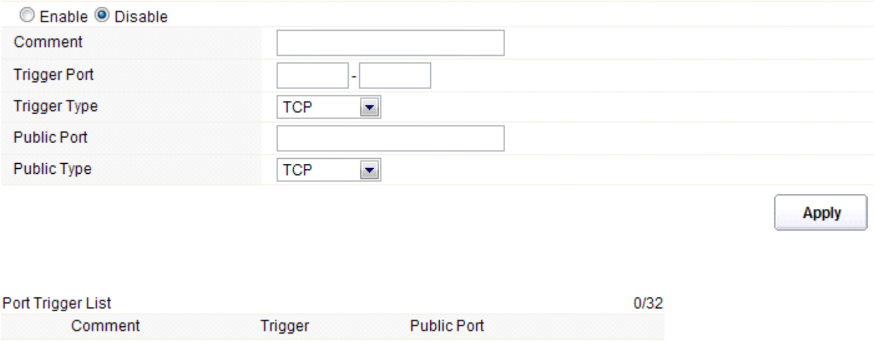
0/32
(Lots/Total Lots)

You can choose to enable or disable URL filtering function.

URL string: type in the string contained in URLs that you don’t allow LAN users to access. Enter the URLs that you don’t allow LAN users to access. And you can also click **Delete** button to delete the URLs you entered.

5.4.5 Port Trigger

This page allows you to trigger port for the traffic of special applications. Ensure that you keep the application involved up-to-date to avoid falling victim to any security exploits.



○ Enable ● Disable

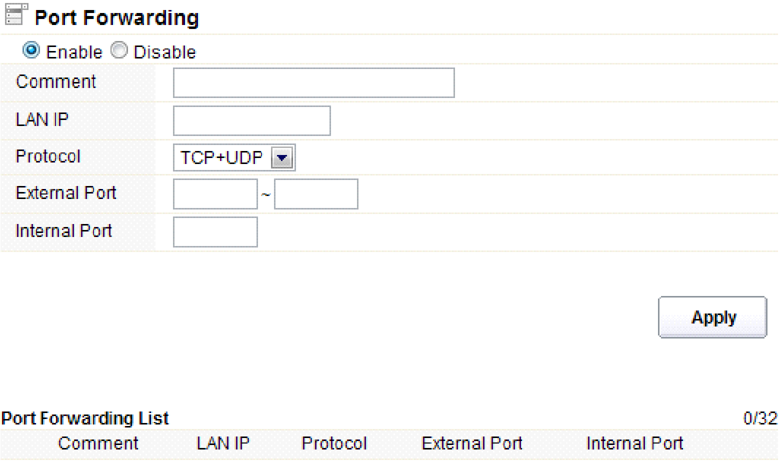
Comment	
Trigger Port	-
Trigger Type	TCP
Public Port	
Public Type	TCP

Port Trigger List 0/32

Comment	Trigger	Public Port

Enable/Disable: you can choose to enable or disable this function.
Comment: please enter the reason for this port trigger action.
Trigger Port: type in the starting & ending ports number of the service.
Trigger type: Specify the transport layer protocol. It could be TCP, UDP or both.
Public Port: type in the public port number.
Public Type: choose one transport layer protocol.
Port Trigger List: this table will list the detailed information about the ports that you set before.

5.4.6 Port Forwarding



Port Forwarding

● Enable ○ Disable

Comment	
LAN IP	
Protocol	TCP+UDP
External Port	~
Internal Port	

Port Forwarding List 0/32

Comment	LAN IP	Protocol	External Port	Internal Port

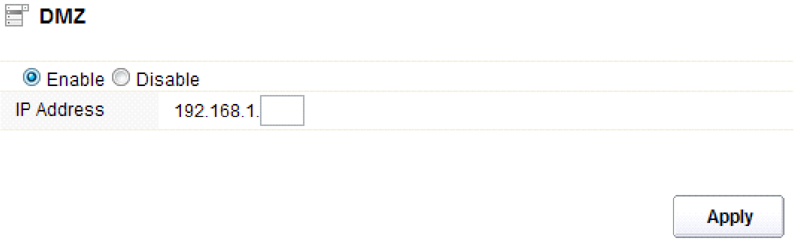
You could choose to enable or disable this function according to your requirement.

Comment: please enter the reason for this port forwarding action.
LAN IP: the IP of the host that is connected to the internal network and needs to be accessible form external network.

Protocol: the L3 protocol type of the IP Address.
External Port: range of the public port number.
Internal Port: internal port number. It is the TCP/UDP port of the application running on the host that is connected to the internal network.
Port Forwarding List: the port forwarding list will show you the detailed information about the forwarded port.

5.4.7 DMZ

DMZ means Demilitarized Zone. It can be enabled and used as a place where services can be placed such as Web Servers, Proxy Servers and E-mail Servers such that these services can still serve the local network and are at the same time isolated from it for additional security. DMZ is commonly used with the NAT functionality as an alternative for the Port Forwarding while makes all the ports of the host network device be visible form the external network side.



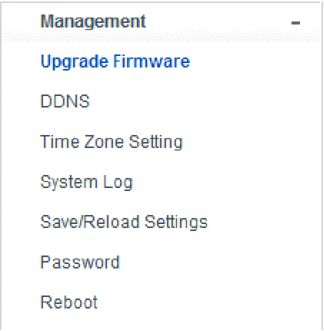
DMZ

● Enable ○ Disable

IP Address 192.168.1.

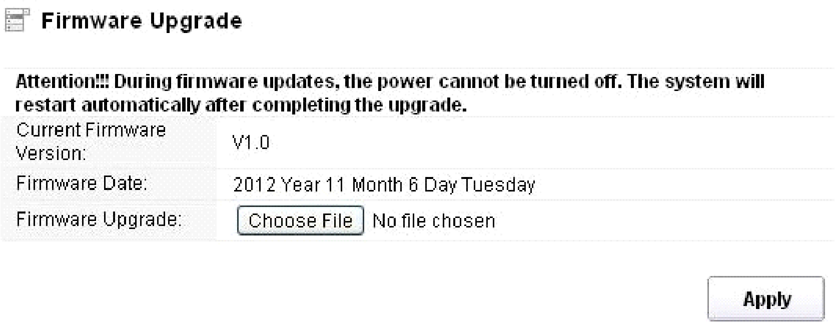
You can choose to enable or disable DMZ function.
IP Address: types in the IP address of the DMZ host

5.5 Management



5.5.1 Upgrade Firmware

This page allows you to upgrade the Access Point firmware to new version. Please note: DO NOT power off the device during the upload because it may crash the system.



Firmware Upgrade

Attention!!! During firmware updates, the power cannot be turned off. The system will restart automatically after completing the upgrade.

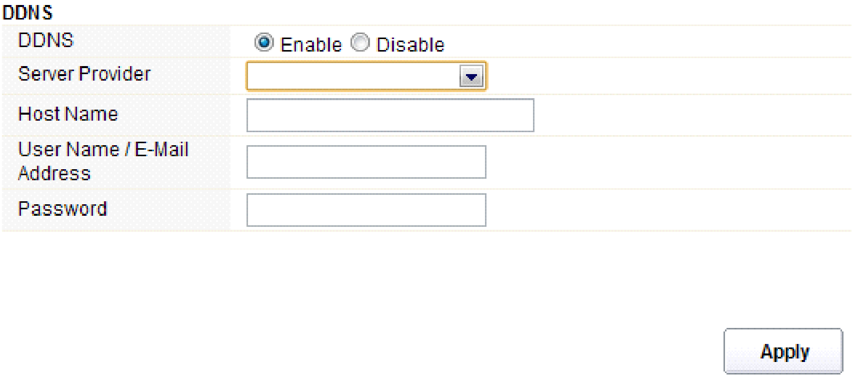
Current Firmware Version:	V1.0
Firmware Date:	2012 Year 11 Month 6 Day Tuesday
Firmware Upgrade:	Choose File No file chosen

Current Firmware Version: shows the current firmware version.
Firmware Date: the date that you upgrade the current firmware.
Firmware Upgrade: select the firmware version on your computer then click **Apply** to upgrade the firmware version.

5.5.2 DDNS

DDNS means Dynamic Domain Name System. The ISP often provides you with a dynamic IP address when you connect to the Internet via your ISP. It means that the public IP address assigned to your router changes each time you access the Internet. The Dynamic DNS feature lets you assign a domain name to a dynamic WAN IP address. It allows the router to update its online WAN IP address mappings on the specified Dynamic DNS server. Once the router is online, you will be able to use the registered domain name to access the router or internal virtual servers from the Internet. It is particularly helpful if you host a web server, FTP server, or other server behind the router.

Before you user the Dynamic DNS feature, you have to apply for free DDNS service to the DDNS service providers. The router provides up to three accounts from three different DDNS service providers. This router supports three service providers: DynDns, no-ip and 3322. Please log in the websites to register for free DDNS service.



DDNS

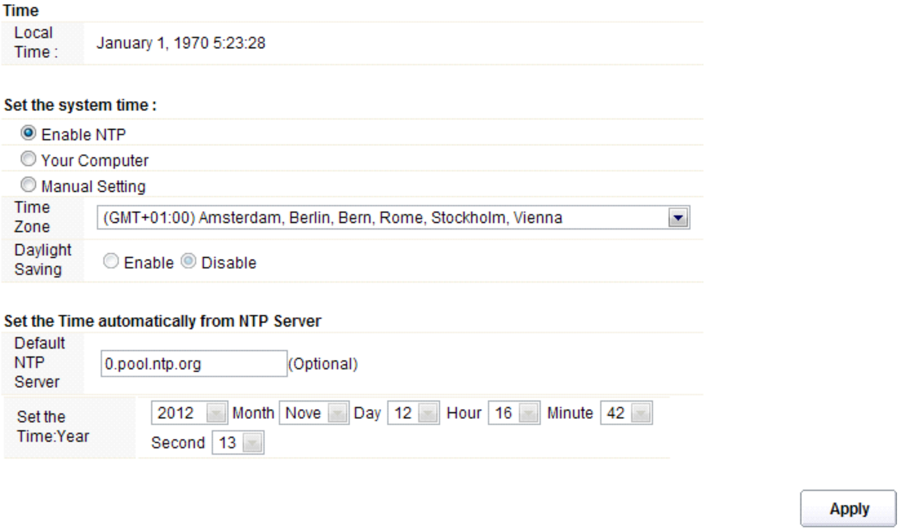
DDNS	● Enable ○ Disable
Server Provider	
Host Name	
User Name / E-Mail Address	
Password	

You could choose to enable or disable DDNS function.
Service Provider: choose one service provider where you have applied for free DDNS service.

Host Name: type in the host name you registered from the DDNS provider.
User Name/Email Address: enter the User Name or Email you registered from the DDNS provider.
Password: enter the Password or Key you set for the User Name.

5.5.3 Time Zone Settings

This page allows you to maintain the system time by synchronizing with a public time server over the Internet.



Time

Local Time :	January 1, 1970 5:23:28

Set the system time :

● Enable NTP
○ Your Computer
○ Manual Setting

Time Zone	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
Daylight Saving	○ Enable ● Disable

Set the Time automatically from NTP Server

Default NTP Server	0.pool.ntp.org (Optional)
Set the Time:Year	2012 Month Nove Day 12 Hour 16 Minute 42 Second 13

Local Time: it shows the current time by default.

Enable NTP: NTP means Network Time Protocol which is used to make the computer time synchronized with its server or clock source, such as Quartz and GPS. It can provide high-precision time correction and prevent harmful protocol attack by confirming encryption. You need to check this box to activate this page.

Time Zone: Select the Time Zone where the router is located.

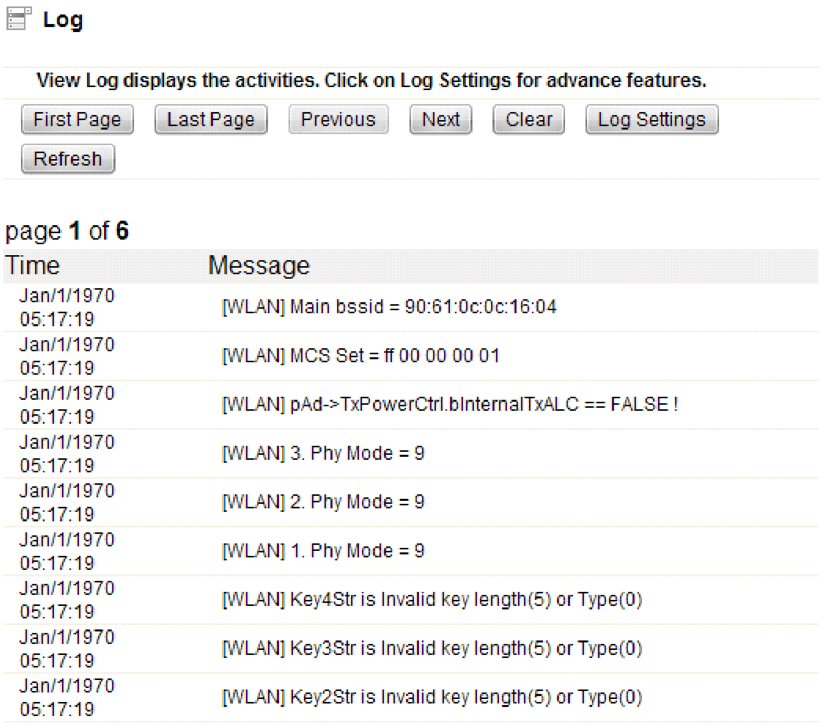
Daylight Saving: If the Time Zone you choose implements daylight saving time, please select this option. By default, it is disabled.

Default NTP Server: Please choose the corresponding NTP server to get right time. This is optional.

Set the Time: please set the right time according to your location.

5.5.4 System Log

This page can be used to set remote log server and show the system log.



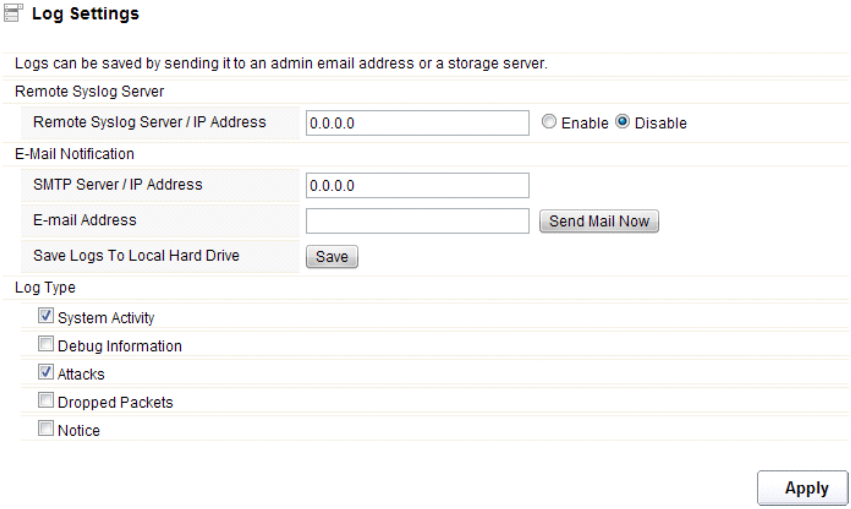
Log

View Log displays the activities. Click on Log Settings for advance features.

page **1** of **6**

Time	Message
Jan/1/1970 05:17:19	[WLAN] Main bssid = 90:61:0c:0c:16:04
Jan/1/1970 05:17:19	[WLAN] MCS Set = ff 00 00 00 01
Jan/1/1970 05:17:19	[WLAN] pAd->TxPowerCtrl.bInternalTxALC == FALSE !
Jan/1/1970 05:17:19	[WLAN] 3. Phy Mode = 9
Jan/1/1970 05:17:19	[WLAN] 2. Phy Mode = 9
Jan/1/1970 05:17:19	[WLAN] 1. Phy Mode = 9
Jan/1/1970 05:17:19	[WLAN] Key4Str is Invalid key length(5) or Type(0)
Jan/1/1970 05:17:19	[WLAN] Key3Str is Invalid key length(5) or Type(0)
Jan/1/1970 05:17:19	[WLAN] Key2Str is Invalid key length(5) or Type(0)

Click **Log Settings** button, it will display the page below:



Log Settings

Logs can be saved by sending it to an admin email address or a storage server.

Remote Syslog Server

Remote Syslog Server / IP Address: 0.0.0.0 ○ Enable ● Disable

E-Mail Notification

SMTP Server / IP Address: 0.0.0.0

E-mail Address:

Save Logs To Local Hard Drive

Log Type

☑ System Activity

□ Debug Information

☑ Attacks

□ Dropped Packets

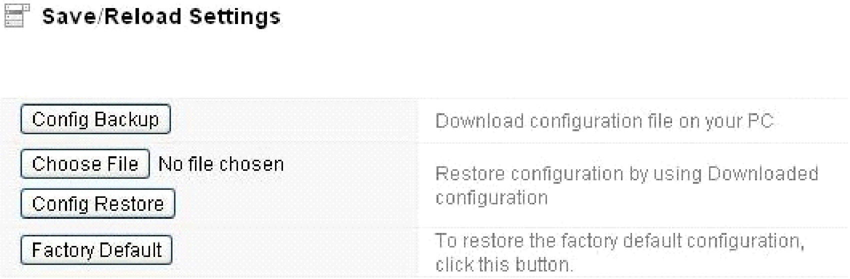
□ Notice

Remote Syslog Server/IP Address: enter an IP address that allows syslog remote sending function while System log messages are sent to a remote server.

SMTP Server/IP: enter a SMTP Server address.
Email Address: enter an Email address.
Log Type: you can choose one type for log.

5.5.6 Save/Reload Settings

This page allows you to save current settings to a file or reload the settings from the file which was saved previously. Besides, you can reset the current configuration to factory default.



Save/Reload Settings

Config Backup	Download configuration file on your PC
Choose File No file chosen Config Restore	Restore configuration by using Downloaded configuration
Factory Default	To restore the factory default configuration, click this button.

Config Backup: click this button to save current settings to your local computer.

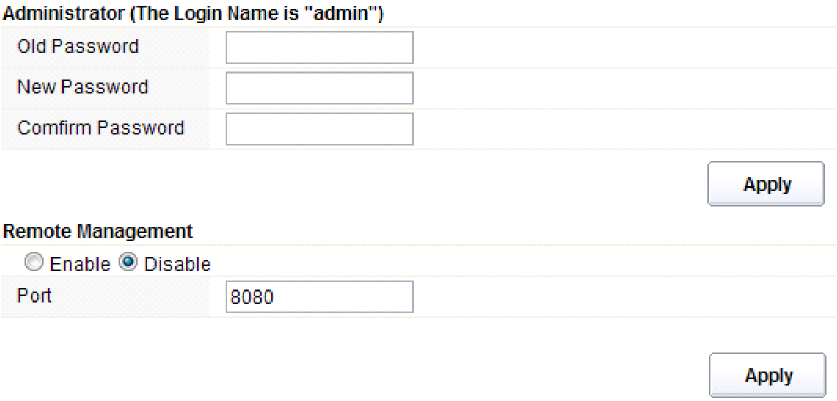
Choose File: if you want to reload the settings from the file saved before, you could click **Choose File** button to choose the right file.

Config Restore: you will be asked whether to restore your configuration using saved file before.

Factory Default: click this button to restore the router settings to the default factory settings.

5.5.7 Password

This page allows you to change the password to login web interface of this router. Also you can enable or disable the Remote Management function here.



Administrator (The Login Name is "admin")

Old Password	
New Password	
Comfirm Password	

Apply

Remote Management

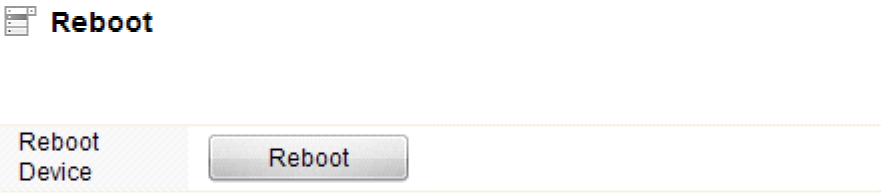
○ Enable ● Disable

Port	8080

Apply

Remote Management: if you enable this function, you can manage the router remotely.
Port: choose the Port number.

5.5.8 Reboot



Click this **Reboot** button to reboot your router quickly.