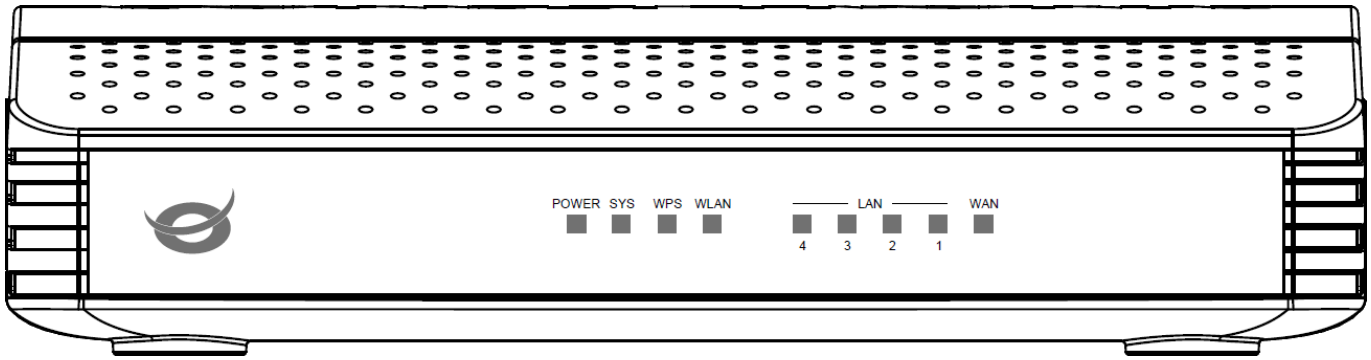
Conceptronic



150N Wireless LAN Broadband Router

User's Manual

Version: 3.0

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Chapter I: Introduction

Thank you for purchasing the Conceptronic C150BRS4 Wireless Broadband Router!

The Conceptronic C150BRS4 utilizes advanced MIMO technology and increases over 8 times transmission range of ordinary 802.11g products. Compatible with IEEE802.11n (Draft 4.0) and IEEE802.11g/b standards, it can provide up to 150Mbps stable transmission rate. Additionally, it includes router, wireless access point, four-port switch and firewall in one, dedicated to SOHOs (Small Office/Home Office) and family networking.

It supports WDS (Wireless Distribution System) function for repeating and amplifying the signals to extend the wireless network coverage. Besides, the Router also supports all of the latest wireless security features, such as 64/128-bit WEP, WPA, WPA2, WPA&WPA and WPS (PBC and PIN) encryption methods, packet filtering and port forwarding, to prevent unauthorized access and protect your network against malicious attack.

In addition, URL and MAC address filtering can take it easy for parents and network administrator to manage network life and QoS bandwidth control over specific computer's downloading speed is supported as well. Moreover, UPnP and WMM support can smooth your MSN voice better, and the included Setup Wizard on CD-ROM will be easy and fast for non-savvy users to install the device and access to the Internet.

1-1. Product Features

- Includes router, wireless access point, four-port switch and firewall in one
- Provides up to 150Mbps uploading and downloading speed
- Supports two WPS (Wi-Fi Protected Setup) encryption methods: PBC and PIN
- Compliant to IEEE802.11n, IEEE802.11g, IEEE802.11b, IEEE802.3 and IEEE802.3u standards
- Supports over 8 times transmission range of 11G products
- Supports 64/128-bit WEP, WPA, WPA2, WPA&WPA2 encryption methods
- Supports RTS/CTS protocol and data partitioning function
- Provides one 10/100Mbps Auto-Negotiation Ethernet WAN port
- Provides four 10/100Mbps Auto-Negotiation Ethernet LAN ports
- Supports xDSL/Cable MODEM, static and dynamic IP in community networking
- Supports remote/local Web management
- Supports WMM to better smooth your voice and video
- Supports SSID stealth mode and access control based over MAC address (up to 30 entries)
- Supports Auto MDI/MDIX
- Supports wireless Roaming technology for high-efficient wireless connections
- Supports auto negotiation/manual mode for 802.11b/802.11g/802.11n
- Supports UPnP and DDNS
- Supports Firefox 1.0, IE5.5 or above
- Supports SNTP
- Supports virtual server, DMZ host
- Built-in firewall for hacker's attack prevention
- Supports DHCP server/client
- Supports auto wireless channel selection
- Supports LAN access control to the Internet
- Provides syslog to record the status of the router
- Supports WDS wireless network extension
- Supports QoS function
- Detachable antennas provided

1-2. Safety information

In order to keep the safety of users and your properties, please follow the following safety instructions:

- This router is designed for indoor use only; DO NOT place this router outdoor.
- DO NOT put this router at or near hot or humid places, like kitchen or bathroom. Also, do not left this router in the car in summer.
- DO NOT pull any connected cable with force; disconnect it from the router first.
- If you want to place this router at high places or hang on the wall, please make sure the router is firmly secured. Falling from high places would damage the router and its accessories, and warranty will be void.
- Accessories of this router, like antenna and power supply, are danger to small children under 3 years old. They may put the small parts in their nose or month and it could cause serious damage to them. KEEP THIS ROUTER OUT THE REACH OF CHILDREN!
- The router will become hot when being used for long time (***This is normal and is not a malfunction)***. DO NOT put this router on paper, cloth, or other flammable materials.
- There's no user-serviceable part inside the router. If you found that the router is not working properly, please contact your dealer of purchase and ask for help. DO NOT disassemble the router, warranty will be void.
- If the router falls into water when it's powered, DO NOT use your hand to pick it up. Switch the electrical power off before you do anything, or contact an experienced technician for help.
- If you smell something strange, or even see some smoke coming out from the router or power supply, remove the power supply or switch the electrical power off immediately, and call dealer of purchase for help.

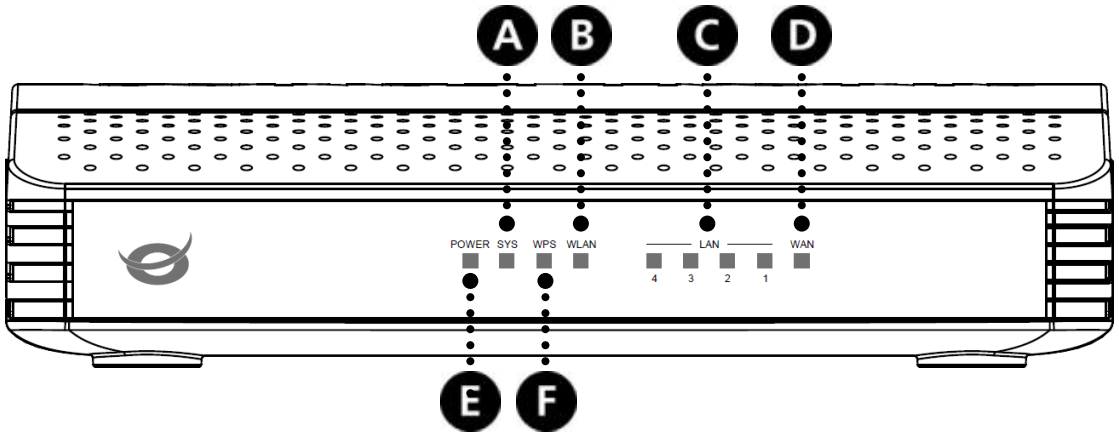
1-3. Package contents

The following items are present in the package of the Conceptronic 150N wireless router:

- Conceptronic C150BRS4 (v3.0) – 150N wireless router
- 1x antenna for the wireless router
- Power supply 9V DC, 1.0A
- Network (LAN) cable
- Product CD-ROM
- Multi language quick installation guide
- Warranty card & CE declaration booklet

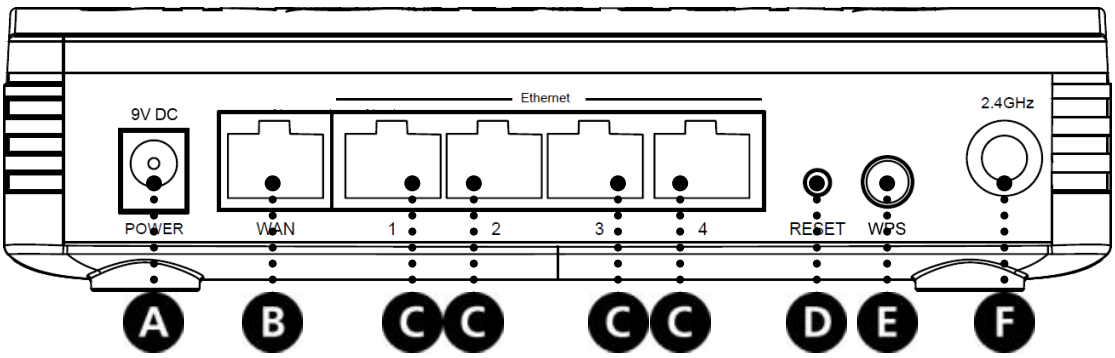
1-4. Familiar with your new wireless broadband router

1-4-1. Front panel



Nr	Description	Status	Status Explanation
A	SYS LED	**OFF**	The device is switched off
		ON - FLASHING	The device is switched on and ready to use
B	WLAN LED	**OFF**	Wireless network is switched off
		ON - FLASHING	Wireless network activity (sending or receiving data)
C	LAN LEDs	**OFF**	LAN port is not connected
	(1, 2, 3, 4)	**ON - STEADY**	LAN port is connected
		ON - FLASHING	LAN port activity (sending or receiving data)
D	WAN LED	**OFF**	WAN port is not connected
		ON - STEADY	WAN port is connected
		ON - FLASHING	WAN port activity (sending or receiving data)
E	Power LED	**OFF**	The device is switched off
		ON	The device is switched on
F	WPS LED	**OFF**	Wireless WPS function is off
		ON - FLASHING	Wireless WPS function is accepting WPS connections

1-4-2. Back panel



Nr	Description	Explanation
A	**Power connection**	Connect the power supply to the router
B	**WAN port**	Connect your broadband connection to the router
C	**LAN ports** (1 - 4)	Connect your computer(s)/network device(s) to the router
D	**Reset button**	Perform a reset (hold)
E	**WPS button**	Activate WPS function (short press)
F	**Wireless antenna connector**	R-SMA connector for wireless antenna connection

Chapter II: System and network setup

2-1. Build network connection

Please follow the following instruction to build the network connection between your new WIRELESS router and your computers, network devices:

A. Connect your xDSL / cable modem to the WAN port of router by Ethernet cable.

B. Connect all your computers, network devices (network-enabled consumer devices other than computers, like game console, or switch / hub) to the LAN port of the router.

C. Connect the A/C power adapter to the wall socket, and then connect it to the 'Power' socket of the router.

D. Please check all LEDs on the front panel. 'PWR' LED should be steadily on, WAN and LAN LEDs should be on if the computer / network device connected to the respective port of the router is powered on and correctly connected. If PWD LED is not on, or any LED you expected is not on, please recheck the cabling, or jump to ***'4-2 Troubleshooting'*** for possible reasons and solution.

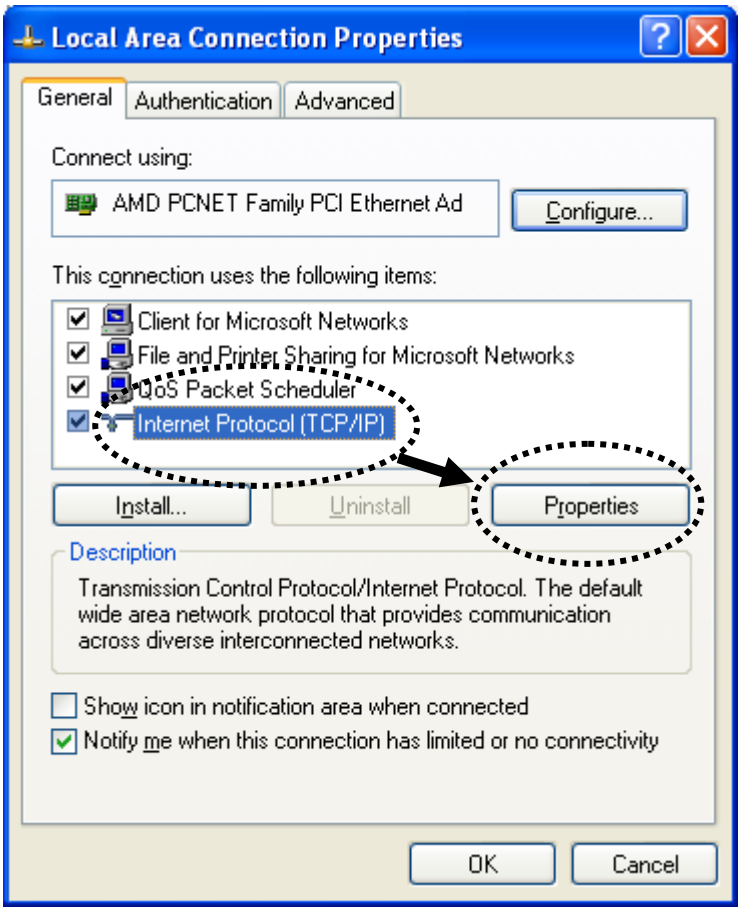
2-2. Connecting to wireless broadband router by web browser

After the network connection is built, the next step you should do is setup the router with proper network parameters, so it can work properly in your network environment.

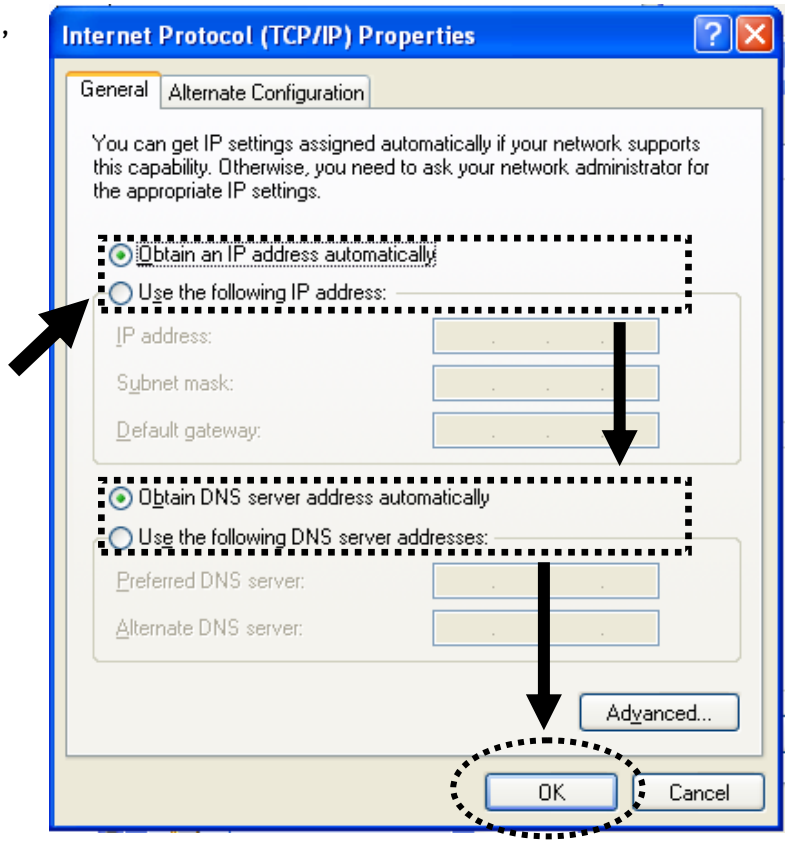
Before you can connect to the router and start configuration procedures, your computer must be able to get an IP address automatically (use dynamic IP address). If it's set to use static IP address, or you're unsure, please follow the following instructions to configure your computer to use dynamic IP address:

2-2-1. Windows XP IP address setup:

A. Click '**Start**' button (it should be located at lower-left corner of your computer), then click control panel. Double-click ***Network and Internet Connections*** icon, click ***Network Connections***, then double-click ***Local Area Connection***, ***Local Area Connection Status*** window will appear, and then click '**Properties**'

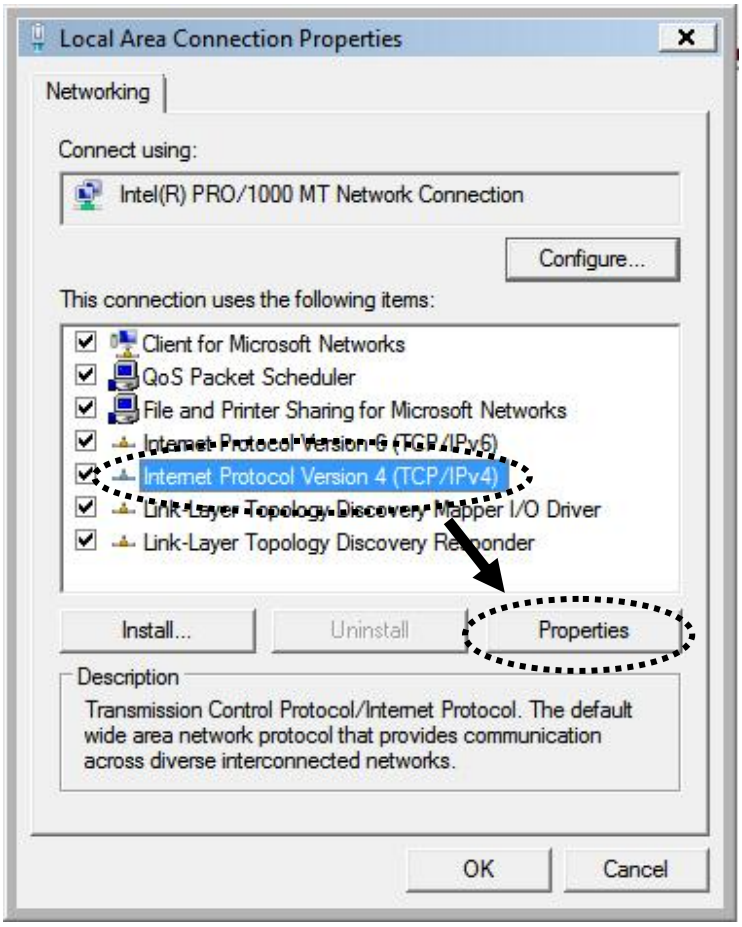


B. Select '**Obtain an IP address automatically**' and '**Obtain DNS server address automatically**', then click '**OK**'.

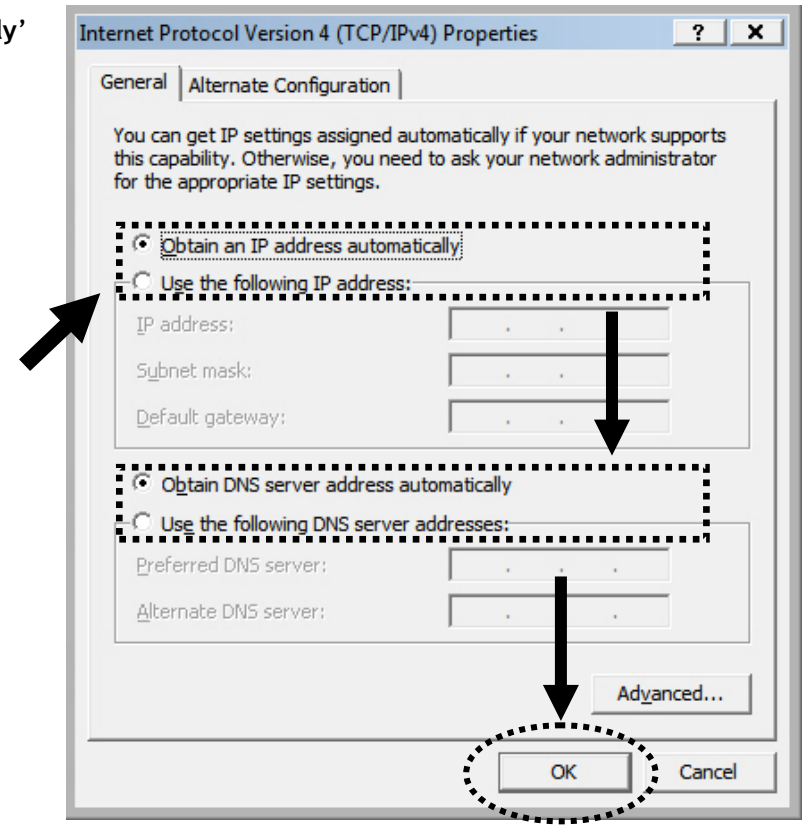


2-2-2. Windows Vista IP address setup:

A. Click '**Start**' button (it should be located at lower-left corner of your computer), then click control panel. Click ***View Network Status and Tasks***, and then click ***Manage Network Connections***. Right-click ***Local Area Network, then select 'Properties'***. ***Local Area Connection Properties*** window will appear, select '**Internet Protocol Version 4 (TCP / IPv4)**', and then click '**Properties**'.

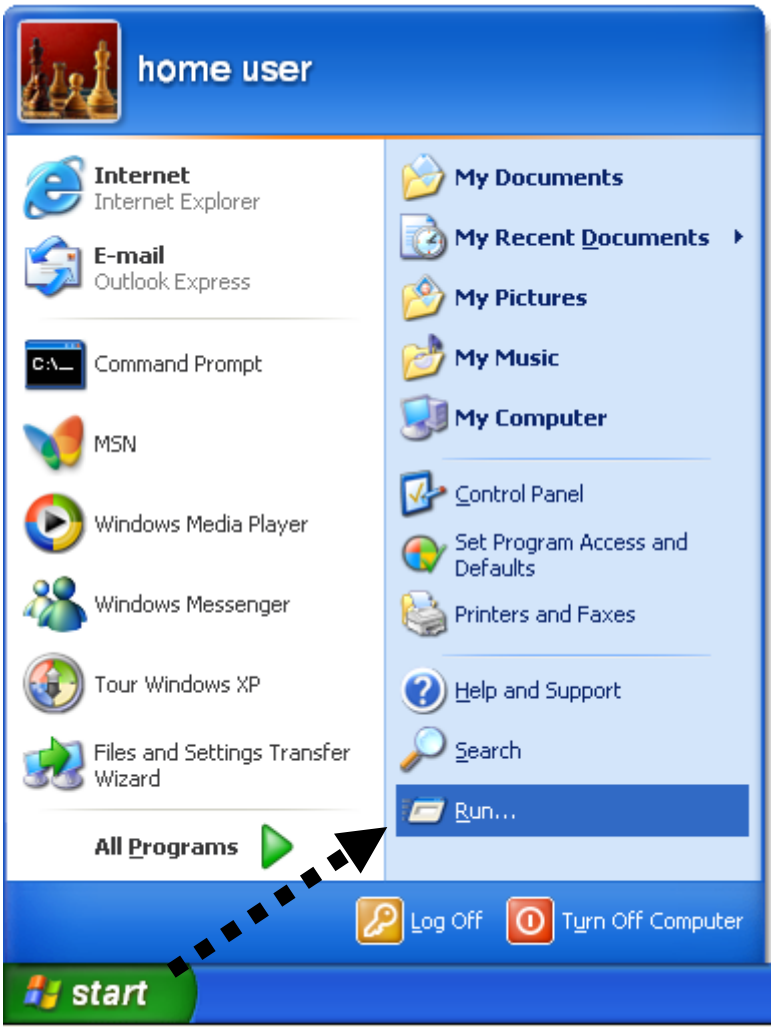


B. Select '**Obtain an IP address automatically**' and '**Obtain DNS server address automatically**', then click '**OK**'.

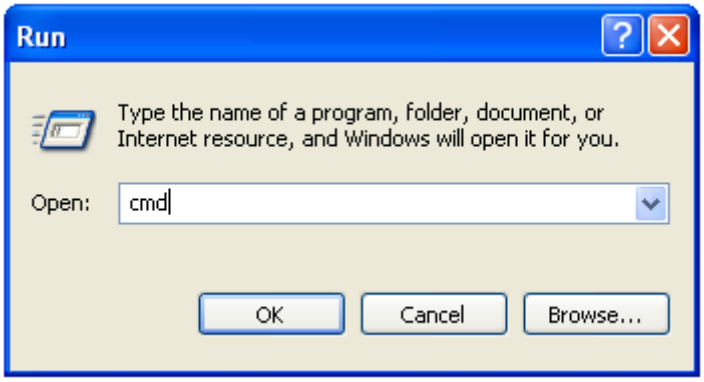


2-2-3. Router IP address lookup

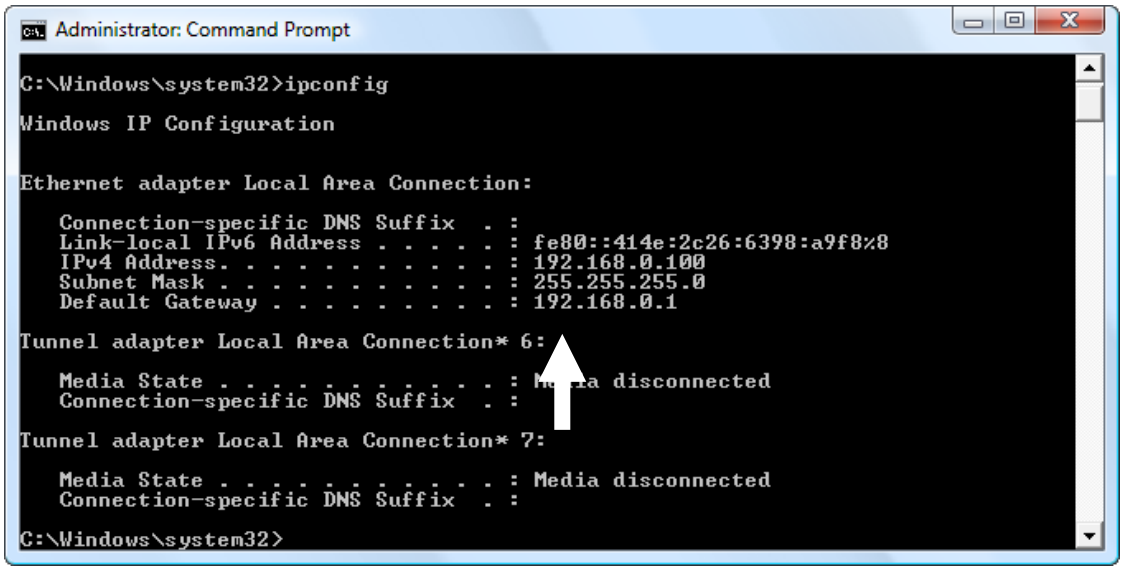
After the IP address setup is complete, please click '**Start**' -> '**Run**' at the bottom-lower corner of your desktop:



Input '**cmd**', then click '**OK**'



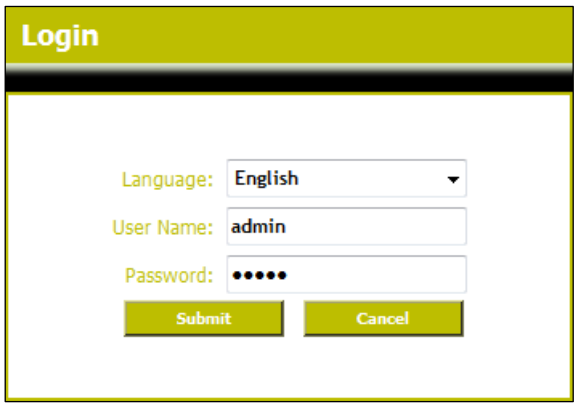
Input '**ipconfig**', then press '**Enter**' key. Please check the IP address followed by '**Default Gateway**' (In this example, the IP address of router is 192.168.0.1, ***please note that this value may be different***.)



Note: If the IP address of Gateway is not displayed, or the address followed by '**IP Address**' begins with '**169**', please recheck network connection between your computer and router, and / or go to the beginning of this chapter, to recheck every step of network setup procedure.

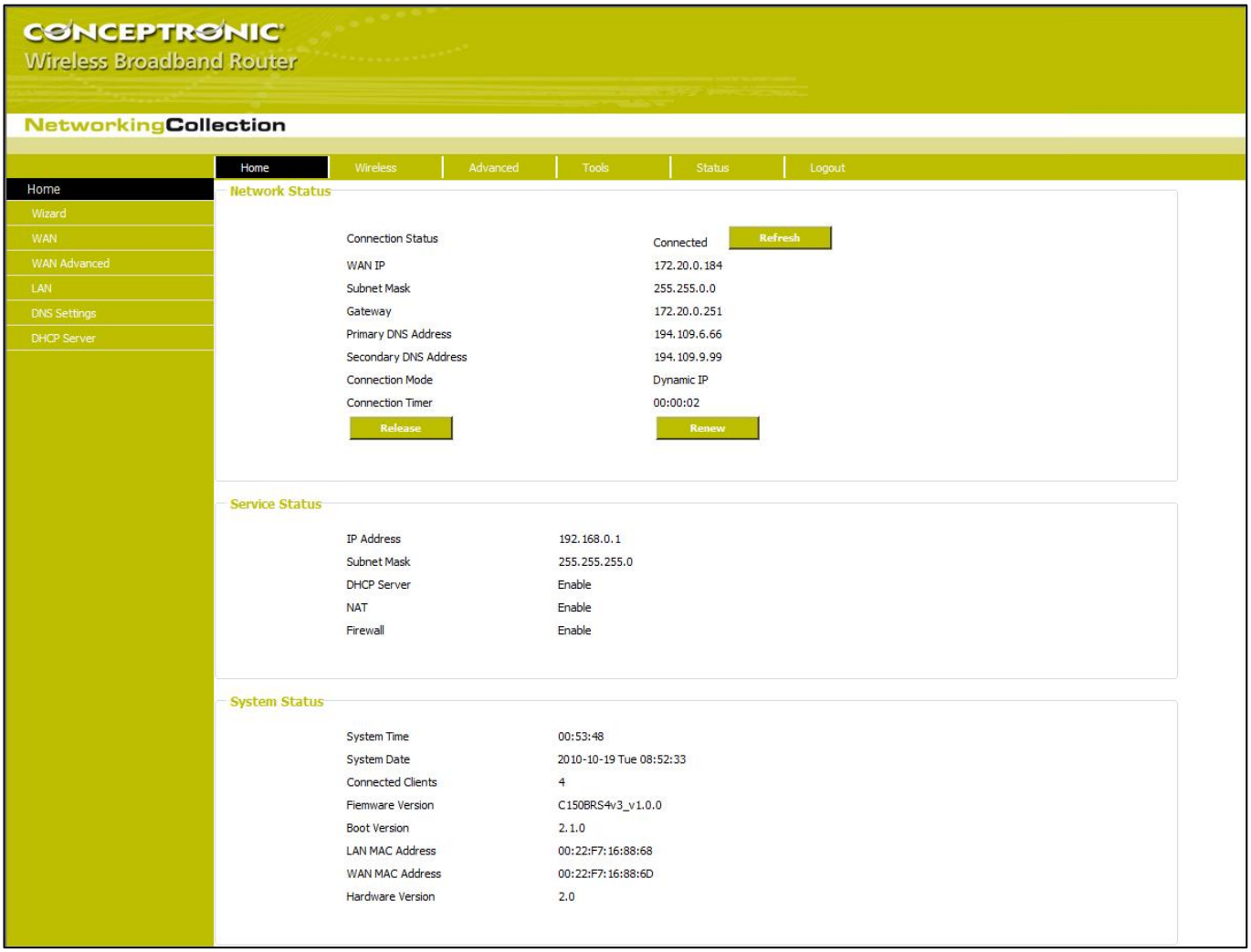
2-2-4. Connect the router's management interface by web browser

After your computer obtained an IP address from router, please start your web browser, and input the IP address of router in address bar. A login window will be shown asking you for the user name and password.



Please input user name and password in the field respectively, default user name is '**admin**', and default password is '**admin**', then click the '**Submit**' button.

When the user name and password are correct the wireless router will show the main page with the status of the wireless router:



On the main page, you can see the status of the internet connection, the system status, firmware version and activated services.

Note: By default, the wireless router is configured to work with Dynamic IP addresses provided by the internet provider. This is a common used setting, making the wireless router to work out of the box in most cases.

The wireless router is also encrypted by default, preventing unauthorized users to login to your wireless network. You can find the predefined encryption key on the bottom of the wireless router.

Chapter III: Configuration - Home

3-1. Home - Wizard

You can setup the wireless router through the built-in Wizard. This Wizard will help you configuring the basic settings of the wireless router step by step.

Note: Before starting the Wizard, make sure you have all information about your internet connection available. For example: connection type, account information, etc.

Note: Throughout this chapter the following applies: If you do not know which option to choose or do not have the necessary information available, you should either refer to the documentation of your internet connection or contact your internet service provider (from now on called ISP).

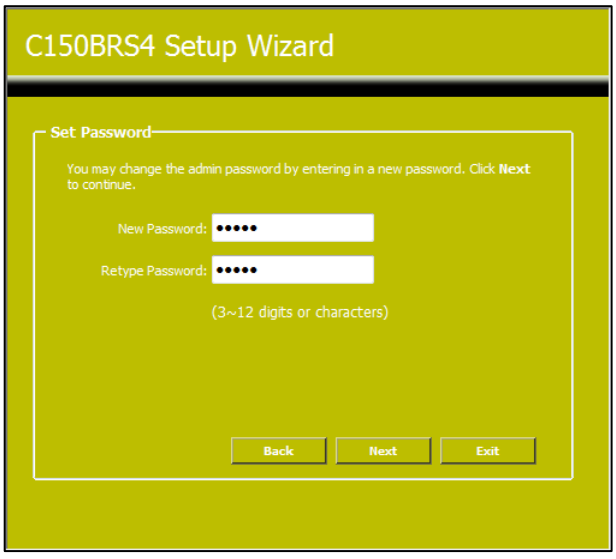
A. Click on '**Wizard**' at the left menu on the main page.

B. Click on '**Next**'to start the wizard. A popup with the Wizard will be shown on your screen:

C. The welcome screen lists five steps of the wizard. Click **"Next"** to continue.

D. You are recommended to set an admin password here. Enter the new password and re-enter it for confirmation.

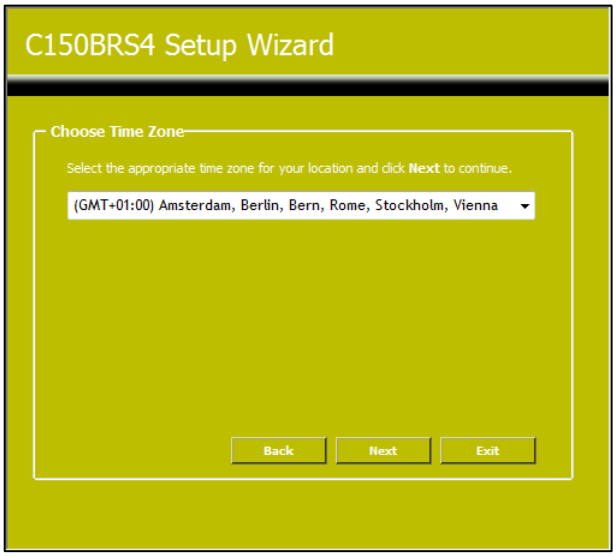
When completed, click **"Next"**.



E. For system management purpose, a correct time setting is critical to have accurate time stamps on the system logs.

Set an appropriate Time Zone in this step.

When completed, click **"Next"**.



F. Select the Internet Connection method which corresponds with your provider settings.

If you don't know which option you need for your internet connection, please check the documentation of your provider or contact your provider helpdesk.

When completed, click **"Next"**.

Connection - Static IP

G. When your provider requires a Static IP connection, select the **"Static IP"** option.

Enter the requested information:

- *IP Address*
- *Subnet Mask*
- *ISP Gateway Address*
- *Primary DNS*
- *Secondary DNS (Optional)*

When completed, click **"Next"**.

H. When your provider requires a Dynamic IP connection, select the "**Dynamic IP**" option.

Some providers require a specific Hostname for their connections. If your provider requires a specific Hostname, enter the Host Name in the field.

Some providers only allow 1 specific MAC address to connect to the internet. If your PC Network Card works with the specific required MAC address, press the "**Clone MAC Address**" button or enter the MAC Address manually.

When completed, click "**Next**".

Connection - Dynamic IP

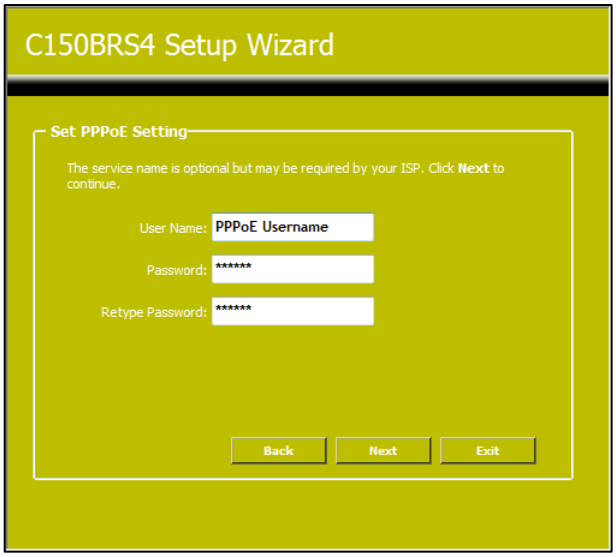
I. When your provider requires a PPPoE connection, select the "**PPPoE**" option.

Enter the requested information:

- *User Name*
- *Password*
- *Retype Password*

When completed, click "**Next**".

Connection - PPPoE



J. When your provider requires a PPTP connection, select the "**PPTP**" option.

Enter the requested information:

- *Server IP*
- *PPTP Account*
- *PPTP Password*
- *Retype Password*

When completed, click "**Next**".

Connection - PPTP

K. When your provider requires a L2TP connection, select the "**L2TP**" option.

Enter the requested information:

- *Server IP*
- *L2TP Account*
- *L2TP Password*
- *Retype Password*

When completed, click "**Next**".

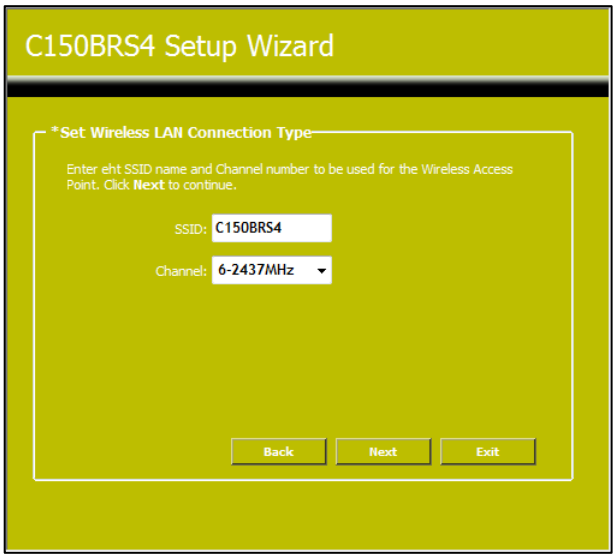
Connection - L2TP

When the WAN configuration is complete, the Wizard will continue with the Wireless configuration:

L. You can change the SSID of the router. The SSID is the name which will be broadcasted through the Wireless part.

You can change the channel between channel **1** and **13**. If you experience slow connections or break-downs, there can be another accesspoint in your area which can interfere with your wireless channel. In that case, you can try another channel.

When completed, click "**Next**".



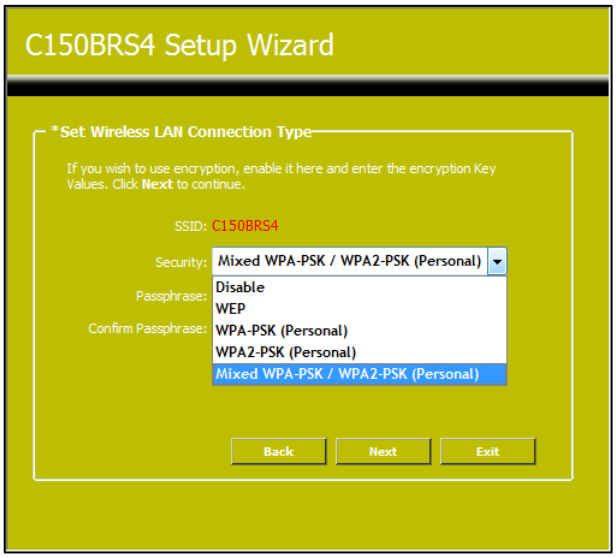
You can secure your Wireless Connection with encryption. By default, the wireless router is secured with WPA-PSK/WPA2-PSK Mixed Mode encryption. The predefined encryption key can be found on the bottom of the router.

Note: All security options of the Setup Wizard are explained, but it is advised to secure your network with "**Mixed WPA-PSK/WPA2-PSK**" security if your Clients do not support WPS. This is the highest WPA2 security level, with backwards compatibility to WPA only clients.

Note: Remember or write down the entered wireless security information. You will need it when you want to configure a Wireless Client to connect to the wireless router!

M. Select a security level for your Wireless Network.

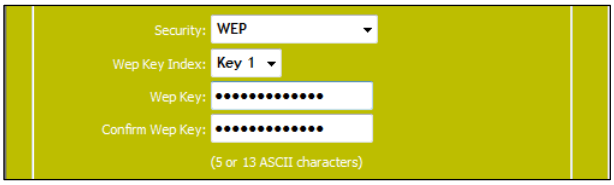
When a security level is chosen, the Wizard will show fields for the required information.



N. If you want to secure your network with WEP encryption, select "**WEP**" from the drop-down list. Enter the WEP key in ASCII format (input: A-Z, 0-9).

Note: Through the Wizard you can only configure WEP 64Bits.

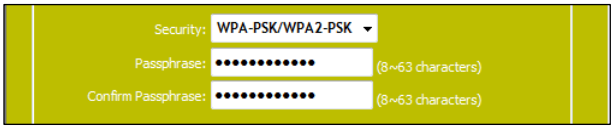
Security - WEP Encryption



O. If you want to secure your network with WPA-PSK or WPA2-PSK, select "**WPA-PSK**", "**WPA2-PSK**" or "**Mixed WPA-PSK/WPA2-PSK**" from the drop-down list.

Enter the Passphrase for your encryption and confirm the Passphrase in the second field.

Security - WPA-PSK / WPA2-PSK

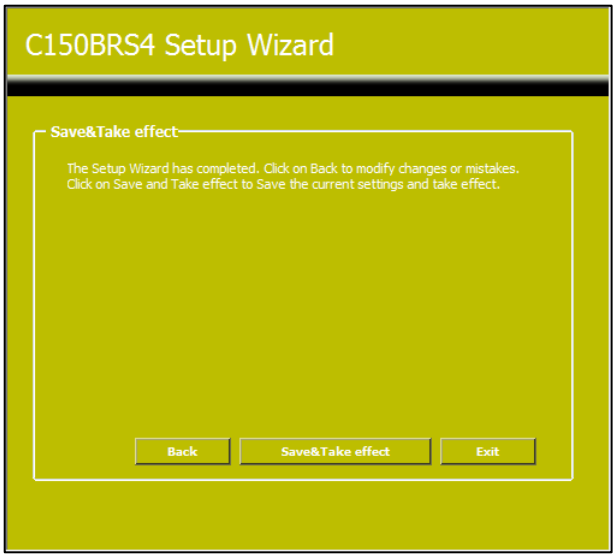


P. When all Wireless settings are made, click “**Next**” to continue.

Q. The Setup Wizard is now complete. If you want to apply your settings, click “**Save & Take Effect**”.

If you want to change any setting, click “**Back**” to return to the previous screen.

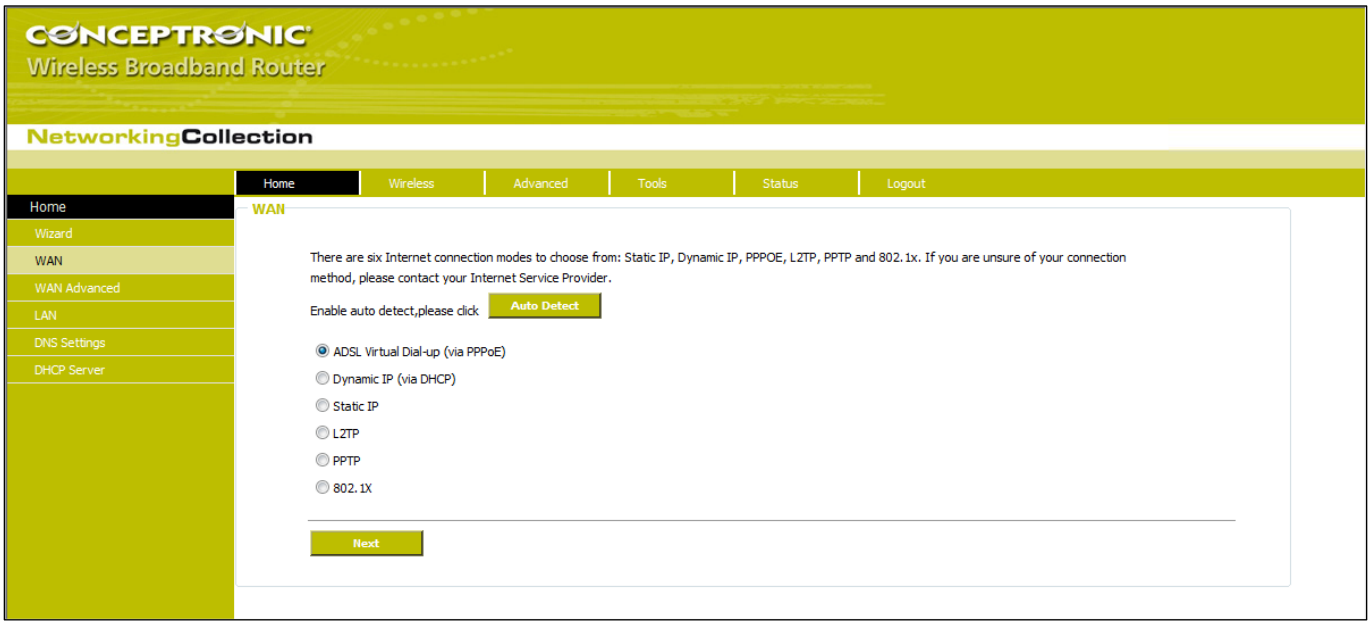
If you want to close the Setup Wizard without any changes, click “**Exit**”.



When you select “**Save & Take Effect**”, the router will apply the configured settings and reboot. Please wait for the message “**Setup Wizard configuration is complete**”.

R. Click “**OK**” to exit the Setup Wizard.

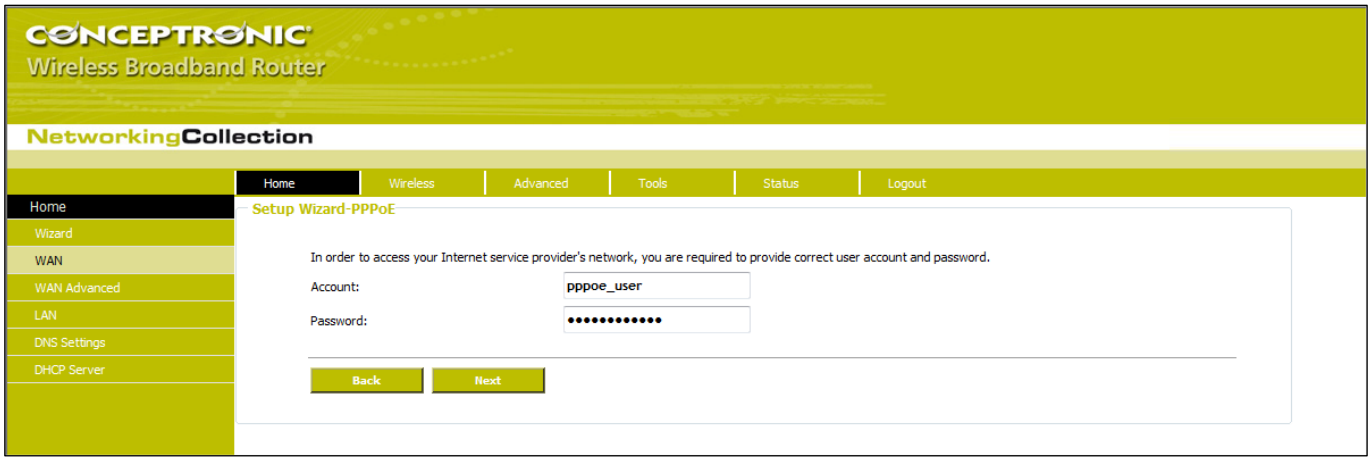
3-2. Home - WAN



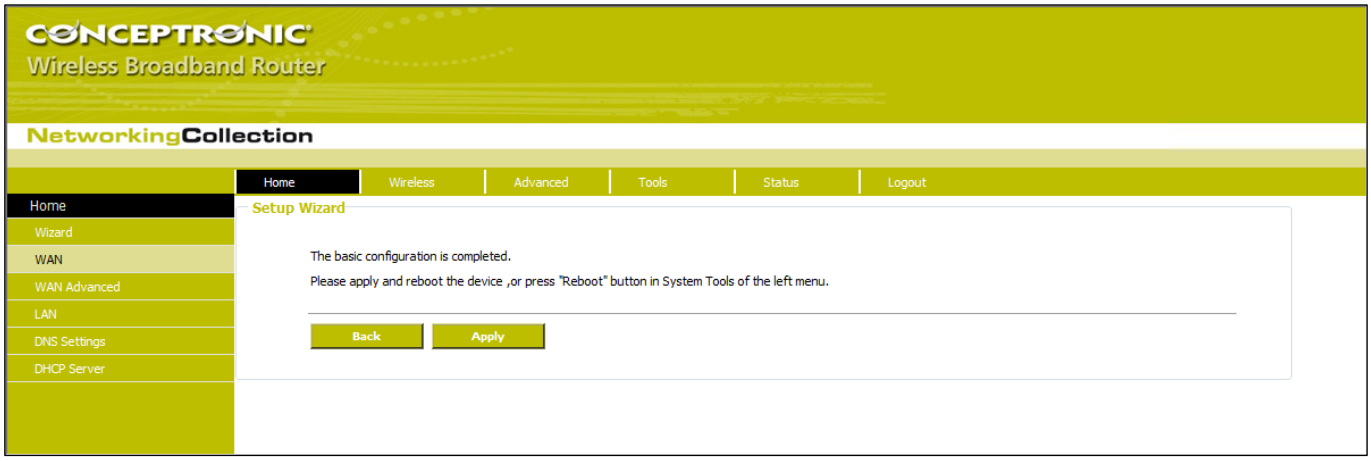
In this screen, select one mode of your Internet connection you use. If you are not clear, press the “Detect” button or contact your Internet Service Provider, and click “Next”.

3-2-1. ADSL Virtual Dial-up (Via PPPoE)

Enter the Account and Password provided by your ISP, and click “Next”.

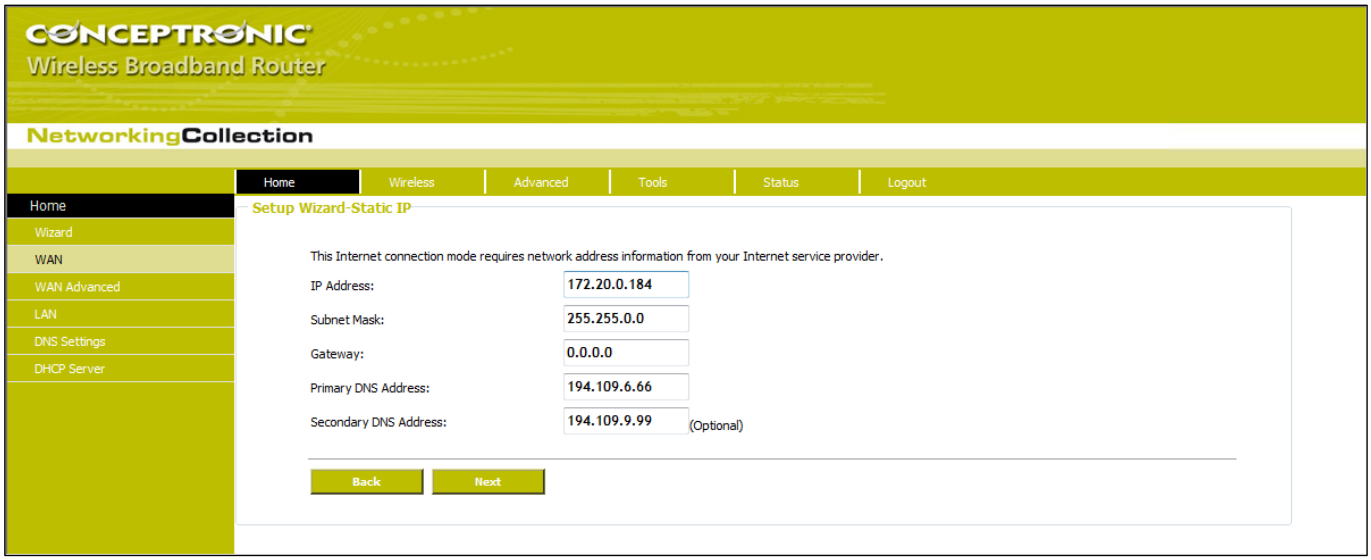


3-2-2. Dynamic IP (Via DHCP)



If your connection mode is Dynamic IP, it means your IP address keeps changing every time you connect. You do not need to enter the information like other modes. Click “Next” and “Save” to finish the settings.

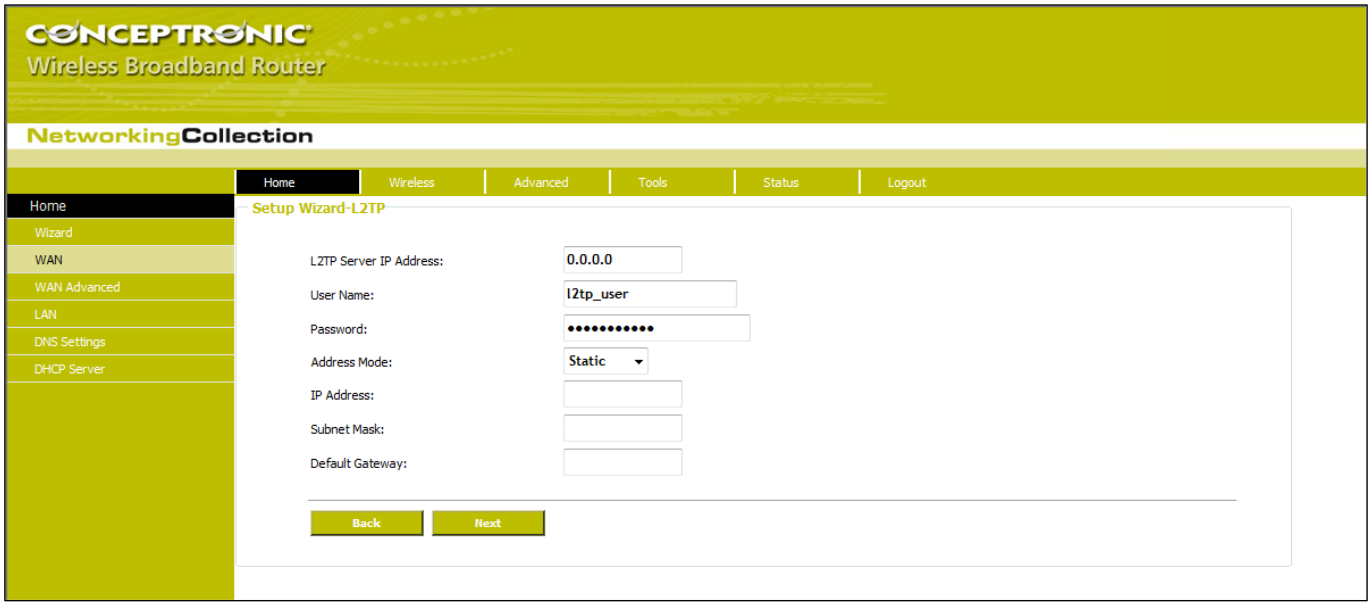
3-2-3. Static IP



In this screen, fill the network address information from your ISP in the IP Address, Subnet Mask, Gateway and Primary DNS server fields and click “Next”.

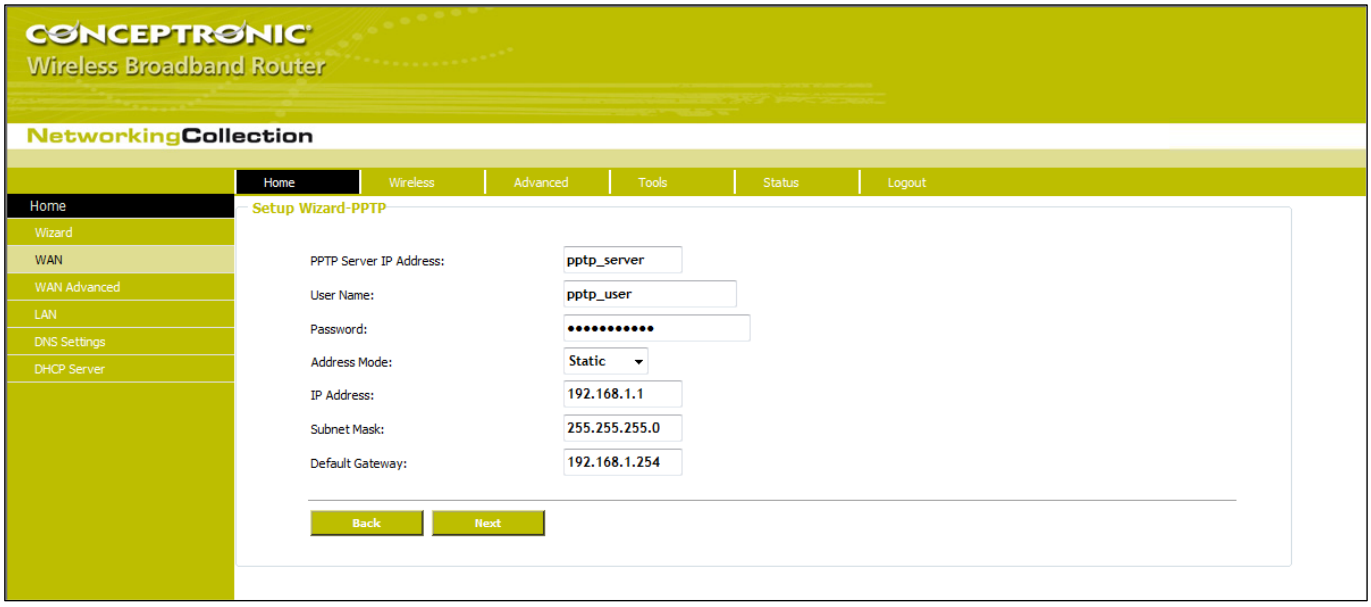
Click “Save” to complete the setup wizard. The Router will record the settings you made. To activate the settings, it is recommended to select “Reboot the Router” from “System Tool” of the left menu. It is rebooting now, please wait for a few minutes and DO NOT power off it.

3-2-4. L2TP



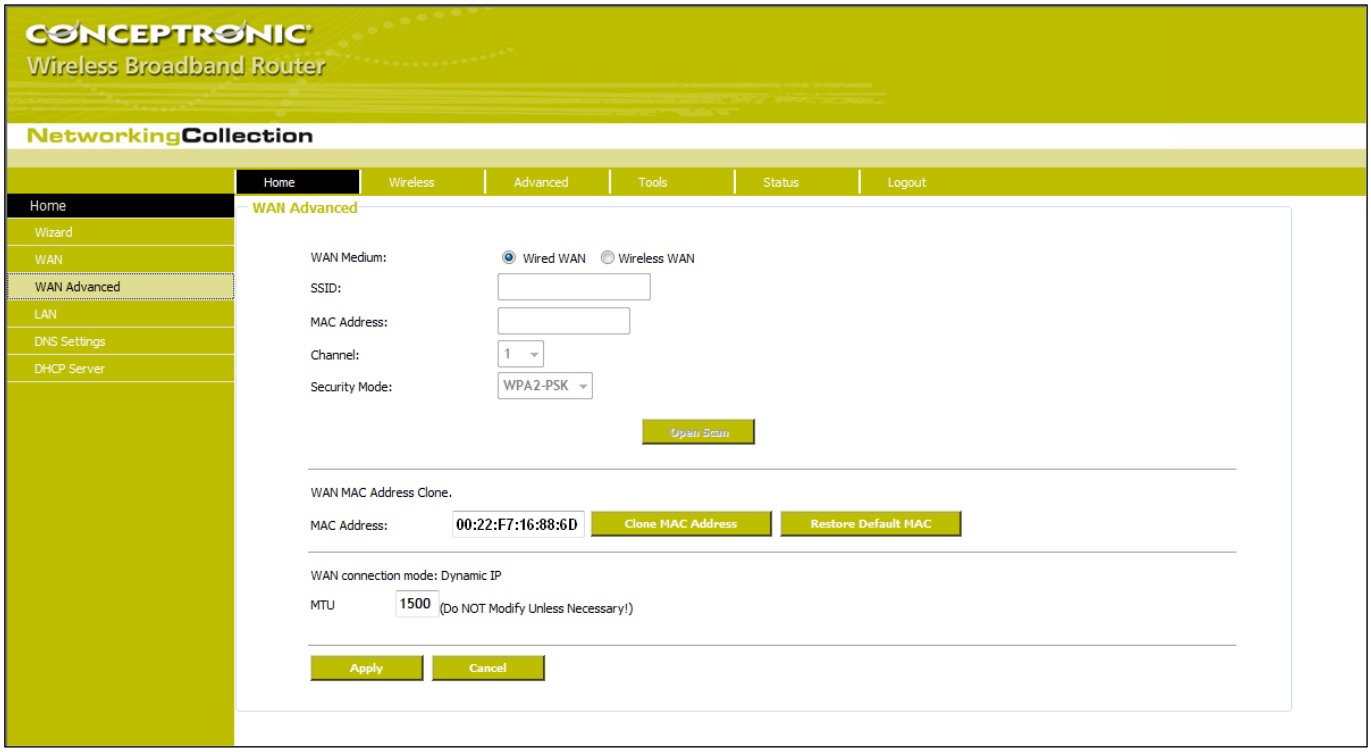
L2TP Server IP	: Enter the Server IP provided by your ISP.
User Name	: Enter L2TP username.
Password	: Enter L2TP password.
MTU	: Maximum Transmission Unit, you may need to change it for optimal performance with your specific ISP. 1400 is the default MTU.
Address Mode	: Select “Static” if your ISP supplies you with the IP address, subnet mask, and gateway. In most cases, select Dynamic.
IP Address	: Enter the L2TP IP address supplied by your ISP.
Subnet Mask	: Enter the Subnet Mask supplied by your ISP.
Default Gateway	: Enter the Default Gateway supplied by your ISP.

3-2-5. PPTP



PPTP Server IP	: Enter the Server IP provided by your ISP.
User Name	: Enter PPTP username provided by your ISP.
Password	: Enter PPTP password provided by your ISP.
Address Mode	: Select “Static” if your ISP supplies you with the IP address, subnet mask, and gateway. In most cases, select Dynamic.
IP Address	: Enter the PPTP IP address supplied by your ISP.
Subnet Mask	: Enter the Subnet Mask supplied by your ISP.
Default Gateway	: Enter the Default Gateway supplied by your ISP.

3-3. Home - WAN Advanced



In the “WAN Advanced” page, you will find 3 sections:

- WAN Medium
- WAN MAC Address Clone
- WAN Connection Mode

3-3-1. WAN Medium

In most cases, ISP provides wired WAN access (ADSL MODEM, Cable MODEM, etc.) and you only need to insert the line into the Router's WAN port. Sometime, wireless WAN access type, more flexible and convenient, is also provided by some ISP.

Wired WAN	: In this type, WAN port should be connected by wired cable. This type is the device's default option.
Wireless WAN	: When your ISP provides wireless access service, you can enable this WAN access type.
SSID	: SSID (Service Set Identifier) is the ID name of the wireless device. You must input the correct SSID and keep it the same SSID with your ISP's wireless device. Otherwise, it is not allowed to have access to your ISP network. Click "Open Scanner' to search the available SSID.
MAC	: Enter the MAC address of ISP wireless device. Click "Open Scanner' to search the MAC address.
Channel	: Wireless device's communication channel. Keep it the same channel with your ISP's wireless device. Click "Open Scanner' to search the available AP channel.
Security Mode	: If your ISP has set the security parameters, the receiving station must set the same security mode, encryption method and key with ISP's device.

If you know the ISP wireless device's SSID, enter the SSID, Wireless MAC address, Channel and Encryption method into the corresponding fields. Certainly you can click the "Open Scanner" button to fill these fields automatically. After you apply the settings, In "Setup Wizard" page select the corresponding WAN connection type to connect the Internet. For example: If your ISP wireless device provides Dynamic IP access type, you need to select "Dynamic IP (Via DHCP)".

3-3-2. WAN MAC Address Clone

This section is for the Router's MAC address to WAN.

Some ISPs require end-user's MAC address to access their network. This feature copies the MAC address of your network device to the Router.

MAC Address	: The MAC address to be registered with your Internet service provider.
Clone MAC Address	: Register your PC's MAC address.
Restore Default MAC Address	: Restore to the default hardware MAC address.

3-3-3. WAN Connection Mode

After you have selected the ISP connection type in "WAN" and you want to modify the related settings, here you can modify and configure the settings in details.

3-3-3-1. Virtual Dial-up (PPPoE)

Connection Mode	: Show your current connection mode.
Account	: Enter them provided by your ISP.
Password	: Enter them provided by your ISP.
MTU	: Maximum Transmission Unit. It is the size of largest datagram that can be sent over a network. The default value is 1492. Do NOT modify it unless necessary. But if when some specific website or web application software can not be open or enabled, have a try to change the MTU value as 1450, 1400, etc.
Service Name	: It is defined as a set of characteristics that are applied to a PPPoE connection. Enter it if provided. Do NOT modify it unless necessary.
AC Name	: Enter it if provided. Do NOT modify it unless necessary.
Connect Automatically	: Connect automatically to the Internet after rebooting the system or connection failure.
Connect Manually	: Connect to the Internet by users manually.
Connect on Demand	: Re-establish your connection to the Internet after the specific time (Max Idle Time). Zero means your Internet connection at all time. Otherwise, enter the minutes to be elapsed before you want to disconnect the Internet access.
Connect on Fixed Time	: Connect to the Internet during the time you fix.

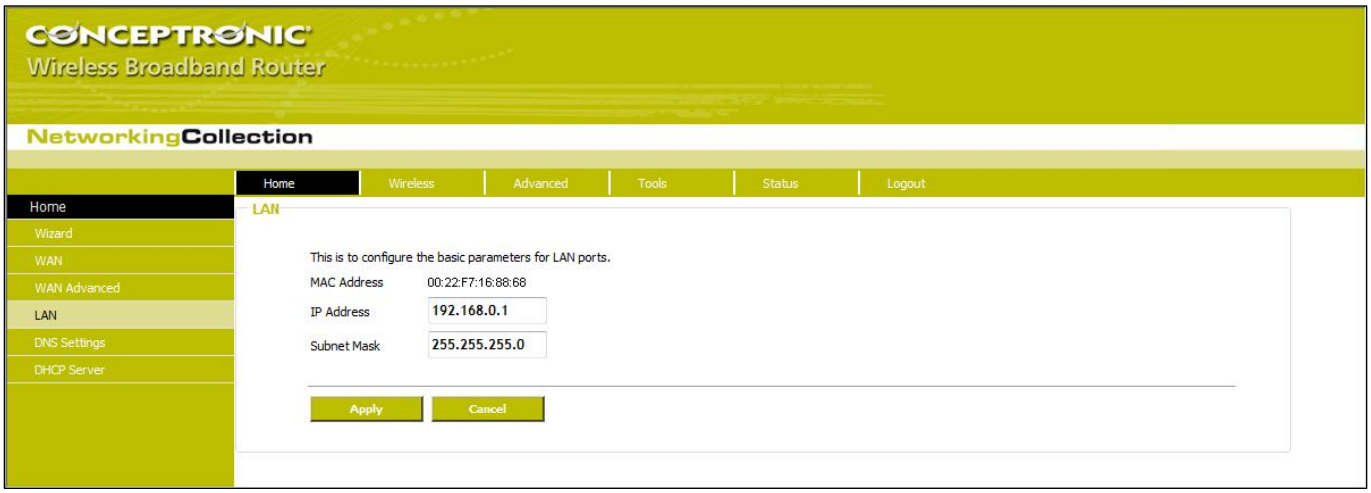
Note: The "Connect on Fixed Time" can be deployed only when you have set the current time in "Time Settings" from "System Tools".

3-3-3-2. Static IP

If your connection mode, static IP is chosen, you can modify the following addressing information.

IP Address	: Here enter the WAN IP address provided by your ISP.
Subnet Mask	: Enter the WAN Subnet Mask here.
Gateway	: Enter the WAN Gateway here.
Primary DNS Server	: Enter the Primary DNS server provided by your ISP.
Secondary DNS Server	: Enter the secondary DNS.

3-4. Home - LAN

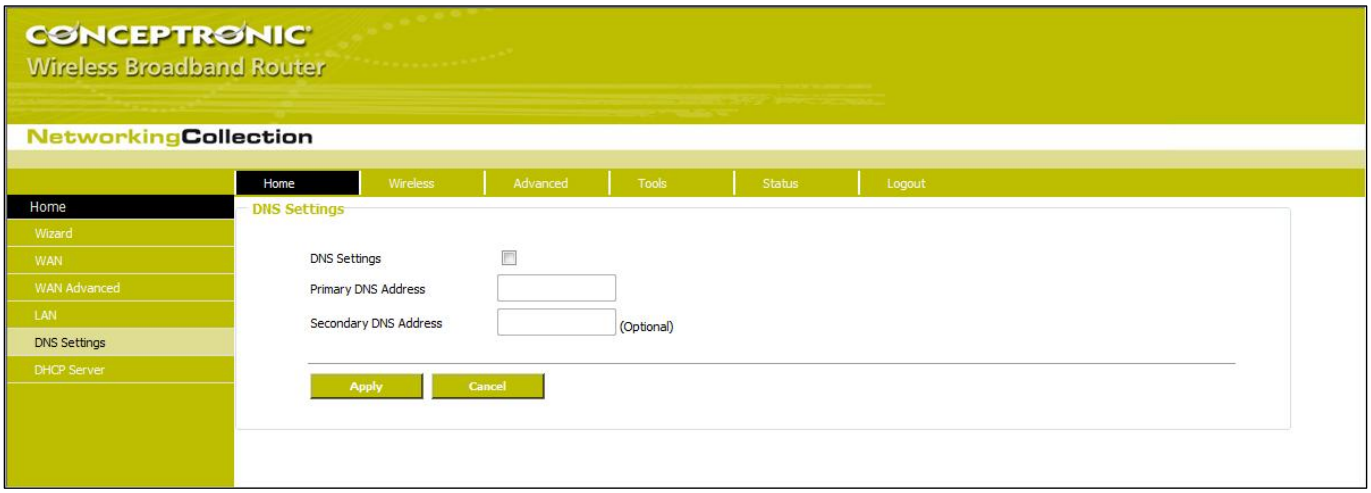


LAN Settings are for the basic TCP/IP parameters of LAN ports.

MAC Address	: The Router's physical MAC address as seen on your local network, which is unchangeable.
IP Address	: The Router's LAN IP addresses (not your PC's IP address). 192.168.0.1 is the default value.
Subnet Mask	: It's shown the Router's subnet mask for measurement of the network size. 255.255.255.0 is the default value.

Important: Once you modify the IP address, you need to remember it for the Web-based Utility login next time.

3-5. Home - DNS Settings

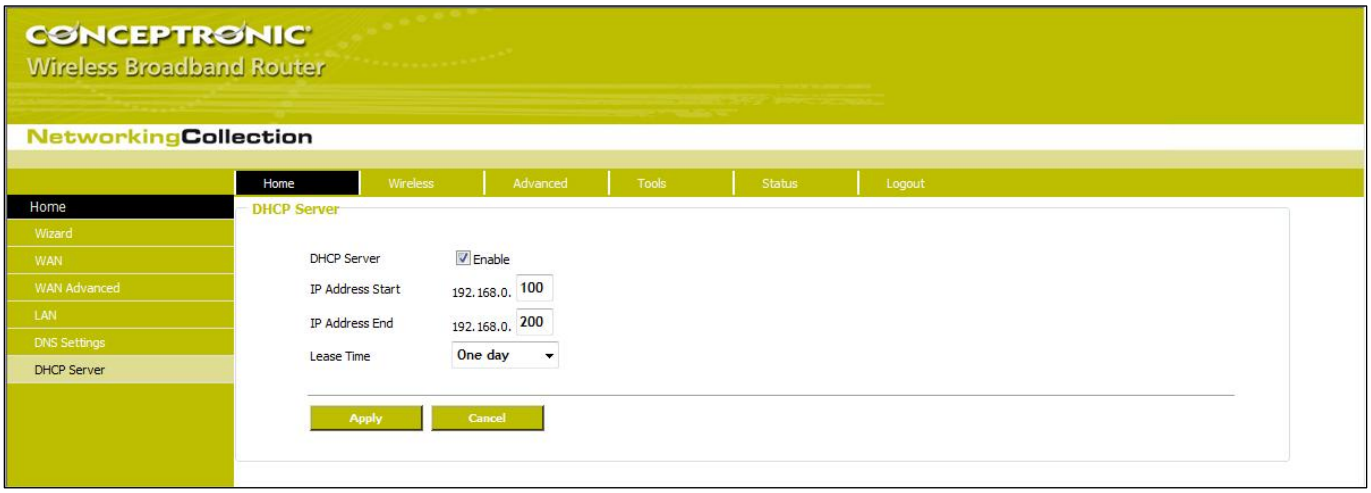


DNS is short for Domain Name System (or Service), an Internet service that translate domain names into IP addresses which are provided by your Internet Service Provider. Please consult your Internet Service Provider for details if you do not have them.

DNS	: Click the checkbox to enable the DNS server. The Router's DHCP sever will answer the client's requests and distribute DNS address.
Primary DNS Address	: Enter the necessary address provided by your ISP.
Secondary DNS Address	: Enter the second address if your ISP provides, which is optional.

Note: After the settings are completed, reboot the device to activate the modified settings.

3-6. Home - DHCP Server



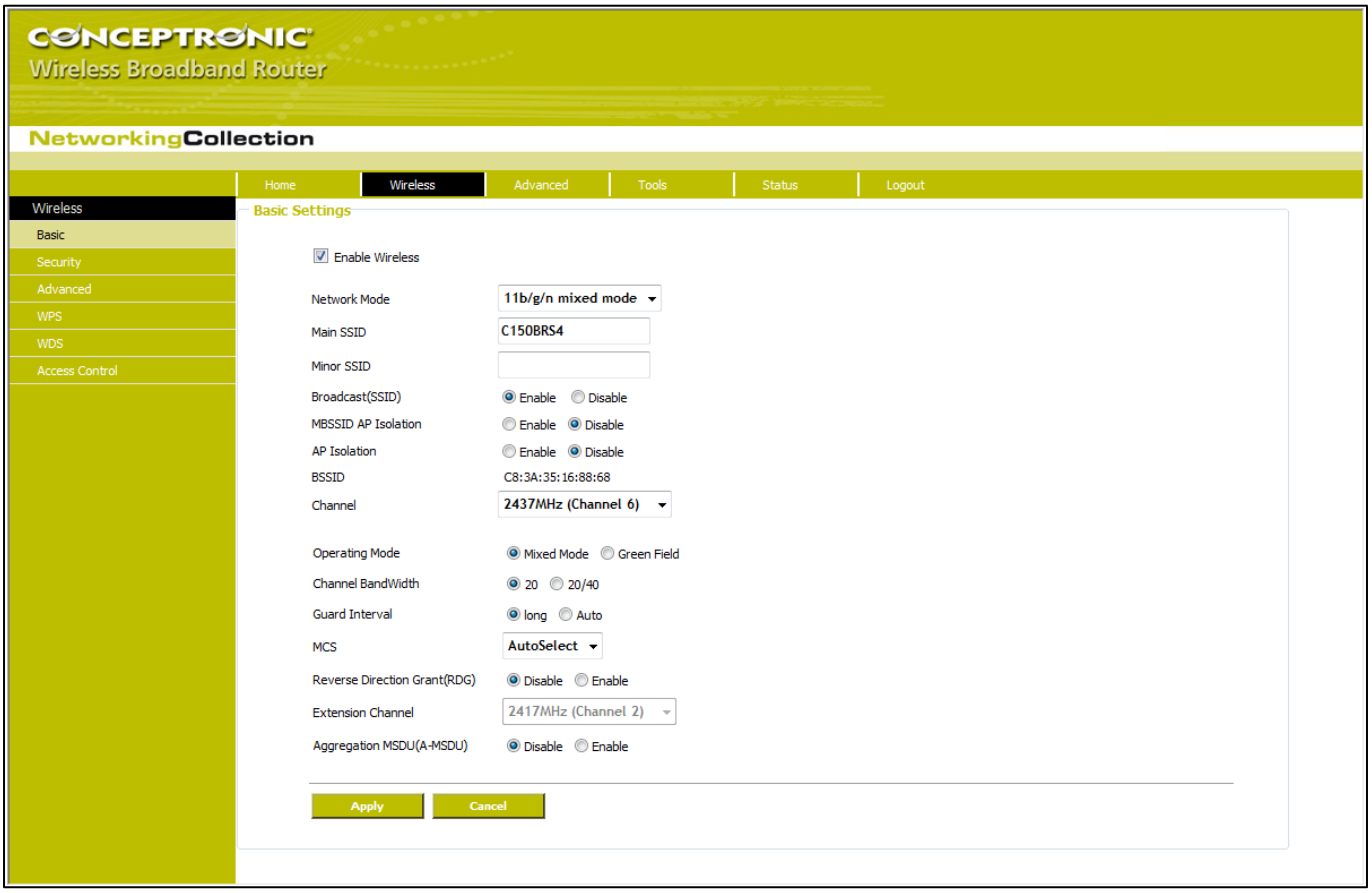
A DHCP (Dynamic Host Control Protocol) is to assign an IP address to the computers on the LAN/private network. When you enable the DHCP Server, the DHCP Server will allocate automatically an unused IP address from the IP address pool to the requesting computer in premise of activating “Obtain an IP Address Automatically”. So specifying the starting and ending address of the IP Address pool is needed.

DHCP Server	**:** Activate the checkbox to enable DHCP server.
IP Address Start/End	**:** Enter the range of IP address for DHCP server distribution.
Lease Time	**:** The length of the IP address lease.

For example: If the lease time is an hour, then DHCP server will reclaim the IP address in each hour.

Chapter IV: Configuration - Wireless

4-1. Wireless - Basic



Enable Wireless : Check to enable the Router's wireless features; uncheck to disable it.

Network Mode : Select one mode from the following. The default is 11b/g/n mode.

11b mode : Allow the wireless client to connect with the device in 11b mode at the maximum speed of 11Mbps.

11g mode : Allow the 11g/11n-compliant client device to connect with the AP at the maximum speed of 54Mbps.

11b/g mode : Allow the 11b/g-compliant client device to connect with the AP with auto-negotiation speed, and 11n wireless client to connect the device with 11g speed.

11b/g/n mode : Allow 11b/g/n-compliant client device to connect with the AP with auto-negotiation speed.

Main SSID : SSID (Service Set Identifier) is the unique name of the wireless network. This device has two SSID and the main SSID is necessary.

Minor SSID : It is optional.

Broadcast (SSID) : Select "Enable" to enable the device's SSID to be visible by wireless clients. The default is enabled.

MBSSID AP Isolation : One access control feature based on wireless MAC address. When this feature is enabled, wireless clients connected with the same SSID can not communicate with each other. For example, configure main SSID as AP1, minor SSID as AP2. PC1 and PC2 connect to AP1 via wireless adapter, and configure PC1 and PC2 in the same segment. After the feature is enabled, two PCs can not communicate and share network resource each other, but they can communicate with wireless clients connected with AP2. This feature is to isolate the communication of wireless clients connected with the same SSID.

AP Isolation : One access control feature based on SSID. When this feature is enabled, each of your wireless clients will be in its own virtual network and will not be able to communicate with each other. When this feature is enabled, wireless clients connected with the Main SSID and Minor SSID can not communicate with each other, which can secure the wireless network strongly. For example, configure main SSID as AP1, minor SSID as AP2. PC1 connects to AP1 via wireless adapter; PC2 connecting to AP2. After the feature is enabled, two PCs can not communicate and share network resource each other. This feature is to isolate the communication of wireless clients connected with different SSID.

Tip: If you want to isolate all connected wireless client's communication, please enable MBSSID AP Isolation and AP Isolation simultaneously.

BSSID : Basic Service Set Identifier of wireless network. In IEEE802.11, BSSID is the MAC address of wireless access point.

Channel : Specify the effective channel (from 1 to 13\Auto) of the wireless network.

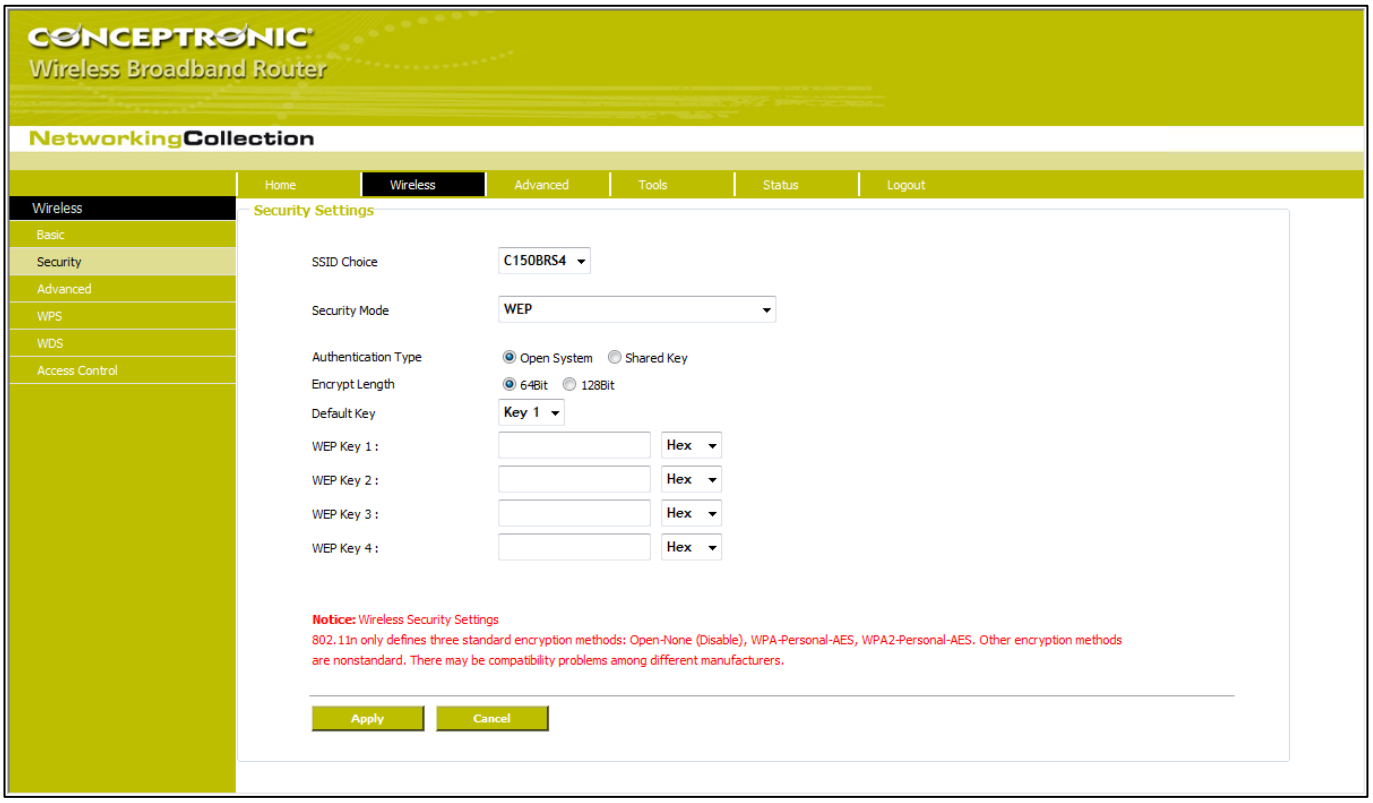
Extension Channel : To increase data throughput of wireless network, the extension channel range is used in 11n mode.

Channel Bandwidth : Select the channel bandwidth to improve the wireless performance. When the network has 11b/g and 11n clients, you can select the 40M; when it is an 11n network, select 20/40M to improve its throughput.

4-2. Wireless - Security

It is used to configure the AP network's security setting. Here presents the encryption methods, including WEP, WPA-personal, WPA-enterprise, WPA2-personal, WPA2- enterprise, etc.

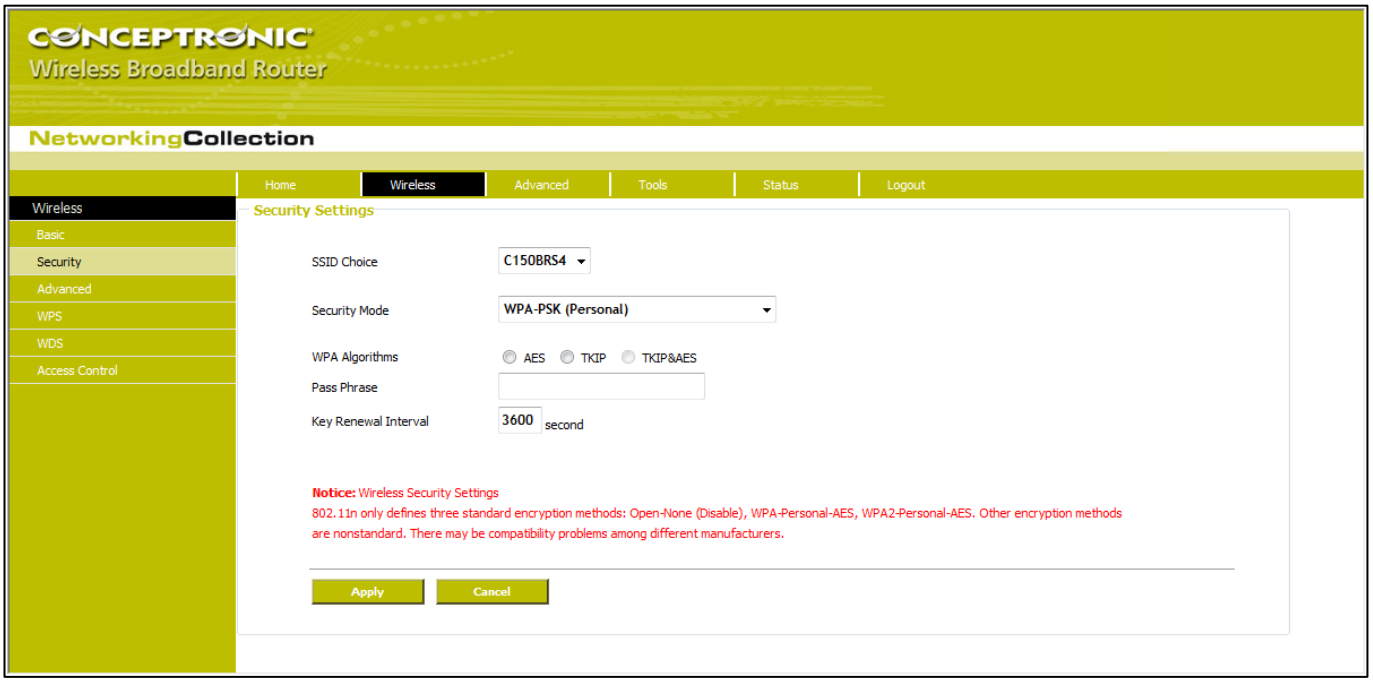
4-2-1. WEP



WEP (Wired Equivalent Privacy), a basic encryption method, usually encrypts wireless data using a series of digital keys (64 bits or 128 bits in length). By using the same keys on each of your wireless network devices, you can prevent unauthorized wireless devices from monitoring your transmissions or using your wireless resources.

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
Authentication Type	: Use the 'Open System' or 'Shared Key' WEP encryption.
Encrypt Length	: Select '64Bit' or '128Bit' encryption key length.
Default Key	: Select one key from the four configured keys as the current available one.
WEP Key1~4	: Set the WEP key with the format of ASCII and Hex. You can enter ASCII code (5 or 13 ASCII characters. Illegal character as "/" is not allowed.) Or 10/26 hex characters.

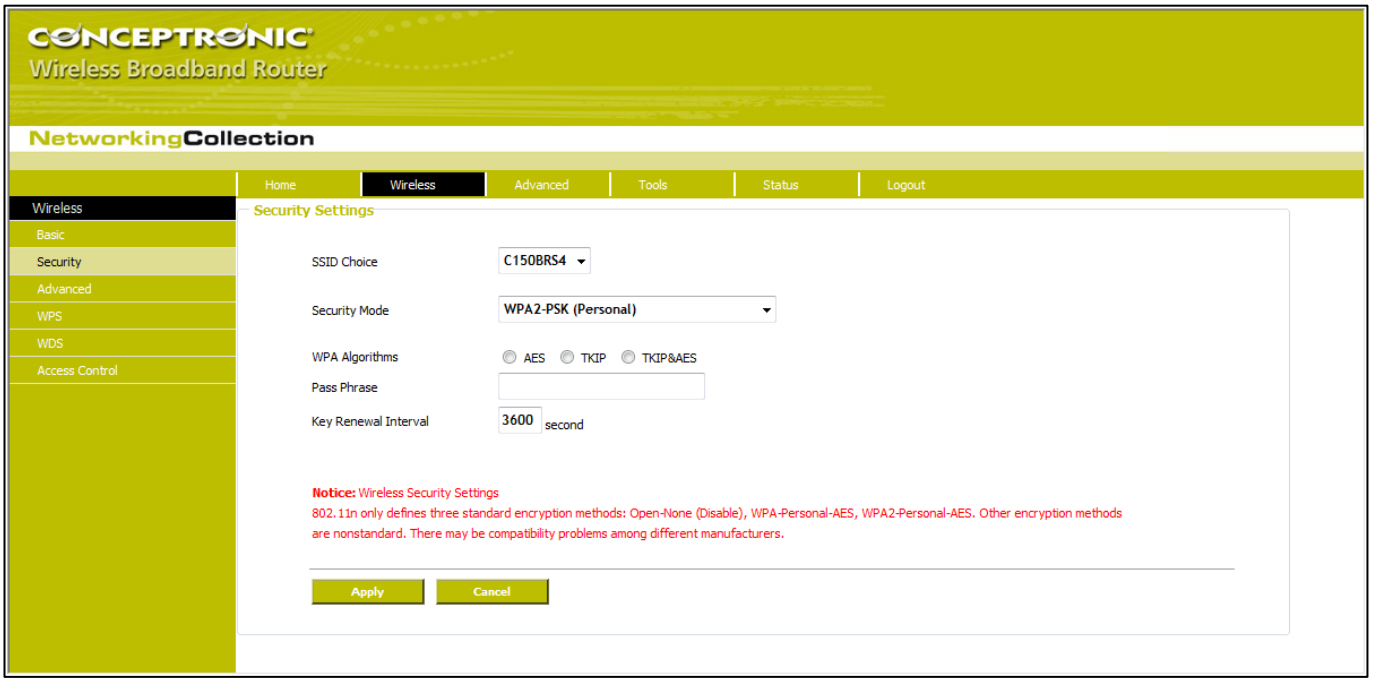
4-2-2. WPA-PSK (Personal)



WPA (Wi-Fi Protected Access), a Wi-Fi standard, is a more recent wireless encryption scheme, designed to improve the security features of WEP. It applies more powerful encryption types (such as TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard]) or a combination of both and can change the keys dynamically on every authorized wireless device.

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WPA Algorithms	: Provides TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard] or a combination of both.
Pass Phrase	: Enter the encrypted characters with 8-63 ASCII characters.
Key Renewal Interval	: Set the key's renewal period.

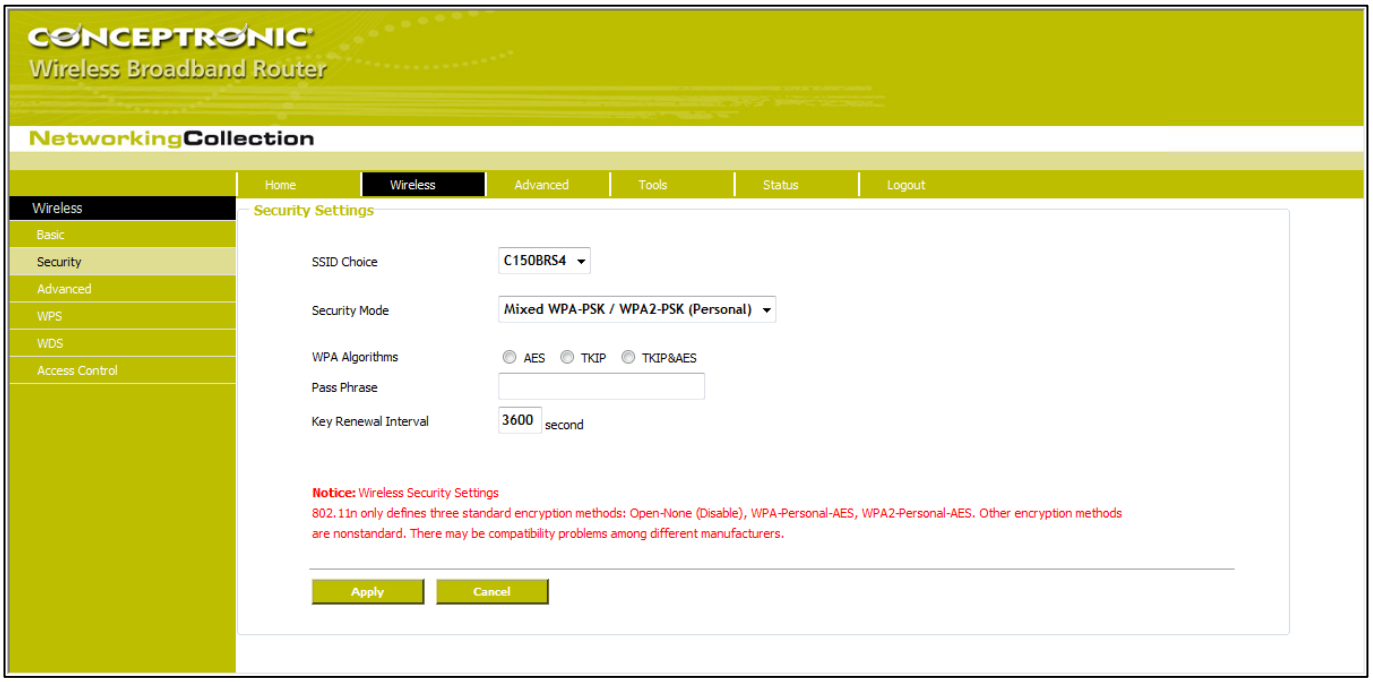
4-2-3. WPA2-PSK (Personal)



WPA2 (Wi-Fi Protected Access version 2) provides higher security than WEP (Wireless Equivalent Privacy) and WPA (Wi-Fi Protected Access).

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WPA Algorithms	: Provides TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard] or a combination of both.
Pass Phrase	: Enter the encrypted characters with 8-63 ASCII characters.
Key renewal Interval	: Set the key's renewal period.

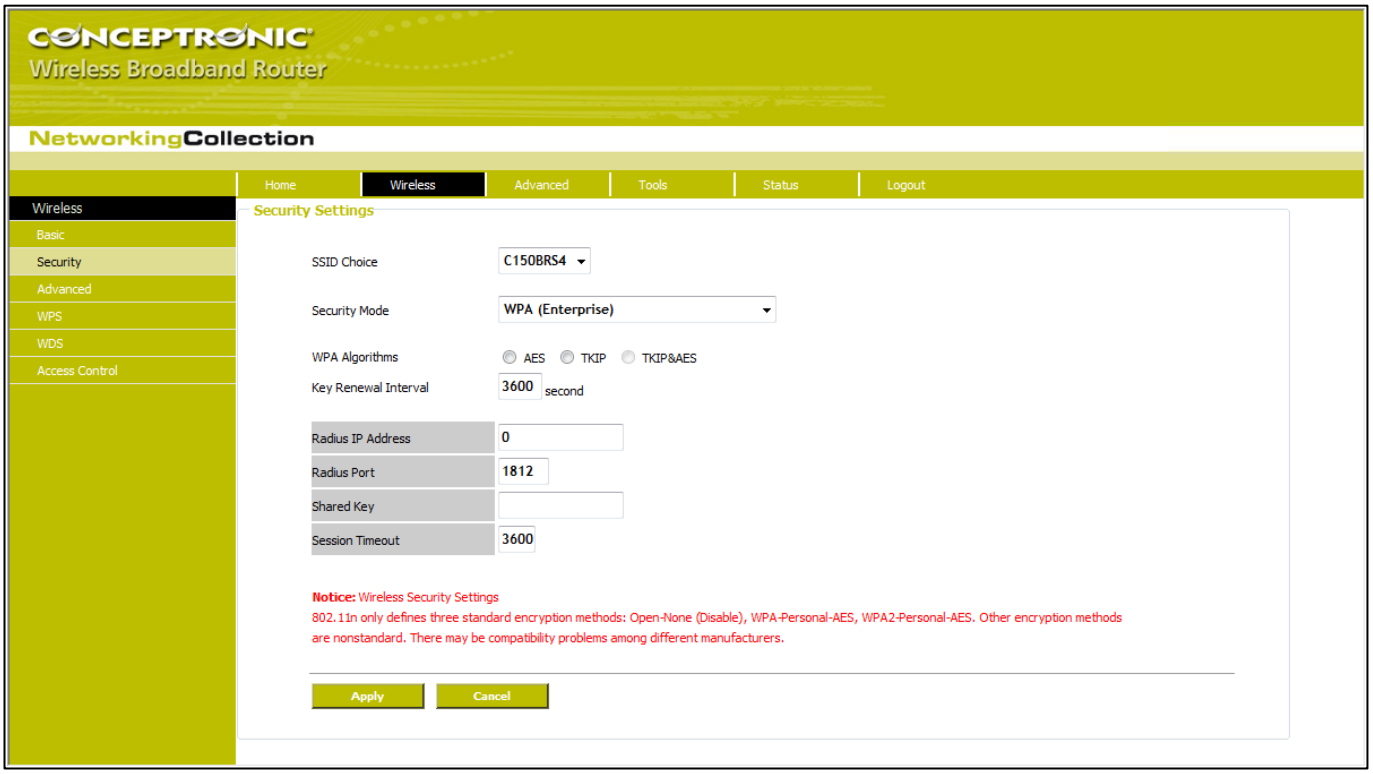
4-2-4. Mixed WPA-PSK / WPA2-PSK (Personal)



Mixed WPA-PSK / WPA2-PSK (Personal) combines the WPA-Personal and WPA-2 Personal security levels. Clients which support WPA2-PSK (Personal) will use WPA2-PSK (Personal), while older clients without this support can use WPA-PSK (Personal).

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WPA Algorithms	: Provides TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard] or a combination of both.
Pass Phrase	: Enter the encrypted characters with 8-63 ASCII characters.
Key renewal Interval	: Set the key's renewal period.

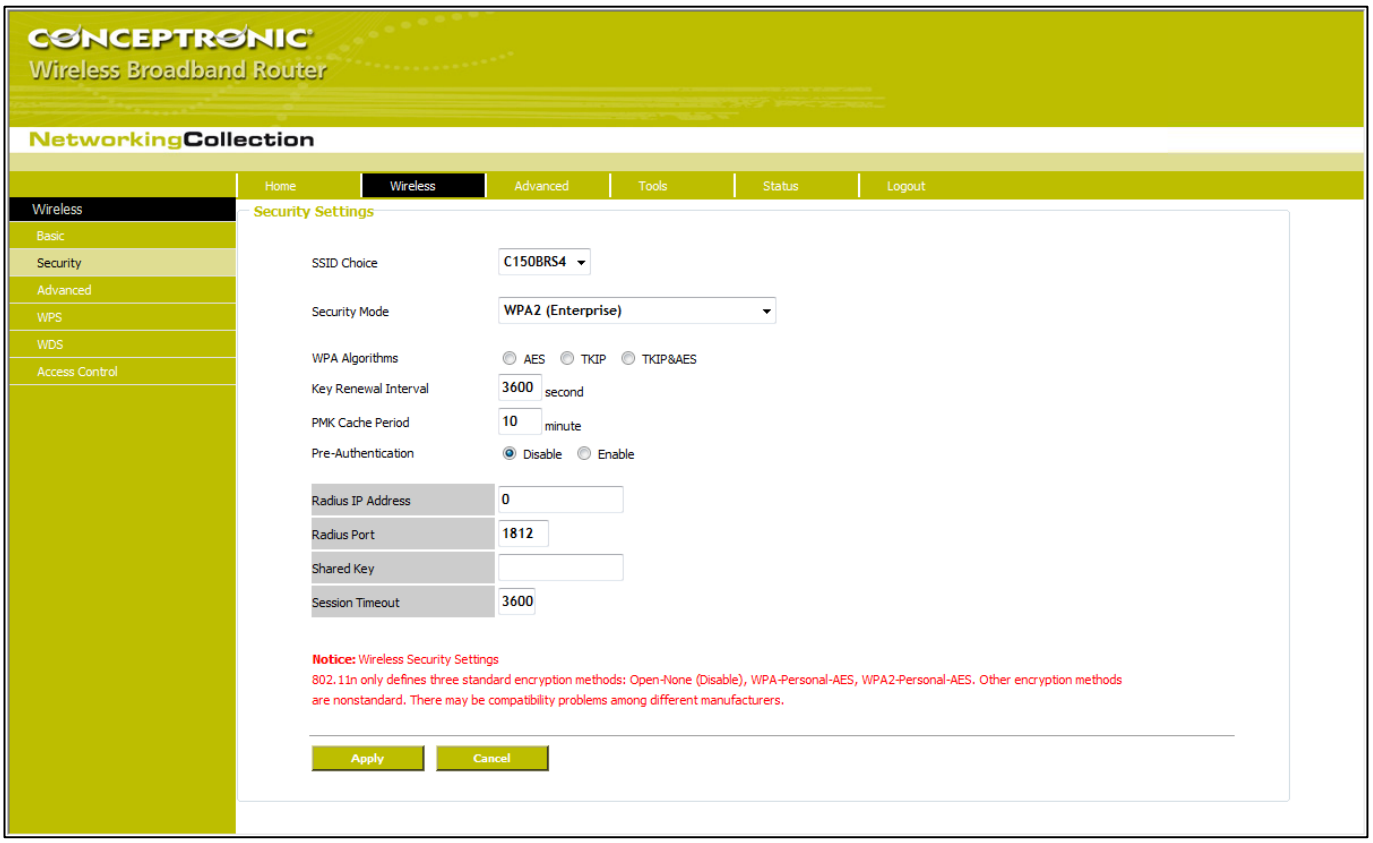
4-2-5. WPA (Enterprise)



This security mode is used when a RADIUS server is connected to the device.

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WPA Algorithms	: Provides TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard] or a combination of both.
Key Renewal Interval	: Set the key's renewal period.
Radius IP Address	: Enter the IP address of the Radius server.
Radius Port	: Enter the authentication port of the Radius server. The default is 1812.
Shared Key	: Enter the shared key for authentication server with 8~63 ASCII characters.
Session Timeout	: The authentication interval period between AP and authentication server.

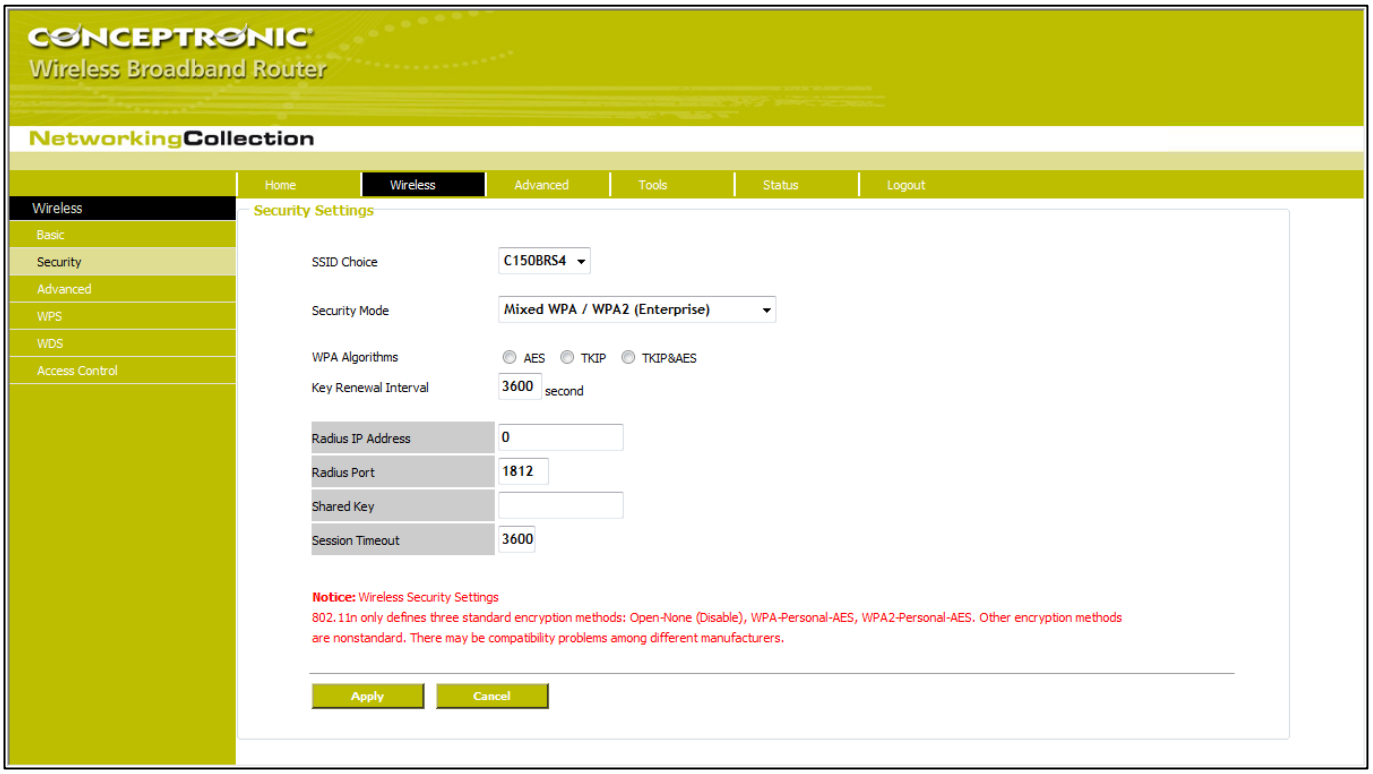
4-2-6. WPA2 (Enterprise)



This security mode is based on Radius authentication server and WPA2 encryption method. WPA2 is used when a RADIUS server is connected to the device.

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WPA Algorithms	: Provides TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard] or a combination of both.
Key Renewal Interval	: Set the key's renewal period.
PMK Cache Period	: Set the PMK cache period.
Pre-Authentication	: Enable or disable the pre-authentication.
Radius IP Address	: Enter the IP address of the Radius server.
Radius Port	: Enter the authentication port of the Radius server. The default is 1812.
Shared Key	: Enter the shared key for authentication server with 8~63 ASCII characters.
Session Timeout	: The authentication interval period between AP and authentication server.

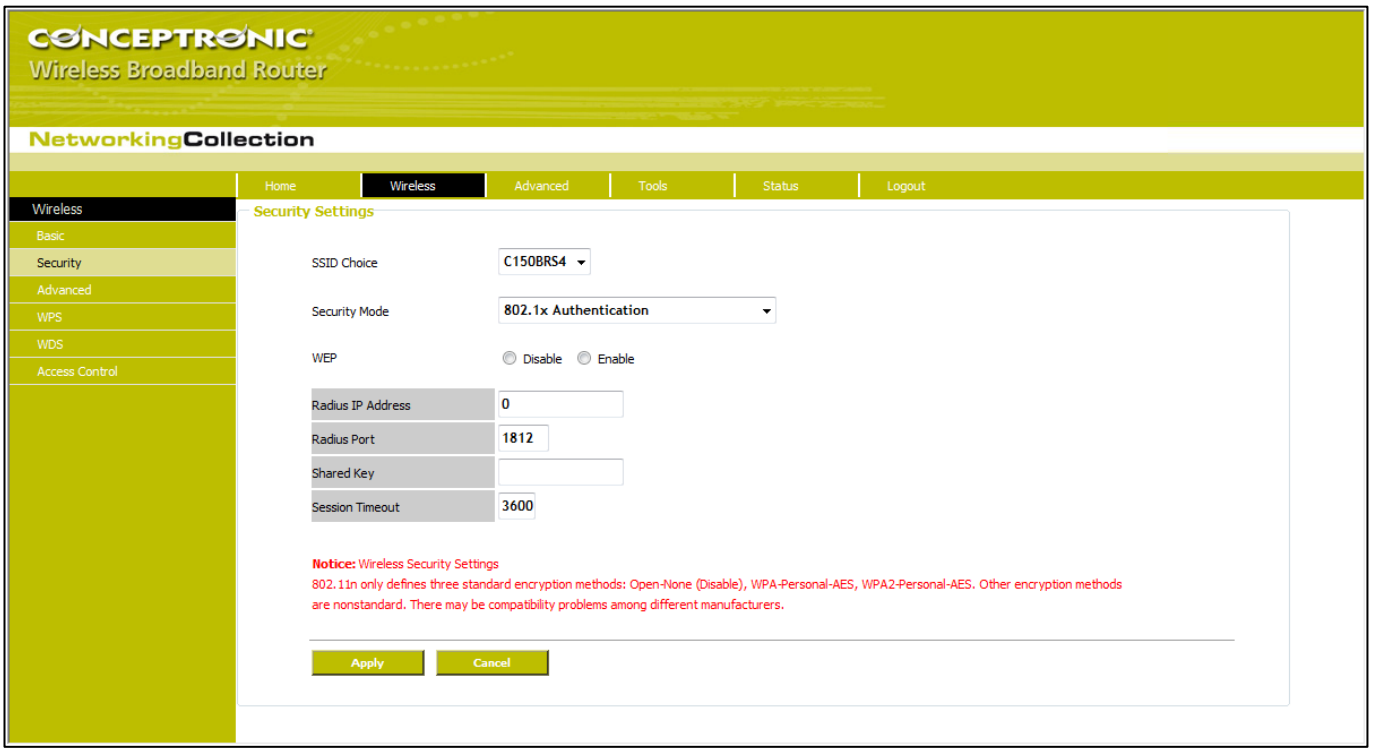
4-2-7. Mixed WPA / WPA2 (Enterprise)



This security mode combines WPA and WPA2 (Enterprise) and is used when a RADIUS server is connected to the device. When the client supports WPA2 (Enterprise), WPA2 (Enterprise) will be used. Older clients will use WPA (Enterprise).

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WPA Algorithms	: Provides TKIP [Temporal Key Integrity Protocol], AES [Advanced Encryption Standard] or a combination of both.
Key Renewal Interval	: Set the key's renewal period.
Radius IP Address	: Enter the IP address of the Radius server.
Radius Port	: Enter the authentication port of the Radius server. The default is 1812.
Shared Key	: Enter the shared key for authentication server with 8~63 ASCII characters.
Session Timeout	: The authentication interval period between AP and authentication server.

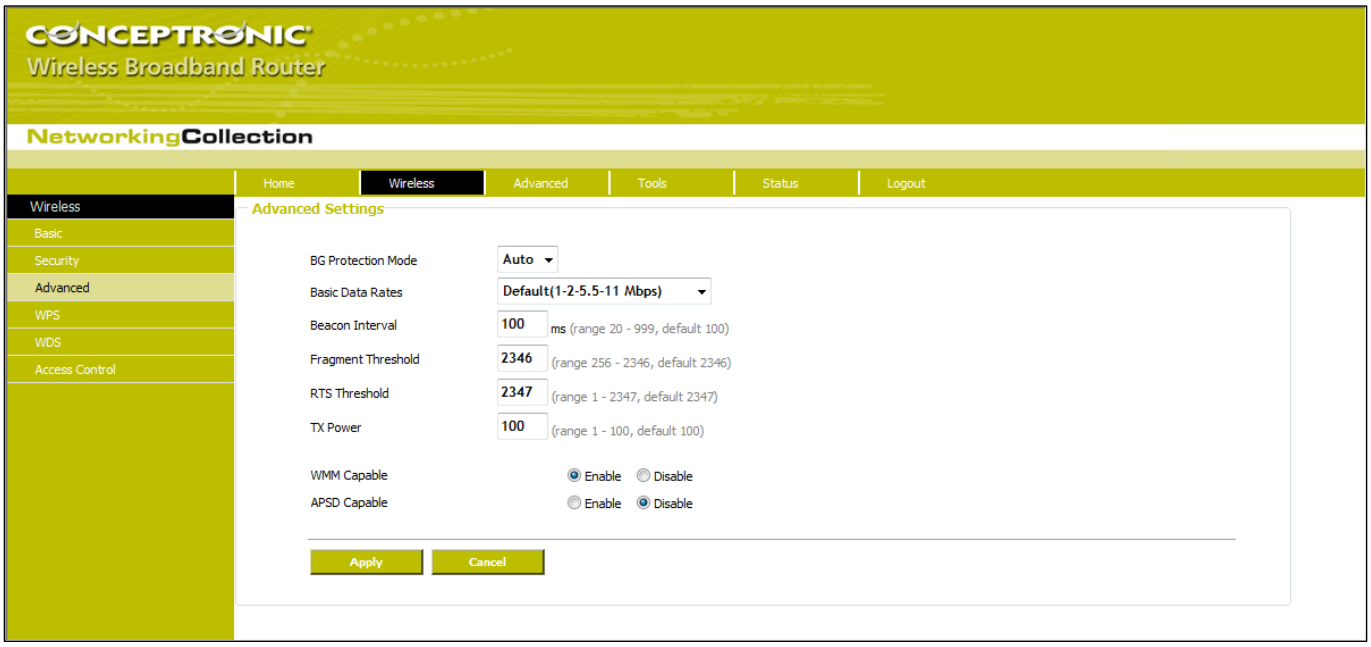
4-2-8. 802.1x



This security mode is used when a RADIUS server is connected to the device. 802.1x, a kind of Port-based authentication protocol, is an authentication type and strategy for users. The port can be either a physic port or logic port (such as VLAN). For wireless LAN users, a port is just a channel. The final purpose of 802.11x authentication is to check if the port can be used. If the port is authenticated successfully, you can open this port which allows all the messages to pass. If the port isn't authenticated successfully, you can keep this port "disable" which just allows 802.1x authentication protocol message to pass.

SSID Choice	: Select the SSID (main SSID or minor SSID) to configure security setting from the drop-down menu.
Security Mode	: From the drop-down menu select the corresponding security encryption modes.
WEP	: Click "Enable/Disable" to enable or disable the WEP algorithm.
Radius IP Address	: Enter the IP address of the Radius server.
Radius Port	: Enter the authentication port of the Radius server. The default is 1812.
Shared Key	: Enter the shared key for authentication server with 8~63 ASCII characters.
Session Timeout	: The authentication interval period between AP and authentication server.

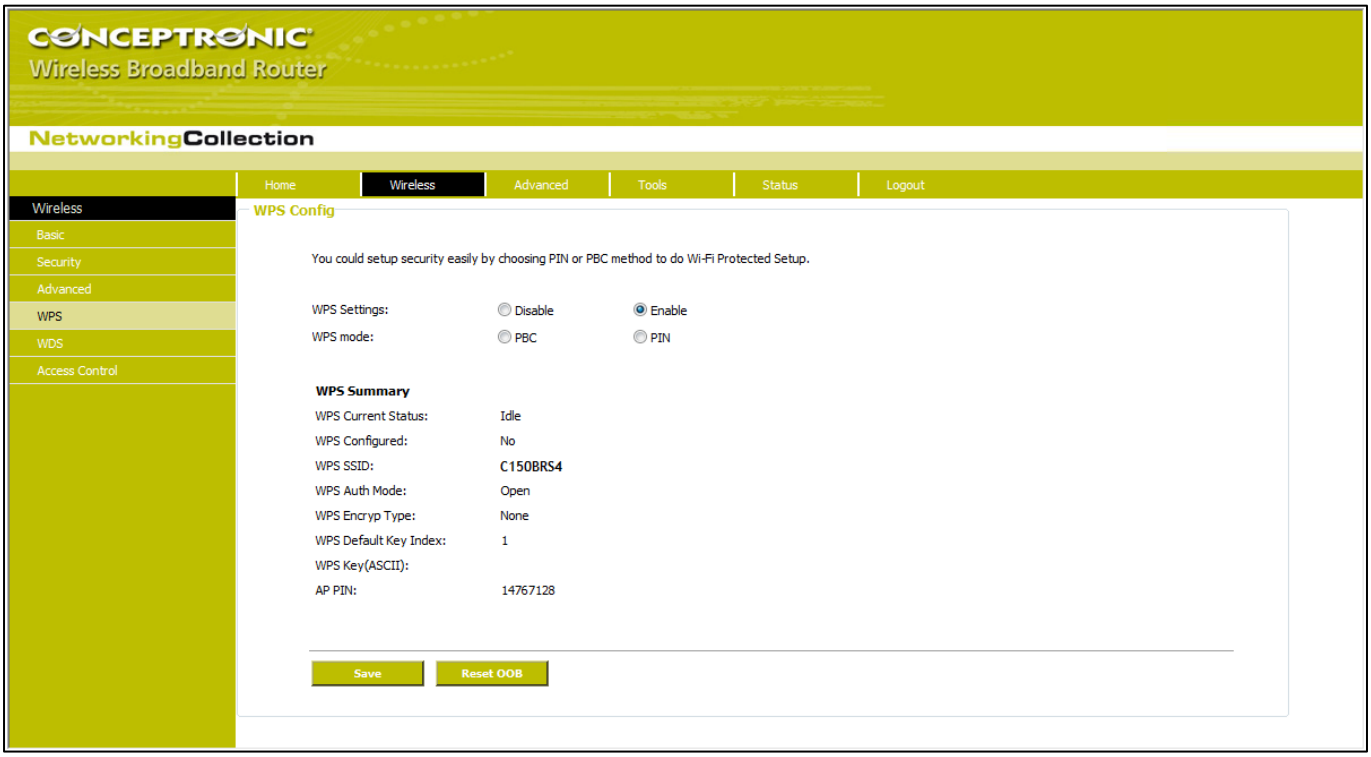
4-3. Wireless - Advanced



This section is to configure the advanced wireless setting of the Router, including the Radio Preamble, 802.11g/n Rate, Fragmentation Threshold, RTS Threshold, etc.

BG protection Mode	: Auto by default. It is for 11b/g wireless client to connect 11n wireless network smoothly in a complicated wireless area.
Basic Data Rates	: For different requirement, you can select one of the suitable Basic Data Rates. Here, default value is (1-2-5.5.-11Mbps…). It is recommended not to modify this value.
Beacon Interval	: Set the beacon interval of wireless radio. Default value is 100. It is recommended not to modify this value.
Fragment Threshold	: The fragmentation threshold defines the maximum transmission packet size in bytes. The packet will be fragmented if the arrival is bigger than the threshold setting. The default size is 2346 bytes. It is recommended not to modify this value.
RTS Threshold	: RTS stands for “Request to Send”. This parameter controls what size data packet the frequency protocol issues to RTS packet. The default value of the attribute is 2346. It is recommended not to modify this value in SOHO environment.
TX Power	: Set the output power of wireless radio. The default value is 100.
WMM Capable	: It will enhance the data transfer performance of multimedia data when they’re being transferred over wireless network. It is recommended to enable this option.
APSD Capable	: It is used for auto power-saved service. The default is disabled.

4-4. Wireless - WPS



WPS (Wi-Fi Protected Setting) can be easy and quick to establish the connection between the wireless network clients and the device through encrypted contents. The users only enter PIN code or press WPS button on the panel to configure it without selecting encryption method and secret keys by manual.

WPS settings : To enable or disable WPS function. The default is “disable”.

WPS mode : Provide two ways: PBC (Push-Button Configuration) and PIN code.

PBC : Select the PBC or press the WPS button on the front panel of the device for about one second (Press the button for about one second and WPS indicator will be blinking for 2 minutes, which means the WPS is enabled. During the blinking time, you can enable another device to implement the WPS/PBC negotiation between them. Two minutes later, the WPS indicator will be off, which means the WPS connection is completed. If more clients are added, repeat the above steps. At present, the WPS supports up to 32 clients access.)

PIN : If this option is enabled, you need to enter a wireless client’s PIN code in the field and keep the same code in the WPS client.

WPS Summary : Show the current state of Wi-Fi protected setting, including authorized mode, encryption type, default key and other information.

WPS Current Status : Idle means WPS in idle state. Start MSC process means the process has been started and waits for being connected. Configured means the negotiation is successful between server and clients.

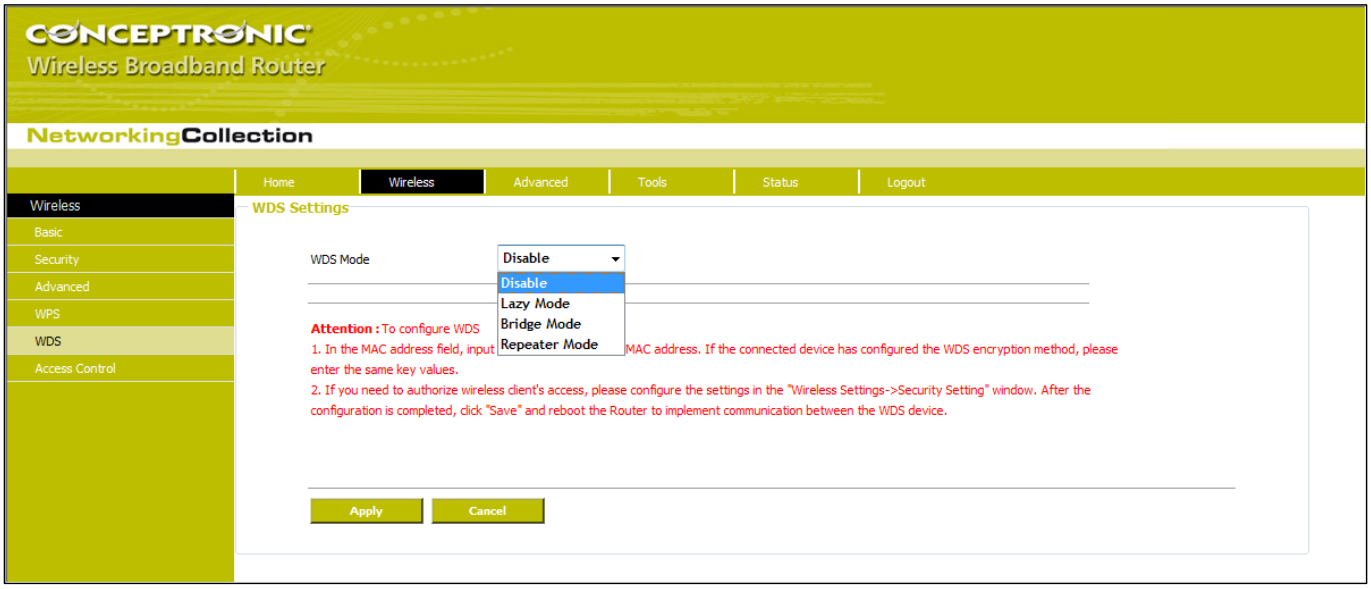
WPS Configured : “yes” means WPS feature is enabled and goes into effect. “not used” means it is not used. Usually the AP-security has been enabled, here will displayed “not used”.

WPS SSID : Show the main SSID set by WPS.

WPS Auth. Mode : The authorization mode deployed by WPS, generally WPA/WPA2-personal mode.

WPS Encrypt Type	: The encryption type used by WPS, generally AES/TKIP.
WPS key	: The effective key generated by AP automatically.
AP PIN（KEY）	: The PIN code used by default.
Reset OOB	: When this button is pressed, the WPS client will be idle state, and WPS indicator will be turned off. AP will not respond the WPS client's requests and the set the security mode as WPA mode.

4-5. Wireless - WDS

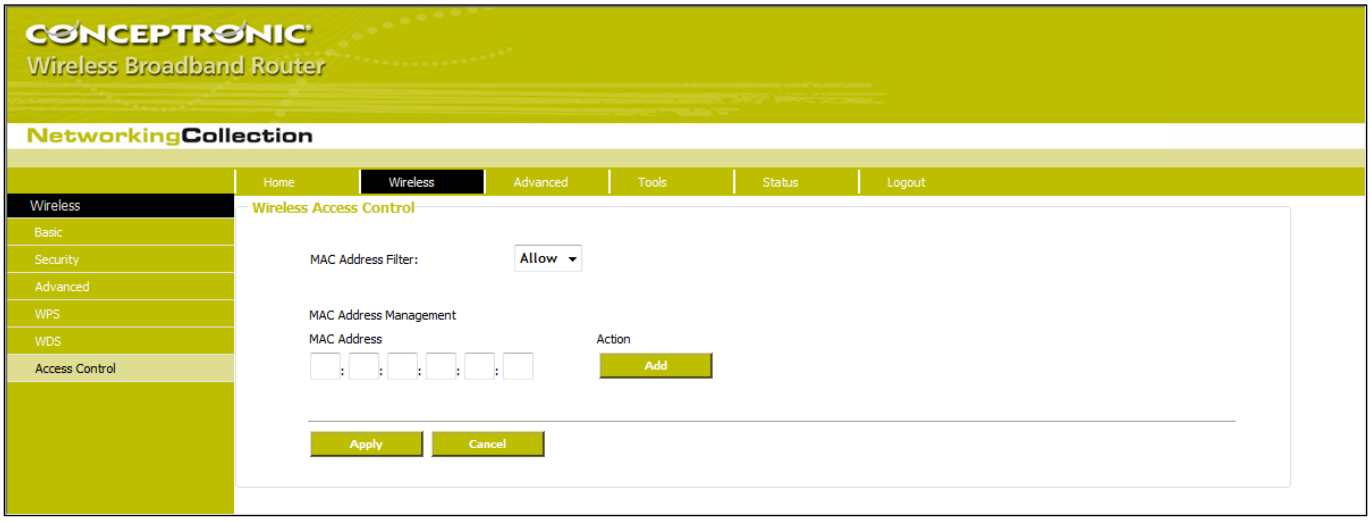


WDS (Wireless Distribution System) is used to expand wireless coverage area. This Router provides three modes: Lazy, Bridge and Repeater.

Lazy	: In this mode, the connected device can be Bridge mode or Repeater mode and enter the Router's BSSID to establish the connection.
Bridge	: You can wirelessly connect two or more wired networks via this mode. In this mode, you need to add the Wireless MAC address of the connecting device into the Router's AP MAC address table or select one from the scanning table.
Repeater Mode	: In this mode, add the opposing MAC address into each own AP MAC address table by manual or scanner to enlarge and extend the wireless radio.
Encrypt Type	: Select one from WEP, TKIP, AES for security here.
Pass phrase	: Enter the encrypted key for wireless devices.
AP MAC	: Input the MAC address of another (opposing) wireless router you want to connect.

NOTE: It is recommended that two wireless routers keep the same bandwidth, channel number, and security settings. Apply the settings and reboot the Router to activate it.

4-6. Wireless - Access Control

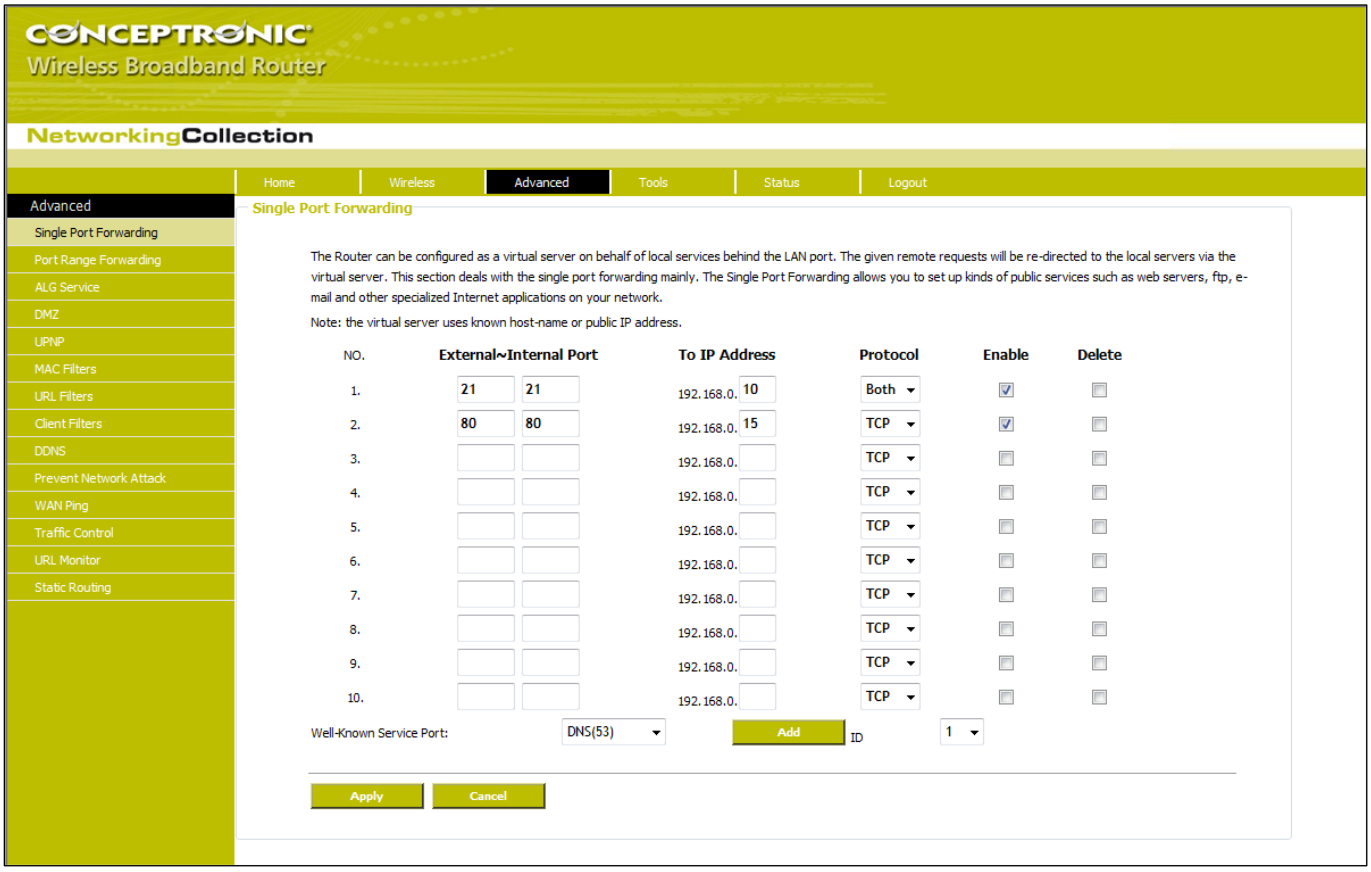


To secure your wireless LAN, the wireless access control is actually based on the MAC address management to allow or block the specific clients to access the wireless network.

MAC Address Filter	: Enable/disable MAC address filter. Select “Close” to malfunction MAC address; “disable” to prevent the MAC addresses in the list from accessing the wireless network; “Allow” to allow the MAC address in the list to access the wireless network.
MAC Address Management	: Input the MAC address to implement the filter policy. Click “Add” to finish the MAC add operation.
MAC list	: Show the added MAC addresses. You can add or delete them.

Chapter V: Configuration - Advanced

5-1. Advanced - Single Port Forwarding



Note: In the picture above, you will see an example of some port forwarding rules.

The Router can be configured as a virtual server on behalf of local services behind the LAN port. The given remote requests will be re-directed to the local servers via the virtual server. This section deals with the single port forwarding mainly. The Single Port Forwarding allows you to set up kinds of public services such as web servers, ftp, e-mail and other specialized Internet applications on your network.

External Port : This is the external (WAN) port number for server or Internet application, for example, port 21 for ftp service.

Internal Port : This is the port number of LAN computer set by the Router. The Internet traffic from the external port will forward to the internal port. For example : you can set the internal port NO.66 to act as the external port NO.21 for ftp service.

IP Address : Enter the IP address of the PC where you want to set the applications.

Protocol : Select the protocol (TCP/UDP/Both) for the application.

Note: If you do not know which protocol (‘**Type**’) you need to select for your virtual server rule, select ‘**Both**’. This option will pass both TCP and UDP traffic through to the configured IP address.

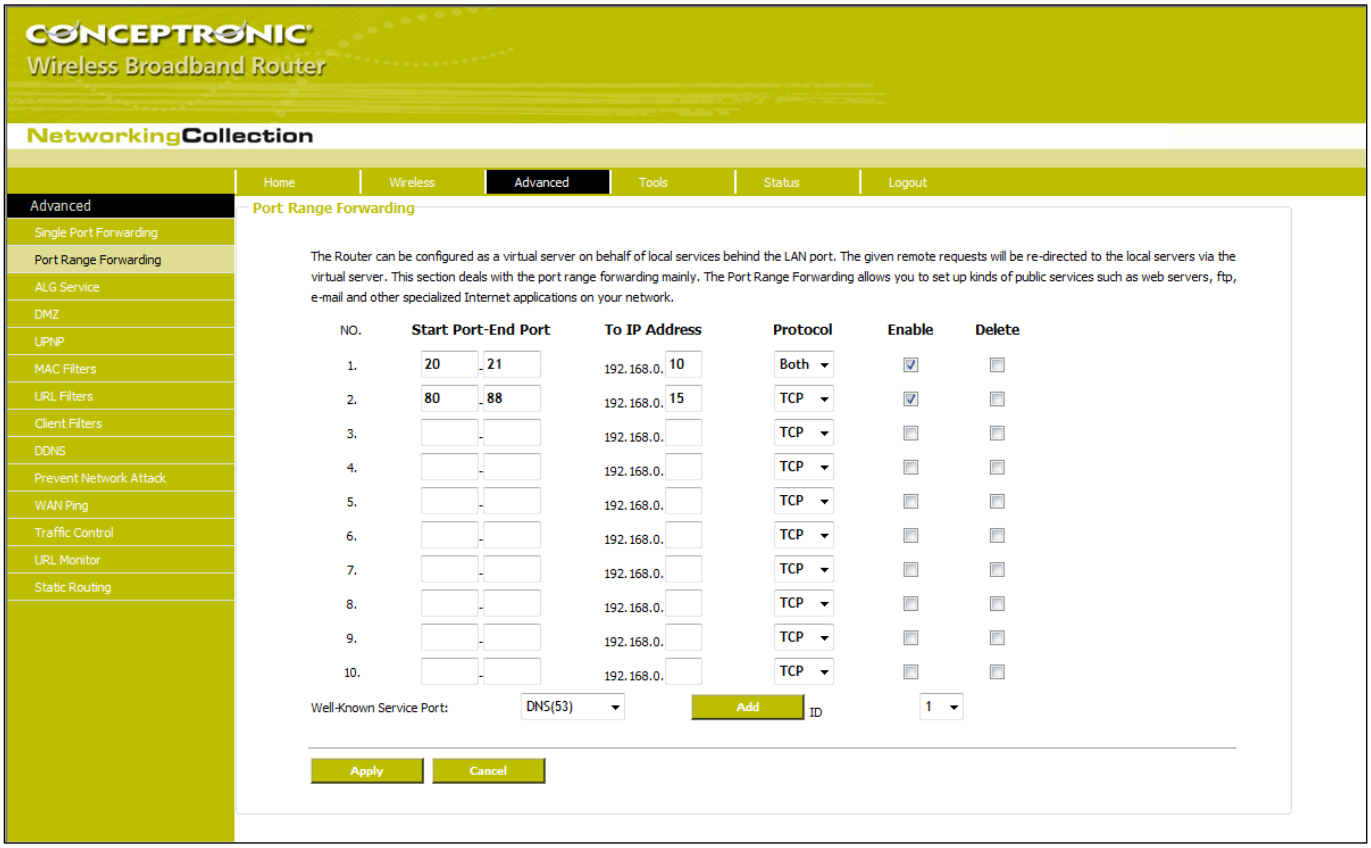
Delete/Enable : Click to check it for corresponding operation.

Well-Known Service Port : Select the well-known services as DNS, FTP from the drop-down menu to add to the configured one above.

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

Note: To make sure the configured rules will work correctly, it is recommended to reboot your router after you have configured your port forwarding rules.

5-2. Advanced - Port Range Forwarding



Note: In the picture above, you will see an example of some port forwarding rules.

This section deals with the port range forwarding mainly. The Port Range Forwarding allows you to set up a range of public services such as web servers, ftp, e-mail and other specialized Internet applications to an assigned IP address on your LAN.

Start/End Port : Enter the start/end port number which ranges the External ports used to set the server or Internet applications.

IP Address : Enter the IP address of the PC where you want to set the applications.

Protocol : Select the protocol (TCP/UDP/Both) for the application.

Note: If you do not know which protocol (‘**Type**’) you need to select for your virtual server rule, select ‘**Both**’. This option will pass both TCP and UDP traffic through to the configured IP address.

Delete/Enable : Click to check it for corresponding operation.

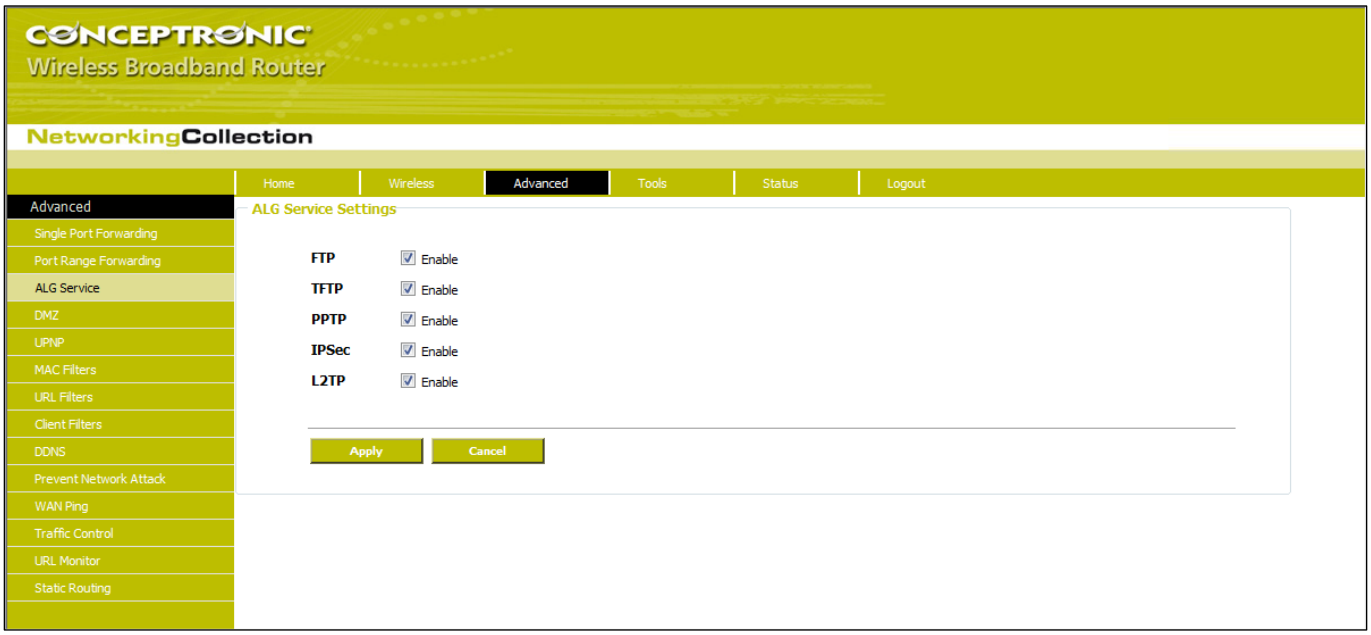
Well-Known Service Port : Select the well-known services as DNS, FTP from the drop-down menu to add to the configured one above.

Add : Add the selected well-known port to the policy ID.

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

Note: To make sure the configured rules will work correctly, it is recommended to reboot your router after you have configured your port forwarding rules.

5-3. Advanced - ALG Service



In the context of computer networking, an ALG or application layer gateway consists of a security component that augments a firewall or NAT employed in a computer network. It allows customized NAT traversal filters to be plugged into the gateway to support address and port translation for certain application layer "control/data" protocols such as FTP, BitTorrent, SIP, RTSP, file transfer applications etc.
In order for these protocols to work through NAT or a firewall, either the application has to know about an address/port number combination that allows incoming packets, or the NAT has to monitor the control traffic and open up port mappings (firewall pinhole) dynamically as required. Legitimate application data can thus be passed through the security checks of the firewall or NAT that would have otherwise restricted the traffic for not meeting its limited filter criteria.

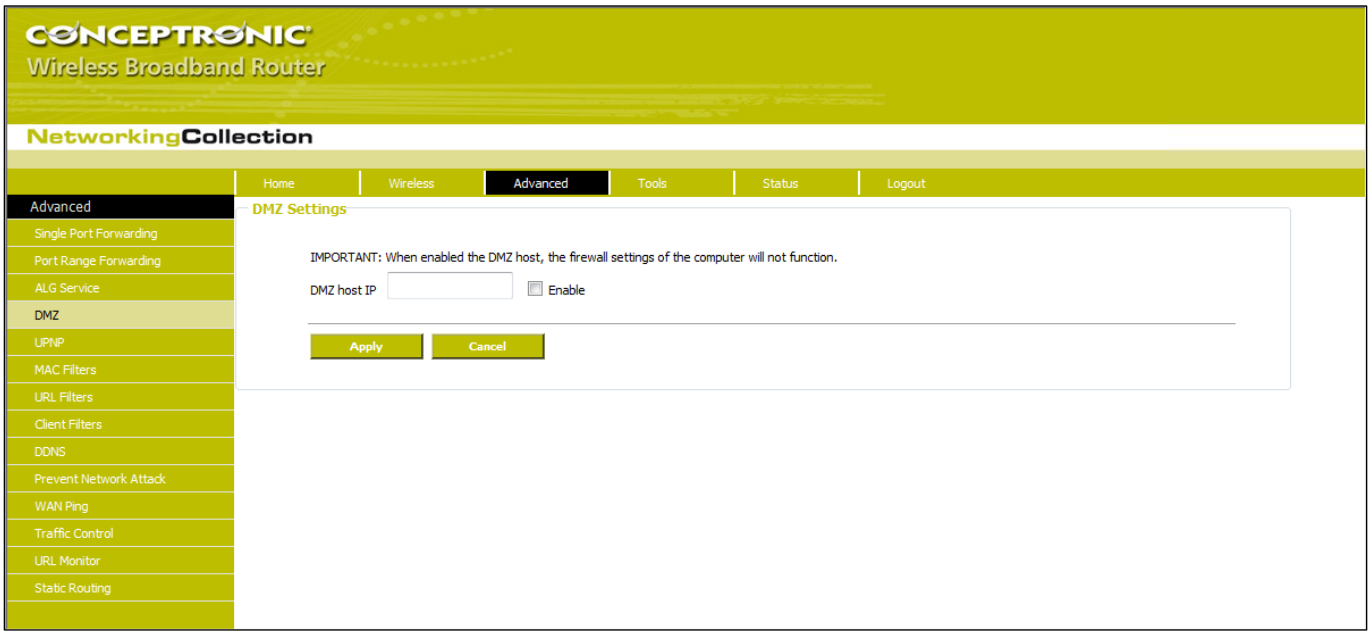
Usually allowing client applications to use dynamic ephemeral TCP/ UDP ports to communicate with the known ports used by the server applications, even though a firewall-configuration may allow only a limited number of known ports. In the absence of an ALG, either the ports would get blocked or the network administrator would need to explicitly open up a large number of ports in the firewall; rendering the network vulnerable to attacks on those ports.

In the default ALG settings, the following protocols have enabled:

- FTP
- TFTP
- PPTP
- IPSec
- L2TP

It is recommended to keep the settings unchanged.

5-4. Advanced - DMZ

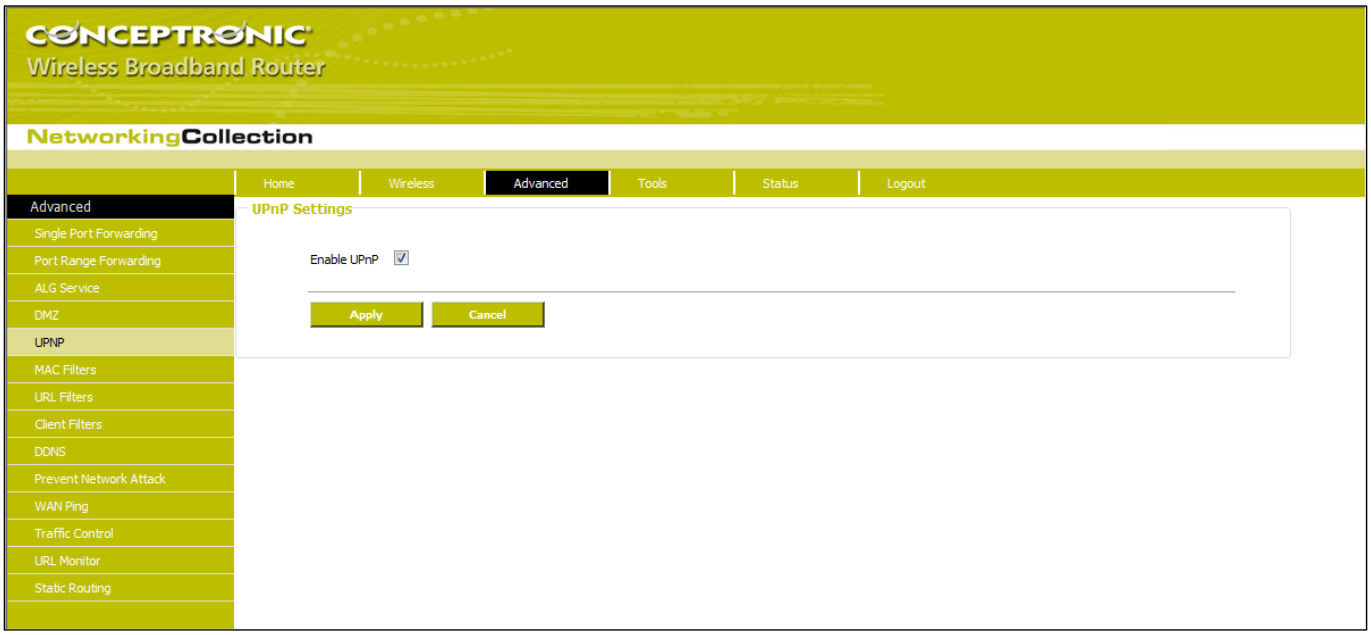


The DMZ function is to allow one computer in LAN to be exposed to the Internet for a special-purpose service as Internet gaming or videoconferencing.

DMZ Host IP Address	: The IP address of the computer you want to expose.
Enable	: Click the checkbox to enable the DMZ host.

Important: When the DMZ host is enabled, the firewall settings of the DMZ host will not function.

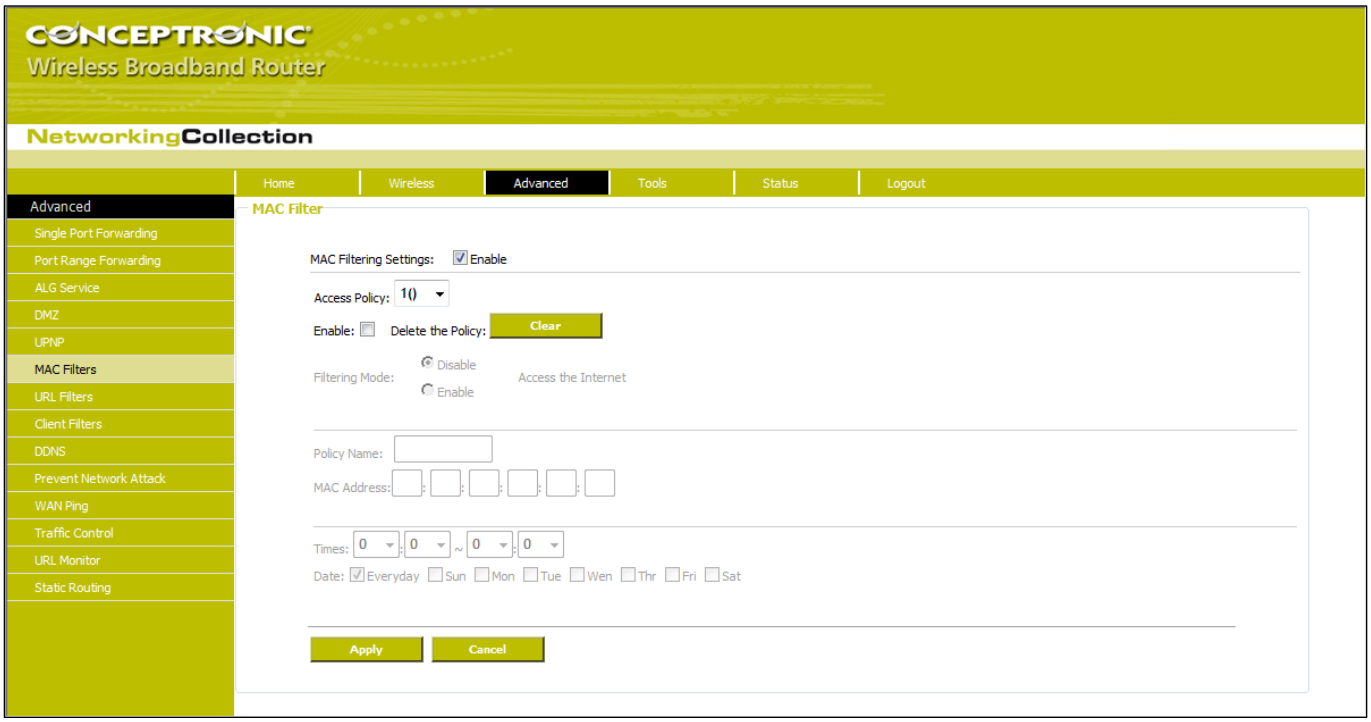
5-5. Advanced - UPNP



It supports latest Universal Plug and Play. This function goes into effect on Windows XP or Windows ME or this function would go into effect if you have installed software that supports UPnP. With the UPnP function, host in LAN can request the router to process some special port switching so as to enable host outside to visit the resources in the internal host.

Enable UPnP	: Click the checkbox to enable the UPnP.

5-6. Advanced - MAC Filters

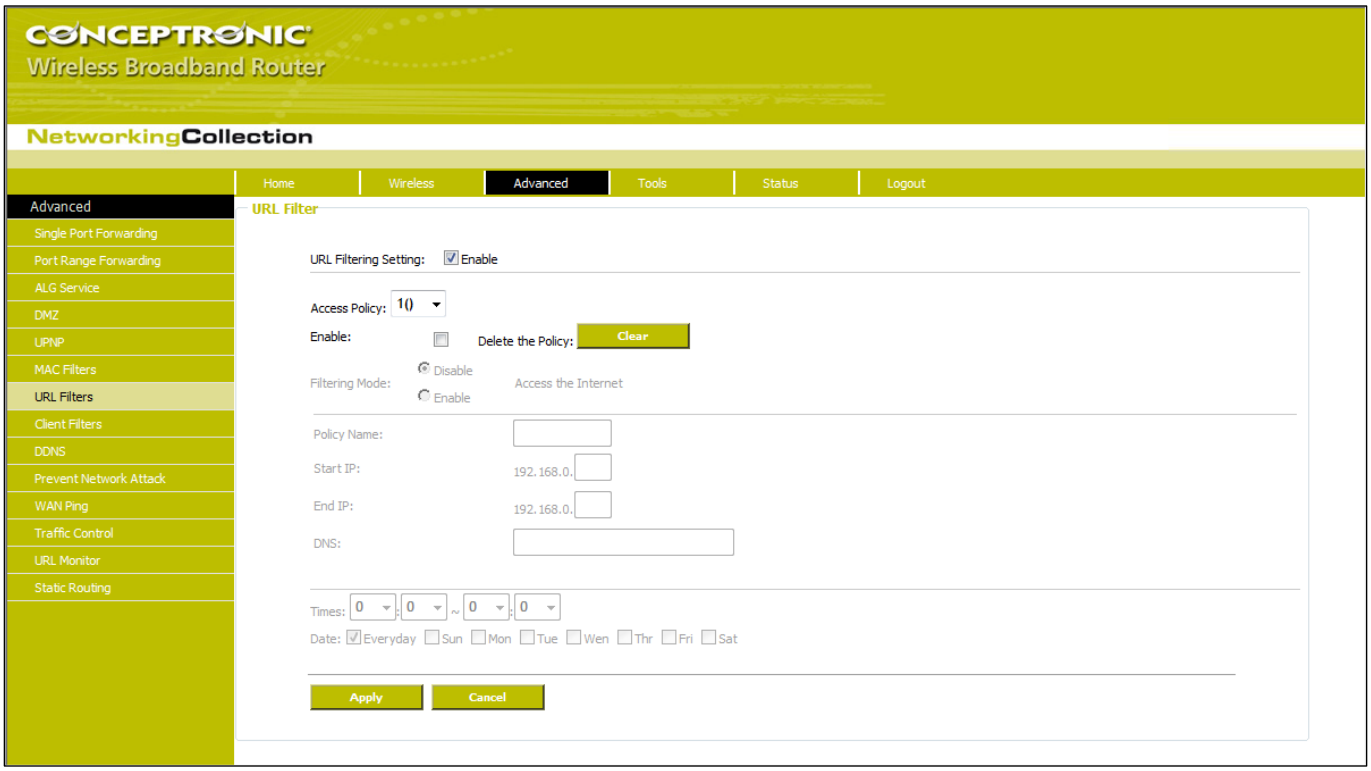


In order to manage the computers in LAN better, you could control the computer's access to Internet by MAC Address Filter.

MAC Address Filter	: Check to enable MAC address filter.
Access Policy	: Select one number from the drop-down menu.
Enable	: Check to enable the access policy.
Clear the Policy	: Click "Clear" button to clear all settings for the policy.
Filter Mode	: Click one radio button to enable or disable to access the Internet.
Policy Name	: Enter a name for the access policy selected.
MAC Address	: Enter the MAC address you want to run the access policy.
Times	: Select the time range of client filter.
Days	: Select the day(s) to run the access policy.
Apply	: Click to make the settings go into effect.

For example: If you want to configure the host with MAC address 00:22:F7: AD:FF:C5 not to access the Internet at 8：00-18：00, you need to set it as above.

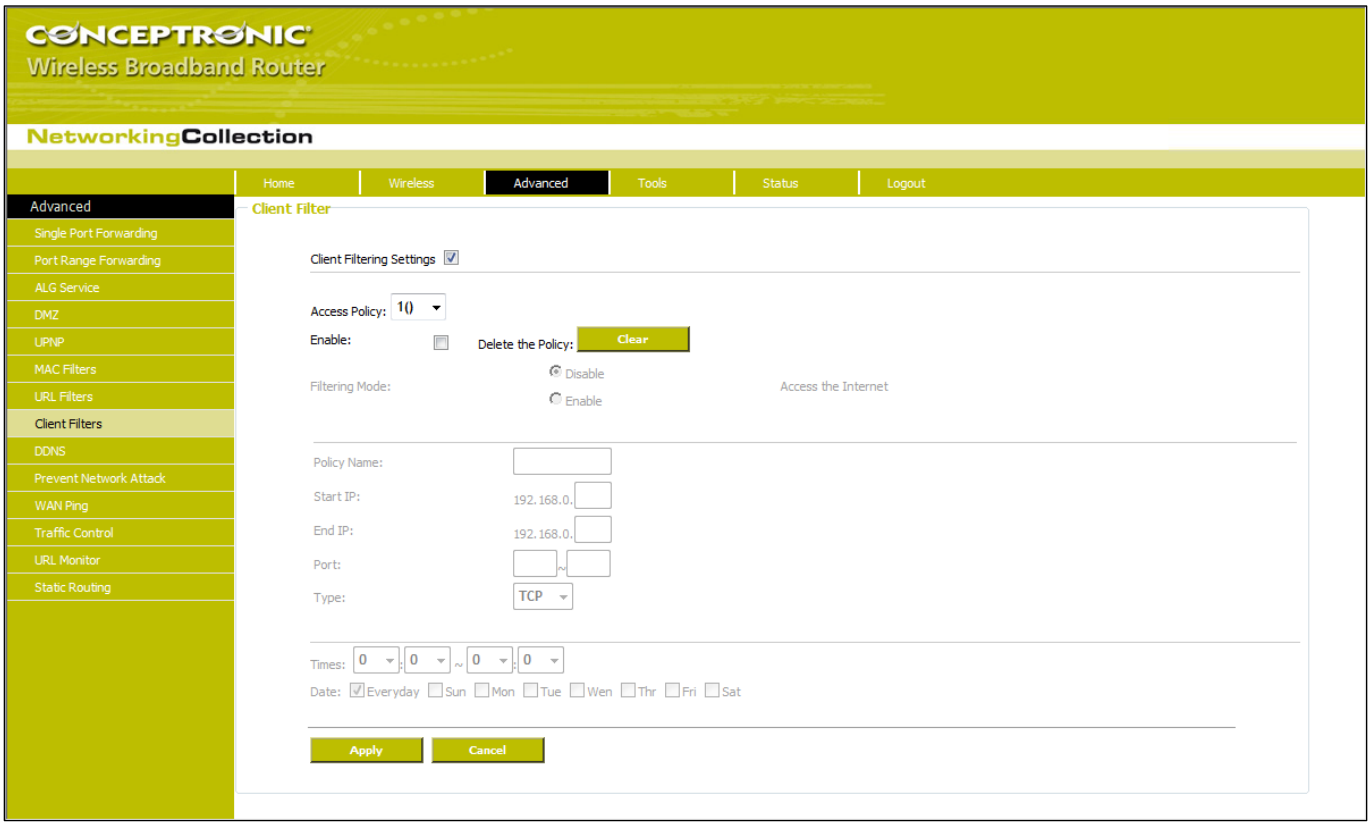
5-7. Advanced - URL Filters



In order to control the computer to have access to websites, you can use URL filtering to allow the computer to have access to certain websites at fixed time and forbids it having access to certain websites at fixed time.

URL Filter	: Check to enable URL filter.
Access Policy	: Select one number from the drop-down menu.
Enable	: Check to enable the access policy.
Clear the Policy	: Click “Clear” button to clear all settings for the policy.
Filter Mode	: Click one radio button to enable or disable to access the Internet.
Policy Name	: Enter a name for the access policy selected.
Start/End IP	: Enter the starting/ending IP address.
URL Strings	: Specify the text strings or keywords needed to be filtered. If any part of the URL contains these strings or words, the web page will not be accessible and displayed.
Times	: Select the time range of client filter.
Days	: Select the day(s) to run the access policy.

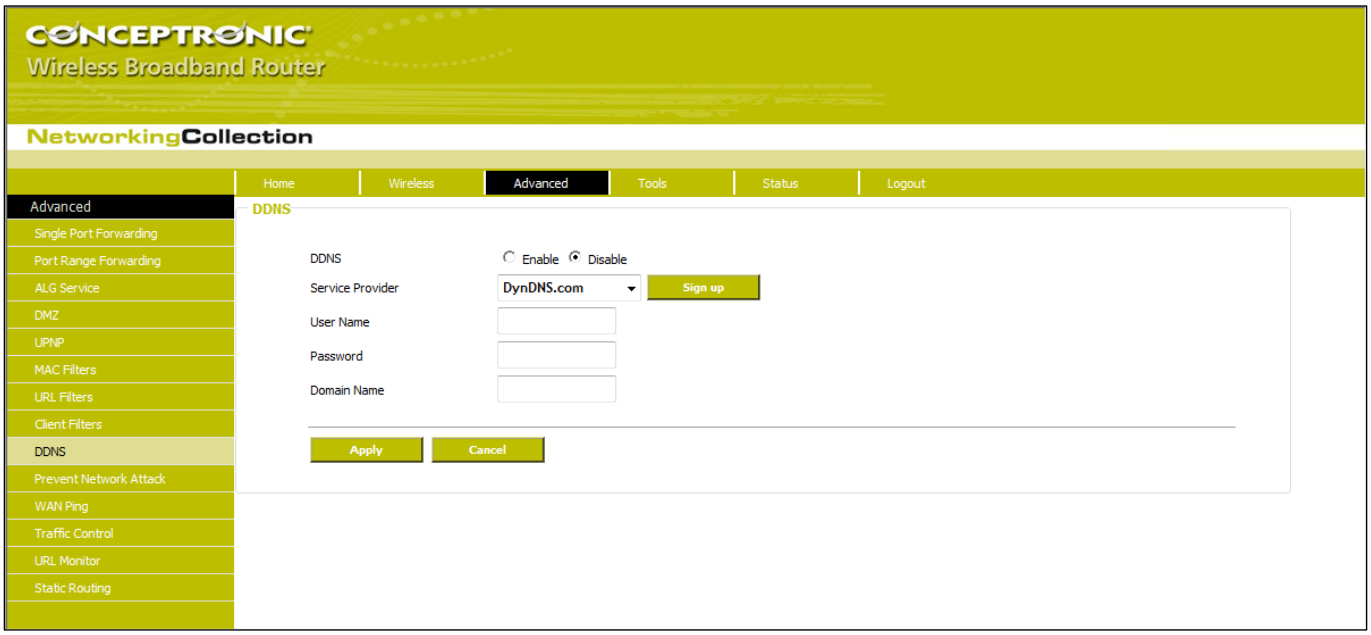
5-8. Advanced - Client Filters



To benefit your further management to the computers in the LAN, you can control some ports access to Internet by data packet filter function.

Client Filter	: Check to enable client filter.
Access Policy	: Select one number from the drop-down menu.
Enable	: Check to enable the access policy.
Clear the Policy	: Click “Clear” button to clear all settings for the policy.
Filter Mode	: Click one radio button to enable or disable to access the Internet.
Policy Name	: Enter a name for the access policy selected.
IP Start/End	: Enter the starting/ending IP address.
Port No.	: Enter the port range based over the protocol for access policy.
Protocol	: Select one protocol (TCP/UDP/Both) from the drop-down menu.
Times	: Select the time range of client filter.
Days	: Select the day(s) to run the access policy.

5-9. Advanced - DDNS

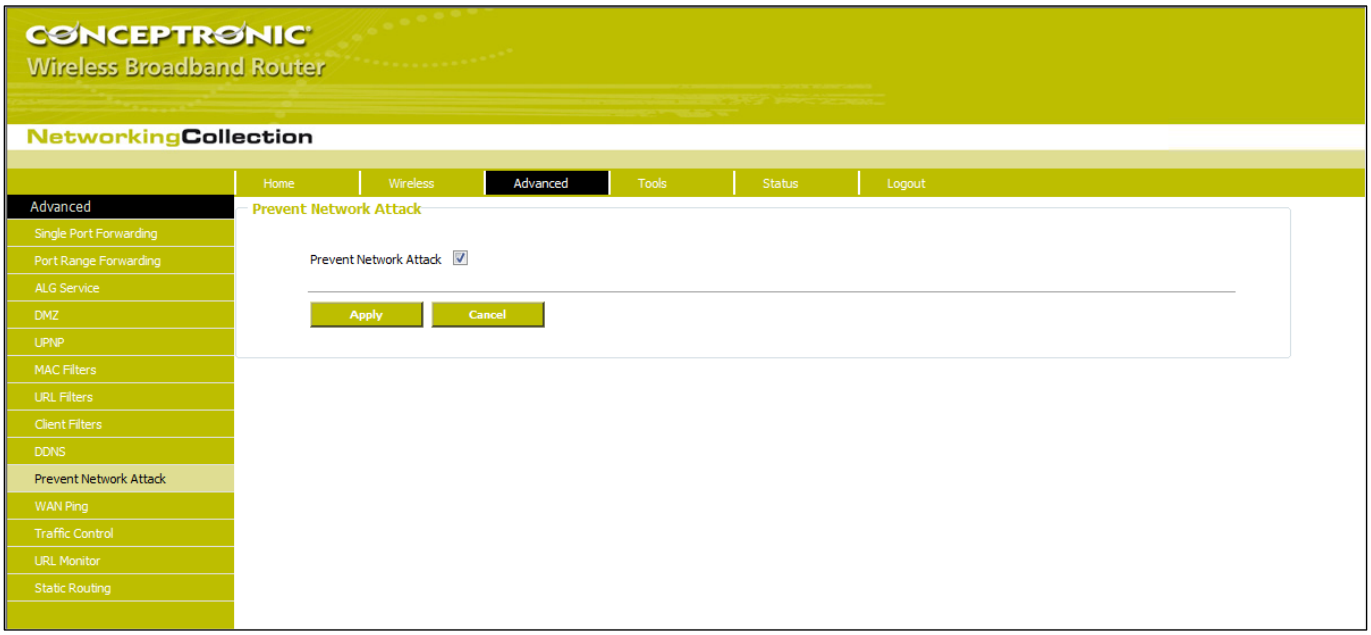


The DDNS (Dynamic Domain Name System) is supported in this Router. It is to assign a fixed host and domain name to a dynamic Internet IP address, which is used to monitor hosting website, FTP server and so on behind the Router. If you want to activate this function, please select “Enable” and a DDNS service provider to sign up.

Main Features: Owing to ISP most times provides dynamic IP address, DDNS is used to capture the changeable IP address and match the fixed domain. Then users can have access to the Internet to communicate with others. DDNS can help you establish virtual host in your home and company.

DDNS	: Click the radio button to enable or disable the DDNS service.
Service Provider	: Select one from the drop-down menu and press “Sign up” for registration.
User Name	: Enter the user name the same as the registration name.
Password	: Enter the password you set.
Domain Name	: Enter the domain name which is optional.

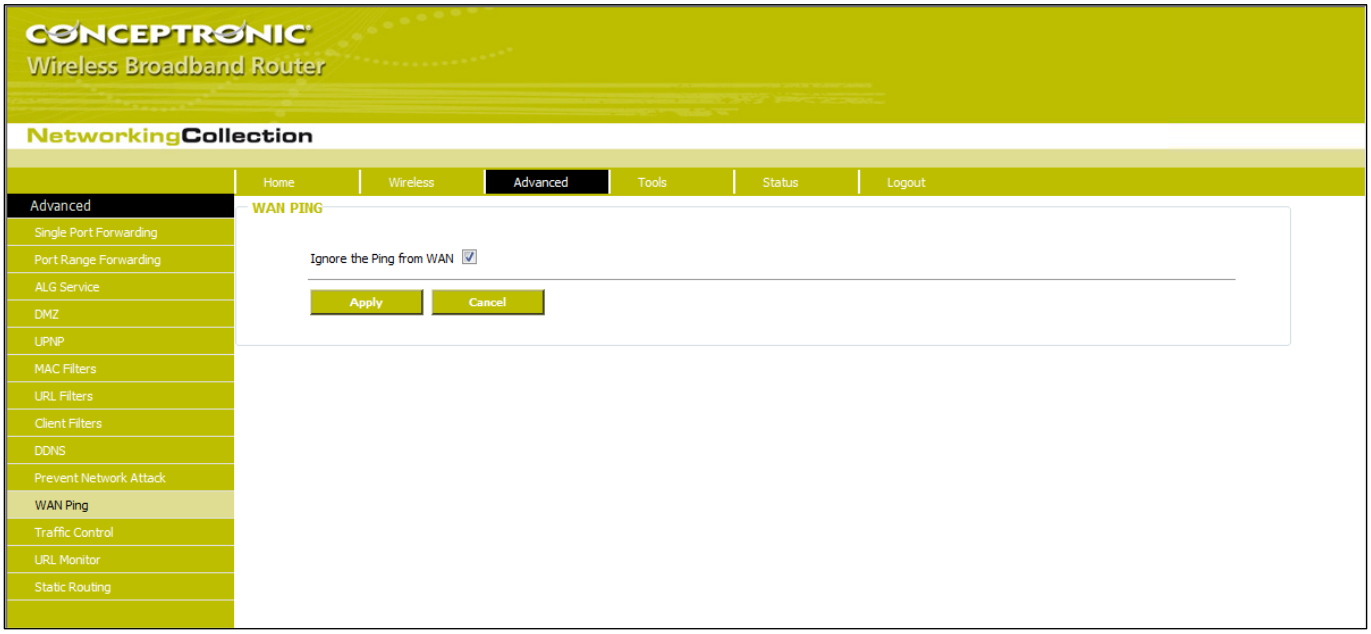
5-10. Advanced - Prevent Network Attack



This section is to protect the internal network from exotic attack such as SYN Flooding attack, Smurf attack, LAND attack, etc. Once detecting the unknown attack, the Router will restrict its bandwidth automatically.
The attacker's IP address can be found from the "System Log".

Prevent Network Attack	: Check to enable it for attack prevention.

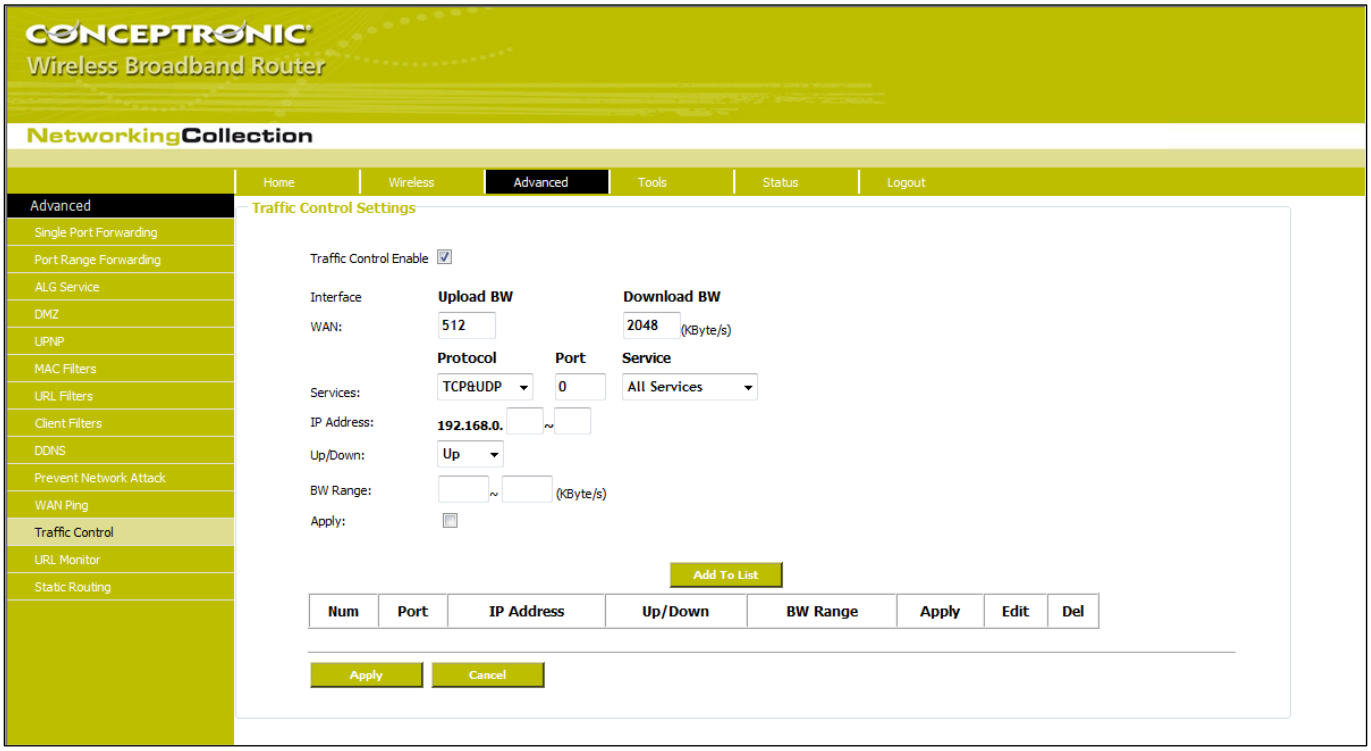
5-11. Advanced - WAN Ping



The ping test is to check the status of your internet connection. When disabling the test, the system will ignore the ping test from WAN.

Ignore Ping from WAN	: Check to ignore the ping request and give no reply.

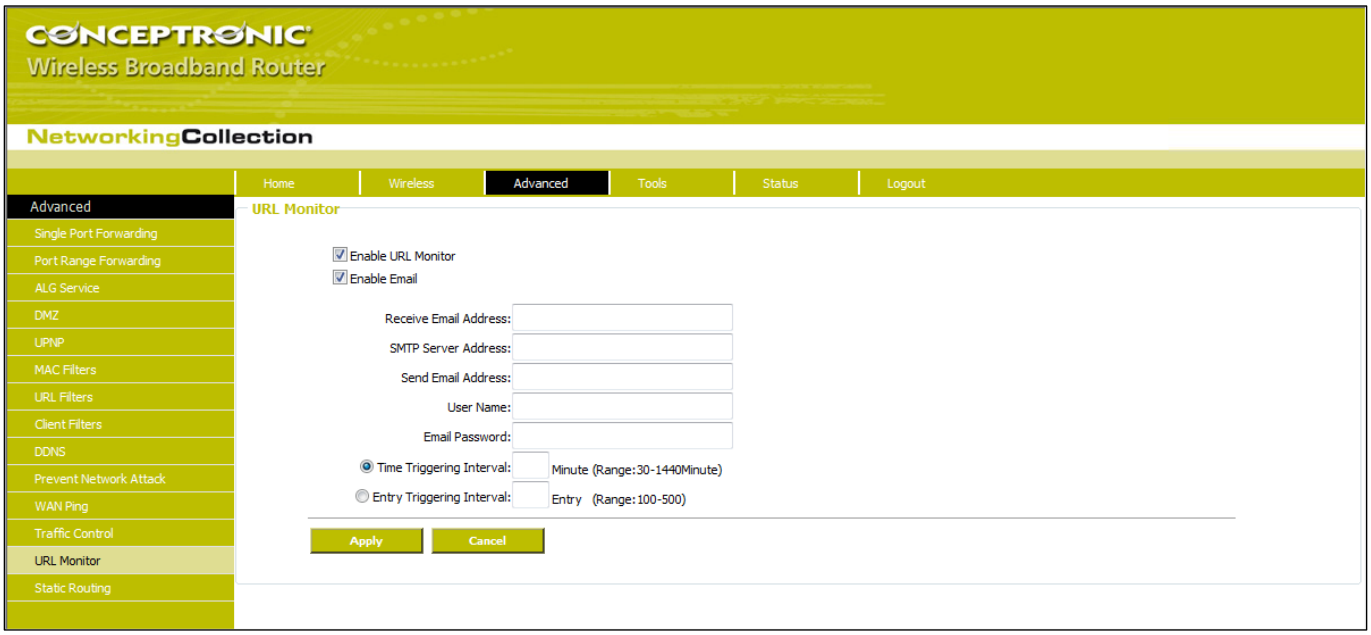
5-12. Advanced - Traffic Control



Traffic control is used to limit communication speed in the LAN and WAN. Up to 20 entries can be supported with the capability for at most 254 PCs' speed control, including for IP address range configuration.

Enable Traffic Control	: To enable or disable the internal IP bandwidth control. The default is disabled.
Interface	: To limit the uploading and downloading bandwidth in WAN port.
Service	: To select the controlled service type, such as HTTP service.
IP Starting Address	: The first IP address for traffic control.
IP Ending Address	: The last IP address for traffic control.
Uploading/Downloading	: To specify the traffic heading way for the selected IP addresses: uploading or downloading.
Bandwidth	: To specify the uploading/downloading Min. /Max. Traffic speed (KB/s), which cannot exceed the WAN speed.
Apply	: To enable the current editing rule. If not, the rule will be disabled.
Add	: After edit the rule, click the “add to list” button to add the current rule to rule list.
Apply	: Click “Save” to activate the current rule.
Cancel	: Click “Cancel” to drop all setting saved last time.

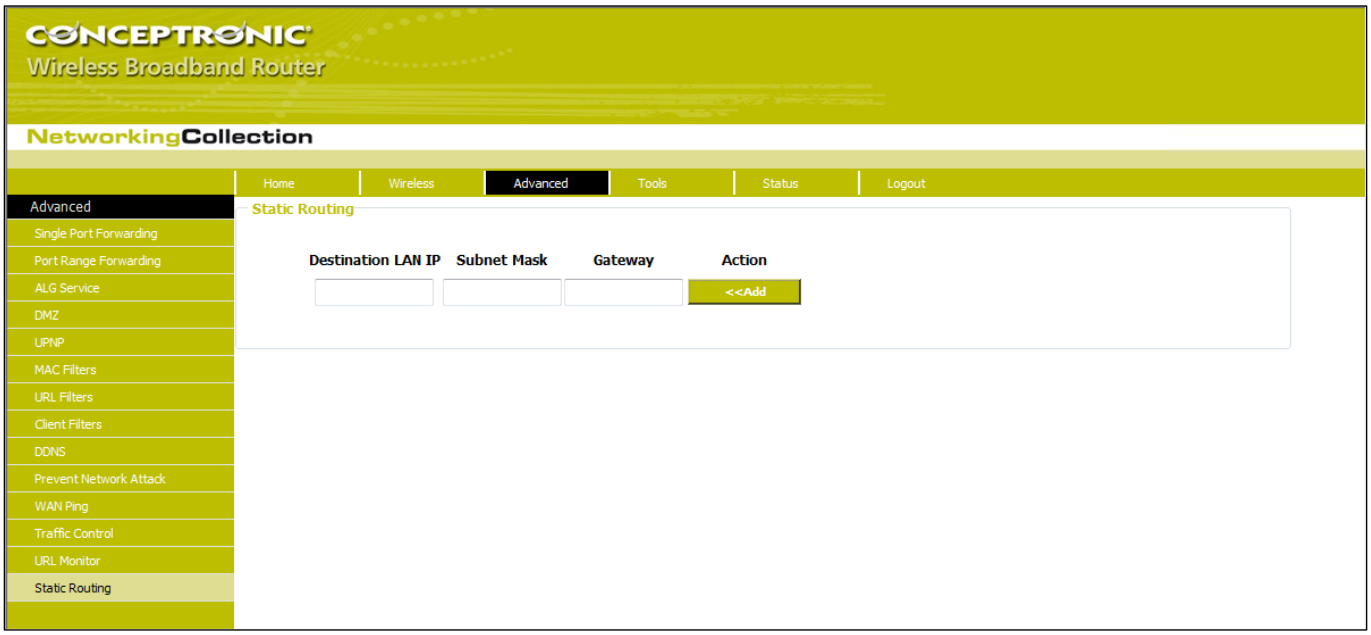
5-13. Advanced - URL Monitor



This feature is used to record user's Internet activity, so in terms of this feature, the administrator can check out and control what they can do and have done.

Enable URL Monitor	: After checking this feature, the Router will record LAN computer's URL information, including the visiting Website, your LAN IP address and the time. The Router can record up to 500 entries. If the record is more than 500 entries, the counter will clean all records and restart the URL record again. If the Router is powered off and restarts the device, the records will be also lost. The default setting is disabled.
Enable Email	: To enable this feature, the URL records will be sent to specified e-mail, which can be solved the problem that the records will be lost when it is over 500 entries.
Receive E-mail Address	: Input the received E-mail's address here.
SMTP Server Address	: Input the SMTP server address here. If you are not clear what your SMTP server's address is, you can find them from Help page of the registered e-mail.
Send Email Address	: Input the sending email address here.
User Name	: Input the sending e-mail's user name.
Email Password	: Input the sending e-mail's password.
Time Triggering Interval	: To set sending e-mail's time interval. The time ranges from 30 to 1440 minutes. For example: if you input 30 here, it means the Router will send a email from "Send Email Address" to "Receive Email Address" in every 30 minutes. And then the device will clean all records and start the recording again.
Entry Triggering Interval	: To set sending e-mail's entry interval. The entry ranges from 100 to 500. For example: if you input 100 here, it means the Router will send a email from "Send Email Address" to "Receive Email Address" in every 100 entries. And then the device will clean all records and start the recording again.

5-14. Advanced - Static Routing



This page is used to configure the Router's static routing.

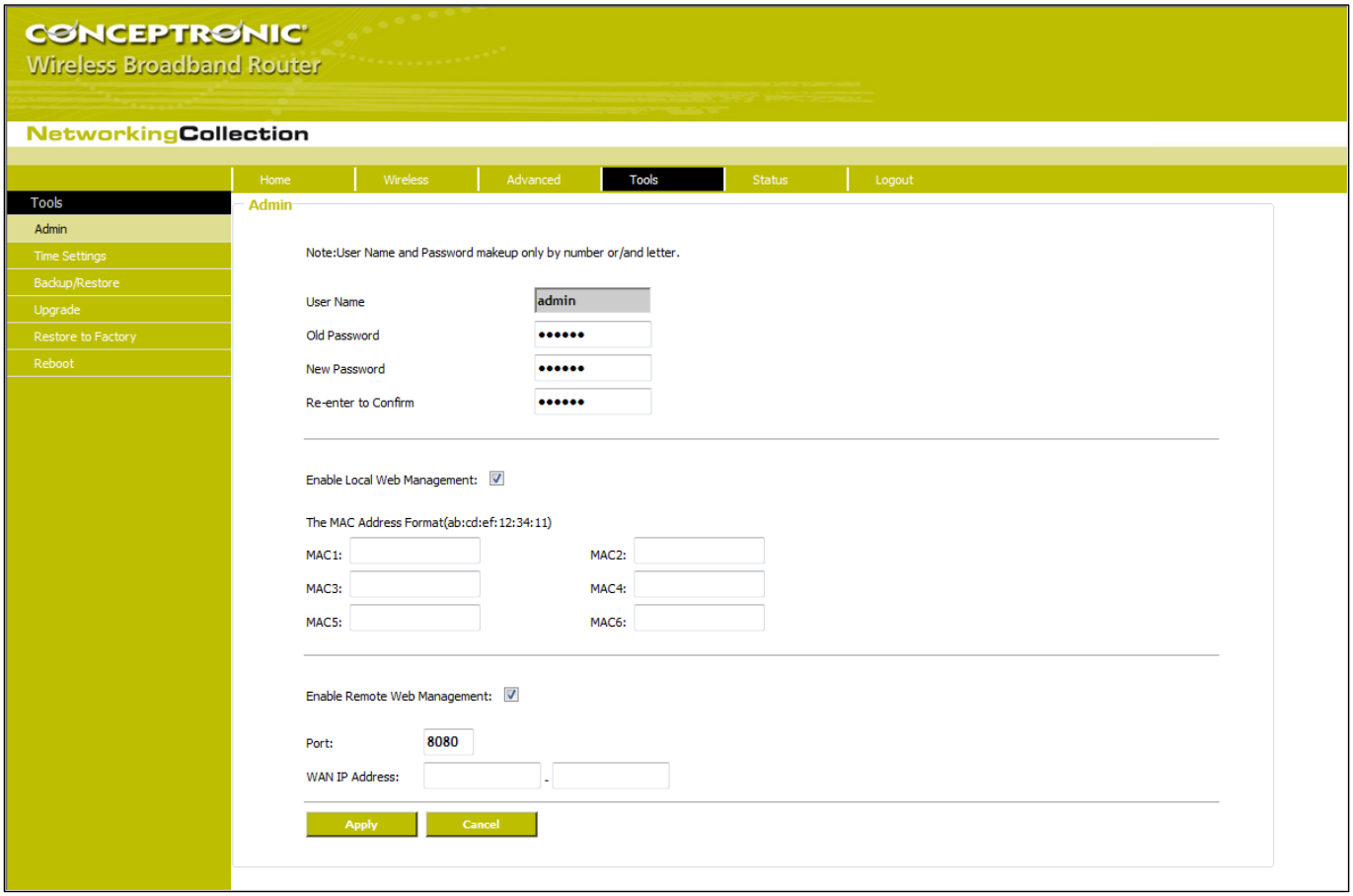
Destination LAN IP	: The address of the remote host with which you want to construct a static route.
Subnet Mask	: The network portion of the Destination LAN IP.
Gateway	: The gateway of the next hop, usually the Router or host's IP address.

Notes:

1. The gateway must keep the same segment with the Router's LAN IP address.
2. If the destination IP address is one host's IP address, the Subnet mask should be 255.255.255.255.
3. If the destination IP address is an IP address range, the subnet mask should match the IP address. For example, if the IP is 10.0.0.0, subnet mask should be 255.0.0.0; if the IP is 10.1.2.0, subnet mask should be 255.255.255.0.

Chapter VI: Configuration - Tools

6-1. Tools - Admin



The “Admin” page exists of 3 sections:

- Administrator password section
- Local Web Management section
- Remote Web Management section

Administrator password section:

This section is to set a new user name and password to better secure your router and network.

User Name	: Enter a new user name for the device.
Old Password	: Enter the old password.
New Password	: Enter a new password.
Re-enter to Confirm	: Re-enter to confirm the new password.

Note: It is highly recommended to change the password to secure your network and the Router.

Local Web Management section:

Local web management, the alternative to remote web management, is to allow the network administrator to manage the Router in LAN. Any PC in the LAN can access the Web management utility by default. So you can enter the specific MAC address of the LAN computer to function.

Enable	**:** Check to enable the local web management.
MAC1/2/3…	**:** Enter the MAC addresses of LAN computers.

Note:

1. In the default state, this feature is not enabled. All computers in the LAN can login the Web.
2. For example, if you only allow the MAC address with 00:11:22:33:E4:F5 to access the Web, please set it as above.

Remote Web Management section:

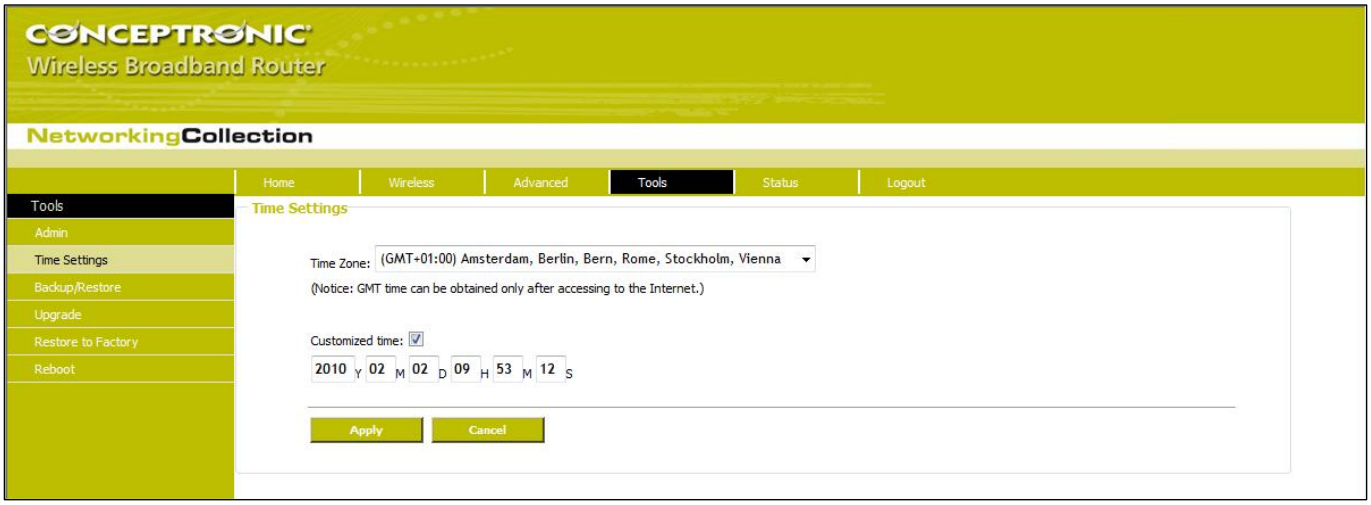
This section is to allow the network administrator to manage the Router remotely. If you want to access the Router from outside the local network, please select the "Enable".

Enable	**:** Check to enable remote web management.
Port	**:** The management port open to outside access. The default value is 80.
WAN IP Address	**:** Specify the range of the WAN IP address for remote management.

Note:

1. If you want to login the device's Web-based interface via port 8080, you need use the format of WAN IP address: port (for example http://219.134.32.101: 8080) to implement remote login.
2. If your WAN IP address starts and ends with 0.0.0.0, it means all hosts in WAN can implement remote Web management. If you change the WAN IP address as 218.88.93.33-218.88.93.35, then only the IP addresses as 218.88.93.33, 218.88.93.34 and 218.88.93.35 can access the Router.

6-2. Tools - Time Settings

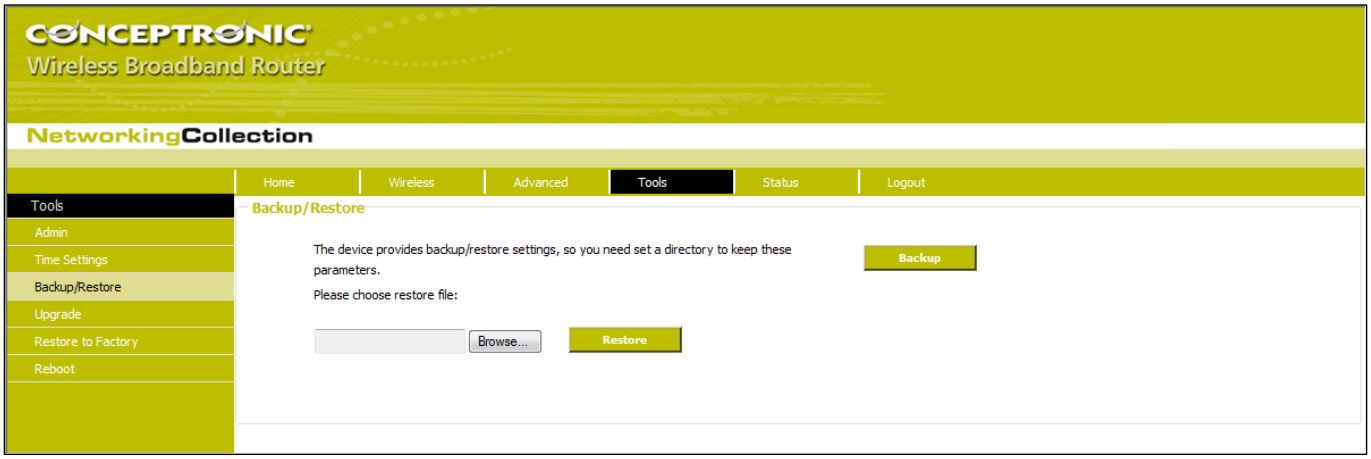


This section is to select the time zone for your location. If you turn off the Router, the settings for time disappear. However, the Router will automatically obtain the GMT time again once it has access to the Internet.

Time Zone	**:** Select your time zone from the drop-down menu.
Customized time	**:** Enter the time you customize.

Note: When the Router is powered off, the time setting will be lost. Before the Router will obtain GMT time automatically, you need connect with the Internet and obtain the GMT time, or set the time on this page first. Then the time in other features (e.g. firewall) can be activated.

6-3. Tools - Backup / Restore



The device provides backup/restore settings, so you need set a directory to keep these parameters.

Backup Setting:

Click “Backup” button to back up the Router’s settings and select the path for save.

Click “Save” to save the configuration files.

Restore Setting:

Click “Browse” button to select the backup files.

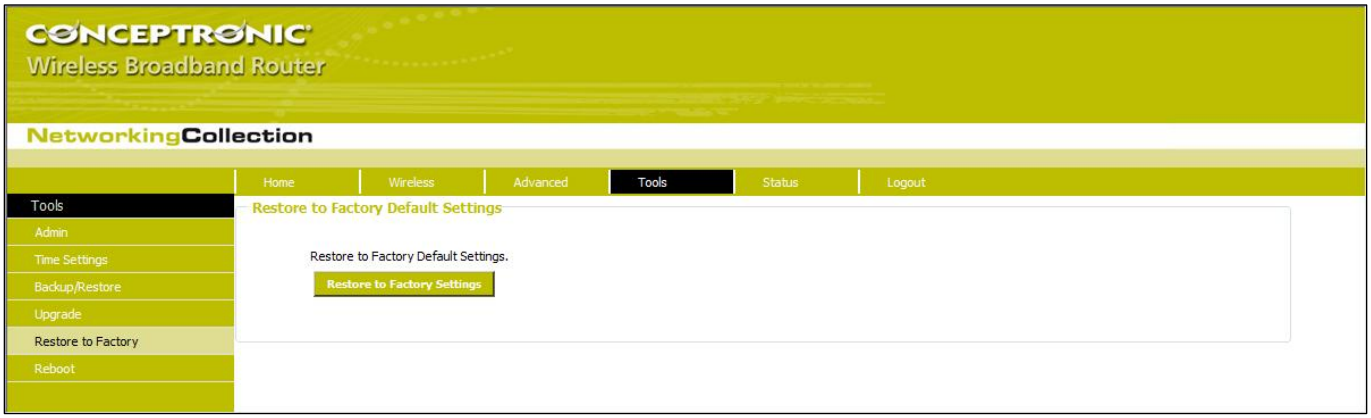
Click “Restore” button to restore previous settings.

6-4. Tools - Upgrade

The Router provides the firmware upgrade by clicking the “Upgrade” after browsing the firmware upgrade packet which you can download from www.conceptronic.net.

Browse	: Click this button to select the upgrade file.
Upgrade	: Click this button to start the upgrading process. After the upgrade is completed, the Router will reboot automatically.

6-5. Tools - Restore to Factory



This button is to reset all settings to the default values. It means the Router will lose all the settings you have set. So please Note down the related settings if necessary.

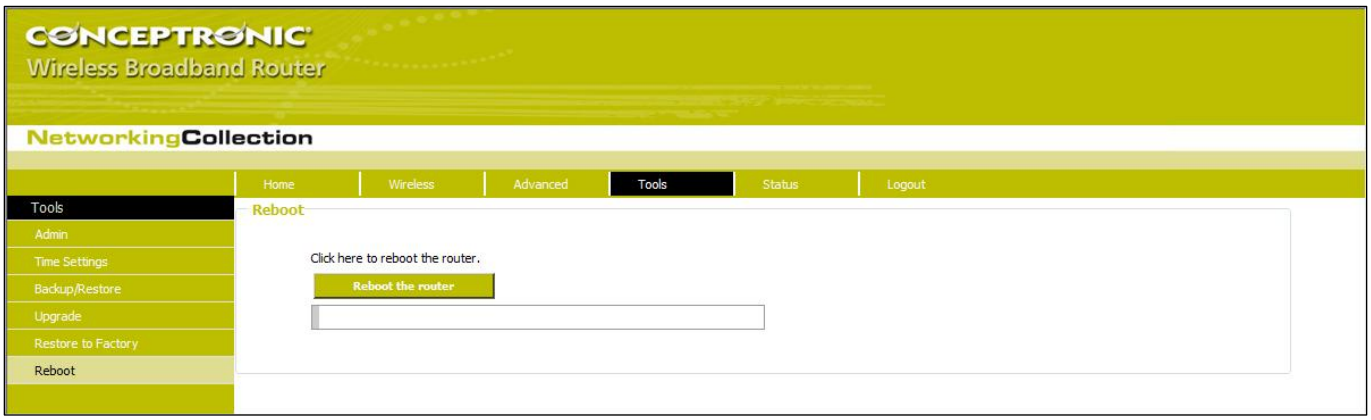
Restore	**:** Click this button to restore to default settings.

Factory Default Settings:

User Name	: admin
Password	: admin
IP Address	: 192.168.0.1
Subnet Mask	: 255.255.255.0

Note: After restoring to default settings, please restart the device, then the default settings can go into effect.

6-6. Tools - Reboot

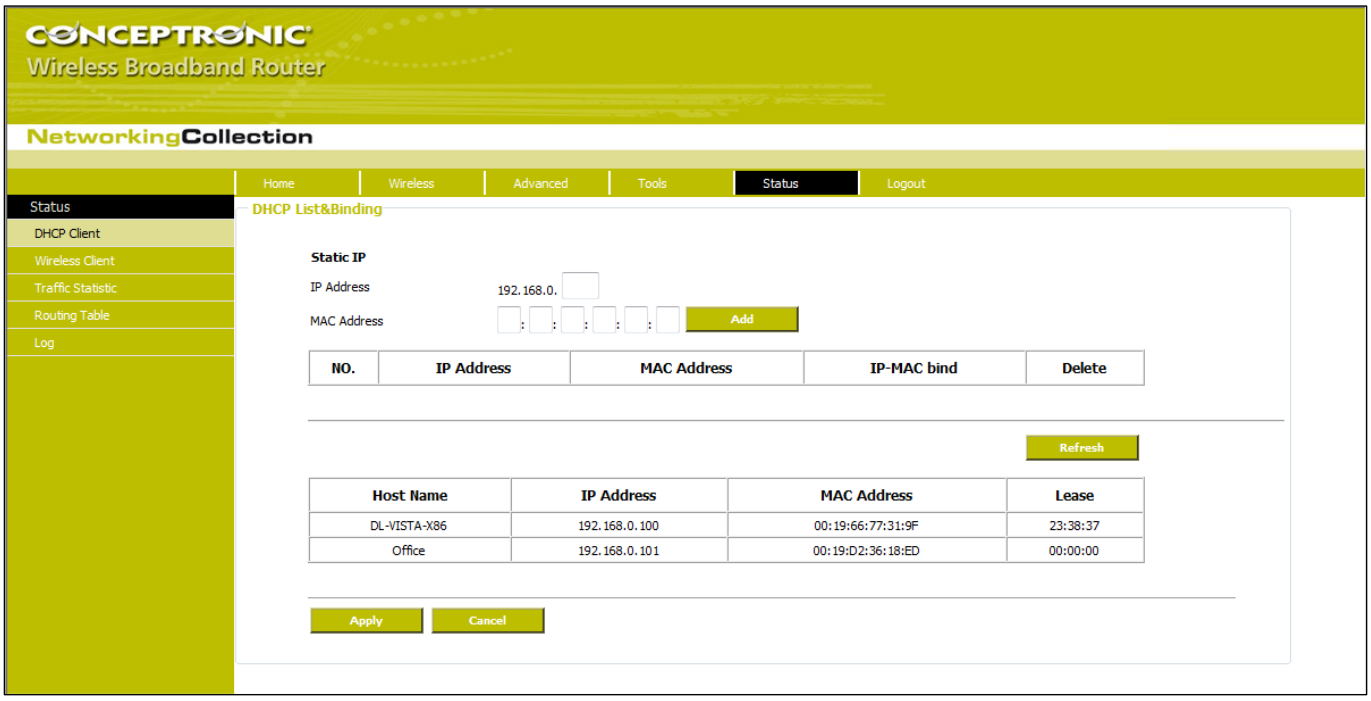


Rebooting the Router makes the settings configured go into effect or to set the Router again if setting failure happens.

Reboot the router	**:** Click this button to reboot the device.

Chapter VII: Configuration - Status

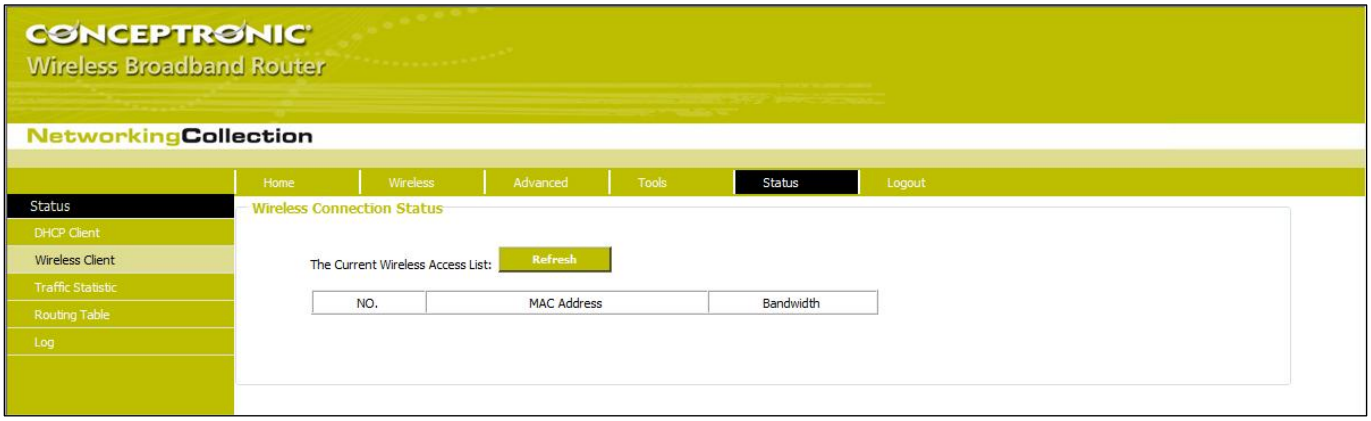
7-1. Status - DHCP Client



The Static IP assignment is to add a specifically static IP address to the assigned MAC address. You can view the related information in the DHCP server list.

IP Address	: Enter the IP address which needs to be bound.
MAC Address	: Enter the MAC address of the computer you want to assign the above IP address. Click "Add" to add the entry in the list.
Hostname	: The name of the computer which is added a new IP address.
Lease Time	: The left time length of the corresponding IP address lease.

7-2. Status - Wireless Client



This page shows wireless client's connection status, including MAC address, Channel bandwidth, etc.

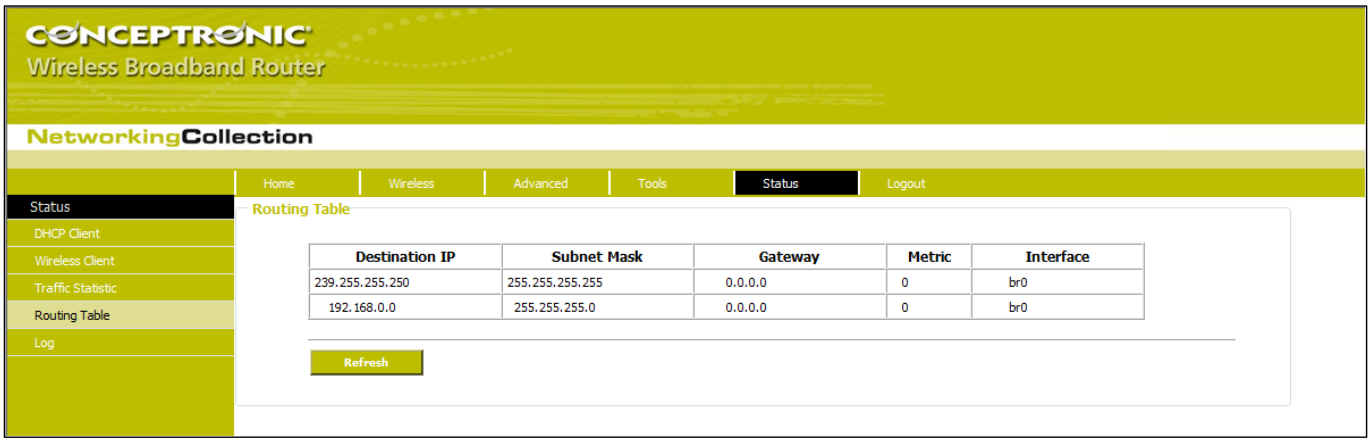
MAC Address	: Shows current MAC addresses of the hosts connecting to the Router.
Bandwidth	: Shows current bandwidth of the hosts (wireless client).

7-3. Status - Traffic Statistic

Traffic statistics is used to show the LAN PC's traffic information.

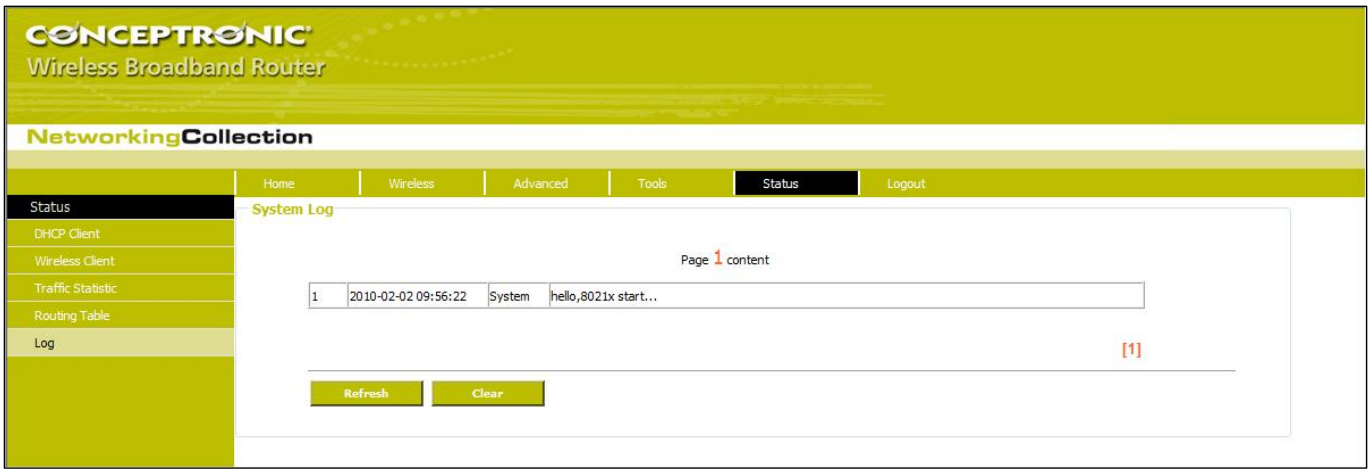
Enable traffic statistics	: Check to enable traffic statistics. Usually traffic statistics is disabled, which can improve the Router's data handling. The default is disabled. If it is enabled, the page will update the PC's traffic information automatically and be refreshed every 5 seconds.
IP address	: The IP address to be shown.
Upstream rate	: The speed of upstream data per second (Kbyte/S).
Downstream rate	: The speed of downstream data per second (Kbyte/S).
Sending packet	: The PC's packets sending from the PC.
Sending byte	: The byte (Mbyte) sending from the PC.
Receiving packet	: The PC's packets received from the Router.
Receiving byte	: The PC's byte (Mbyte) received from the Router.

7-4. Status - Routing Table



The main duty for a router is to look for a best path for every data frame, and transfer this data frame to a destination. So, it's essential for the router to choose the best path, i.e. routing arithmetic. In order to finish this function, many transferring paths, i.e. routing table, are saved in the router, for choosing when needed.

7-5. Status - Log



The section is to view the system log. Click the "Refresh" to update the log. Click "Clear" to clear all shown information. If the log is over 150 records, it will clear them automatically.

Refresh	: Click this button to update the log.
Clear	: Click this button to clear the current shown log.

7-6. Logout

After you have finished the settings completely, in logout page click "Yes" to logout the web management page.

Chapter VIII: Appendix

8-1. Troubleshooting

If you found the router is working improperly or stop responding to you, don't panic! Before you contact your dealer of purchase for help, please read this troubleshooting first. Some problems can be solved by you within very short time!

Scenario	Solution
Router is not responding to me when I want to access it by web browser	a. Please check the connection of power cord and network cable of this router. All cords and cables should be correctly and firmly inserted to the router. b. If all LEDs on this router are off, please check the status of A/C power adapter, and make sure it's correctly powered. c. You must use the same IP address section which router uses. d. Are you using MAC or IP address filter? Try to connect the router by another computer and see if it works; if not, please restore your router to factory default settings (pressing 'reset' button for over 10 seconds). e. Set your computer to obtain an IP address automatically (DHCP), and see if your computer can get an IP address. f. If you did a firmware upgrade and this happens, contact your dealer of purchase for help. g. If all above solutions don't work, contact the dealer of purchase for help.
Can't get connected to Internet	a. Go to 'Status' -> 'Internet Connection' menu, and check Internet connection status. b. Please be patient, sometime Internet is just that slow. c. If you connect a computer to Internet directly before, try to do that again, and check if you can get connected to Internet with your computer directly attached to the device provided by your Internet service provider. d. Check PPPoE / L2TP / PPTP user ID and password again. e. Call your Internet service provide and check if there's something wrong with their service. f. If you just can't connect to one or more website, but you can still use other internet services, please check URL/Keyword filter. g. Try to reset the router and try again later. h. Reset the device provided by your Internet service provider too. i. Try to use IP address instead of hostname. If you can use IP address to communicate with a remote server, but can't use hostname, please check DNS setting.

I can't locate my router by my wireless client	a. 'Broadcast ESSID' set to off? b. All two antennas are properly secured. c. Are you too far from your router? Try to get closer. d. Please remember that you have to input ESSID on your wireless client manually, if ESSID broadcast is disabled.
File download is very slow or breaks frequently	a. Are you using QoS function? Try to disable it and try again. b. Internet is slow sometimes, being patient. c. Try to reset the router and see if it's better after that. d. Try to know what computers do on your local network. If someone's transferring big files, other people will think Internet is really slow. e. If this never happens before, call you Internet service provider to know if there is something wrong with their network.
I can't log onto web management interface: password is wrong	a. Make sure you're connecting to the correct IP address of the router! b. Password is case-sensitive. Make sure the 'Caps Lock' light is not illuminated. c. If you really forget the password, do a hard reset.
Router become hot	a. This is not a malfunction, if you can keep your hand on the router's case. b. If you smell something wrong or see the smoke coming out from router or A/C power adapter, please disconnect the router and A/C power adapter from utility power (make sure it's safe before you're doing this!), and call your dealer of purchase for help.
The date and time of all event logs are wrong	a. Adjust the internal clock of router.

8-2. Glossary

Default Gateway (Router): Every non-router IP device needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out towards the destination.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

DNS Server IP Address: DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as www.Broadbandrouter.com) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "Broadbandrouter.com" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

Ethernet: A standard for computer networks. Ethernet networks are connected by special cables and hubs, and move data around at up to 10/100 million bits per second (Mbps).

Idle Timeout: Idle Timeout is designed so that after there is no traffic to the Internet for a pre-configured amount of time, the connection will automatically be disconnected.

IP Address and Network (Subnet) Mask: IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods, which identifies a single, unique Internet computer host in an IP network. Example: 192.168.2.1. It consists of 2 portions: the IP network address, and the host identifier.

ISP Gateway Address: (see ISP for definition). The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

ISP: Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN: Local Area Network. A LAN is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your home network is considered a LAN.

MAC Address: MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. The MAC address is a unique identifier for a device with an Ethernet interface. It is comprised of two parts: 3 bytes of data that corresponds to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product's serial number.

NAT: Network Address Translation. This process allows all of the computers on your home network to use one IP address. Using the broadband router's NAT capability, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Port: Network Clients (LAN PC) uses port numbers to distinguish one network application/protocol over another. Below you will find a list of some common used ports and their corresponding application:

Port	Application	Port	Application
20	FTP data (FTP server)	**80**	HTTP (Web server)
21	FTP data (FTP server)	**110**	POP3 (Mail server – incoming)
22	SSH (Secure shell)	**2000**	Remotely Anywhere
23	Telnet	**5800**	VNC
25	SMTP (Mail server – outgoing)	**5900**	VNC

For more ports and their corresponding applications, see http://portforward.com/cports.htm.

PPPoE: Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers

Protocol: A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

Router: A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses.

Subnet Mask: A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers (e.g. 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC).

TCP/IP, UDP: Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocol. TCP performs proper error detection and error recovery, and thus is reliable. UDP on the other hand is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

WAN: Wide Area Network. A network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.

Web-based management Graphical User Interface (GUI): Many devices support a graphical user interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.

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