SAPIDO

All Broadbands

N+ Broadband Router – All Broadbands

RB-1232 Version 2 User Manual V1.0

FCC Statement

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

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

FCC Caution

1. The device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:

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

3. FCC RF Radiation Exposure Statement: The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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

5. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

IMPORTANT NOTE
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance20cm between the radiator & your body.

CE Mark Warning

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

National Restrictions

Frequency range - 2400.0 - 2483.5 MHz

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

Note: Please don't use the product outdoors in France

CE Statement of Conformity

Our product has been tested in typical configuration by Ecom Sertech Corp and was found to comply with the essential requirement of "Council Directive on the Approximation of the Laws of the Member Sates relating to Electromagnetic Compatibility" (89/336/EEC; 92/31/EEC; 93/68/EEC). The Declaration of Conformity can be found at the Sapido regional website. www.sapidotech.de

CE Information of Disposal

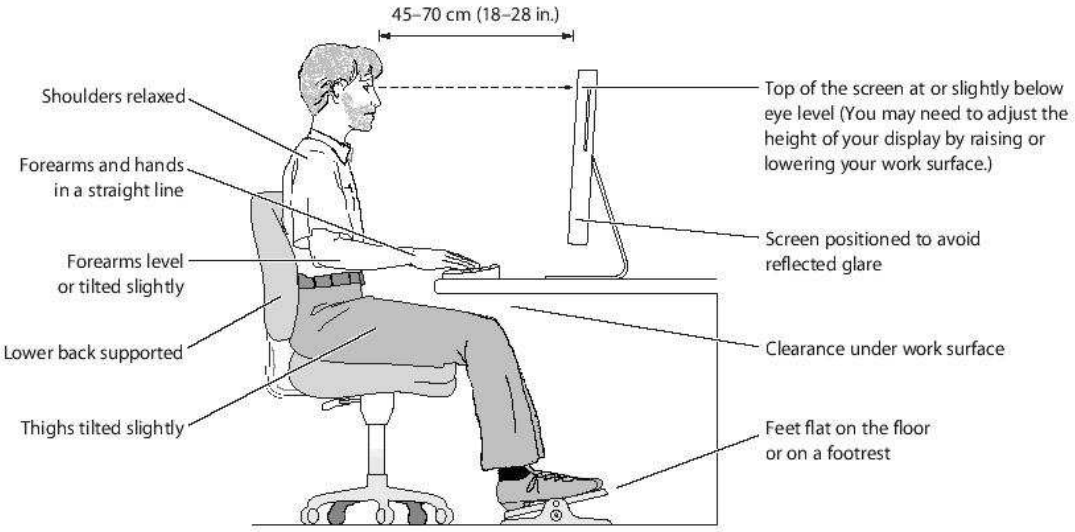
The electric and electronic equipment or unit which is labeled with crossed-out wheeled bin may not be disposed of with household waste. This mark is based on European Directive 2002/96/EC (for Waste Electric and Electronic Equipment=WEEE).

Please take it to the designated collection facilities. We will ensure the proper recycling, reuse and other forms of recovery of WEEE. WEEE has the potential effects on the environment and human health as a result of the presence of hazardous substances. You can contribute to eliminate these effects by your cooperation.

Safe Seating Gestures

You should follow the manufacturer's instructions for adjusting the backrest to fit your body properly.

- An adjustable chair that provides firm, comfortable support is best.
- Adjust the height of the chair so your thighs are horizontal and your feet flat on the floor.
  - The back of the chair should support your lower back (lumbar region).



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Chapter 1 Introduction

1.1 Overview

N+ Broadband Router is a portable and convenient wireless solution for delivering 802.11n

wireless connectivity with a maximum wireless signal rate of up to 300Mbps. Use it in conference rooms, hotel rooms, or even at hotspots.

Moreover, with connect to a 3.5G (EVDO/HSPA) or WiMAX USB modem, this N+ Broadband Router allows user to share the wireless network outdoor or be an alternative or backup to fixed broadband.

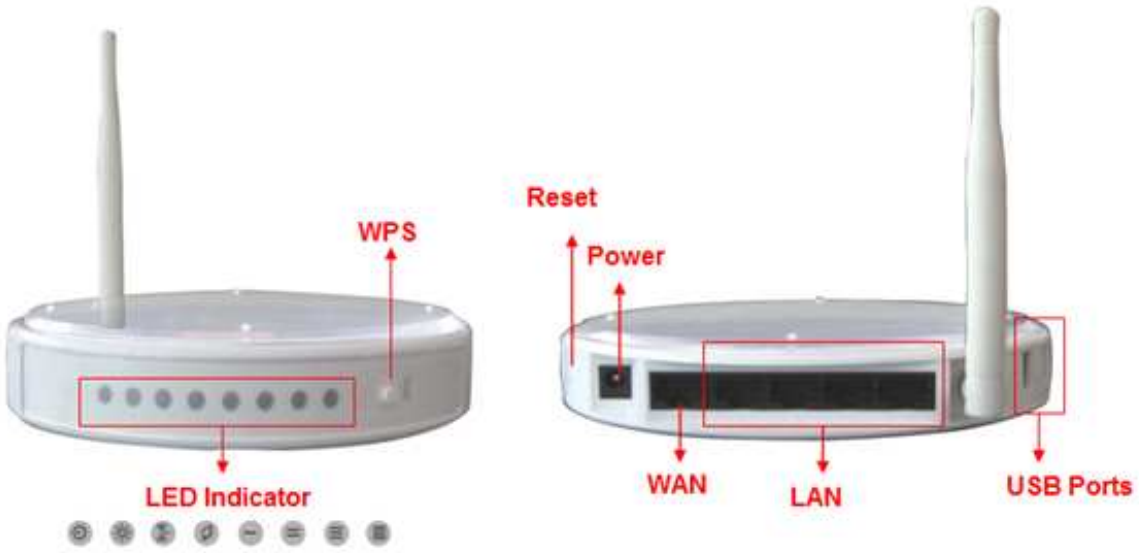
1.2 Features

- **UPnP Supported**; insert your 3.5G or WiMAX modem card and enjoy the Internet without extra setting
- **3.5G and Wireless 11n Combo**; Ideal for mobility or backup for fixed lined connection
- **WPS button** provides not only an easy and secured wireless network but also a WDS repeater in one push
- **Friendly user interface with 12 languages** supported; takes only 5 seconds to switch to your preferred language
- **Multiple APs Supported;** adds or limits the properties for classed SSID, increasing the flexibility and efficiency of the network.
- **Superior, reliable performance;** 20000 fast recycling sessions provide a stable network connection for P2P downloading.

1.3 Hardware Specifications

Item	Specification
WAN Port	1 x 10/100 Mbps RJ45, with auto MDI/MDIX
LAN Port	4 x 10/100 Mbps RJ45, with auto MDI/MDIX
Wireless	IEEE 802.11n (Chipset onboard)
USB2.0 Port	1 USB Port
Others	
Operation Requirement	Operating Temp. 0° to 40°C (32° to 10°F) Storage Temp. -20° to 70°C (-4° to 158°F) Operating Humidity 10% to 85% Non-Condensing Storage Humidity 5% to 90% Non-Condensing
Session	20000
Antenna	Internal X1, External X1
Dimensions	150mm(L) x 150mm(W) x 33mm(H)
Button	Reboot button / Reset button – hold for 1second to reboot, hold for 5 seconds is to reset. WPS button – When push the WPS button, the system is entering the WPS connection mode.
Power supply	Adapt AC 90 V ~ 240 V in / DC 5V 1.2A output

1.3.1 Product Appearance



(1.) WPS button

Users can use WPS connection easily.

(2.) LAN port

LAN port is for connecting your PC, printer server, or switch, etc.

(3.) WAN port

WAN port is for connecting to an xDSL or CABLE modem.

(4.) Reset button

This button is for resetting 3.5G Download Server Router back to factory default settings. When a user hold the reset button over 5 seconds, everything is back to factory default settings; if user just hold for 1 seconds, this machine will only reboot, not reset to factory default settings.

(5.) USB port

Users can connect with USB thumb drive .

1.3.2 LED Indicator Status Description

Status / LED Indicator	Solid	Flashing
POWER	Operation OK	Power on
STATUS	Operation OK	Green: Reset/Firmware updates in progress Orange: WPS enabled
WIRELESS & WPS	Operation OK	Green: Transmitting Data
		Orange: Establishing WPS
WAN	Internet OK	Transmitting Data
LAN	Ethernet OK	Transmitting Data

1.4 System Requirements

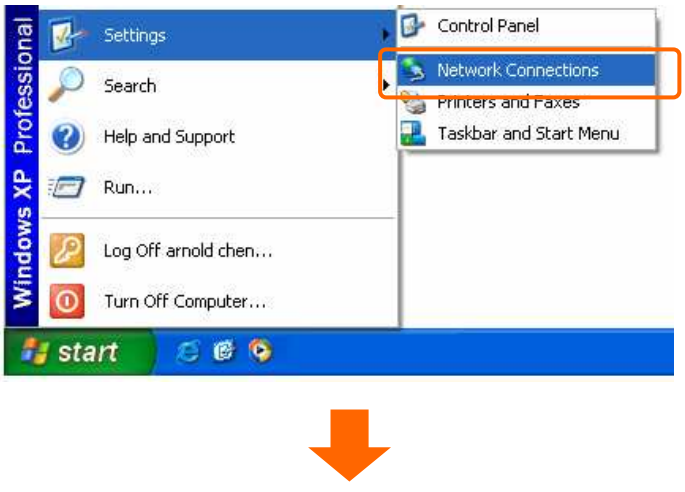
To begin with N+ Broadband Router, you must have the following minimum system requirements. If your system can't correspond to the following requirements, you might get some unknown troubles on your system.

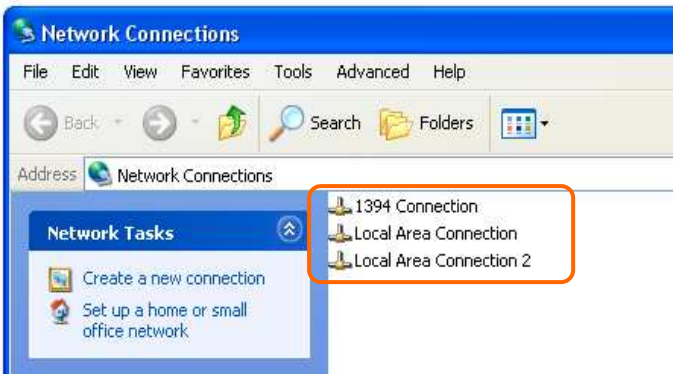
- XDSL/Cable Modem and broadband Internet Account.
- One Ethernet (10 BASE-T or 10/100 BASE-TX) network interface card.
- CP/IP and at least one web browser software installed (E.g.: Internet Explorer 5.0, Netscape Navigator 7.x, Apple Safari 2.03 or higher version).
- At lease one 802.11g (54Mbps) or one 802.11b (11Mbps) wireless adapter for wireless mobile clients.
- Recommended OS: Win2000 or WinXP / Linux.

1.5 Get Your IP Automatically & Manually

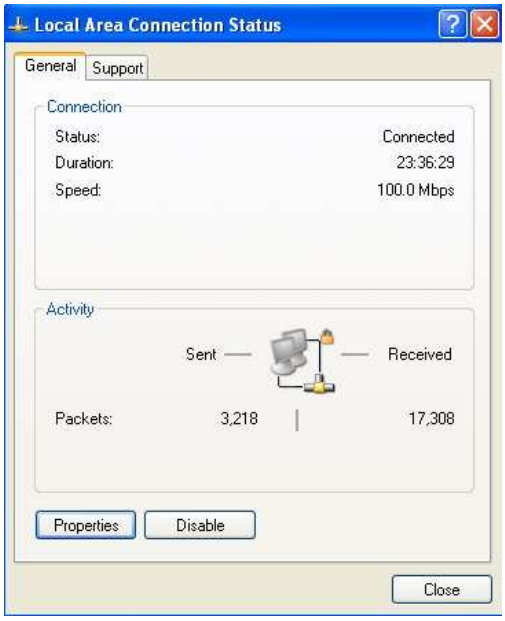
After N+ Broadband Router connected with your computer, please make sure your IP is in the automatic IP position or you adjust it manually in order to activate the Internet network from home to Internet. If you don't know how to enter the settings, please follow the steps as below.

Step 1. Go to **Start**>**Settings**> **Network Connections** and then select **Local Area Connection**.

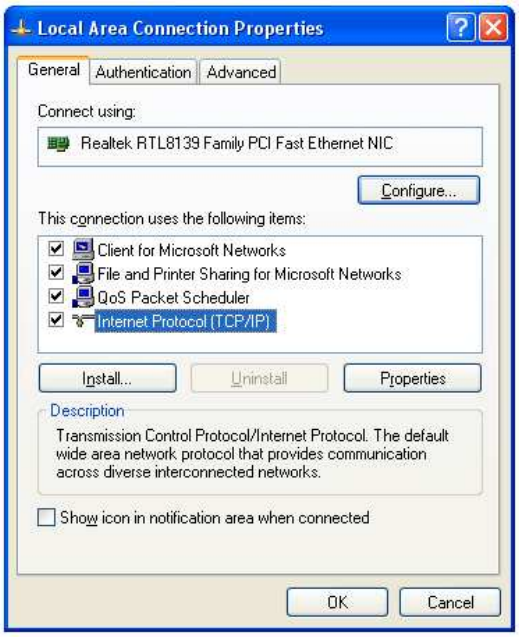




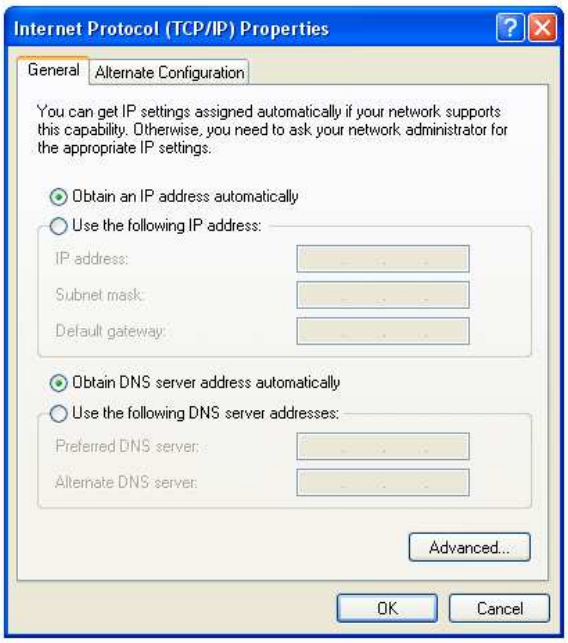
Step 2. Click on Properties



Step 3. Double click on Internet Protocol (TCP/IP).



Step 4-1. For getting IP automatically if you are one of the users under N+ Broadband Router, please skip **Use the following IP address** and then select **Obtain an IP address automatically** and **Obtain DNS server address automatically** and then click on **OK** button.



Step 4-2. For getting IP manually in order to specify a Virtual Server, such as Print Server, FTP Server and so on, please skip **Obtain an IP address automatically** and then select **Use the following IP address**. And the following default setting of N+ Broadband Router should be noted:

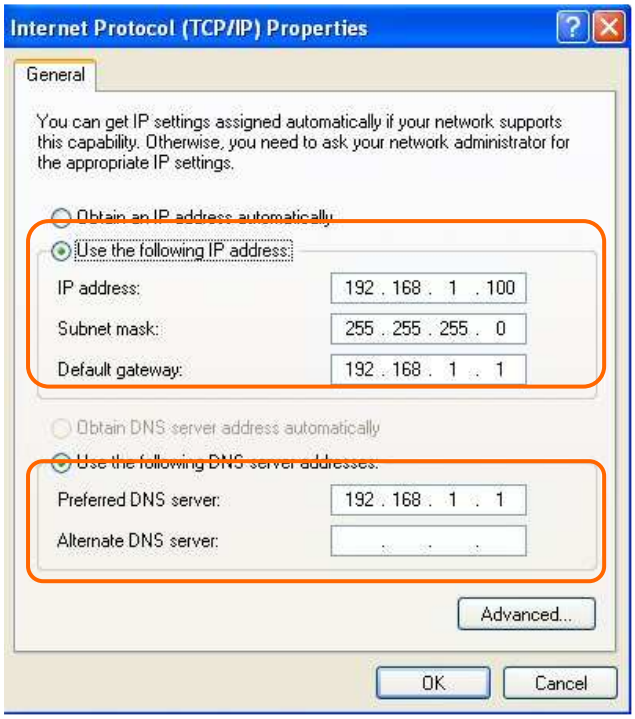
- IP Address: 192.168.1.10 (as your Print Server for example)
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.1

Note: If you configure your computer's IP Address manually, it needs to be on the same network segment.

For example:

- IP Address: 192.168.1.xxx (xxx can be any number between 2 and 253, but it can't be repeated, we use 100 to be the example.)
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.1.1 (this is the IP address of N+ Broadband Router in Router Mode)
- DNS: 192.168.1.1 (use N+ Broadband Router's IP address or on your own choice)

Note: IP address and Default gateway cannot be the same.



1.5.1 Network Testing

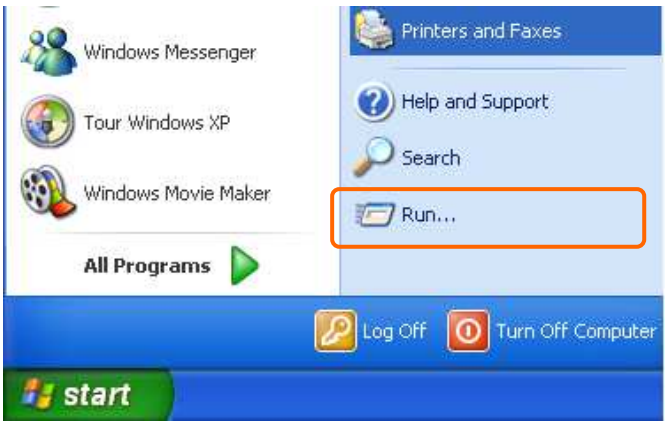
There are two ways to test your Network whether it can work on Internet or not. They are "Testing with Internet Browser" and "Testing with Dos".

1.5.2 Testing with Internet Browser

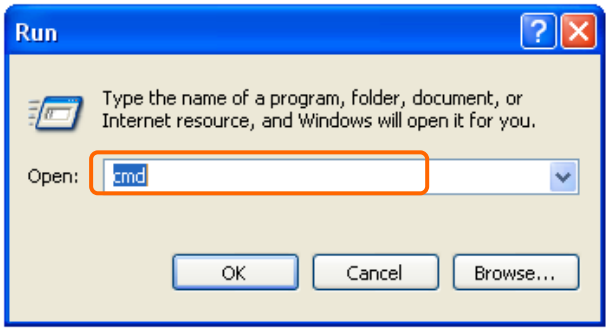
Open an Internet Browser, such as Internet Explore or Netscape. Input a valid web address you like, for example, http://www.yahoo.com in the web address blank and then press enter. If the website appears, that means your Internet is working under normal situation.

1.5.2.1 Testing with DOS (Windows XP Platform)

Step 1. Go to start > Run.

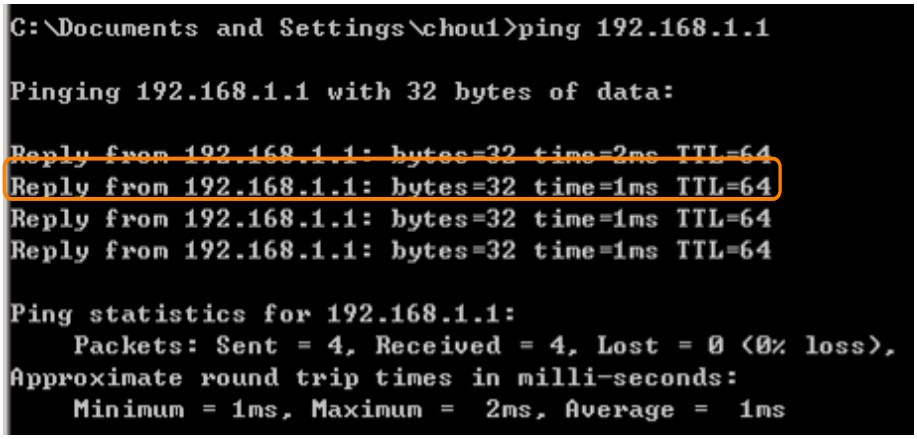


Step 2. Input **cmd** in the blank, and then click **OK** button. The Command Prompt window appears.

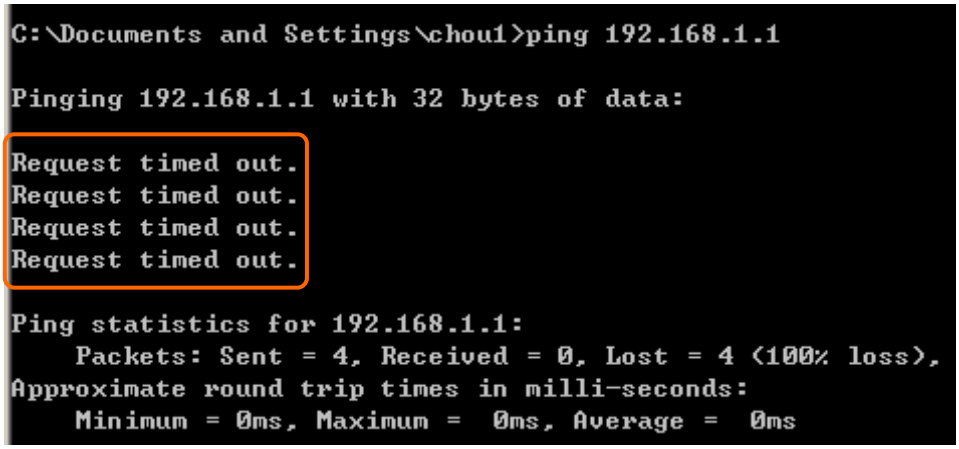


Step 3. Input **ipconfig** in the flashing area then press enter. You will get an IP Address 192.168.1.100, for example, and Default Gateway as 192.168.1.1.

Step 4. Ping a legal WAN Address such as 192.168.1.1. If Internet works, it will show **Reply from 192.168.1.1: bytes = 32 time = 3ms TTL =64,** for example.



If it can't work, it will show **Request timed out**.



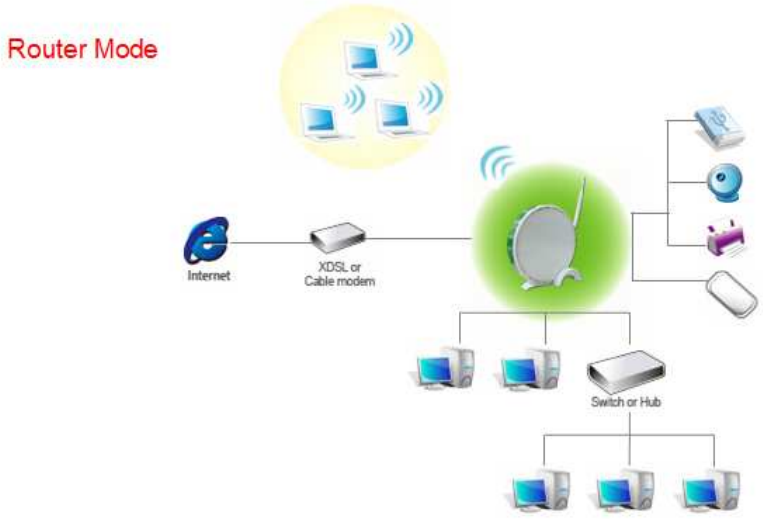
Chapter 2 Hardware Installation

2.1 Diagram of Connecting Hardware to N+ Broadband Router

N+ Broadband Router is a portable and convenient wireless solution for delivering 802.11n wireless connectivity with a maximum wireless signal rate of up to 300Mbps. Use it in conference rooms, hotel rooms, or even at hotspots.

2.1.1 Hardware Connection and Application for Router Mode

When N+ Broadband Router switches to Router Mode, there will be each WAN and LAN port existing, the administrator can do the Quick Setup including WAN Setup, LAN Setup, Wireless Setup, Time Server Setup, Password Setup, Firewall Setup, QoS Setup.

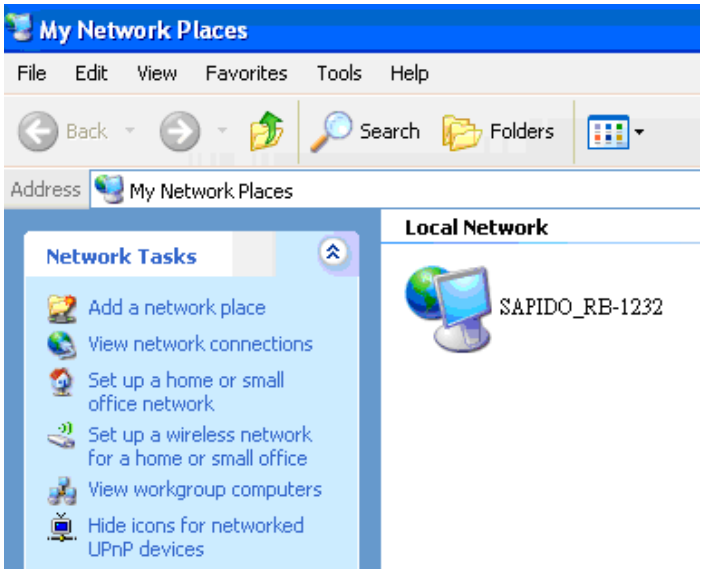


Chapter 3 One Button Setup

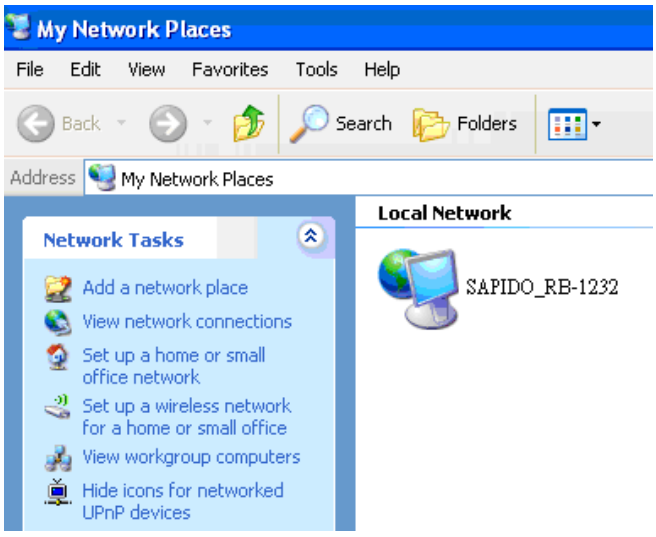
The advanced One Button Setup provides users a simple way to set up the complicated network. Instead of numbers of IPs to be memorized, you just need to fill in some necessary information and then enjoy the secured internet by clicking the "**Finished**" button.

3.1 One Button Setup configuration for Router Mode

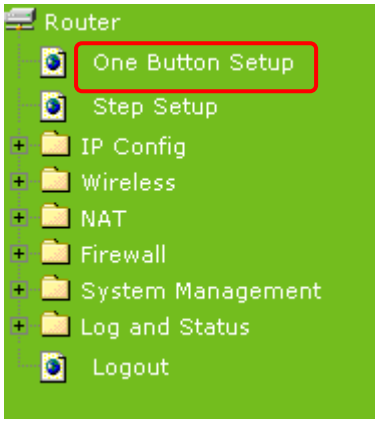
The default UPnP of N+ Broadband Router is ON. When users connect N+ Broadband Router to their PC, and icon will show up in the right-down corner.



Step 1. Click the **Internet Gateway Device** to open the login page.



Step 2. Click **One Button Setup** on the left of the main menu under router mode.



One Button Setup

This page is used to configure all of the server router function for first time.

Time Zone Select

Time Zone Select : (GMT+08:00)Taipei

Change Password

New Password:

Device Name

Device Name: SAPIDO_RB-1232

WAN Interface Setup

WAN Interface: 3.5G usb dongle

Service: UMTS/HSPA/HSDPA/HSUPA

Connect Speed: Auto Switch / 2.5G/2.75G only / 3G/3.5G only

SIM PIN: None

Retype SIM PIN:

APN: internet

Username:

Password:

PHONE Number: *99#

Wireless Setup

SSID: SAPIDO_All_Broadband_Router

Encryption: None

Finish

- **Time Zone Select:** Select your time zone from the Time Zone drop-down list.
- **Change Password:** For changing password, please fill the password information into

the blank.

- **Device Name:** Name your device here. The default is “**SAPIDO-RB-1232**”.
- **WAN Interface Setup:** Select the WAN Interface from the drop-down list.
- **Service:** Select 3.5G service type.
- **Connect Speed:** Select connection speed.
- **WAN Type Setup:** Please choose the access type.
- **Wireless Setup:** Define the SSID, and Encryption type.
- **Finished:** Click **finished** button to complete the setting.

Note: One Button Setup is not completed unless users finish all settings and click **Finish** button.

Chapter 4 Basic Setup

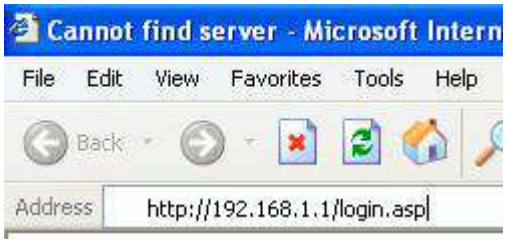
4.1 Router Mode

Under Router Mode, the 3.5G plus 11n Download Router provides a Router/AP function. User can get IP address assigned by ISP wired or wirelessly. It also supports NAT and DHCP functions that enable multiple computers to share an Internet connection at the same time.

4.1.1 Administrator Setup Instruction

Open a Microsoft Internet Explorer, Mozilla Firefox or Apple Safari browser, and enter http://192.168.1.1 (Default Gateway) into browser's blank.

Notice: If the homepage doesn't appear, please check if the TCP/IP configuration is obtaining IP address automatically or not. If you don't know how to do it, please refer to "1.5 Get your IP Automatically & Manually".



Homepage

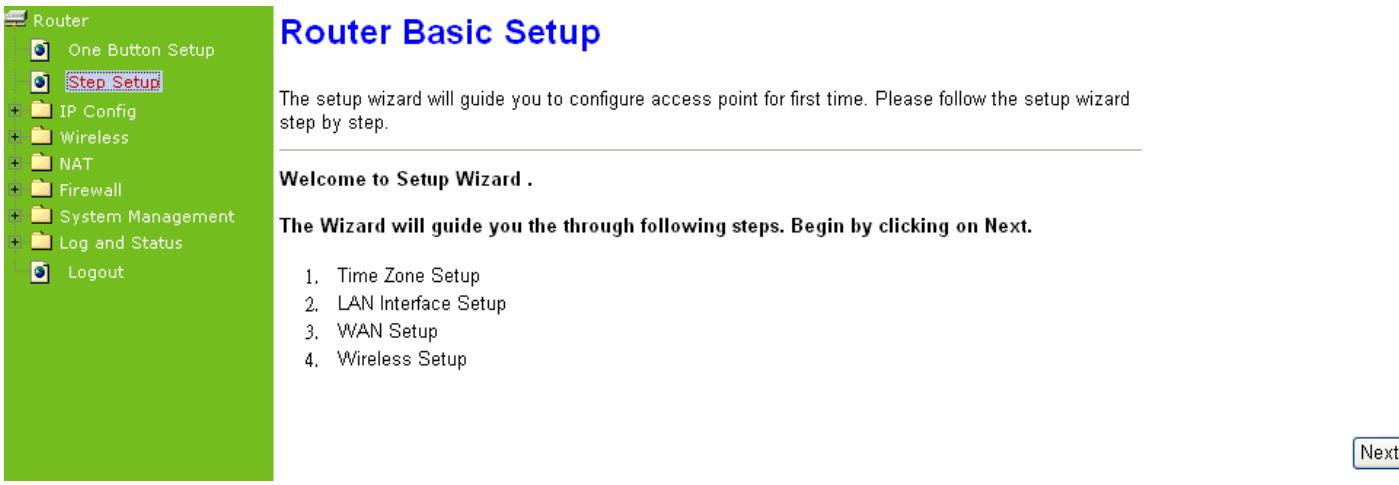
The default values for User Name and Password are **admin** (all in lowercase letters). Click **Login** to enter.

4.2 Basic Setup

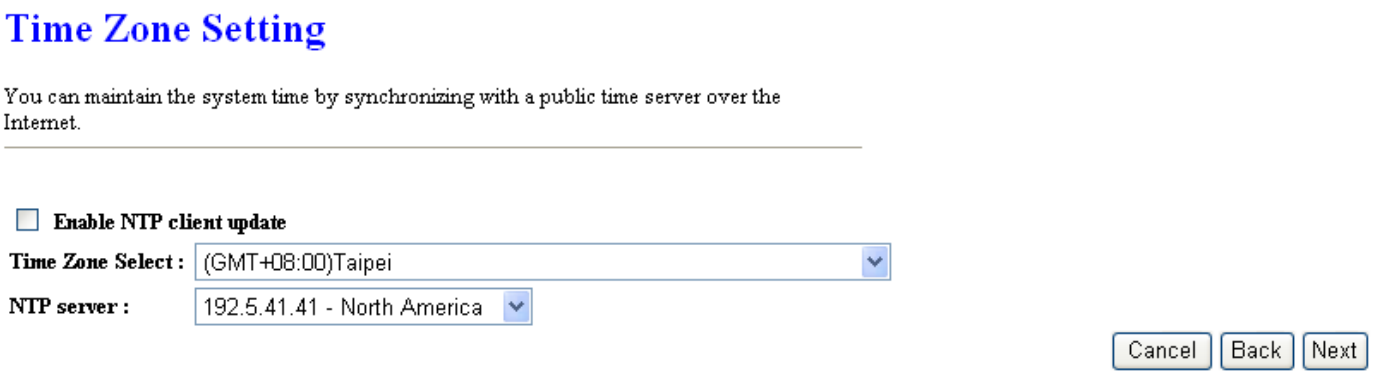
Typical Configuration Manager Page consists of two separate frames. The left frame contains all the means available for device configuration. Menus are indicated by file icons, and related menus are grouped into categories, such as LAN, WAN and etc., and indicated by folder icon, depending on whether the group of menus are expanded or not. You can click on any of these to display a specific configuration page.

Select **Step Setup** on the left of the main menu. Then you'll see the full functionality selection screen appears and detailed settings for each item, including "**Basic**" and "**Application**" two parts.

Click **Basic**, you see 4 major items set in Basic Setup Selection. Please click **Next** to the next page.



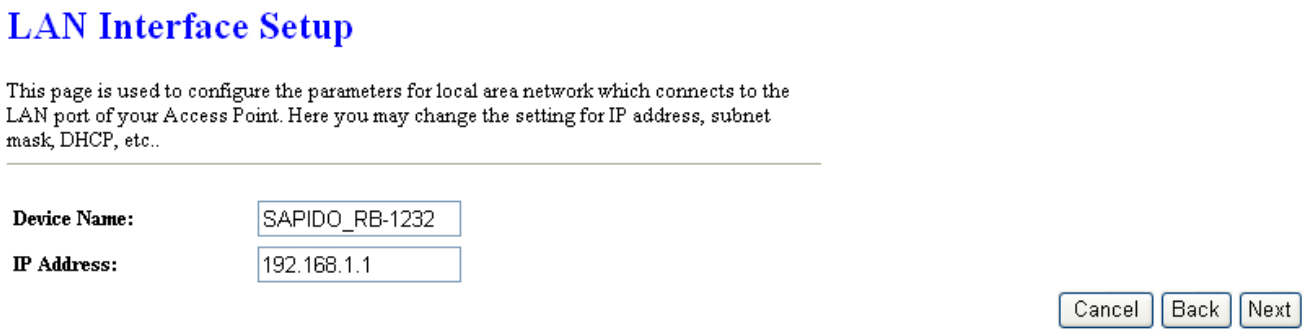
4.2.1 Time Zone Setup



Select **Enable NTP client update** to maintain the system time.

4.2.2 LAN Interface Setup

If you are using N+ Broadband Router with multiple PCs on your LAN, you must connect the LAN via the Ethernet ports on the built-in Ethernet switch. You must assign a unique IP address to each device residing on your LAN. The LAN IP address identifies the router as a node on your network; that is, its IP address must be in the same subnet as the PCs on your LAN. The default LAN IP for the Internet Security Router is 192.168.1.1.

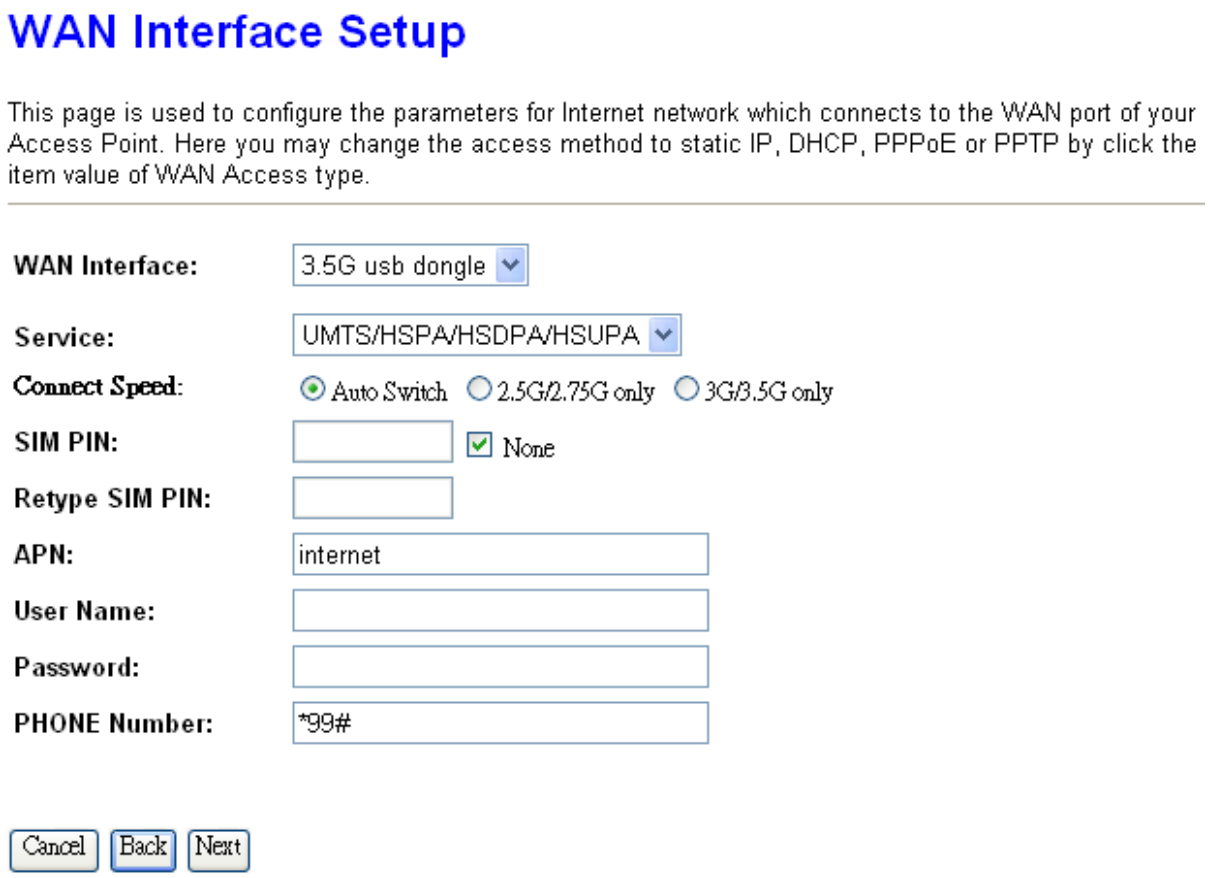


For Gateway IP Address, the IP address 192.168.1.xxx (xxx can be any number between 1 and 254 that is not used by another device.) Please don't change the default LAN IP settings at this section until you have completed the rest of the configurations and confirm that your Internet connection is working.

Click on **Next** button to proceed.

4.2.3 WAN Setup

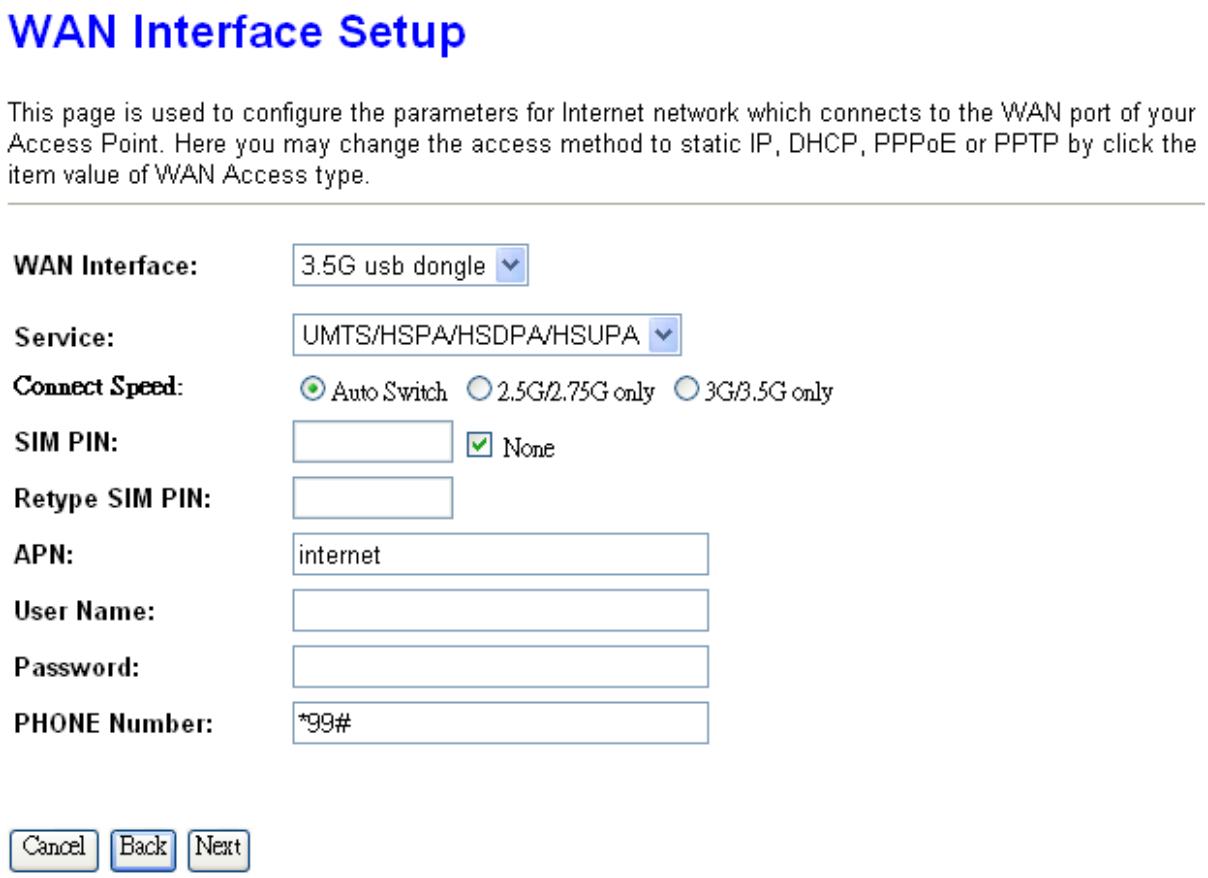
The WAN settings can be referred to as the Public setting. All IP information in the WAN settings is public IP addresses which are accessible on the Internet. N+ Broadband Router supports 4 interfaces and 4 access types to WAN. Select one of the WAN connection modes required by your ISP in the following WAN Setup Configuration page, the WAN setup pages will vary depending on what kind of WAN Type you select.



Choose your WAN Interface and Access WAN type as the above mentioned, and click **Next,** its associated settings will show up.

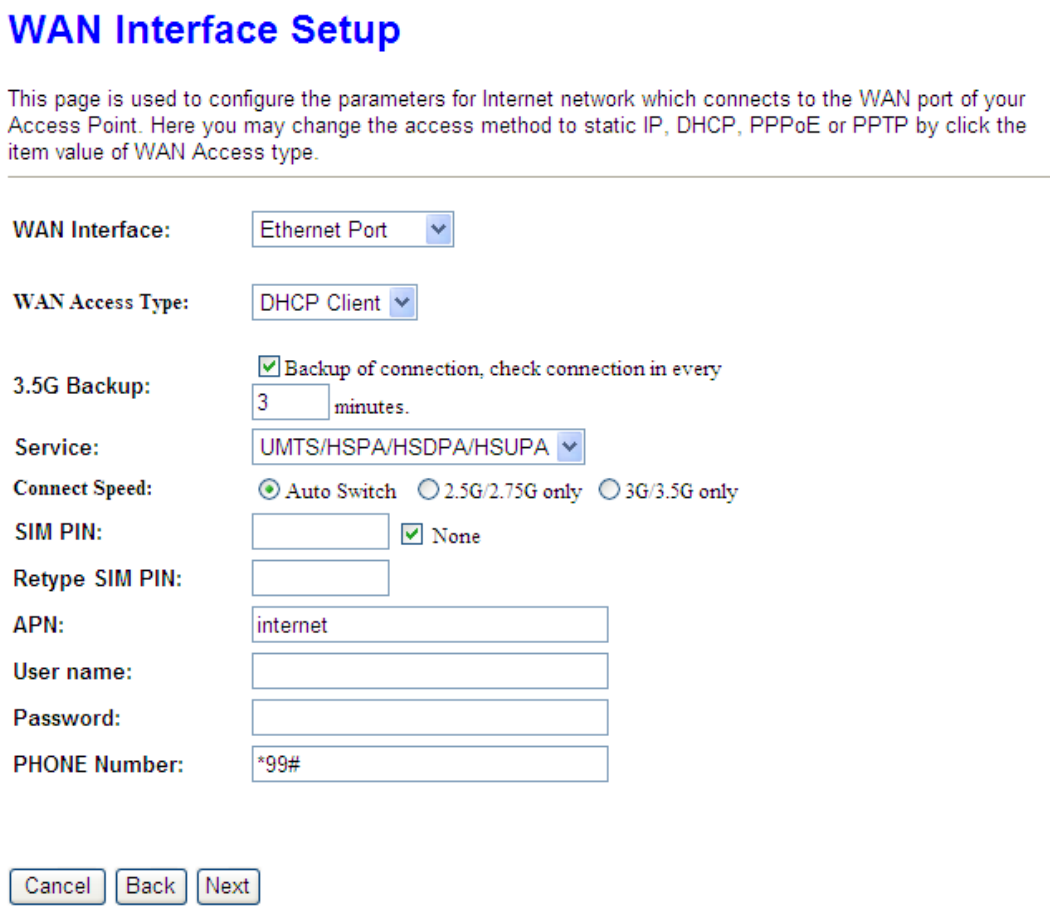
4.2.3.1 WAN Interface–3.5G (HSDPA/UMTS)

If you are using HSDPA/UMTS (3.5G connection) as the WAN Type, please select **3.5G USB Dongle** and fill in the required information as follows to directly access Internet via connected 3.5G adapter. At this moment, **Backup of Connection** is not available. When 3.5G signal cannot be reached, the system starts to search downward for 3/2.75/2.5G signals until none existed.



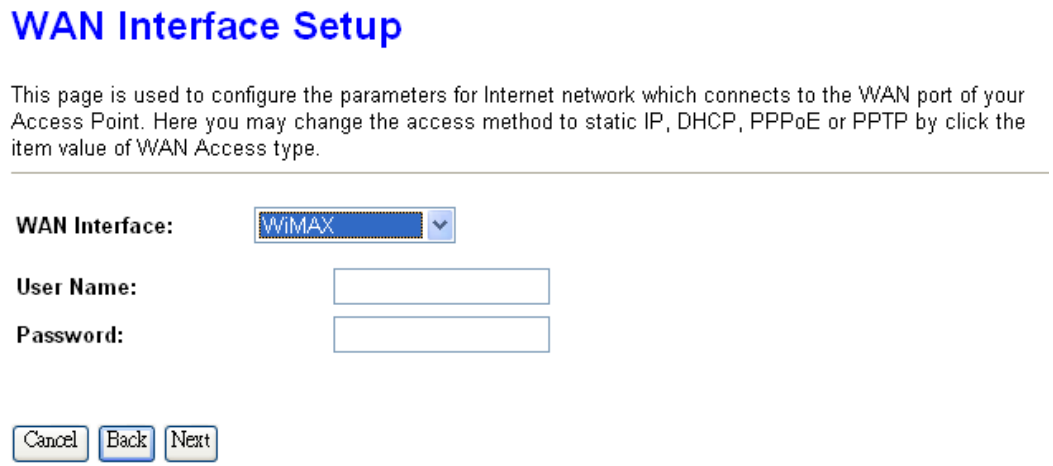
4.2.3.2 WAN Interface– Ethernet Port

If you are using an Ethernet cable to connect the Internet, please select **Ethernet port**.



4.2.3.3 WAN Interface– WiMAX

If you are using WiMAX as the WAN Type, please select **WiMAX** and fill in the required information as follows to directly access Internet via connected WiMAX adapter.



4.2.3.4 WAN Interface– Wireless

If you are connecting the internet via wireless, please select **Wireless** and its associated settings will show up underneath at the same time.

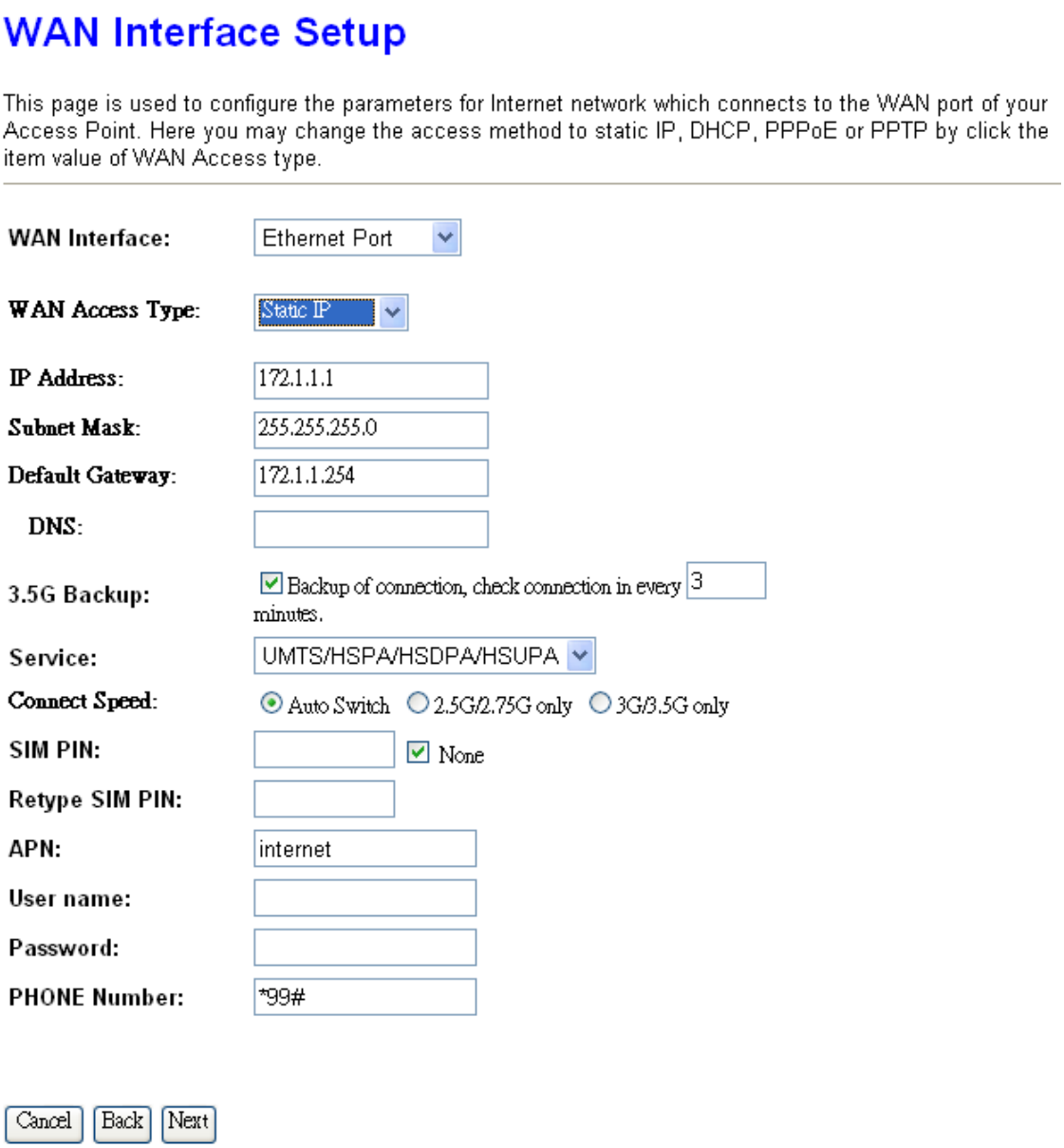
You can see a list of available Wireless networks. Select you preferred one to connect and the Encryption type form the drop-down list.

4.2.3.5 WAN Access Type – Static IP

Choose Static IP Address if all WAN IP information is provided to you by your ISP. You will need to enter the IP address, IP Netmask and IP gateway as provided. Each entered fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format. Fill in the DNS information provided by your ISP; otherwise, **Domain Name** can't be used.

In particular, here provides 3G or 3.5G transmission rate when the 3.5G adapter is plugged, just check to apply for the backup. In other words, once Static IP connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed. The default interval between the two connection detection is 3 minutes. The interval range is from 1 to 60 minutes.

The 3.5G feature is working as mutual backup for other 3 WAN Types, and the required information is listed as follows, such as user name, password and SIM PIN etc. That is, setting up the interval time to auto detect whether the Internet connection is lost or not. If yes, the system immediately switches to 3.5G Internet connection and will disconnect automatically when the original Static IP connection recovers.



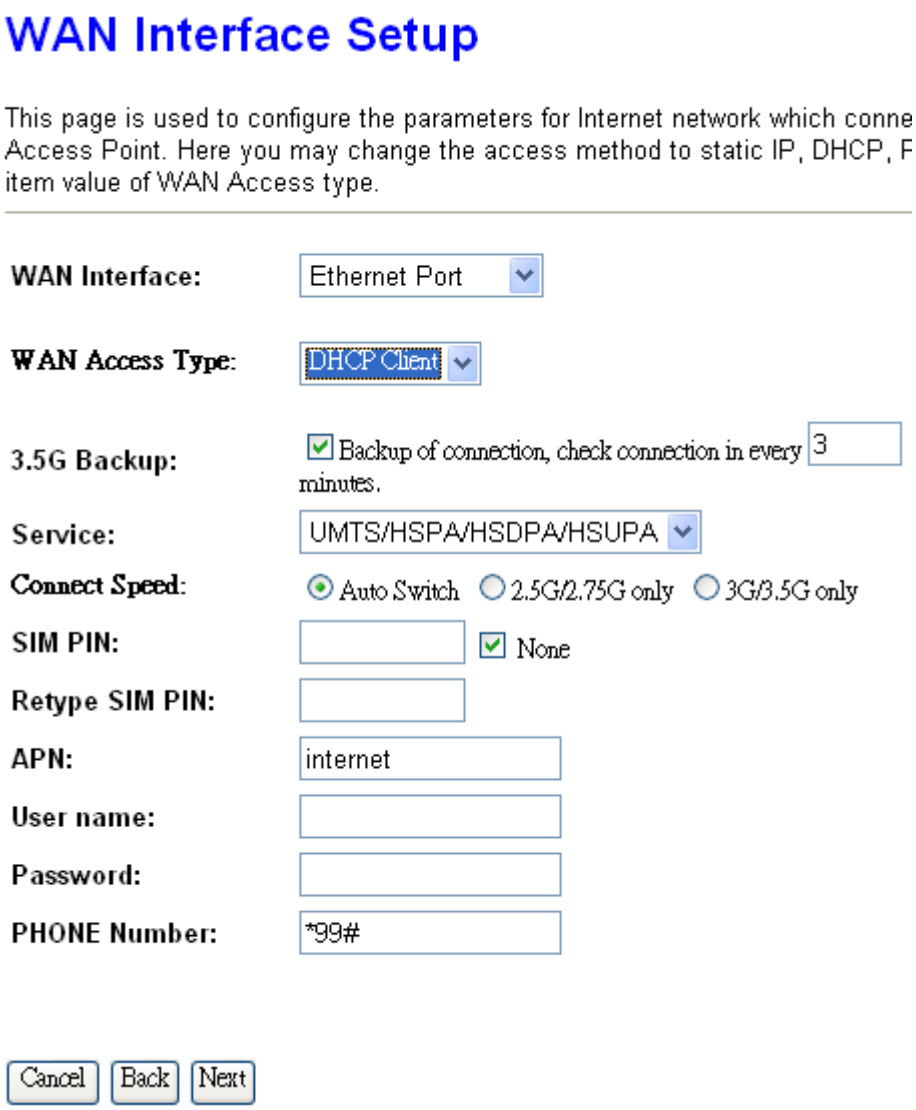
Click on **Next** button to go on next setting page.

4.2.3.6 WAN Access Type – Dynamic IP

Choose Dynamic IP to obtain IP address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for Cable modem services.

Apply 3G or 3.5G transmission rate for the backup. Once Dynamic IP connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

Setting up the interval time to auto detect whether the Internet connection is lost or not. If yes, the system immediately switches to 3.5G Internet connection and will disconnect automatically the original Dynamic IP recovers.



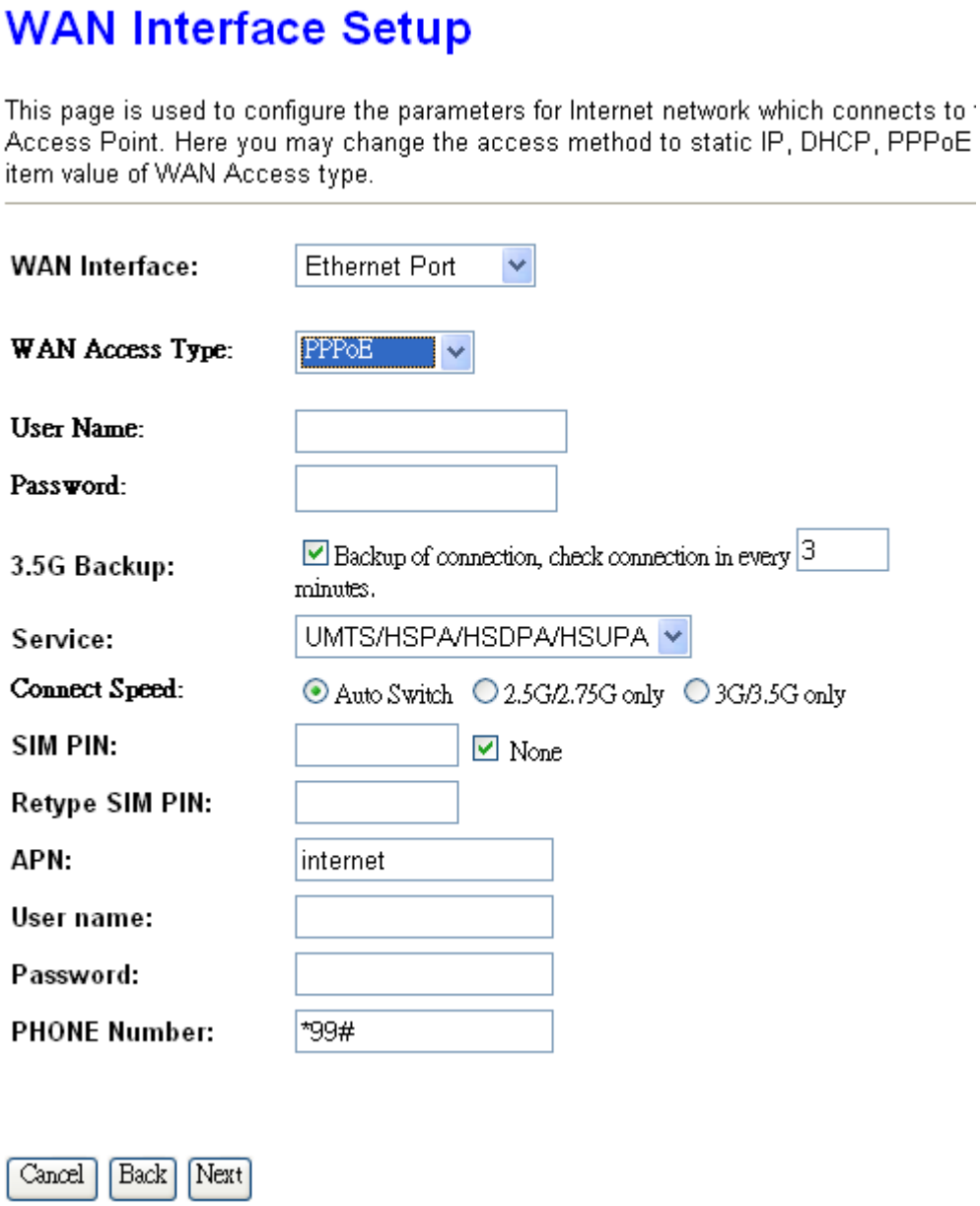
Click on **Next** button to go on next setting page.

4.2.3.7 WAN Access Type – PPPoE

This option is typically used for DSL services. Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses PPPoE connection. Your ISP will provide you with a username and password.

Apply 3G or 3.5G transmission rate for the backup. In other words, once PPPoE connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

Setting up the interval time to auto detect whether the Internet connection is lost or not. If yes, the system immediately switches to 3.5G Internet connection and will disconnect automatically the original PPPoE connection recovers.



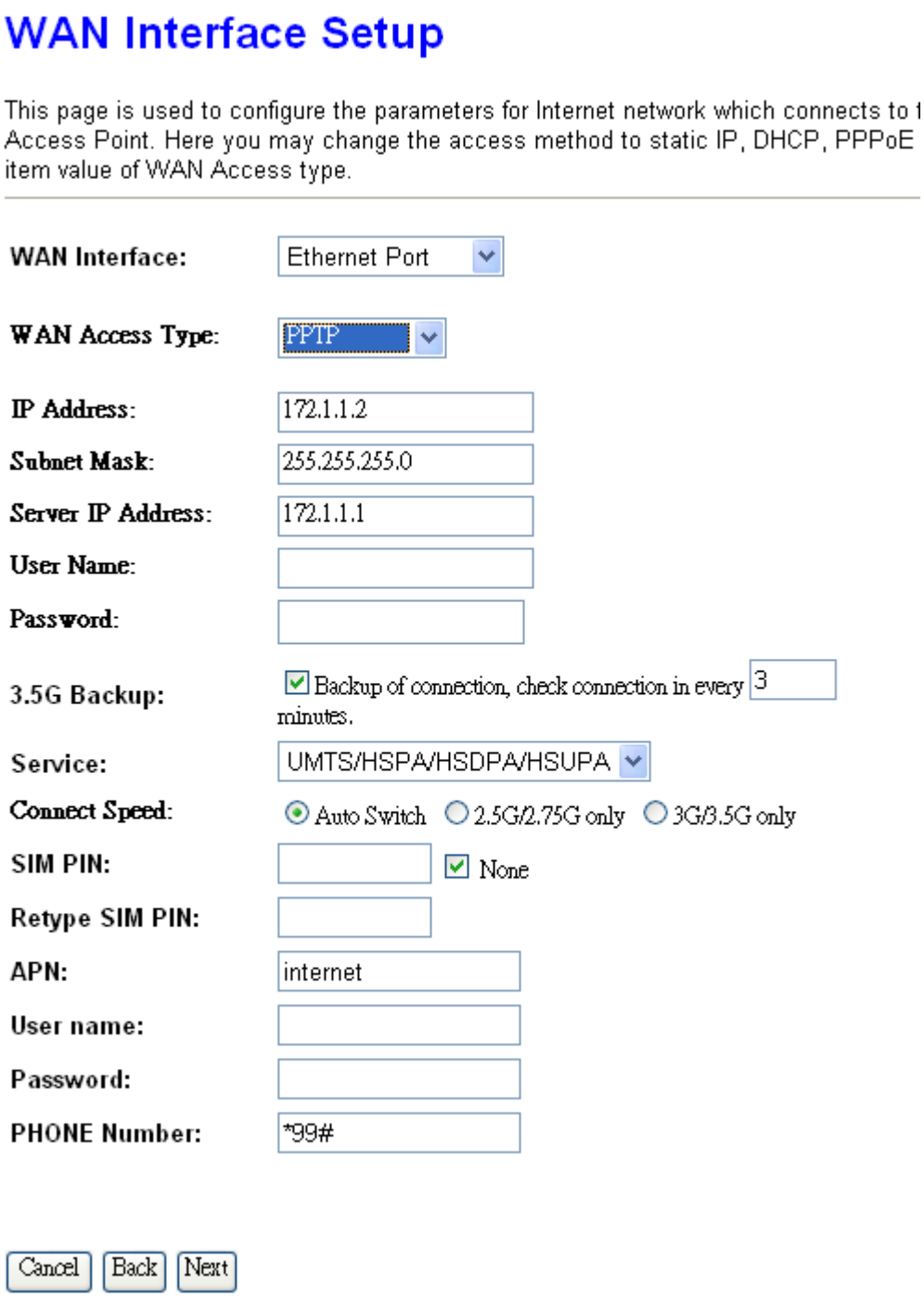
Click on **Next** button to go on next setting page.

4.2.3.8 WAN Access Type – PPTP

This option is typically used for DSL services. Some DSL service providers supply a special DSL modem. This kind of modem only supports the PPTP tunnel to access the Internet, you should create a PPTP tunnel that carries a PPP session and terminates on the DSL model. Once the tunnel has been established, this kind of DSL modem will forward the PPP session to the ISP. As long as the PPP session is connected, all the local users will be able to share this PPP session to access to the Internet.

Apply 3G or 3.5G transmission rate for the backup. Once Dynamic IP connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

Setting up the interval time to auto detect whether the Internet connection is lost or not. If yes, the system immediately switches to 3.5G Internet connection and will disconnect automatically the original PPTP connection recovers.



Click on **Next** button to go on next setting page.

4.2.3.9 Wireless Setup

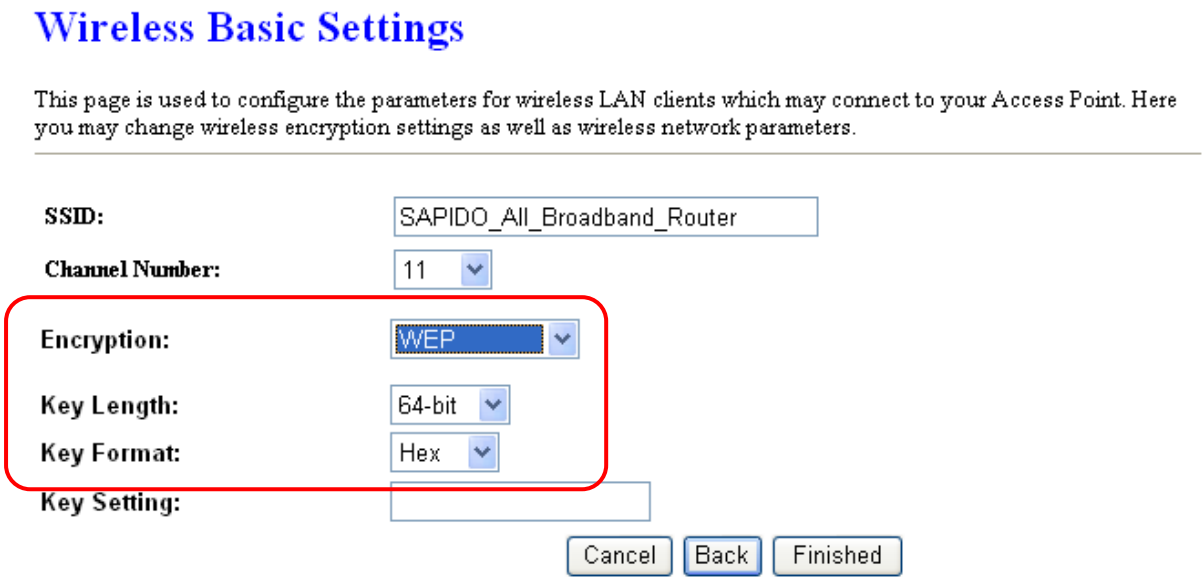
First step is to name your SSID, and the default value is Download Server Router. Please follow the illustrations below to proceed.

4.2.3.10 Wireless Security Setup

The security function is provided to prevent the connection requests from unauthorized wireless clients. As the **Encryption Type**, select WEP or WPA can protect your data from eavesdroppers, if you do not need the encryption, select “None” to skip the following setting.

a. Encrypt Type - WEP

N+ Broadband Router supports both 64-bit and 128-bit encryption using the Wired Equivalent Privacy (WEP) algorithm. Select the type of encryption you want to use (64 or 128 bit) and configure one to four WEP Keys. The “1280bit” method is more secure than the “64-bit”.



Key Length: For 64bits WEP key, 10 hexadecimal digitals leading by **0x** can be entered. For 128bits WEP key, 26 hexadecimal digits leading by **0x** can be entered.

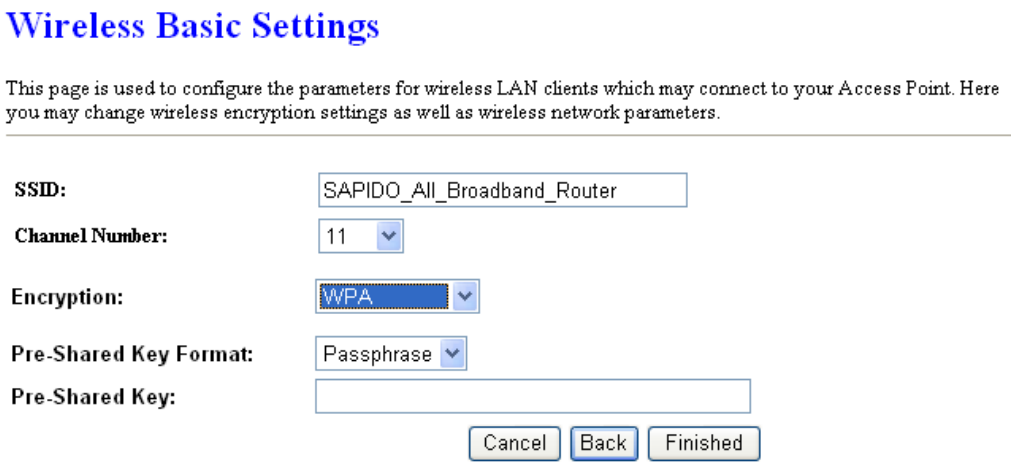
Key Format: The keys can be entered in ASCII or Hexadecimal. Select the item from drop-down list you wish to use.

Key Setting: A password is requested here.

Note: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that all wireless devices must support the same WEP encryption bit size and have the same key.

b. Encrypt Type - WPA, WPA2 & WPA2 Mixed

The WPA and WPA2 encrypt each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel or a key got dynamically through 802.1x.



WPA (TKIP) and WPA2 (TKIP): Allow the access from WPA clients simultaneously and the encryption keys are given from PSK respectively.

Pre-Shared Key Format: The keys can be entered in ASCII, 8~63 ASCII characters, for example, “0123456789ABCD….” or Hex, 64 bytes hexadecimal digits (0~9, a~f, and A~F). Select the item from drop-down list you wish to use and enter your **Pre-Shared Key.**

After checking each above and choose the suitable item by demand, click **Finished** to proceed.

4.2.4 Basic Setup Complete

The Basic Setup has been completed successfully when you see this screen.

The system will be rebooted automatically and go to the product’s diagram homepage. You may connect to Internet via wired or wireless at this moment according to above settings.

Chapter 5 Advanced Configuration

5.1 IP Configuration

This function allows you to add routing rules into **N+ Broadband Router**. It is useful if you connect several computers behind N+ Broadband Router to share the same connection to Internet.

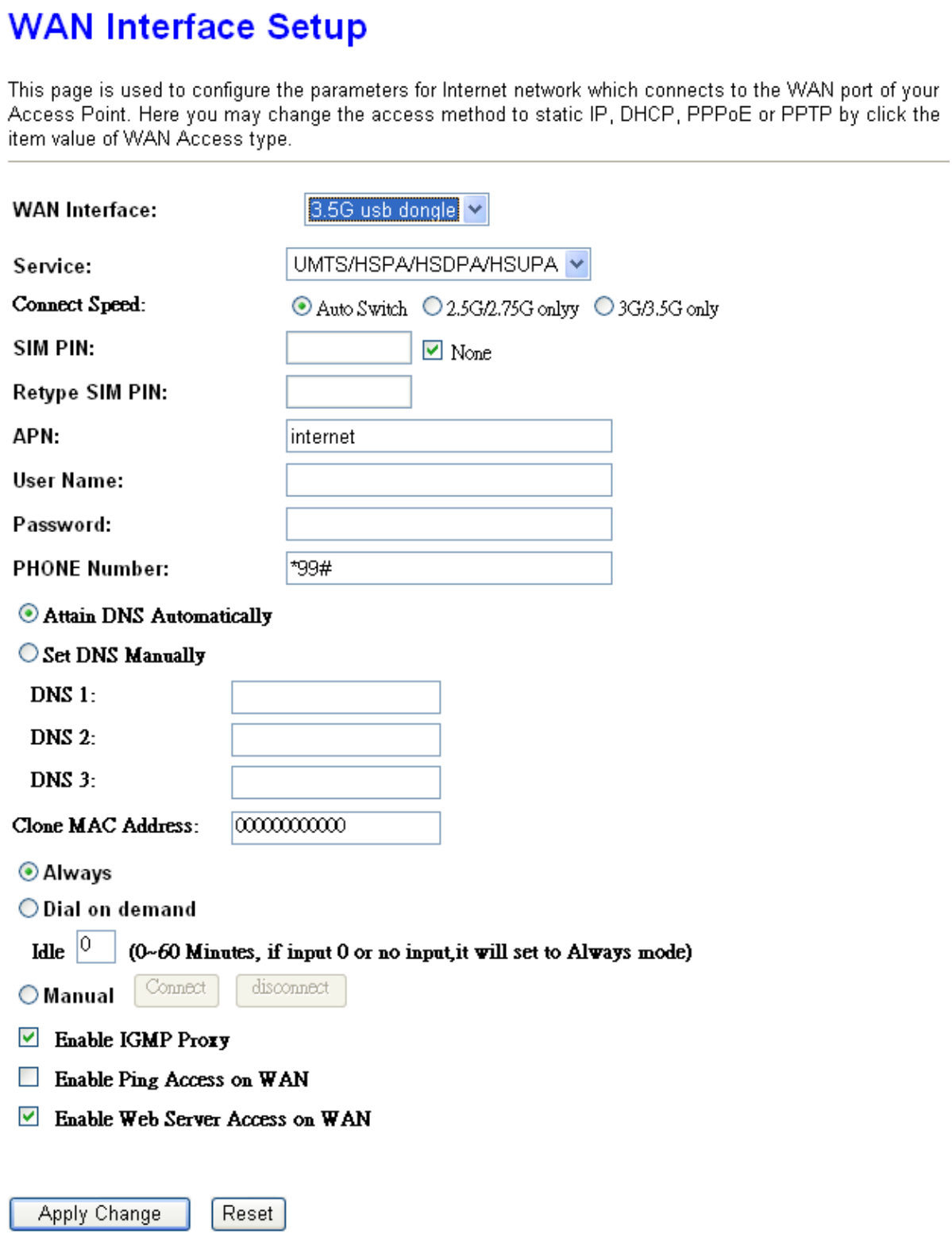
5.1.1 WAN

Select **WAN** under the **IP Config** menu. N+ Broadband Router supports 3 interfaces and 4 access types. Follow the instructions below for each to set up accordingly.

Choose your WAN Interface and WAN type, and click **Next,** its associated settings will show up.

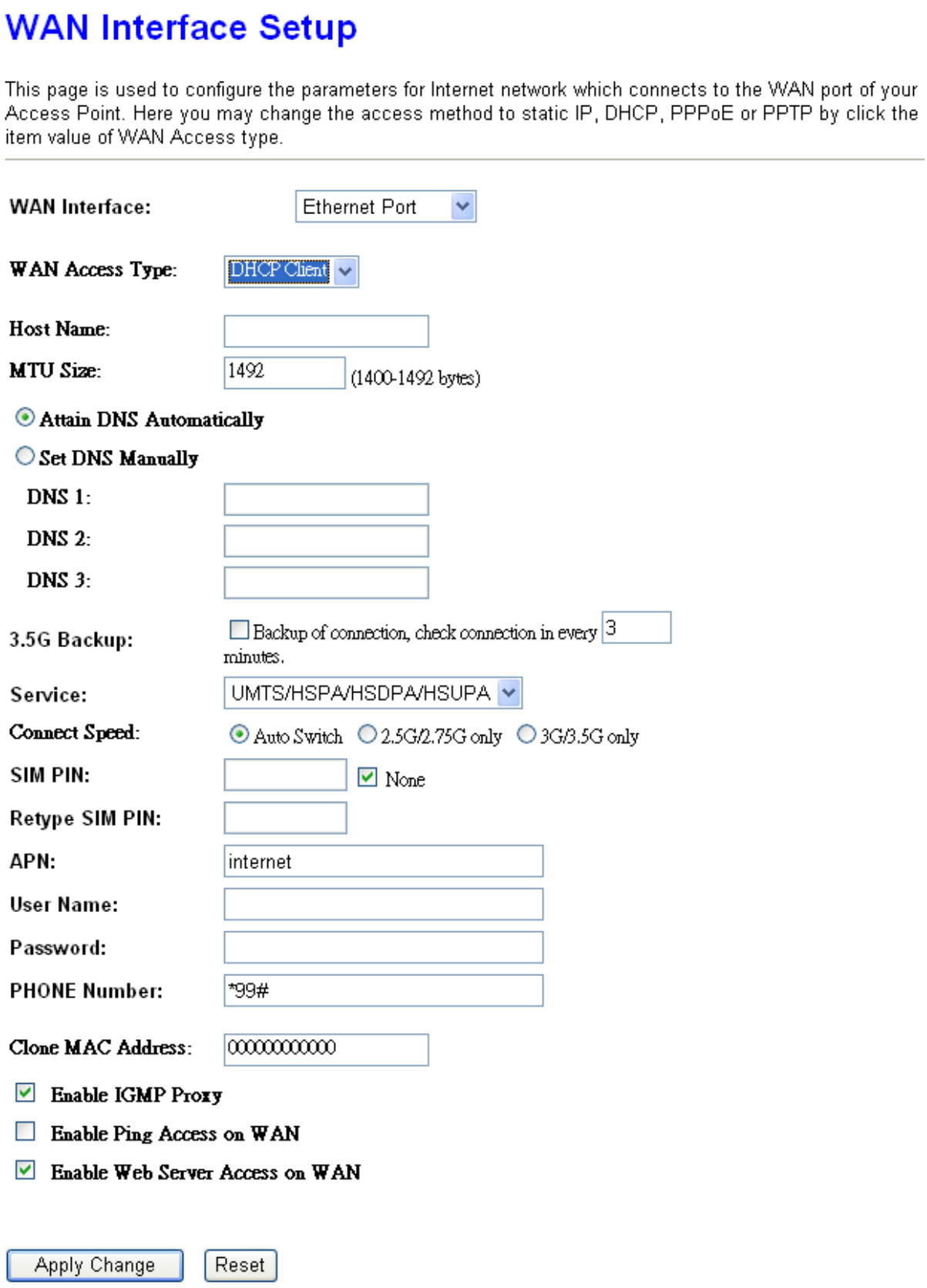
5.1.1.1 WAN Interface–3.5G (HSDPA/UMTS)

If you are using HSDPA/UMTS (3.5G connection) as the WAN Type, please select **3.5G USB Dongle.** At this moment, **Backup of Connection** is not available. When 3.5G signal cannot be reached, the system starts to search downward for 3/2.75/2.5G signals until none existed.



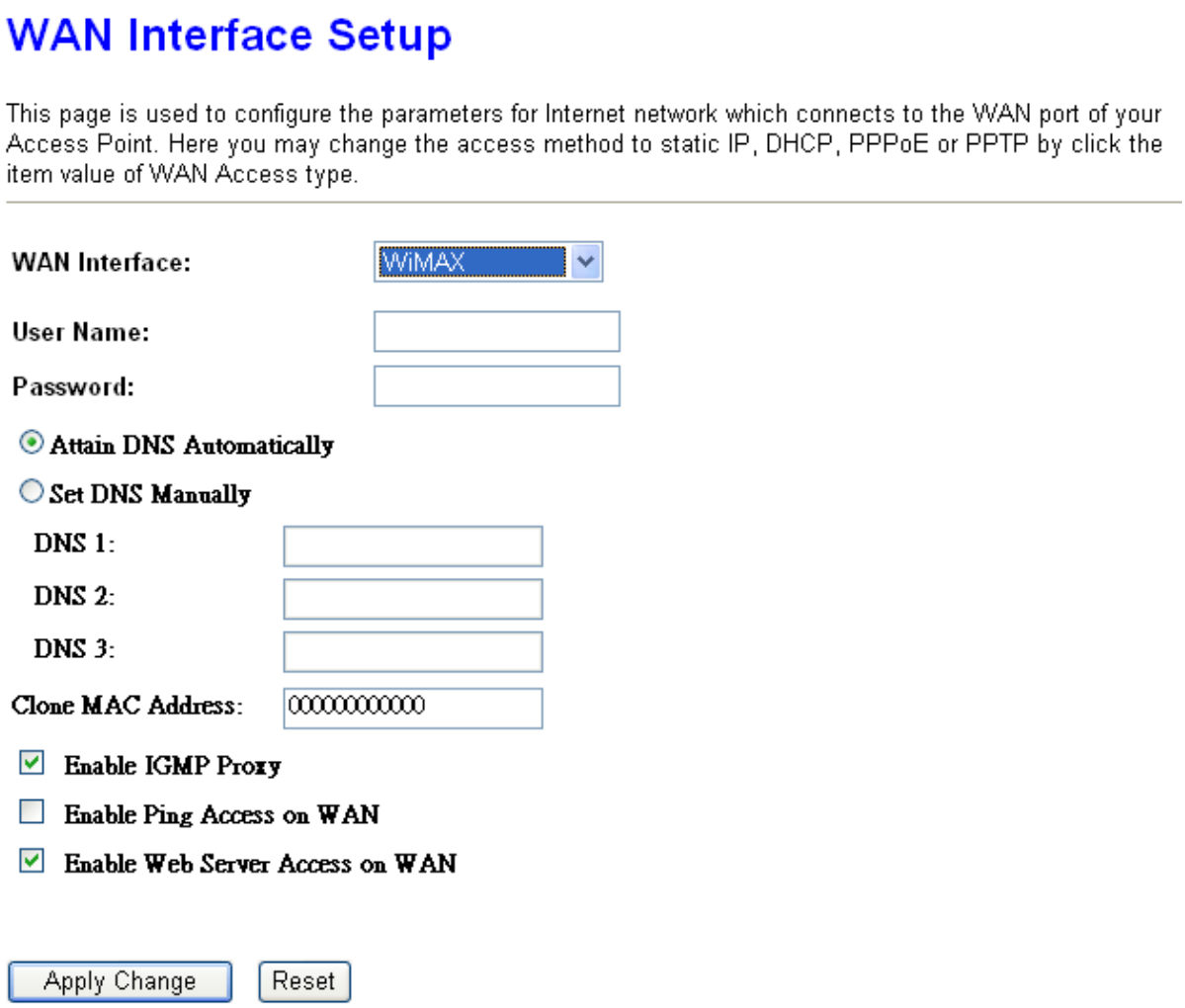
5.1.1.2 WAN Interface– Ethernet Port

If you are using an Ethernet cable to connect the Internet, please select **Ethernet port**.



5.1.1.3 WAN Interface– WiMAX

If you are using WiMAX as the WAN Type, please select **WiMAX** and fill in the required information as follows to directly access Internet via connected WiMAX adapter.



5.1.1.4 WAN Interface– Wireless

If you are connecting the internet via wireless, please select **Wireless** and its associated settings will show up underneath at the same time.

You can see a list of available Wireless networks. Select you preferred one to connect and the Encryption type form the drop-down list.

5.1.1.5 WAN Access Type – Static IP

If you applied for a **Static IP** connection type from ISP, please follow the steps to set up your WAN connection.

1. IP Address

Input your IP Address supplied by ISP. If you don't know, please check with your ISP.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0**.

3. Default Gateway

Input ISP Default Gateway Address. If you don't know, please check with your ISP.

4. MTU Size

MTU stands for Maximum Transmission Unit. For Static IP connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed by Ethernet at the network layer is 1500 byte

5. DNS

If ISP provides you DNS information, please select **Attain DNS automatically,** otherwise select **Set DNS Manually** and input the DNS information into the blank.

6. 3.5G Backup

The default interval between the two connection detection is 3 minutes, and the range is from 1 to 60 minutes. Once Internet connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

7. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

8. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communication protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

9. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

10. Enable Web Server Access on WAN

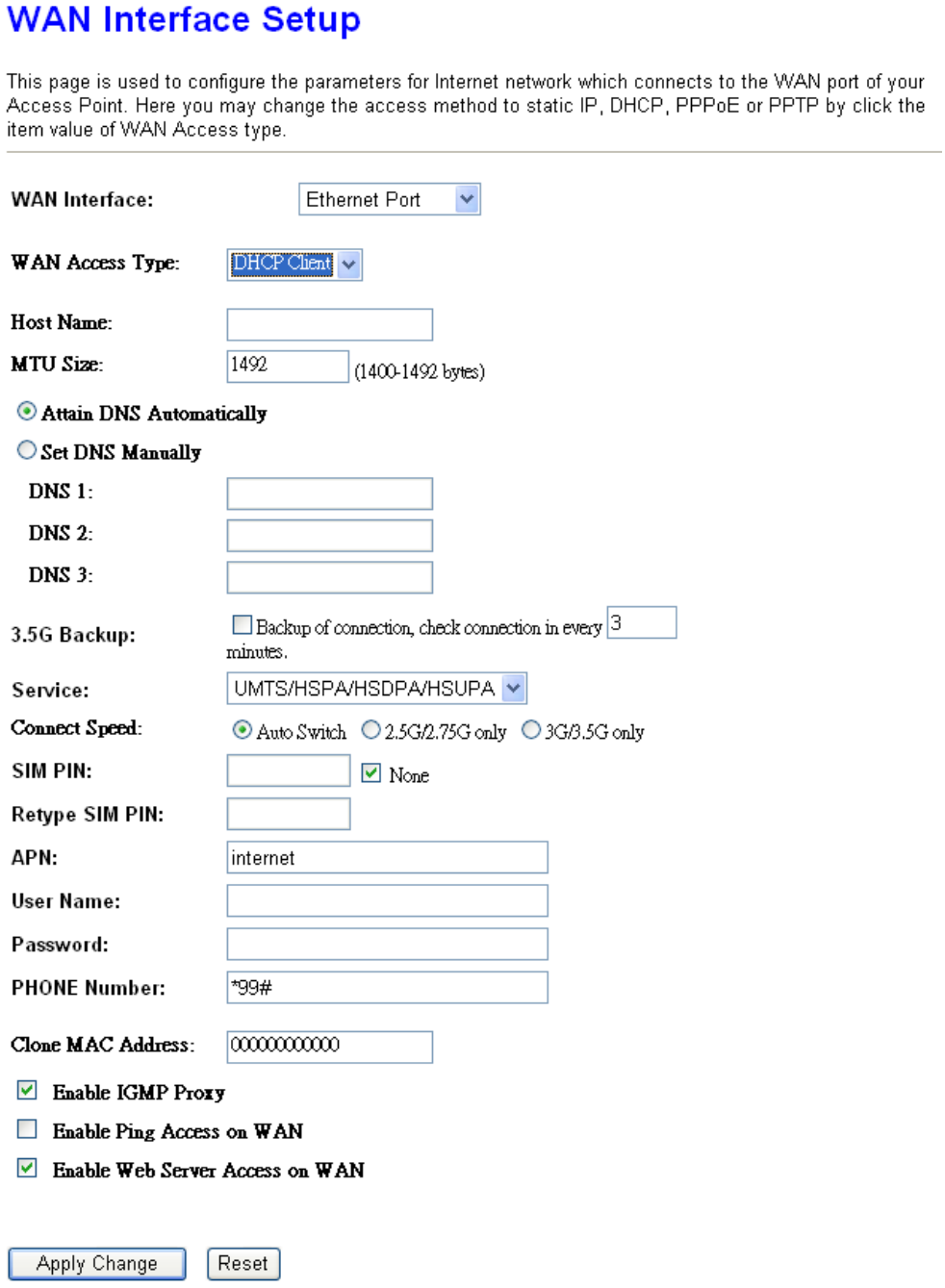
This option is to enable Web Server Access function on WAN.

11. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on Reset to clear all the input data.

5.1.1.6 WAN Access Type –Dynamic IP

If your WAN access type is Dynamic IP, please complete the settings as following instructions.



1. Host Name

The host name is optional; but if your ISP requires you to input a specific host name, please put it in, for example, N+ Broadband Router applied from ISP. Generally, Cable Modem will provide the hostname information.

2. MTU Size

MTU stands for Maximum Transmission Unit. For Static IP connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number is 1492 byte

3. DNS

If ISP provides you DNS information, please select **Attain DNS automatically,** otherwise select **Set DNS Manually** and input the DNS information into the blank.

4. 3.5G Backup

The default interval between the two connection detection is 3 minutes, and the range is from 1 to 60 minutes. Once Internet connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

5. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

6. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communication protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

7. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

8. Enable Web Server Access on WAN

This option is to enable Web Server Access function on WAN.

9. Apply Changes & Reset

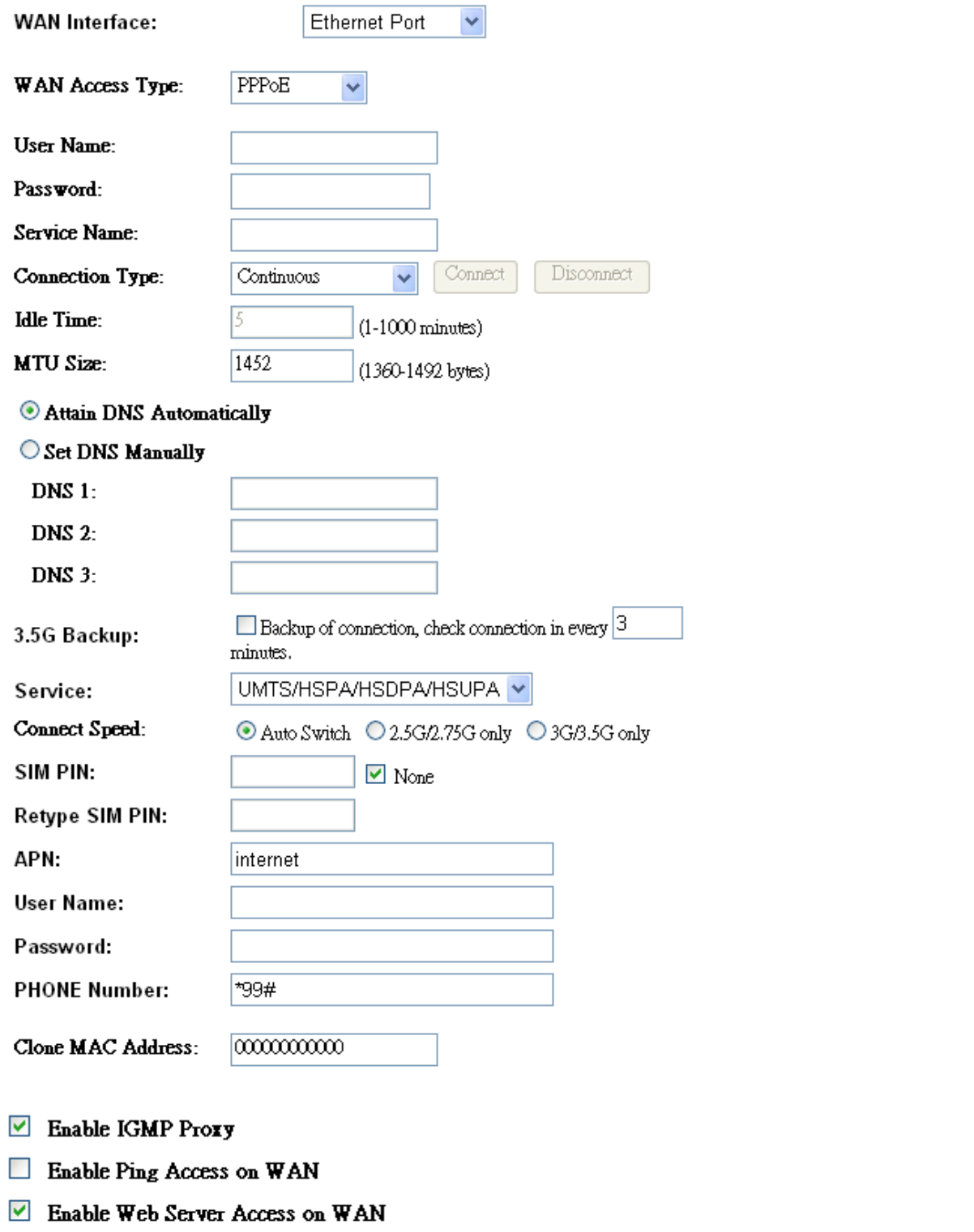
Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.1.1.7 WAN Access Type –PPPoE

If you applied for a **PPPoE** connection type from ISP, please follow the steps to set up your WAN connection.

WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.



1. User Name

Input your user name supplied by ISP. If you don't know, please check with your ISP.

2. Password

Input your Password supplied by ISP.

3. Service Name

Input the service name supplied by ISP.

4. Connection Type

It has three types: **Continuous, Connect on Demand,** and **Manual.**

5. Idle Time

It is the time of inactivity before disconnecting your PPPoE session. Enter an Idle Time (in minutes) to define a maximum period of time for which the Internet connect is maintained during inactivity. If the connection is inactive for longer than the defined Idle Time, then the connection will be dropped. Either set this to zero or enable Auto-reconnect to disable this feature.

6. MTU Size

MTU stands for Maximum Transmission Unit. For PPPoE connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed by Ethernet at the network layer is 1492 byte

7. DNS

If ISP provides you DNS information, please select **Attain DNS automatically,** otherwise select **Set DNS Manually** and input the DNS information into the blank.

8. 3.5G Backup

The default interval between the two connection detection is 3 minutes, and the range is from 1 to 60 minutes. Once Internet connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

9. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for

the specific MAC Address.

10. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

11. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

12. Enable Web Server Access on WAN

This option is to enable **Web Server Access** function on WAN.

13. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.1.1.8 WAN Access Type – PPTP

If you have applied for a **PPTP** connection type from ISP, please follow the steps to set up your WAN connection.

WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type.

WAN Interface: Ethernet Port

WAN Access Type: PPTP

IP Address: 172.1.1.2

Subnet Mask: 255.255.255.0

Server IP Address: 172.1.1.1

User Name:

Password:

MTU Size: 1460 (1400-1460 bytes)

☐ **Request MPPE Encryption**

◉ **Attain DNS Automatically**

○ **Set DNS Manually**

DNS 1:

DNS 2:

DNS 3:

3.5G Backup: ☐ Backup of connection, check connection in every 3 minutes.

Service: UMTS/HSPA/HSDPA/HSUPA

Connect Speed: ◉ Auto Switch ○ 2.5G/2.75G only ○ 3G/3.5G only

SIM PIN: ☑ None

Retype SIM PIN:

APN: internet

User Name:

Password:

PHONE Number: *99#

Clone MAC Address: 000000000000

☑ **Enable IGMP Proxy**

☐ **Enable Ping Access on WAN**

☑ **Enable Web Server Access on WAN**

Apply Change Reset

1. IP Address

Input your IP Address supplied by ISP. If you don't know, please check with your ISP.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0.**

3. Server IP Address

Input your Server IP Address supplied by ISP. If you don't know, please check with your ISP.

4. User Name

Input the PPTP Account supplied by ISP, for example. If you don't know, please check with your ISP.

5. Password

Input the Password supplied by ISP.

6. MTU Size

MTU stands for Maximum Transmission Unit. For PPPoE connection, the default MTU should be provided by computer operating systems (OS). Advanced users can set the MTU manually for increasing the internet performance. The largest number allowed is 1460 byte

7. Request MPPE Encryption

Microsoft Point-to-Point Encryption (MPPE) encrypts data in Point-to-Point Protocol (PPP)-based dial-up connections or Point-to-Point Tunneling Protocol (PPTP) virtual private network (VPN) connections. 128-bit key (strong), 56-bit key, and 40-bit key (standard) MPPE encryption schemes are supported. MPPE provides data security for the PPTP connection that is between the VPN client and the VPN server.

8. DNS

If ISP provides you DNS information, please select **Attain DNS automatically**, otherwise select **Set DNS Manually** and input the DNS information into the blank.

9. 3.5G Backup

The default interval between the two connection detection is 3 minutes, and the range is from 1 to 60 minutes. Once Internet connection is disconnected, the system automatically connects Internet via 3.5G adapter. If 3.5G signal is not available, it starts to search downward for 3/2.75/2.5G signals until none existed.

10. Clone MAC Address

Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

11. Enable IGMP Proxy

The **Internet Group Management Protocol (IGMP)** is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. You can choose to enable **IGMP Proxy** to provide service.

12. Enable Ping Access on WAN

Select **Enable Ping Access on WAN**, will make WAN IP address response to any ping request from Internet users. It is a common way for hacker to ping public WAN IP address, to see is there any WAN IP address available.

13. Enable Web Server Access on WAN

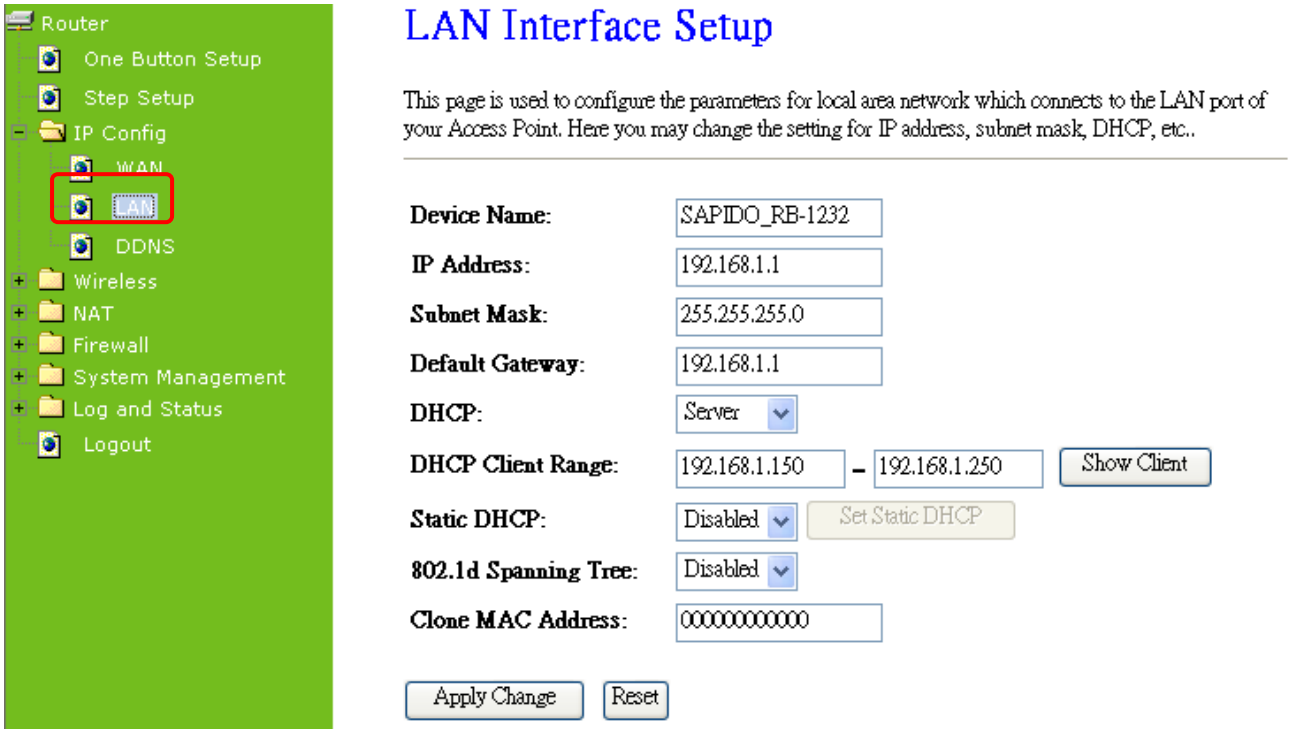
This option is to enable Web Server Access function on WAN.

14. Apply Changes & Reset

Click on Apply Changes to save the setting data. Or you may click on Reset to clear all the input data.

5.1.2 LAN Interface Setup

Use this page to set up the local IP address and subnet mask for your router. Please select **LAN Interface Setup** under the **IP Config** menu and follow the instructions below to enter the **LAN** setting page to configure the settings you want.



1. IP Address

The default value of LAN IP address is **192.168.1.1** for this router.

2. Subnet Mask

Input Subnet Mask, normally it is **255.255.255.0**.

3. Default Gateway

Input ISP Default Gateway Address. If you don't know, please check with your ISP.

4. DHCP

Enable or disable DHCP services. The DHCP server will automatically allocate an unused IP address from the IP address pool to the requesting computer if enabled.

5. DHCP Client Range

Define the DHCP client range and then the DHCP server will assign an IP to the requesting computer from this range. The **Show Client** will display every assigned IP address, MAC address, and expired time. The default range is 192.168.1.100 - 192.168.1.200.

6. 802.1d Spanning Tree

IEEE 802.1d Spanning Tree Protocol (STP) is a link layer network protocol that ensures a loop-free topology for any bridged LAN. The main purpose of STP is to ensure that you do not create loops when you have redundant paths in your network. Loops are deadly to a network.

7. Clone MAC Address

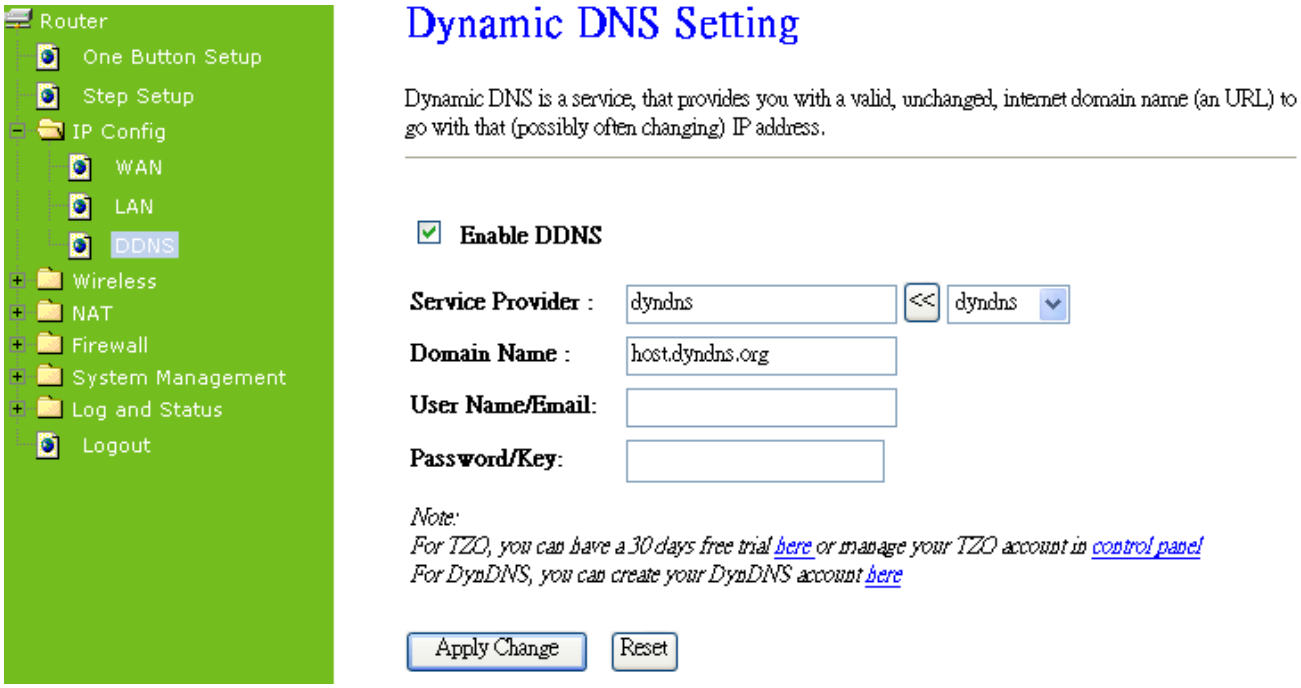
Copy the MAC address from the device you had registered to your ISP if your ISP asks for the specific MAC Address.

8. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.1.3 Dynamic DNS Setting

Dynamic DNS allows you to make an assumed name as a dynamic IP address to a static hostname. Please configure the dynamic DNS below. Please select DDNS under the IP Config menu, and follow the instructions below to enter the DDNS setting page to configure the settings you want.



1. Enable / Disable DDNS

Select enable to use DDNS function. Each time your IP address to WAN is changed, and the information will be updated to DDNS service provider automatically.

2. Service Provider

Choose correct Service Provider from drop-down list, here including DynDNS, TZO, ChangeIP, Eurodns, OVH, NO-IP, ODS, Regfish embedded in N+ Broadband Router.

3. Domain Name

This field represents the host name you register to Dynamic-DNS service and expect to export to the world.

4. User Name /Email

User name is used as an identity to login Dynamic-DNS service.

5. Password /Key

Password is applied to login Dynamic-DNS service.

6. Apply & Cancel

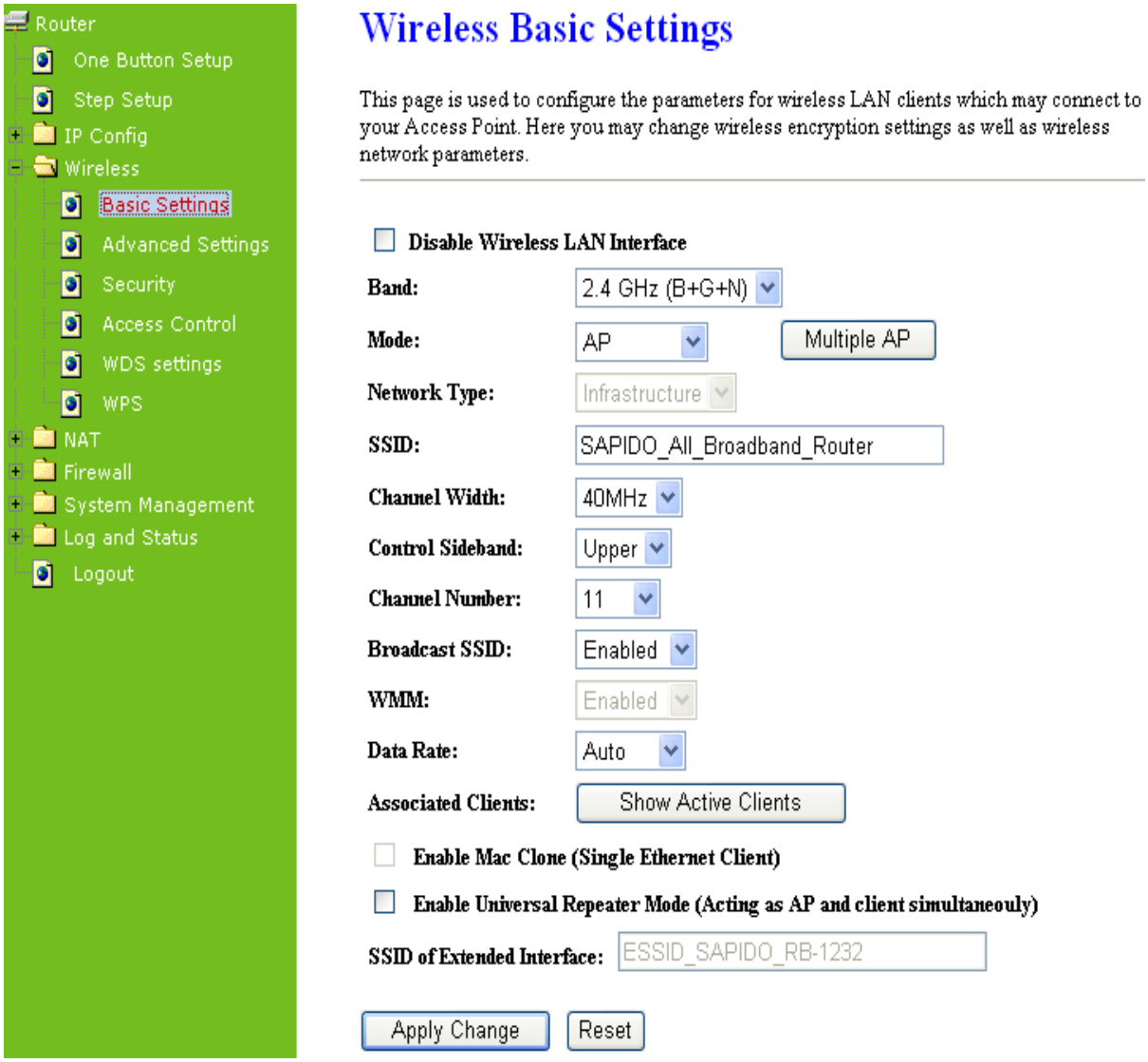
Click on **Apply** button to continue. Click on **Cancel** button to clear the setting on this page.

5.2 Wireless Setup

N+ Broadband Router enables fastest 300 Mbps IEEE802.11g wireless transmissions and keeps compatibility with existing IEEE 802.11n devices. N+ Broadband Router complies with IEEE 802.11b/g standard. Please select **Wireless** under the main menu.

5.2.1 Wireless Basic Settings

Follow the instructions to configure the **Wireless** settings.



1. Disable Wireless LAN Interface

Select **Disable Wireless LAN Interface** to turn off the wireless function.

2. Band

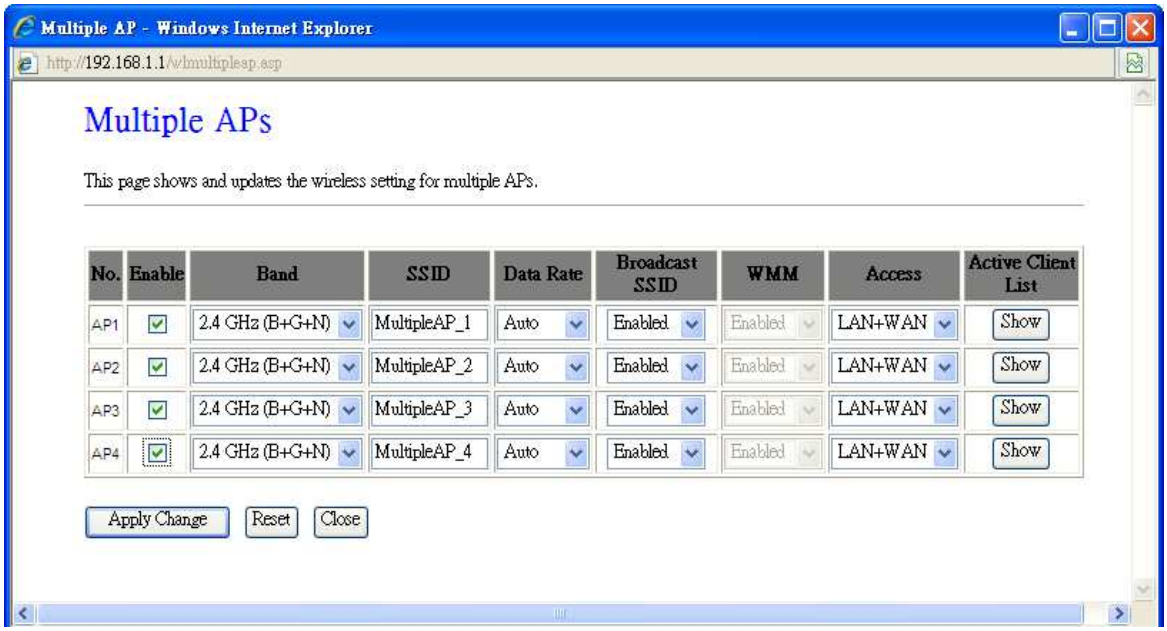
This field indicates the 802.11x interface mode. For example, "**2.4GHz(G)**" prevents the 802.11b clients from accessing the router. "**2.4GHz(B+G)**" allows both 802.11b and 802.11g clients to access the router. There are 6 options, 2.4 GHz (B/G/N/B+G/G+N/B+G+N) from the drop down list.

3. Mode

Select **AP, WDS,** or **AP+WDS** to allow or disallow the wireless operation.

Multiple APs

Click Multiple APs to set up 4 different SSIDs to deploy a shared WLAN. Users can add or limit the properties for each SSID, increasing the flexibility and efficiency of the network.



(1) **Enable:** check it for enable or not.

(2) **Band:** select the frequency from the drop down list.

(3) **SSID:** please enter different SSID in each class.

(4) **Data Rate:** please select the data transmission rate.

(5) **Access:** defined the access type.

a. LAN+WAN: the client can access to the Internet and connect to N+ Broadband Router's GUI to setup.

b. WAN: the client can only access to the Internet.

(6) **Active Client List:** display the properties of the client which is connecting successfully.

(7) **Apply Changes:** Please click **Apply Changes** to initiate or click **Reset** to cancel.

4. Network Type：

Please select "**Infrastructure**" or "**Ad hoc**." The default is "**Infrastructure**." The selection is disabled when wireless mode is selected to AP.

5. SSID：

Please input your wireless network name. Default is **“SAPIDO_All_Broadband_Router”**.

6. Channel Width

Please select “**20MHZ**” or “**40MHZ**” channel width to change the transmission channels.

7. ControlSideband

Setting the Sideband "**Upper**" or "**lower.**”

8. Channel Number

Please select your wireless network channel. There are Auto, 2~11.

9. Broadcast SSID

Enable or disable the SSID broadcast function. Disable this feature can provide more security of your WLAN.

10. Data Rate

Rate at which data can be communicated (bps); auto, 1M, 2M, 5.5M, 11M, 6M, 9M, 12M, 18M, 24M, 36M, 48M or 54M to be selected from the drop-down list.

11. Associated Clients

Check the WiFi ISP connectors and the connecting status.

12. Enable Mac Clone (Single Ethernet Client)

Copy the MAC Address for identity of some ISPs.

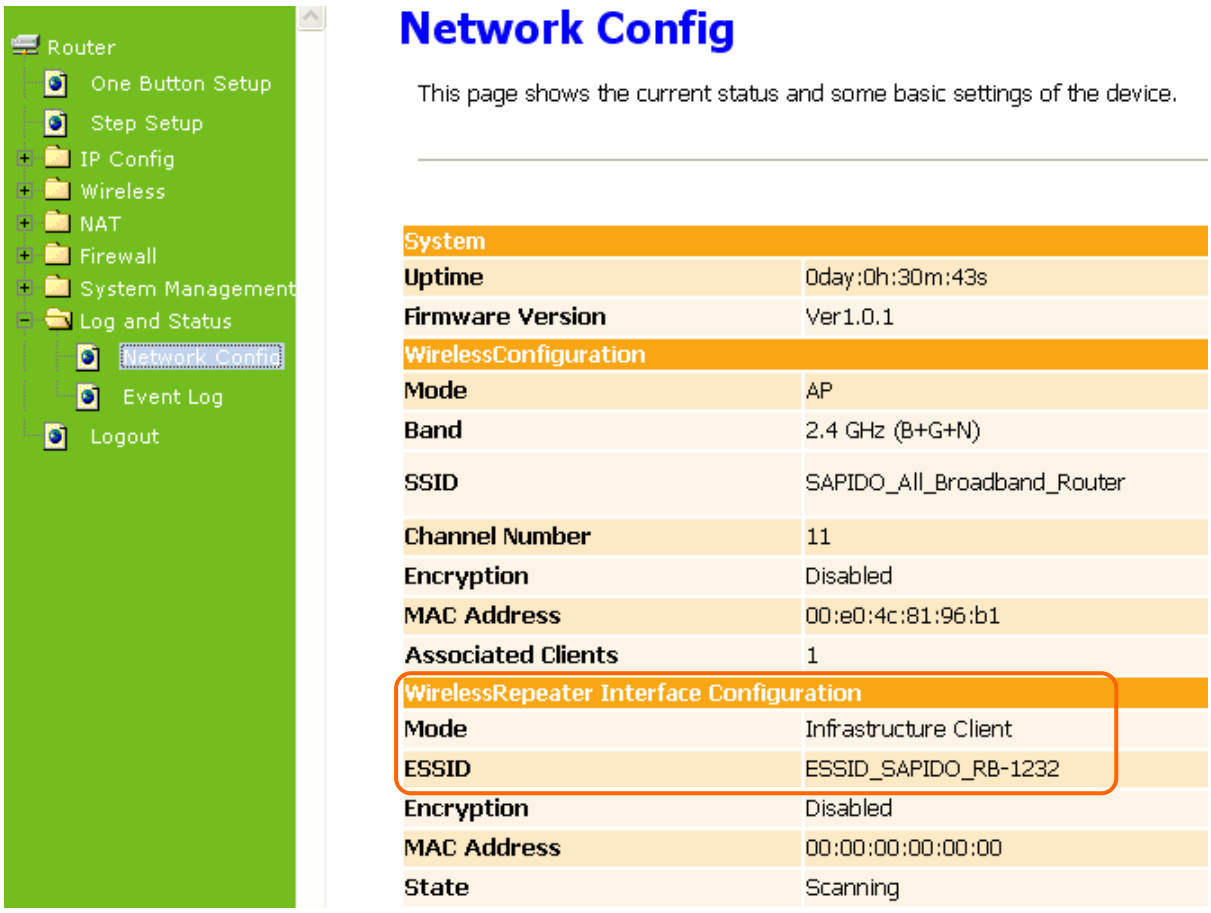
13. Enable Universal Repeater Mode (Acting as AP and Client simultaneously)

Enable **Universal Repeater Mode**, N+ Broadband Router will act as a wireless AP and AP client at the same time, and able to link to another AP.. It uses AP client function to connect to a Root AP (any AP) and uses AP function to service all wireless stations within its coverage. All the stations within the coverage of N+ Broadband Router can be bridged to the Root AP. It can help user to extend the coverage of wireless network.

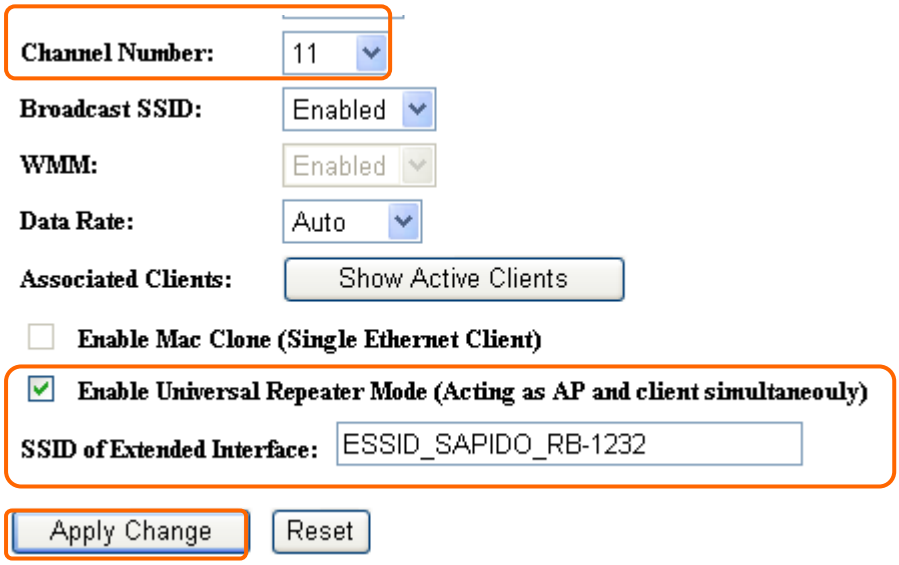
- **How to Enable URM (Universal Repeater Mode)**

  User could enable URM in wireless basic setting page as shown in following figures.

  Step 1. Get back to menu “**Network Config**” and write down the SSID, channel and security.



Step 2. Setting the same SSID, channel and security you got form “Network Config” and Click on **Apply Changes** to save the setting



Note: The DHCP server should be disabled under menu “**LAN Interface Setup**” and then the URM could be enabled.

Step 3. Check the AP connectors and the Wireless connecting status.

14. SSID of Extended Interface

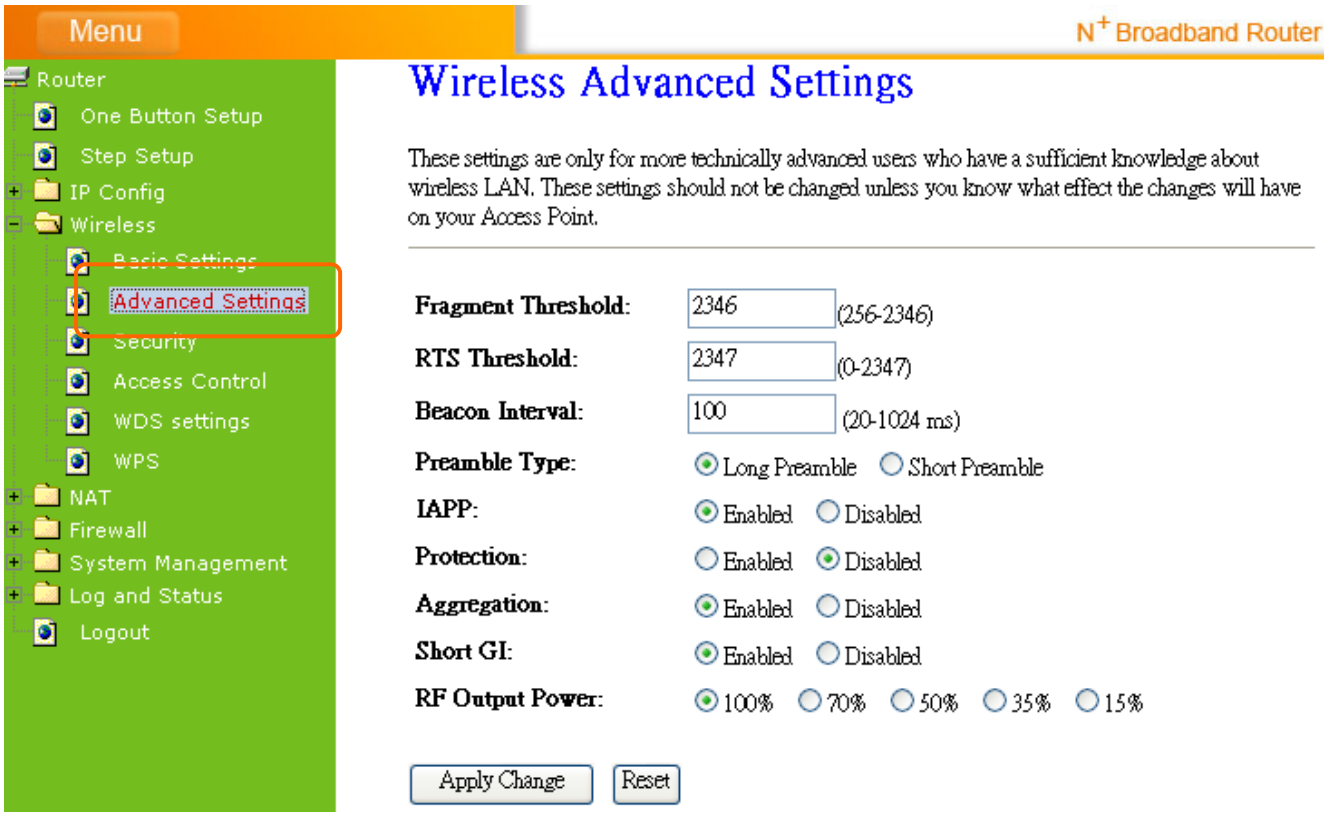
When mode is set to “AP” and Universal Repeater Mode is enabled, user should input SSID of another AP (the upper level device) in the field of **SSID of Extended Interface**.

15. Apply Changes & Reset

Click on “**Apply Changes**” to save the setting data. Or you may click on “**Reset**” to clear all the input data.

5.2.2 Wireless Advanced Settings

Please follow the instructions to configure the **Wireless** settings.



1. Fragment Threshold

To identify the maximum length of packet, the overflow packet length wil be fragmentized. The allowed range is 256-2364, and default length is 2346 bytes.

2. RTS Threshold

This value should remain at its default setting of 2347. The range is 0~2347. Should you encounter inconsistent data flow, only minor modifications are recommended. If a network packet is smaller than the present RTS threshold size, the RTS/CTS mechanism will not be

enabled. The router sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. Fill the range from 0 to 2347 into this blank.

3. Beacon Interval

Beacons are packets sent by an access point to synchronize a wireless network. Specify a beacon interval value. The allowed setting range is 20-1024 ms.

4. Preamble Type

The preamble (also called “a header”) is a section of data at the head of a packet that contains information that wireless devices need when they send and receive packets. Short preambles improve throughput performance, but some wireless devices require long preambles. Select the suitable preamble as short or long preamble.

5. IAPP

Inter Access Point Protocol. Allow seamless roaming between Access Points in your wireless network. Coupled with superior RF performance

6. Protection

Select to enable the wireless protection or not.

7. Aggregation

Data aggregation can reduce the amount of data routed through the network, and increasing throughput.

8. Short GI

Enabling the Short Guard Interval increases the wireless transmission.

9. RF Output Power

User can adjust the RF output power to get the best wireless connection. There are 5 power types available: 100%, 70%, 50%, 35%, and 15%.

10. Apply Changes & Reset

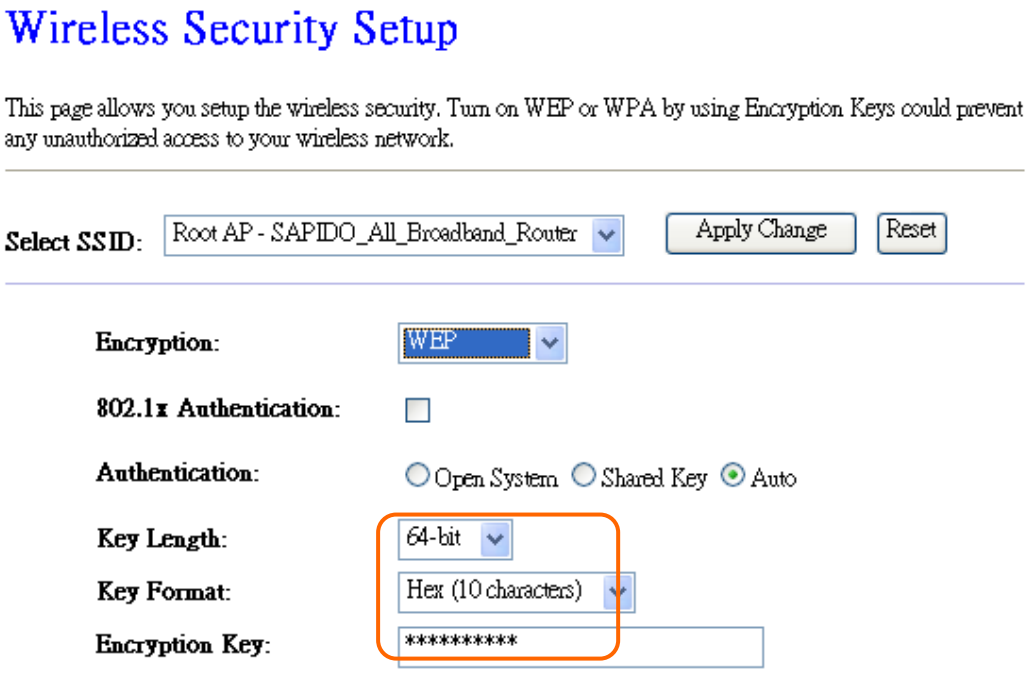
Click on “Apply Changes” to save the setting data. Or you may click on “Reset” to clear all the input data.

5.2.3 Wireless Security Setup

4 encryption types can be selected here, please follow the instructions below for each.

1. Encryption – WEP

Enabling WEP can protect your data from eavesdroppers. If you do not need this feature, select "**None**" to skip the following setting. N+ Broadband Router supports both 64-bit and 128-bit encryption using the Wired Equivalent Privacy (WEP) algorithm. Select the type of encryption you want to use (64 or 128 bit) and configure one to four WEP Keys. The "1280bit" method is more secure than the "64-bit".



2. Use 802.1x Authentication

Enable 802.1x Authentication so that a wireless node must be authenticated before it can gain access to other LAN resources.

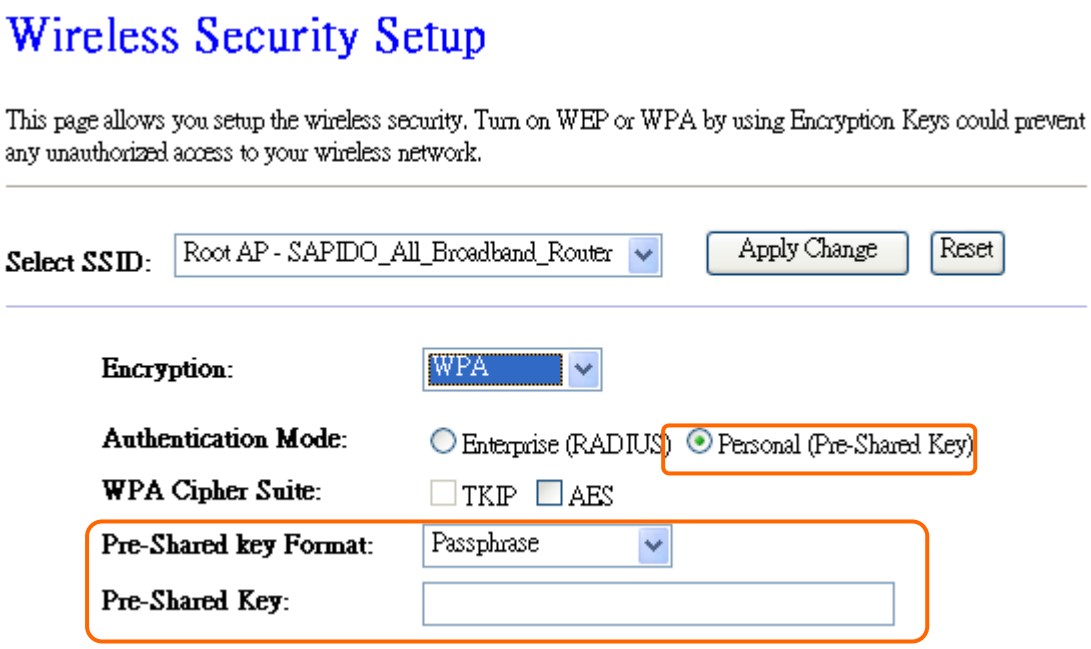
Key Length: For 64bits WEP key, either 5 ASCII characters or 10 hexadecimal digitals leading by 0x can be entered. For 128bits WEP key, either 13 ASCII characters or 26 hexadecimal digits leading by 0x can be entered.

Note: 128 bits WEP is most secure, but has more encryption/decryption overhead. Note that all wireless devices must support the same WEP encryption bit size and have the same key. Four keys can be entered here, but only one key can be selected at a time. The keys can be entered in ASCII or Hexadecimal. Select the item from drop-down list you wish to use.

Encryption Key: At most four keys can be set. A WEP key is either 10 or 26 hexadecimal digits (0~9, a~f, and A~F) based on whether you select 64 bit or 128 bit in the WEP drop-down list.

3. Encryption – WPA (WPA, WPA2 & WPA Mixed)

The WPA, WPA2 & WPA Mixed encrypt each frame transmitted from the radio using the pre-shared key (PSK) which entered from this panel or a key got dynamically through 802.1x.



- **WPA Authentication Mode**

Enterprise (RADIUS): Please input the port, IP address, and password of authentication RADIUS Server.

Personal (Pre-Shared Key): Pre-Shared Key type is coding in ASCII, and the length is between 8 to 63 characters. If the coding is in Hex, the key length is 64 characters.

4. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.2.4 Wireless Access Control

With the MAC address, you may allow or disallow the access to your AP.

1. Wireless Access Control Mode

"**Allowed Listed**" means only the MAC address listed on the allowed list can access to your wireless network.

"Deny Listed" means the listed MAC Address are not allowed to linkto your wireless network.

"**Disable**" for function disuse.

2. MAC Address

Please input the allowed or denied MAC address, for example, 001122334455.

3. Comment

You may input the comments for the set MAC Address.

4. Apply Changes & Reset

Click on “Apply Change” to save the setting data. Or you may click on “Reset” to clear all the input data.

5. Current Access Control List

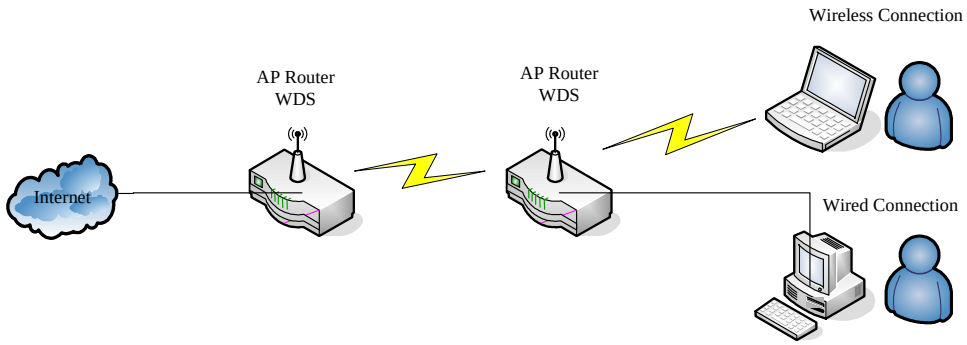
In this list, all the MAC info you input will be displayed.

6. Delete Selected and Delete All

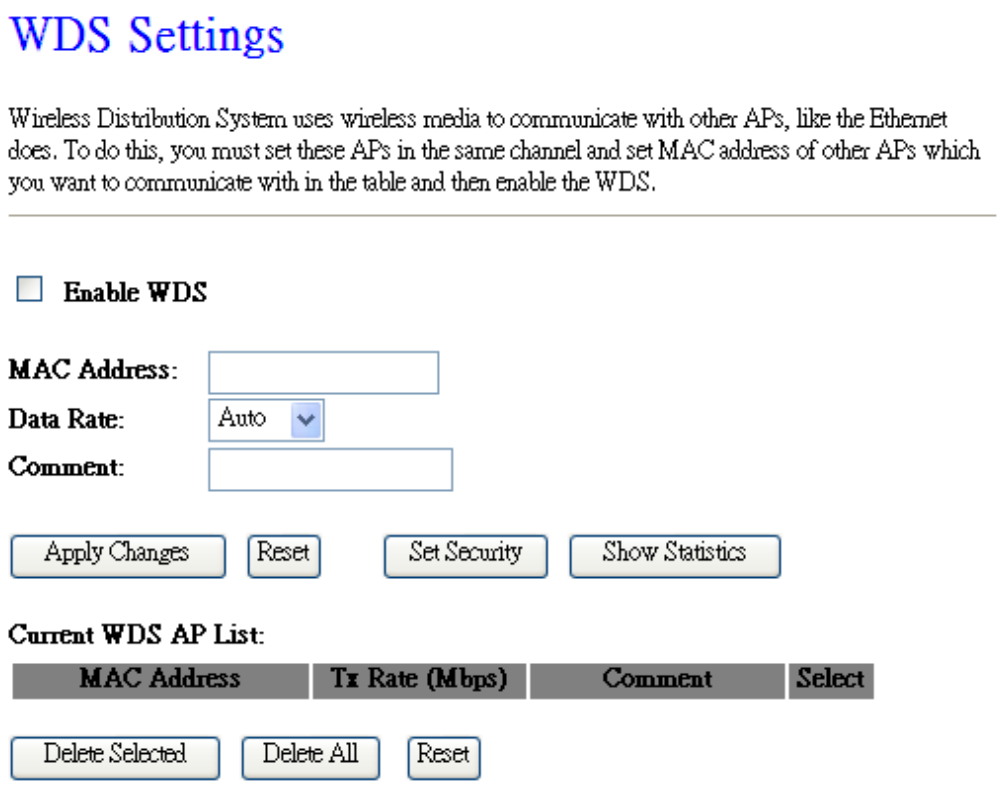
Click on “**Delete Selected**” to erase the selected MAC address. Click on “**Delete All**” to erase all the entered MAC Address.

5.2.5 WDS Settings

WDS (Wireless Distribution System) is a Wireless Access Point mode that enables wireless bridging in which only WDS APs communicate with each other (without allowing for wireless clients or stations to access them), and/or wireless repeating in which APs communicate both with each other and with wireless stations (at the expense of half the throughput).



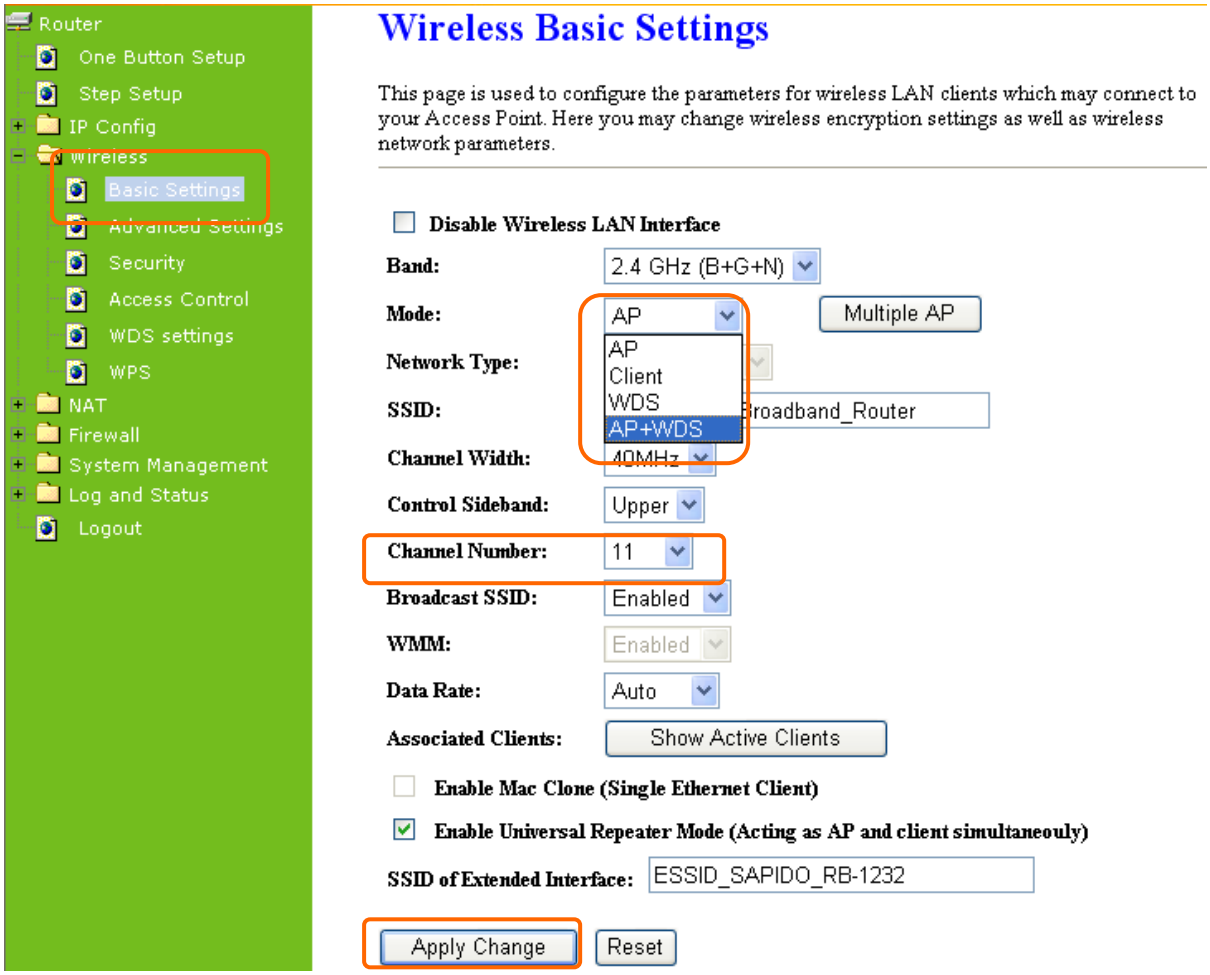
Please follow the instructions to setup WDS connections.



Step 1. Check the MAC address and Channel number of the device you want to setup WDS with N+ Broadband Router.

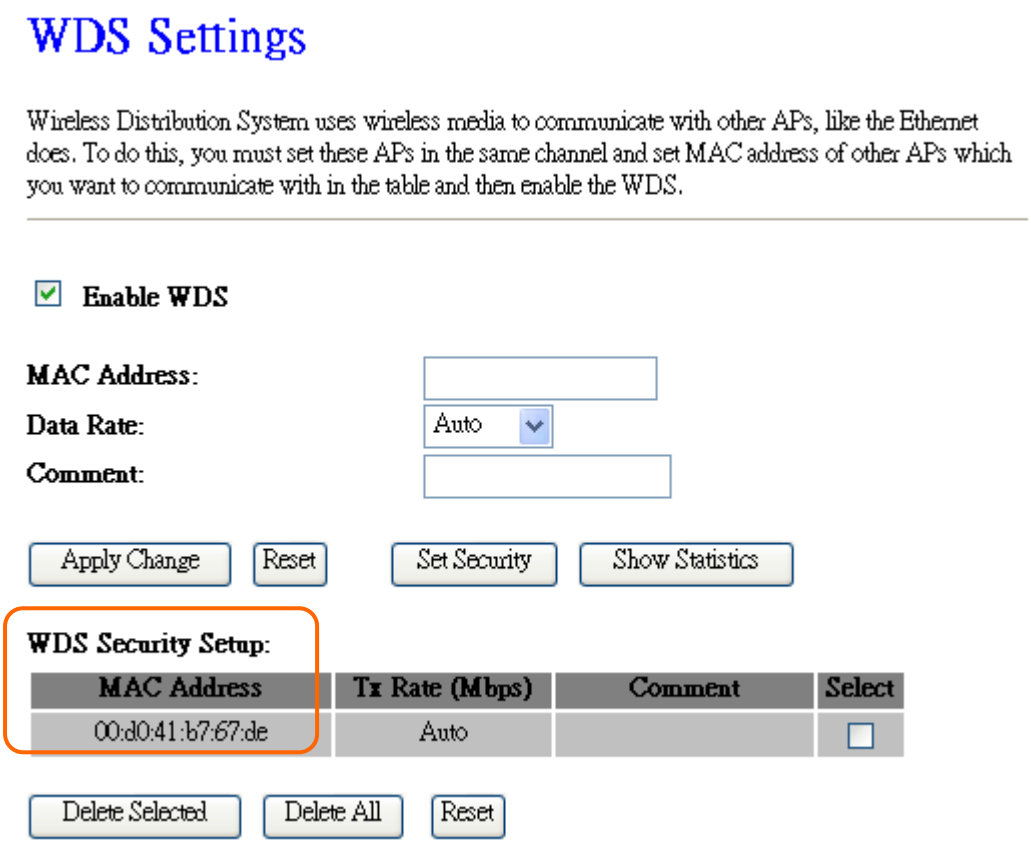
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	SAPIDO_All_Broadband_Router
Channel Number	11
Encryption	Disabled
MAC Address	00:e0:4c:81:96:b1
Associated Clients	2
LAN Configuration	
Attain IP Protocol	Fixed IP
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DHCP Server	Enabled
MAC Address	00:e0:4c:81:96:b1

Step 2. Get back to the menu "**Wireless Basic Settings**" of N+ Broadband Router. Select **AP+WDS** mode, and then select the Channel Number. Click **Apply Changes** to save the setting data.

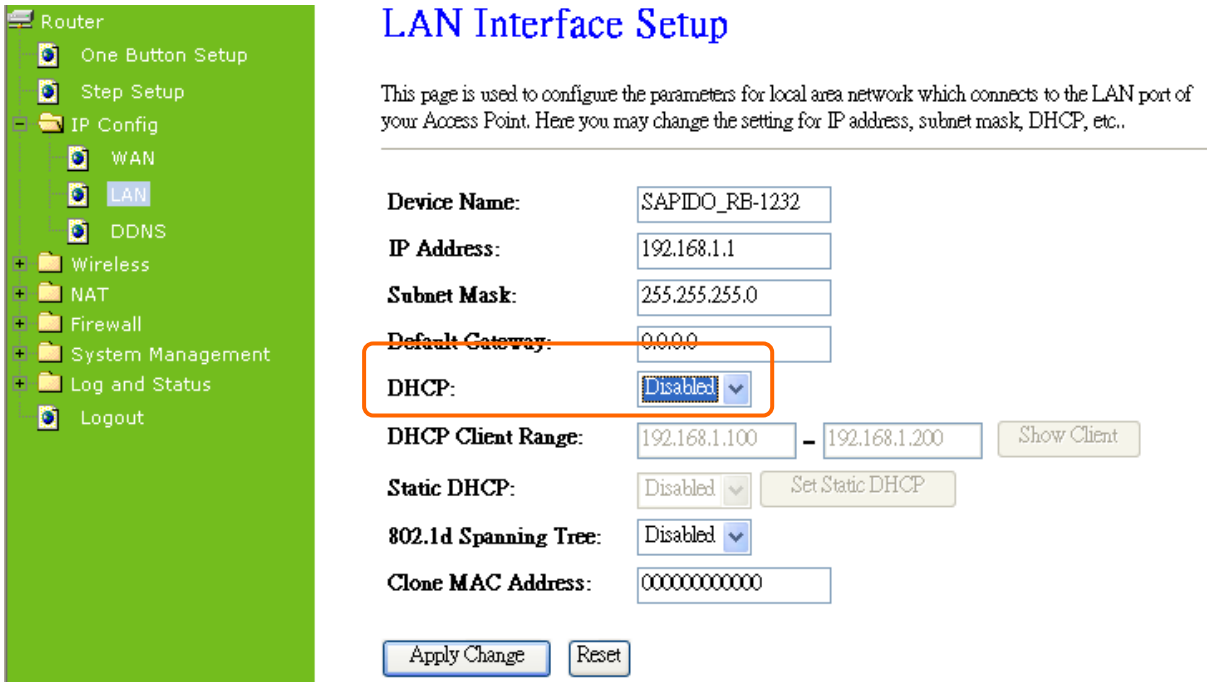


Step 3. Enter the WDS Settings page, select Enable WDS, and then input the MAC address of the paired device. Click Apply Changes to save the setting data.

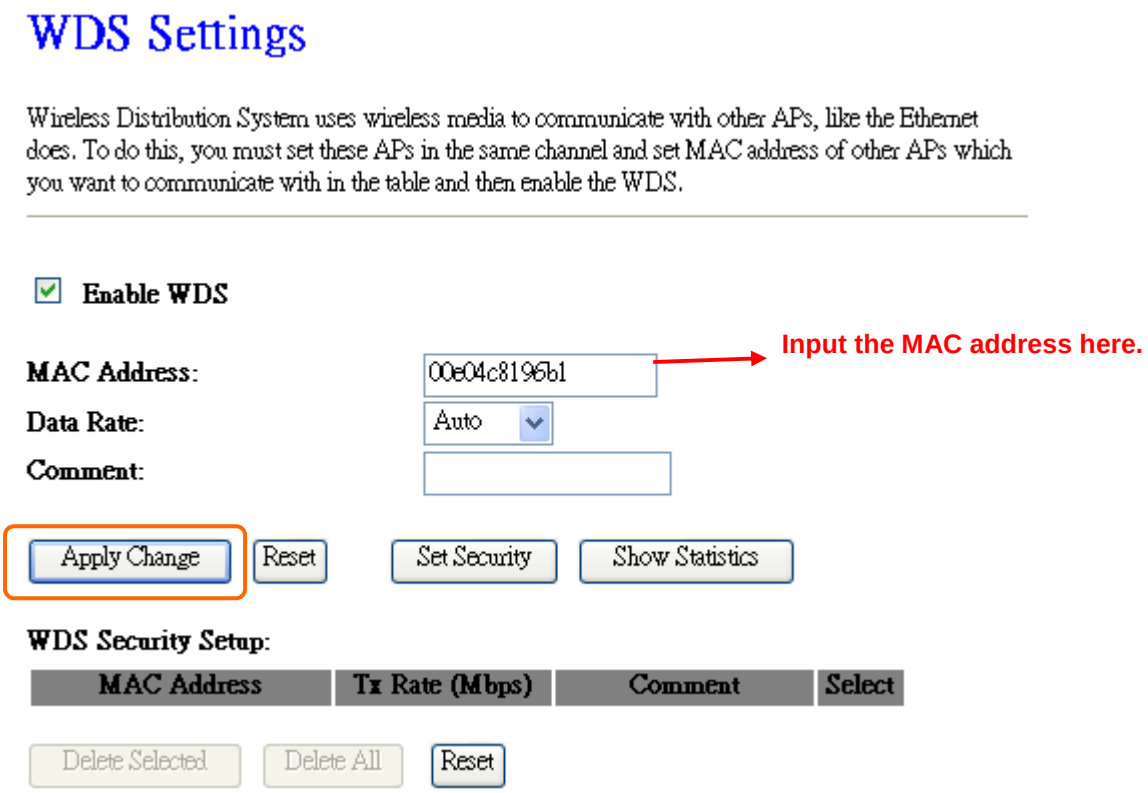
Step 4. When the time counts down to 0, you will see the MAC address of the paired device displaying on **Current WDS AP List.**



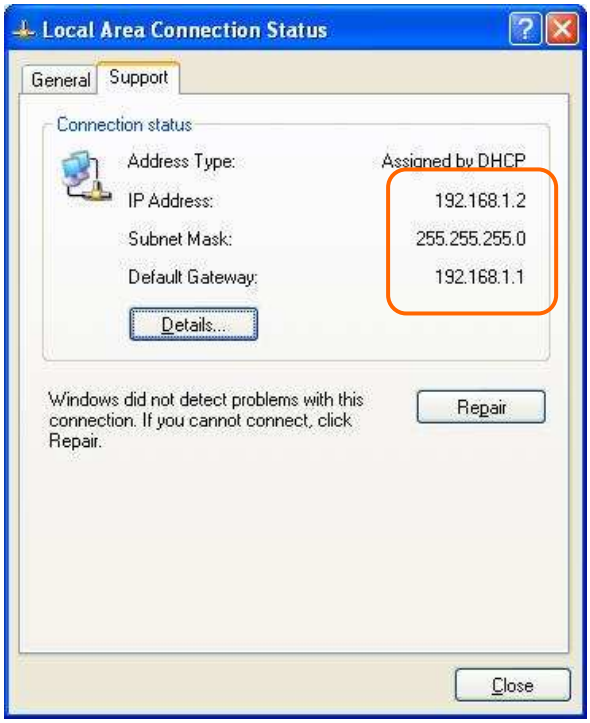
Step 5. Head back to LAN Interface, disable DHCP option, and then click Apply Changes to save the setting data.



Step 6. Doing the same way to setup the MAC address in the paired device. Launch the UT to the menu "**WDS settings**" of the paired device, and input router's MAC address. Click **Apply Changes** to save the setting data.



Step 7. After initiating the paired device, please check Local Area Connections. Click Supports to check out the IP address which is assigned by the paired device.



Step 8. You can input http://192.168.1.1 in IE browser to enter the GUI page of the paired device and make sure the connection.

5.2.6 WPS

Wi-Fi Protected Setup (WPS) is an easy way to establish a secured wireless network between N+ Broadband Router and wireless card. Users do not need to manually entering a creative, yet predictable security key on both Wi-Fi devices to prevent unwanted access to their wireless network. With WPS, it can automatically configure a wireless network with a network name (SSID) and strong WPA data encryption and authentication.

WPS can be enabled by 2 methods:

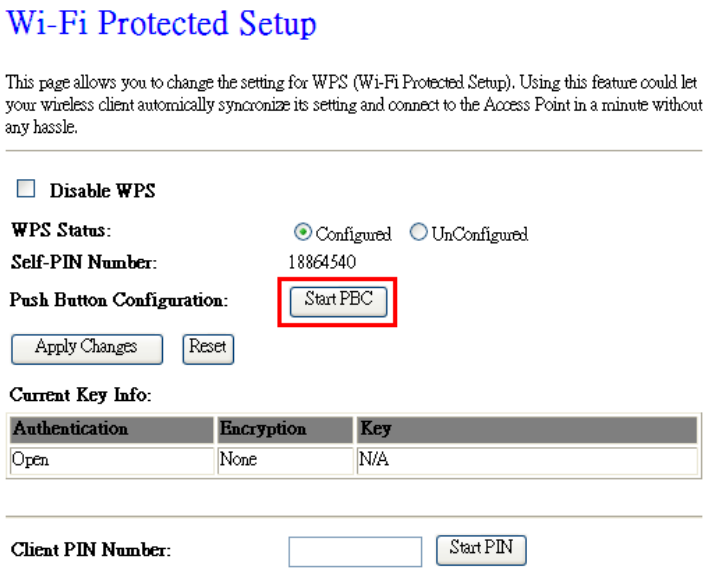
1. **PBC (Push button configuration) Method,** in which the user simply has to push a button, either an actual or a virtual one, on both WPS devices to connect.
2. **PIN (Personal Identification Number) Method,** in which a PIN has to be taken either from a sticker label or from the web interface of the WPS device. This PIN will then be entered in the AP or client WPS device to connect.

Please follow instructions below to enable the WPS function.

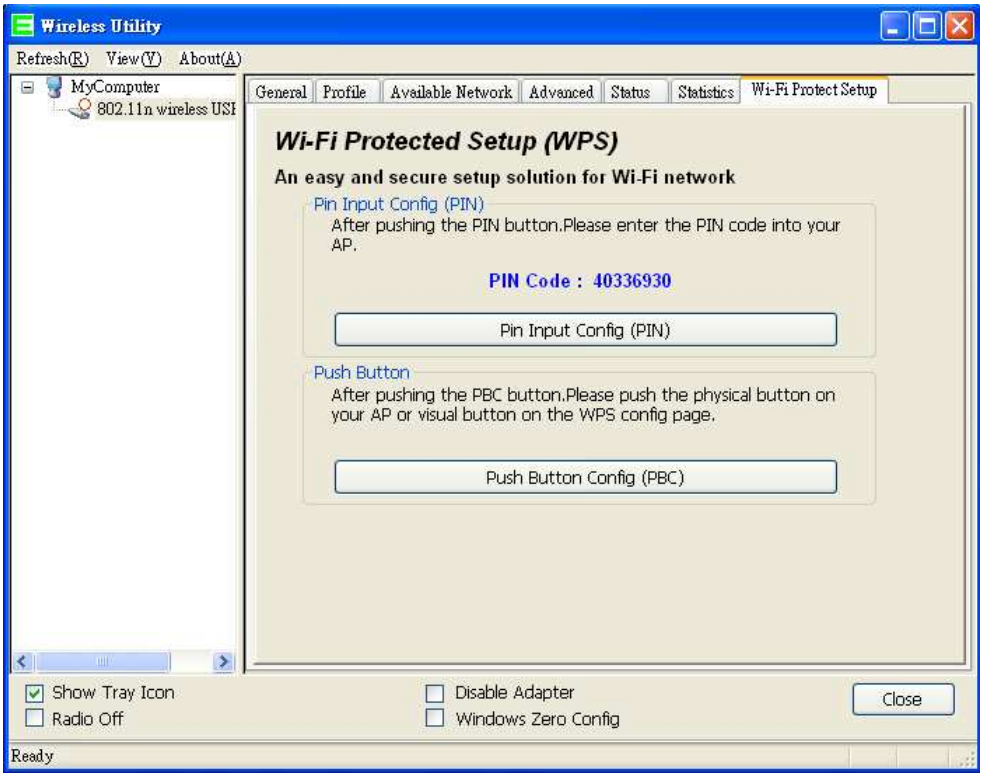
- **Start PBC:**

(1.) Press the **WPS button** from N+ Broadband Router or click **Start PBC** from menu "Wi-Fi Protected Setup", and waiting for the WPS wireless card setting.

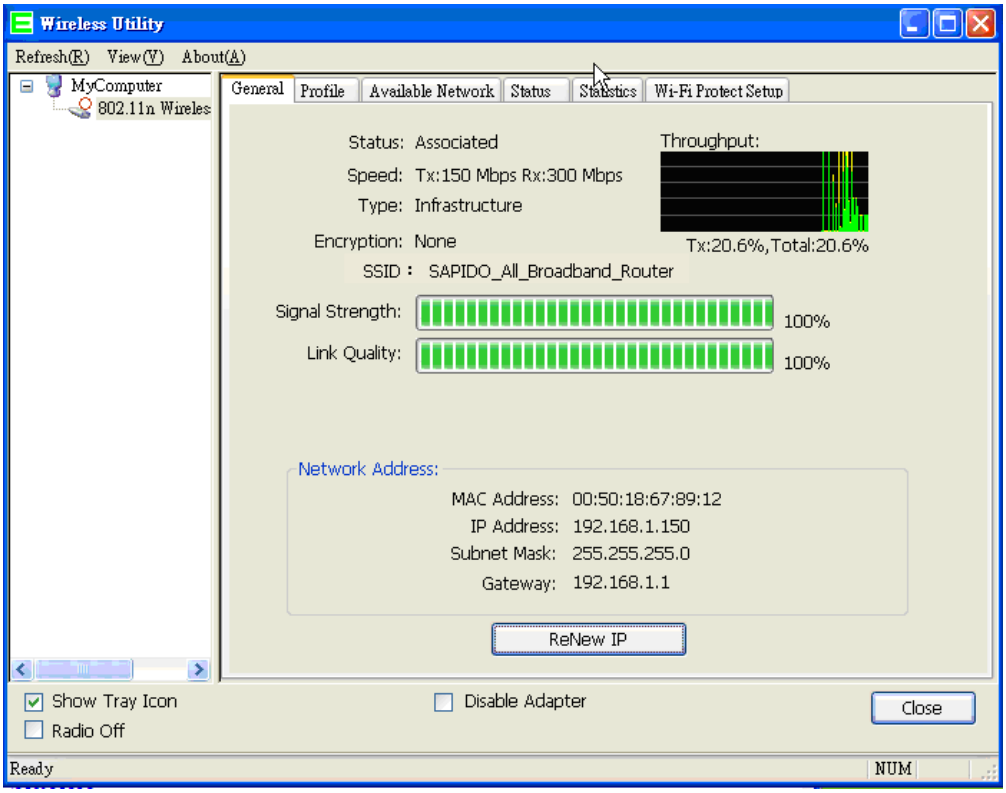
or



(2.) Open the “Wireless Utility” of your wireless card, and click its “PBC” button, to start auto pairing.

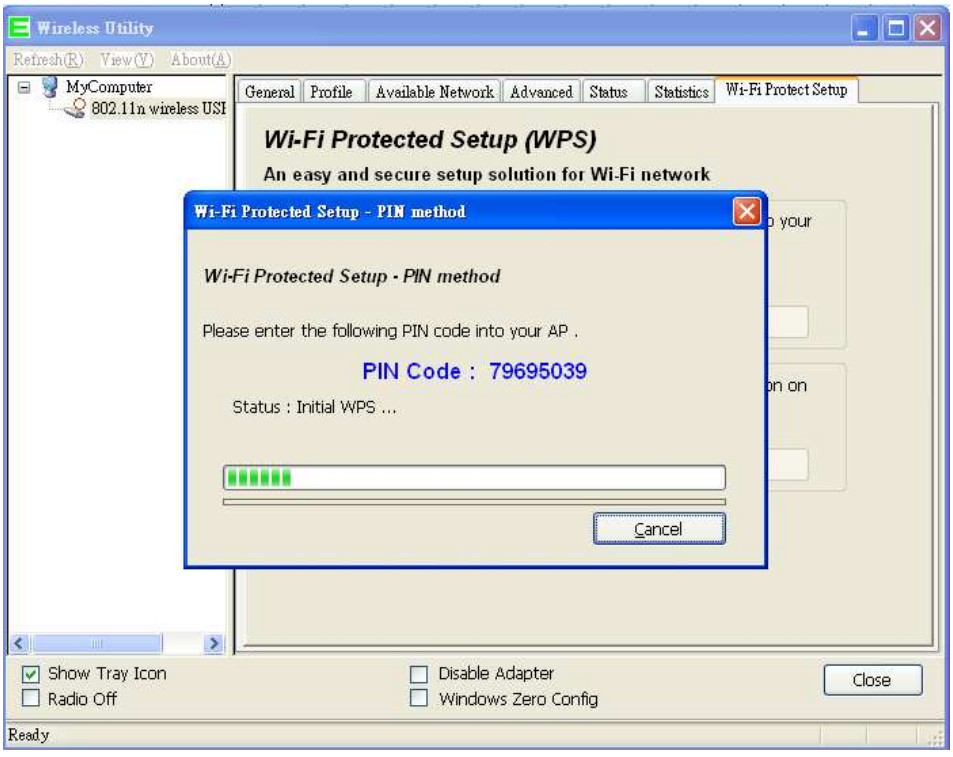


(3.) While scanning is successful, the information of the wireless card appears in the windows below.

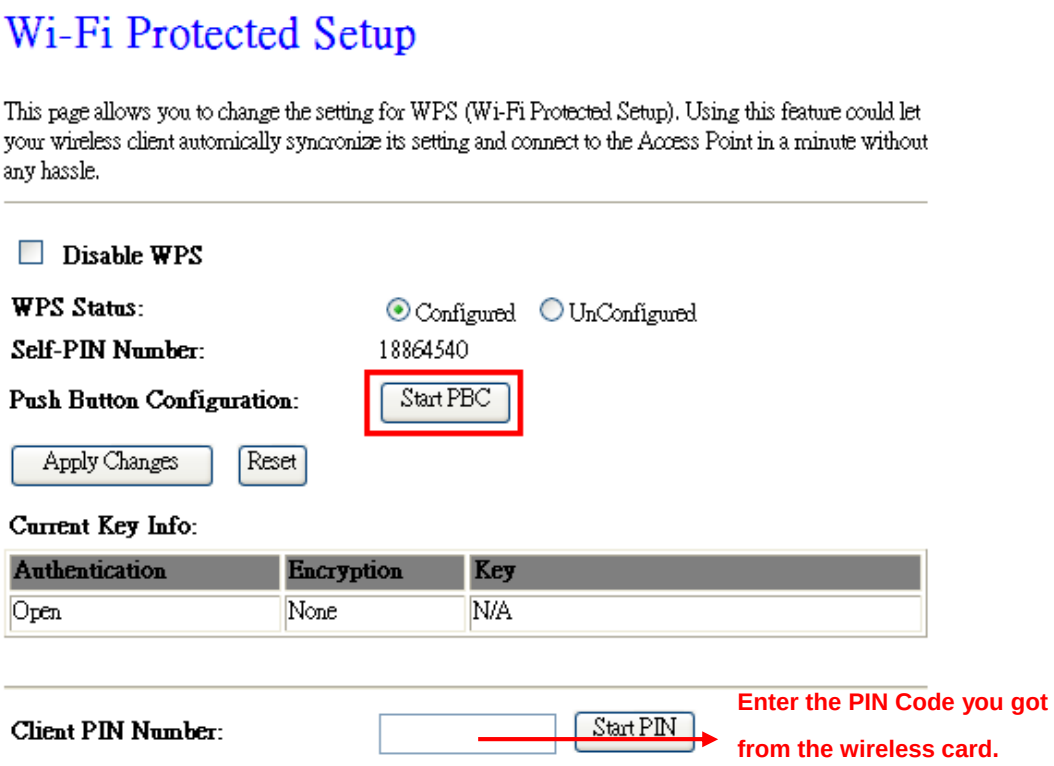


- **Start PIN:**

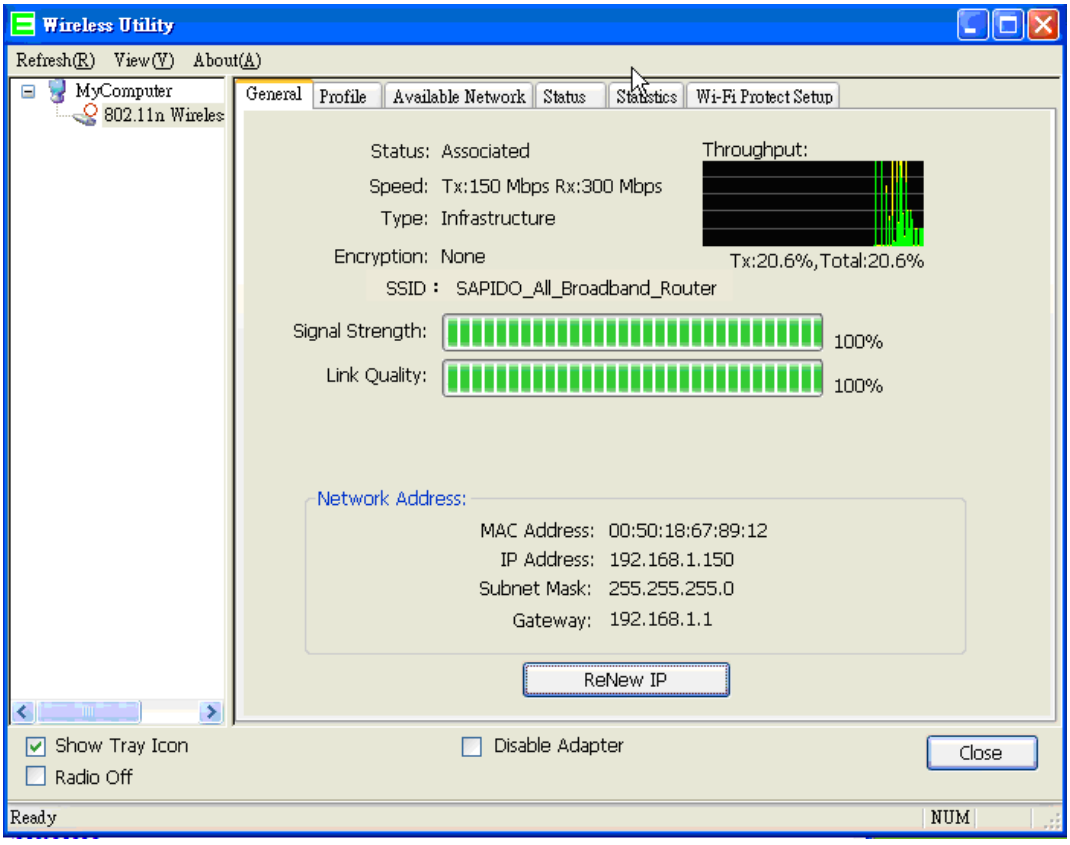
(1.) Open the “Wireless Utility” of your wireless card. Follow its PIN instruction to get a new PIN number. Write it down.



(2.) Open menu “Wi-Fi Protected Setup” of N+ Broadband Router, input the PIN number from the wireless card then click **Start PIN**.



(3.) Back to “Wireless Utility” and press the “Start PIN” button to complete the auto-paring process.

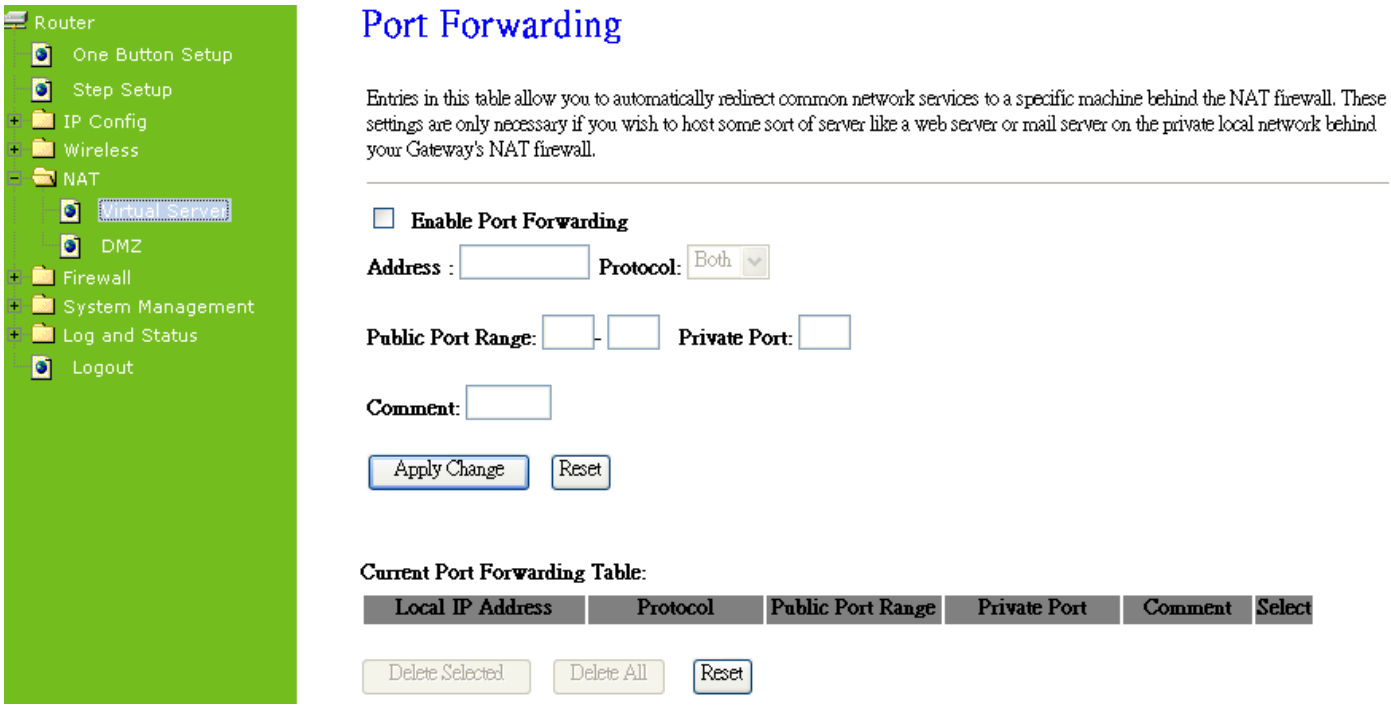


5.3 NAT

NAT is a method of mapping one or more IP addresses and/or services ports into different specified services, where NAT stands for Network Address Translation. It allows the internal IP addresses of many computers on a Local Area Network (LAN) to be translated to one public address, saving users' cost. It also plays a security role by obscuring the true IP addresses of important machines from potential hackers on the Internet. For convenience, we called a router having the NAT facility as a NAT-enabled router.

5.3.1 Visual Server

To offer services, like WWW, FTP, provided by a server in your local network accessible for outside users, you should specify a local IP address to the server. Then, add the IP address and network protocol type, port number, and name of the service in the following list. Based on the list, the gateway will forward service request from outside users to the corresponding local server.



1. Enable Port Forwarding

Enable Port Forwarding to allow an external user to reach a port within a private LAN.

2. IP Address

Specify the private IP address of the internal host offering the service.

3. Protocol

Specify the transport layer protocol (TCP or UDP).

4. Port Range

Enter the Start and End ports in the range you'd like to forward. If you're just forwarding 1 port, set them both equal. For example 80-80 or 20-22。

5. Comment

You can add comments for this port forwarding rule.

6. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

7. Current Port Forwarding Table

It will display all port forwarding regulation you made.

8. Delete Selected & Delete All

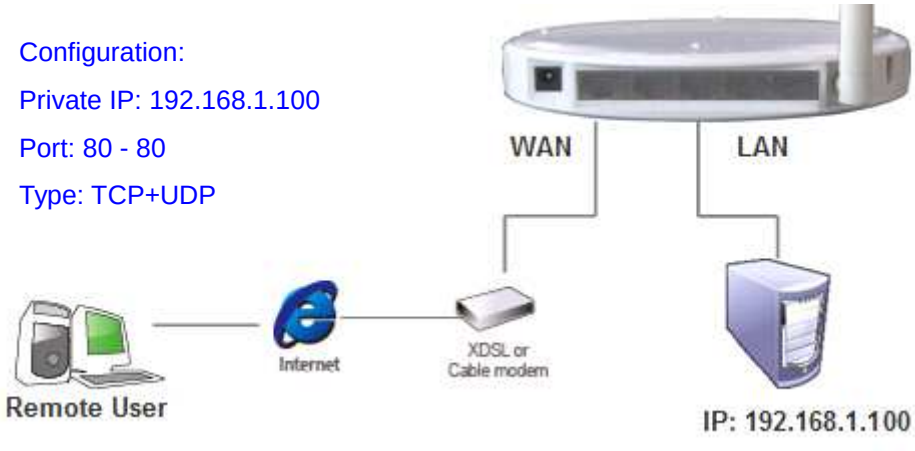
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

9. Reset

You can click **Reset** to cancel.

- **Port Forwarding**

  The following figure shows the ip forwarding configuration of your web on a local area network. The web server is located on 192.168.1.100, forwarding port is 80, and type is TCP+UDP.



5.3.2 Visual DMZ

Virtual DMZ allows you to expose one computer to Internet, so that all inbound packets will be redirected to the computer you set. It is useful while you run some applications that use uncertain incoming ports. Please use it carefully.

1. Enable DMZ

Check **Enable** to apply Virtual DMZ for the Router.

2. DMZ Host IP Address

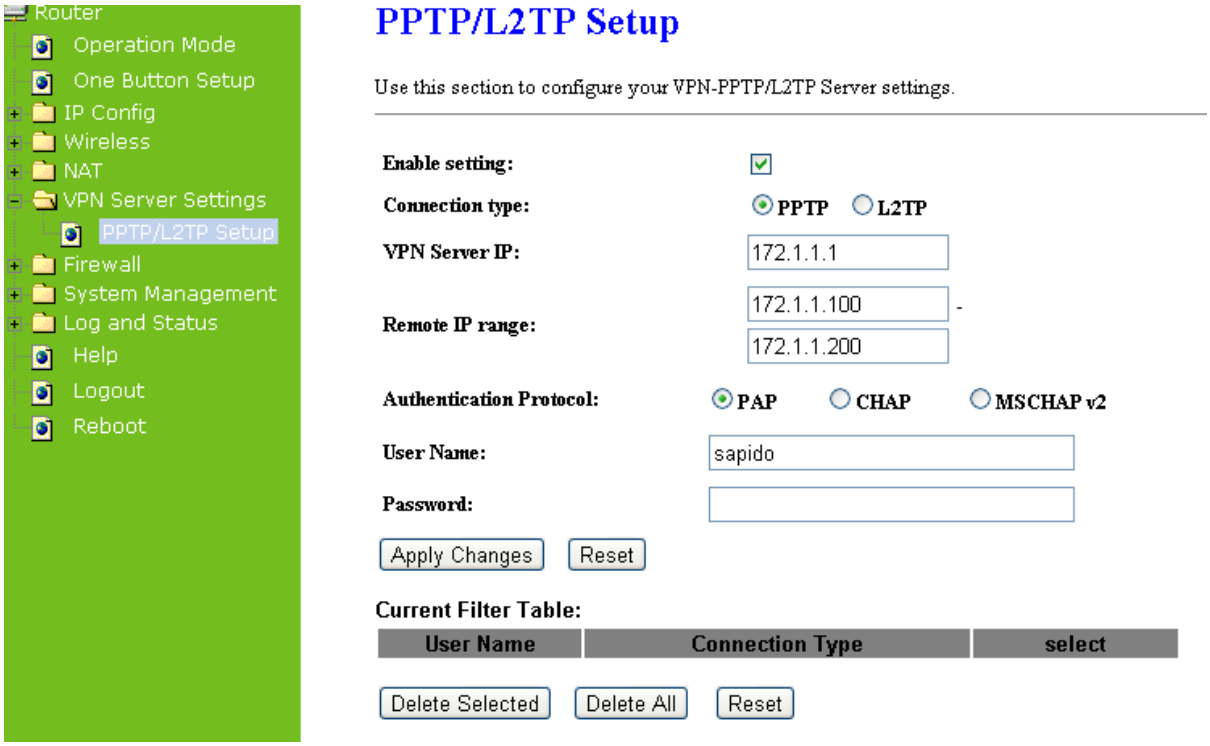
This field stands for the destination IP address that you like to redirect the matched packet to.

3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5.4 VPN Server setting

The VPN Server function providing PPTP/L2TP mode are designed to allow users to an external network device / computer and office local area network to establish a secure network connection. And User can safe login office local area network and access to personal documents, files Sharing and other resources. It provides the most convenient VPN encryption.



1. **Enable Setting**
   Check this option, will start the VPN Server feature.
2. **Connection Type**
   Provide PPTP or L2TP access connection type
3. **VPN Server IP**
   Input the IP address of VPN server。
4. **Remote IP range**
   It is the IP range of assigned to the VPN Client。
5. **Authentication Protocol**
   It is provided three types of authentication protocol。
6. **MPPE Encryption Mode(RC4)**
   It is provided three encryption modes。
7. **User Name**
   Input the login name of the client user。
8. **Password**

Input the login password of the client user

9. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

10. Current Filter Table

It will display all user that are filtering now.

11. Delete Selected & Delete All

Click on "**Delete Selected**" to erase the selected user name. Click on "**Delete All**" to erase all the entered user name

12. Reset

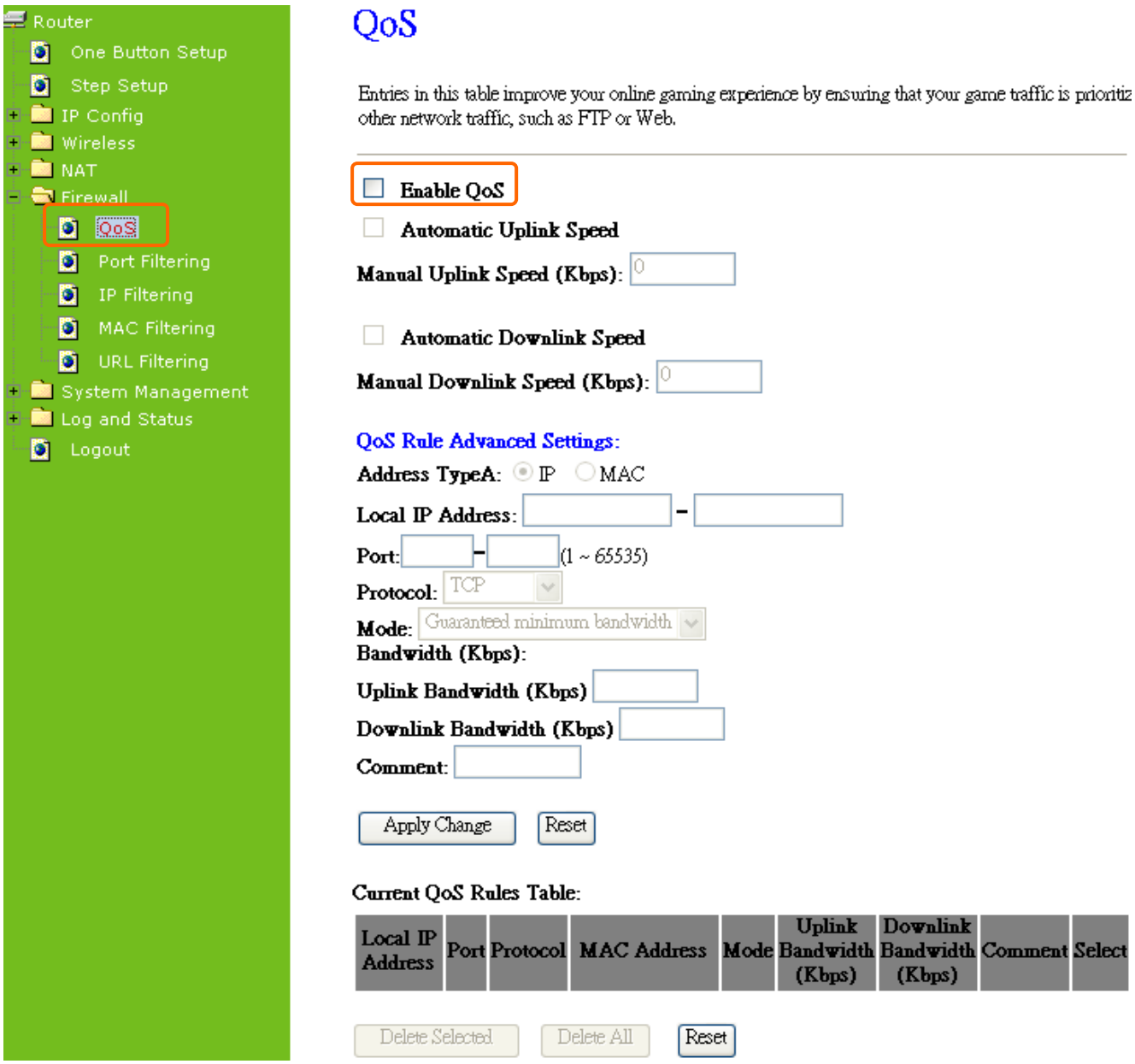
You can click **Reset** to cancel.

5.5 Firewall

The Firewall function helps to protect your local network against attacks from outside. It also provides a way of restricting users on the local network from accessing the Internet. Additionally, it can filter out specific packets to trigger the router to place an outgoing connection.

5.5.1 QoS

Quality of Service (QoS) refers to the capability of a network to provide better service to selected network traffic over various technologies, including Frame Relay, Asynchronous Transfer Mode (ATM), Ethernet and 802.1x networks, and IP-routed networks that may use any or all of these underlying technologies. The primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved loss characteristics. Also important is making sure that providing priority for one or more flows does not make other flows fail. QoS technologies provide the elemental building blocks that will be used for future business applications in campus, WAN and service provider networks. This chapter provides each setting of QoS.



1. Enable QoS

One checkbox appears to activate the QoS control function or not. Click it to force the router to perform QoS control over traffic flows.

2. Automatic Uplink Speed

Click the checkbox to manage uplink speed automatically.

3. Manual Uplink Speed

Input the number of uplink speed.

4. Automatic Downlink Speed

Click the checkbox to manage downlink speed automatically.

5. Manual Downlink Speed

Input the number of downlink speed.

6. Address TypeA

Select IP or MAC to manage QoS.

7. Mode

Select the type of bandwidth mode.

8. Uplink Bandwidth

Please enter the port number of uplink bandwidth.

9. Downlink Bandwidth

Please enter the port number of downlink bandwidth.

10. Comment

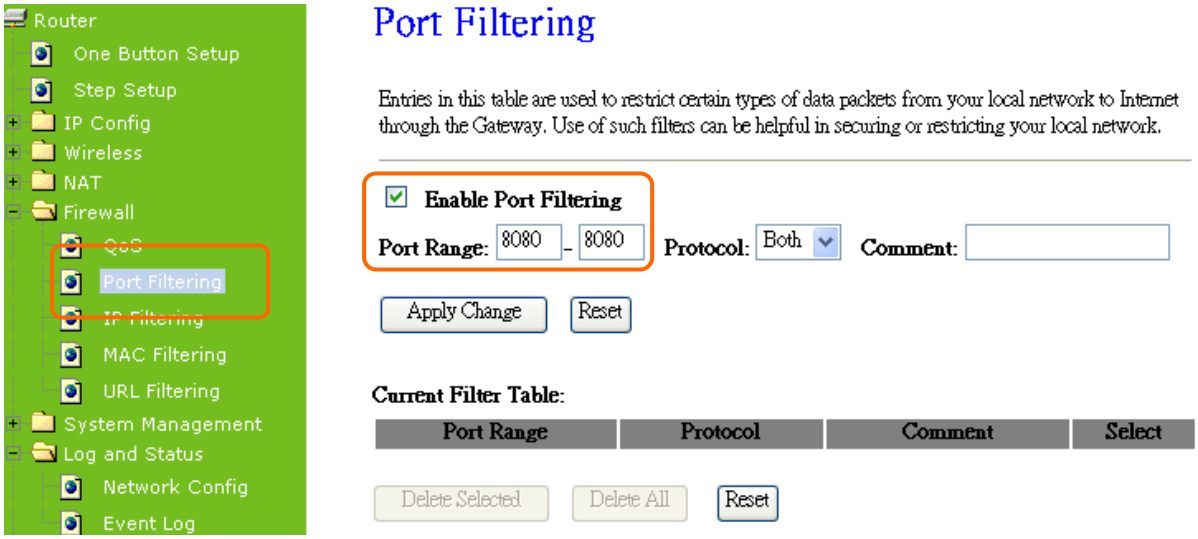
You can add comments for this regulation.

11. Apply Changes

Click on **Apply Changes** to save the setting or **Reset** to clear all the input data.

5.5.2 Port Filtering

This function allows users to filter and manage specific ports; to limit the use of certain applications to transmit through a specific port. Port filtering helps users to improve the security of your network.



1. Enable Port Filtering

Check **Enable Port Filtering** to start the service.

2. Port Range

Enter the Start and End ports in the range you'd like them to be filtered.

3. Protocol

Please select the protocol type of the port.

4. Comment

You can add comments for this Port Filtering rule.

5. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

6. Current Filter Table

It will display all ports that are filtering now.

7. Delete Selected & Delete All

Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

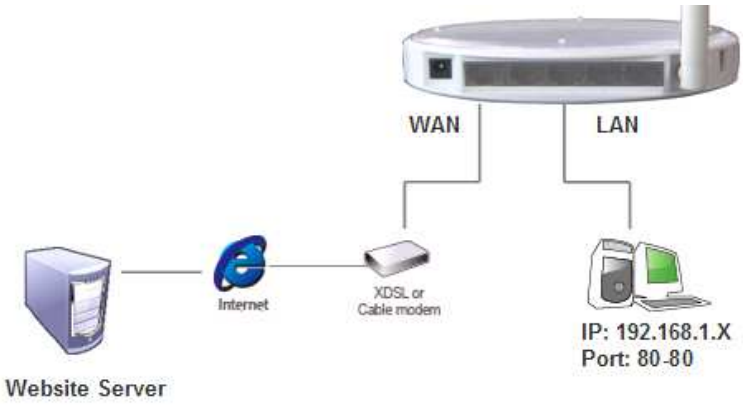
8. Reset

You can click **Reset** to cancel.

- **Port Filtering**

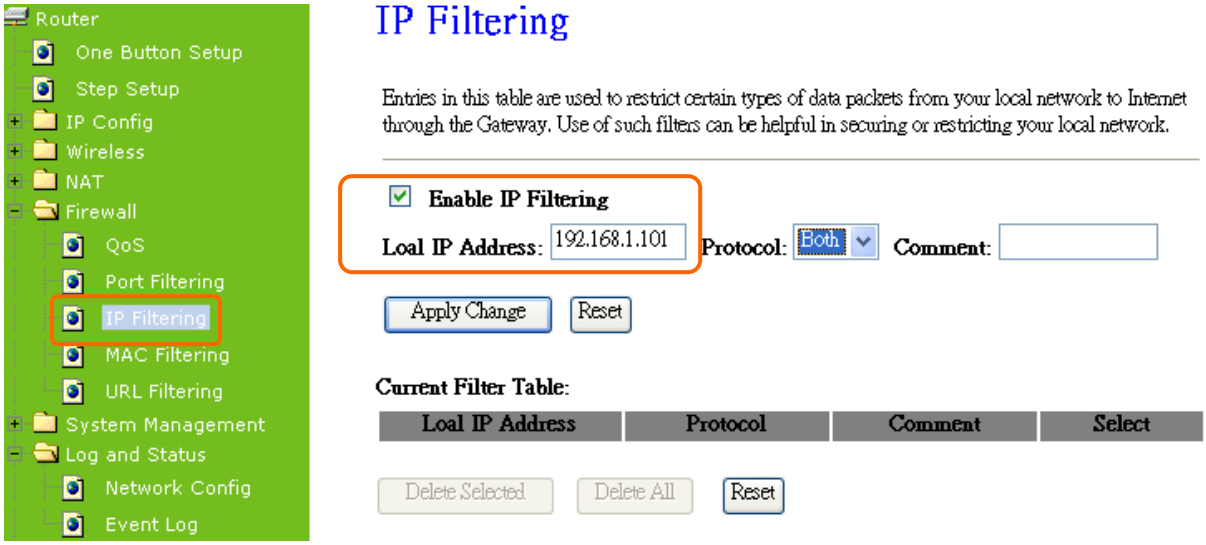
  The following figure shows a user limits some applications to use the 80 port.

  *All clients inside the local area network can't open the 80 port through this router.



5.5.3 IP Filtering

Use IP Filter to deny LAN IP addresses from accessing the Internet. You can deny specific port numbers or all ports for the specific IP address.



1. Enable IP Filtering

Check enable or disable to apply IP Filter function.

2. Local IP Address

Please enter the IP address that needs to be filtered.

3. Protocol

Please select the protocol type of the IP address.

4. Comment

You can add comments for this regulation.

5. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

6. Current Filter Table

It will display all IP addresses that are filtering now.

7. Delete Selected & Delete All

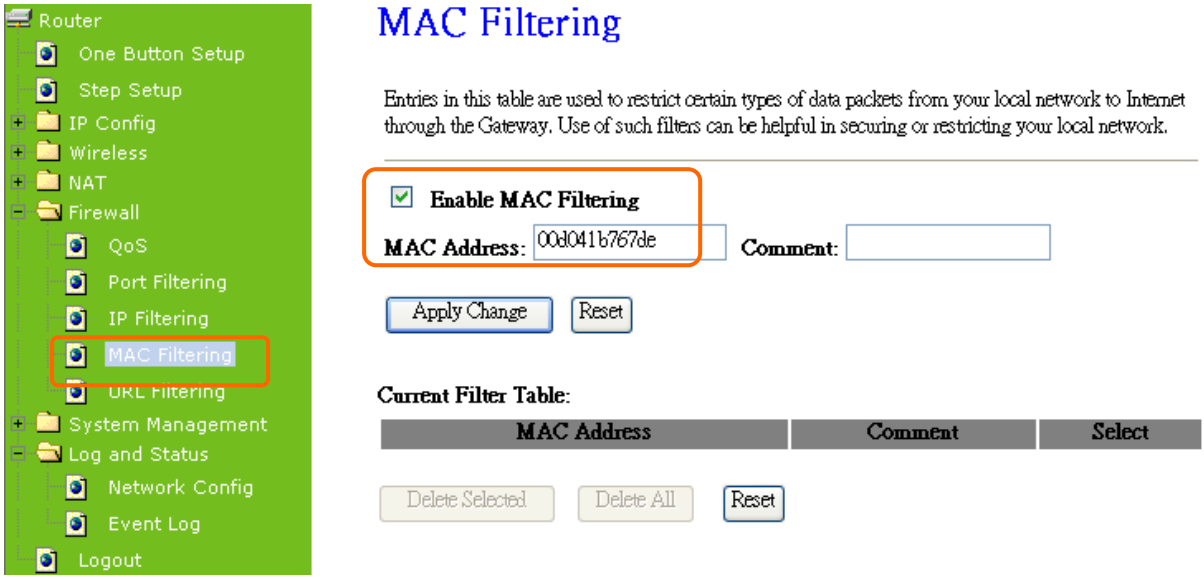
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

8. Reset

You can click **Reset** to cancel.

5.5.4 MAC Filtering

Use MAC filters to deny LAN computers by their MAC addresses from accessing the Internet. You can manually add a MAC address that is currently connected to N+ Broadband Router.



1. Enable MAC Filtering

Check enable or disable to apply MAC Filter function.

2. MAC Address

Enter the MAC address manually that you want to filter.

3. Comment

You can add comments for this MAC Filtering rule.

4. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

5. Current Filter Table

It will display all MAC addresses that are filtering now.

6. Delete Selected & Delete All

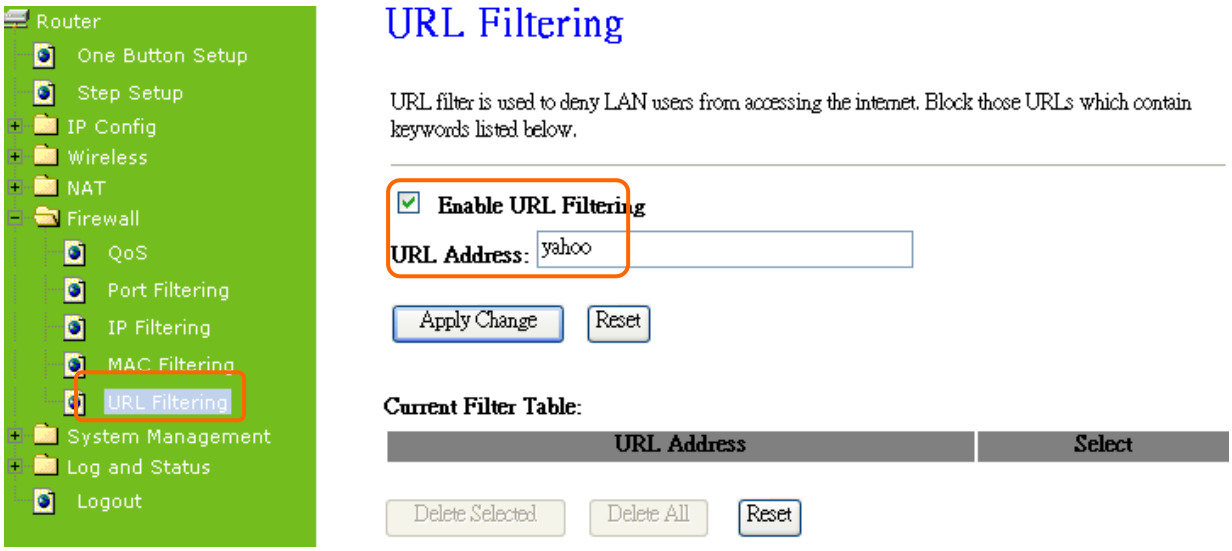
Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

7. Reset

You can click **Reset** to cancel.

5.5.5 URL Filtering

Keyword based URL (Uniform Resource Locator) filtering allows you to define one or more keywords that should not appear in URL's. Any URL containing one or more of these keywords will be blocked. This is a policy independent feature i.e. it cannot be associated to ACL rules. This feature can be independently enabled / disabled, but works only if firewall is enabled.



1. Enable URL Filtering

Check enable or disable to apply URL filter function.

2. URL Address

Enter the URL address into this blank to apply filter blocking, example: "www.yahoo.com.

3. Apply Changes & Reset

Click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data.

4. Current Filter table

Shows all filtered URL information.

5. Delete Selected & Delete All

Click **Delete Selected** will delete the selected item. Click **Delete All** will delete all items in this table.

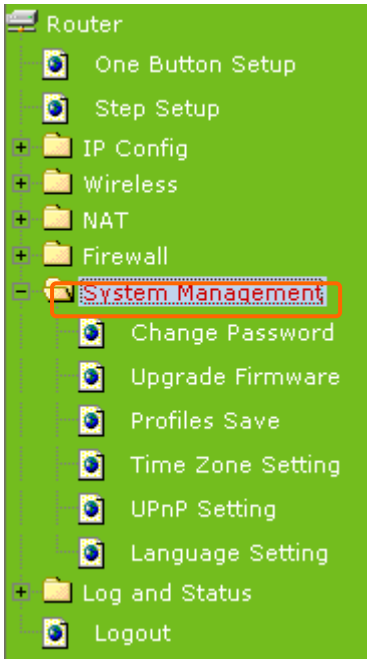
6. Reset

You can click **Reset** to cancel.

Note: URL Filtering cannot work when the Visual Server is enabled. Please disable Visual Server before activate filter.

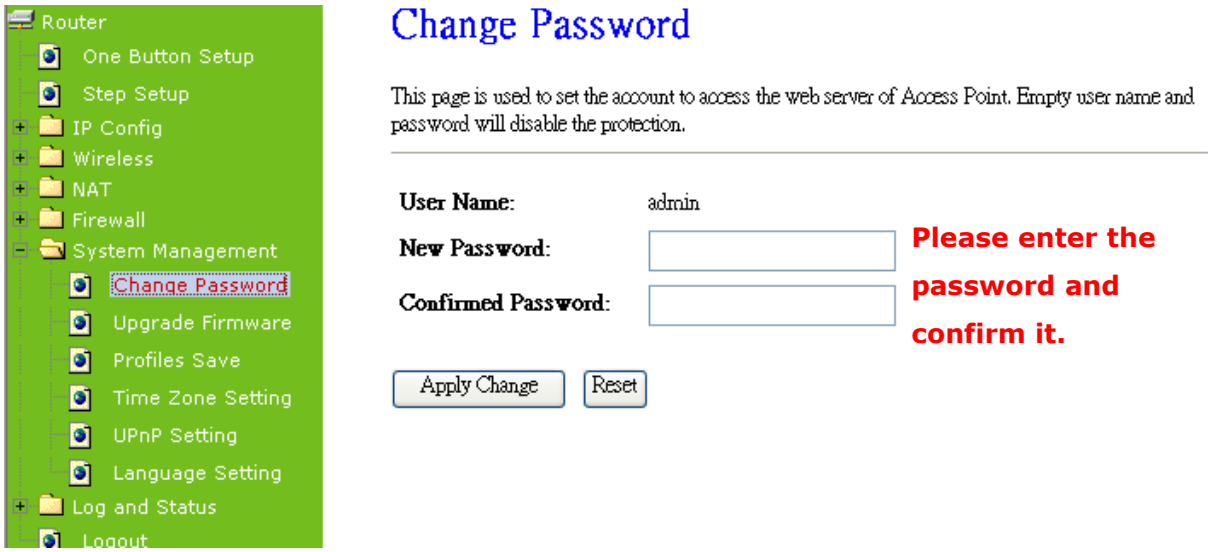
5.6 System Management

N+ Broadband Router provides system management including password changing, upgrade firmware, time setting, user's account setting and other detail settings. Following is detail explanation for each.



5.6.1 Change Password

Administrator can set or change their password in this section.



1. New Password

Enter the new password you want to change.

2. New Password (Confirm)

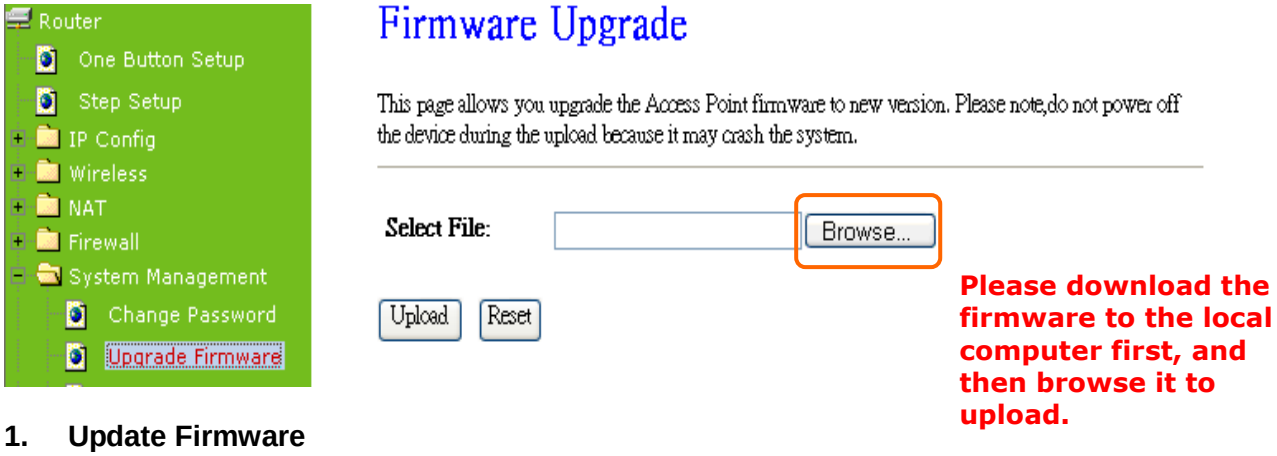
Enter the new password again for confirming.

3. Apply & Cancel

Click **Apply** to continue or **Cancel** to clear the settings on this page.

5.6.2 Upgrade Firmware

This function can upgrade the firmware of the router. There is certain risk while doing firmware upgrading. Firmware upgrade is not recommended unless the significant faulty is found and published on official website. If you feel the router has unusual behaviors and is not caused by the ISP and environment. You can check the website (http://www.sapido.com.tw) to see if there is any later version of firmware. Download the firmware to your computer, click **Browser** and point to the new firmware file. Click **Upload** to upgrade the firmware. You can't make any move unless the machine reboot completely.



1. Update Firmware

Click on **Browse…** button to search your local hard drive and locate the firmware to be used for update.

2. Upload & Reset:

Click **Upload** to upgrade the firmware or **Reset** to restore to factory default Settings

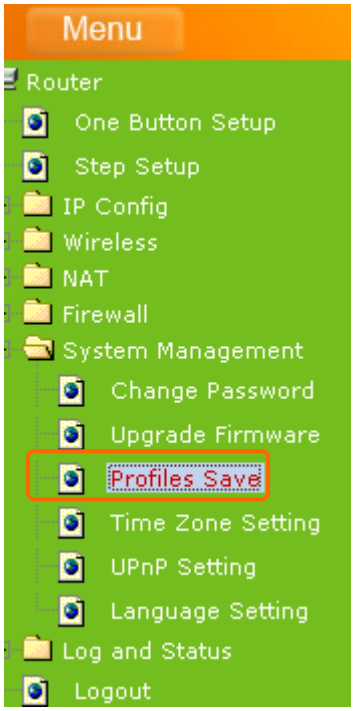
Note: 1. To prevent the firmware upgrading interrupted by other wireless signals and caused failure. We recommend using wired connection to do the upgrading.
2. The upgrade firmware will not remove your previous settings.

- **Reset button:**

On the back of this router, there is a reset button. If you can not login the administrator page by forgetting your password; or the router has problem you can't solve. You can push the reset button for 5 seconds with a stick. The router will reboot and all settings will be restored to factory default settings. If the problem still exists, you can visit our web site to see if there is any firmware for download to solve the problem.

5.6.3 Profiles Save

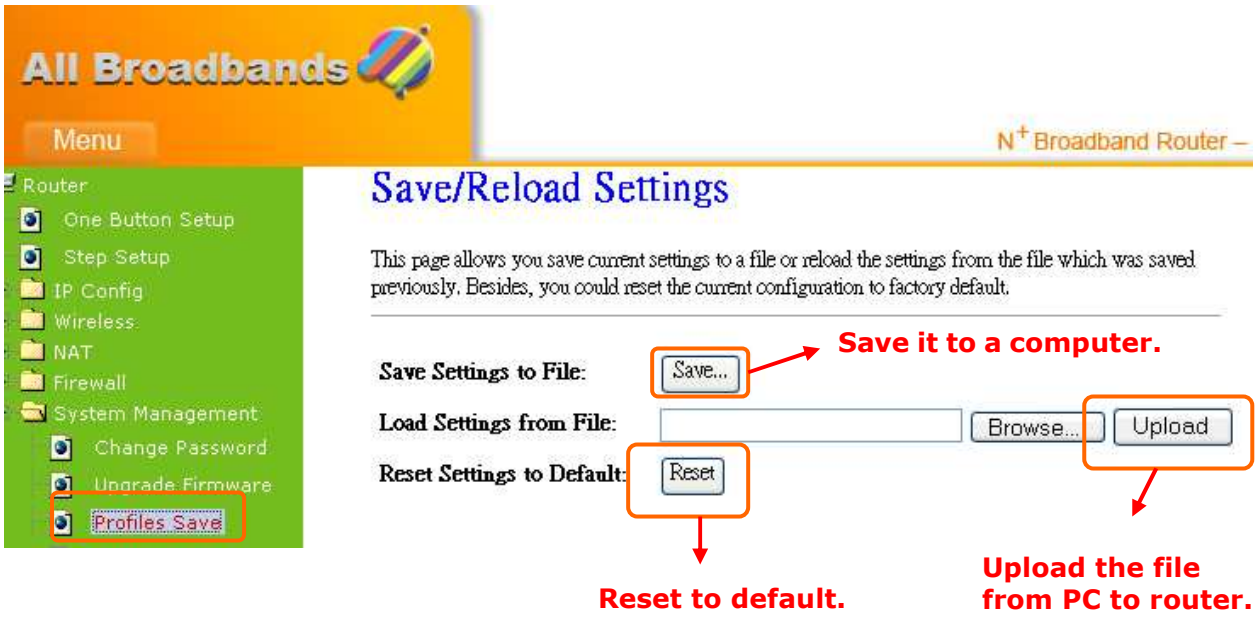
To back up the current configuration setting or load the backup data, also you can restore N+ Broadband Router to default setting by this function.



1. Save Settings To File

Click on **Save** button for saving the configuration setting into assigned location.

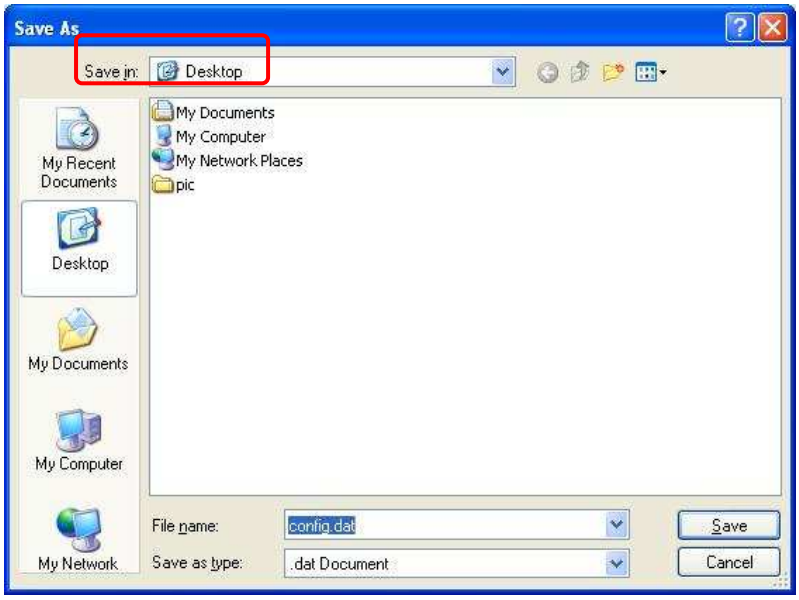
Users can save or restore the setting profile, and reset the setting to factory default.

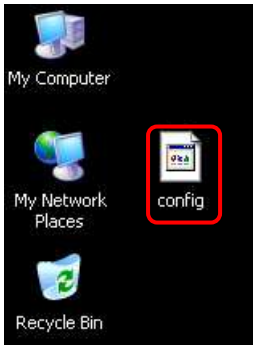


*Please see the following instructions.

a. Please click **Save…**, a prompt window will ask user to save config.dat file. (Figure 1), please select the location (Figure 2), for example: the desktop (Figure 3).
A pop window will show up and ask to save **config.dat** file. please select the location (Figure 2), for example: the desktop (Figure 3).

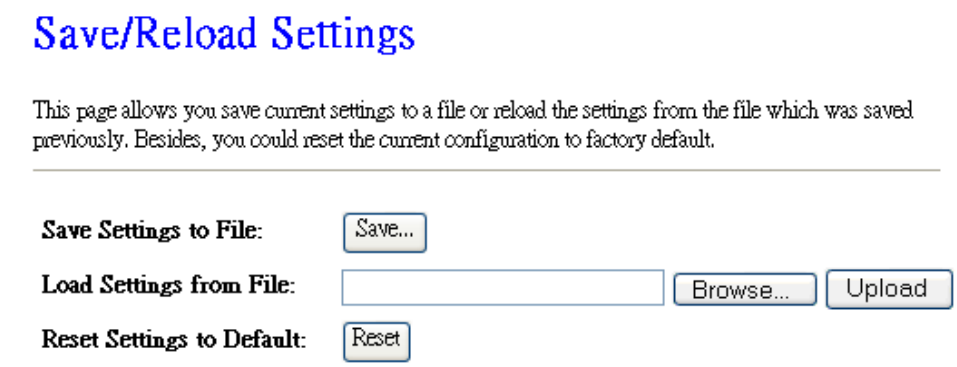
Please select the location, for example: the desktop.



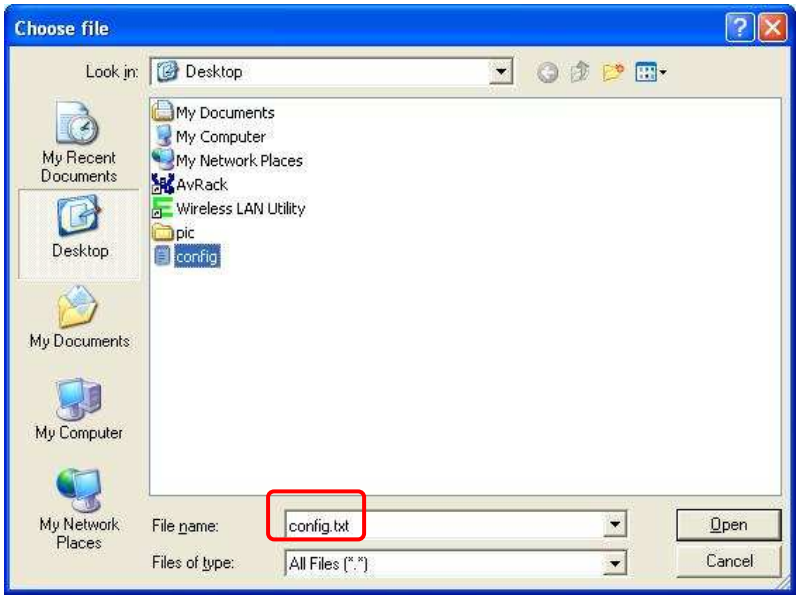


2. Load Settings From File

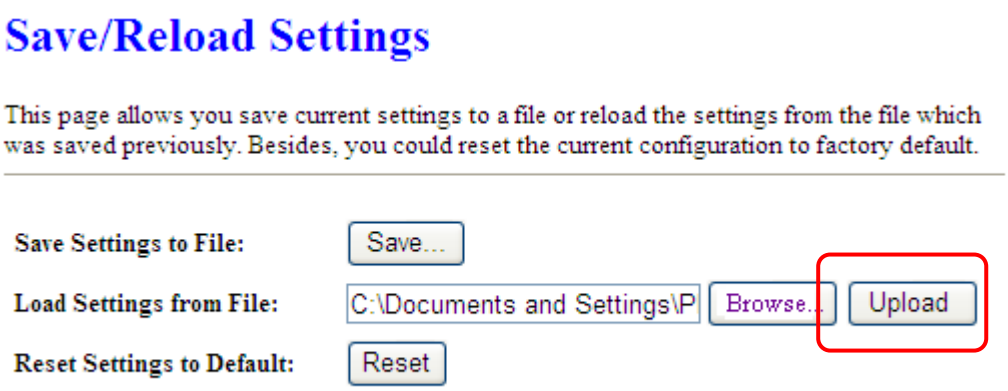
Click on "**Browse…**" button for searching the saving configuration from hard drive, and then click on Upload button to load all the settings into the router.



Select the **config.dat** file.



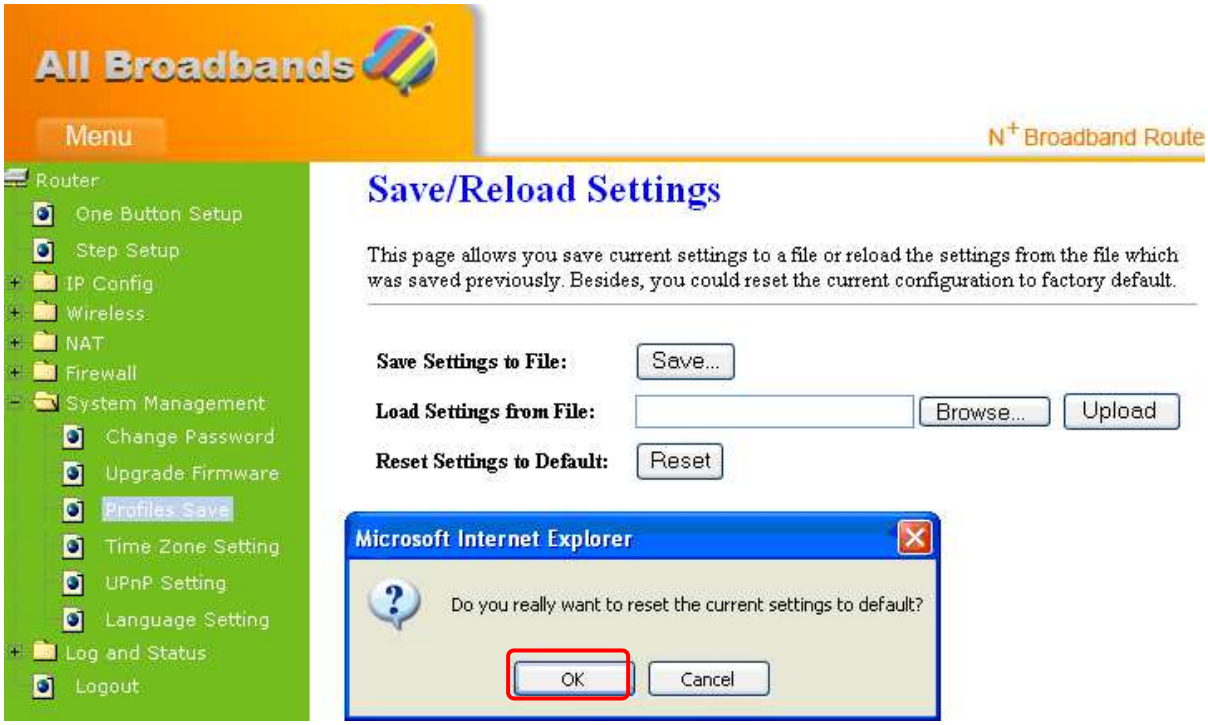
Click **Upload** to retrieve.



When you see the screen below, the updating is completed. Please click **OK** to return to the main menu.

3. Reset Setting to Default

After you have tried other methods for troubleshooting your network, you may choose to restore N+ Broadband Router to the factory default settings.

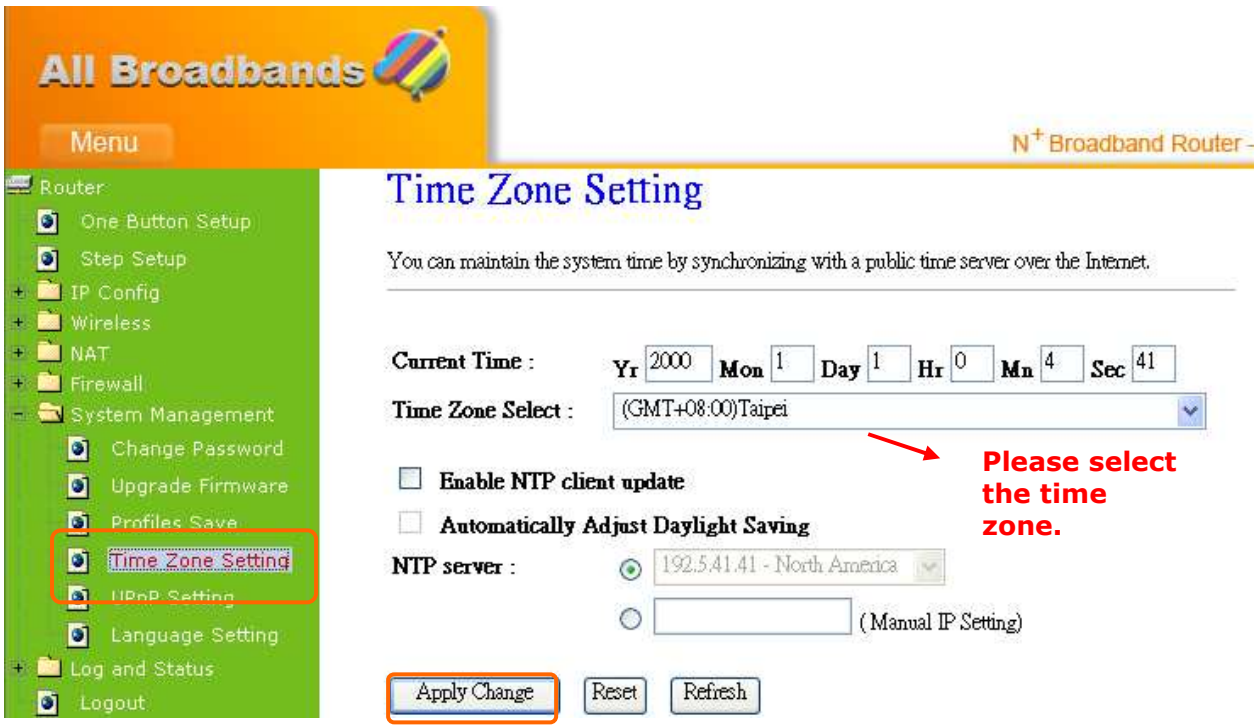


When you see the screen below, the resetting is completed. Please click **OK** and return to the main menu.

5.6.4 Time Zone Setting

The System time is the time used by N+ Broadband Router for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If a NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.

This function allows users to select their time zone and NTP server. Users can adjust the time manually or through the NTP server.



1. Current Time

Users can input the time manually.

2. Time Zone Select

Select your time zone location from the drop-down list.

3. Enable NTP client update

Check to enable NTP client update.

4. Automatically Adjust Daylight Saving

If you are in daylight saving time area, please enable this item.

5. NTP server

Please select the NTP server from the pull-down list, or you can enter the NTP server IP address manually.

6. Apply Changes & Reset & Refresh

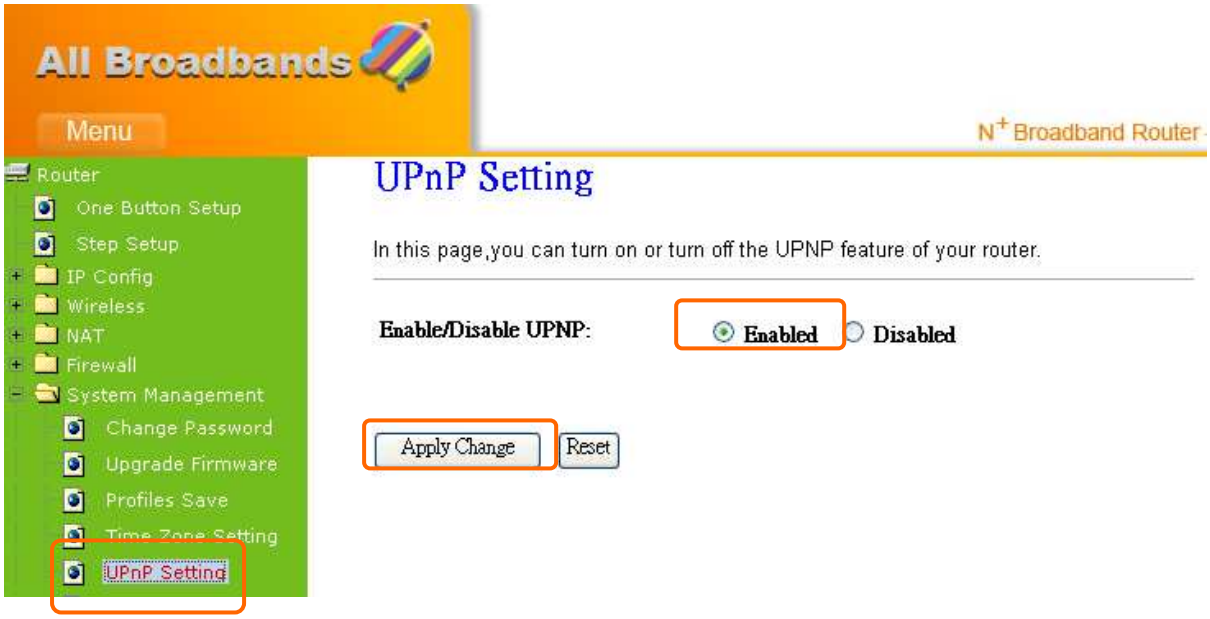
Please click on **Apply Changes** to save the setting data. Or you may click on **Reset** to clear all the input data. Or you may click on **Refresh** to update the system time on the screen.

7. NTP Server Type & Default NTP Server

Choose **"General Time Server" and select** the NTP Server from the drop-down list or choose "Customized Time Server" and enter the server by manual.

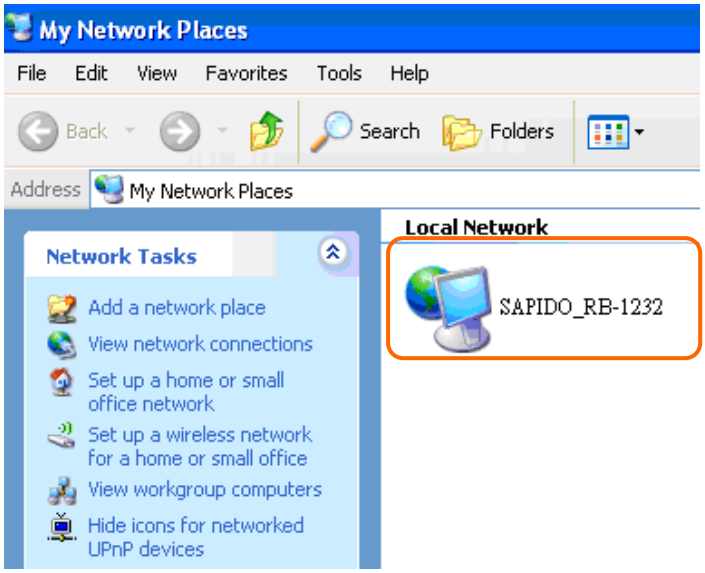
5.6.5 UPnP Setting

UPnP (Univsersal Plug and Play) allows users to connect their UPnP-enabled broadband router, printer server and other devices right to the network with zero-configuration, meaning easier setup for installing the device on the network. The automatic discovery feature enables the device to obtain an IP address, present and describe itself to other devices and PCs on the network without having to install drivers, but to configure and use those devices.



1. Enable/Disable UPnP

Enabling UPNP, click **My Network Places,** and user can open the web GUI by just clicking on the **Internet Gateway Device** icon.



5.6.6 Language Setting

N+ Broadband Router provides a user friendly interface in 12 languages. You can create your own language interface by following steps.

Step 1. Select Language: Select your preferred language from the drop down list, for example, Deutsch, and then click **Apply Changes**.

Step 2. When you see the screen with message in your selected language, the Language setup is completed.

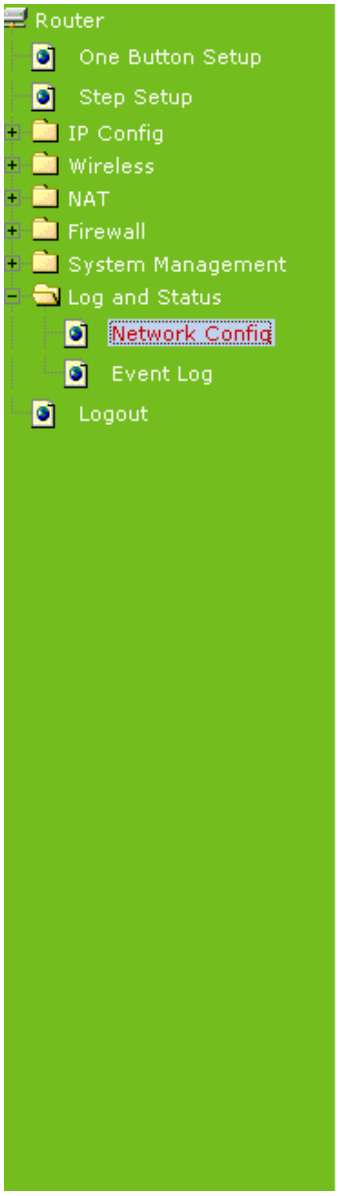
Note: In order to prevent the incomplete translation, you can press “CTRL+F5” to force reload of the page.

5.7 Log & Status

N+ Broadband Router provides the log list and connection status for user to check.

5.7.1 Network Config

Network Configuration shows the firmware version and the connection status of LAN, WAN and Wireless.



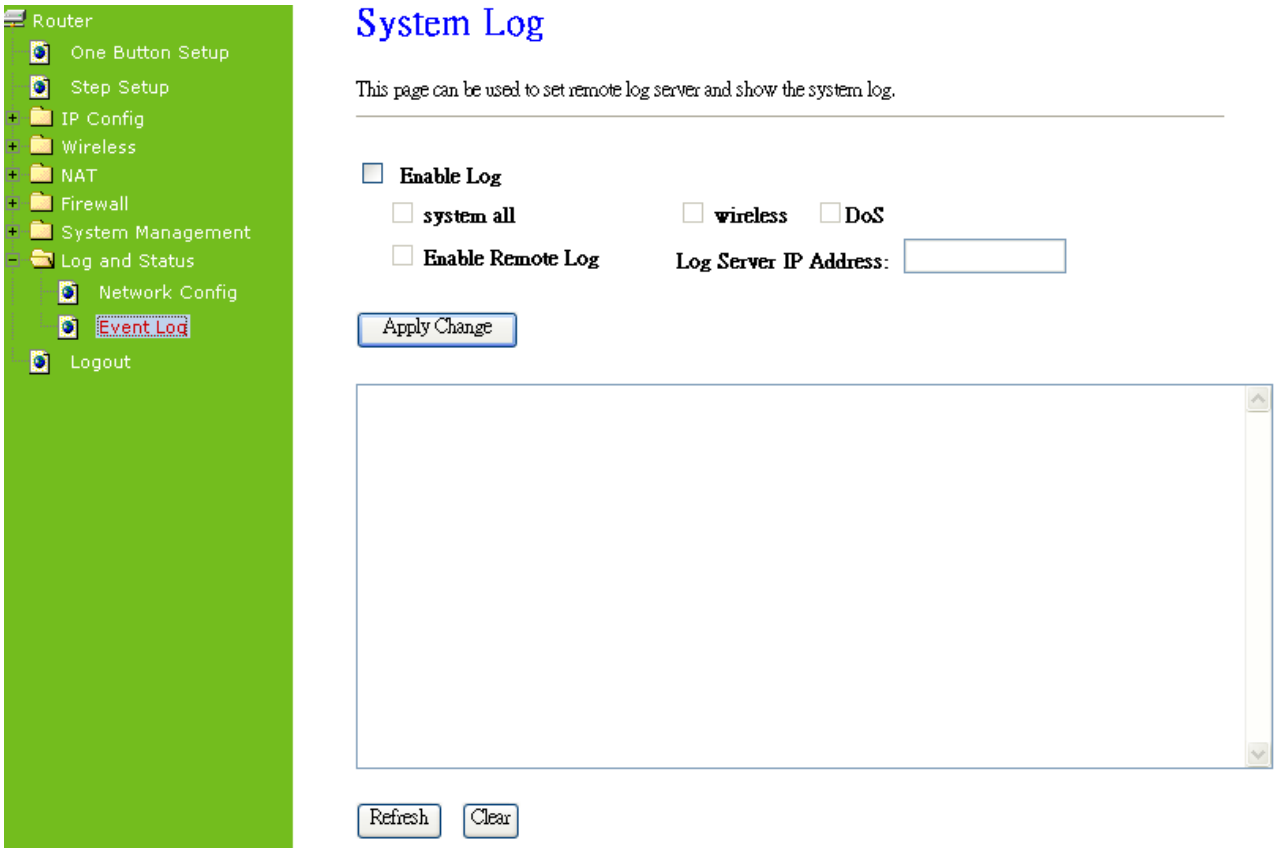
Network Config

This page shows the current status and some basic settings of the device.

System	
Uptime	0day:0h:13m:51s
Firmware Version	Ver1.0.1
WirelessConfiguration	
Mode	AP
Band	2.4 GHz (B+G+N)
SSID	SAPIDO_All_Broadband_Router
Channel Number	11
Encryption	Disabled
MAC Address	00:e0:4c:81:96:b1
Associated Clients	1
LAN Configuration	
Attain IP Protocol	Fixed IP
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DHCP Server	Enabled
MAC Address	00:e0:4c:81:96:b1
WAN Configuration	
Attain IP Protocol	3.5G Disconnected
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
MAC Address	00:e0:4c:81:96:b9

5.7.2 Event Log

N+ Broadband Router provides system logs for review.



1. Enable Log

Select Enable Log to record the system log

2. system all, wireless & DoS

Select **Wireless, DoS** or **system all** to record

3. Enable Remote Log

You may choose to enable the remote event log or not.

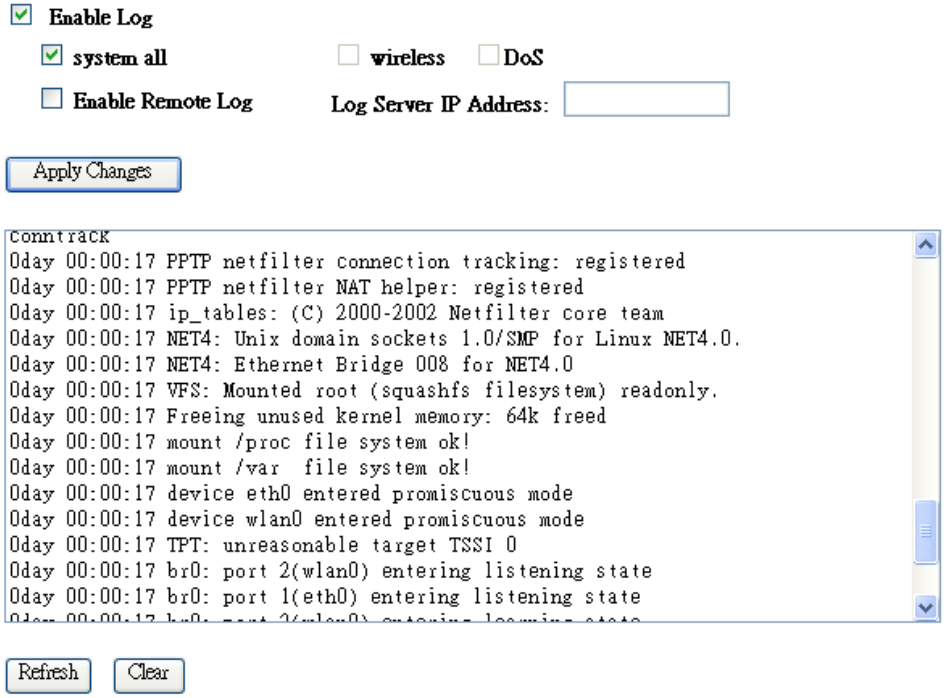
4. Log Server IP Address

Please input the log server IP Address.

5. Apply Changes & Refresh & Clear

Click on **Apply Changes** to save the setting data. Click on **Refresh** to renew the system time, or on **Clear** to clear all the record.

- After clicking **Apply Changes** to record the event log, it will be shown as the example below.



5.8 Logout

Click **Logout** on the bottom menu to exit and go back to GUI login home page.

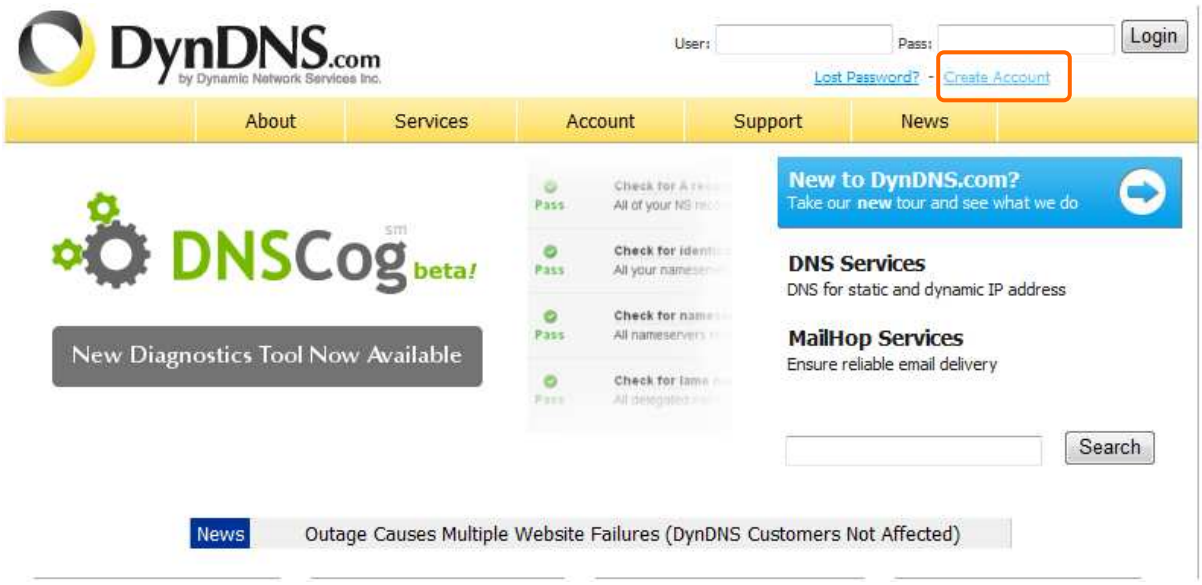
Chapter 6 DDNS Service Application

DDNS is a service changes the dynamic IP to the static IP. The settings of DDNS can solve the problem of being given the different IP by router every time. After setting the Router, your host name would correspond to your dynamic IP. Moreover, via the host name application, it could be easier for you to use FTP, Webcam and Printer remotely.

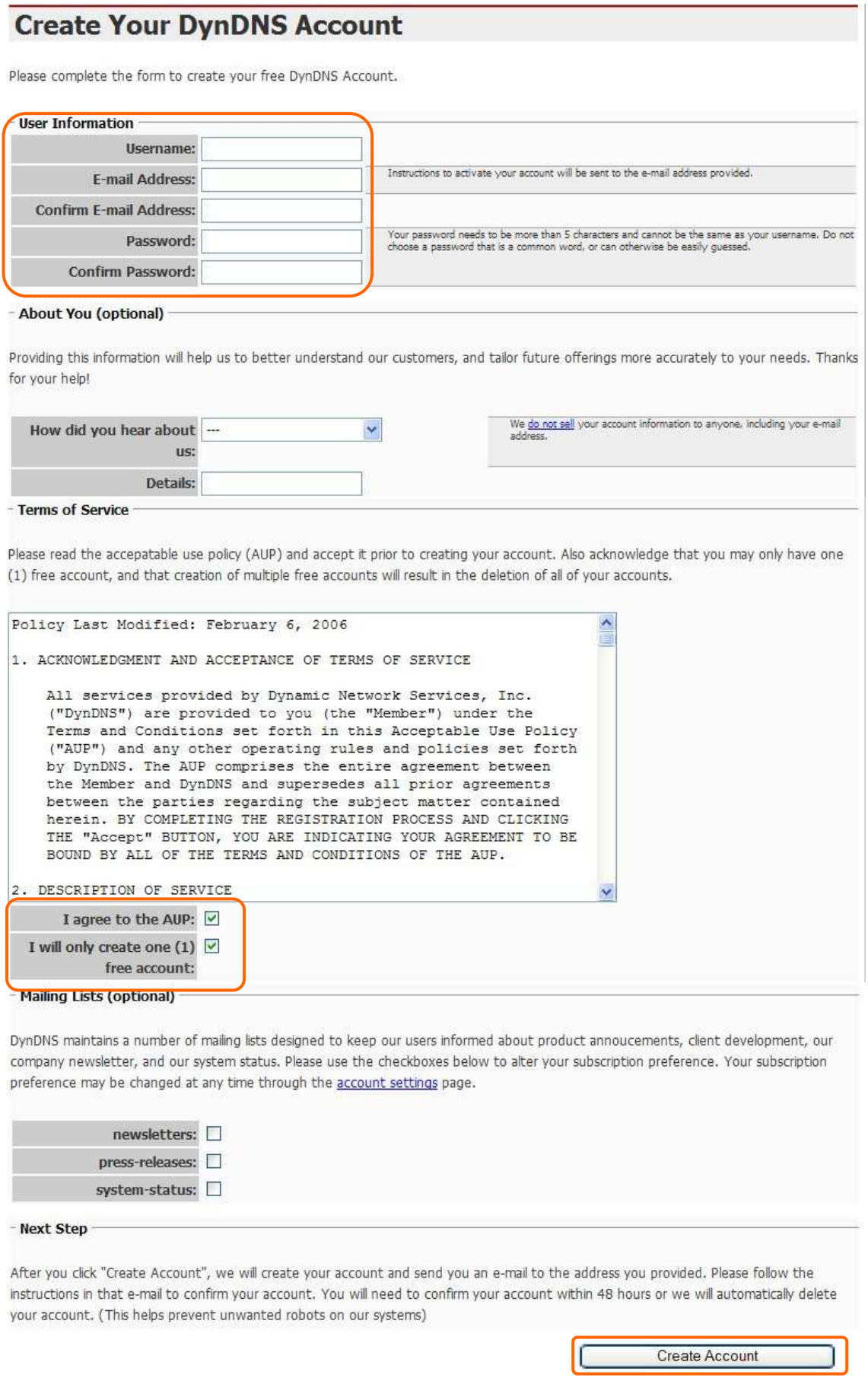
Dynamic DNS allows you to make an assumed name as a dynamic IP address to a static host name. Please configure the dynamic DNS below. Please select **Dynamic DNS** under the **IP Config** folder, and follow the instructions below to enter the **Dynamic DNS** page to configure the settings you want.

If you don't have a DDNS account, please follow the steps to complete your DDNS with Dynamic IP settings.

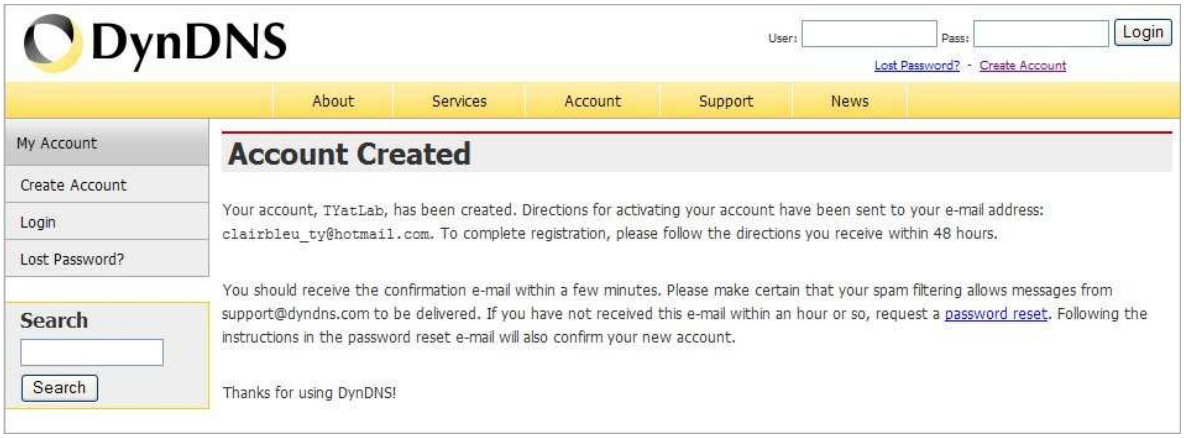
Step 1. First access the Internet and fill http://www.dyndns.com/ into the address field of your web browser, then click **Create Account**.



Step 2. Fill in the form as required, and then click on **Create Account** button.



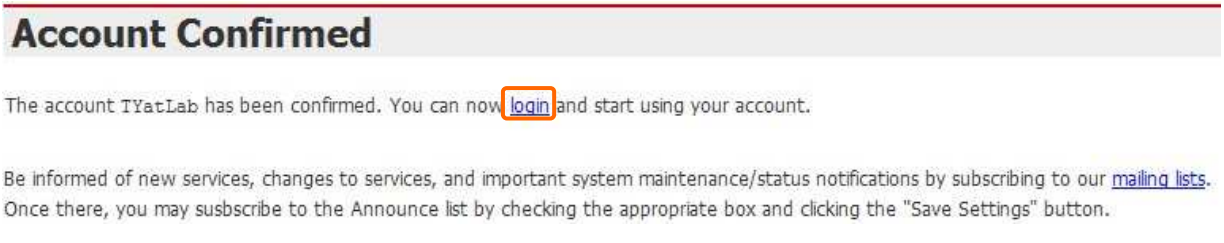
Step 3. When you got this account created message, close it, and check your mailbox. You would get a mail from DynDNS website.



Step 4. Click on the indicated address within your mail to confirm.

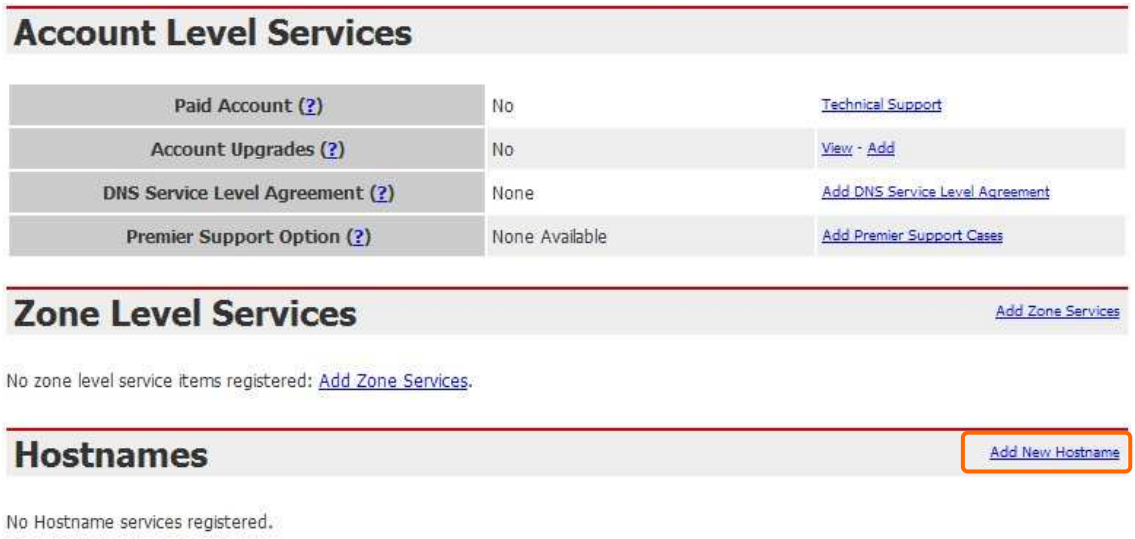
```
Your DynDNS Account 'TYatLab' has been created. You need to
visit the confirmation address below within 48 hours to complete
the account creation process:

https://www.dyndns.com/account/confirm/Z3OpStScjR_Ypn82CNMyZQ

Our basic service offerings are free, but they are supported by
our paid services. See http://www.dyndns.com/services/ for a
full listing of all of our available services.

If you did not sign up for this account, this will be the only
communication you will receive. All non-confirmed accounts are
automatically deleted after 48 hours, and no addresses are kept
on file. We apologize for any inconvenience this correspondence
may have caused, and we assure you that it was only sent at the
request of someone visiting our site requesting an account.

Sincerely,
The DynDNS Team
```

Step 5. Click on **login.**

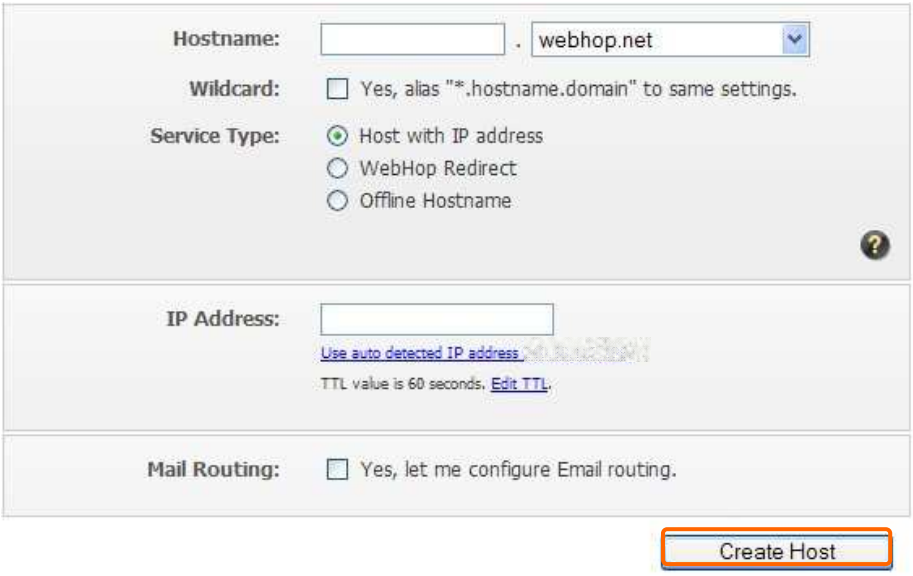


Step 6. Click **My Services** after logging in.

Step 7. Click **Add New Hostname**.



Step 8. Put in your favorite hostname and service type, and then click **Create Host** after finished.



Step 9. Your hostname has been created when you see the following page.

Chapter 7 Q & A

7.1 Installation

1. Q: Where is the XDSL Router installed on the network?

A: In a typical environment, the Router is installed between the XDSL line and the LAN. Plug the XDSL Router into the XDSL line on the wall and Ethernet port on the Hub (switch or computer).

2. Q: Why does the throughput seem slow?

A: To achieve maximum throughput, verify that your cable doesn't exceed 100 meter. If you have to do so, we advise you to purchase a bridge to place it in the middle of the route in order to keep the quality of transmitting signal. Out of this condition you would better test something else.

- Verify network traffic does not exceed 37% of bandwidth.
- Check to see that the network does not exceed 10 broadcast messages per second.
- Verify network topology and configuration.

7.2 LED

1. Why doesn't N+ Broadband Router power up?

A: Check if the output voltage is suitable, or check if the power supply is out of order.

2. The Internet browser still cannot find or connect to N+ Broadband Router after verifying the IP address and LAN cable, the changes cannot be made, or password is lost.

A: In case N+ Broadband Router is inaccessible, you can try to restore its factory default settings. Please press the "Reset" button and keep it pressed for over 7 seconds and the light of STATUS will vanish. The LEDs will flash again when reset is successful.

3. Why does N+ Broadband Router shut down unexpectedly?

A: Re-plug your power adapter. Then, check the STATUS indicator; if it is off, the internal flash memory is damaged. For more help, please contact with your provider.

7.3 IP Address

1. Q: What is the default IP address of the router for LAN port?

A: The default IP address is 192.168.1.1 with subnet mask 255.255.255.0

2. Q: I don't know my WAN IP.

A: There are two ways to know.

Way 1: Check with your Internet Service Provider.

Way 2: Check the setting screen of N+ Broadband Router. Click on **Status & Log** item to select **Network Configuration** on the Main Menu. WAN IP is shown on the WAN interface.

3. How can I check whether I have static WAN IP Address?

A: Consult your ISP to confirm the information, or check Network Configuration in N+ Broadband Router's Main Menu.

4. Will the Router allow me to use my own public IPs and Domain, or do I have to use the IPs provided by the Router?

A: Yes, the Router mode allows for customization of your public IPs and Domain.

7.4 OS Setting

1. Why can't my computer work online after connecting to N+ Broadband Router?

A: It's possible that your Internet protocol (TCP/IP) was set to use the following IP address. Please do as the following steps. (Windows 2000 & XP) **Start**＞**Settings**＞ **Network and Dial-up Connections**＞double click on **Internet Protocol(TCP/IP)**＞ select **obtain IP address automatically**＞ Click on **OK** button. Then, open Internet browser for testing. If you still can't go online, please test something else below.

- Verify network configuration by ensuring that there are no duplicate IP addresses.
- Power down the device in question and ping the assigned IP address of the device. Ensure no other device responds to that address.

1. Check that the cables and connectors or use another LAN cable.

2. Q: Web page hangs, corrupt downloads, or nothing but junk characters is being displayed on the screen. What do I need to do?

A: Force your NIC to 10Mbps or half duplex mode, and turn off the "Auto-negotiate" feature of your NIC as a temporary measure. (Please look at the Network Control Panel, in your Ethernet Adapter's Advanced Properties tab.)

3. Q: Why can't I connect to the Web Configuration?

A: you can remove the proxy server settings in your web browser.

7.5 N+ Broadband Router Setup

1. Q: Why does N+ Broadband Router's setup page shut down unexpectedly?

A: If one of the pages appears incompletely in N+ Broadband Router's setup pages, please click on Logout item on the Main Menu before shutting it down. Don't keep it working. Then, close Internet browser and open it again for going back to the previous page.

2. Q: Why can't my USB devices and LAN ports work properly after setting the DHCP?

A: There are two rules over here.

Rule1: After connecting USB devices, please reboot your Router.

Rule2: Before finishing the DHCP setup, please don't connect any computer to LAN ports, because the conflict of having the same IP may occur and cause some computers a lot of trouble.

※Notice: Make sure that you always click on the Apply button after configuring each setting. And in order to let other LAN ports work properly, please reboot your PC.

3. Q: I don't know how to configure DHCP.

A: DHCP is commonly used in the large local network. It allows you to manage and distribute IP addresses from 2 to 254 throughout your local network via N+ Broadband Router. Without DHCP, you would have to configure each computer separately. It's very troublesome. Please Open **Internet browser** > Input **192.168.1.1 in the website blank field** > Select **DHCP Server under** the **IP Config Menu**. For more information, please refer to 3.3.2 (Router Mode) or 4.3.1 (AP Mode).

4. Q: How do I upgrade the firmware of N+ Broadband Router?

A: Periodically, a new Flash Code is available for N+ Broadband Router on your product supplier's website. Ideally, you should update N+ Broadband Router's Flash Code

using **Upgrade Firmware** on the **System Management** menu of N+ Broadband Router Settings.

5. Q: My **N+ Broadband Router** cannot connect to the ISP?

A: There are three possible solutions.

1. Check the Cable/XDSL modem is power on.
2. Check the Cable/XDSL link light is on to verify a good physical connection.
3. Check the WAN port LED to verify if the Cable/XDSL modem is connected to the router:

If your ISP Login method is following, please make sure the username and password are correct or not.

If your ISP is using dynamic IP addressing (DHCP) then the DHCP protocol does not have the authentication feature. Some Cable service providers often use the following to determine user's identification.

6. Q: Why is that I can ping to outside hosts, but cannot access Internet websites?

A: Check the DNS server settings on your PC. You should get the DNS servers settings from your ISP. If your PC is running a DHCP client, remove any DNS IP address setting. As the router assign the DNS settings to the DHCP-client-enabled PC.

7. Q: N+ Broadband Router couldn't save the setting after click on Apply button?

A: N+ Broadband Router will start to run after the setting finished applying, but the setting isn't written into memory. Here we suggest if you want to make sure the setting would be written into memory, please reboot the device via **Reboot** under **System Management** directory**.**

7.6 Wireless LAN

1. Q: Why couldn’t my wireless notebook work on-line after checking?

A: Generally, Wireless networks can sometimes be very complicated to set up, particularly if you're dealing with encryption and products from different vendors. Any number of variables can keep your workstations from talking to each other. Let's go over some of more common ones.

For starters, verify that your router and your workstation are using the same SSID descriptions. SSID acts as a password when a mobile device tries to connect to the wireless network. The SSID also differentiates one WLAN from another, so all access points and all devices attempting to connect to a specific WLAN must use the same SSID. A workstation will not be permitted to connect to the network unless it can provide this unique identifier. This is similar to the function of your network's Workgroup or Domain name.

When you're experiencing conductivity problems, it is always best to keep things simple. So next you are going to do is that, please disable any WEP encryption you might have configured.

Successful implementation of encryption also includes the use of a shared key. A HEX key is the most common, but other formats are also used. This key identifies the workstation to the router as a trusted member of this network. Different manufacturers can implement this key technology in ways that might prevent them from working correctly with another vendor's products. So pay attention to detail is going to be the key to a successful installation.

Next make sure the router and the NIC are configured to use the same communications channel. There are normally 11 of them, and the default channel can also vary from vendor to vendor. You might also want to confirm that the router has DHCP services enabled and an address pool configured. If not, the NIC won't be able to pick up an IP address. I have run across a few access points that offer DHCP services but do not assign all of the needed IP information to the NIC. As a result, I was able to connect to the network, but could not browse the web. The point is, don't assume anything. Verify for yourself that all of the required settings are being received by the workstation.

Finally, you might want to keep the system you're trying to configure in the same room as the router, at least during the initial configuration, in order to minimize potential interference from concrete walls or steel beams.

2. Q: My PC can't locate the Wireless Access Point.

A: Check the following:

- Your PC is set to Infrastructure Mode. (Access Points are always in Infrastructure Mode.)
- The SSID on your PC and the Wireless Access Point are the same. Remember that the SSID is case-sensitive. So, for example "Workgroup" does NOT match "workgroup".
- Both your PC and the Wireless Access Point must have the same setting for WEP. The default setting for the Wireless Router is disabled, so your wireless station should also have WEP disabled.
- If WEP is enabled on the Wireless Router, your PC must have WEP enabled, and the key must match.
- If the Wireless Router's Wireless screen is set to Allow LAN access to selected Wireless Stations only, then each of your Wireless stations must have been selected, or access will be blocked.
- To see if radio interference is causing a problem, see if connection is possible when close to the Wireless Access Point. Remember that the connection range can be as little as 100 feet in poor environments.

3. Q: Wireless connection speed is very slow.

A: The wireless system will connect at highest possible speed, depending on the distance and the environment. To obtain the highest possible connection speed, you can experiment with following:

- Access Point location: Try adjusting the location and orientation of the Access Point.
- Wireless Channel: If interference is the problem, changing to another channel may show a marked improvement.
- Radio Interference: Other devices may be causing interference. You can experiment by switching other devices off, and see if this helps. Any "noisy" devices should be shielded or relocated.
- RF Shielding: Your environment may tend to block transmission between the wireless stations. This will mean high access speed is only possible when close to the Access Point.

4. Q: Some applications do not run properly when using the Wireless Router.

A: The Wireless Router processes the data passing through it, so it is not transparent. Use the Special Application feature to allow the use of Internet applications which do

not function correctly. If this does solve the problem, you can use the DMZ function. This should work with almost every application, but:

- It is a security risk, since the firewall is disabled.
- Only one (1) PC can use this feature.

5. Q: I can't connect to the Wireless Router to configure it.

A: Check the following:

- The Wireless Router is properly installed, LAN connections are OK, and it is powered ON.
- Make sure that your PC and the Wireless Router are on the same network segment.
- If your PC is set to "Obtain an IP Address automatically" (DHCP client), restart it.
- If your PC uses a Fixed (Static) IP address, make sure that it is using an IP Address within the range 192.168.1.129 to 192.168.1.253 and thus compatible with the Wireless Router's default IP Address of 192.168.1.254. Also, the Network Mask should be set to 255.255.255.0 to match the Wireless Router. In Windows, you can check these settings by using Control Panel ~ Network to check the Properties for the TCP/IP protocol.

6. Q: The WinXP wireless interface couldn't communicate the WEP with N+ Broadband Router's wireless interface.

A: The default WEP of WinXP is **Authentication Open System - WEP**, but the WEP of N+ Broadband Router is only for **Shared Key - WEP**, it caused both sides couldn't communicate. Please select the WEP of WinXP from Authentication Open System to **Pre-shared Key - WEP**, and then the WEP wireless interface between WinXP and N+ Broadband Router would be communicated.

7.7 Support

1. Q: What is the maximum number of IP addresses that the XDSL Router will support?

A: The Router will support to 253 IP addresses with NAT mode.

5. Q: Is the Router cross-platform compatible?

A: Any platform that supports Ethernet and TCP/IP is compatible with the Router.

7.8 Others

1. Q: Why can't I receive corrupted FTP downloads?

A: If you are experiencing corrupted files when you download a file with your FTP client, try using another FTP program.

2. Q: Why does the router dial out for PPPoE mode very often?

A: Normally some of game, music or anti-virus program will send out packets that trigger the router to dial out, you can close these programs. Or you can set the idle time to 0, then control to dial out manually.

3. Q: What can I do if there is already a DHCP server in LAN?

A: If there are two DHCP servers existing on the same network, it may cause conflict and generate trouble. In this situation, we suggest to disable DHCP server in router and configure your PC manually.

7.9 USB Device

1. Q: How many USB devices can be connected to the Product?

A: N+ Broadband Router supports maximum of 1 USB ports.

Chapter 8 Appendices

8.1 Operating Systems

1. Microsoft：Windows 2000, XP, Vista 32bit and the following related versions.
2. Apple：Mac OS X 10.4.7, Leopard and the following related versions.
3. Linux：Redhat 9, Fedora 6 & 7, Ubuntu 7.04 and the following related versions.

8.2 Browsers

1. Internet Explorer ver. 6 and 7 and the following related versions.
2. FireFox ver. 2.0.0.11 and the following related versions.3.
3. Safari ver. 3.04 and the following related versions.

8.3 Communications Regulation Information

Should any consumers need to learn more information, services and supports, please contact the supplier of your product directly.