User Guide

300Mbps Wireless N USB ADSL2+ Modem Router

TD-W8968

REV 5.1.0

1910011943

CONTENTS

About This Guide

This guide is a complement to Quick Installation Guide. The Quick Installation Guide instructs you on quick Internet setup, and this guide provides details of each function and shows you the way to configure these functions appropriate to your needs.

When using this guide, please notice that features of the router may vary slightly depending on the model and software version you have, and on your location, language, and Internet service provider. All screenshots, images, parameters and descriptions documented in this guide are used for demonstration only.

Conventions

In this guide, the following conventions are used:

Convention	Description
Teal Underlined	Hyperlinks are teal underlined. You can click to redirect to a website or a specific section.
Teal	Contents to be emphasized and texts on the web page are in teal, including the menus, items, buttons, etc.
→	The menu structures to show the path to load the corresponding page. For example, Access Management → Filter means the Filtering function page is under the Access Management menu.
☞ Note	Ignoring this type of note might result in a malfunction or damage to the device.

More Info

The latest software, management app and utility can be found at the Download Center page at http://www.tp-link.com/support.

The Quick Installation Guide can be found where you find this guide or inside the package of the router.

Specifications can be found on the product page at http://www.tp-link.com.

A Technical Support Forum is provided for you to discuss our products at http://www.tp-link.com.

Our Technical Support contact information can be found at Contact Technical Support page at www.tp-link.com/support.

Chapter 1. Product Overview

1.1 Overview of the Modem Router

TP-Link's Modem Router is a combined wired/wireless network connection device with integrated wireless router and DSL modem, reducing hassle of configuration and saving space.

With ADSL and WAN, the modem router is compatible with ADSL connections and fiber/cable access.

With Ethernet ports and antennas, the modem router provides wired and wireless access for multiple computers and mobile devices.

With various features and functions, the modem router is the perfect hub of your home or business network.

1.2 Product Appearance

1.2.1 The Front Panel

The modem router's LEDs are located on the front panel (View from left to right).

LED Explanation:

Name	Status	Indication
(Power)	On	The modem router is powered on.
	Off	The modem router is off. Please ensure that the power adapter is connected correctly.
(ADSL)	On	ADSL synchronization is complete.
	Flashing	ADSL synchronization is in progress.
	Off	ADSL synchronization failed. Please refer to Note 1 for troubleshooting.
(Internet)	On	The network is available with a successful Internet connection.
	Flashing	There is data being transmitted or received via the Internet.
	Off	There is no successful Internet connection or the modem router is operating in Bridge mode. Please refer to Note 2 for troubleshooting.

(Wi-Fi)	On	The wireless function is enabled but no data is being transmitted.
	Flashing	The wireless function is enabled and the modem router is sending or receiving data over the wireless network.
	Off	The wireless function is disabled.
(WPS)	On	A WPS synchronization is established.
	Flashing	A wireless device is trying to connect to the network via WPS. This process may take up to 2 minutes.
	Off	A WPS synchronization has been established for more than 5 minutes or a WPS synchronization failed. Please refer to 4.7.2.1 WPS Setup for more information.
(USB)	On	The USB device is identified and ready to use.
	Flashing	The modem router is sending or receiving data over this USB port.
	Off	No USB device is plugged into the USB port.
(LAN1-4)	On	The corresponding LAN port is connected.
	Flashing	The modem router is sending or receiving data over this LAN port.
	Off	The corresponding LAN port is not connected.

Note:

1. If the ADSL LED is off, please check your Internet connection first. Refer to 2.2 Connecting the Modem Router for more information about how to make Internet connection correctly. If you have already made a right connection, please contact your ISP to make sure if your Internet service is available now.
2. If the Internet LED is off, please check your ADSL LED first. If your ADSL LED is also off, please refer to Note 1. If your ADSL LED is GREEN ON, please check your Internet configuration. You may need to check this part of information with your ISP and make sure everything have been input correctly. Refer to 4.2 Device Info for more information.

1.2.2 The Back Panel

Item	Description
POWER	The Power plug is where you will connect the power adapter.
ON/OFF	The switch for the power.
WPS	The switch for the WPS function. For details, please refer to 4.6.2.1 WPS Setup.
RESET	The switch for the reset function. Please refer to the note below for more information.
WiFi	The switch for the Wi-Fi function.
USB	The USB port connects to a USB storage device or a USB printer.
LAN 1, LAN 2, LAN 3, LAN 4	Through these ports, you can connect the modem router to your PC or the other Ethernet network devices. Enable EWAN function and you will be able to connect to Cable/FTTH/VDSL/ADSL device.
ADSL	Connect to the Modem Port of Splitter or to the telephone line.
Wireless Antennas	To receive and transmit the wireless data.

☞ Note:

There are two ways to reset the modem router's factory defaults.

1) Use the Restore Default function on Management → Settings → Restore Default page in the modem router's web management page.
2) Use the Factory Default RESET button: With the modem router powered on, use a pin to press and hold the RESET button for at least 8 seconds. And the modem router will reboot to its factory default settings.

Chapter 2. Connecting the Modem Router

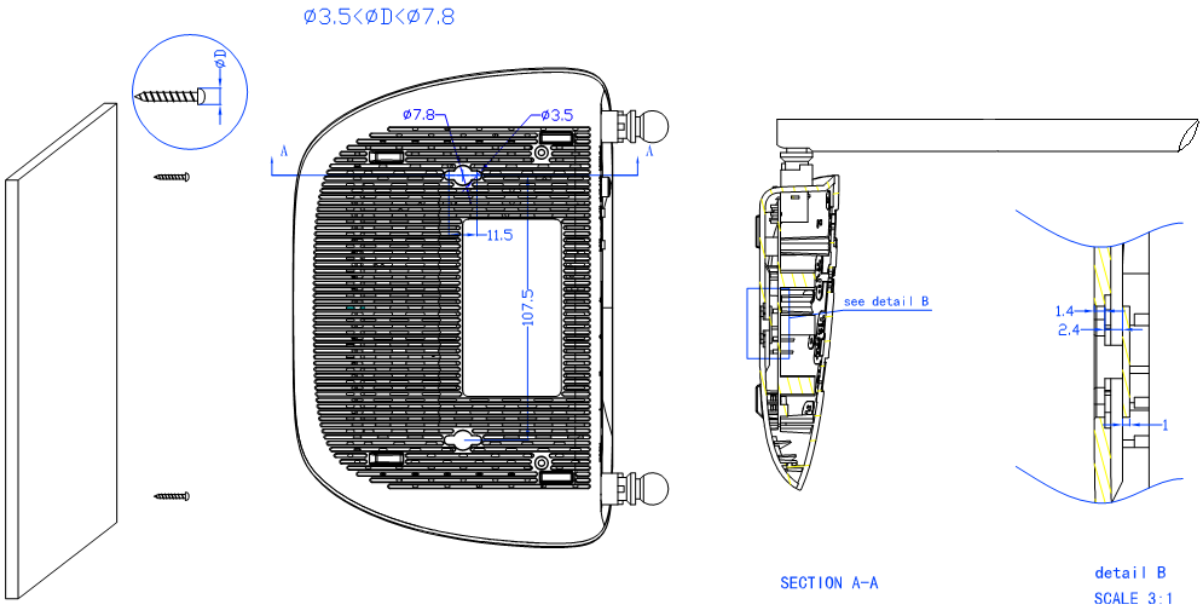
2.1 Positioning the Modem Router

With the modem router, you can access your network from anywhere within the wireless network coverage. However, the wireless signal strength and coverage vary depending on the actual environment of your modem router. Many obstacles may limit the range of the wireless signal, for example, concrete structures or thick walls.

For your security and best Wi-Fi performance, please:

- Do NOT locate the modem router in a place where it will be exposed to moisture or excessive heat.
- Keep away from the strong electromagnetic radiation and the device of electromagnetic sensitive.
- Place the modem router in a location where it can be connected to the various devices as well as to a power source.
- Make sure the cables and power cord are safely placed out of the way to avoid a tripping hazard.

Generally, the modem router is placed on a horizontal surface, such as on a shelf or desktop. The device also can be mounted on the wall as shown in the following figure.

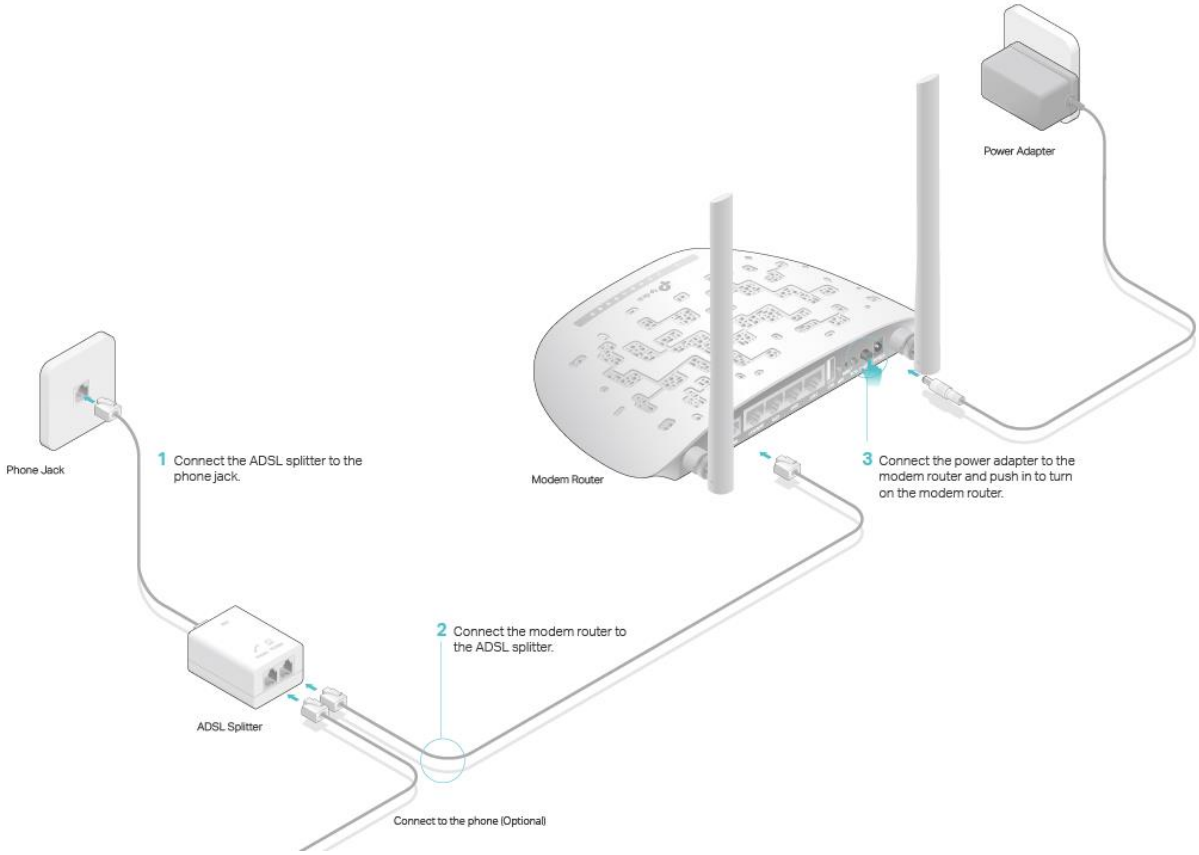


Note:

The diameter of the screw, 3.5mm<D<7.8mm, and the distance of two screws is 107.5mm. The screw that project from the wall need around 4mm based, and the length of the screw need to be at least 20mm to withstand the weight of the product.

2.2 Connecting the Modem Router

Before installing the device, please make sure your broadband service provided by your ISP is available. If there is any problem, please contact your ISP. Before cable connection, cut off the power supply and keep your hands dry. You can follow the steps below to install it.



Step 1: Connect the ADSL Line.

Method One: Directly connect the modem router to the phone jack with the ADSL line.

Method Two: Connect the modem router to the phone jack via a separate splitter. External splitter can divide the data and voice, and then you can access the Internet and make calls at the same time. The external splitter has three ports:

- LINE: Connect to the wall jack
- PHONE: Connect to the phone sets
- MODEM: Connect to the ADSL port of the modem router

Step 2: Connect your computer to the modem router.

Method One: Wired

Connect the computer to a LAN port on your modem router with an Ethernet cable.

Method Two: Wireless

Click the network icon of your computer or go to Wi-Fi Setting of your smart device, then use the default SSID (Wireless Network Name) and Wireless Password printed on the product label of the modem router to join the network.

Method Three: Via the WPS button

Wireless devices that support WPS, including Android phones, tablets, most USB network cards, can be connected to your router through this method. (WPS is not supported by iOS devices.)

☞ Note:

The WPS function cannot be configured if the wireless function of the modem router is disabled. Also, the WPS function will be disabled if your wireless encryption is WEP. Please make sure the wireless function is enabled and is configured with the appropriate encryption before configuring the WPS.

1) Tap the WPS icon on the device's screen.
2) Immediately press the WPS button on your modem router.
3) The WPS LED flashes for about two minutes during the WPS process.
4) When the WPS LED is on, the client device has successfully connected to the modem router.

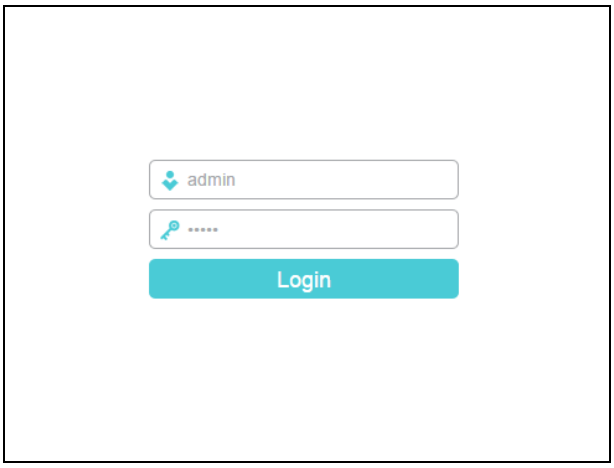
Step 3: Attach the power adapter. The electrical outlet shall be installed near the device and shall be easily accessible.

Chapter 3. Quick Start

This chapter will show you how to configure the basic functions of your modem router using Quick Setup Wizard within minutes.

1. If the TCP/IP Protocol on your computer is set to the static (fixed) IP address, you need to change it to obtain an IP address automatically. Please refer to Appendix A: Configuring the PC for more detailed instruction.
2. Once your host PC is properly configured, launch a web browser and go to http://tplinkmodem.net or 192.168.1.1.

3. Enter the default Username admin and the default Password admin, then click Login or press Enter to access to the Quick Start screen.



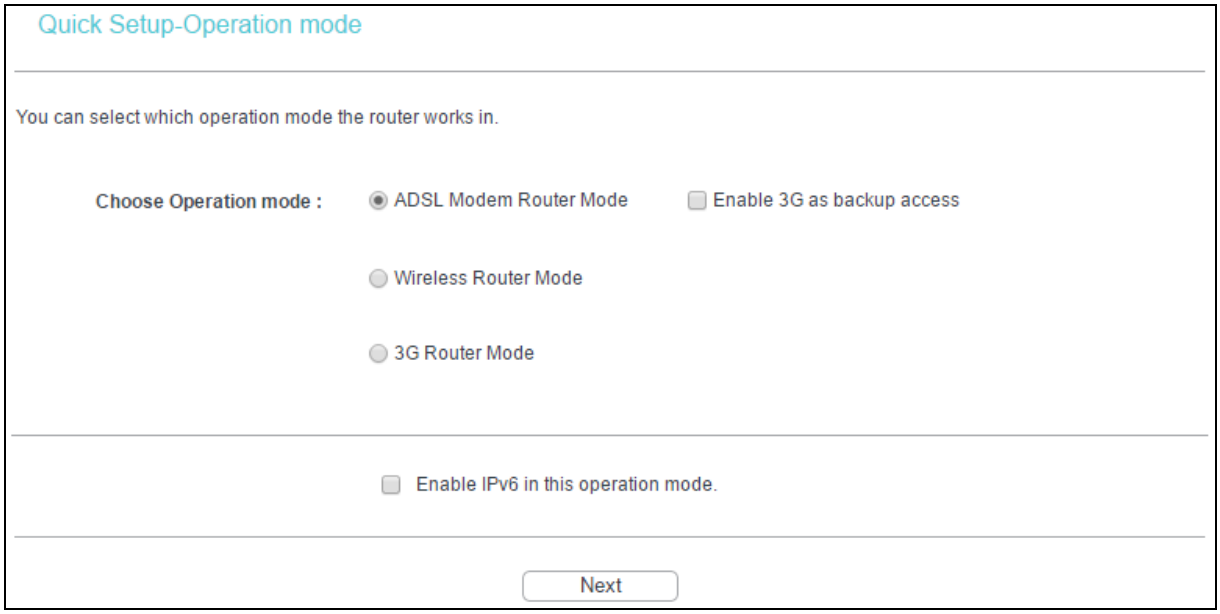
☞ Note:

1) Do not mix up the username and password with your ADSL account username and password which are needed for PPP connections.
2) A Quick Setup window will pop up automatically when logging for the first time; otherwise, select Quick Start from the menu.
3) If the above screen does not pop up, it means that your web browser has been set to a proxy. Go to menu Tools → Internet Options → Connections → LAN Settings, in the screen that appears, cancel the Using Proxy checkbox, and click OK to finish it.

4. Follow the steps below to set up your modem router quickly.

Step 1. After your successful login, you will see the Quick Setup Wizard. Click Next to continue.

Step 2. Choose the Operation Mode for Internet access, and then click Next. For ADSL Modem Router Mode and Wireless Router Mode, 3G Router Mode can be set as a backup internet access method. If you do not want to configure 3G settings now, just untick the option.



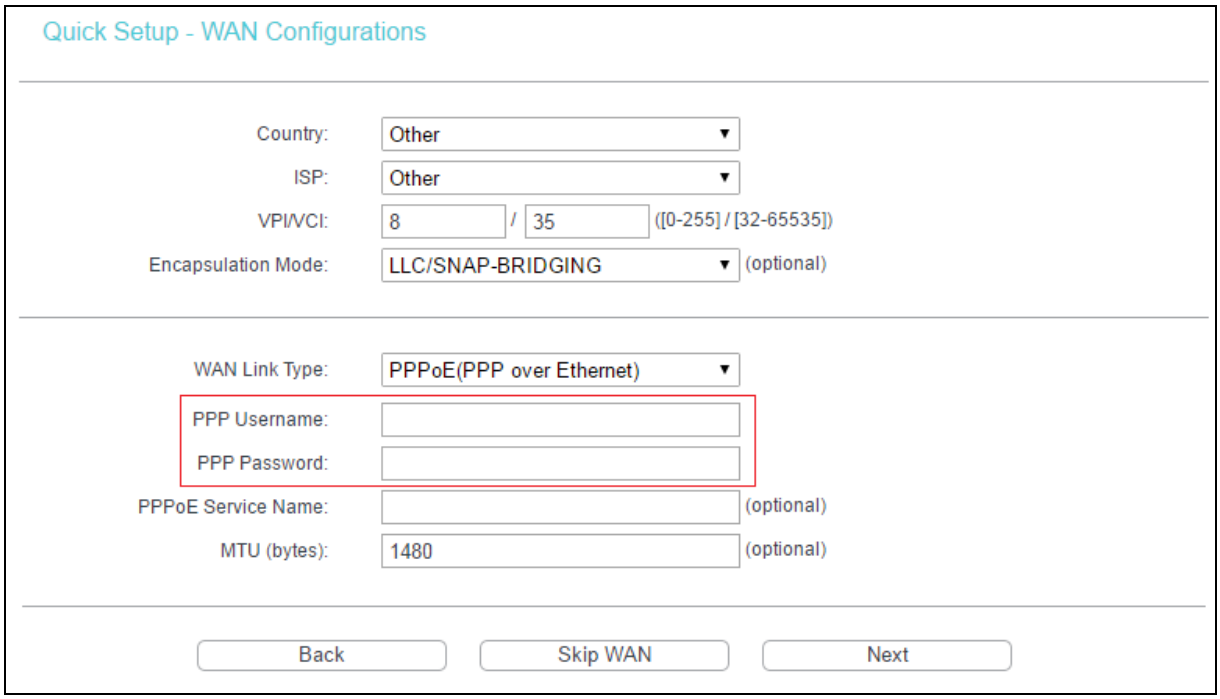
- ADSL Modem Router Mode: In this mode, the device enables multi-users to share Internet via ADSL using its ADSL port and share it wirelessly at 300Mbps wireless 802.11n speeds.
- Wireless Router Mode: In this mode, the device enables multi-users to share Internet via Ethernet WAN (EWAN) using its interchangeable LAN/WAN port and share it wirelessly at 300Mbps wireless 802.11n speeds.
- 3G Router Mode: In this mode, the device allows multi-users to share a 3G mobile broadband connection via wired or wireless connection.

☞ Note:

If you are unwilling to configure WAN Service now, you can click the Skip WAN button. Then you can configure WAN service referring to 4.4.1 Layer2 Interface.

Step 3. Configure parameters for WAN connection.

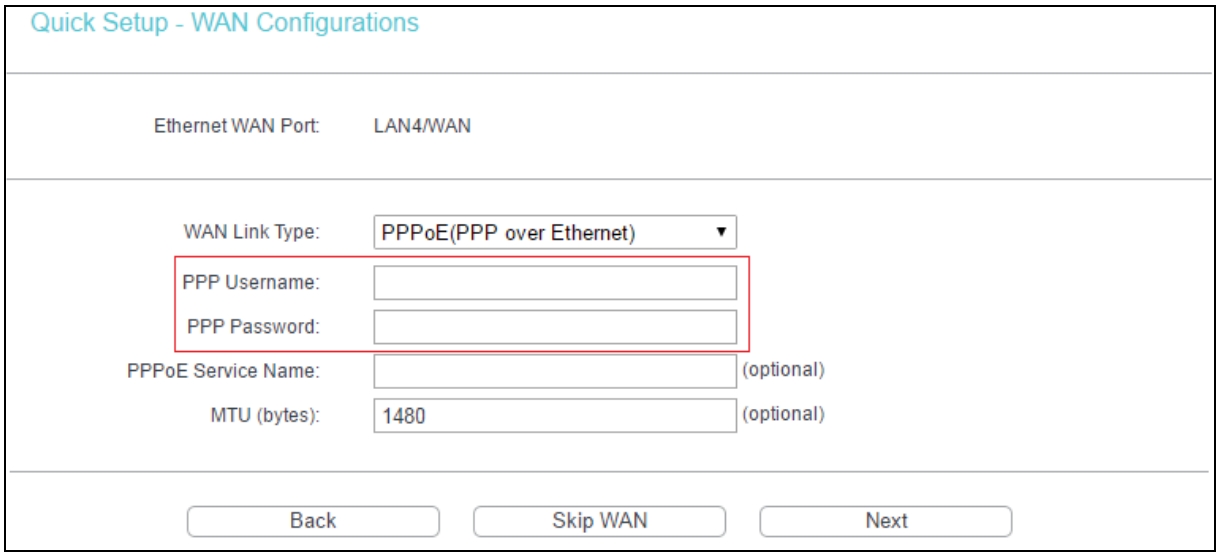
- If ADSL Modem Router Mode is chosen, please select your Country and ISP from the drop-down list, and enter related parameters provided by your ISP. Then click Next. Here we use PPPoE as an example.



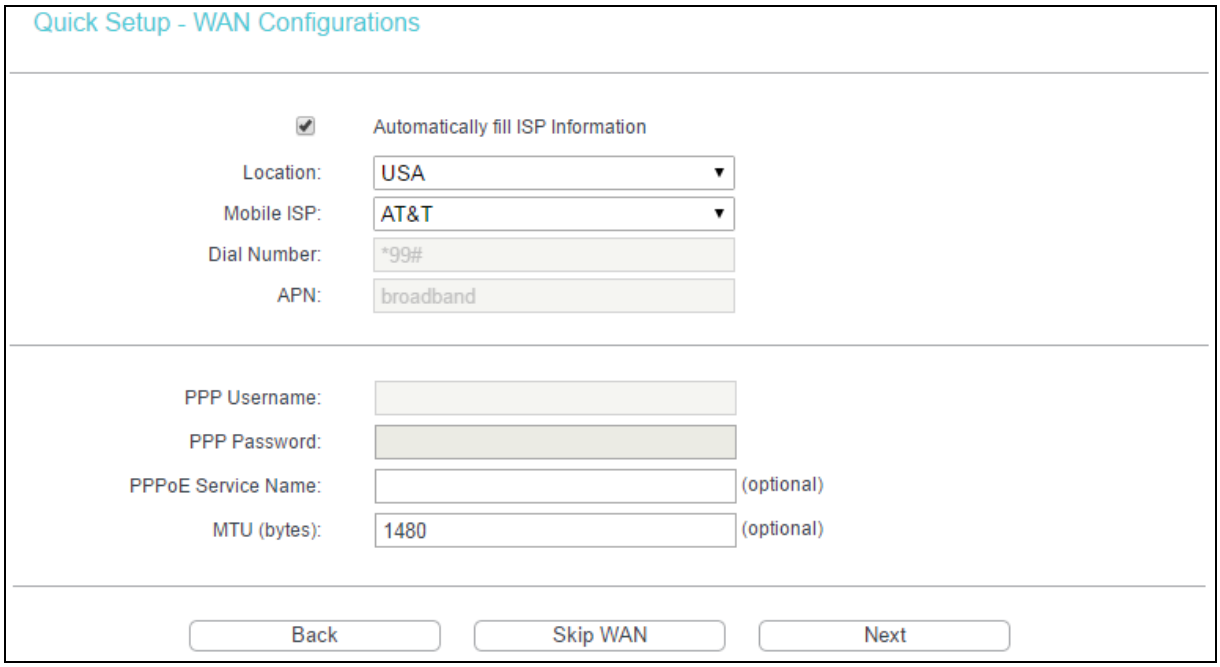
Note:

If your country or ISP is not listed, please select Other. Then you can manually enter the VPI/VCI values and select Encapsulation Mode provided by your ISP.

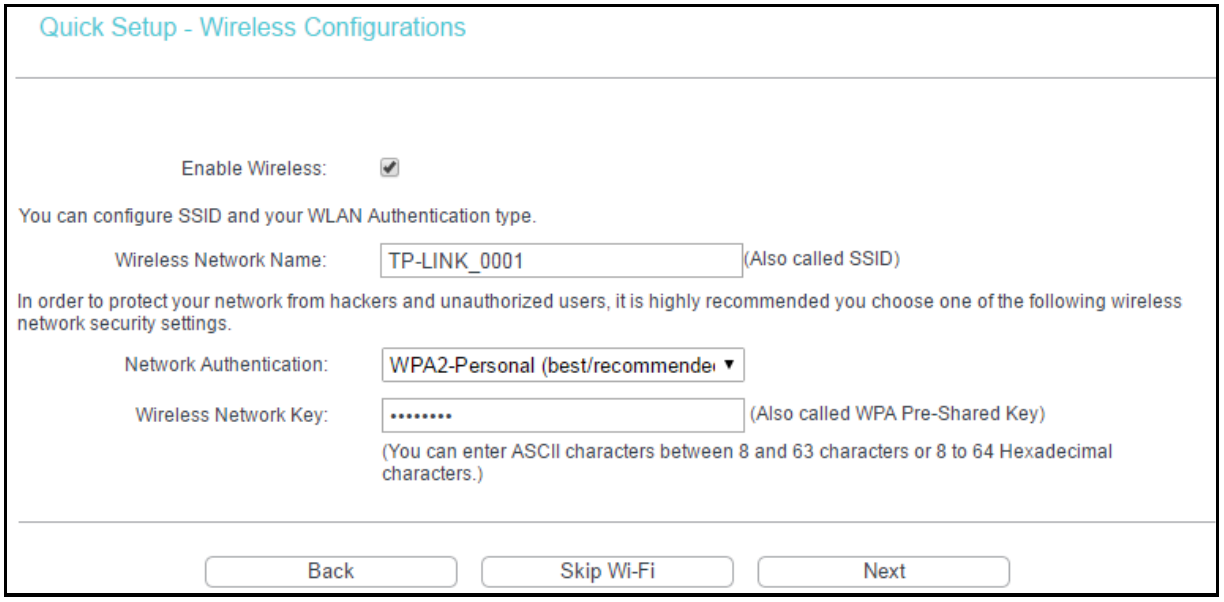
- If Wireless Router Mode is chosen, please select WAN Link Type provided by your ISP and enter the related parameters, then click Next. Here we use PPPoE as an example.



- If 3G Router Mode is chosen, you should first insert your 3G USB modem on the USB port of the modem router. Then select your location and mobile ISP. Click Save to continue.



Step 4. The WLAN function is enabled by default. You can rename your wireless network name and create your own password in this page. The default wireless name is TP-LINK_XXXX, and the default wireless password, the same as the PIN code, is printed on the bottom label of the modem router. Click Next to continue.



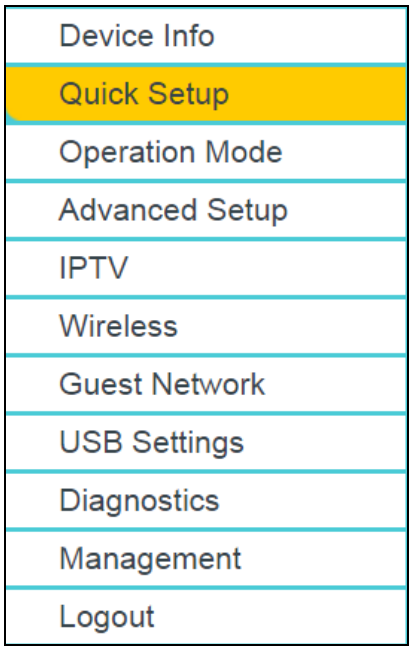
Step 5. You will see the Summary screen, and click Confirm to make your settings take effect.

Chapter 4. Configuring the Modem Router

This chapter will show each web management page's key function and the configuration way.

4.1 Login

After your successful login, you will see eleven main menus on the left of the web management page. On the right, there are the corresponding explanations and instructions.

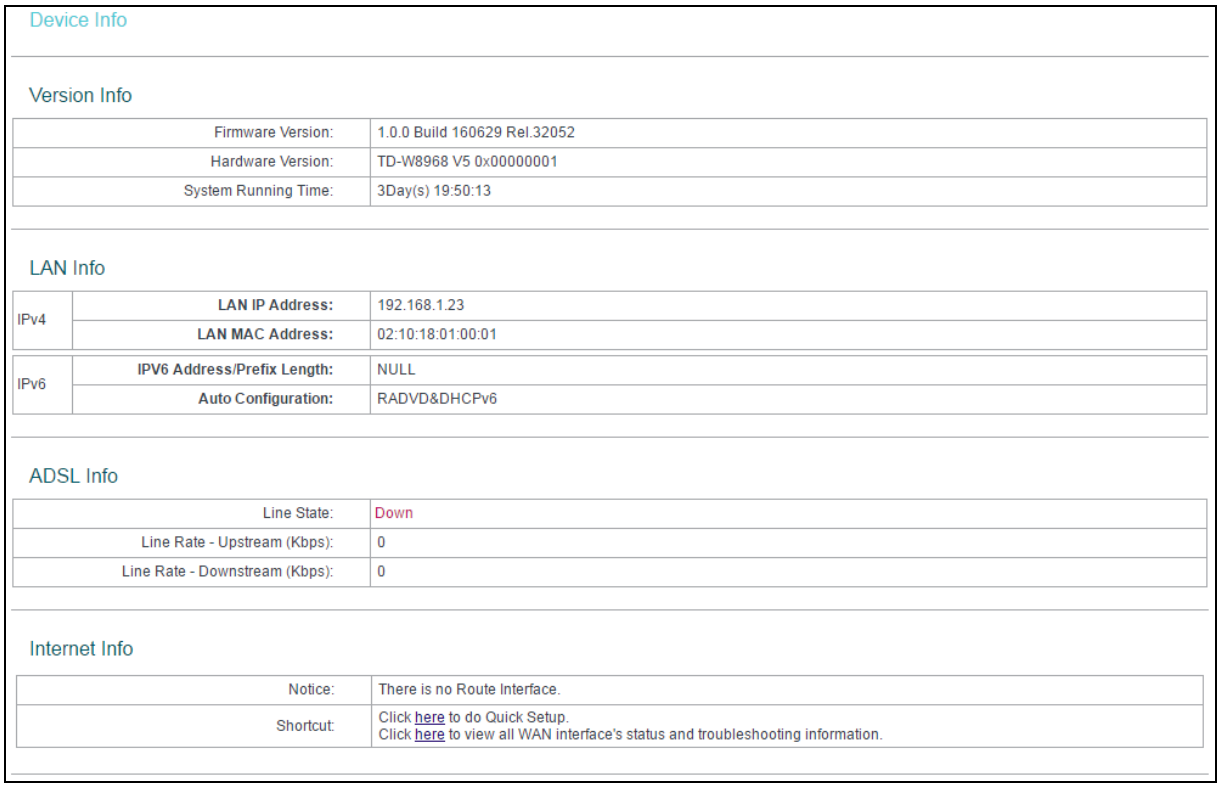


The detailed explanations for each web management page's key function are listed below.

4.2 Device Info

Choose Device Info menu, and there are six submenus under the main menu: Summary, WAN, Statistics, Route, ARP and DHCP. This Device Info section mainly introduces the elementary information about the modem router and its current settings in use. Click any of them, and you will be able to view the corresponding information.

Go to Device Info → Summary, you will see the Summary screen. The first table indicates the information about the version including Software and Hardware, and the system running time. The second table displays the current status of the Internet connection. This information will vary depending on the settings of the modem router configured on the Advanced Setup screen.

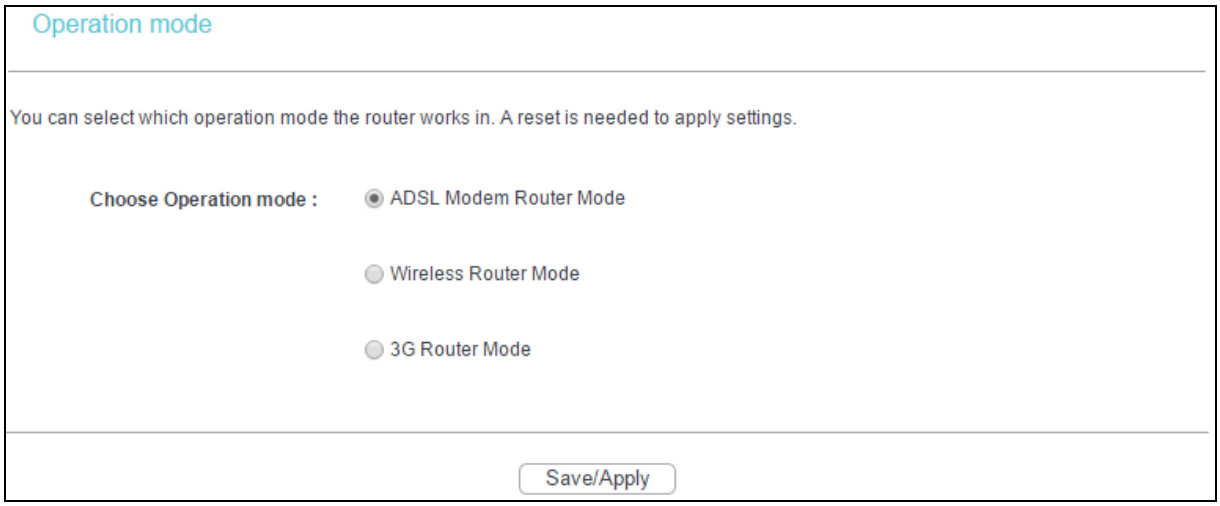


☞ Note:

Click the other submenus under the main menu Device Info, and you will be able to view the corresponding information about WAN, Statistics, Route, ARP and DHCP.

4.3 Operation Mode

Choose Operation Mode, and you will see the screen below. The modem router supports three operation mode types: ADSL Modem Router Mode, Wireless Router Mode and 3G Router Mode. Select your desired mode and then click Save/Apply. Then the modem router will reboot. Please wait.

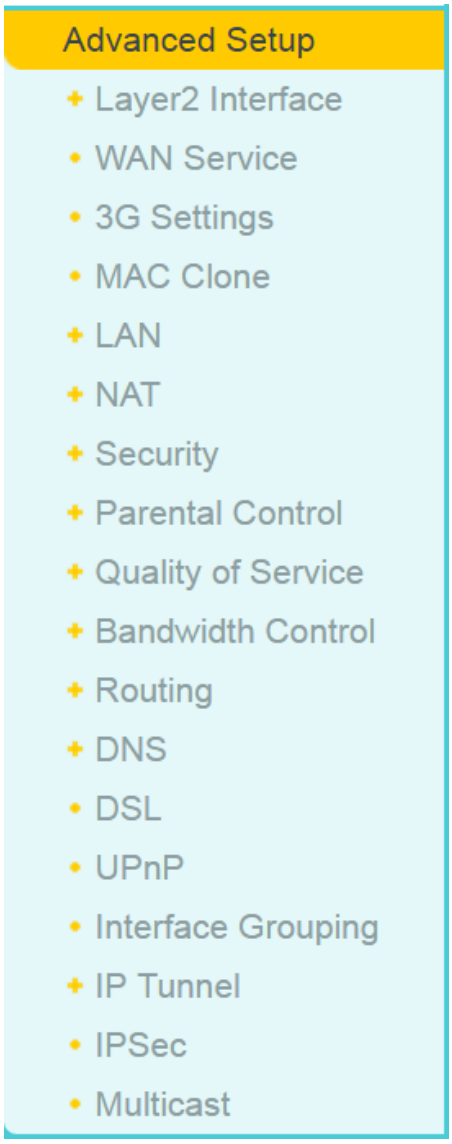


➢ ADSL Modem Router Mode: In this mode, the device enables multi-users to share Internet via ADSL using its ADSL port and share it wirelessly at 300Mbps wireless 802.11n speeds.

- Wireless Router Mode: In this mode, the device enables multi-users to share Internet via Ethernet WAN (EWAN) using its interchangeable LAN/WAN port and share it wirelessly at 300Mbps wireless 802.11n speeds.
- 3G Router Mode: In this mode, the device allows multi-users to share a 3G mobile broadband connection via wired or wireless connection.

4.4 Advanced Setup

In ADSL Modem Router Mode, choose Advanced Setup, there are many submenus under the main menu. Click any one of them, and you will be able to configure the corresponding function.



This Advanced Setup section mainly introduces how to configure the modem router for adequate use. The detailed explanations for each subsection are provided below.

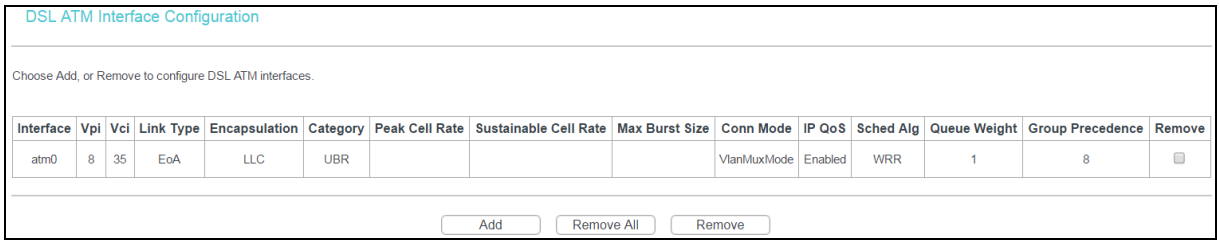
☞ Note:

To completely configure the WAN Interface, you need to first select the Layer2 Interface (4.4.1 Layer2 Interface) according to the connection ISP provides for you, and then to select the type of the connection (4.4.2 WAN Service) for the further configuration.

4.4.1 Layer2 Interface

4.4.1.1 ATM Interface

Go to Advanced Setup → Layer2 Interface → ATM Interface, you can configure ATM interfaces on the screen below.

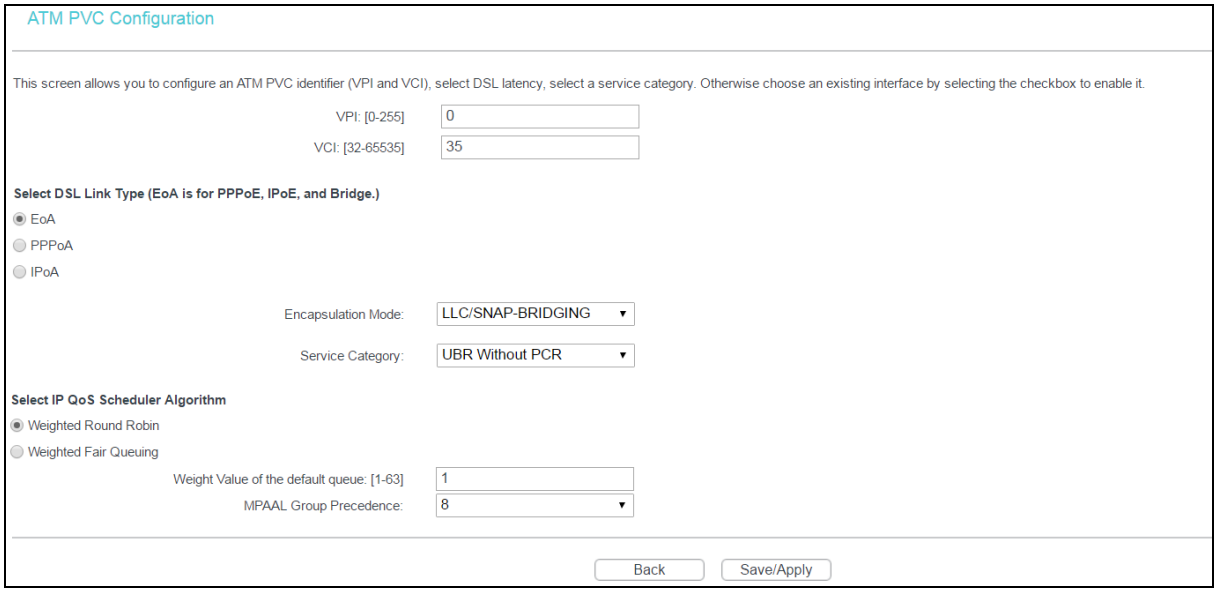


➢ Remove: Select the check box in the table on the screen above and then click the Remove button, the corresponding interface will be deleted in the table.

☞ Note:

If the interface is used by the configuration of the 4.4.2 WAN Service, you need to remove the corresponding WAN Service entry first before you can remove it here.

➢ Add: Click the button, and you can add a new interface in the next screen.



➢ VPI/VCI: The VPI and VCI values are provided by your ISP. Do not change them unless it was required by your ISP.

➢ DSL Link Type: Select a DSL Link Type which is provided by your ISP. The options include EoA (it is for PPPoE, IPoE, and Bridge), PPPoA (PPP over ATM) and IPoA (IP over ATM).

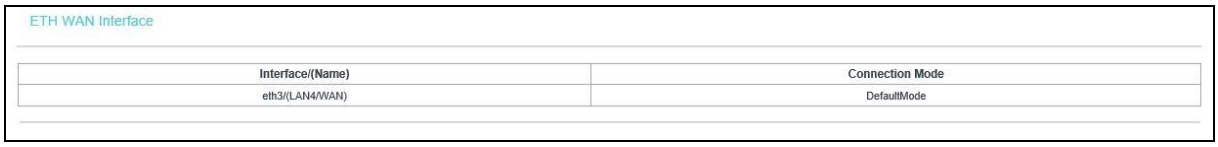
- Encapsulation Mode: The mode of the data processing over the Link Type you have selected. Use the default setting, if you are not sure.
- Service Category: Select the type of the service assigned by your ISP in the drop-down list. The default type is UBR Without PCR.

Note:

Enabling packet level QoS for PVC improves performance for selected classes of applications. While QoS consumes system resources, therefore the number of PVC(s) will be reduced. Besides this, it cannot be set for the connection type of CBR and Real-time VBR. For PVCs management, you can use ATM QoS to setup each PVC traffic line's priority. If you select the QoS service, the Quality of Service menu will be added to the web management page, the detailed configuration will be described in 4.4.9 Quality of Service.

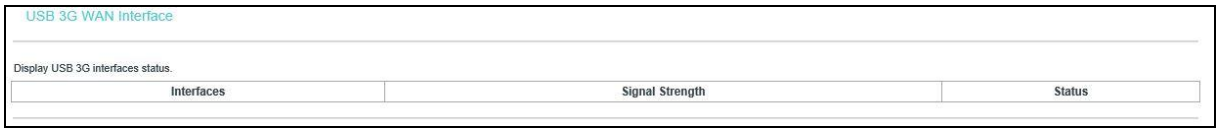
4.4.1.2 ETH Interface

If your modem router works on Wireless Router Mode, Go to Advanced Setup → Layer2 Interface → ETH Interface, and you can see ETH WAN interface on the screen below.



4.4.1.3 USB 3G Interface

If you enable 3G as backup access or your modem router works on 3G Router Mode, Go to Advanced Setup → Layer2 Interface → USB 3G Interface, you can see USB 3G interface status on the screen below.

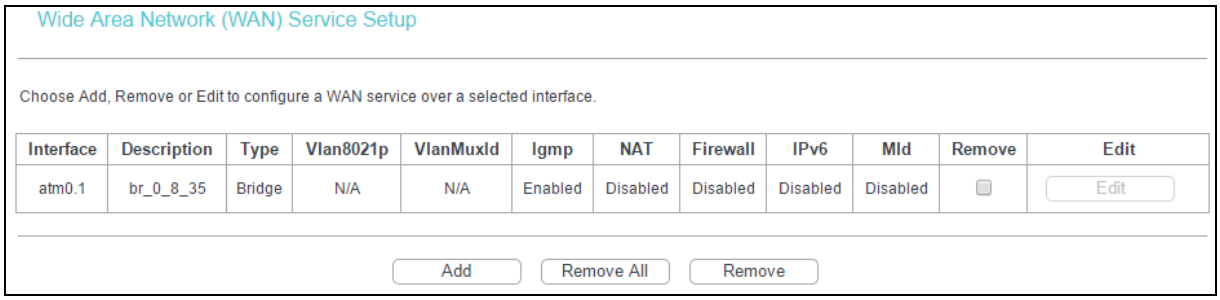


4.4.2 WAN Service

Go to Advanced Setup → WAN Service, and you will see the WAN Port Information Table in the screen, which describes the WAN port settings and the relevant manipulation to each interface. After you add a new Lay2 Interface, please follow the instructions below to complete the further configuration of WAN Interface. There are five different configurations for the connection types, which are PPPoE, IPoE, Bridge, PPPoA, and IPoA. You can select the corresponding types according to your needs.

Note:

Bridge mode is not available under Wireless Router Mode.



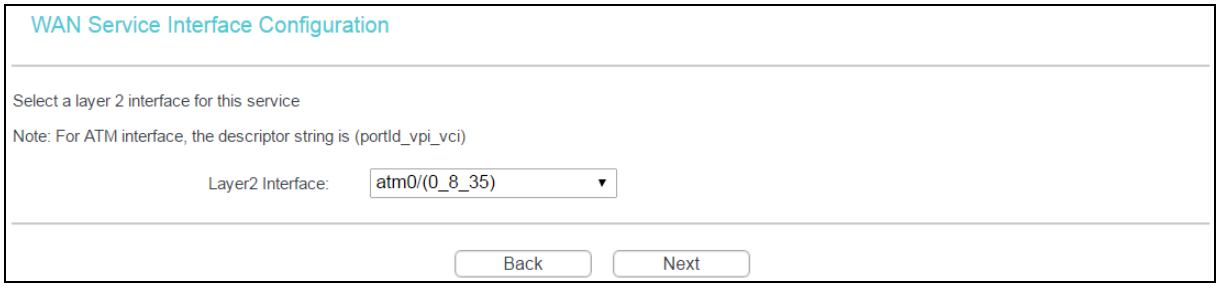
☞ Note:

The following section adopts different VPI/VCI to introduce further configuration for the different connection types. If you need to change the configuration of ATM PVC (VPI/VCI), you should go to the previous section (4.4.1 Layer2 Interface) to configure them again.

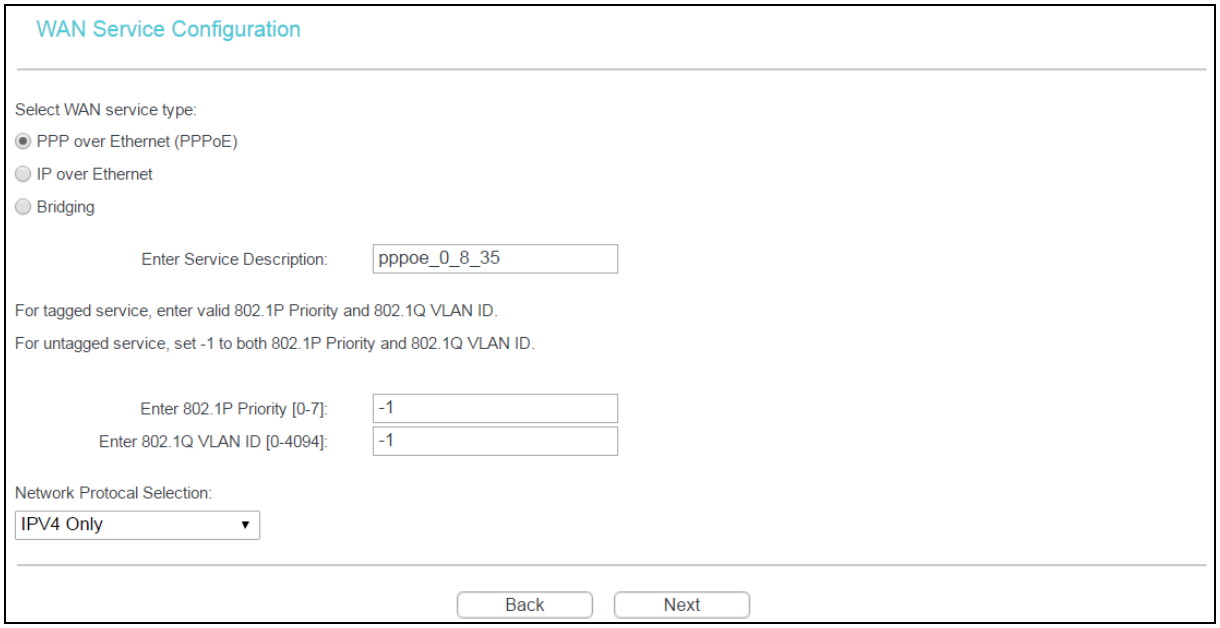
4.4.2.1 ATM-EoA-PPPoE

If your ISP provides a PPPoE connection and you need to use an ATM Interface, follow the steps below to add a WAN service over a selected ATM interface:

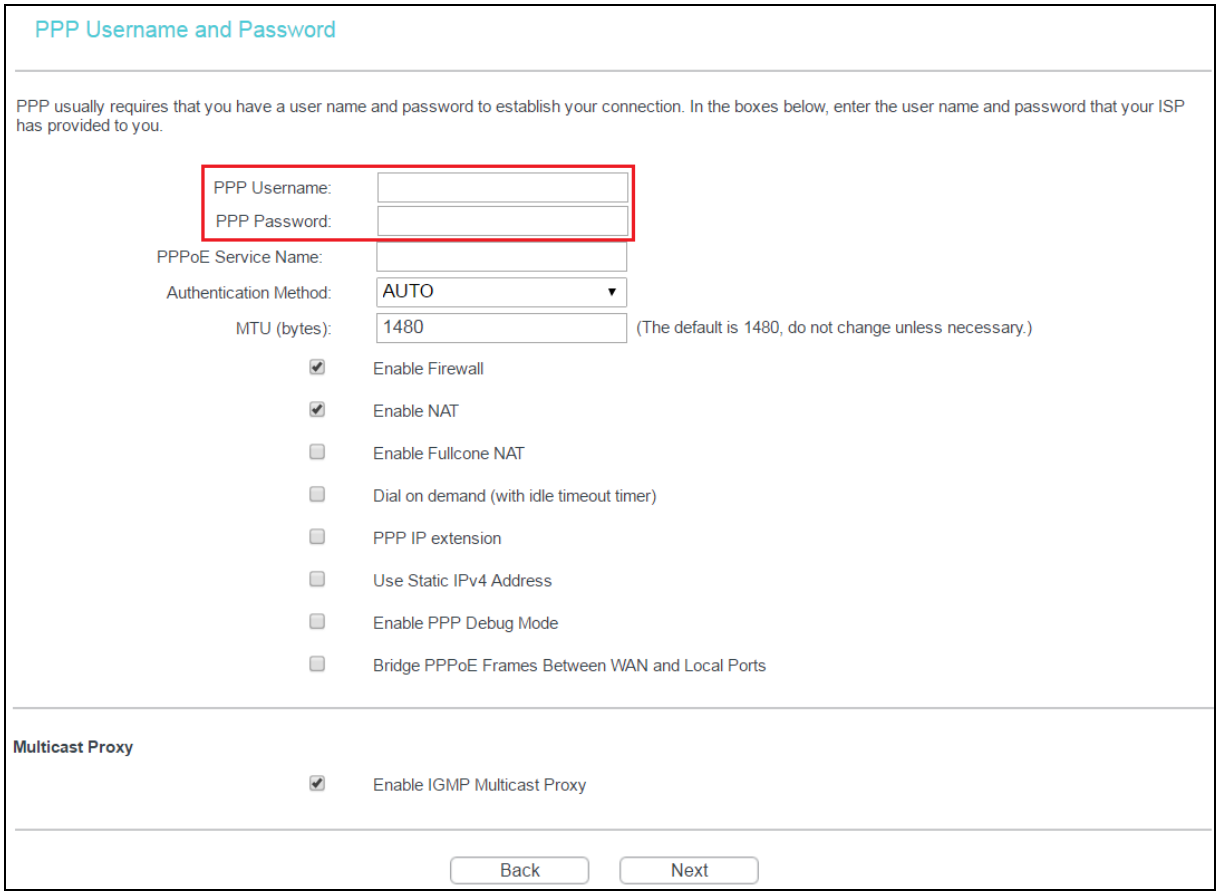
1. Add a new ATM interface and select EoA option for DSL Link Type (4.4.1.1 ATM Interface).
2. Click Add in the WAN Port Information Table and you will see the screen below. Click Next.



3. Select the WAN service type. If your ISP provides a PPPoE connection, select PPPoE option. You can create a service name for the Service Description or leave it the default name. Click Next.



4. Enter the following parameters and then click Next.



- PPP Username/Password: Enter the user name and password provided by your ISP. These fields are case-sensitive.
- PPPoE Service Name: Enter the Service Name if it was provided by your ISP. If you leave it blank, the default name will be the same as the Service Description on the previous screen.
- Authentication Method: Select the Authentication Method from the drop-down list. The default method is AUTO, and you can leave it as a default setting.

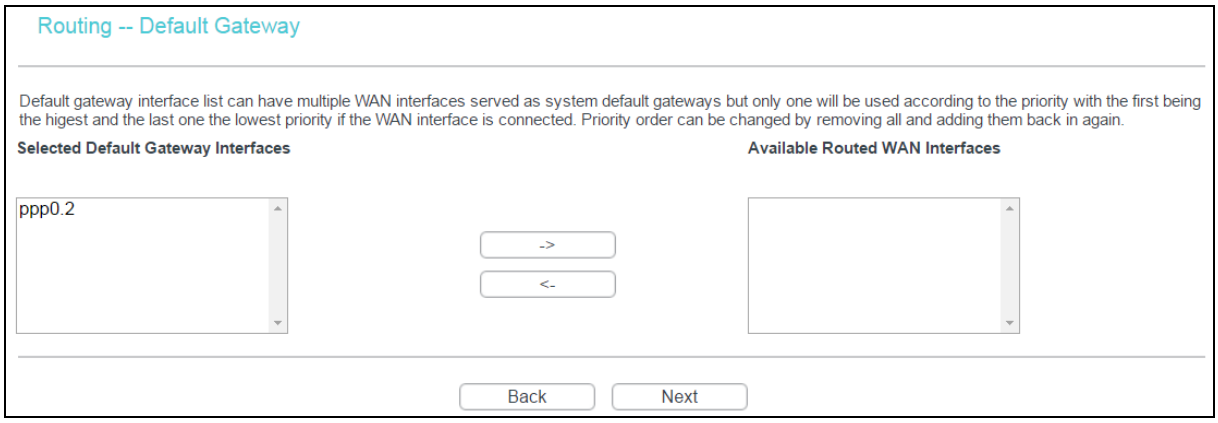
Note:

If you are not sure about the PPP IP extension, PPP Debug Mode and others below, please don't change these options.

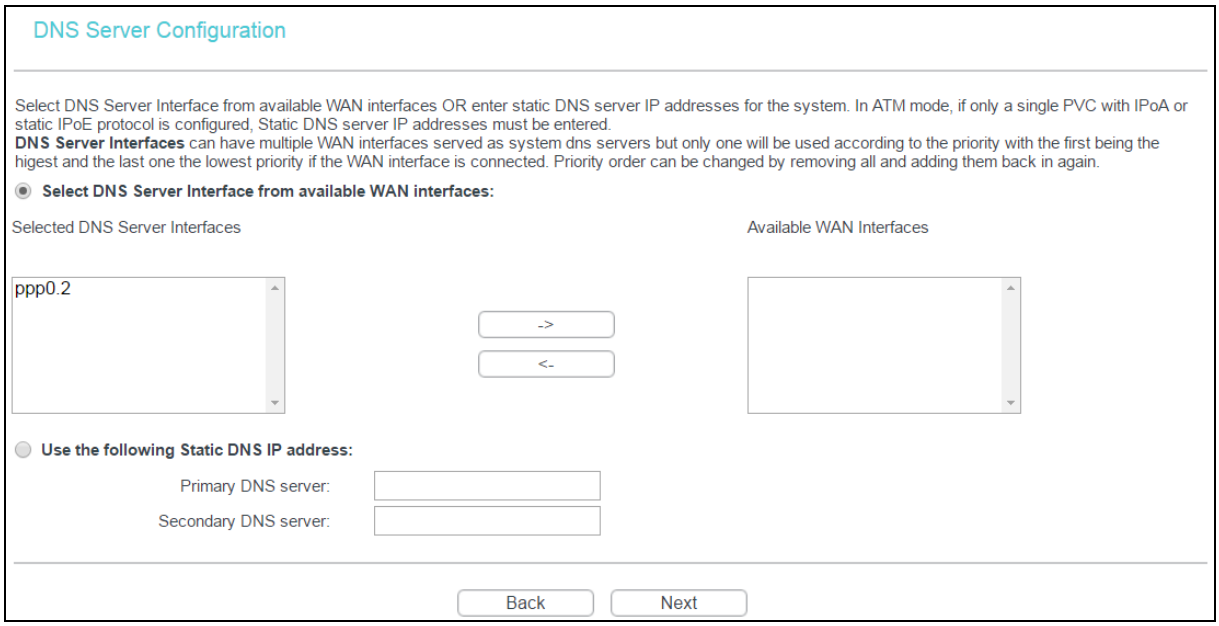
- MTU Size: Maximum Transmission Unit Size. Check this box then you can change the MTU size. The default MTU value is 1480 Bytes. It is not recommended that you change the default value unless required by your ISP.
- Enable Firewall: A PPP Firewall enhances network's security. Select the Option to use the firewall.
- Enable NAT: This technology translates the IP addresses of a local area network to a different IP address for the Internet. If this modem router is hosting your network's connection to the Internet, please select the check box. If another router exists in your network, you don't need to select the option.

- Enable Fullcone NAT: It is a type of NAT. If not enabled, the default NAT will act.
- Dial on demand (with idle timeout timer): The modem router will cut off the Internet connection after it has been inactive for a specific period of time (idle timeout), and it will automatically re-establish the connection as soon as you attempt to access the Internet again. If your Internet is charged by time, you may want to select this option in order to save money.
- PPP IP extension: Select this option to get the public IP address from the PPP server to your PC, and the NAT and SPI Firewall will be closed. Sometimes you can think it as bridge while PPP dialing in the modem router. It's a special feature deployed by some ISP. Unless your ISP specifically requires this setup, do not select it.
- Use Static IPv4 Address: If your ISP gives you a static WAN, Gateway and DNS IP address, select this option to enter them manually.
- Enable PPP Debug Mode: Select this option to debug the PPP function and you can see many PPP log information in the System Log. Only PPP has this debug Mode.
- Bridge PPPoE Frames Between WAN and Local Ports: Select this option to start PPP connection in your local PC.
- Enable IGMP Multicast Proxy: IGMP (Internet Group Management Protocol) is used to manage multicasting on TCP/IP networks. Some ISPs use IGMP to perform remote configuration for client devices, such as the router. The default value is enabled, and if you are not sure, please contact your ISP or just leave it.

5. Select a preferred wan interface as the system default gateway and click Next.



6. Configure the DNS Server Addresses on the screen below and click Next.

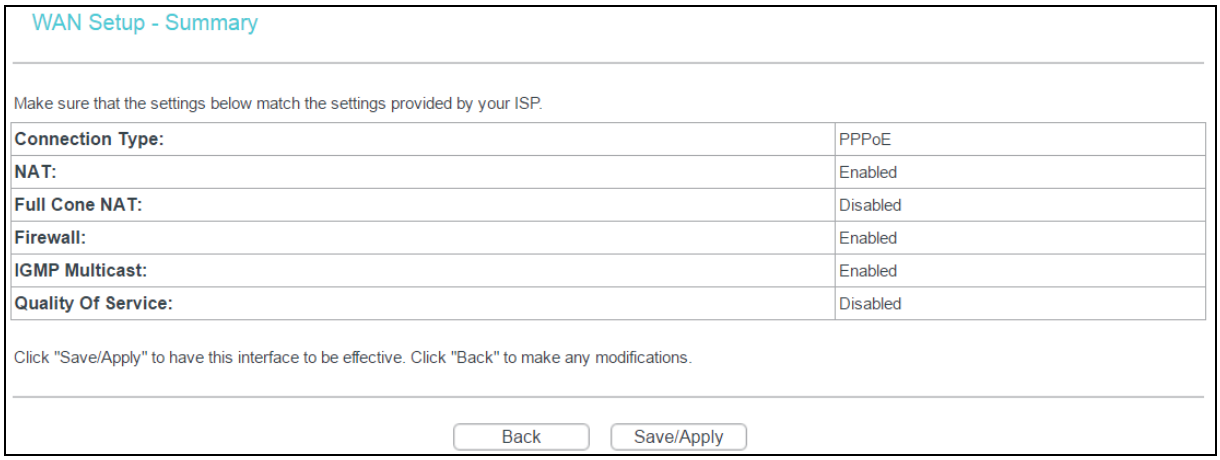


- Select DNS Server Interface from available WAN Interfaces: You can select this option to automatically get DNS server information from the selected WAN interface.
- Use the following Static DNS IP Address: You can select this option to manually enter the primary and /or optional secondary DNS server IP addresses provided by your ISP.

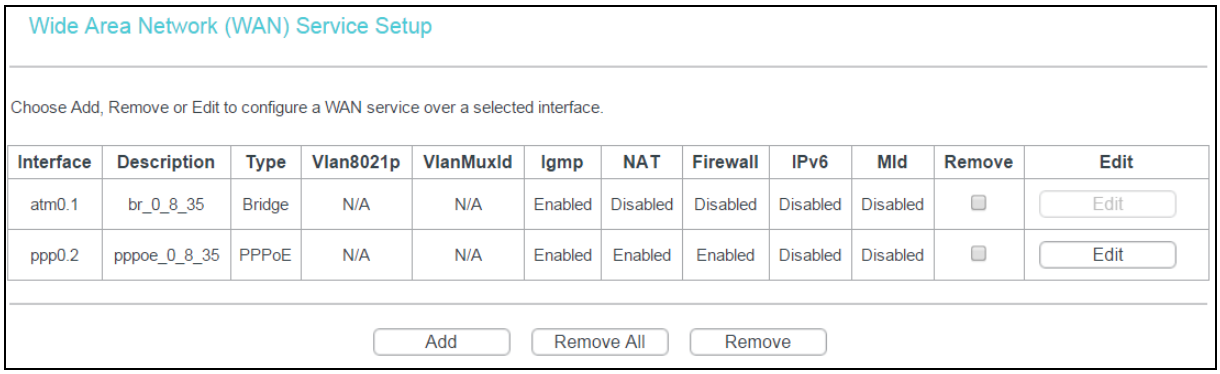
Note:

If only single PVC with IPoA is configured, you must enter static DNS server IP addresses.

7. On the next screen you will see the detailed settings you've made. Please click Save/Apply to save these settings.



8. On the next screen you will see the WAN Port Information Table with the new configuration.

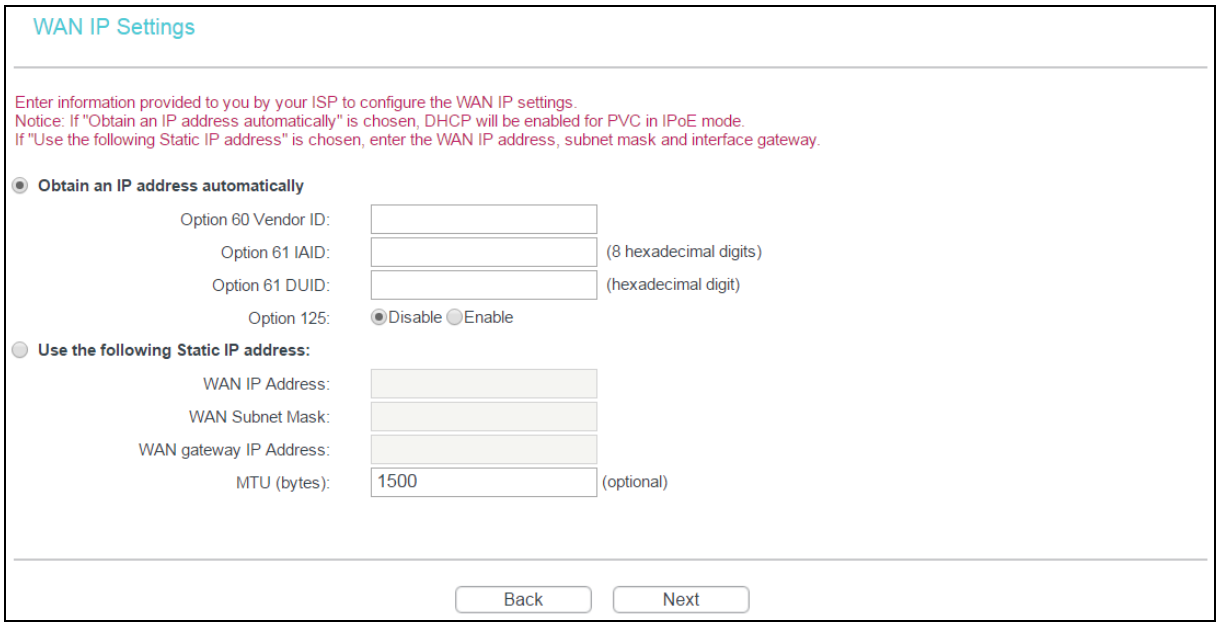


- Remove All: Click Remove All, then all the interface in the table will be deleted.
- Remove: Select the check box in the table above and then click Remove, the corresponding interface will be deleted in the table.

4.4.2.2 ATM-EoA-IPoE

If your ISP provides an IPoE connection and you need to use an ATM Interface, follow the steps below to add a WAN service over a selected ATM interface:

1. Add a new ATM interface and select EoA option for DSL Link Type (4.4.1.1 ATM Interface).
2. Click Add in the WAN Port Information Table. Select WAN Service Interface over ATM PVC on the next screen.
3. If your ISP provides an IPoE connection, select IP over Ethenet option for the WAN service type and click Next to continue.
4. Enter parameters in the following blanks to configure the WAN IP Address and click Next.



- Obtain an IP address automatically: Select this option, the modem router will be able to obtain IP network information dynamically from a DHCP server provided by your ISP.

☞ Note:

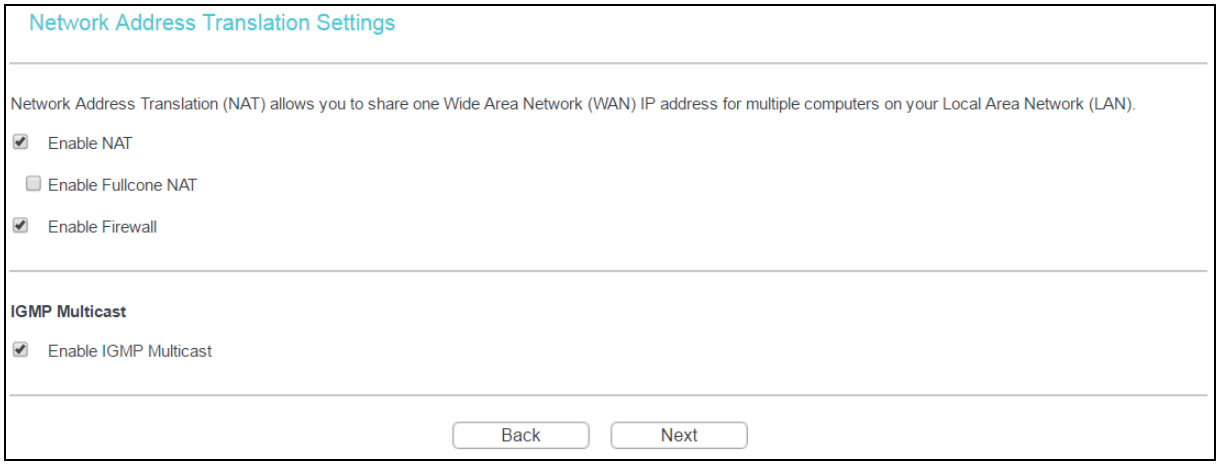
1) The response message from a DHCP server typically contains a number of configuration parameters (DHCP options) for the modem router. The DHCP options include IP network information, and also the vendor-specific options. In some cases, the modem router is implemented to perform user-defined operations (as shown below). You can implement your own treatment of all such options.

2) If the modem router is functioning as a DHCP client, it must identify itself in option 61 (client-identifier) in every DHCP message. DUID/IAID is portion of option 61.

   - Option 60 Vendor ID: The option code 60 is used to identify Vendor class.
   - Option 61 IAID: IAID (Identity Association ID) assigns an Identity Association ID to individual interfaces. In cases where the device is functioning with a single DHCP client identity, it must use value 1 for IAID for all DHCP interactions. In cases where the device is functioning with multiple DHCP client identities, the values of IAID have to start at 1 for the first identity and be incremented for each subsequent identity. For example, the device may use IAID value 1 for the first physical interface and value 2 for the second. Alternatively, the device may use IAID value 1 for the virtual circuit corresponding to the first connection object in the data model and value 2 for the second connection object in the data model.
   - Option 61 DUID: Specifies the name of the interface whose link-layer address the server is to use as its DUID (DHCP Unique Identifier). You must enter a value for this parameter or the server will not start. When the server starts, the DUID is written to the system log.
   - Option 125: The option 125 allows DHCP server to be pre-configured with policy for handling classes of devices in a certain way without requiring DHCP server to be able to parse the unique format used in client-identifier option.

➢ Use the following Static IP address: If you are provided with a static IP/gateway Address, please select this option, and then enter the WAN IP Address, WAN Subnet Mask and WAN gateway IP Address manually.

5. You will see the next screen as below. You can enable the NAT, SPI Firewall, and IGMP Multicast. If you are not sure about the settings, just leave the default settings. Click Next.

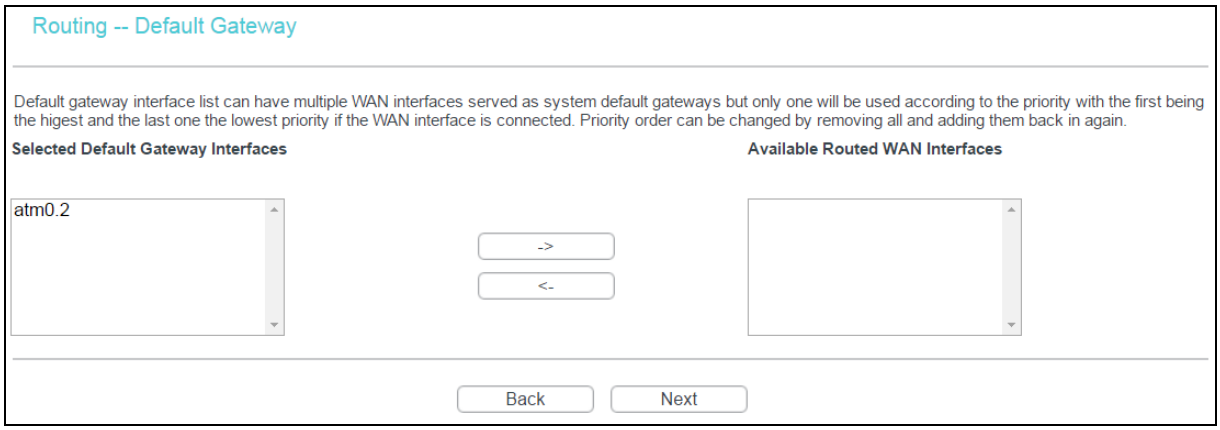


- Enable NAT: This technology translates the IP addresses of a local area network to a different IP address for the Internet. If this modem router is hosting your network's connection to the Internet, please select the check box. If another router exists in your network, you don't need to select the option.
- Enable Fullcone NAT: It is a type of NAT. If not enabled, the default NAT will act.
- Enable Firewall: A SPI firewall enhances network's security. Select the option to use a firewall, or else without a firewall.
- Enable IGMP Multicast: This is disabled by default. This setting will not allow IGMP (Internet Group Management Protocol) packets to be forwarded to the LAN. IGMP is used to manage multicasting on TCP/IP networks. Most users will not need to enable this. Some ISPs use IGMP to perform remote configuration for client devices, such as the router. If you are unsure, check with your ISP.

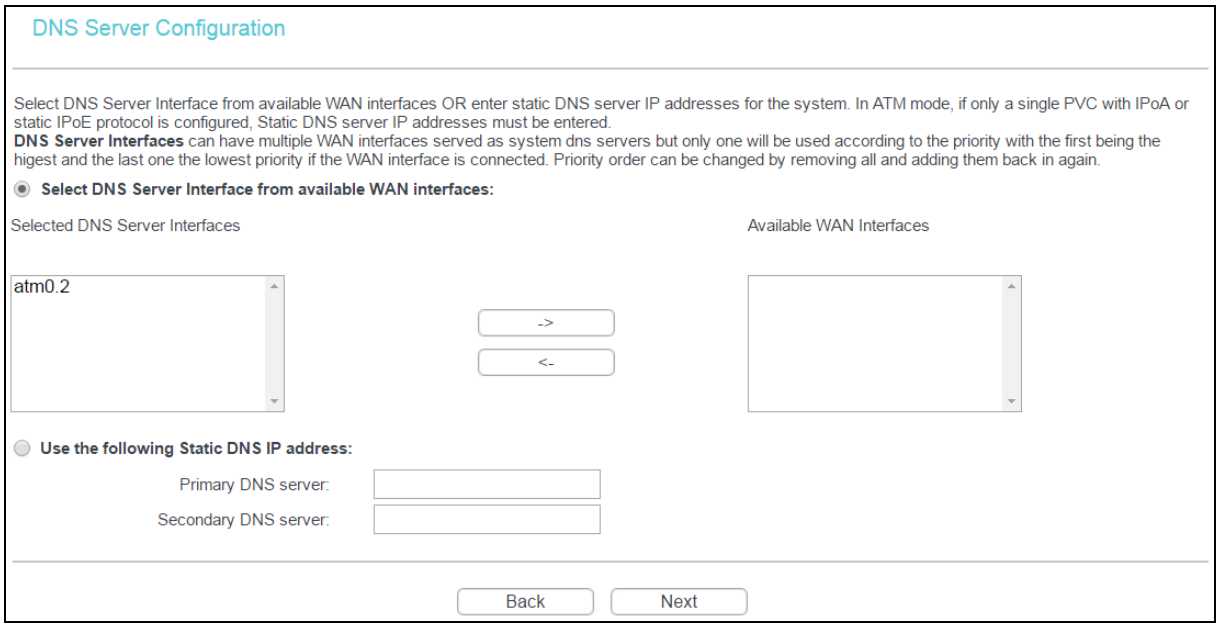
☞ Note:

If you select the Enable NAT checkbox, the NAT menu will be added to the web management page. We will describe the detailed configuration in 4.4.6 NAT.

6. Select a preferred WAN interface as the system default gateway and click Next.



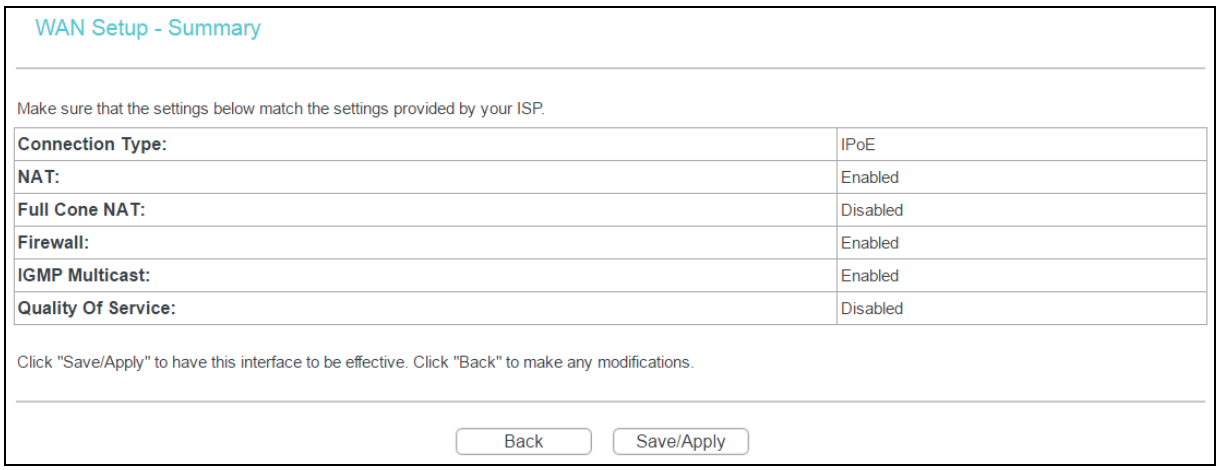
7. Configure the DNS Server Addresses on the screen as follows.



Note:

If only single PVC with IPoA is configured, you must enter static DNS server IP addresses.

8. On the next screen you will see the detailed settings you've made. Please click Apply/Save to save these settings.



4.4.2.3 ATM-EoA-Bridging

If you want to adopt the Bridge service, you need to use an ATM Interface. Follow the steps below to add a WAN service over a selected ATM interface:

1. Add a new ATM interface and select EoA option for DSL Link Type (see 4.4.1.1 ATM Interface).
2. Click Add in the WAN Port Information Table. Select WAN Service Interface over ATM PVC on the next screen.
3. Select Bridging option for the WAN service type on the screen, and click Next to continue.
4. And you will see the detailed settings you've made. Please click Apply/Save to save these settings.

4.4.2.4 ATM-PPPoA

If your ISP provides a PPPoA connection, you need to use an ATM Interface. Follow the steps below to add a WAN service over a selected ATM interface:

1. Add a new ATM interface and select PPPoA option for DSL Link Type (see 4.4.1.1 ATM Interface).
2. Click Add in the WAN Port Information Table and the next configuration is similar to PPPoE, (see section 4.4.2.1 ATM-EoA-PPPoE). The difference is that you don't need to set the PPPoE Service Name and Bridge PPPoE Frames Between WAN and Local Ports.

4.4.2.5 ATM-IPoA

If your ISP provides an IPoA connection, you need to use an ATM Interface. Follow the steps below to add a WAN service over a selected ATM interface.

1. Add a new ATM interface and select IPoA option for DSL Link Type (see 4.4.1.1 ATM Interface).
2. Click Add in the WAN Port Information Table and the next configuration is similar to IPoE (see section 4.4.2.2 ATM-EoA-IPoE). The difference is that you have to manually set the Static IP Address, and the Static IP Address for DNS Server.

☞ Note:

ETH and ATM service can not coexist. If the ATM Interface had configured, you cannot configure any other WAN service over the ETH Interface until the ATM Interface is deleted.

4.4.2.6 ETH-PPPoE

If your ISP provides a PPPoE connection, click Add in the WAN Port Information Table and the following configuration is similar to PPPoE over ATM interface (see section 4.4.2.1 ATM-EoA-PPPoE).

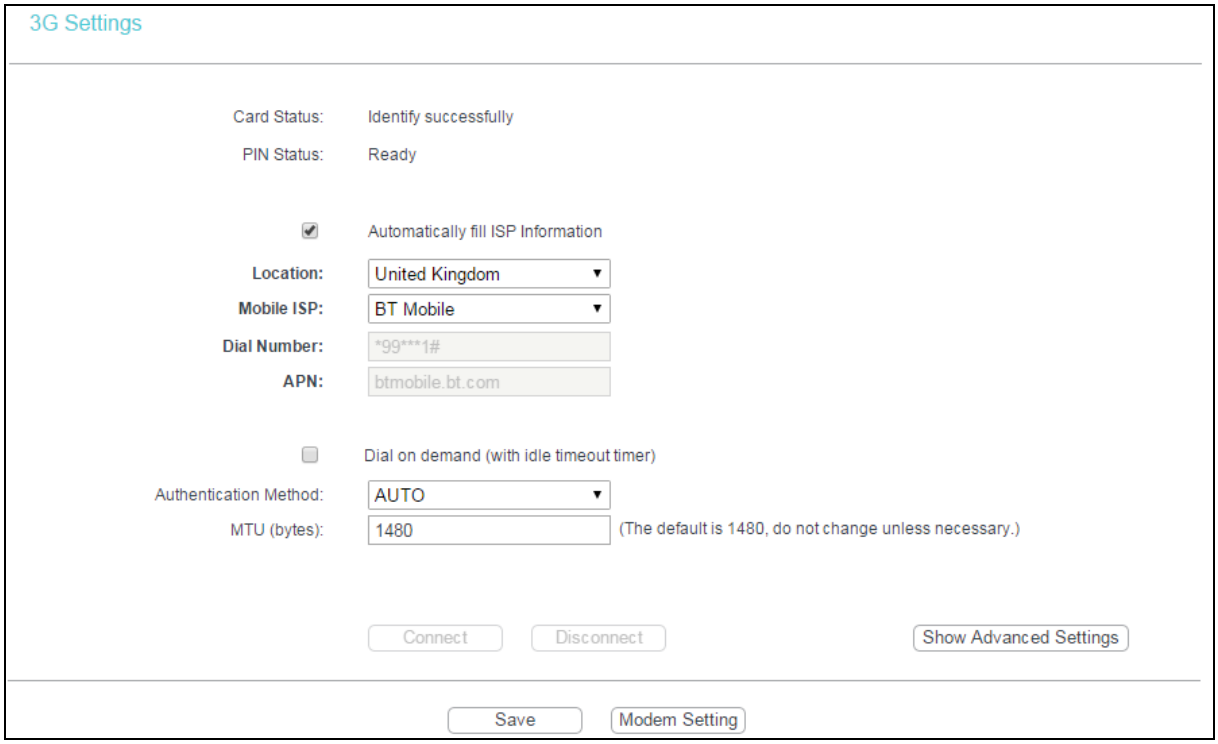
4.4.2.7 ETH-IPoE

If your ISP provides an IPoE connection, click Add in the WAN Port Information Table and the next configuration is similar to IPoE over ATM interface (see section 4.4.2.2 ATM-EoA-IPoE).

4.4.3 3G Settings

Go to Advanced Setup → 3G Settings, and you can configure parameters for 3G function on the screen below. To use the 3G function, you should first insert your USB modem on the USB port of the modem router. There is already much 3G USB modem information embedded in the modem router. The USB modem parameters will be set automatically if the card is supported by the modem router. If your USB modem inserted is supported by the modem router, Identify successfully will display in the USB 3G Modem field as shown below.

Some 3G USB modem may not be supported by the modem router. For more information, please refer to Compatibility List on our website www.tp-link.com. If your 3G USB modem is incompatible with our modem router, please feel free to contact our Technical Support.



- Location: The location where you're enjoying the 3G card.
- Mobile ISP: The ISP (Internet Service Provider) you apply to for 3G service. The modem router will show the default Dial Number and APN of that ISP.

  ☞ Note:

  If your Location or Mobile ISP is not listed, please untick the box before Automatically fill ISP Information. Then fill the Dial Number and APN blanks below.

- Dial on demand: Dial on demand is dependent on the traffic. If there is no traffic (or Idle) for a pre-specified period of time (Inactivity Timeout), the connection will drop down automatically. And once there is traffic send or receive, the connection will be automatically on. If you want your Internet connection to remain active at all times, enter 0 in the Inactivity Timeout field.

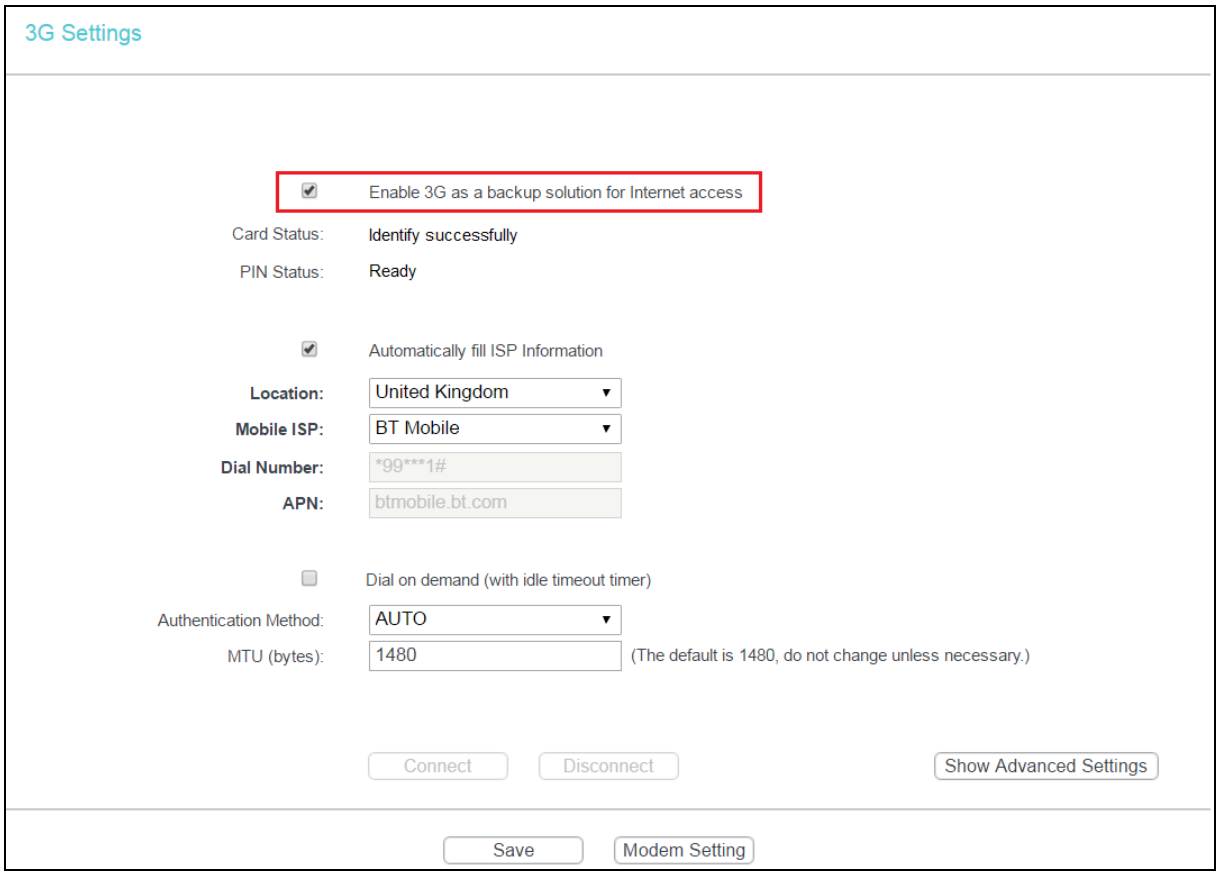
☞ Note:

Sometimes the connection cannot be disconnected although you specify a time to Inactivity Timeout because some applications visit the Internet continually in the background.

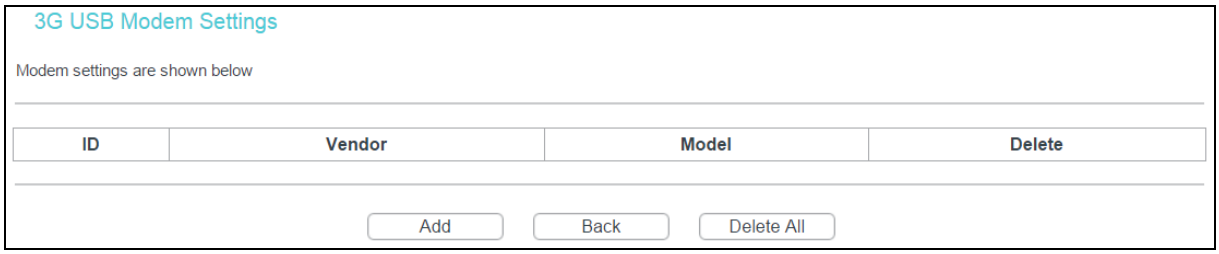
- Connect/Disconnect: You can click Connect/Disconnect to connect/disconnect connection immediately.
- Authentication Method: Some ISPs need a specific authentication type, please confirm it with your ISP or keep it Auto.
- MTU size(in bytes): The default MTU (Maximum Transmission Unit) size is 1480 bytes, which is usually fine. For some ISPs, you need modify the MTU. This should not be done unless you are sure it is necessary for your ISP.

☞ Note:

3G settings is unavailable when operation mode is not 3G Router Mode and the backup is not enabled. Please tick the box in the next screen to enable 3G as a backup solution for Internet access or change settings on Operation Mode if you want to use 3G.



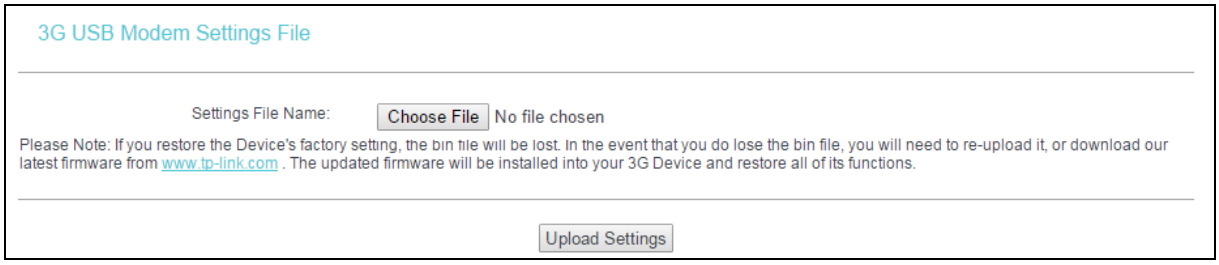
Click Modem Settings on 3G Settings, and 3G Modem settings can be shown as below.



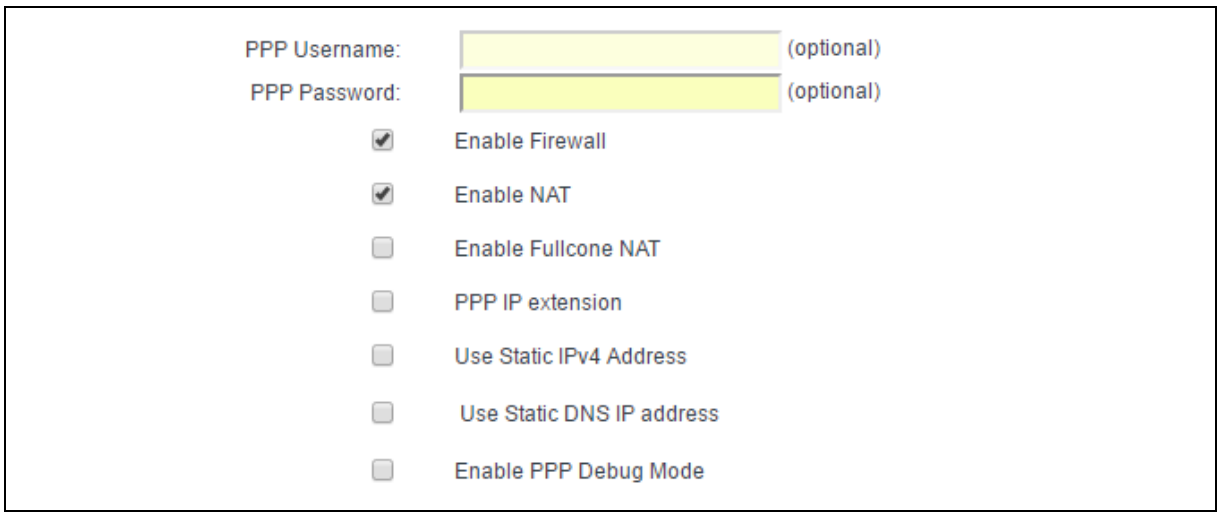
To upload 3G USB Modem Configuration File:

1. Click Add and the screen below will pop up.
2. Click Browse below, and then select the right file from the drop-down list.

Click Upload Settings to upload the file.



Click Show Advanced Settings in 3G Settings, and advanced settings can be shown as below.



- PPP Username/Password: Enter the username and password provided by your ISP. These fields are case-sensitive.
- Use Static IPv4 Address: If your ISP specifies an IP address for you, click the checkbox and fill the Static IPv4 Address.
- Use Static DNS IP Address: If your ISP specifies a DNS IP address for you, click the checkbox and fill the Primary DNS and Secondary DNS blanks below. The Secondary DNS is optional. Otherwise, the DNS servers will be assigned dynamically from ISP.
- Primary DNS: Enter the DNS IP address in dotted-decimal notation provided by your ISP.
- Secondary DNS: (Optional) Enter another DNS IP address in dotted-decimal notation provided by your ISP.

Once the connection is successful, you will find the 3G screen is similar to the first figure in this section.

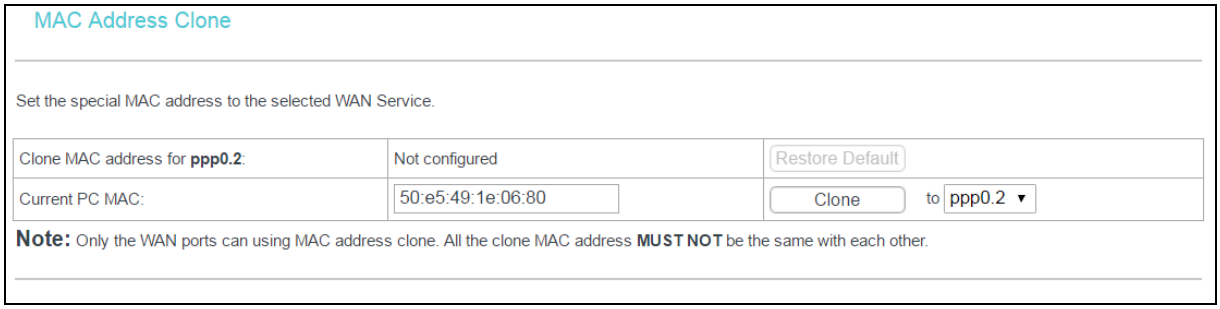
Click Save to save your settings.

4.4.4 MAC Clone

Go to Advanced Setup → MAC Clone, you can configure the MAC address of the WAN Interface as shown below.

The WAN Interface List displays the Lay2 Interfaces you have configured on the section 4.4.1 Layer2 Interface and its default MAC Address. If you have not configured corresponding WAN Service for the interface on the section 4.4.2 WAN Service, the blank for MAC Address will display Need a corresponding WAN Service.

The last one of WAN Interface List displays your PC's current address.



Type the new value for the WAN Interface who's MAC Address you want to change.

You can select corresponding WAN Interface from the drop-down list and click Clone to clone your current PC MAC.

Click Restore Default to restore the WAN Interface's default MAC Address.

☞ Note:

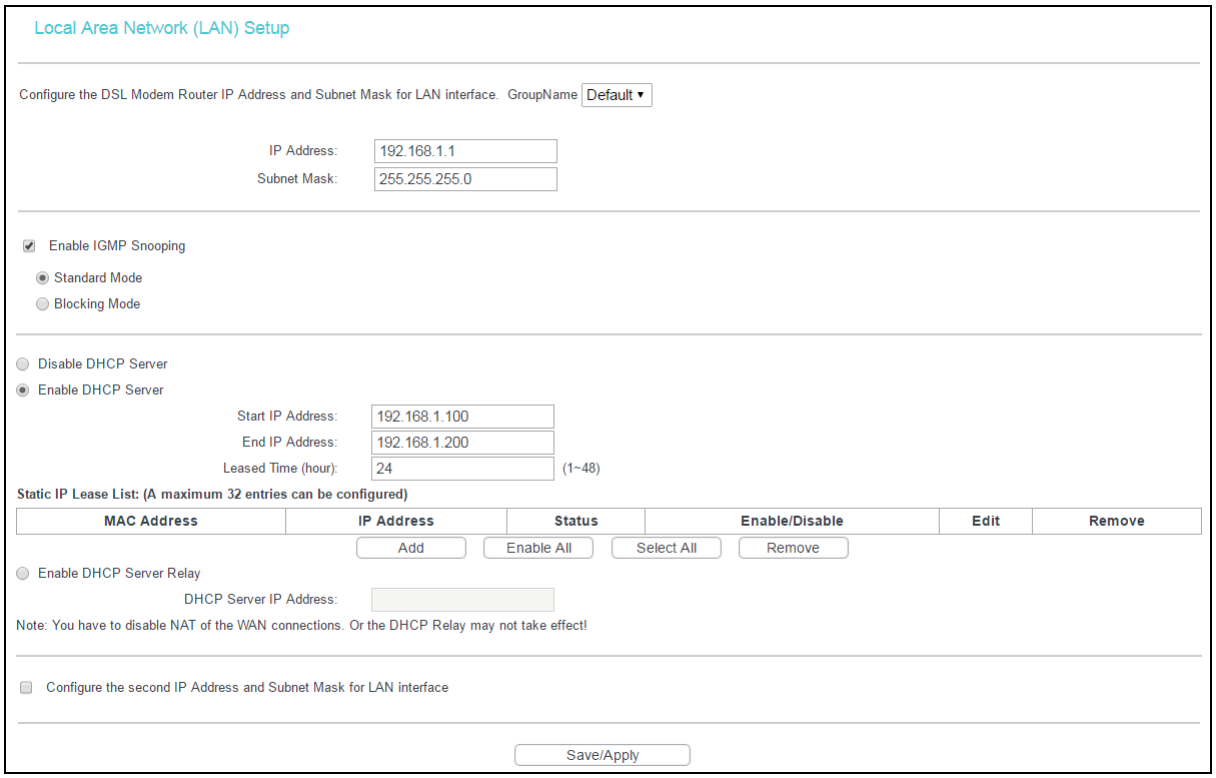
Only the WAN Ports can use MAC Address Clone function. All the clone MAC addresses must not be the same with each other.

4.4.5 LAN

Go to Advanced Setup → LAN, and you will see the LAN screen including IPv4 LAN Config and IPv6 LAN Config. The section allows you to configure the modem router's LAN ports settings.

4.4.5.1 IPv4 LAN Config

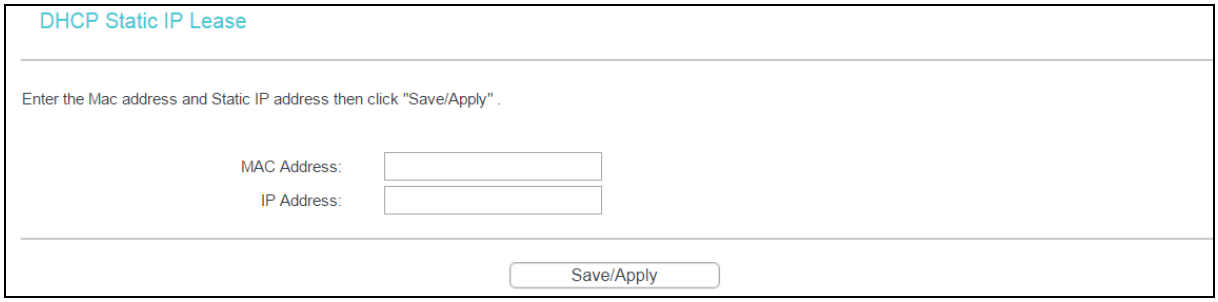
Go to Advanced Setup → LAN → IPv4 LAN Config, and you will see the LAN screen below. Here you can configure LAN IPv4 interface for your modem router.



- IP Address: Enter the modem router's local IP Address, and then you can access to the web management page via the IP Address. The default value is 192.168.1.1.
- Subnet Mask: Enter the modem router's Subnet Mask, the default value is 255.255.255.0.
- Enable IGMP Snooping: If you select the option, please choose the IGMP Mode**:** Standard Mode or Blocking Mode.
- DHCP Server: These settings allow you to configure the modem router's Dynamic Host Configuration Protocol (DHCP) server function. The DHCP server is enabled by default for the modem router's Ethernet LAN interface. DHCP service will supply IP settings to computers which are configured to automatically obtain IP settings that are connected to the modem router through the Ethernet port. When the modem router is set for DHCP, it becomes the default gateway for DHCP client connected to it. Keep in mind that if you change the IP address of the modem router, you must change the range of IP addresses in the pool used for DHCP on the LAN.
  - Start IP Address: Enter a value for the DHCP server to start with when issuing IP addresses. Because the default IP address for the modem router is 192.168.1.1, the default Start IP Address is 192.168.1.2, and the Start IP Address must be 192.168.1.2 or greater, but smaller than 192.168.1.254.
  - End IP Address: Enter a value for the DHCP server to end with when issuing IP addresses. The End IP Address must be smaller than 192.168.1.254. The default End IP Address is 192.168.1.254.
  - Leased Time (hour): The Leased Time is the amount of time in which a network user will be allowed connection to the modem router with their current dynamic IP address. Enter the amount of time, in hours, then the user will be "leased" this dynamic IP address.

After the dynamic IP address has expired, the user will be automatically assigned a new dynamic IP address. The default is 24 hours.

- Static IP Lease List: The function allows you to specify a reserved IP address for a PC on the LAN, that PC will always obtain the assigned IP address each time when it accesses the DHCP server. Reserved IP addresses should be assigned to servers that require permanent IP settings. Click the Add button on the LAN screen above, and then you will set the rule in the screen as below.

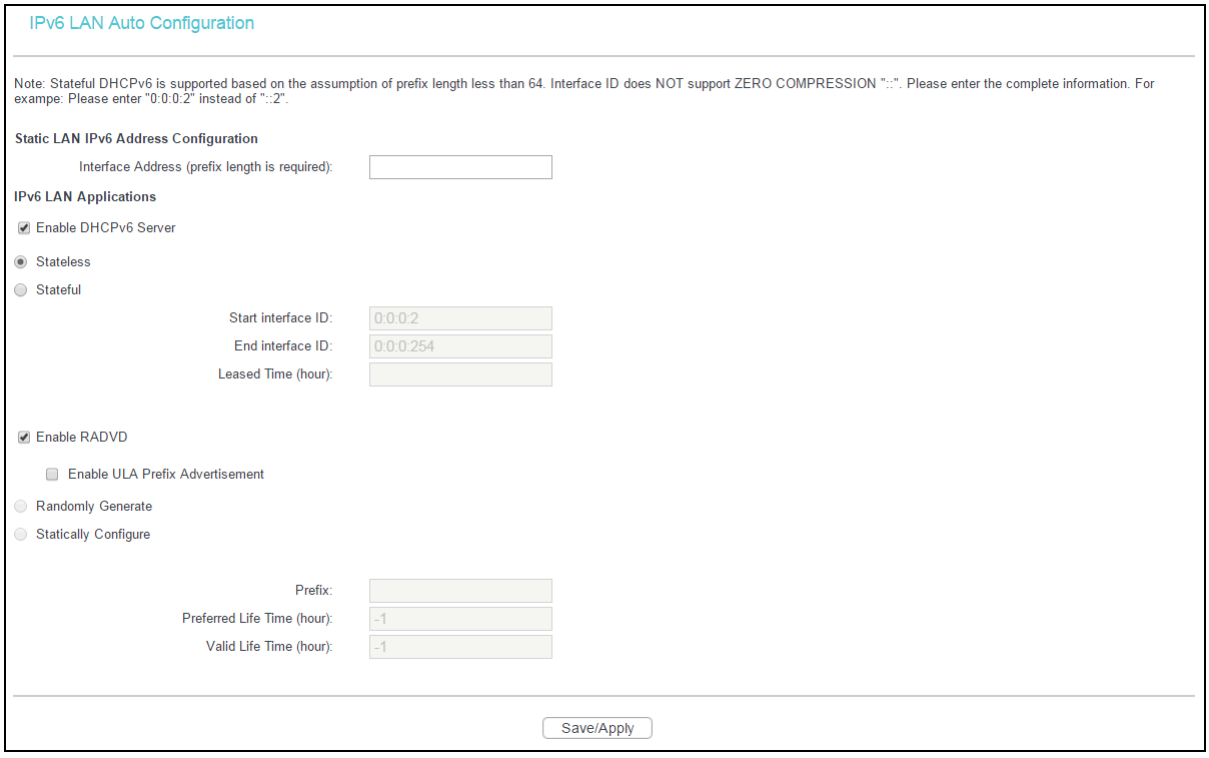


  - MAC Address: The MAC address of the computer on the LAN which you want to reserve an IP.
  - IP Address: The IP address you want to reserve to the computer.

- Configure the second IP Address and Subnet Mask: You can configure the modem router's second IP Address and Subnet Mask for LAN Interface through which you can also access to the web management page as the default IP Address and Subnet Mask.

4.4.5.2 IPv6 LAN Config

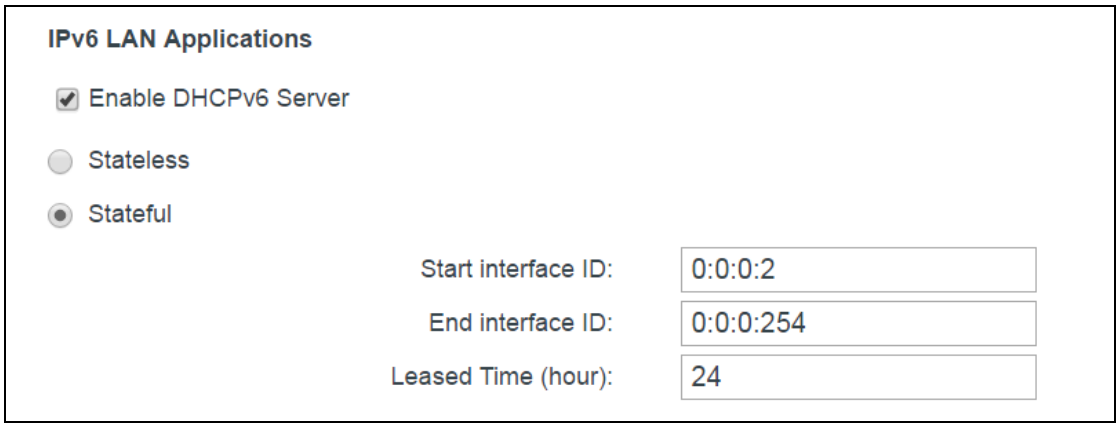
Go to Advanced Setup → LAN → IPv6 LAN Config, and you will see the LAN screen below. Here you can configure LAN IPv6 interface for your modem router.



- Interface Address (prefix length is required): Here enter the prefix length of your interface address.
- IPv6 LAN Applications: Select a type to assign IPv6 addresses to the computers in your LAN. DHCPv6 Server and RADVD are provided.

For DHCPv6 Server:

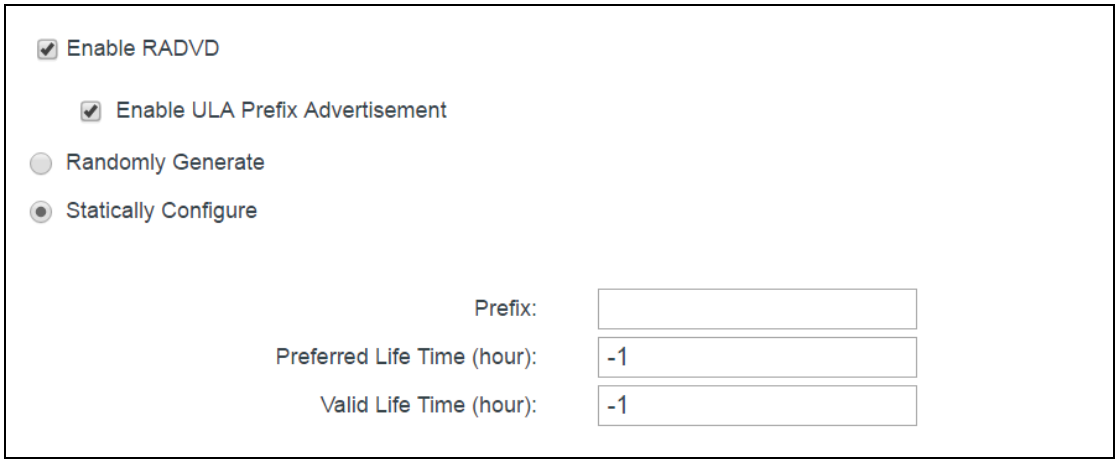
1) If Stateless is selected, it doesn't need to be configured.
2) If Stateful is selected, please complete the following parameters.



- Start interface ID: Enter a value for the DHCPv6 server to start with when issuing IPv6 addresses.
- End interface ID: Enter a value for the DHCPv6 server to end with when issuing IPv6 addresses.
- Leased Time (hour): The Leased Time is the amount of time in which a network user will be allowed to connect to the modem router with their current dynamic IPv6 address. Enter the amount of time, in hours, then the user will be "leased" this dynamic IPv6 address. After the dynamic IPv6 address has expired, the user will be automatically assigned a new dynamic IPv6 address. The default is 24 hours.

For RADVD:

1) If Randomly Generate is selected, it doesn't need to be configured.
2) If Statically Configure is selected, please complete the following parameters.



- Prefix: Enter a value for the site prefix.

Click Save/Apply to make the configuration take effect.

4.4.6 NAT

NAT (Network Address Translation) allows you to share one WAN (Wide Area Network) IP address for multiple computers on your LAN (Local Area Network).

☞ Note:

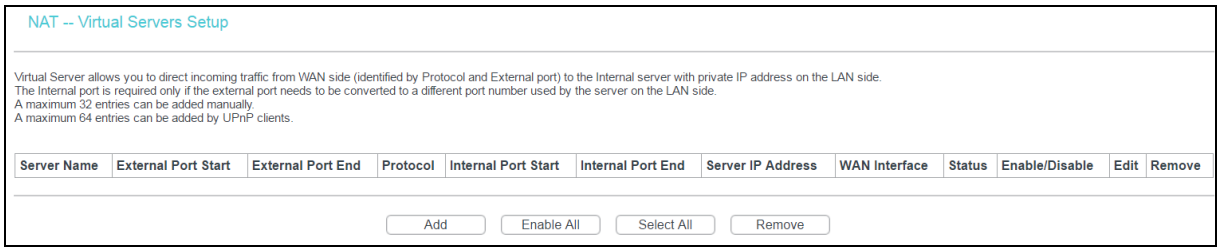
When you select PPPoA or PPPoE for the WAN Setup, or when you select Enable NAT for the type of IPoA and IPoE connection (4.4.2 WAN Service), you will see the NAT menu on the web management page.

Go to Advanced Setup → NAT, and there are three submenus under the main menu: Virtual Servers, Port Triggering, DMZ Host and ALG. Click any of them, and you will be able to configure the corresponding function.

4.4.6.1 Virtual Servers

Go to Advanced Setup → NAT → Virtual Servers, you can set up virtual servers on the screen below.

Virtual servers can be used for setting up public services on your LAN, such as DNS, Email and FTP. A virtual server is defined as a service port, and all requests from the Internet to this service port will be redirected to the computer specified by the server IP. Any PC that was used for a virtual server must have a static or reserved IP Address because its IP Address may change when using the DHCP function.



➢ Virtual Server Table: The table indicates the information about the Virtual Server entries.

- Server Name: This is the name of the Virtual Server. It is exclusive and must be filled in.
- External Port Start: The base number of External Ports. You can type a service port or leave it blank.
- External Port End: The end number of External Ports. You can type a service port or leave it blank.
- Protocol: The protocol used for this application, TCP, UDP, or TCP/UDP.
- Internal Port Start: The base number of Internal Ports. You can type a service port or leave it blank.

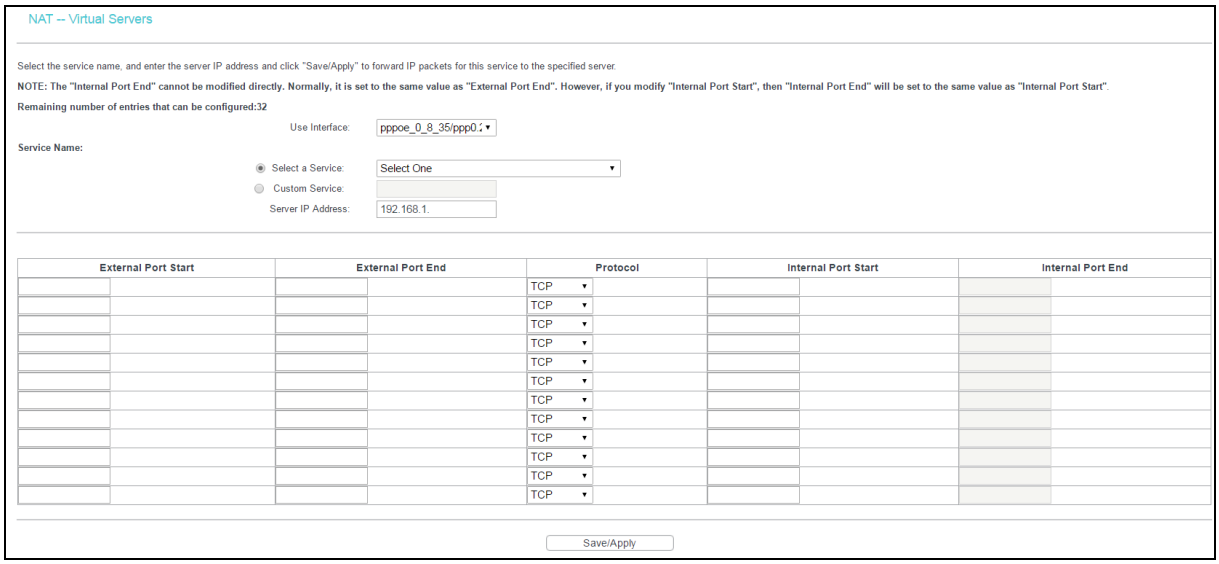
- Internal Port End: The end number of Internal Ports. You can type a service port or leave it blank.
- Server IP Address: The IP Address of the PC providing the service application.
- WAN Interface: The WAN Service Interface providing the service application.

➢ Add: Click Add to add a new entry.

➢ Remove: Select the check box in the table, click Remove, and then the corresponding entry will be deleted in the table.

To add a virtual server entry:

1. Click Add on the preceding screen, and then you will see the new Virtual Server in the next screen as shown below.



2. Select the Interface which you want to use from the drop-down list.
3. Select the service which you want to use from the drop-down list. If the list does not have the service you need, type the name of the custom service in the text box.
4. Type the IP Address of the computer in the Server IP Address text box.
5. Enter the External Port Start, External Port End, Internal Port Start and Internal Port End in the table, and then select the protocol used for this Virtual Server, TCP, UDP or TCP/UDP.
6. Click Save/Apply to enable virtual server and then you will see your setting as shown on Virtual Servers Setup screen.

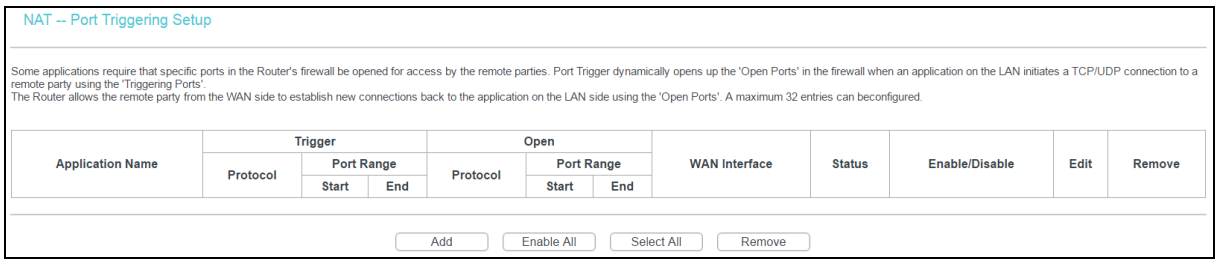
☞ Note:

If you select the service from the drop-down list, the External Port Start, External Port End, Internal Port Start, Internal Port End and the Protocol will be added in the table automatically. You only need to enter the Server IP Address for the Virtual Server.

4.4.6.2 Port Triggering

Go to Advanced Setup → NAT → Port Triggering, you can set Port Triggering on the screen.

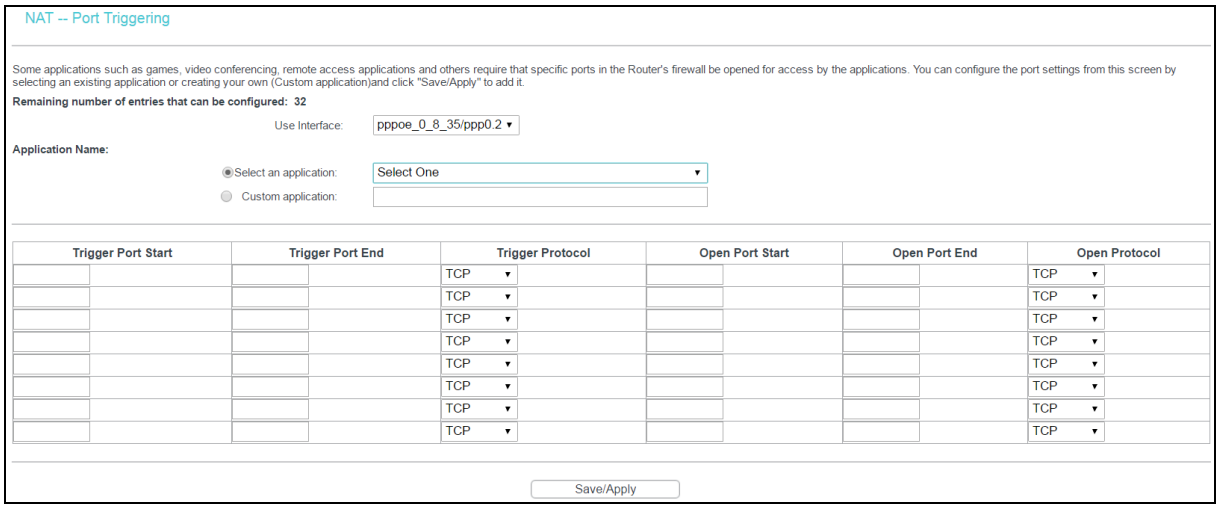
Some applications require that specific ports in the modem router's firewall should be opened for access by remote devices. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote device using the triggering ports. The modem router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the open ports. A maximum 32 entries can be configured.



- Port Triggering Setup Table: The table indicates the information about the Port Triggering entries.
  - Application (Name): This is the name of the Port Triggering. It is exclusive and must be filled.
  - Trigger: It includes the Protocol and the Start and End value of the Trigger Ports.
  - Open: It includes the Protocol and the Start and End value of the Open Ports.
  - WAN Interface: The WAN Service Interface setting of the Port Triggering.
- Add: Click the button to add a new entry.
- Remove: Select the check box in the table above and then click Remove, and the corresponding entry will be deleted in the table.

To add a new Port Triggering:

1. Click Add on the preceding screen, and then you will see the new Port Triggering in the next screen as shown below.



2. Select the application from the drop-down list. If the list does not have the application that you want, select the Custom application radio button, and type the name of the custom application in the text box.
3. Enter the Trigger Port Start, Trigger Port End, Open Port Start and Open Port End in the table, and then select the Trigger protocol and Open protocol, TCP, UDP or TCP/UDP.
4. Click Save/Apply to enable the settings and then you will see your settings on Port Triggering Setup Table.

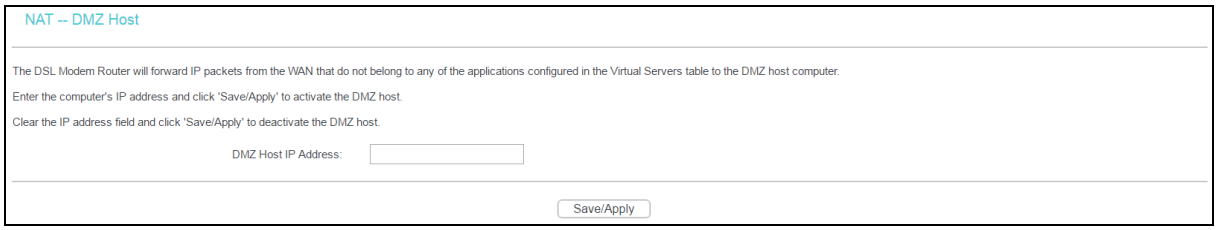
☞ Note:

If you select the application from the drop-down list, the External Port Start, External Port End, Internal Port Start, Internal Port End and the Protocol will be added in the table automatically.

4.4.6.3 DMZ Host

Go to Advanced Setup → NAT → DMZ Host, and you can set up DMZ Host on the screen below.

The DMZ host feature can make a local host be exposed to the Internet for a special-purpose service, such as online gaming or video conferencing.



To add a new DMZ Host:

You can enter the computer's IP address and then click Save/Apply to activate the DMZ host you set on this page.

☞ Note:

DMZ host forwards all the ports at the same time. Any PC whose port is being forwarded must have its DHCP client function disabled and should have a new static IP Address assigned to it because its IP Address may change while using the DHCP function.

4.4.6.4 ALG

Go to Advanced Setup → NAT → ALG, and then you can configure the basic security in the screen as shown below.

Click Save/Apply to save your settings.

4.4.7 Security

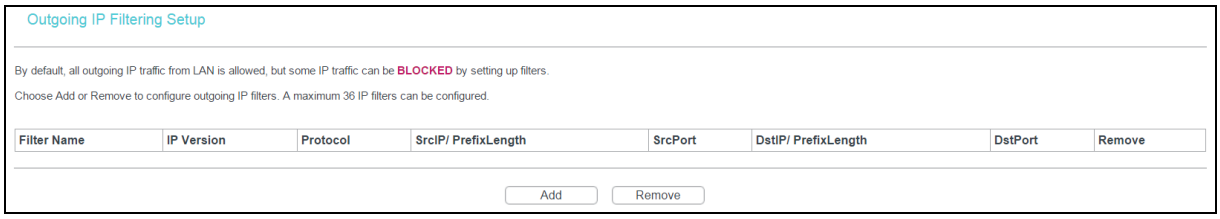
Go to Advanced Setup → Security, and you will see the security screen including IP Filtering and MAC Filtering (only effective in Bridging mode) submenus.

4.4.7.1 IP Filtering

The IP address filtering feature makes it possible for administrators to control user's access to the Internet, which is based on user's IP. The IP address filtering here means Outgoing, the detailed descriptions are provided below.

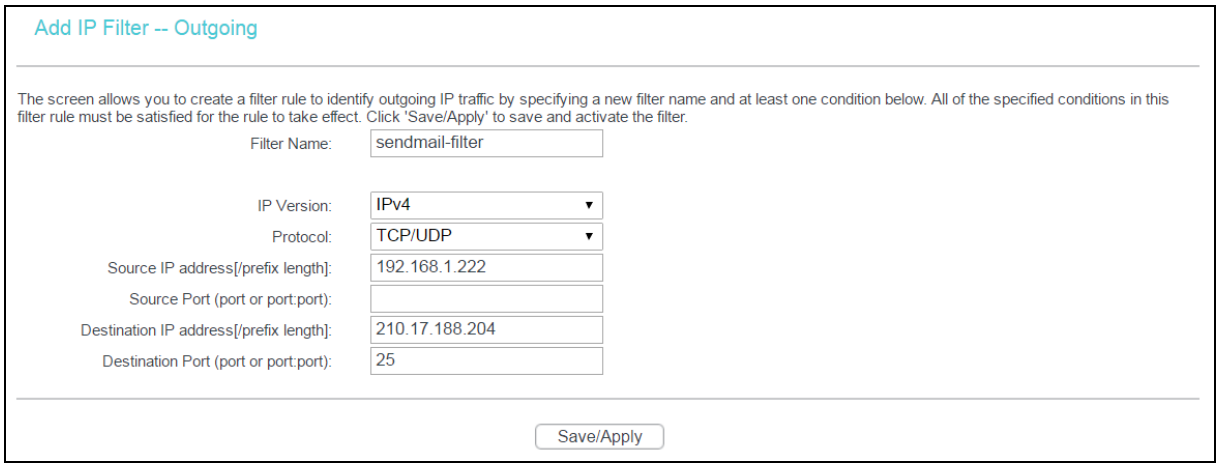
Go to Advanced Setup → Security → IP Filtering, you can configure Outgoing Filtering rules on the screen below.

The Outgoing IP Filtering feature allows you to control some IP traffic from LAN to access to some specifically addresses. By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be BLOCKED by setting up filters.



Set up an Outgoing IP Filtering rule:

1. Click Add on the screen above, and you will see the next screen as shown below.



2. Enter the Filter name for the rule, and it is exclusive and must be filled.
3. Select the protocol: TCP/UDP, TCP, UDP or ICMP in the drop-down list for the connection between the Source IP address and Destination IP address.
4. Enter a Source IP Address in dotted-decimal notation format and then type Source Port (port or port**:** port) in the text boxes separately.
5. Enter a Destination IP Address in dotted-decimal notation format and then type Destination Port (port or port**:** port) in the text boxes separately.
6. Click Save/Apply to save this entry.

☞ Note:

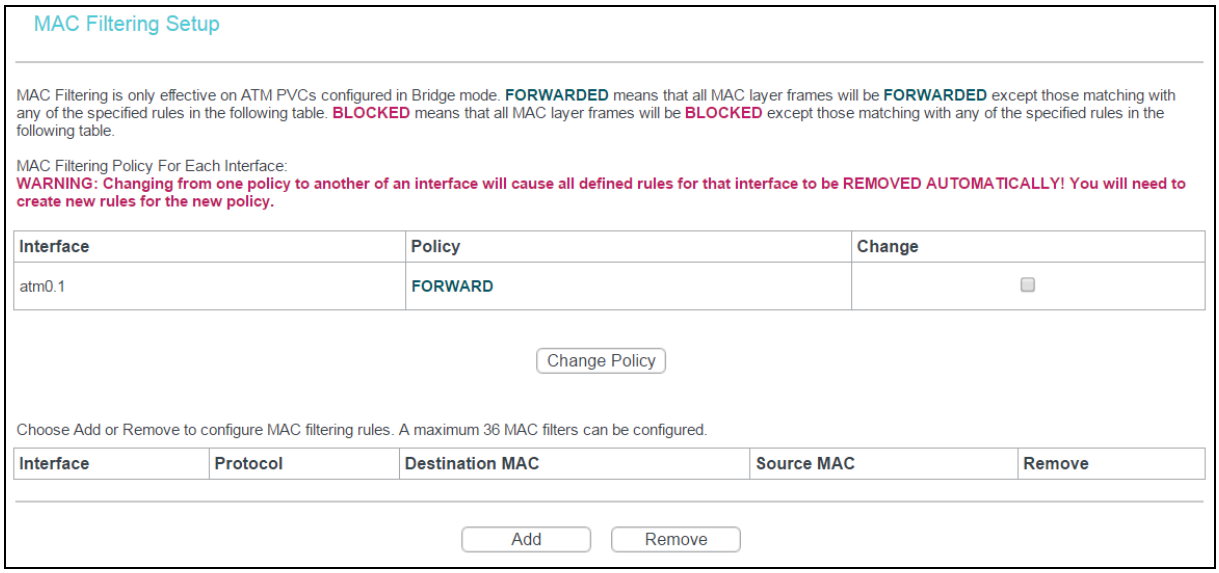
When you add an Outgoing IP Filtering entry, you must configure at least one condition on the preceding screen except the Filter name. If you leave the Protocol blank, it means that the rule is effective to all protocols, if you leave the Source IP Address and/or Destination IP Address blank, it suggests that all Source IP Addresses and/or Destination IP Addresses are controlled by the rule, if you leave the Source Port and/or Destination Port blank, it suggests that all Source Ports and/or Destination Ports are controlled by the rule.

4.4.7.2 MAC Filtering

Go to Advanced Setup → Security → MAC Filtering, and you can configure MAC Filtering rules on the screen as shown below. The section allows you to control access to the Internet by users on your local network based on their MAC Address.

☞ Note:

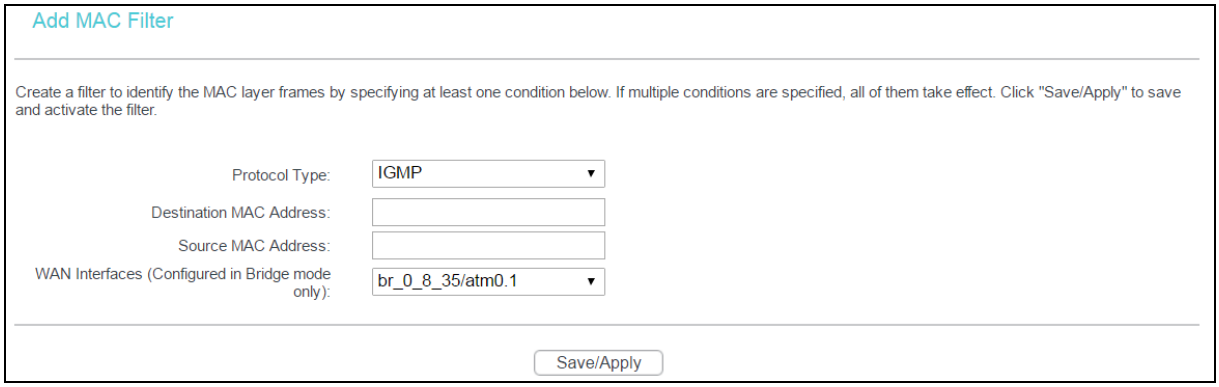
MAC Filtering is only effective on ATM PVC(s) configured in Bridging mode.



- Change Policy: There are two policies for the MAC filters: FORWARDED and BLOCKED. Select the Change checkbox and click Change Policy to change from one policy to another. When you set FORWARDED, it means that all MAC layer frames will be forwarded except those matching with any of the specified rules in the table. While BLOCKED means that all MAC layer frames will be blocked except those matching with any of the specified rules in the preceding table.
- Add: Click Add, and then you can add a new MAC Filter in the next screen.
- Remove: Select the check box in the table and then click Remove, and then the corresponding entry will be deleted in the table.

To add a MAC Filtering rule:

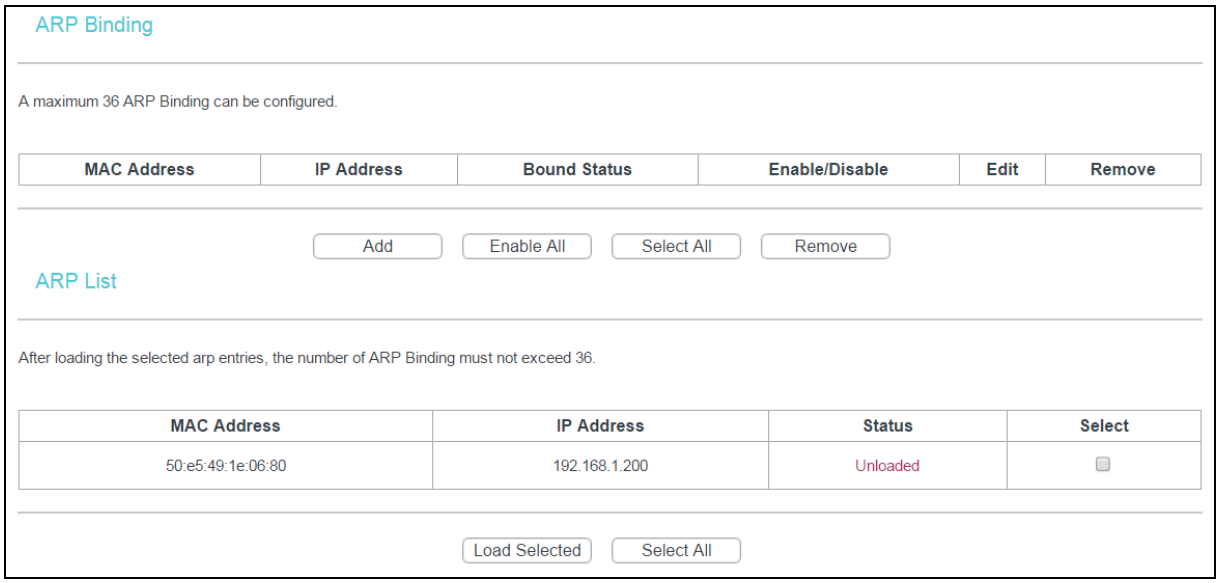
1. Click Add, and you will see the similar screen below.



2. Select Protocol Type in the drop-down list for the rule.
3. Enter Destination MAC Address and Source MAC Address in the text box.
4. Select Frame Direction in the drop-down list for the rule.
5. Select the WAN interfaces from the drop-down list.
6. Click Save/Apply to save this entry and then you will see your settings on the Mac Filtering screen.

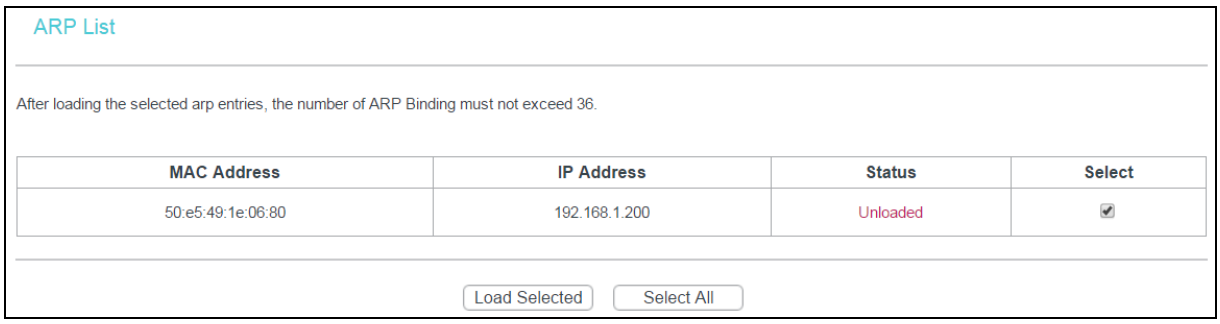
4.4.7.3 ARP Binding

Go to Advanced Setup → Security →ARP Binding, and you will see the ARP Binding screen. This function allows you to bind network device's IP address to its MAC address, and prevents ARP spoofing and other ARP attacks.

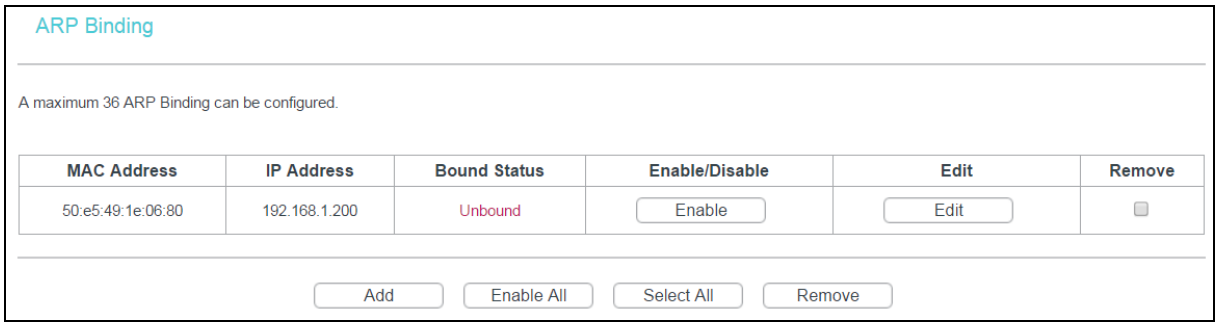


To bind a connected network device's IP address and MAC address:

1. Select the entry of the connected device's MAC Address and IP Address in ARP List as shown below.



2. Click Load Selected and the device's information will appear on the ARP Binding table as shown below.



3. Click Enable to bind the device's MAC address to its IP address.

To manually bind a network device's IP address and MAC address:

1. Click Add on ARP Binding screen, and then you will see the next screen as shown below.

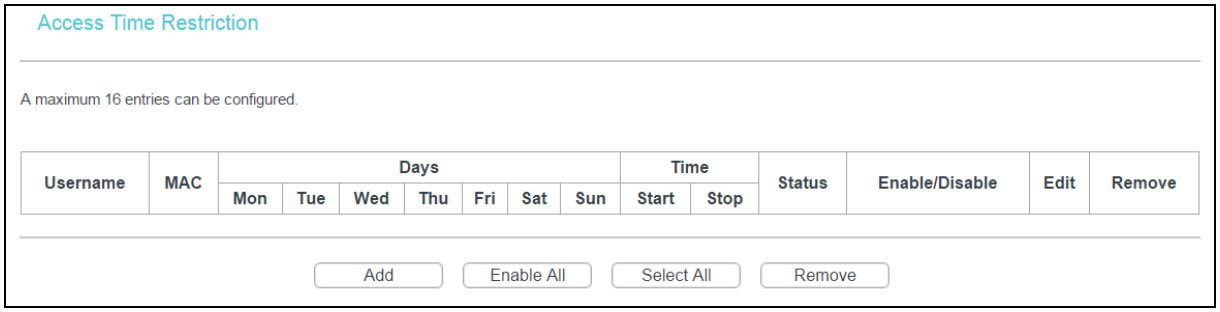
2. Enter the MAC Address and IP Address of the network device.
3. Tick Bound Enable to enable this entry.
4. Click Save/Apply to save this entry and then you will see your settings as shown on ARP Binding screen.

4.4.8 Parental Control

Go to Advanced Setup → Parental Control, and you will see the Parental Control screen including Time Restriction and URL Filter. Time Restriction allows you to control the Internet activities of the child by restricting the time of surfing. URL Filter limits every computer connected to the modem router to access certain websites. These two features work independently.

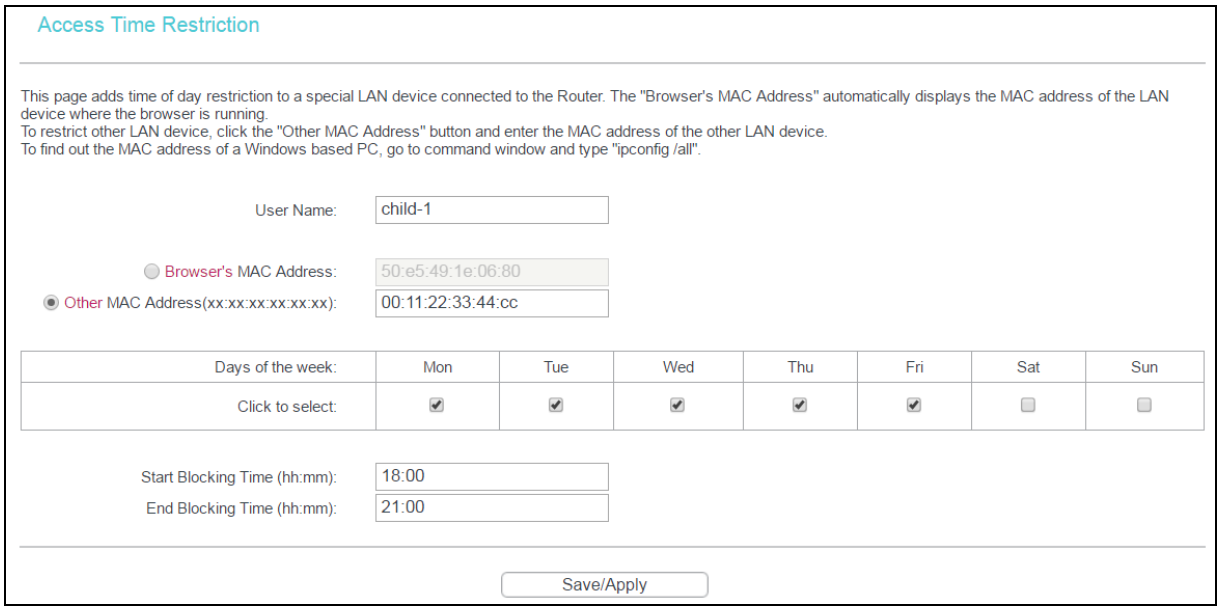
4.4.8.1 Time Restriction

This feature allows you add time of day restriction to a special LAN device connected to the modem router.



To add a Time Restriction entry:

1. Click Add, and then you will see the next screen as shown below.



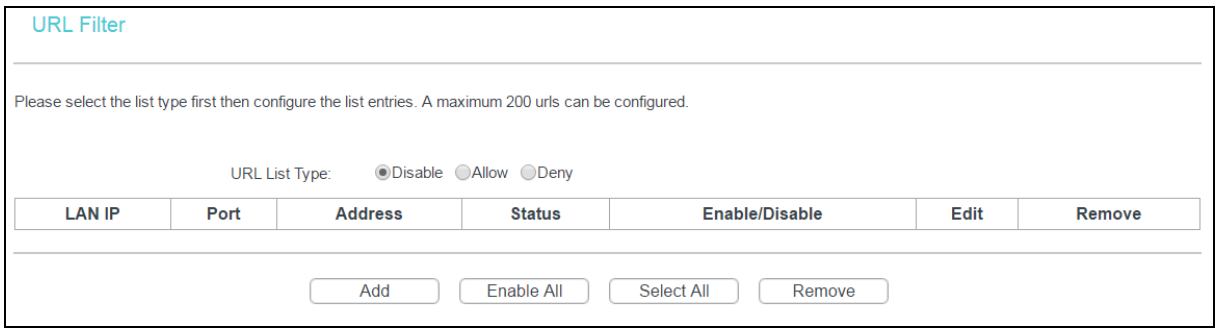
2. Enter the User Name of the LAN device connected to the modem router.
3. To restrict the device where the browser is running, select the Browser's MAC Address radio button. The MAC Address has been automatically displayed in the text box. To restrict other LAN devices, click Other MAC Address radio button and enter the MAC address of the other LAN device.
4. Select the day to allow the rule to take effect in the table.
5. Enter the Start Blocking Time and End Blocking Time in the text box separately, and then the device controlled will then be unable to connect to the internet during that time.
6. Click Save/Apply to save this entry and then you will see your settings as shown above.

☞ Note:

The Time Restriction will not work correctly before the time of the device is set in Management → Internet Time.

4.4.8.2 URL Filter

This feature allows you to configure the filter rules based on URL to control all the computers in the LAN to access the specified port, and it is independent with Time Restriction feature.



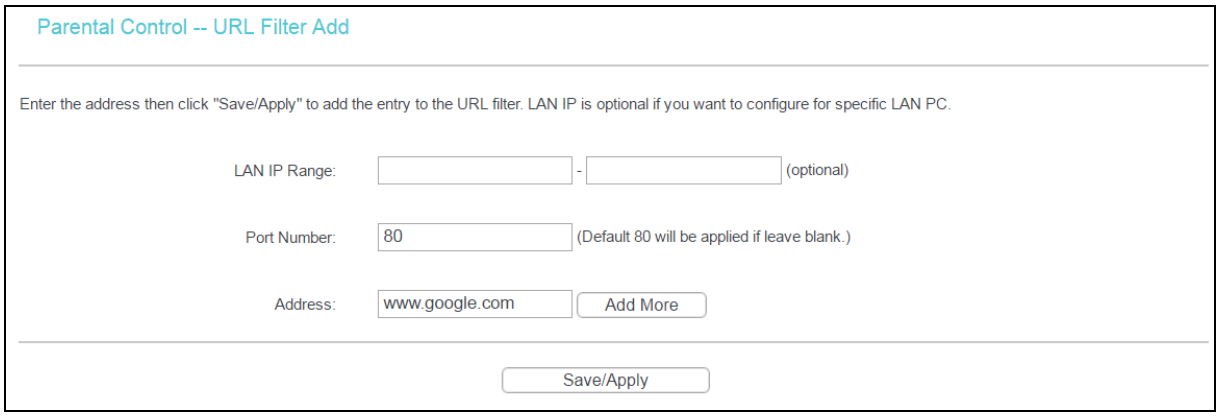
There are three policies for the URL Filter.

➢ Disable: URL Filter function will not take effect.

- Allow: Only allow the PCs to access the specified URL.
- Deny: Block the PCs to access the specified URL.

To add a URL Filter entry:

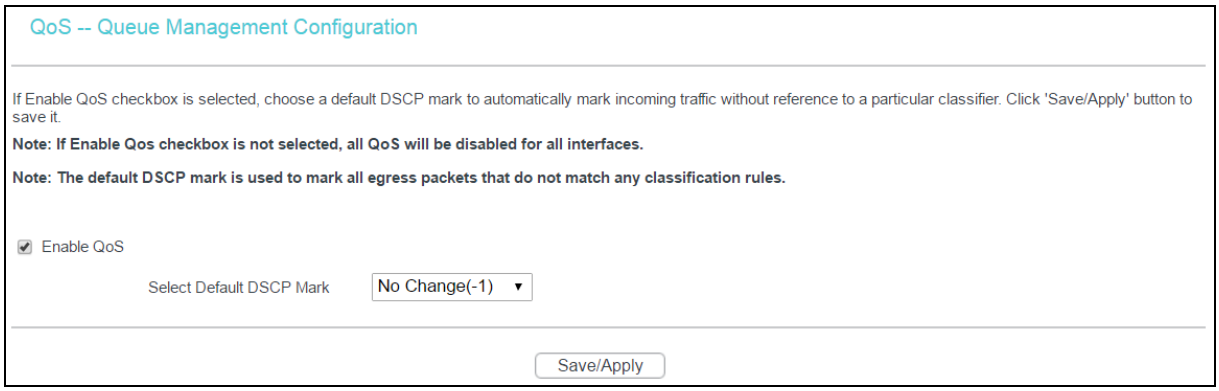
1. Check the Deny or Allow radio button. Here we take Deny for example.
2. Click Add and then you will see the next screen as shown below. Enter the URL Address and Port Number.



3. Click Save/Apply to save this entry and then you will see your settings on URL Filter screen. Every computer connected to the modem router will not access this URL address on the port.

4.4.9 Quality of Service

Go to Advanced Setup → Quality of Service, you can enable QoS (Quality of Service) on the screen below. QoS helps to prioritize data as it enters your modem router. By attaching special identification marks or headers to incoming packets, QoS determines which queue the packets enter, based priority. This is useful when there are certain types of data you want to give higher priority, such as voice data packets give higher priority than Web data packets. This option will provide better service of selected network traffic over various technologies.



Select the Enable QoS checkbox to enable all QoS for all interfaces.

Select a Default DSCP Mark from drop-down list to automatically mark incoming traffic without reference to a particular classifier.

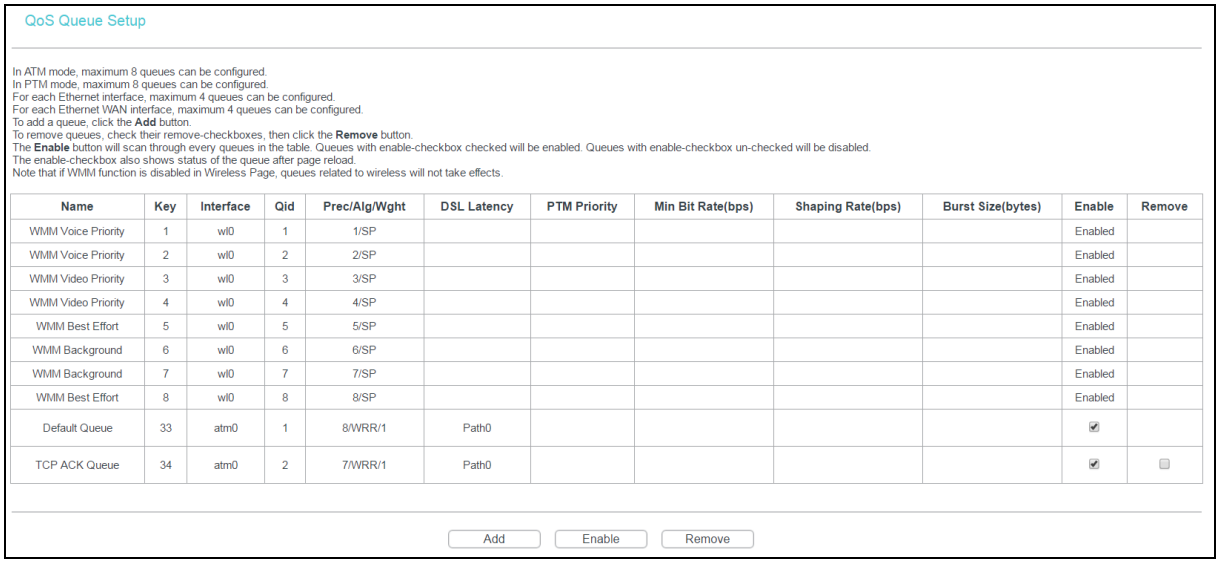
Click Save/Apply to save the current configuration.

☞ Note:

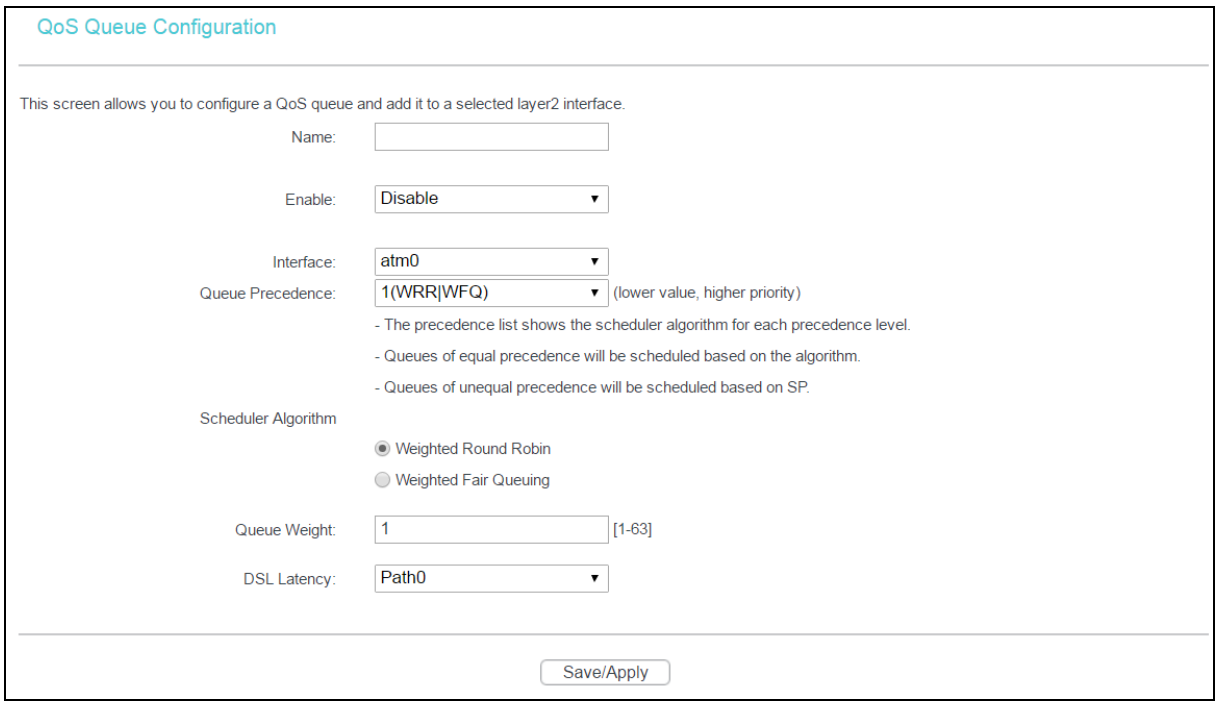
The default DSCP mark is used to mark all egress packets that do not match any classification rules.

4.4.9.1 Queue Config

Go to Advanced Setup → Quality of Service → Queue Config, you can set up virtual servers on the screen below.



Click Add, and you can configure the QoS queue entry on the next screen.



- Name: Set a name for the entry.
- Enable: Select Enable option to take this entry effect.
- Interface: Assigned a specific Wan Service for this QoS queue entry.

- Queue Precedence: Specify precedence for this QoS queue entry.
- DSL Latency: Select latency path for the type of data transmission, only Path0 is available for this modem router.

After you specify the condition, click Save/Apply to save the entry and then you will see you settings on QoS Queue Setup screen.

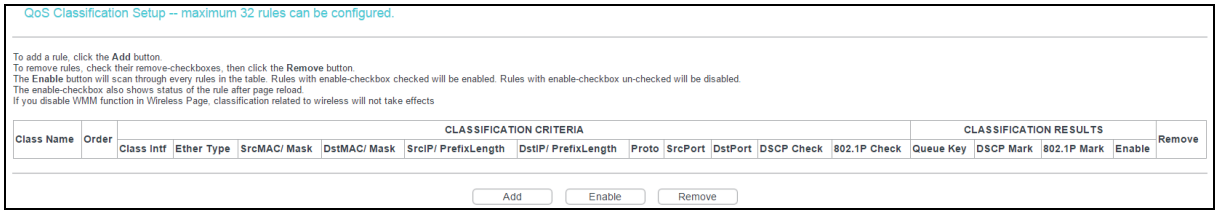
☞ Note:

1) Lower integer values for precedence imply higher priority for this queue relative to others.
2) The queue entry configured here will be used by the classifier to place ingress packets appropriately.

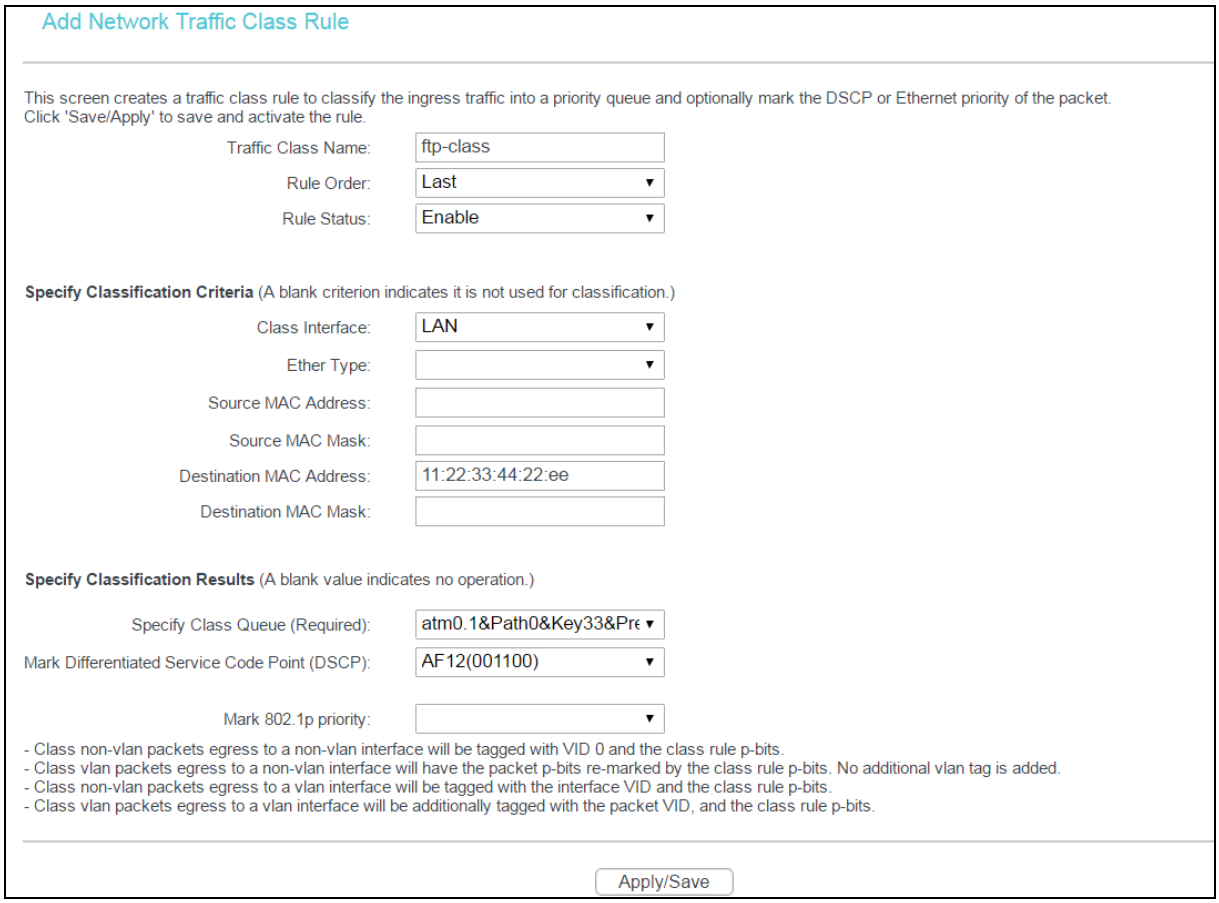
4.4.9.2 QoS Classification

This section will guide you to create a traffic class rule to classify the upstream traffic, assign queue which defines the precedence and the interface and optionally overwrite the IP header DSCP byte.

A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect.



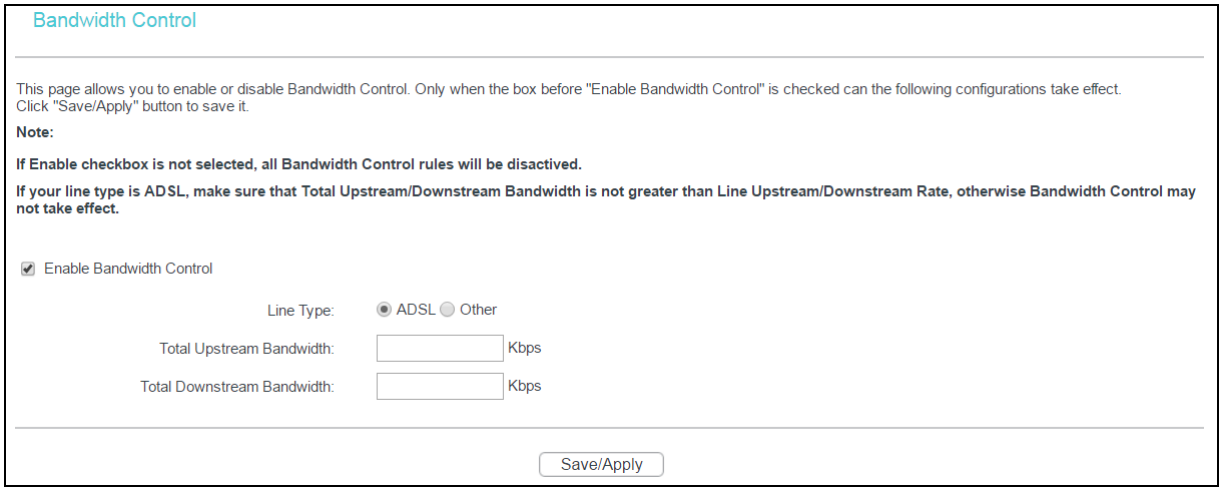
Click Add, and you can configure the QoS on the next screen.



After you specify the condition, click Save/Apply to save the entry.

4.4.10 Bandwidth Control

Go to Advanced Setup → Bandwidth Control and then you will see the screen below. This page allows you to enable this function and to configure the value of Total Upstream/Downstream Bandwidth.



- Enable Bandwidth Control: Check this box to enable the Bandwidth Control function.
- Total Upstream Bandwidth (Kbps): Enter the upload speed through the WAN port.
- Total Downstream Bandwidth (Kbps): Enter the download speed through the WAN port.

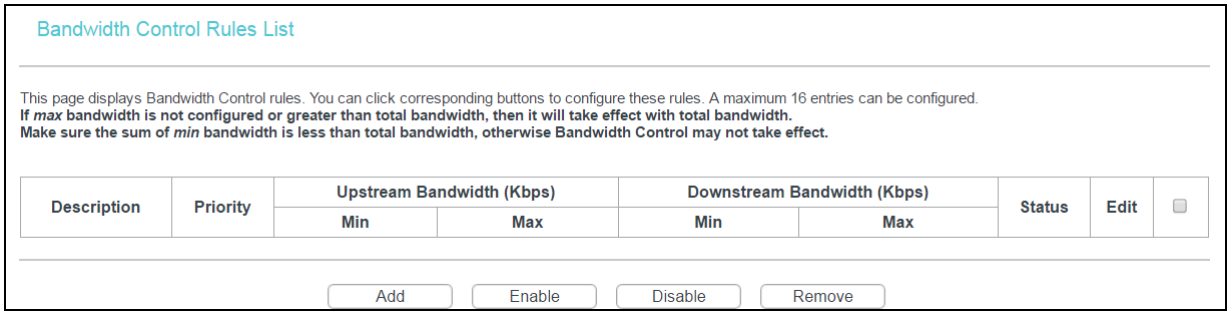
- Save/Apply: Click this button to make the configuration take effect.

Note:

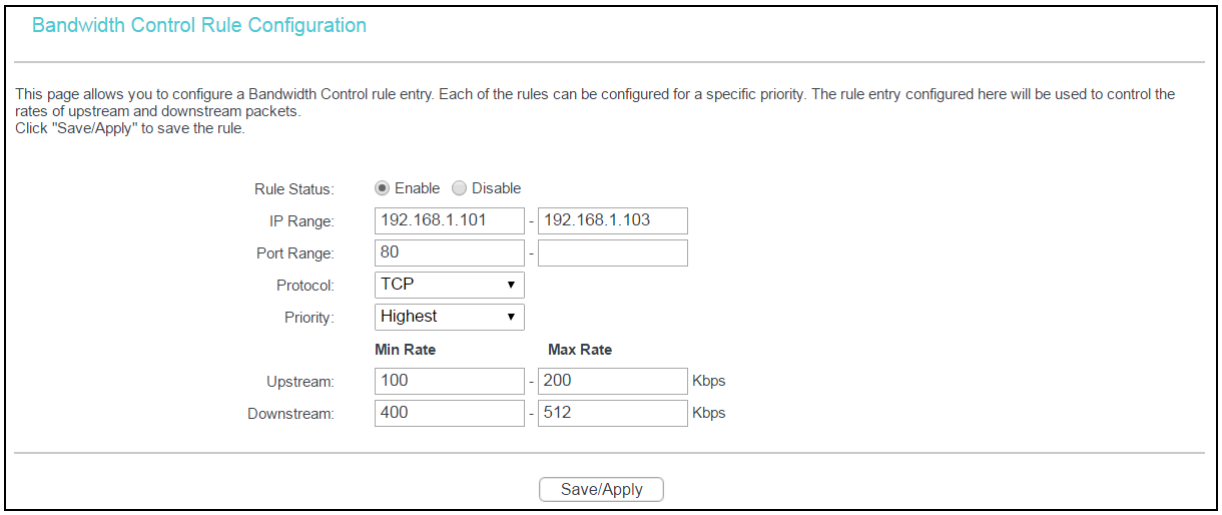
The Total Upstream Bandwidth and Total Downstream Bandwidth are required to be configured.

4.4.10.1 Rules List

Go to Advanced Setup → Bandwidth Control → Rules List and then you will see the screen as shown below. This page allows you to view and configure TC rules.

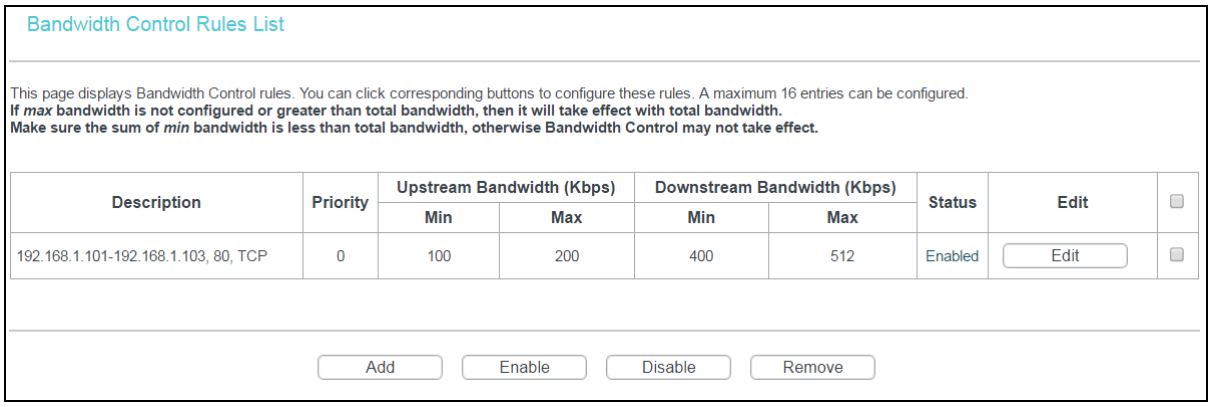


To add a TC rule, click Add and you can configure it on the screen below.



- Rule Status: Select the status of the rule from the drop-down list to enable or disable the rule.
- IP Range: Enter a single IP address or a range of IP addresses.
- Port Range: Enter a single port or a range of ports.
- Protocol: Select a protocol type from the drop-down list. TCP, UDP and TCP/UDP are available here.
- Priority: Select priority form the drop-down list. There are five options: Highest, 1, 2, 3, 4, 5, 6 and Lowest. The default precedence of the rule is 4.
- Upstream: Enter the min and max upload speed through the WAN port.
- Downstream: Enter the min and max download speed through the WAN port.

After completing the above configuration, click Save/Apply to make it take effect and then you will see the following list. If you want to modify the rule, click Edit. If you want to delete the rule, check the Remove box first and then click Remove.



☞ Note:

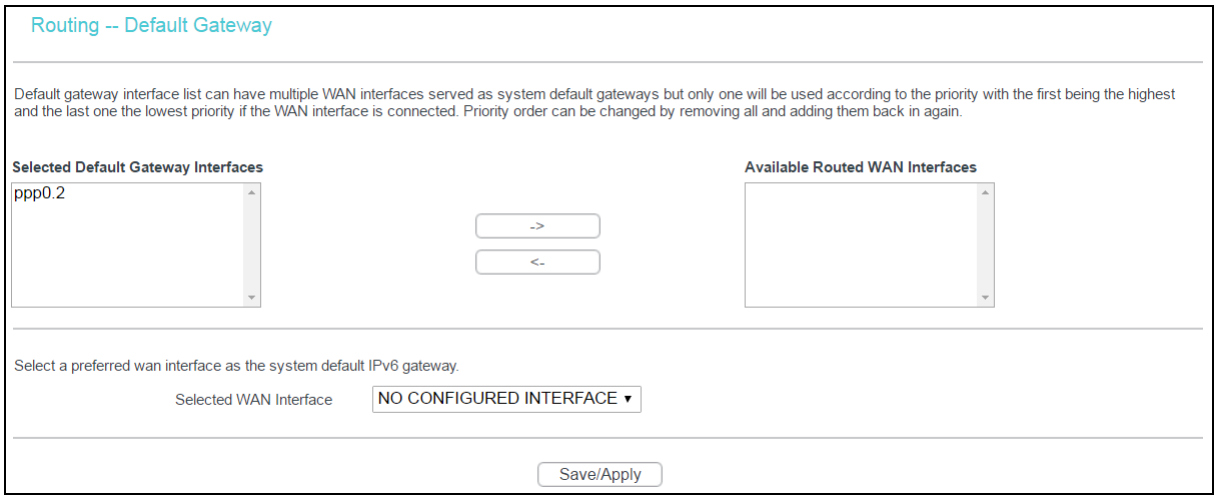
The priority, max upstream/downstream rate and min upstream/downstream rate work on allocation of surplus upload/download bandwidth. For rules with different priority, the surplus bandwidth is firstly allocated to the rule with the highest priority according to its max upstream/downstream rate. If there still has surplus bandwidth, it is allocated to the rule with hypo-high priority. For rules with the same priority, the surplus bandwidth is allocated to them according to their min upstream/downstream rate. The greater a rule's min upstream/downstream rate is, the more bandwidth it gets.

4.4.11 Routing

Go to Advanced Setup → Routing. It includes three menus: Default Gateway, Static Route and RIP. The detailed descriptions are provided below.

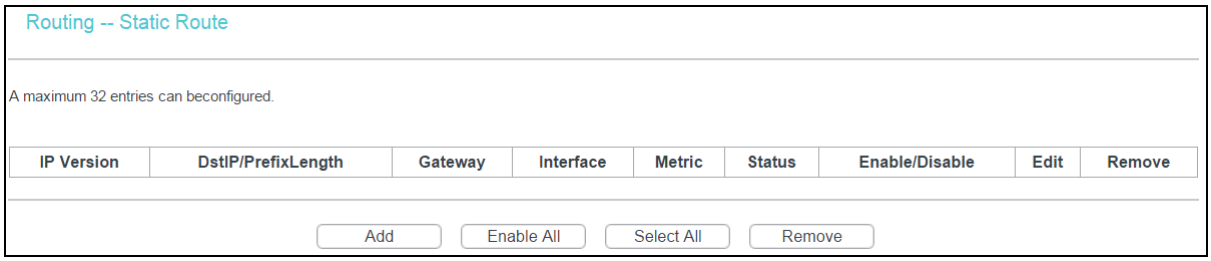
4.4.11.1 Default Gateway

Go to Advanced Setup → Routing → Default Gateway, and you can see the Default Gateway screen.



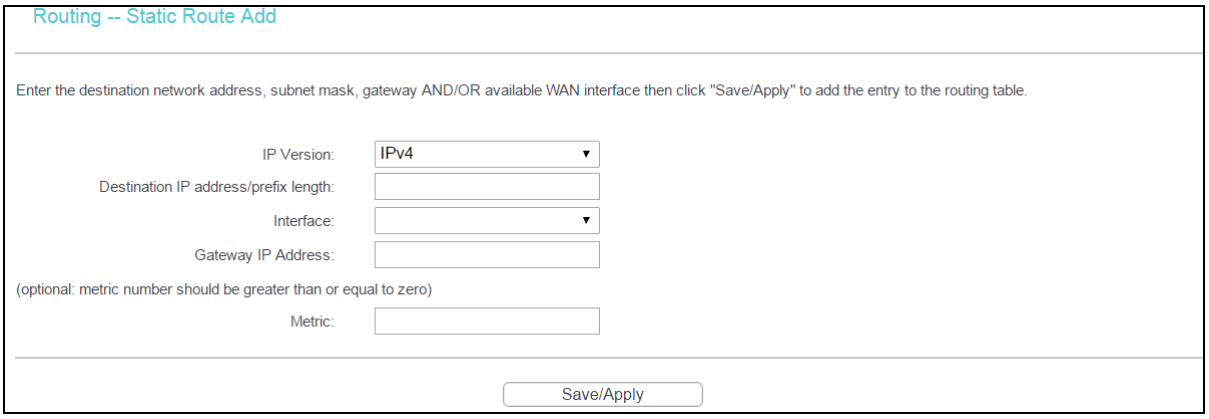
4.4.11.2 Static Route

Go to Advanced Setup → Routing → Static Route. You can see the Static Route screen, this screen allows you to configure the static routes. A static route is a pre-determined path that network information must travel to reach a specific host or network.



To add static routing entries:

1. Click Add, and you will see the screen below.



2. Enter the following data:

- IP Version: Select the version of IP.
- Destination IP Address/prefix length: The Destination IP Address is the address of the network or host that you want to assign to a static route.
- Interface: Select the Interface name in the text box, or else, the default Use Interface will be adopted for the Static Route.
- Gateway IP Address: If you select the IPoE or IPoA mode for Interface, the screen above will display this item. You should type the Gateway address correctly, and the other option for Interface will adopt the default Gateway address for the Static Route.

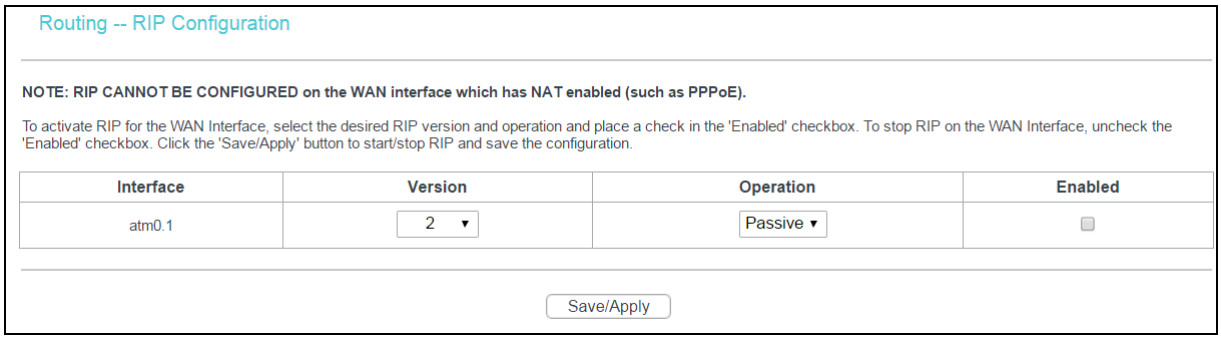
3. Click Save/Apply to save your settings.

Note:

Gateway IP address should be correctly configured if IP based Interface (IPoE, IPoA) is selected.

4.4.11.3 RIP

Go to Advanced Setup → Routing → RIP, and you can see the screen below.



Note:

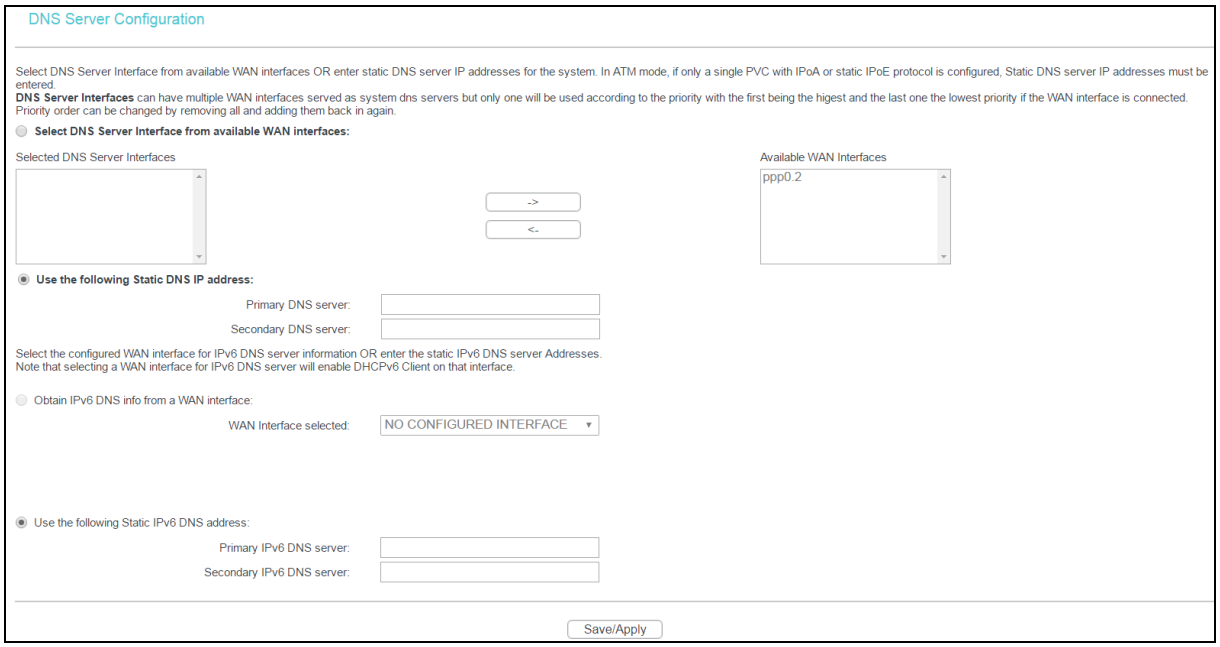
RIP cannot be configured on the WAN Interface which has NAT enabled (such as PPPoE).

4.4.12 DNS

When you select the connection type PPPoE, PPPoA or IPoA for WAN configuration, you will see the DNS menu which includes DNS Server and Dynamic DNS submenus.

4.4.12.1 DNS Server

Go to Advanced Setup → DNS → DNS Server, and you can see the DNS Server Configuration screen below.



For PPPoA, PPPoE enabled PVC(s), please select the Select DNS Server Interface from available WAN interfaces checkbox. This modem router will accept automatically the first received DNS assignment from the selected configured WAN interface during the connection establishment.

For single PVC with IPoA, static IPoE protocol, please select the Use the following Static DNS IP address checkbox, and enter the primary and /or optional secondary DNS server IP addresses provided by your ISP.

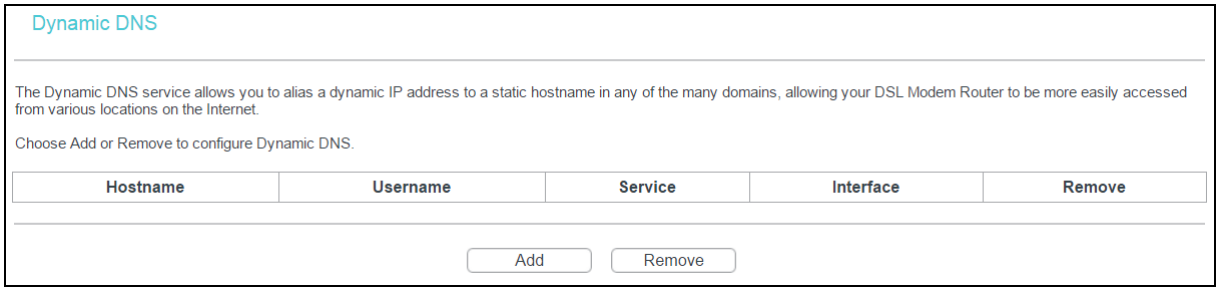
Here you can also select a configured WAN interface for IPv6 DNS server or enter the static IPv6 DNS server Addresses provided by your ISP.

Click Save/ Apply to save the new configuration.

4.4.12.2 Dynamic DNS

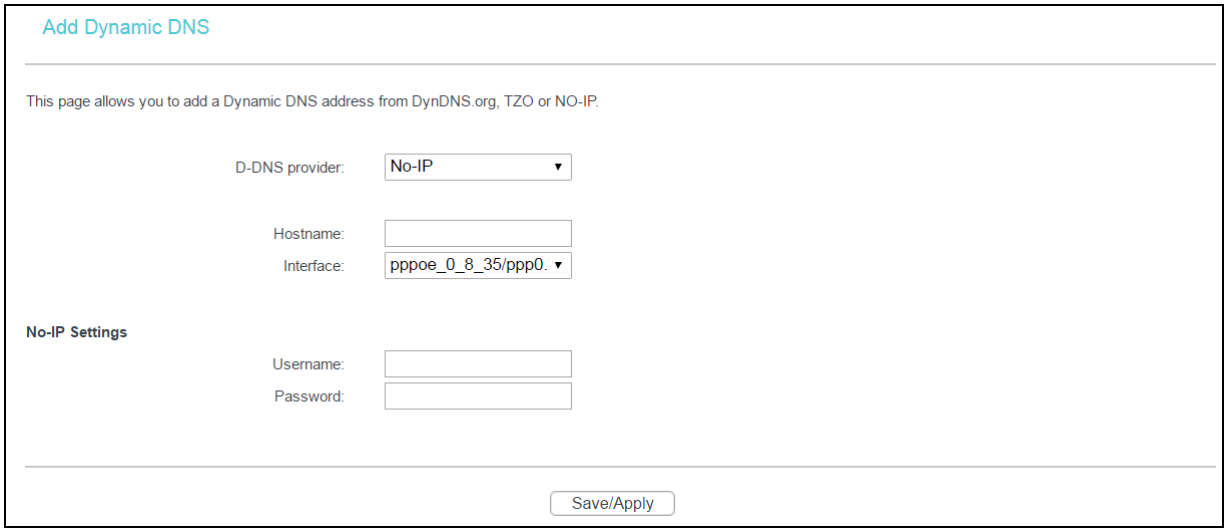
Go to Advanced Setup → DNS → Dynamic DNS, and you can see the Dynamic DNS screen, which allows you to configure the Dynamic DNS.

The modem router offers a Dynamic Domain Name System (DDNS) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP Address. The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your modem router to be more easily accessed from various locations on the Internet.



To add a DDNS entry:

1. Click Add, and then you will set the DDNS in the next screen.



2. Select D-DNS provider in the drop-down list.
3. Enter the Hostname of the DNS Server, and select the corresponding Interface for the DDNS, or you can leave it default.
4. Type the Username and Password for your DDNS account.

Click Save/Apply to save your settings.

4.4.13 DSL

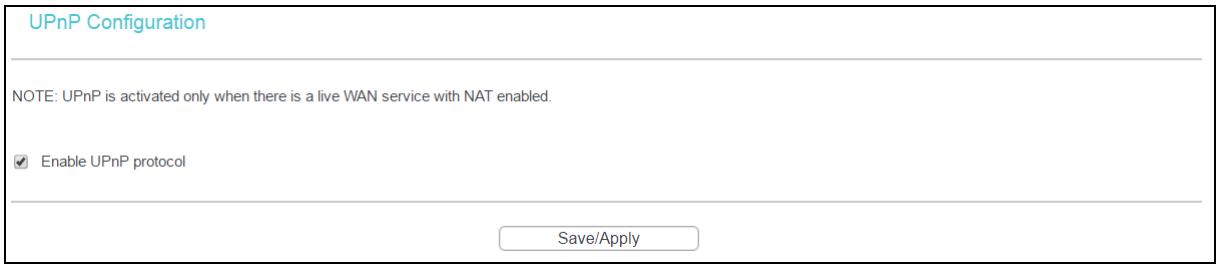
Go to Advanced Setup → DSL, and you can see the DSL Settings screen, which allows you to configure the DSL.

You can select the modulation type, phone line pair and the capability of Bitswap or SRA. After you set them up, click Save/Apply to save the configurations.

4.4.14 UPnP

Go to Advanced Setup → UPnP, and you can Enable or Disable the UPnP (Universal Plug and Play) protocol on the screen.

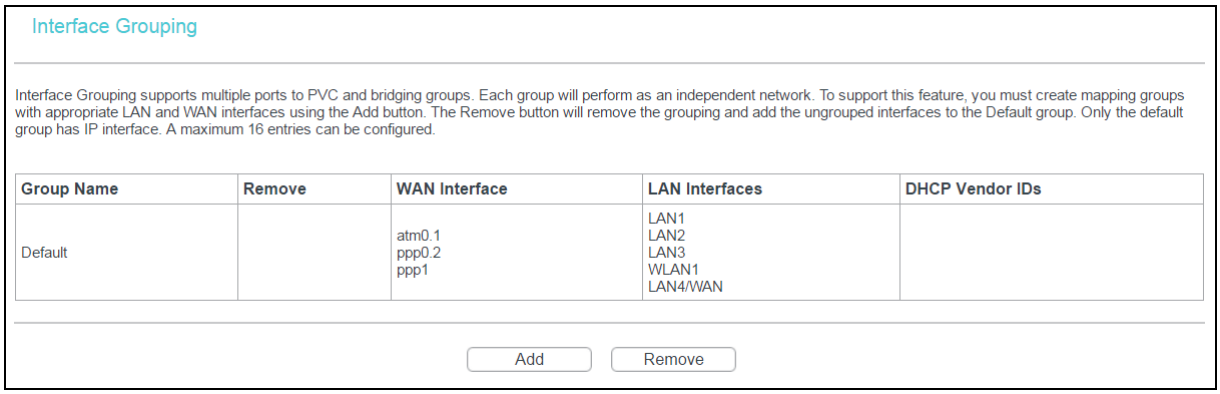
UPnP (Universal Plug and Play) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices. An UPnP device can dynamically join a network, obtain an IP address, convey its capabilities and learn about other devices on the network. In turn, a device can leave a network smoothly and automatically when it is no longer in use. UPnP broadcasts are only allowed on the LAN.



Select the checkbox and click Save/Apply to enable the UPnP function.

4.4.15 Interface Grouping

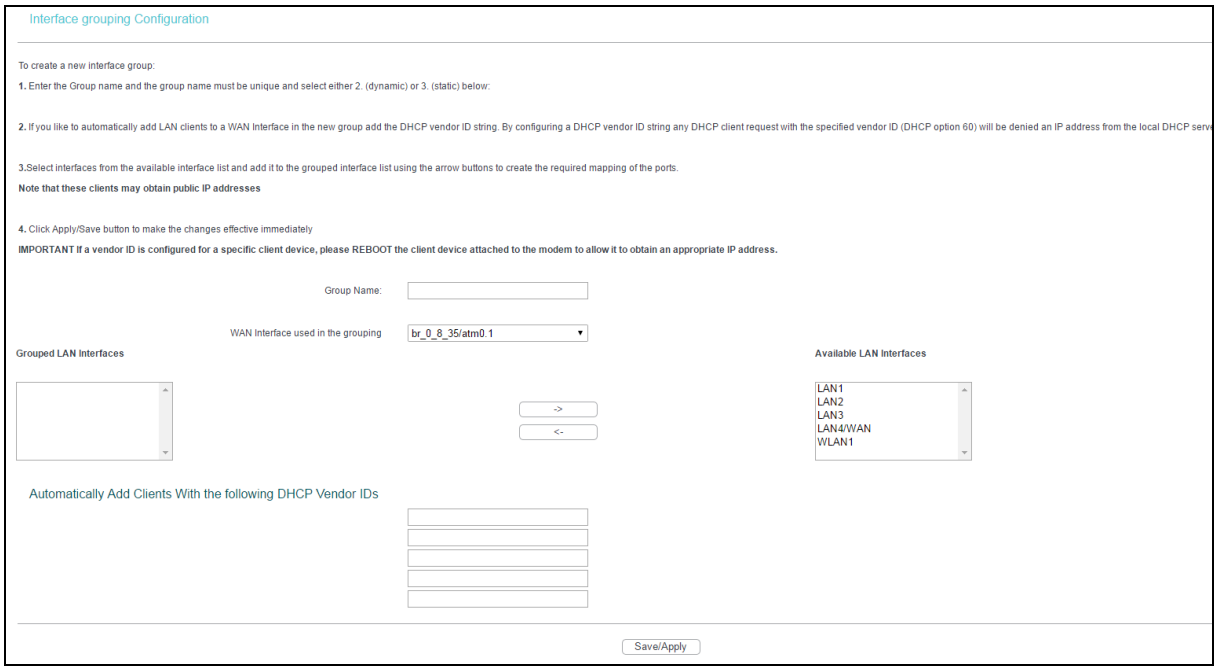
Go to Advanced Setup → Interface Grouping, and you can configure multiple ports to PVC and bridging groups to perform as an independent network.



To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using Add button. The Remove button will remove the grouping and add the ungrouped interfaces to the Default group. Only the default group has IP interface.

To create a new interface group:

1. Click Add and you can add a new interface group in the next screen.



2. Enter a unique name for Group.
3. Select the Interface which you want to use from the drop-down list.

Note:

If you like to automatically add LAN clients to a WAN Interface in the new group add the DHCP vendor ID string. By configuring a DHCP vendor ID string any DHCP client request with the specified vendor ID (DHCP option 60) will be denied an IP address from the local DHCP server.

4. Select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports.

☞ Note:

These clients may obtain public IP addresses.

5. Click Save/Apply to make the entry effective immediately.

☞ Note:

If a vendor ID is configured for a specific client device, please REBOOT the client device attached to the modem to allow it to obtain an appropriate IP address.

4.4.16 IP Tunnel

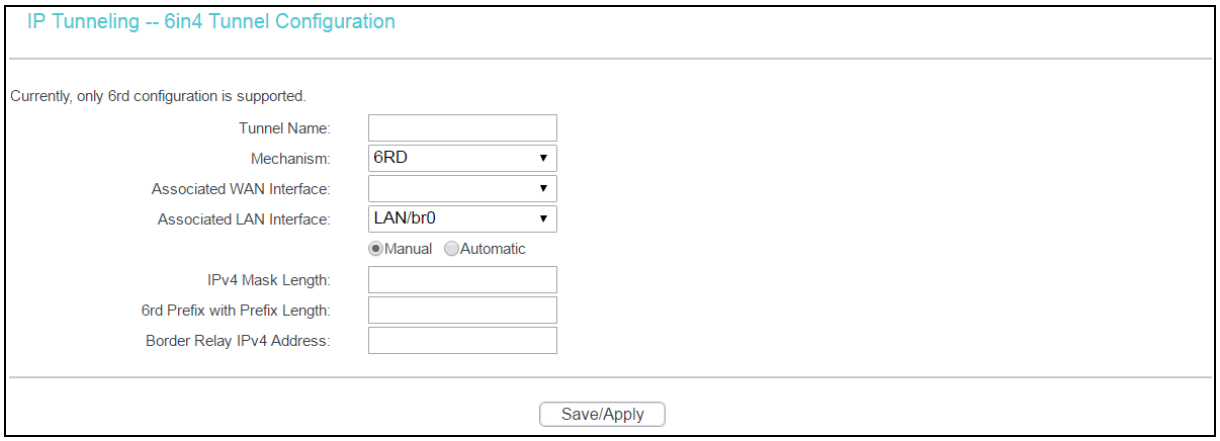
IPv6 tunnel is a kind of transition mechanism to enable IPv6-only hosts to reach IPv4 services and to allow isolated IPv6 hosts and networks to reach each-other over IPv4-only infrastructure before IPv6 completely supplants IPv4. It is a temporary solution for networks that do not support native dual-stack, where both IPv6 and IPv4 run independently.

Go to Advanced Setup → IP Tunnel, which includes two menus: IPv6inIPV4 and IPv4inIPv6, The detailed descriptions are provided below.

4.4.16.1 IPv6inIPv4

Go to Advanced Setup → IP Tunnel → IPv6inIPv4, you can see the 6in4 tunnel configuration screen. This screen allows you to configure the static routes.

Click Add, and you can configure the 6in4 tunnel on the next screen below.



- Mechanism: 6RD, this type is used in the situation that your WAN connection is IPv4 while LAN connection is IPv6.
- Associated WAN Interface: Select a WAN connection from the drop-down list. Only the connected WAN connections can be shown in the drop-down list.

- Associated LAN Interface: Select a LAN connection from the drop-down list. Only the connected LAN connections can be shown in the drop-down list.
- IPv4 Mask Length: The length of the selected WAN connection's IPv4 mask.
- 6rd Prefix with Prefix Length: The length of the 6rd prefix.
- Border Relay IPv4 Address: The IPv4 address of the border relay router of 6RD tunnel.

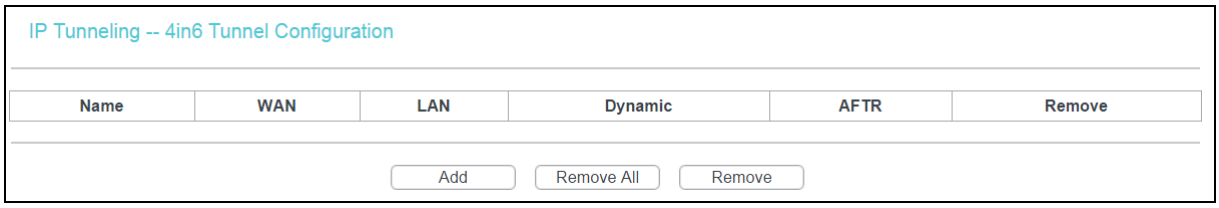
Click Save/Apply to make the configuration take effect.

Note:

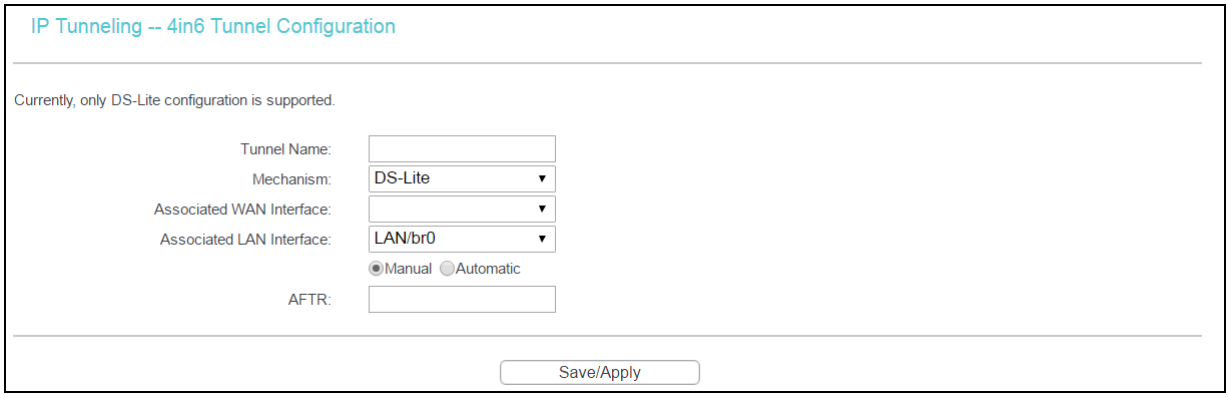
In this type, there should not have any IPv6 WAN connections. If there are IPv6 WAN connections, the page will prompt you to delete all the IPv6 WAN connections.

4.4.16.2 IPv4inIPv6

Go to Advanced Setup → IP Tunnel → IPv4inIPv6. You can see the 4in6 tunnel configuration screen, this screen allows you to configure the static routes.



Click Add, and you can configure the 6in4 tunnel on the next screen.



- Mechanism: DS-Lite, this type is used in the situation that your WAN connection is IPv6 while LAN connection is IPv4.
- Associated WAN Interface: Select a WAN connection from the drop-down list. Only the connected WAN connections can be shown in the drop-down list.
- Associated LAN Interface: Select a LAN connection from the drop-down list. Only the connected LAN connections can be shown in the drop-down list.
- AFTR: Enter the IPv6 address of the remote node.

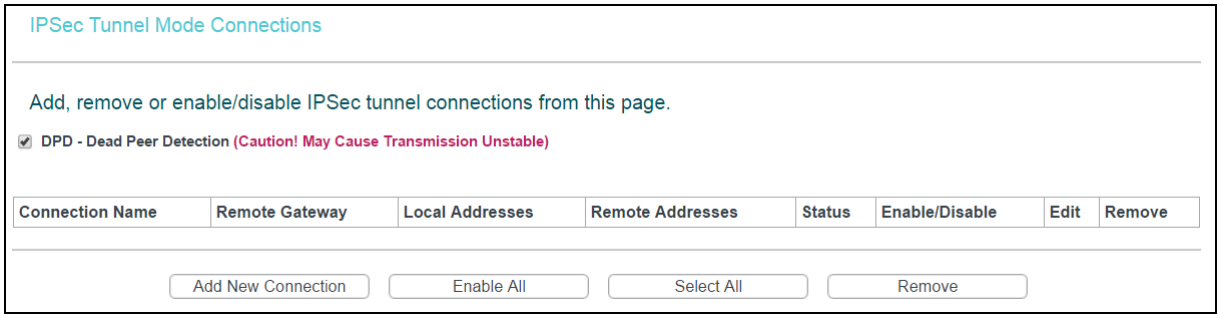
Click Save/Apply to make the configuration take effect.

Note:

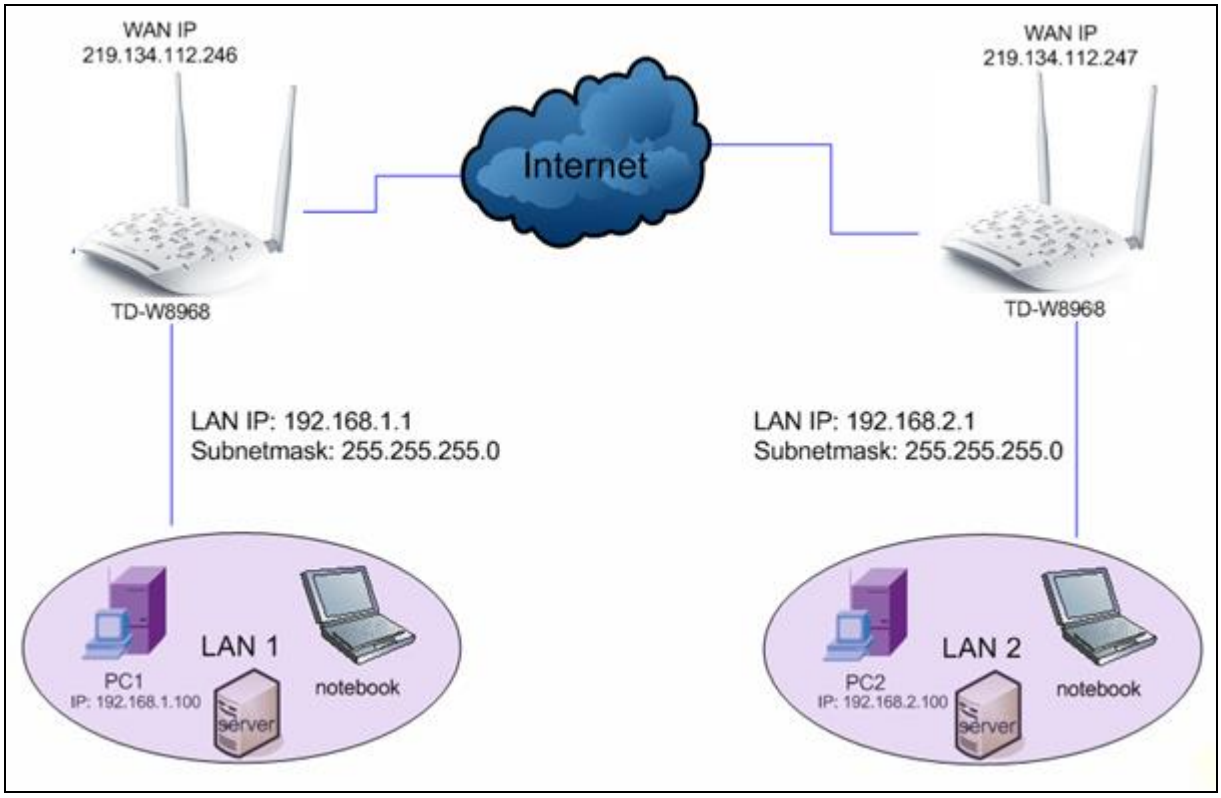
In this type, there should not have any IPv4 WAN connections. If there are IPv4 WAN connections, the page will prompt you to delete all the IPv4 WAN connections.

4.4.17 IPSec

Go to Advanced Setup → IPSec, you can Add/Remove or Enable/Disable the IPSec tunnel connections on the screen below.



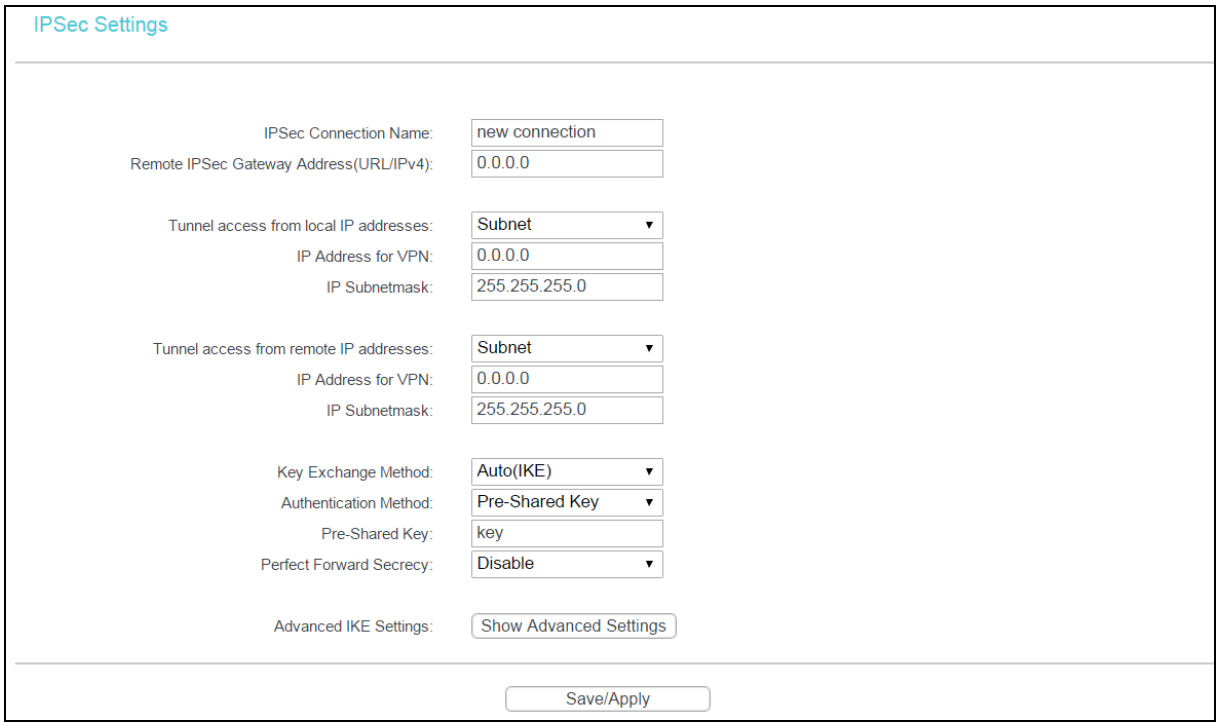
This section will guide you to configure a VPN tunnel between two TD-W8968s. The topology is as follows.



Note:

You could also use other VPN routers to set VPN tunnels with TD-W8968. TD-W8968 supports up to 10 VPN tunnels simultaneously.

Click Add New Connection and then you will enter the screen below.



- IPSec Connection Name: Enter a name for your VPN.
- Remote IPSec Gateway Address (IP or Domain Name): Enter the destination gateway IP address in the box which is the public WAN IP or Domain Name of the remote VPN server endpoint. (For example: Input 219.134.112.247 in Device1, and input 219.134.112.246 in Device 2)
- Tunnel access from local IP addresses: Choose Subnet if you want the Whole LAN to join the VPN network, or else choose Single Address if you want single IP to join the VPN network.
- IP Address for VPN: Enter the IP address of your LAN. (For example: Input 192.168.1.1 in Device1 and input 192.168.2.1 in Device2)
- IP Subnetmask: Enter the Subnet mask of your LAN. (For example: Input 255.255.255.0 in both Device1 and Device2)
- Tunnel access from remote IP addresses: Choose Subnet if you want the Remote Whole LAN to join the VPN network, or else choose Single Address if you want single IP to join the VPN network.
- IP Address for VPN: Enter the IP address of the Remote LAN. (For example: Input 192.168.2.1 in Device1 and input 192.168.1.1 in Device2)
- IP Subnetmask: Enter the subnetmask of the remote LAN. (For example: Input 255.255.255.0 in both Device1 and Device2)
- Key Exchange Method: Select Auto (IKE) or Manual.
- Authentication Method: Select Pre-Shared Key (recommended).
- Pre-Shared Key: Input the Pre-Shared key for Authentication. (For example: Input 12345678)

➢ Perfect Forward Secrecy: PFS is an additional security protocol.

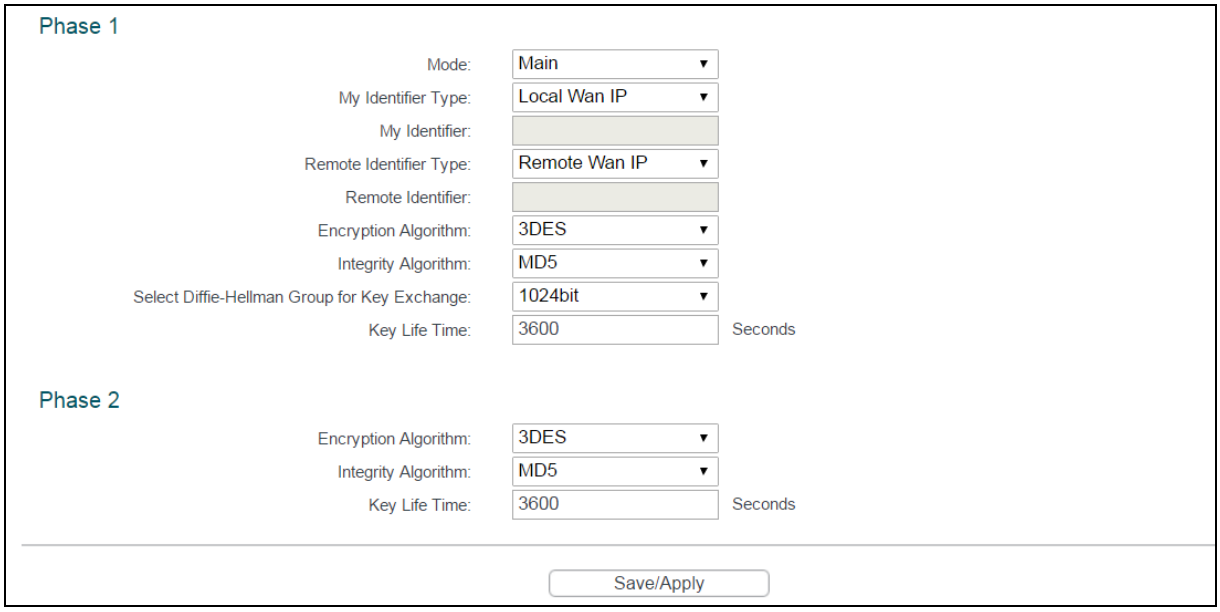
We recommend you leave the Advanced Settings as default value.

After complete the basic settings and click Save/Apply in both Device1 and Device2, PCs in LAN1 could communicate with PCs in remote LAN2. (For example: You can ping the IP address of PC2 which is 192.168.2.100 in PC1)

☞ Note:

The VPN Servers Endpoint from both ends must use the same pre-shared keys and Perfect Forward Secrecy settings.

Click Show Advanced Settings and then you can configure the Advanced Settings.



➢ Main Mode: Select Main Mode to configure the standard negotiation parameters for IKE phase1.

➢ Aggressive Mode: Select Aggressive Mode to configure IKE phase1 of the VPN Tunnel to carry out negotiation in a shorter amount of time. (Not Recommended-Less Secure)

☞ Note:

The difference between the two is that aggressive mode will pass more information in fewer packets, with the benefit of slightly faster connection establishment, at the cost of transmitting the identities of the security firewall in the clear. When using aggressive mode, some configuration parameters such as Diffie-Hellman groups, and PFS can not be negotiated, resulting in a greater importance of having "compatible" configuration on both ends.

➢ Key Life Time:

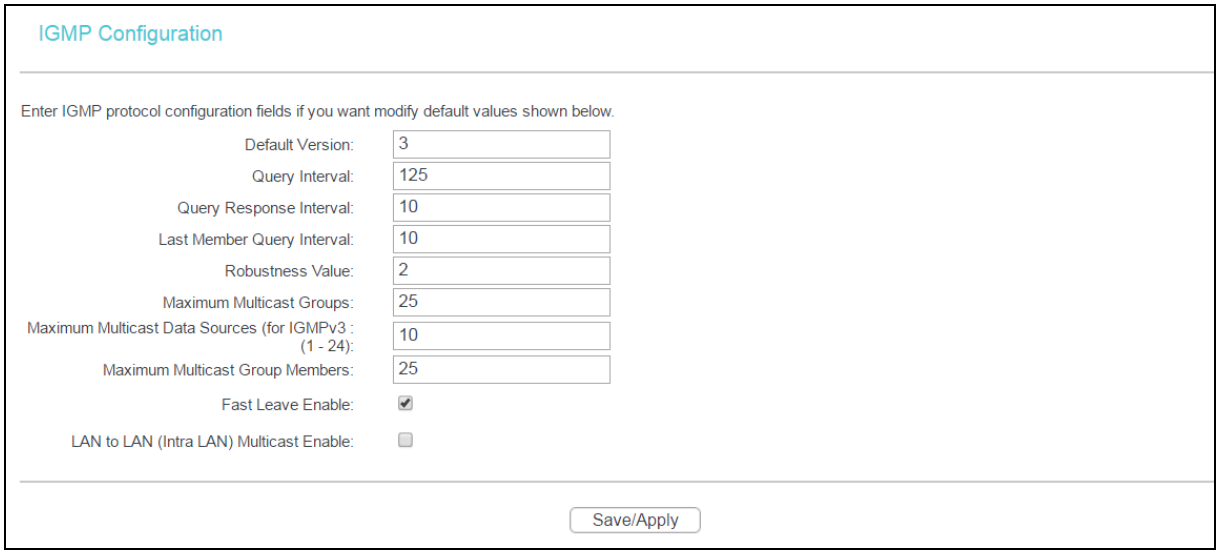
Enter the number of seconds for the IPSec lifetime. It is the period of time to pass before establishing a new IPSec security association (SA) with the remote endpoint. The default value is 3600.

☞ Note:

If you want to change the default settings of Advanced Settings, please make sure that both VPN server endpoints use the same Encryption Algorithm, Integrity Algorithm, Diffie-Hellman Group and Key Life time in both phase1 and phase2.

4.4.18 Multicast

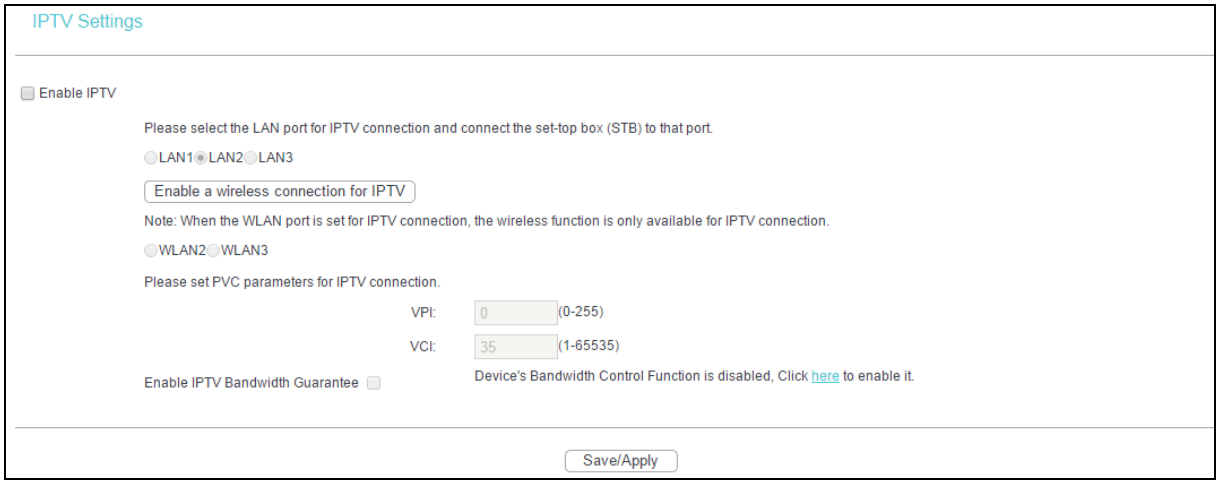
Go to Advanced Setup → Multicast, you can configure the IGMP protocol on the screen.



Click Apply/Save to save your settings.

4.5 IPTV

Choose IPTV, and you will see the screen below.



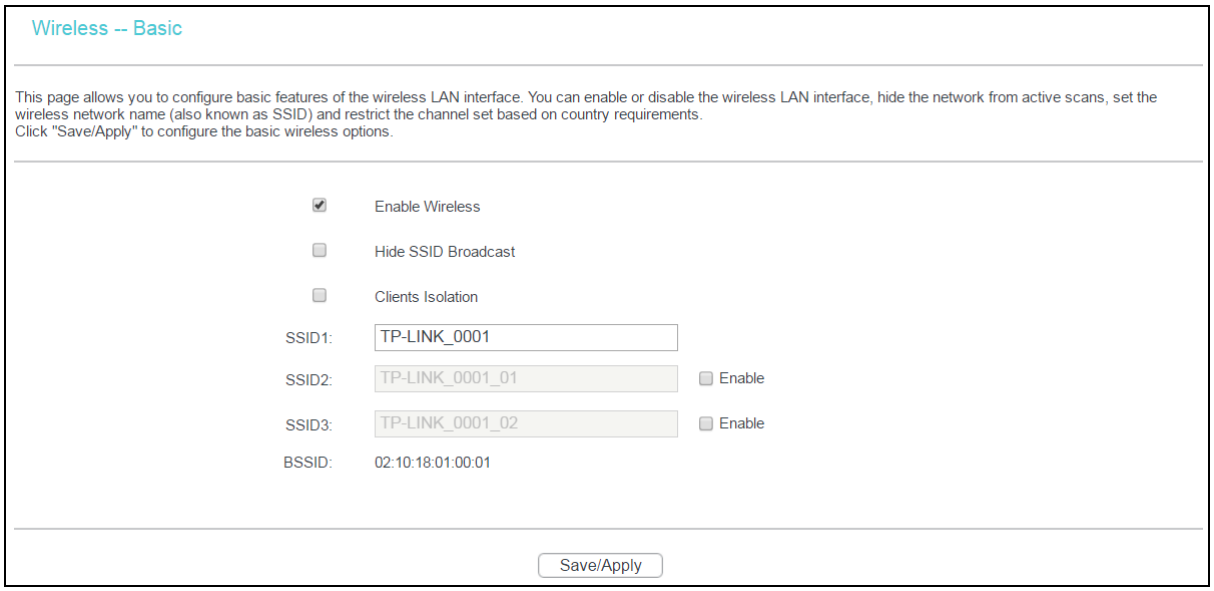
- Enable IPTV: Check this box to enable IPTV. If this checkbox is selected, please set the following parameters as shown in the figure below. Make sure the following settings are correct.
- VPI (0~255): Identifies the virtual path between endpoints in an ATM network. The valid range is from 0 to 255. Please input the value provided by your ISP.

- VCI (1~65535): Identifies the virtual channel endpoints in an ATM network. The valid range is from 1 to 65535 (1 to 31 is reserved for well-known protocols). Please input the value provided by your ISP.

Click Save/Apply to save your settings.

To add a wireless connection for IPTV:

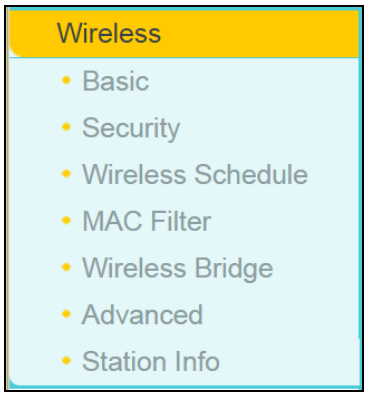
1. Click the Enable a wireless connection for IPTV button. Then screen below will pop up.
2. Configure the settings please refer to Section 4.6.1 Basic.



Click Save/Apply to save your settings.

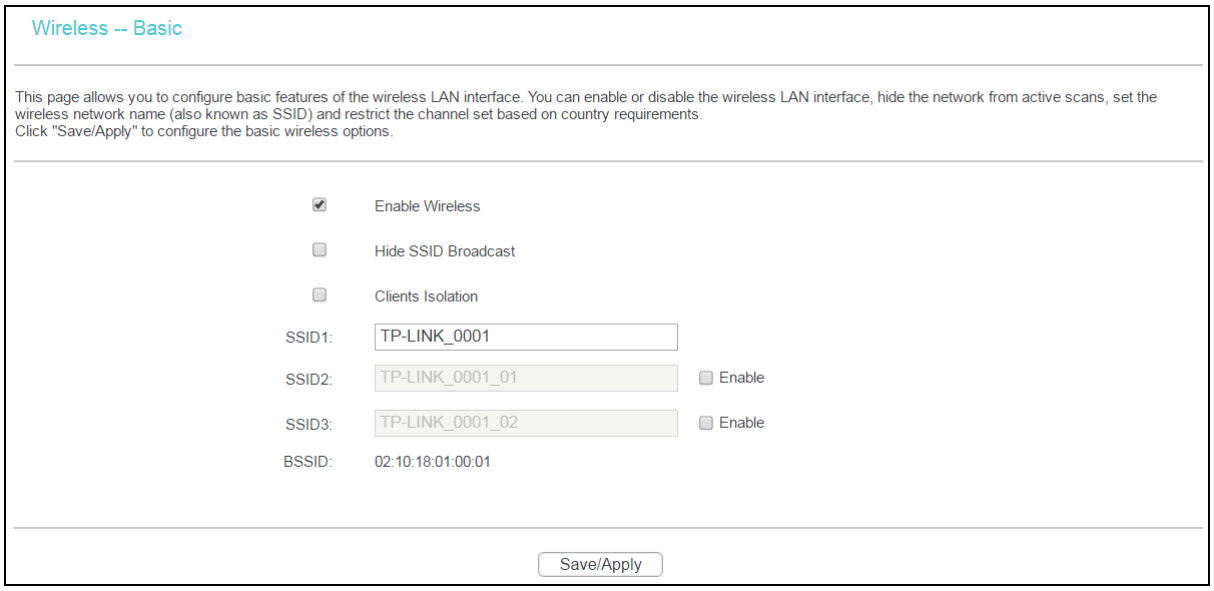
4.6 Wireless

Choose Wireless, and there are six submenus to configure Wireless LAN settings. Click any of them, and you will be able to configure the corresponding function. The detailed explanations for each submenu are provided below.



4.6.1 Basic

Go to Wireless → Basic, you will see the screen of Wireless--Basic settings shown as below. The basic settings for wireless networking are set on this screen.



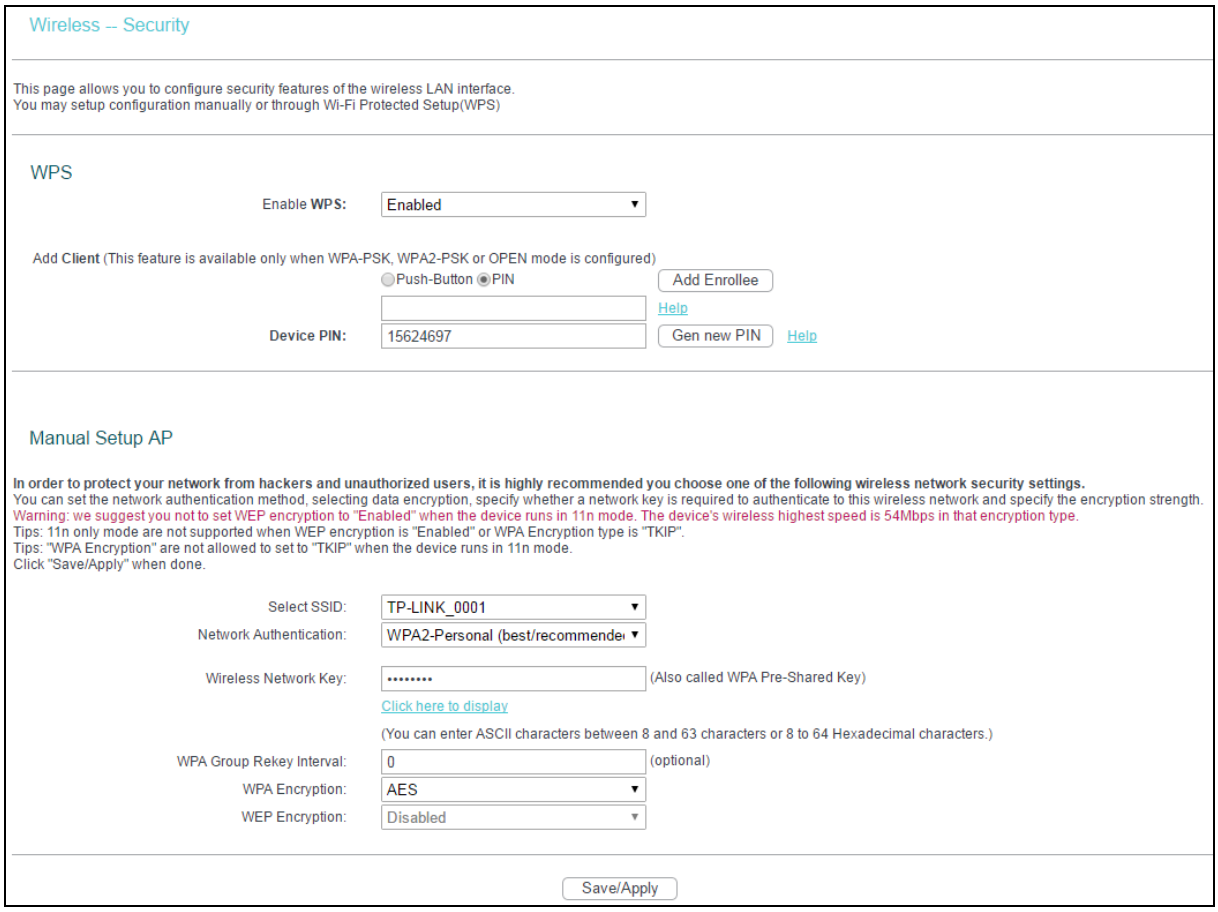
This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on Region requirements.

- Enable Wireless: If you want to use wireless features, you must select Enable Wireless. If you deselect Enable Wireless option, all the Wireless settings below will be disabled.
- Hide SSID Broadcast: When wireless clients survey the local area for wireless networks to associate with, you can select this option to avoided being surveyed.
- Clients Isolation: Select this option to enable AP isolation function so that stations associated to the AP will not be able to communicate with each other.
- SSID1: Wireless network name. Enter a desired SSID which is case-sensitive and must not exceed 32 characters. The SSID is shared among all points in a wireless network and it must be identical for all devices in the wireless network. Make sure this setting is the same for all stations in your wireless network. Type the desired SSID in the space provided.
- SSID2/3: The modem router can broadcast three SSIDs at most. Tick the box to enable SSID2 or SSID3 as needed.
- BSSID: Show the MAC address of the modem router.

Click Apply/Save to save your settings.

4.6.2 Security

Go to Wireless → Security, you will see the screen of Wireless--Security settings shown as below. You can configure security features of the wireless LAN interface by manually setting the network authentication or through WPS (Wi-Fi Protected Setup) method.



4.6.2.1 WPS Setup

This section will guide you to add a new wireless device to an existing network quickly by WPS (or called QSS) method.

☞ Note:

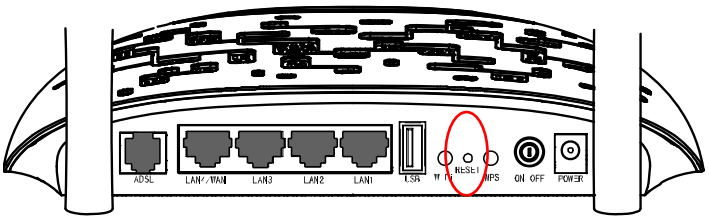
1) This feature is available only when OPEN, WPA-PSK, WPA2-PSK or Mixed WPA2/WPA-PSK mode is configured.
2) To build a successful connection by WPS, you should also do the corresponding configuration of the new device for WPS function meanwhile.

I. By PBC

There are two ways to add the wireless adapter to the network by PCB.

Method One: Hardware push button

Step 1: Press the WPS button on the back panel of the modem router.

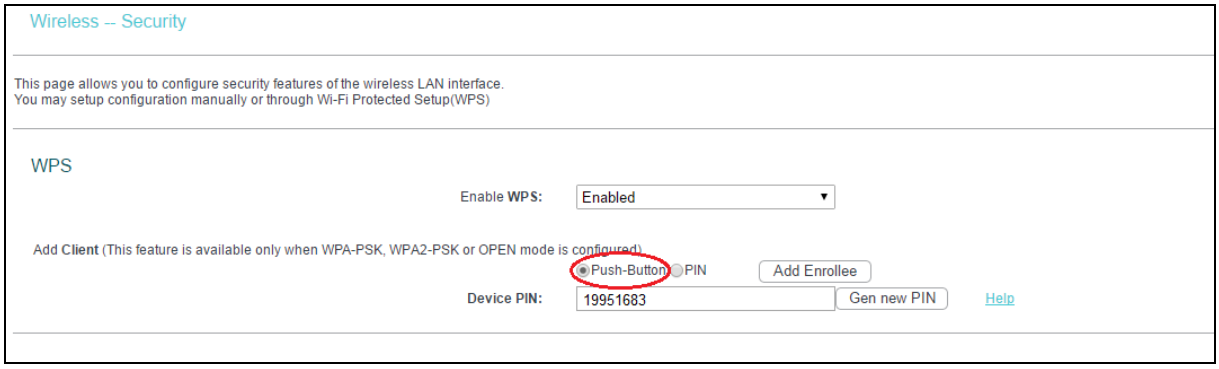


Step 2: Press and hold the WPS button of the wireless adapter (if it has one) for 2 or 3 seconds.

Step 3: Wait for a while until the following screen of adapter appears. Click OK to complete the WPS configuration.

Method Two: Software push button

Step 1: Click Push-Button of the modem router, and you will see the screen as shown below. Then click Add Enrollee.



Step 2: For the configuration of the wireless adapter, please choose Push the button on my access point or wireless router in the configuration utility of the WPS as below, and click Connect.

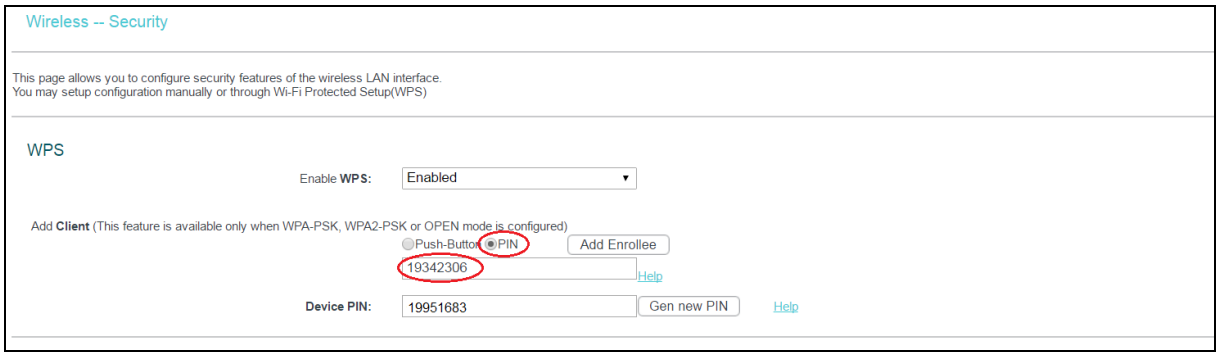
Step 3: Wait for a while until the following screen of adapter appears. Click OK to complete the WPS configuration.

II. By PIN

If the new device supports Quick Security Setup and the PIN method, you can add it to the network by PIN with the following two methods.

Method One: Enter the PIN of wireless adapter into my modem router

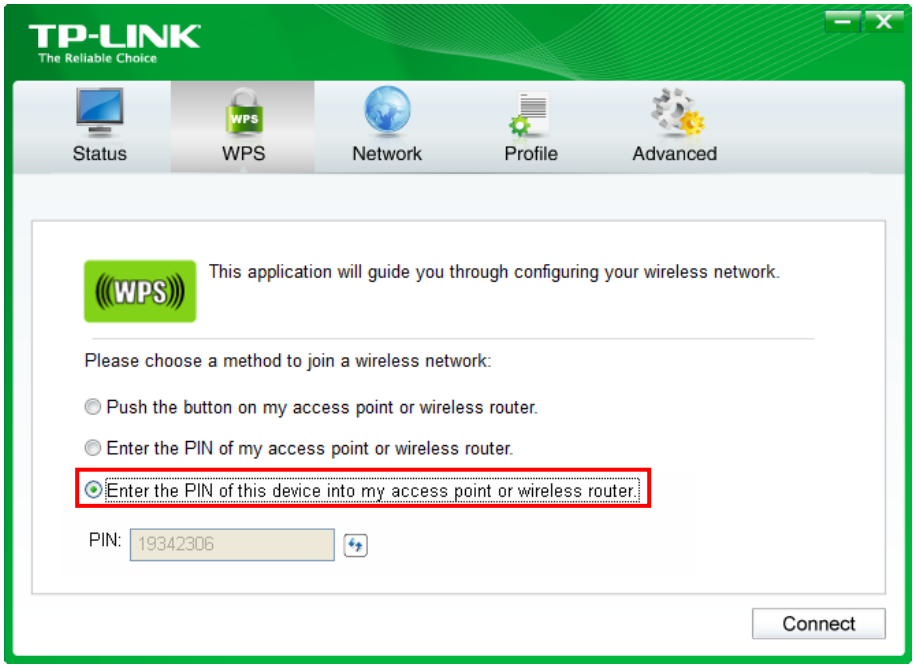
Step 1: Select the PIN checkbox and enter the PIN code of the wireless adapter in the field under as shown below. Then click Add Enrollee.



☞ Note:

The PIN code of the adapter is always displayed on the WPS configuration screen.

Step 2: For the configuration of the wireless adapter, please choose Enter the PIN of this device into my access point or wireless router in the configuration utility of the WPS as below, and click Connect.

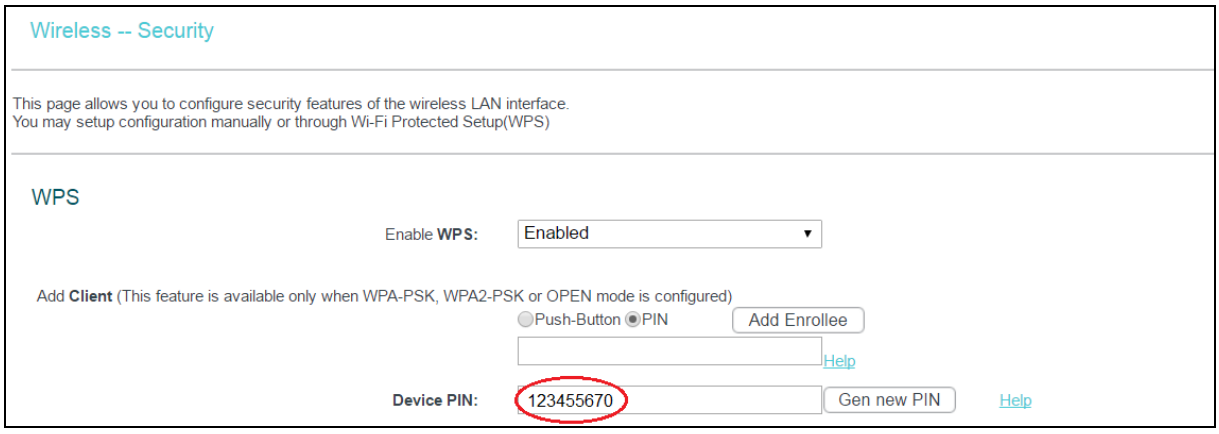


☞ Note:

In this example, the default PIN code of this adapter is 19342306 as the preceding figure shown.

Method Two: Enter the PIN of my modem router into the wireless adapter

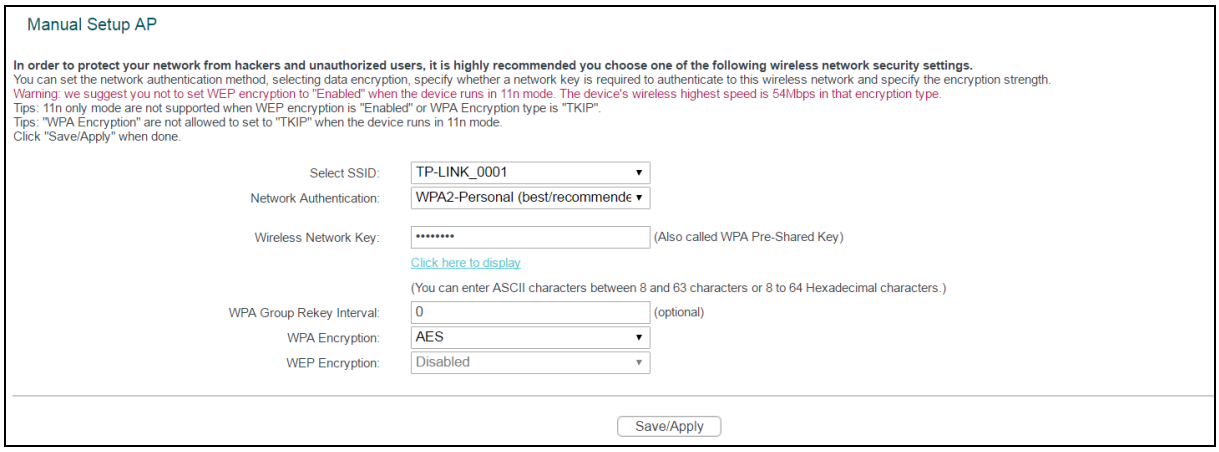
Step 1: Get the Current PIN code generated by the modem router as shown below. You can click Gen New PIN to get a new PIN code for modem router.



Step 2: For the configuration of the wireless adapter, please choose Enter the PIN of my access point or wireless router in the configuration utility of the WPS as below, and enter the PIN code of the modem router into the field after PIN. Then click Connect.

4.6.2.2 Manual Setup AP

Follow the instructions below to configure security features of the wireless LAN interface manually. You can set the network authentication method, select data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.



➢ Select SSID: Select the SSID from the drop-down list.

➢ Network Authentication: Select an authentication type from the drop-down list.

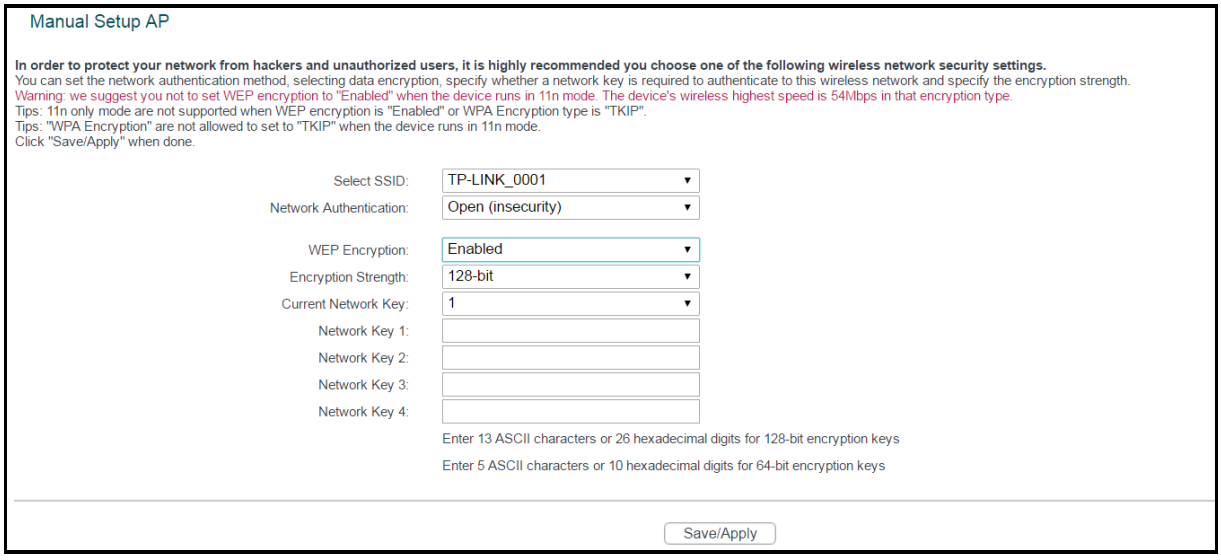
☞ Note:

For most users, it is recommended to use the default Wireless LAN Performance settings. Any changes made to these settings may adversely affect your wireless network. Under certain circumstances, changes may benefit performance. Carefully consider and evaluate any changes to these wireless settings.

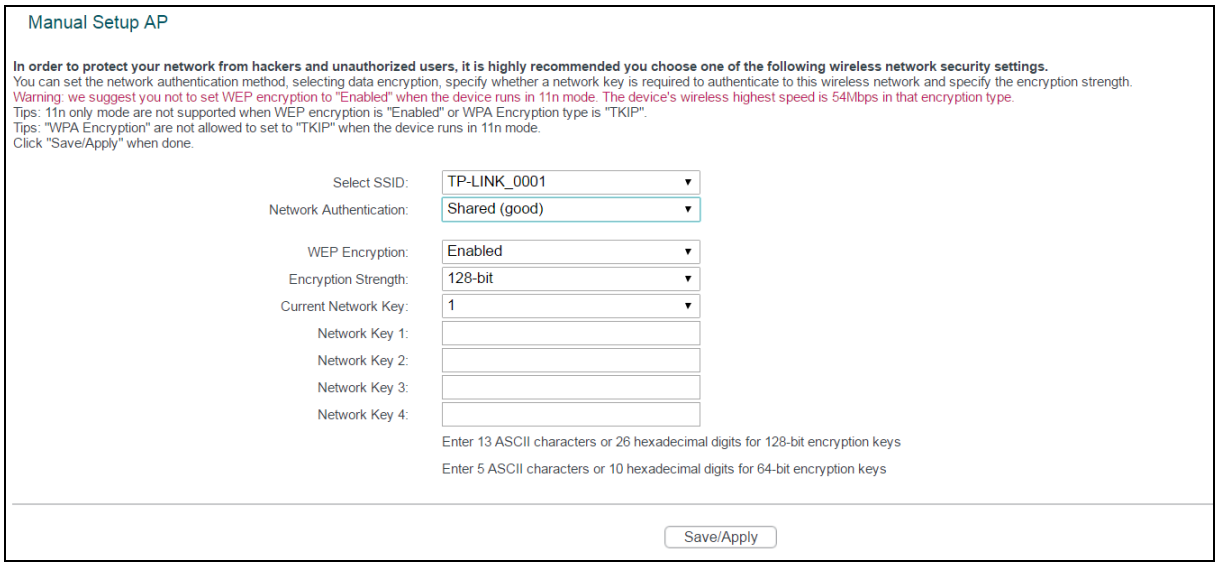
1. WEP

WEP is a basic encryption method offering two levels of encryption, 64-bit and 128-bit encryption. To configure the WEP encryption, there are two ways:

- Keep the Network Authentication of Open (insecurity) and select Enabled from the WEP Encryption drop-down list, as shown below. Open (insecurity) with WEP encryption disable allows any wireless station to associate with the access point.



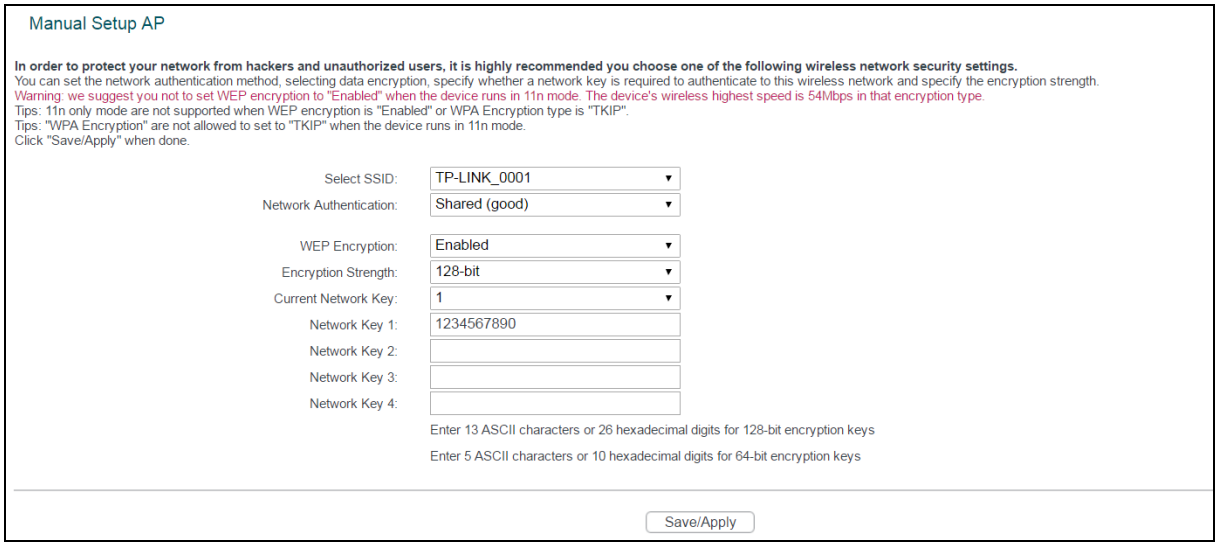
- Select Shared (good) from the Network Authentication drop-down list, as shown below. Shared (good) must enable WEP encryption. Network using Open or Shared authentication with WEP encryption only allows stations using the same network key encryption to associate with it. Follow the instructions below to configure the Shared Keys.



- Encryption Strength: Select the appropriate level of encryption, 64-bit or 128-bit.
- Current Network Key: To indicate which WEP key to use, select a transmission key number.
- Network Key 1-4: If you want to manually enter the WEP keys, then enter them in the network Key 1-4 fields.

Configure WEP Settings

1. Select the SSID from the Select SSID drop-down list.
2. Select Shared (good) from the Network Authentication drop-down list. The menu will change to offer the appropriate settings.
3. Select 64-bit from the WEP Encryption drop-down list.
4. Select 1 from Current Network Key drop-down list.
5. Type in the password in the Network Key 1 field.
6. Click Save/Apply to save the new configuration.

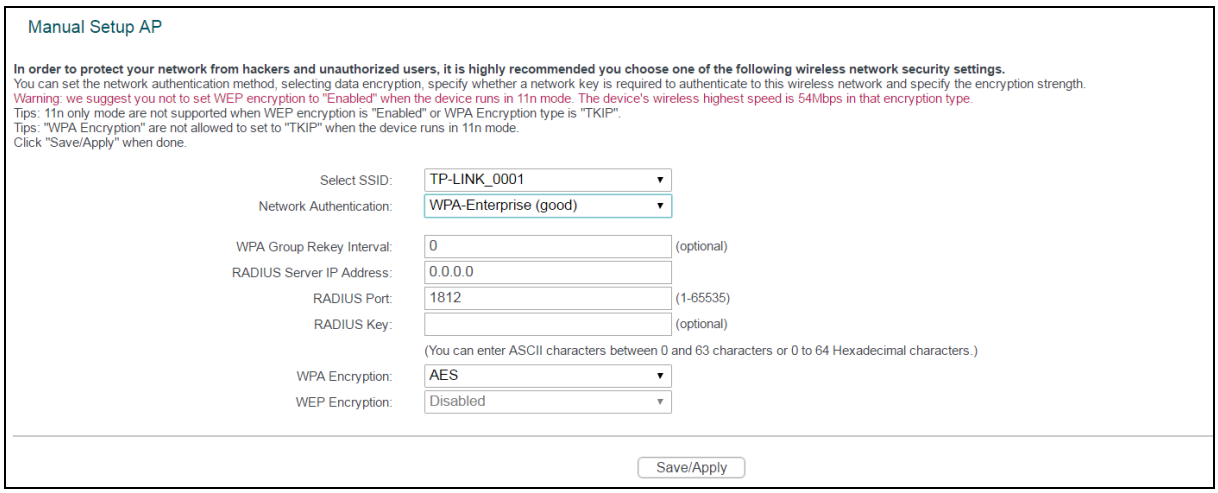


☞ Note:

We use Network Authentication Shared (good), Encryption Strength 64-bit, Current Network Key "1" and enter 10 hexadecimal digits"1234567890" in the Network Key 1 for example, as shown above.

2. WPA-Enterprise

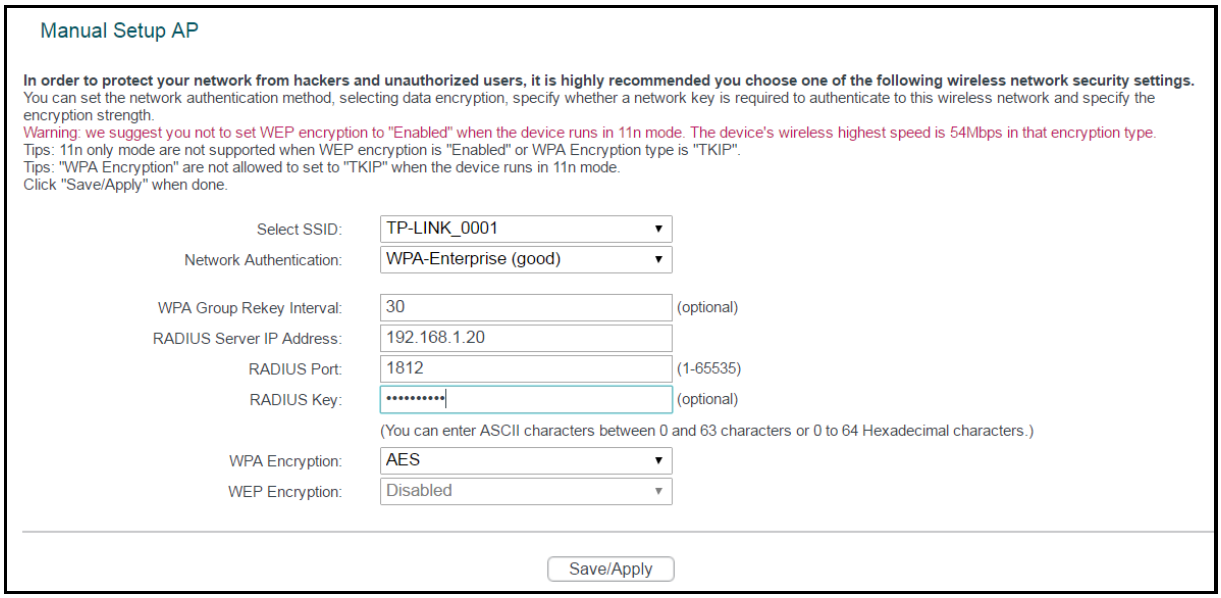
WPA security for wireless communication has been developed to overcome some of the shortcomings of WEP. WPA combines the key generation with the authentication services of a RADIUS server.



- WPA Group Rekey Interval: Enter the Key Renewal period, which tells the modem router how often it should change encryption keys.
- RADIUS Server IP Address: The IP address of the RADIUS server.
- RADIUS Port: The port of the RADIUS server. The default number is 1812.
- RADIUS Key: The password of the RADIUS Server.
- WPA Encryption: Select the encryption you want to use: TKIP+ AES or AES (AES is an encryption method stronger than TKIP).

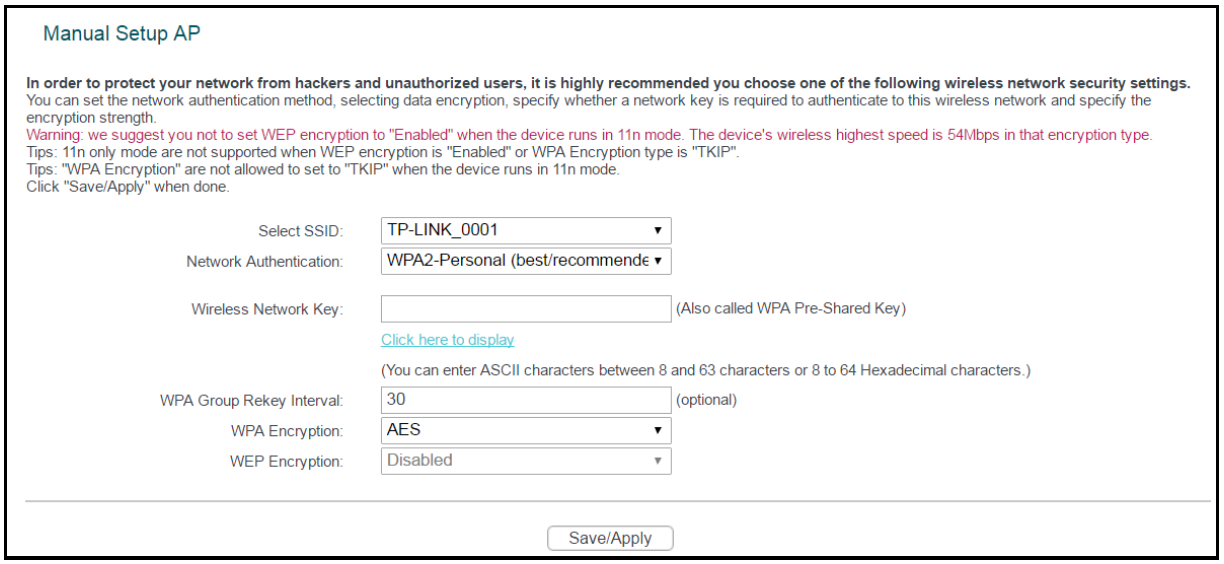
Configure WPA settings

1. Select the SSID from the Select SSID drop-down list.
2. Select WPA from the Network Authentication drop-down list. The menu will change to offer the appropriate settings.
3. Change the WPA Group Rekey Interval as desired.
4. Type in the IP address of the RADIUS server used in the RADIUS Server IP Address field.
5. Change the RADIUS Port if necessary.
6. Type in the password in the RADIUS Key field.
7. Use the default setting AES of WPA Encryption.
8. Click Save/Apply to save the new configuration.



3. WPA-Personal

WPA-Personal requires a shared key and does not use a separate server for authentication. PSK keys can be ASCII or Hex type.

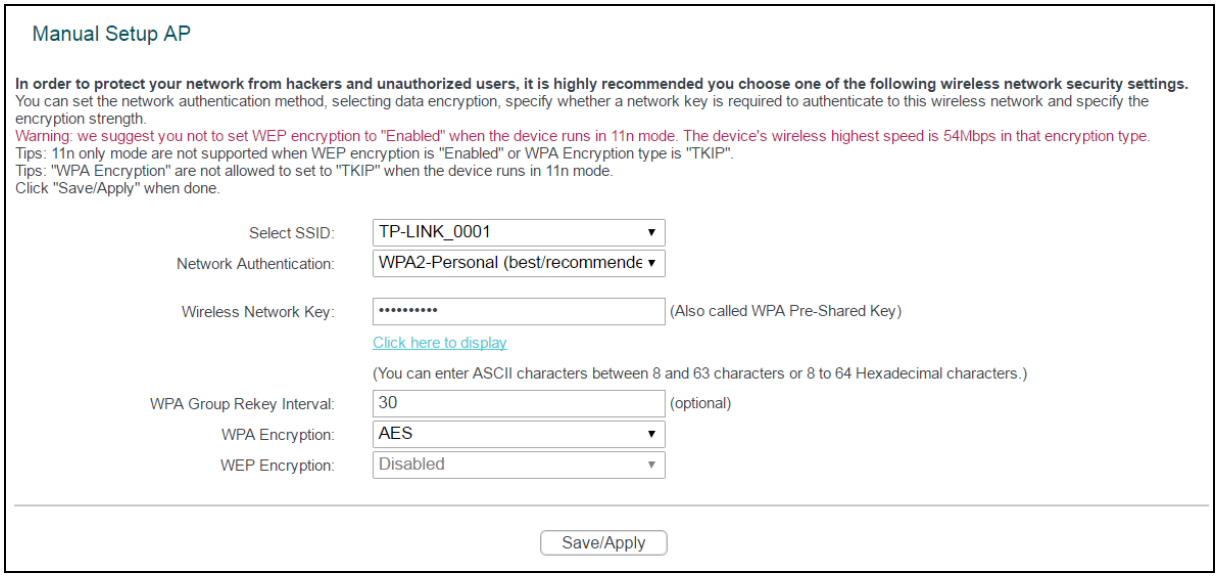


- Wireless Network Key: Enter the key shared by the modem router and your other network devices. It must have 8-63 ASCII characters or 8-64 Hexadecimal digits.
- Click here to display: Click it to show you the WPA Pre-Shared Key.

Configure WPA-Personal settings

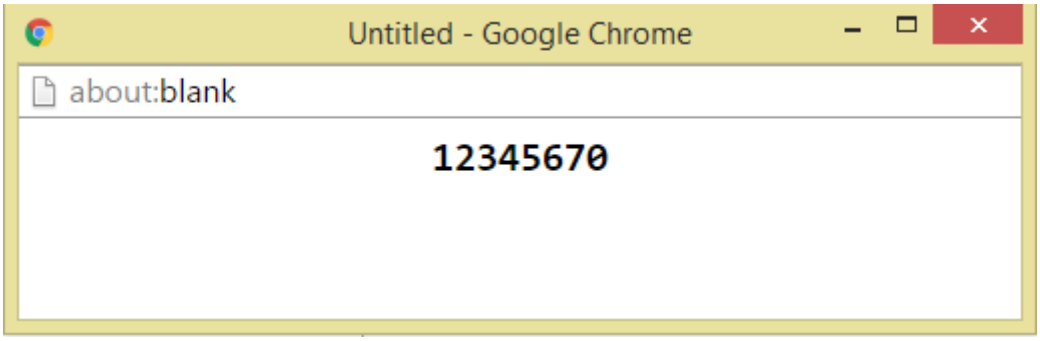
1. Select the SSID from the Select SSID drop-down list.
2. Select WPA-Personal. The menu will change to offer the appropriate settings as the picture show above.
3. WPA-Personal requires a shared key. Type the key in the space provided. PSK keys can be ASCII or Hex type.
4. Change the Group Key Interval as desired or use the default setting.

5. Click Save/Apply to save the new configuration.



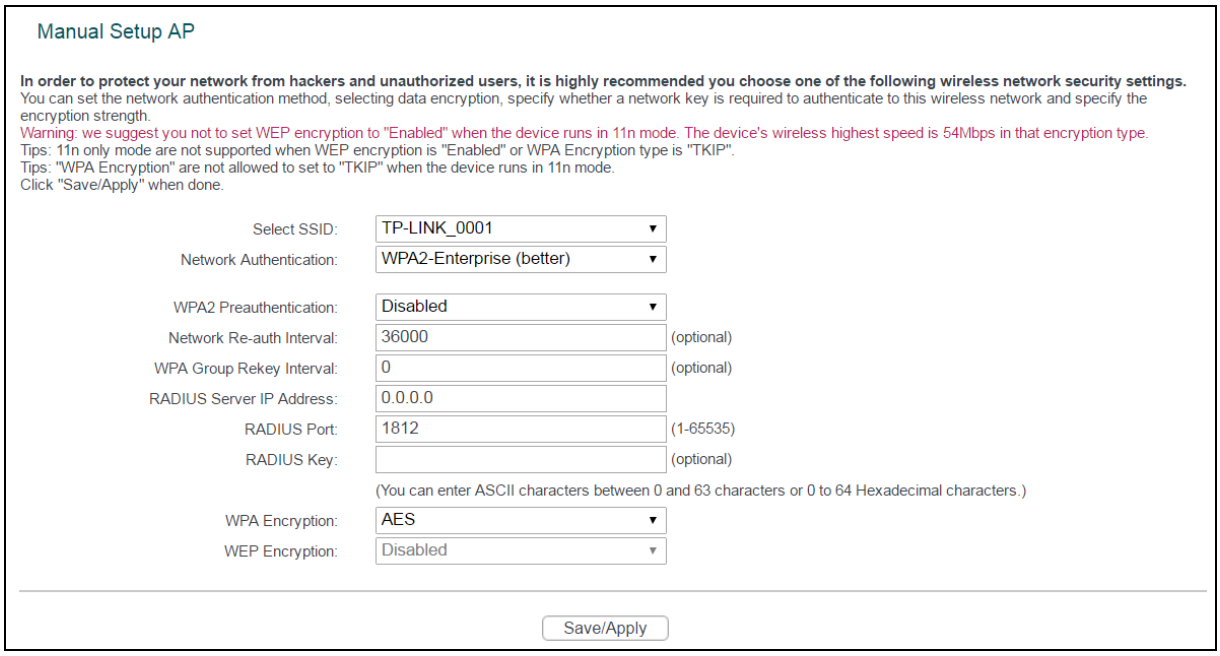
☞ Note:

If you click the option Click here to display, the screen below will pop-up, and it shows the password you have set. In addition, it won't show the blank characters in both ends of the password phrase.



4. WPA2-Enterprise

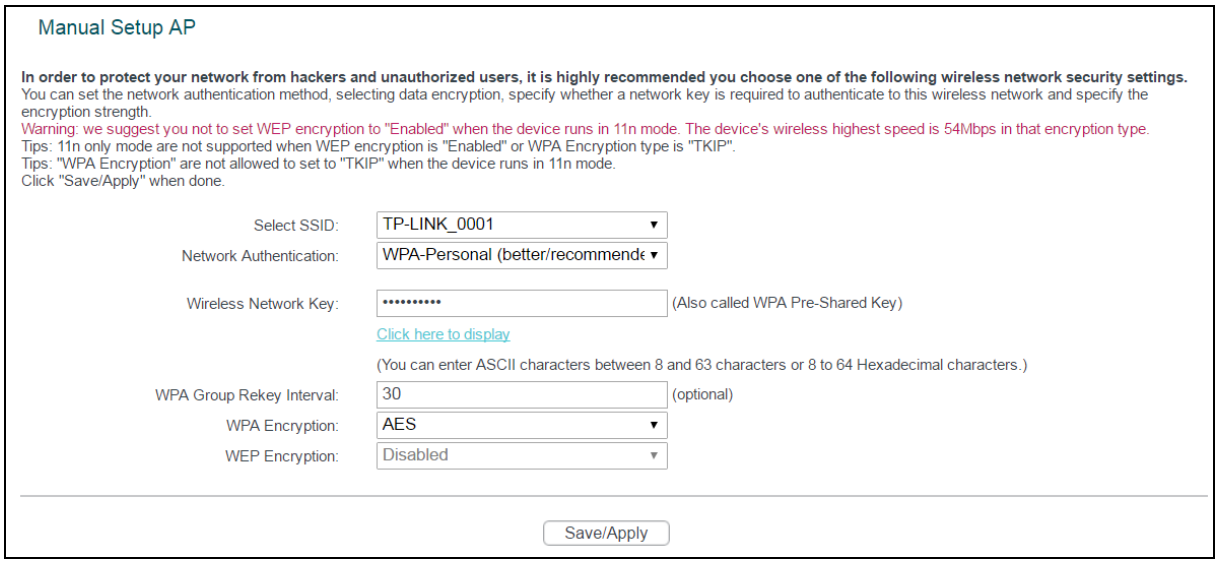
To configure WPA2-Enterprise settings, select the WPA2-Enterprise option from the drop-down list. The menu will change to offer the appropriate settings. The steps of these settings are similar to WPA settings.



- WPA2 Preauthentication: Select Enable from the drop-down list. Stations will authenticate with the AP during the scanning process, and once association is required, the station has been already authenticated.
- Network Re-auth Interval: Enter a value in seconds as the frequency interval to enable periodic Network Re-authentication function, while leave it blank or enter “0” to disable it.

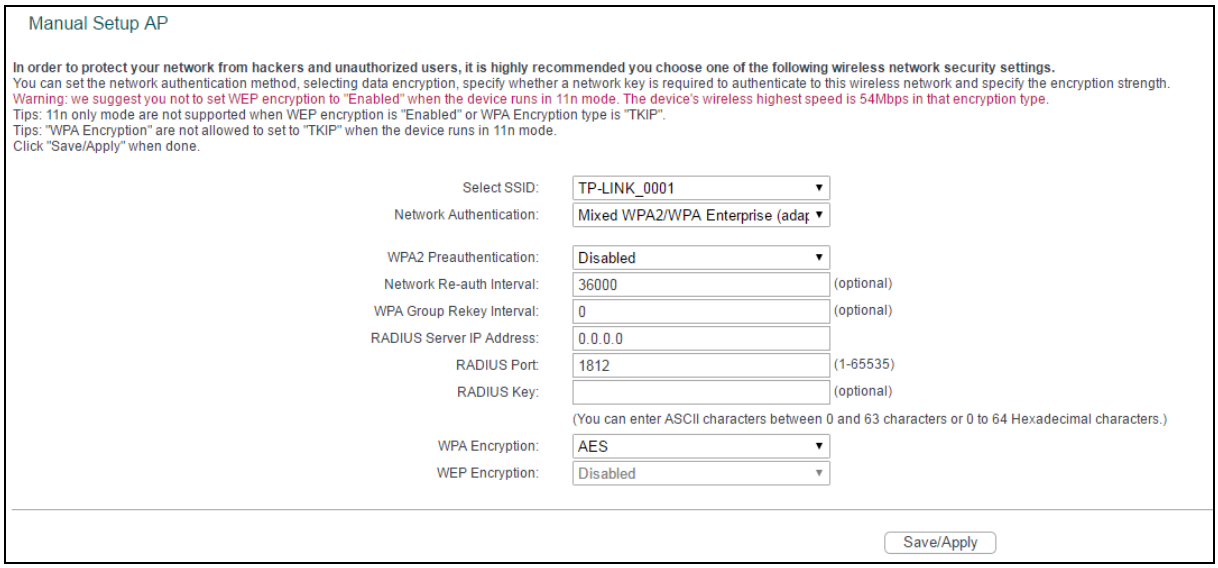
5. WPA2-Personal

To configure WPA2-Personal settings, select the WPA2- Personal option from the drop-down list. The menu will change to offer the appropriate settings. WPA2- Personal requires a shared key and does not use a separate server for authentication. PSK keys can be ASCII or Hex type.



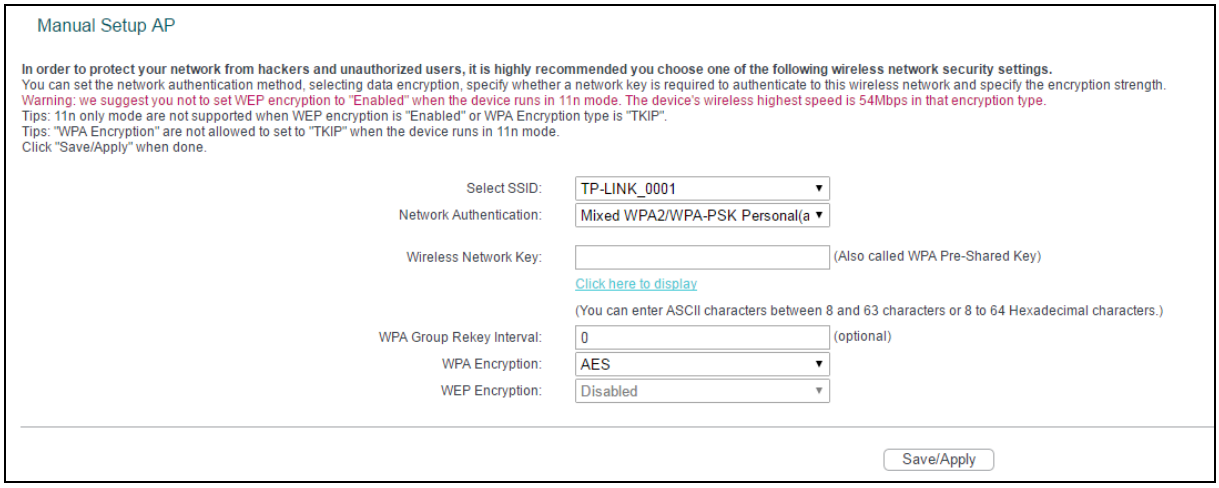
6. Mixed WPA2/WPA Enterprise

To configure Mixed WPA2/WPA Enterprise settings, select the Mixed WPA2/WPA Enterprise option from the drop-down list. The menu will change to offer the appropriate settings. The steps to these settings are similar to those for WPA-PSK.



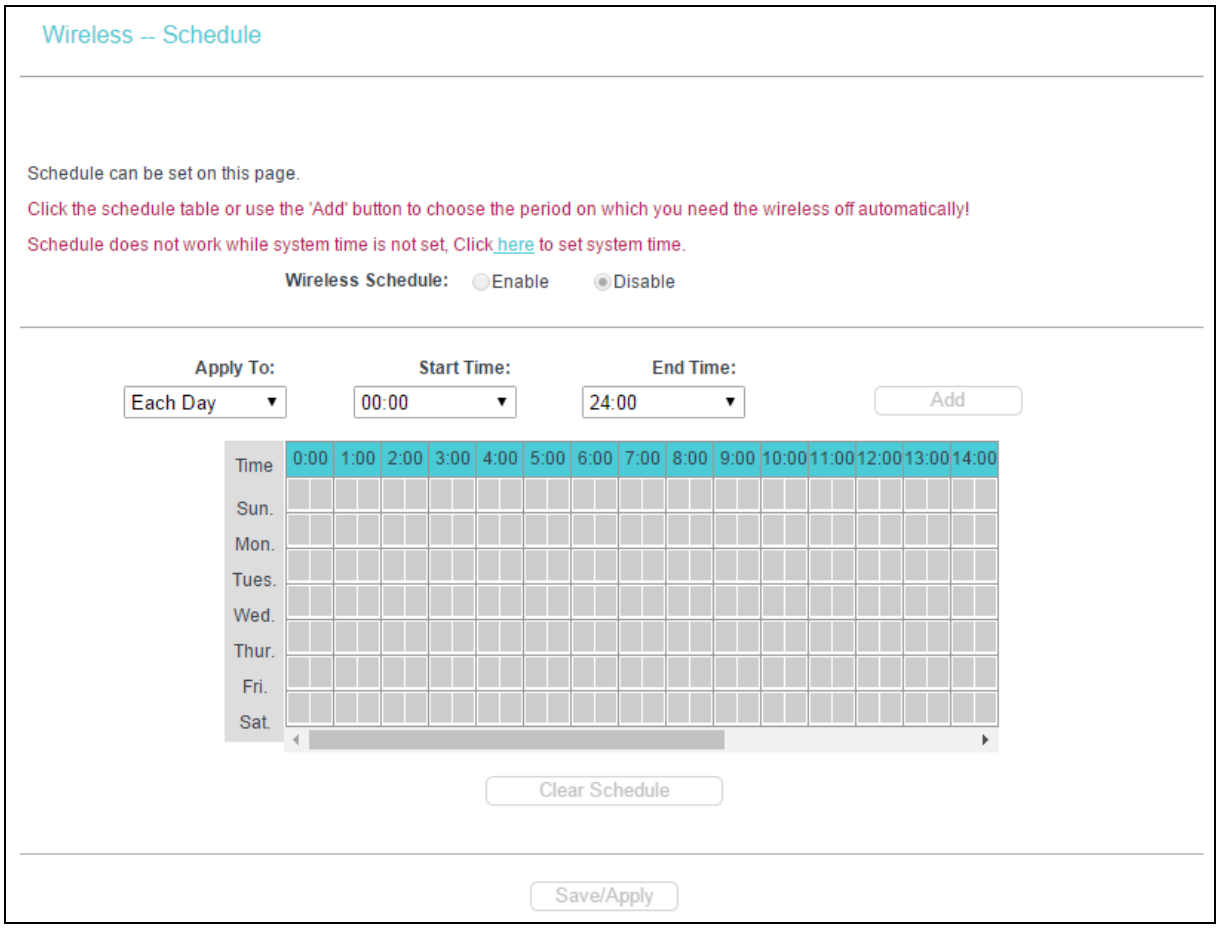
7. Mixed WPA2/WPA Personal

To configure Mixed WPA2/WPA-Personal settings, select the Mixed WPA2/WPA Personal option from the drop-down list. The menu will change to offer the appropriate settings. The steps of this setting are the same with WPA-PSK.



4.6.3 Wireless Schedule

Go to Wireless → Wireless Schedule, you can configure the Task Schedule as shown below. Please set the modem router's system time first.



☞ Note:

The time you set is the period you need the wireless off.

Before configure the wireless schedule, please set system time first which refer to 4.10.5 Internet Time, then you can enable or disable Wireless Schedule.

- Apply To: Select the day or days you need the wireless off.
- Start Time, End Time: You can select all day-24 hours or you may enter the Start Time and End Time in the corresponding field.
- Add: Click this button to add your selected time to the below table.

Click Clear Schedule to clear your settings in the table.

Click Save/Apply to complete the settings.

4.6.4 MAC Filter

Go to Wireless → MAC Filter, you will see the screen of Wireless--MAC Filter settings shown as below.

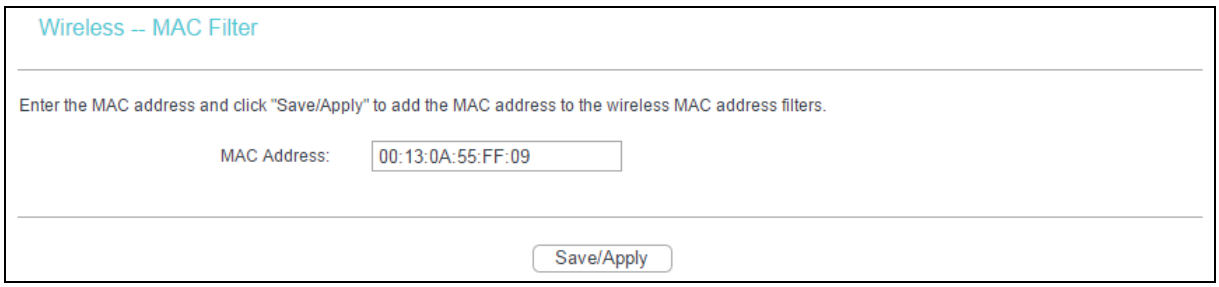
Wireless access can be filtered by using the MAC addresses of the wireless devices transmitting within your network's RADIUS. To filter wireless users by MAC Address, either permitting or blocking access. If you do not wish to filter users by MAC Address, select Disabled.

- Select SSID: Select the SSID of the wireless network in which you want to use the MAC Filter function.
- Disabled: Select this option to disable MAC Filter function.
- Allow: Select this option to enable MAC Filter function that allows wireless access by the devices listed on this screen.
- Deny: Select this option to enable MAC Filter function that blocks wireless access from the devices listed on this screen.
- Add: Click this button to add the MAC Address.
- Remove: Select the item of the MAC Address and click this button to remove it.

When you click Add, the pop-up picture shown below, and then you can type the MAC Address in the MAC Address field.

☞ Note:

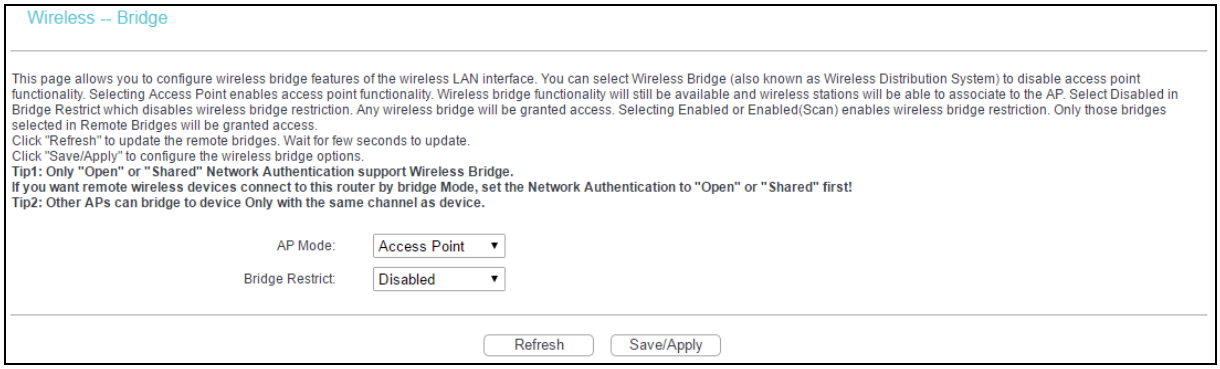
The form of MAC Address must be xx:xx:xx:xx:xx:xx, like 00:13:0A:55:FF:09.



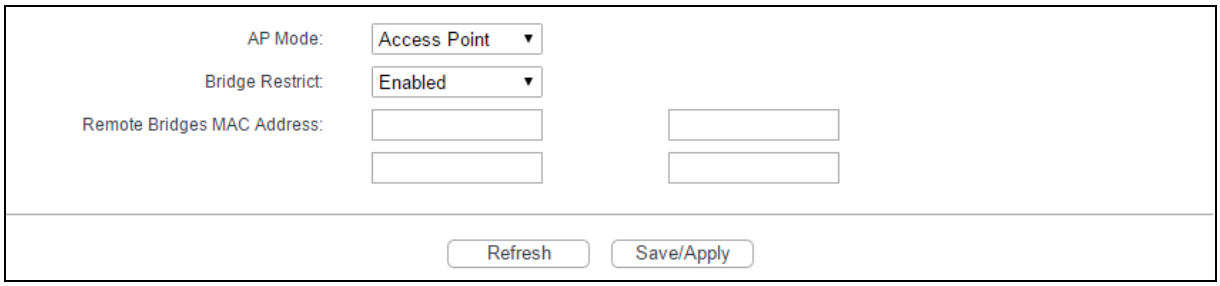
When you finished making changes to the MAC Filter List screen, click Save/Apply to save the changes.

4.6.5 Wireless Bridge

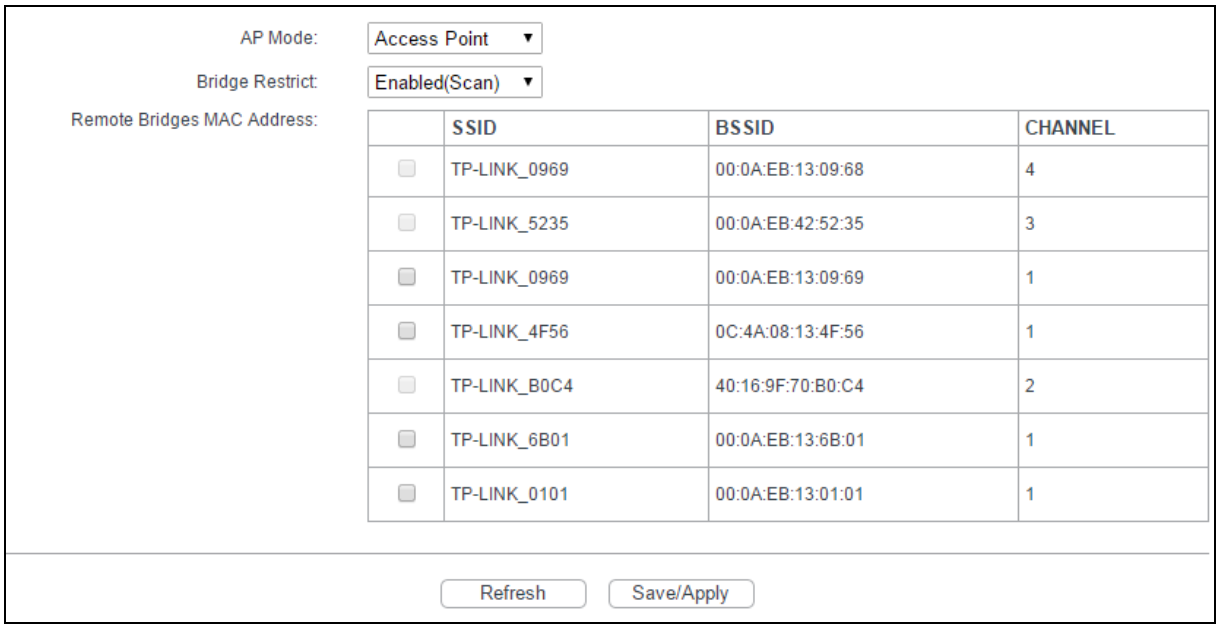
Go to Wireless → Wireless Bridge, you will see the screen of Wireless--Bridge settings shown as below. You can configure wireless bridge features of the wireless LAN interface and click Apply/Save to save the current configuration.



- AP Mode: Select an AP Mode from the drop-down list. Options available are: Access Point and Wireless Bridge.
  - Access Point: Select this option to allow wireless stations including AP clients to access.
  - Wireless Bridge: Also known as WDS (Wireless Distribution System), it will bridges the wireless stations which also in bridge mode to connect two or more remote LANs.
- Bridge Restrict:
  - Disabled: Select this option to disables wireless bridge restriction, and any wireless bridge will be granted access.
  - Enabled: Select this option (as shown below) to enables wireless bridge restriction, please enter the MAC address of the Remote Bridges that you want to connect with, and only these Remote Bridges are granted access.



  - Enabled (Scan): Select this option to enable wireless bridge restriction, and it will scan the environment for APs that exist around the device. Only those selected AP will be granted access.
  - Refresh: Click this button to scan and display the APs.

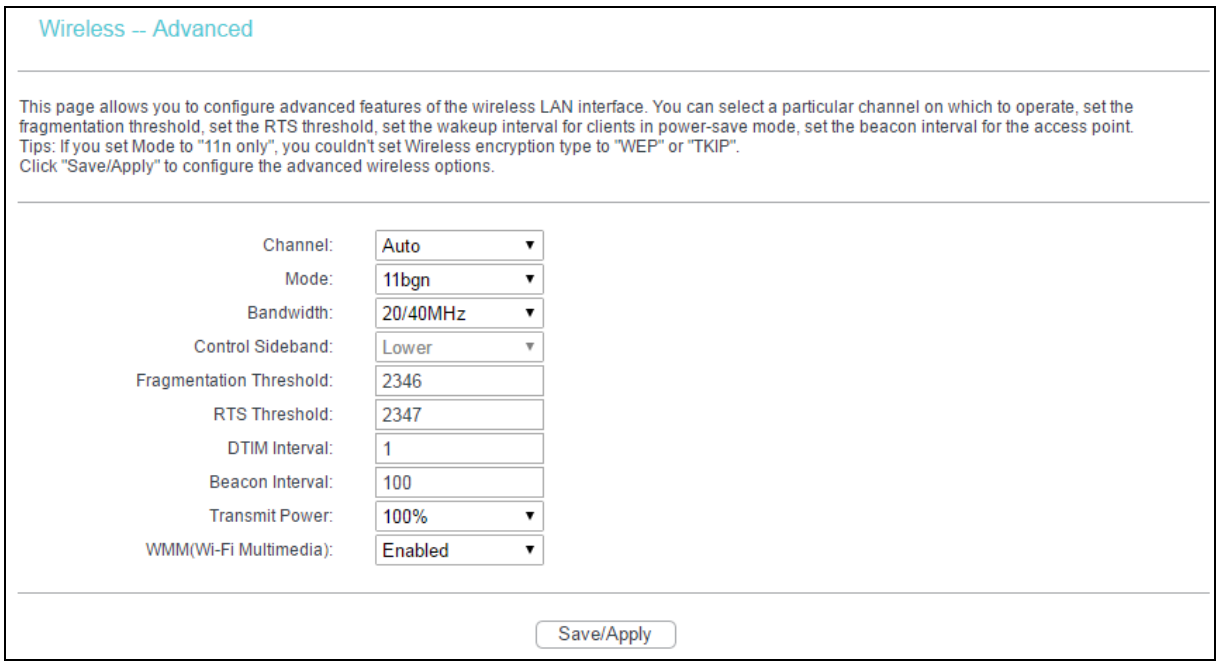


☞ Note:

Only Open or Shared authentication method support wireless bridge, you should go to Wireless → Security to change authentication method to open or shared mode first.

4.6.6 Advanced

Go to Wireless → Advanced, you will see the screen of Wireless--Advanced settings shown as below.



- Channel: Select the channel you want to use from the drop-down List. This field determines which operating frequency will be used. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.

- Mode: In the drop-down list you can select 11b, 11bg, 11bgn and 11n only. 11bgn allows both 802.11b, 802.11g and 802.11n wireless stations to connect to the modem router.
- Bandwidth: Select the Bandwidth you want to use from the drop-down List. If bigger bandwidth is selected, device could transmit and receive data with higher speed.
- Control Sideband: If bigger bandwidth is selected, this option will allow you select the Control Sideband you want.
- Fragmentation Threshold: This value specifies the maximum size for a packet before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly increase the Fragmentation Threshold. Setting the Fragmentation Threshold too low may result in poor network performance. Only minor reduction of the default value is recommended. In most cases, it should remain at its default value of 2346.
- RTS Threshold: Should you encounter inconsistent data flow, only minor reduction of the default value 2347 is recommended. If a network packet is smaller than the preset RTS threshold size, the RTS/CTS mechanism will not be enabled. The modem 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. This mechanism can provide you a quiet communication channel by notifying other stations not to send packet for a period of time. In most cases, keep its default value of 2347.
- DTIM Interval: This value, between 1 and 255, indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. The countdown unit is measured by the amounts of beacon frames received. When the modem router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Its clients hear the beacons and awaken to receive the broadcast and multicast messages. The default value is 1.
- Beacon Interval: Enter a value between 20-1000 milliseconds. The Beacon Interval value indicates the frequency interval of the beacon. A beacon is a packet broadcast by the modem router to synchronize the wireless network. The default value is 100.
- Transmit Power: This option will allow you to configure the wireless transmit power. High transmit power will extend the wireless signal range of the device and make the signal transmit more legible. Low transmit power with the smaller wireless signal range that will decrease the probability of interrupt by other Wi-Fi device.
- WMM (Wi-Fi Multimedia): This function can guarantee the packets with high-priority messages being transmitted preferentially. It is strongly recommended.

4.6.7 Station info

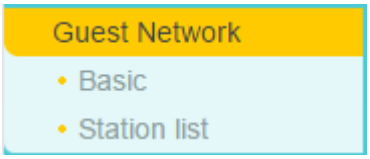
Go to Wireless → Station Info, you will see the screen of Wireless--Authenticated Stations setting shown as below.

This page shows authenticated wireless stations and their status.

- MAC: Displays the connected wireless station's MAC address.
- Associated: Displays whether the wireless station has associated with the access point.
- Authorized: Displays the information of Authentication.
- SSID: Displays the connected wireless station's SSID.

You cannot change any of the values on this page. To update this page and to show the current connected wireless stations, click Refresh.

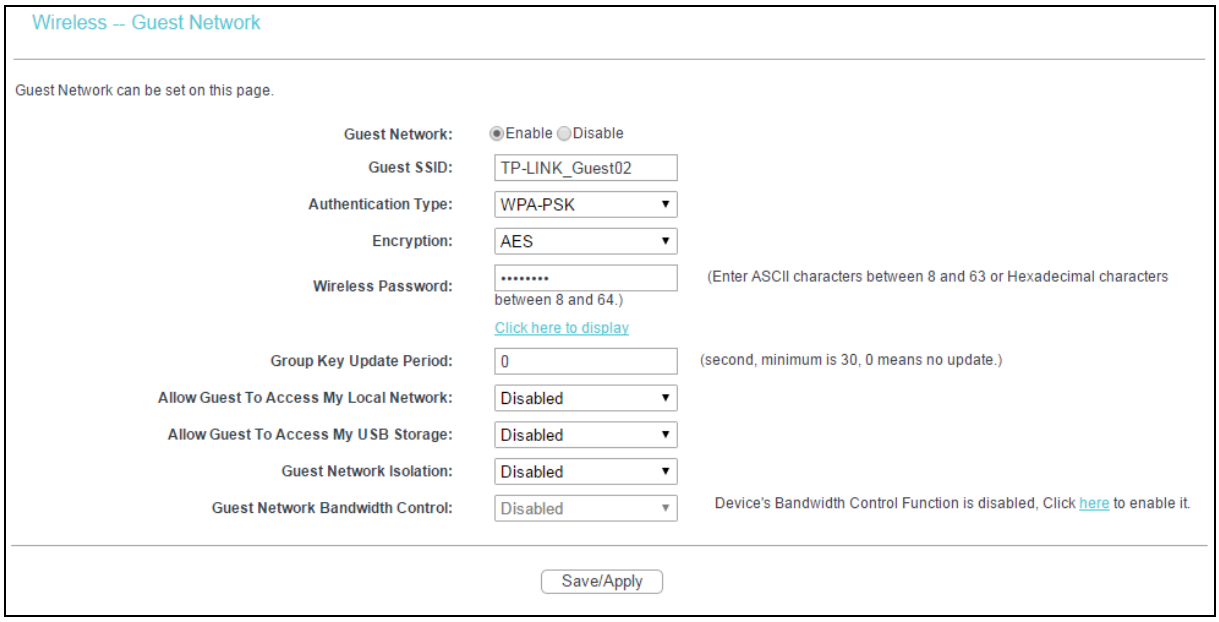
4.7 Guest Network



There are two submenus under the Guest Network menu: Basic and Station list. Click any of them, and you will be able to scan or configure the corresponding function. The detailed explanations for each submenu are provided below.

4.7.1 Basic

Go to Guest Network → Basic, and you will see the screen as below. This feature allows you to create a separate network for your guests without allowing them to access your main network and the computers connected to it.



You can enable or disable Guest Network. When you enable this function, you could set wireless parameters for Guest Network.

- Guest SSID: The guest network name. When setting up a Guest network, it is strongly recommended to use a name that easily distinguishes it from your primary network.
- Authentication Type: Select the Authentication Type from the drop-down list.
- Encryption: You can select either AES or AES+TKIP.
- Wireless Password: Here displays the default wireless password. You can click Click here to display to see the default wireless password, and you can also enter ASCII characters between 8 and 63 characters or 8 to 64 Hexadecimal characters to create a new password.
- Group Key Update Period: Specify the group key update interval in seconds. The value should be 30 or above. Enter 0 to disable the update.
- Allow Guest to Access my Local Network: The guests have access to your Local Network, but can not log in to the modem router's web management page.
- Allow Guest to Access my USB Storage: The guests can access the specified files on the USB storage device via the function of USB Storage Sharing, but the function of FTP Server, Media Server and Print Server are not available in Guest Network. For more details please refer to 4.8.3 Storage Sharing.
- Guest Network Isolation: This function can isolate wireless clients on your guest network from each other. Client isolation is disabled by default.
- Guest Network Bandwidth Control: With this function, you can configure the Upstream Bandwidth and Downstream Bandwidth for guest network.

Click Save/Apply to save your settings.

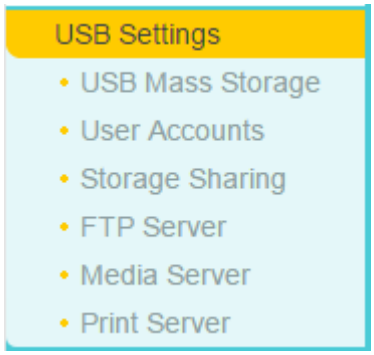
4.7.2 Station list

Go to Guest Network → Station list, and you can see the MAC Address, Associated, Authorized, SSID and Interface.

- MAC: Displays the connected wireless station's MAC address.
- Associated: Displays whether the wireless station has associated with the access point.
- Authorized: Displays the information of Authentication.
- SSID: Displays the connected wireless station's SSID.

You cannot change any of the values on this page. To update this page and to show the current connected wireless stations, click Refresh.

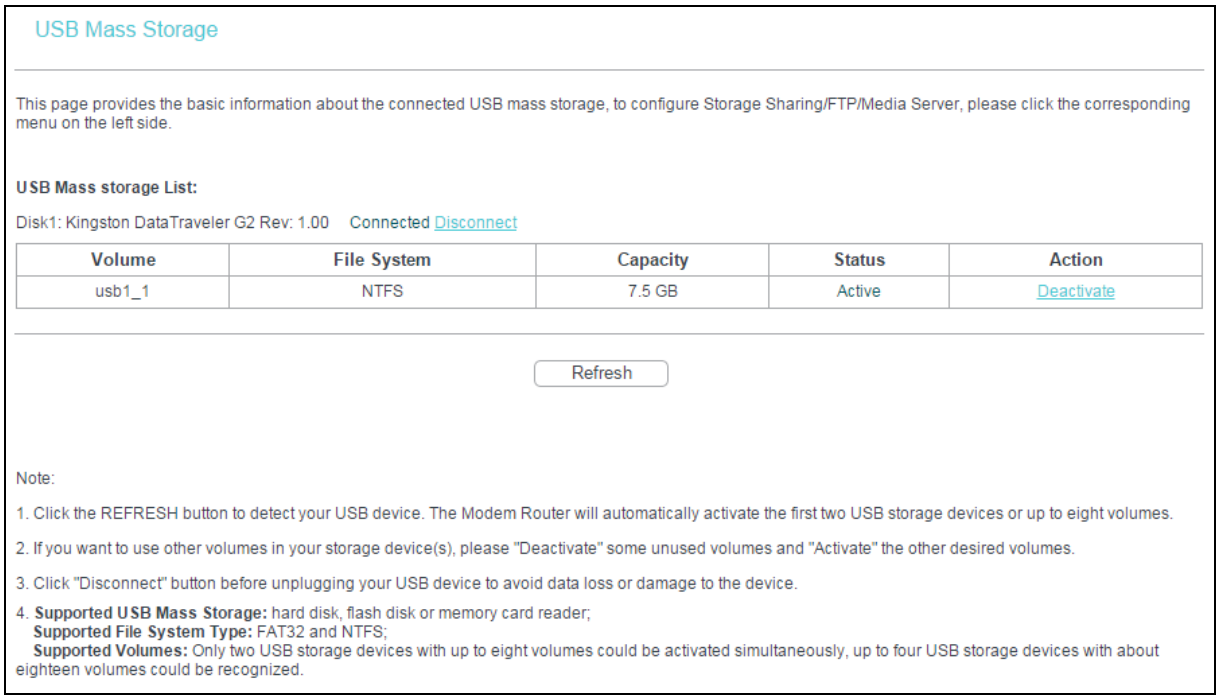
4.8 USB Settings



There are six submenus under the USB Settings menu, USB Mass Storage, User Accounts, Storage Sharing, FTP Server, Media Server and Print Server. Click any of them, and you will be able to configure the corresponding function.

4.8.1 USB Mass Storage

Go to USB Settings → USB Mass Storage, you can configure a USB disk drive attached to the modem router and view volume and share properties such as share name, capacity, status, action and others on this page as shown below.



- Volume: The volume name of the USB drive the users have access to.
- File System: The system of the USB drive.
- Capacity: The storage capacity of the USB driver.
- Status: Indicates the shared or non-shared status of the volume. Active means volume can be shared, while Inactive means volume can not be shared.
- Action: When the volume is shared, you can click the Deactivate to stop sharing the volume; when volume is non-shared, you can click the Activate button to share the volume.

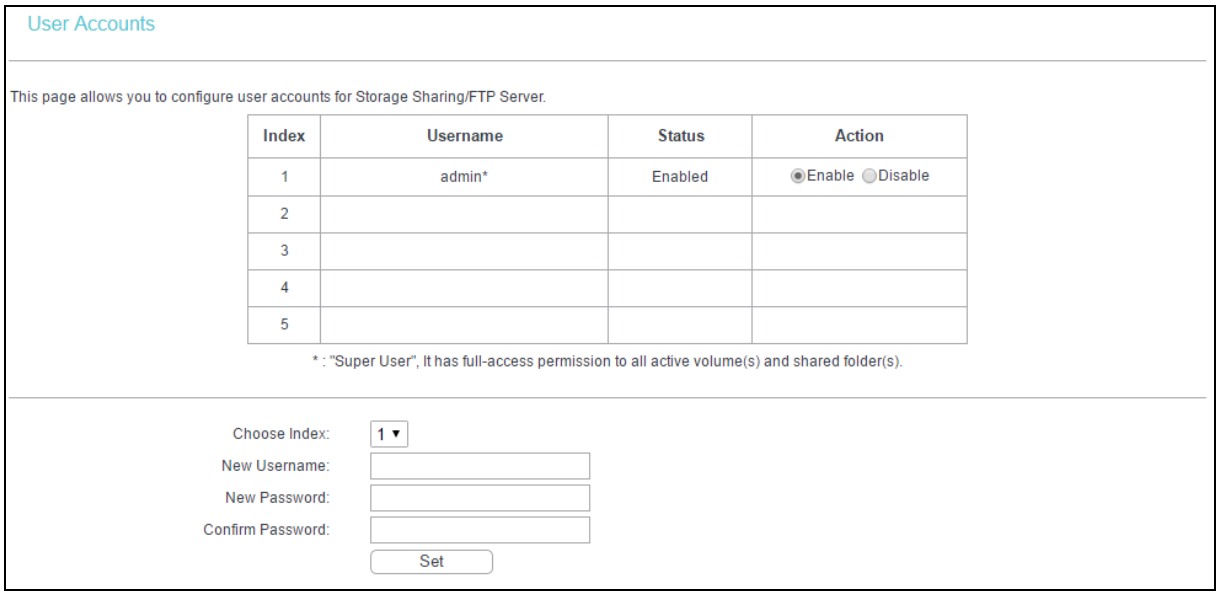
Click Disconnect to safely remove the USB storage device that is connected to USB port.

☞ Note:

Before removing the USB storage device, you should click Disconnect to make sure that all your data have been saved completely. Removing device directly may cause your USB storage device crashed.

4.8.2 User Accounts

You can specify the username and password for Storage Sharing and FTP Server users on this page. There are five users here, which provide means to control the access to the USB mass storage by Storage Sharing or FTP. The Super User has the right to read and write to Storage Sharing and FTP Server.



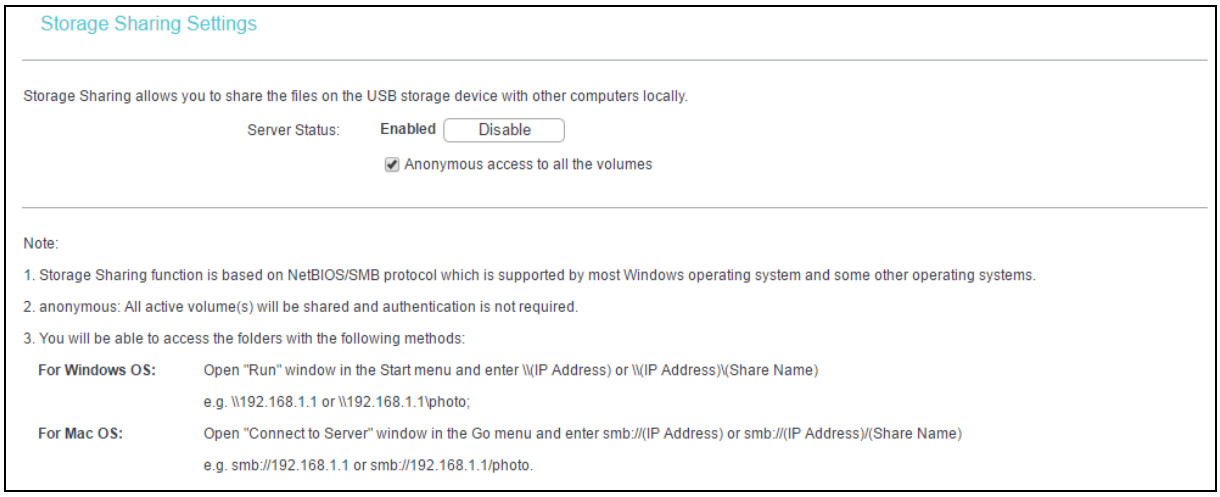
To add a new user account, please follow the steps below:

1. Choose the index from the drop-down list of Choose Index.
2. Self-define a New Username.
3. Enter the password in the New Password field.
4. Re-enter the password in the Confirm Password field.

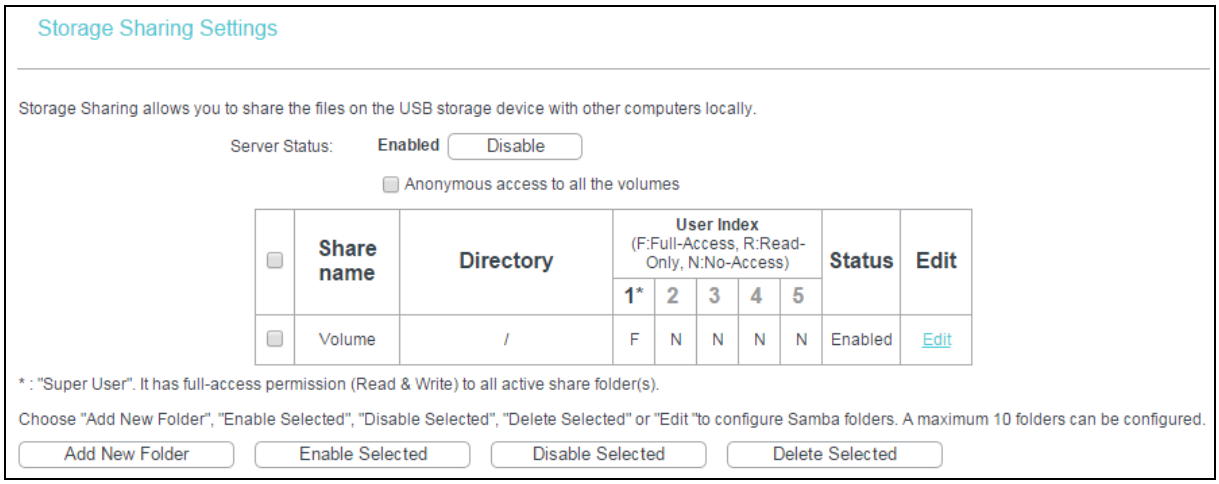
Click Set, and then a new entry will be added in the table.

4.8.3 Storage Sharing

Go to USB Settings → Storage Sharing, you can configure a USB disk drive attached to the modem router and view volume and share properties on this page as shown below.



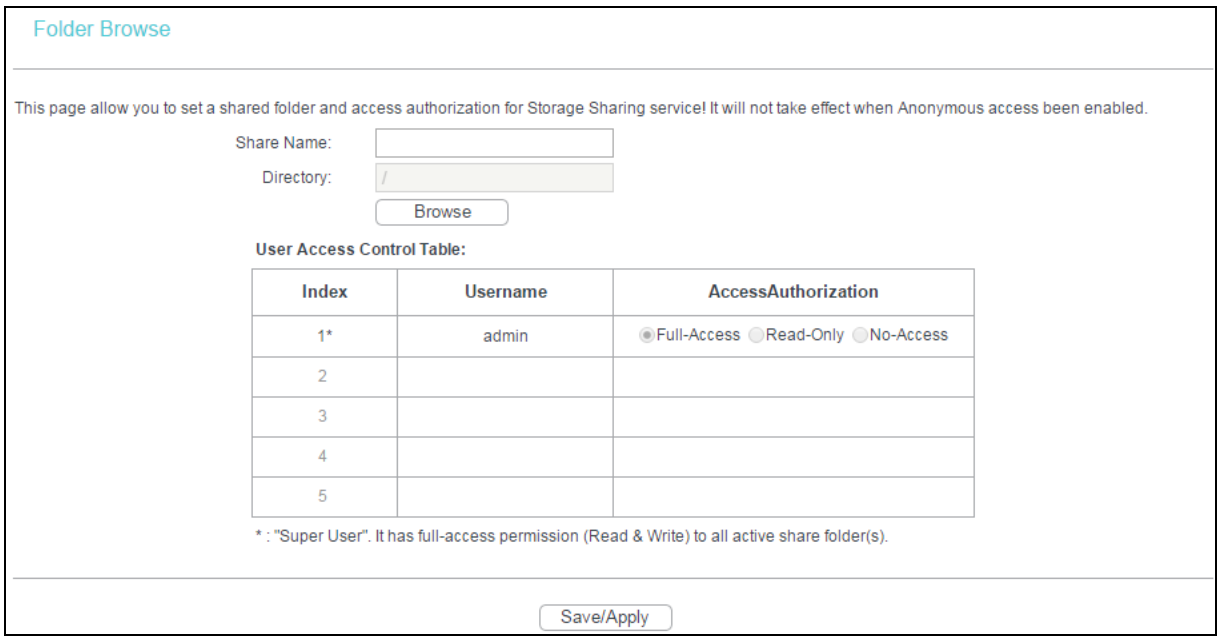
- Server Status: Indicates the Storage Sharing's current status.
- Anonymous access to all the volumes: This function is enabled by default, so users can access all activated volumes of Storage Sharing without accounts. If you want to add a shared folder which does not allow anonymous login, uncheck the box to disable this function. And Folder Table will be displayed as shown below.



- Share Name: This folder's display name.
- Directory: The real full path of the specified folder.
- User Index: The authorization of the user is displayed. * means Super Users who have the full-access permission to all activated volumes and share folders. Grey users mean the users who have no right to use this function. Others are common users.
- Status: The status of the entry is enabled or disabled.
- Edit: Click Edit in the table, and then you can modify the entry.

To add a new folder, follow the instructions below:

1. Click Add New Folder in the above table.



2. Click Browse, and then select the Select Volume from the drop-down list.
3. Enter display name of the share folder in Share Name filed.
4. Click Save/Apply to apply the settings.

You can click upper to go to the upper folder.

Click Enable/Disable Selected to enable or disable the selected entries.

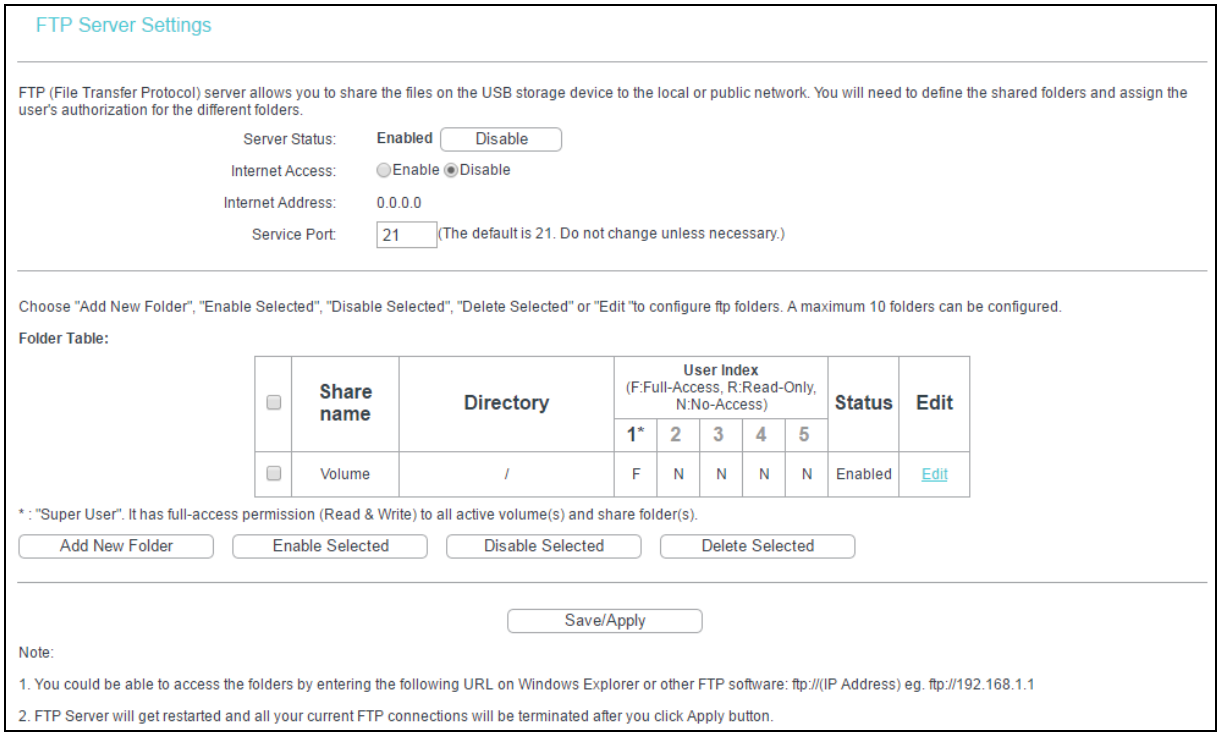
Click Delete Selected to delete the selected entries.

☞ Note:

1) The max share folders number is 10. If you want to share a new folder when the number has reached 10, you can delete an existing share folder and then add a new one.
2) If you want to change the Storage Sharing settings, you can click Apply to make the changes take effect.

4.8.4 FTP Server

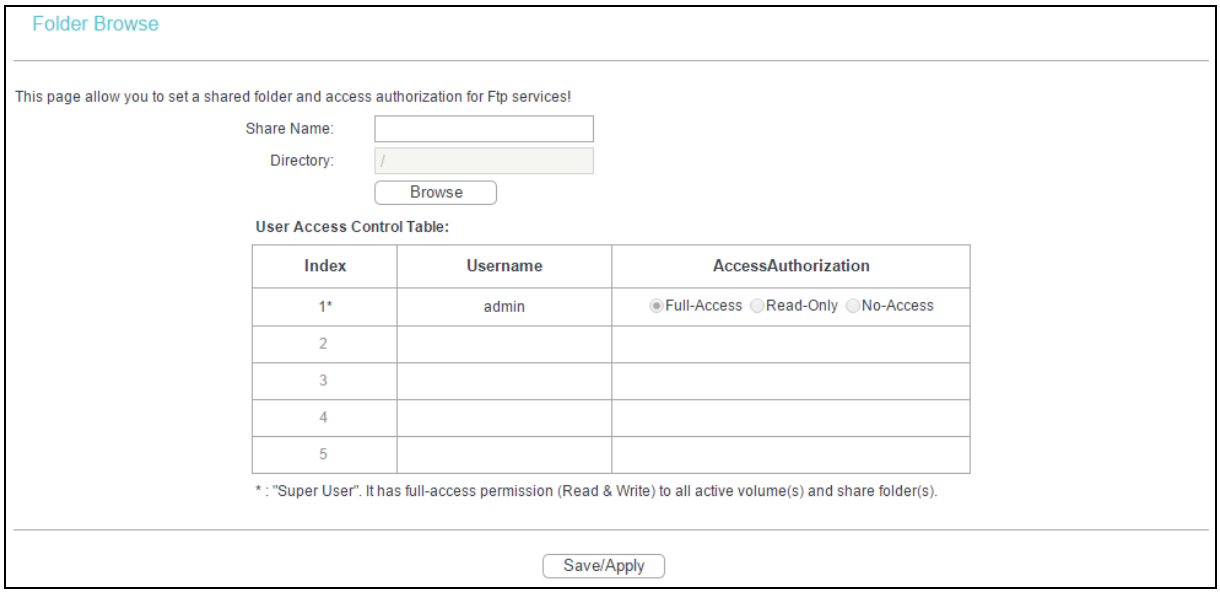
Go to USB Settings → FTP Server, and you can create an FTP server that can be accessed from the Internet or your local network.



- Server Status: Indicates the FTP Server's current status.
- Internet Access: If Internet Access is enabled, user(s) in public network can access FTP server via Internet Address.
- Internet Address: If Internet Access is enabled, WAN IP will be displayed here.
- Service Port: Enter the FTP Port number to use. The default is 21.
- Share Name: This folder's display name.
- Directory: The real full path of the specified folder.
- User Index: The authorization of the user is displayed.
- Status: The status of the entry is enabled or disabled.
- Edit: Click Edit in the table, and then you can modify the entry.

To add a new folder, follow the instructions below.

1. Click Add New Folder on the above figure.



2. Click Browse, and then select Select Volume from the drop-down list.
3. Enter display name of the share folder in Share Name filed.
4. Click Save/Apply to apply the settings.

You can click upper to go to the upper folder.

Click Enable/Disable Selected to enable or disable the selected entries.

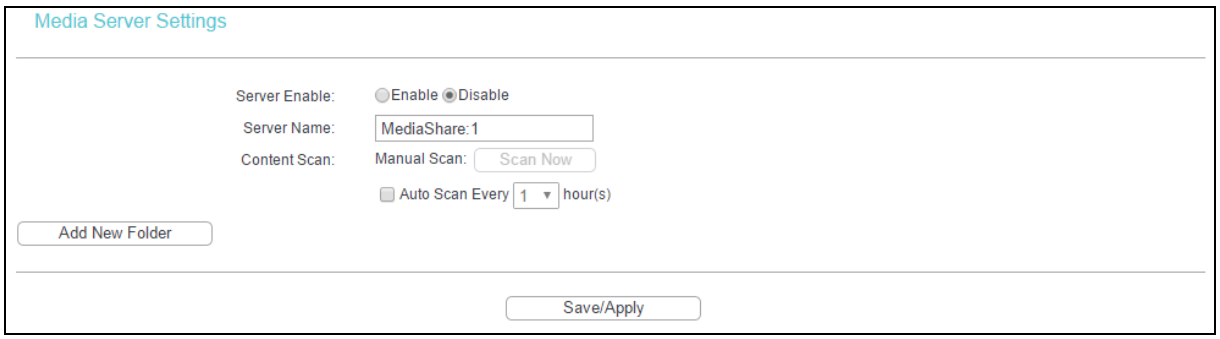
Click Delete Selected to delete the selected entries.

☞ Note:

1. The max share folders number is 10. If you want to share a new folder when the number has reached 10, you can delete an existing share folder and then add a new one.
2. If you want to change the FTP settings, you can click Apply to make the changes take effect.

4.8.5 Media Server

Go to USB Settings → Media Server, you can create media server that allows you to share stored content with other computers and devices on your home network and on the Internet.

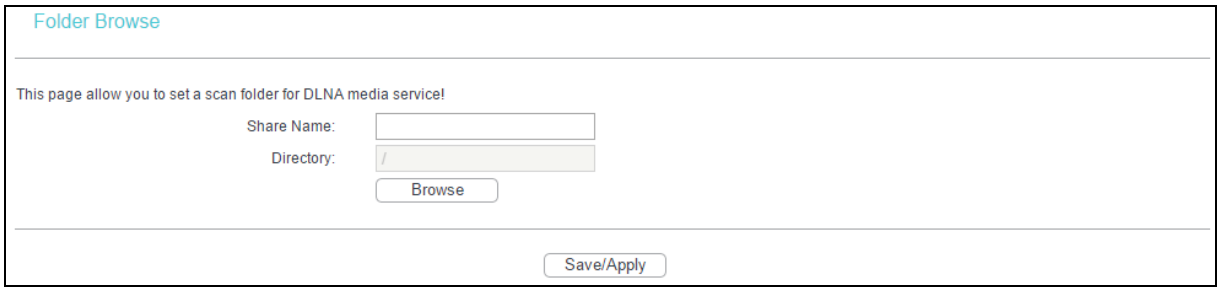


➢ Server Enable: Select this box to enable this function.

- Server Name: The name of this Media Server.

To add a new share folder for your media server, please follow the instructions below:

a) Click Add New Folder, and you will see the screen as shown below.



b) Enter the name of the share folder in Share Name field.

c) Click Save/Apply to apply the configuration.

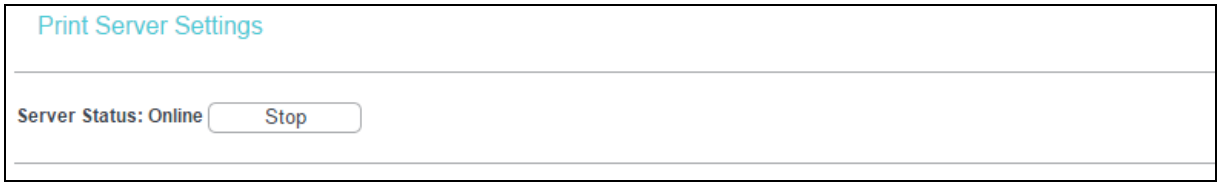
d) Click Scan Now to scan all the share folders immediately. You can also select the Auto-Scan, at same time, select an auto scan interval time by drop-down list. In this case, the media server will auto scan the share folders.

☞ Note:

The max share folders number is 6. If you want share a new folder when the numbers has been reached to be 6, you can delete a share folder and then add a new one.

4.8.6 Print Server

Go to USB Settings → Print Server, you can configure print server on this page as shown below.

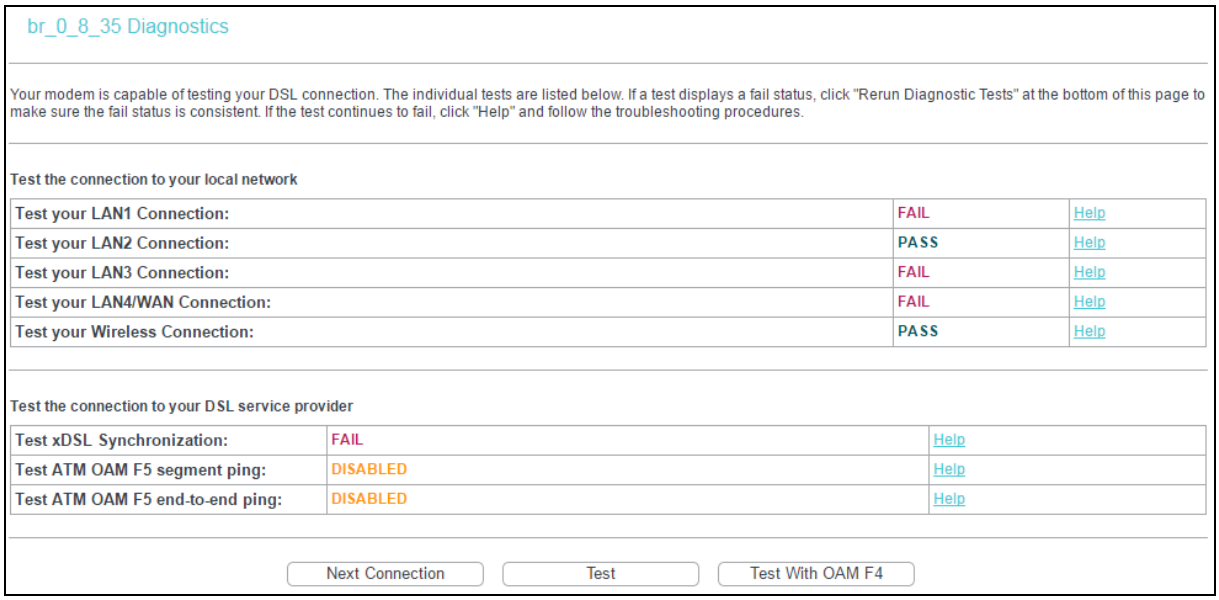


There are three states of the print server, they are as follows:

- Online: Indicates the print service has been turned on, and no user is using the print services at present. You can click Stop to stop the print service.
- Offline: Indicates the print service feature is disabled. You can click Start to start the print service.
- Busy: Indicates the print service has been turned on, but at this moment other users are using print services.

4.9 Diagnostics

Choose Diagnostics, you will see the Diagnostics screen. This section describes the result of the test for the ENET (Ethernet) Connection, Wireless Connection and ADSL Synchronization. You can refer to the Help menu to get more information about the corresponding test.



br_0_8_35 Diagnostics

Your modem is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.

Test the connection to your local network

Test your LAN1 Connection:	FAIL	Help
Test your LAN2 Connection:	PASS	Help
Test your LAN3 Connection:	FAIL	Help
Test your LAN4/WAN Connection:	FAIL	Help
Test your Wireless Connection:	PASS	Help

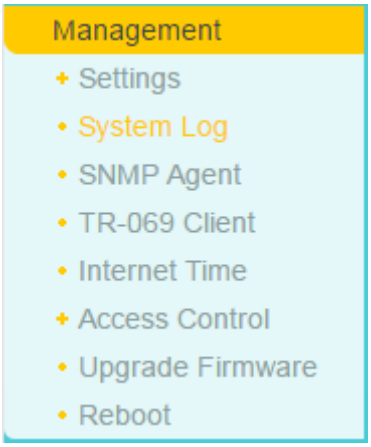
Test the connection to your DSL service provider

Test xDSL Synchronization:	FAIL	Help
Test ATM OAM F5 segment ping:	DISABLED	Help
Test ATM OAM F5 end-to-end ping:	DISABLED	Help

Next Connection | Test | Test With OAM F4

4.10 Management

Choose Management, and there are eight submenus under the main menu. They are Settings, System Log, SNMP Agent, TR-069 Client, Internet Time, Access Control, Update Firmware and Reboot. Click any of them, and you will be able to configure the corresponding function.

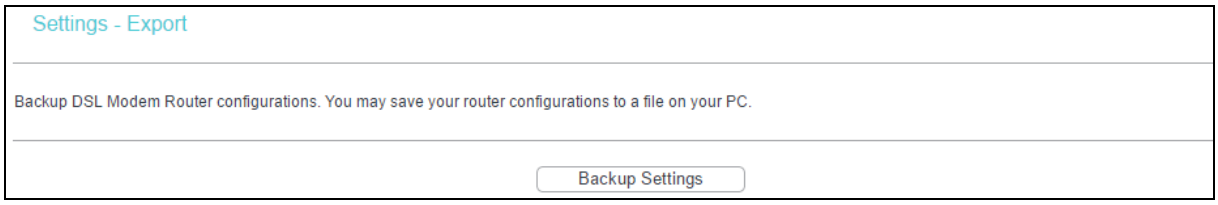


4.10.1 Settings

This section provides three important functions for managing the modem router: Export (Backup), Import (Update) and Restore Default. The detailed manipulations are described below.

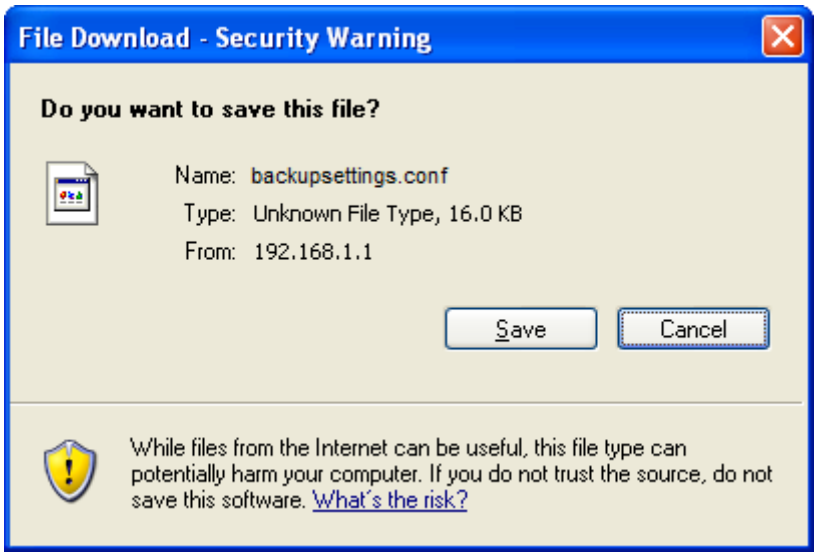
4.10.1.1 Export

Go to Management → Settings → Export, you can see the Export screen, which allows you to save the current configuration of the modem router as a backup file.

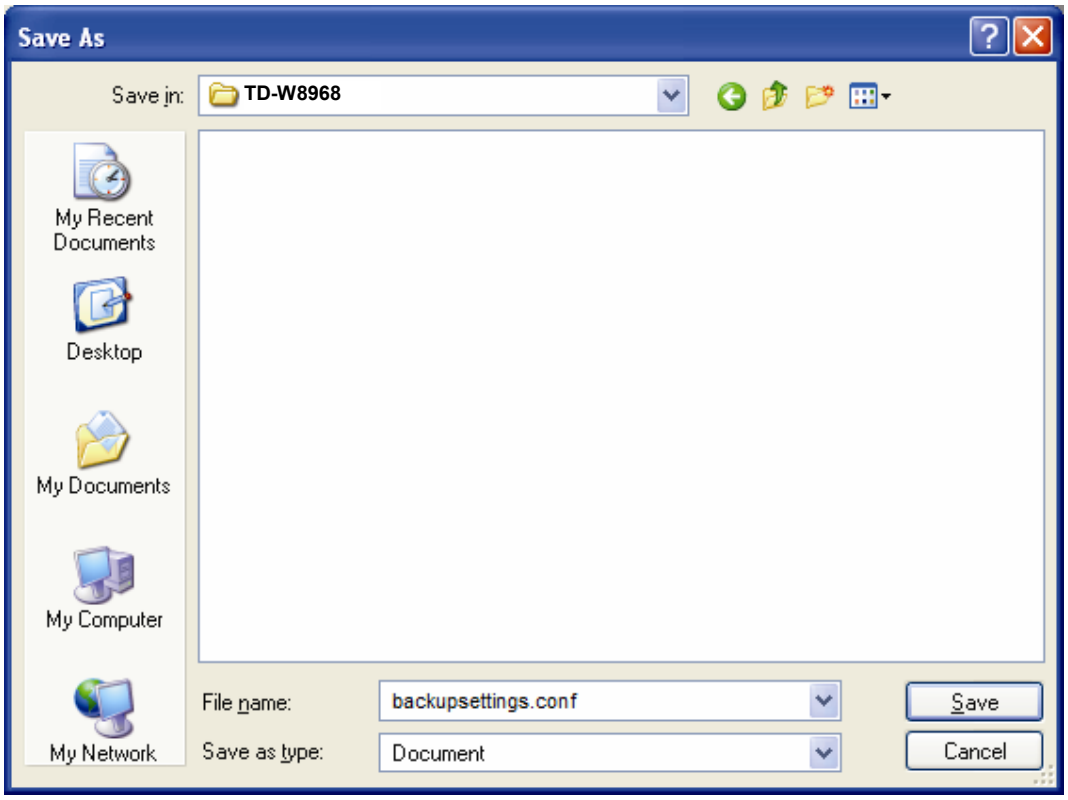


To back up the modem router's current settings:

1. Click Backup Settings on the preceding screen, and the following screen will then appear.

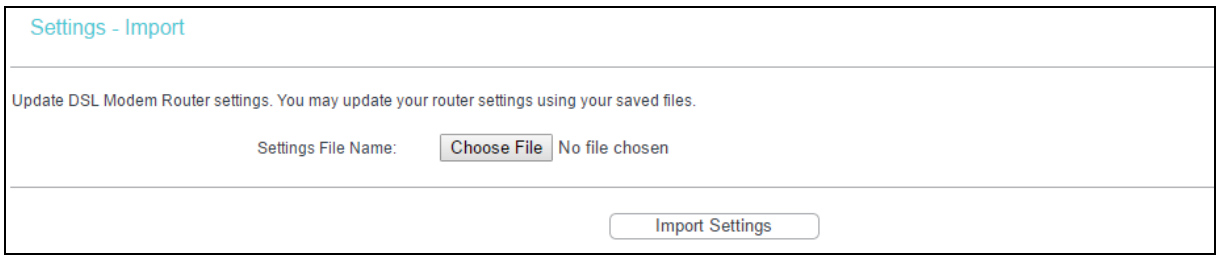


2. Click Save, and save the file as the appointed file.



4.10.1.2 Import

Go to Management → Settings → Import, you can see the Import screen, which allows you to update the modem router's settings.



To update the modem router's settings:

1. Click Browse to locate the update file for the device, and you can also enter the exact path to the Setting file in the text box.
2. After you have selected the file for updating the settings, click Import Settings.

☞ Note:

The modem router will reboot upon completion. This process will take a while, and don't turn off the modem router or press the Reset button while processing.

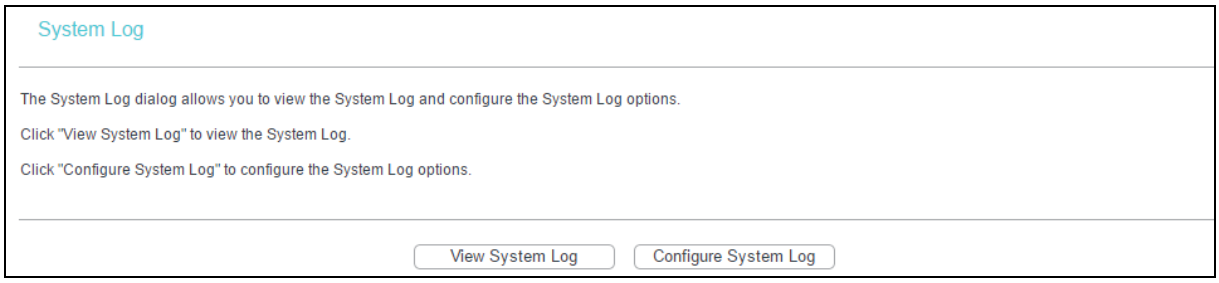
4.10.1.3 Restore Default

Go to Management → Settings → Restore Default, and you can see the Restore Default screen, which allows you to restore the modem router's configuration to the factory defaults on the screen.

- Restore Default Settings: Click this button to restore the modem router's configuration to the factory defaults, and then follow the on-screen instructions to complete it.
- Account and Password: The default username and its password are both admin.
- The default IP Address: 192.168.1.1.
- The default Subnet Mask: 255.255.255.0.

4.10.2 System Log

Go to Management → System Log, you can see the System Log screen, this screen allows you to view the system log and configure the system log options.



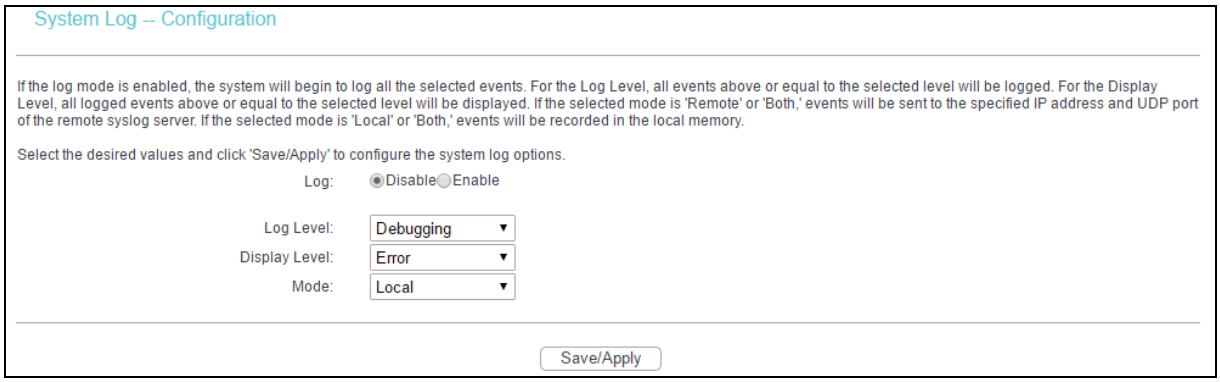
To view the System Log:

Click View System Log, you will see the screen below which displays the modem router's recent logs.

- Refresh: Click the button, and the information in the table will be updated.
- Back: Click the button, and the screen will back to the previous page.

To configure the System Log settings:

Click the Configure System Log button, and you will see the screen below.



- Disable/Enable: Select the Enable to log the events. If you don't want to log these events, please select Disable.
- Log Level: Select the Log level in the drop-down list. For the Log level, all events above or equal to the selected level will be logged.
- Display Level: Select the Display level in the drop-down list. For the Display Level, all logged events above or equal to the selected level will be displayed.
- Mode: Select the mode to record the events. If the selected mode is Local, events will be recorded in the local memory. If the selected mode is Remote, events will be sent to the specified IP address and UDP port of the remote system log server. If the selected mode is Both, events will be sent to the local memory and the remote system log server.

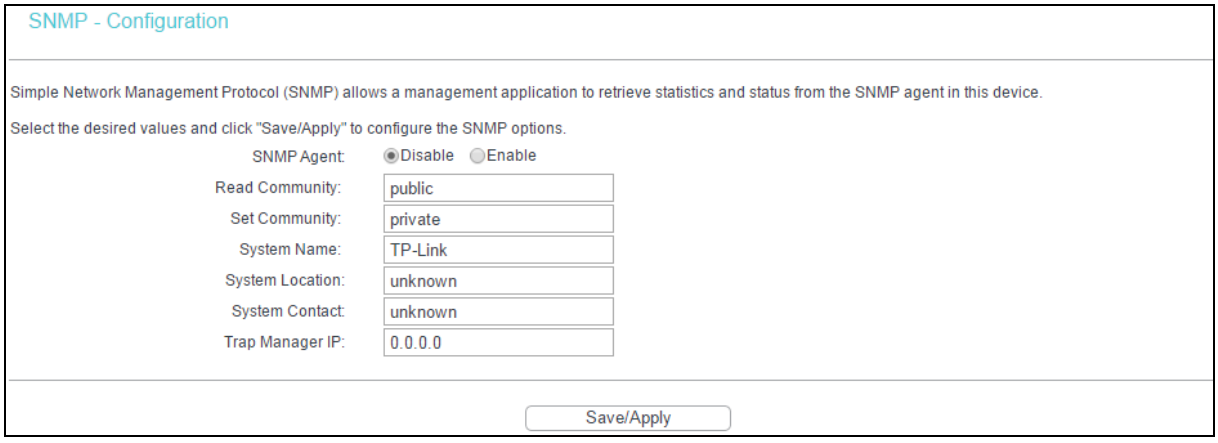
4.10.3 SNMP Agent

Go to Management → SNMP Agent, you can see the SNMP-Configuration screen as shown below.

SNMP (Simple Network Management Protocol) has been widely applied in the computer networks currently, which is used for ensuring the transmission of the management information between any two nodes. In this way, network administrators can easily search and modify the information on any node on the network. Meanwhile, they can locate faults promptly and implement the fault diagnosis, capacity planning and report generating.

An SNMP Agent is an application running on the router that performs the operational role of receiving and processing SNMP messages, sending responses to the SNMP manager, and sending traps when an event occurs. So a router contains SNMP "agent" software can be monitored and/or controlled by SNMP Manager using SNMP messages.

An SNMP Manager or SNMP Service is an application that performs the operational roles of generating SNMP messages/requests to modify and retrieve management information, and receiving the requested information and trap-event reports that are generated by the SNMP agent. SNMP Manager is the third-party management system. Monitor one is an SNMP Manager.



- SNMP Agent**:** You can select the checkbox to disable or enable the function.

☞ Note:

SNMP Community string provides a simple method of authentication between the router (SNMP Agent) and a remote network manager (SNMP Manager). You can specify the community string as the password to authenticate the management station to the router.

- Read Community: This field allows you to specify the SNMP Community string which provides read-only access to the router that the community is only permitted to read the device configuration. The default value is public.
- Set Community: This field allows you to specify the SNMP Community string which provides read and write access to the router that the community has the authority to read and change the device configuration. The default value is private.

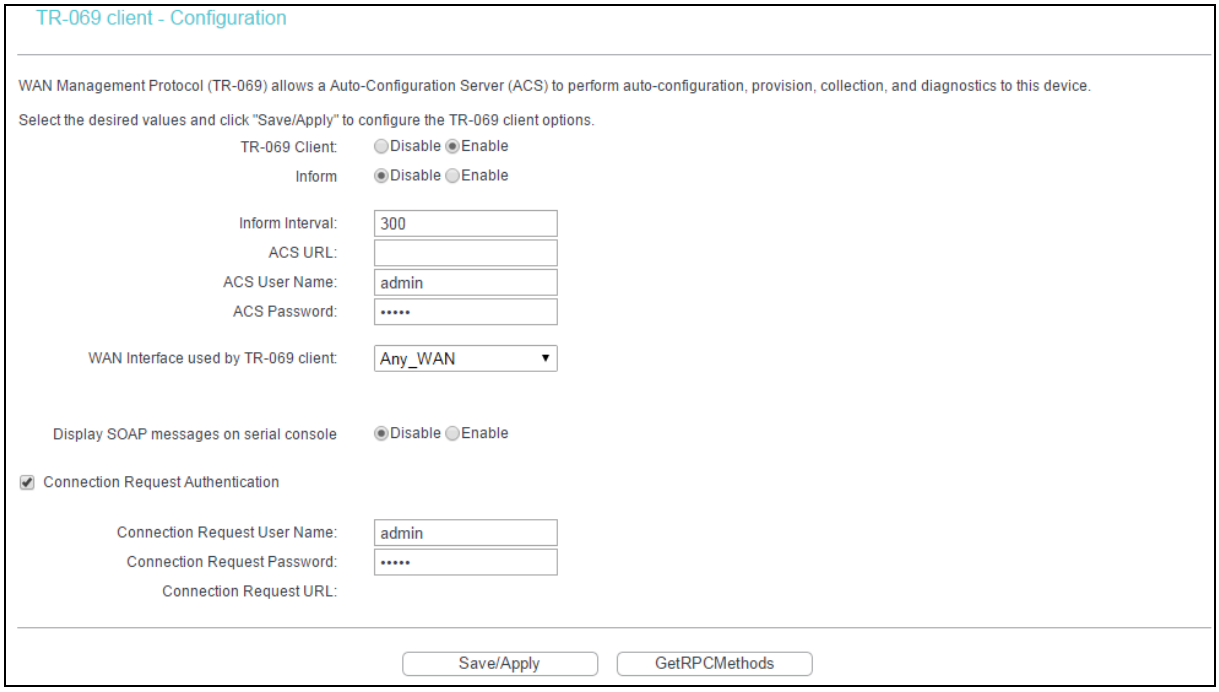
- System Name: Enter alphanumeric string to specify an SNMP community string name. Your router (SNMP agents) will expose management data on the managed systems as this system name.
- System Location: The person to notify when problems occur.
- System Contact: The location of the person that is identified as the system contact.
- Trap Manager IP: Enter the IP address of the SNMP Manager，where the SNMP Agent forwards trap notifications.

Select the desired values and click Save/Apply to configure the SNMP options.

4.10.4 TR-069 client

Go to Management → TR-069 client, you can see the TR-069 client - Configuration screen as shown below.

TR-069（WAN Management Protocol）allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.



- TR-069 Client: You can select the checkbox to disable or enable the TR-69 Client function.
- Inform: You can select the checkbox to disable or enable the Inform Interval.
- Inform Interval: Type the interval time of your modem router contact with the ACS.
- ACS URL: Please accept this information from your ISP. And through ACS (Auto-Configuration Server) you can perform auto-configuration, provision, collection, and diagnostics to this modem router.
- ACS User Name: Please accept this User Name information from your ISP.
- ACS Password: Please accept the Password information from your ISP.

☞ Note:

If you want to log on the ACS, you must own the ACS User Name and ACS Password.

- WAN Interface used by TR-069 Client: Please select the WAN Interface from the drop-down list to perform this function.
- Connection Request User Name: Type the Connection Request User Name; set it yourself.
- Connection Request Password: Type the Connection Request Password; set it yourself.

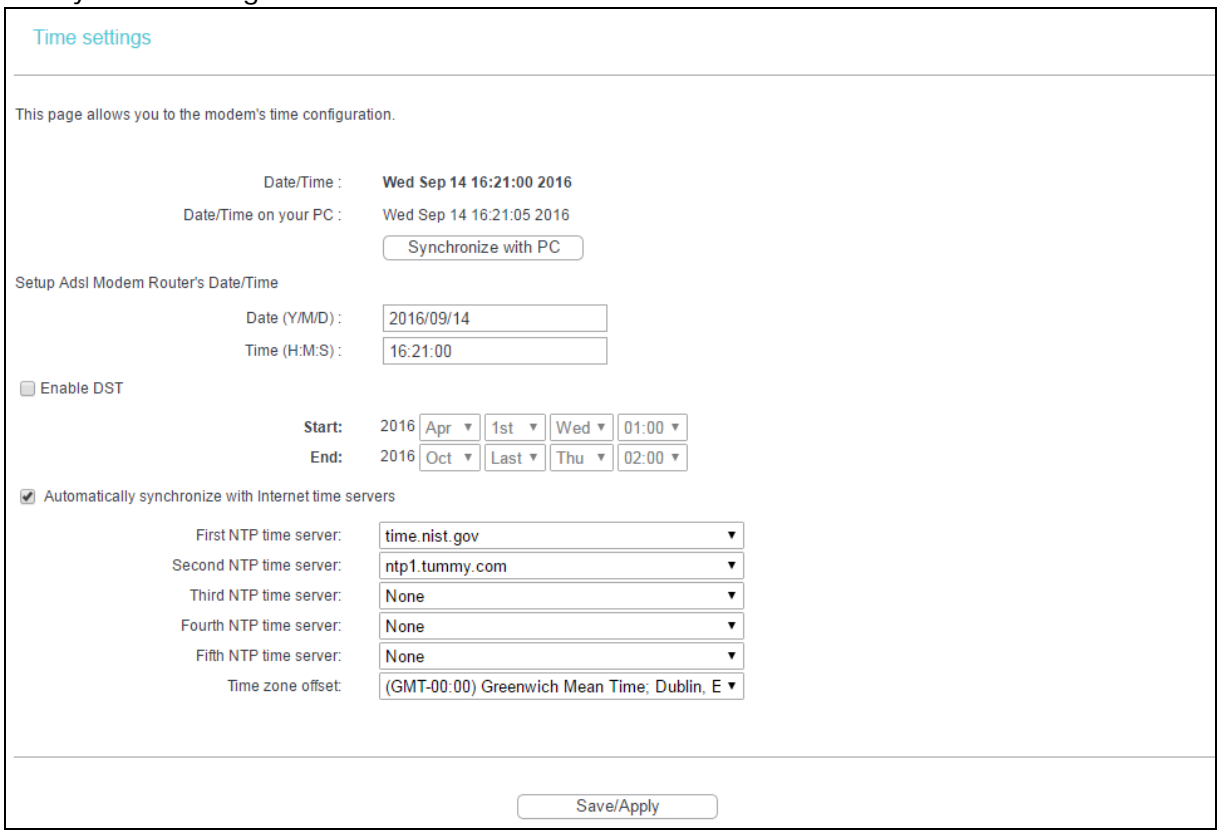
☞ Note:

The Connection Request User Name and Connection Request Password used for ACS log on the router and manage it.

Select the desired values and click Save/Apply to configure the TR-069 client options.

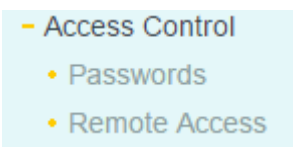
4.10.5 Internet Time

Go to Management → Internet Time, you can see the Time settings screen as shown below. Here you can configure the time of the modem router.



- Synchronize with PC: Click this button if you want to use the current managing PC's time.
- Enable DST: Select the checkbox to enable daylight saving function.

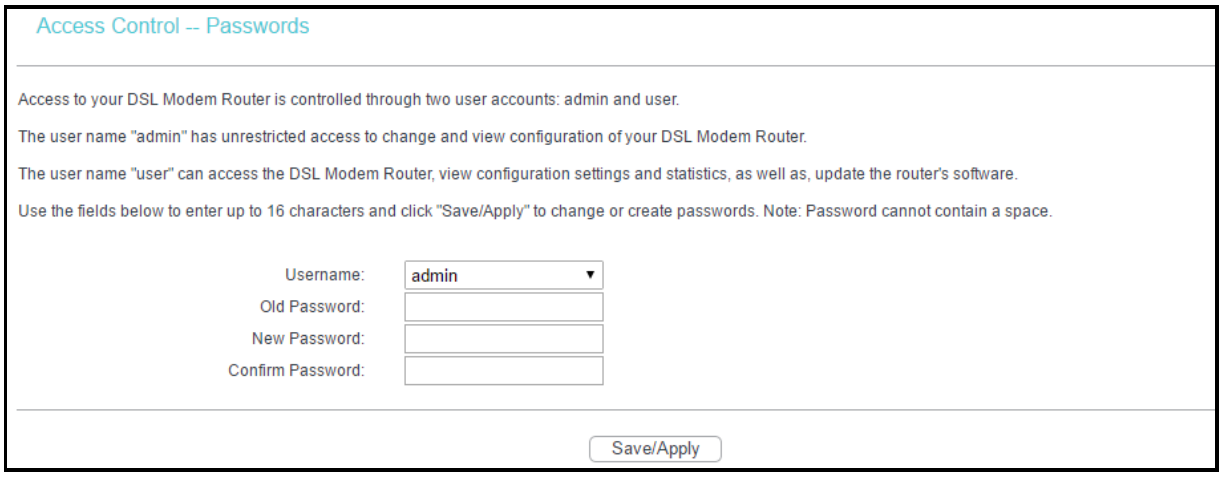
4.10.6 Access Control



There are two submenus under the Access Control menu: Passwords and Remote Access. The detailed explanations for each submenu are provided below.

4.10.6.1 Passwords

Go to Management → Access Control → Passwords, you can see the screen below which allows you to change the factory default password of the modem router. The default password is the same as the username, which is admin/admin, support/support, and user/user respectively.



To change the password:

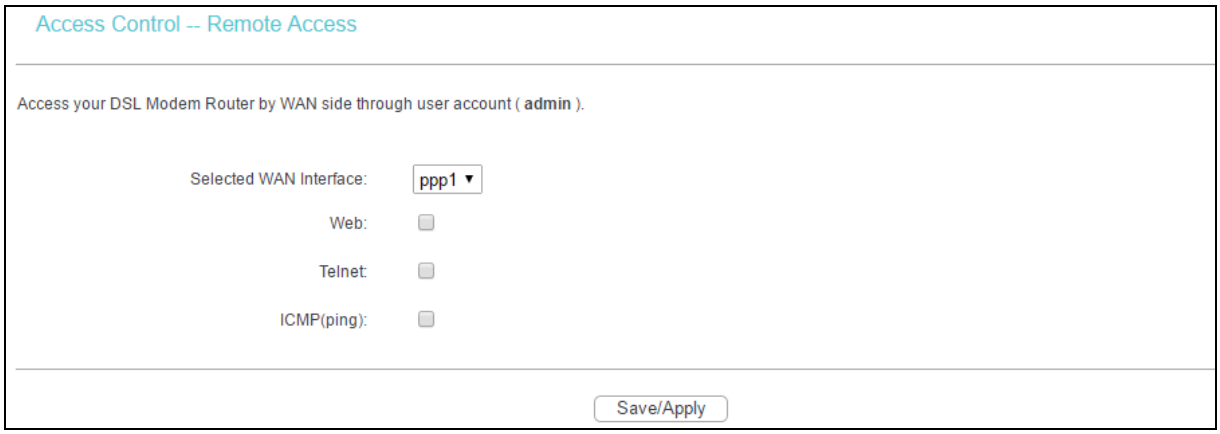
1. Select the Username whose password you want to change.
2. Enter the Old Password in the text box.
3. Enter the New Password and Confirm Password. The Confirm Password should be the same as the New Password.
4. Click Save/Apply to make your change take effect.

☞ Note:

1) Access to your DSL modem router is controlled through two user accounts: admin and user. The username admin has unrestricted access to change and view configuration of your DSL modem router. The username user can access the DSL modem router, view configuration settings and statistics, as well as, update the modem router's software.
2) Admin accounts can do remote management. For security reasons, please change the default password for this account when remote access function is enabled.
3) The password cannot contain a space, and its maximum length is 16 characters.

4.10.6.2 Remote Access

Go to Management → Access Control → Remote Access, you can see the screen below which allows you to change the factory default password of the modem router.

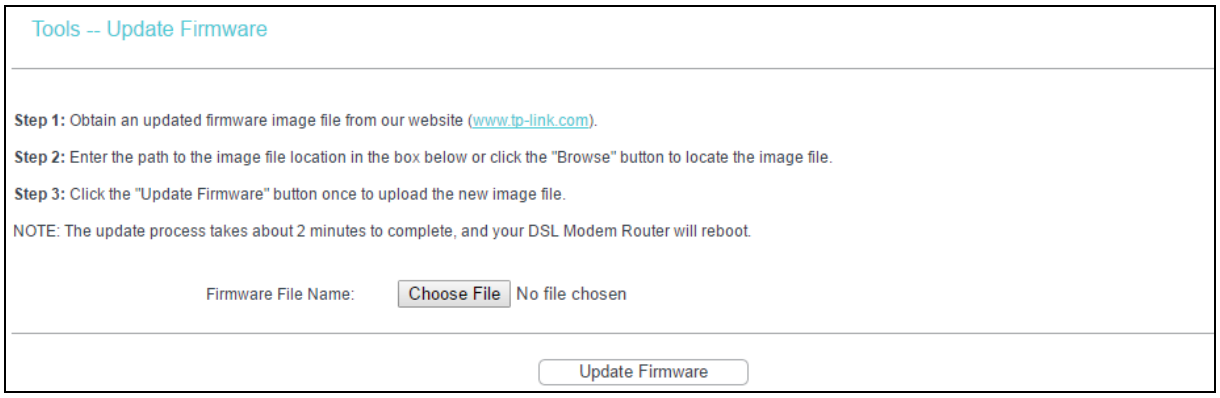


- Web：Select this box, and you can access your modem router via web.
- Telnet: Select this box, and you can access your modem router via command line.
- ICMP(ping): Select this box, and PC in public network can ping the WAN address of the modem router.

Click Save/Apply to make your change take effect.

4.10.7 Upgrade Firmware

Go to Management → Upgrade Firmware, you can see the screen below which allows you to upgrade the latest version software to keep the modem router up to date.



- Browse: Click the button to locate the latest software for the device.
- Update Firmware: After you have selected the latest software, click this button.

To update the modem router's software:

1. Download the latest software upgrade file from the official website (http://www.tp-link.com).
2. Click Browse to view the folders and select the image file or enter the exact path to the image file location in the text box.
3. Click Update Firmware.

☞ Note:

1) There is no need to upgrade the firmware unless the new firmware has a new feature you want to use. However, when experiencing problems caused by the modem router itself, you can try to upgrade the firmware.
2) Do NOT revert to a previous version of firmware.
3) Before upgrading the modem router's firmware, you should write down some of your customized settings to avoid losing important configuration settings of the modem router.
4) Do not turn off the modem router or press the RESET button while the software is being updated.
5) The modem router will reboot after the Upgrading is finished.

4.10.8 Reboot

Go to Management → Reboot, you can see the screen below which allows you to reboot the modem router.

☞ Note:

1) After you click Reboot, please wait for a while before reopening your web browser.
2) Do not turn off the modem router or press the RESET button while the modem router is rebooting.
3) If necessary, reconfigure your PC's IP address to match your new configuration.

4.11 Logout

Choose Logout, and you will back to the login screen as shown below.


300Mbps Wireless N USB ADSL2+ Modem Router
tp-link
Model No. TD-W8968
Username
Password
Login

Appendix A: Configuring the PC

We'll introduce how to install and configure the TCP/IP correctly on your computer. First make sure your Ethernet Adapter is working, refer to the adapter's manual if necessary.

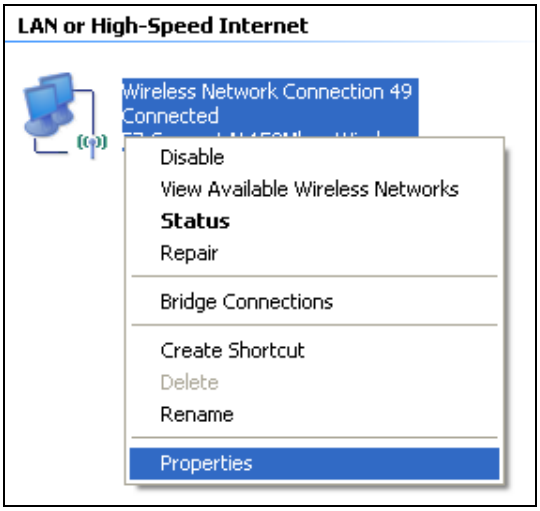
The default IP address of the modem router is 192.168.1.1. And the default Subnet Mask is 255.255.255.0. These values can be changed as you desire. Here we use all the default values for description and take Windows XP as example.

1. Configure TCP/IP component

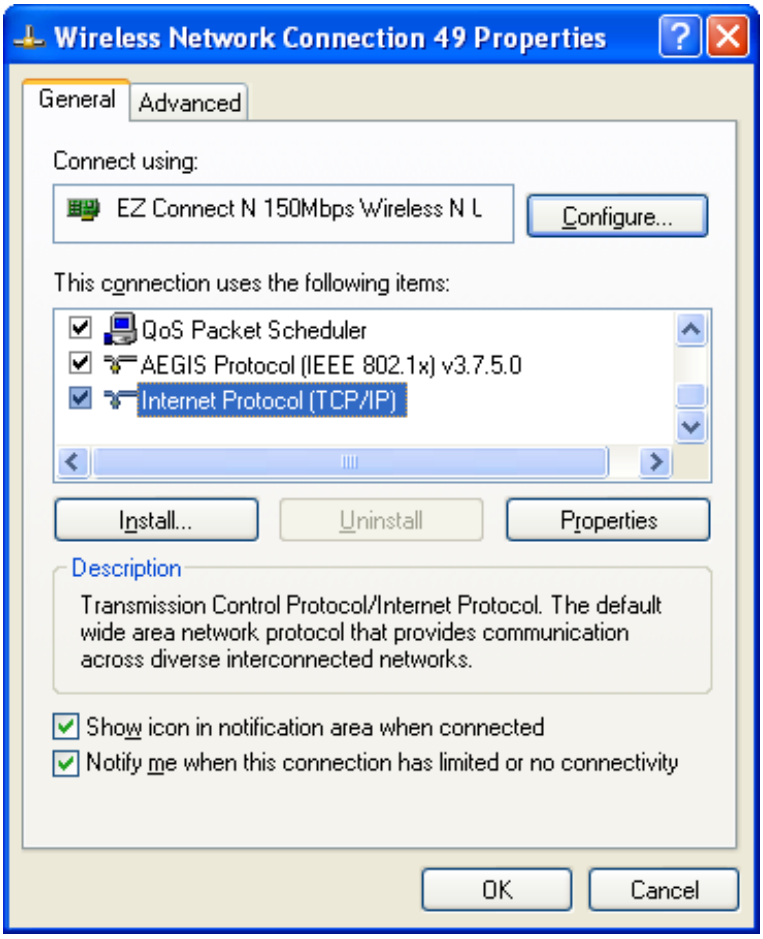
   1) On the Windows taskbar, click Start, and then click Control Panel.

   2) Click the Network and Internet Connections icon, and then click on the Network Connections tab in the appearing window.

   3) Right click the icon that showed below, then select Properties on the prompt page.



   4) In the prompt page that showed below, double click on the Internet Protocol (TCP/IP).

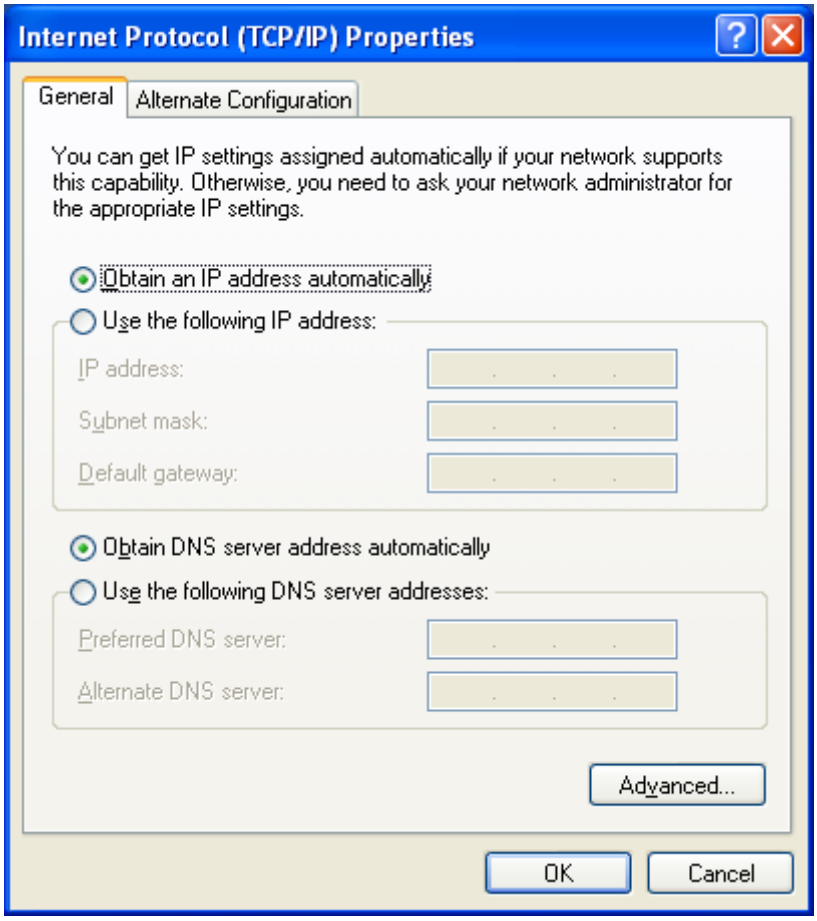


5) The following TCP/IP Properties window will display and the IP Address tab is open on this window by default.

Now you have two ways to configure the TCP/IP protocol below:

- Setting IP address automatically

Select Obtain an IP address automatically, and choose Obtain DNS server automatically, as shown in the Figure below:



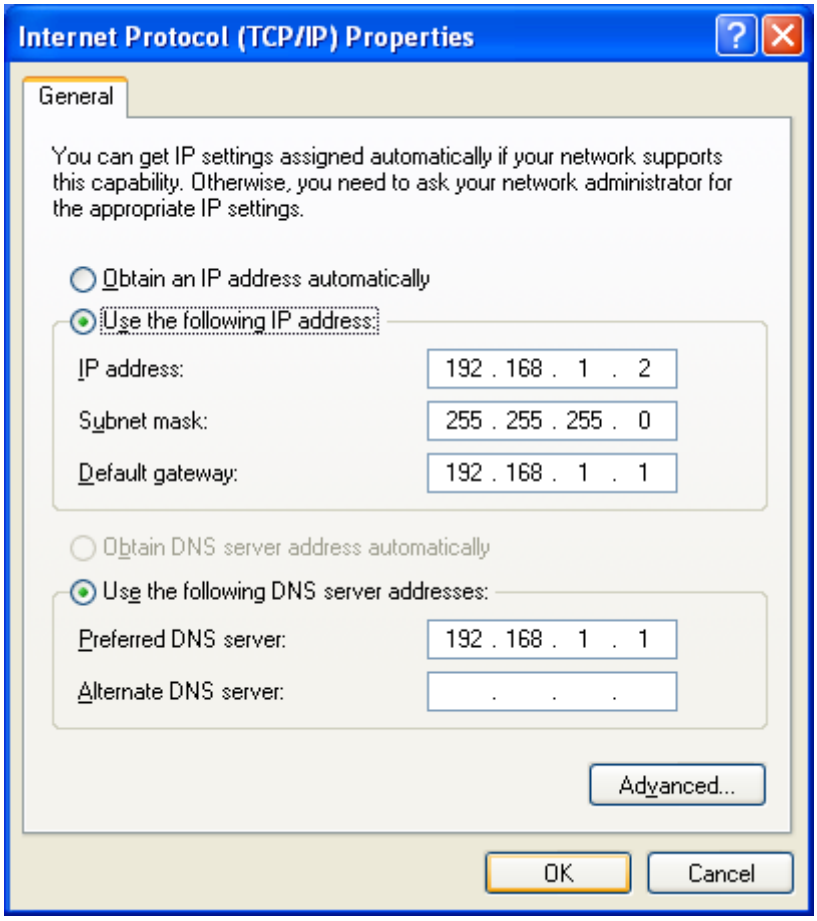
➢ Setting IP address manually

1) Select Use the following IP address radio button. And the following items available

2) If the modem router's LAN IP address is 192.168.1.1, specify the IP address as 192.168.1.x (x is from 2 to 254), and the Subnet mask as 255.255.255.0.

3) Type the modem router's LAN IP address (the default IP is 192.168.1.1) into the Default gateway field.

4) Select Use the following DNS server addresses. In the Preferred DNS Server field you can enter the same value as the Default gateway or type the local DNS server IP address.



Now: Click OK to keep your settings.

2. Verify the network connection

Now, you can run the Ping command in the command prompt to verify the network connection. Please click the Start menu on your desktop, select run tab, type cmd or command in the field and press Enter. Type ping 192.168.1.1 on the following screen, and then press Enter.

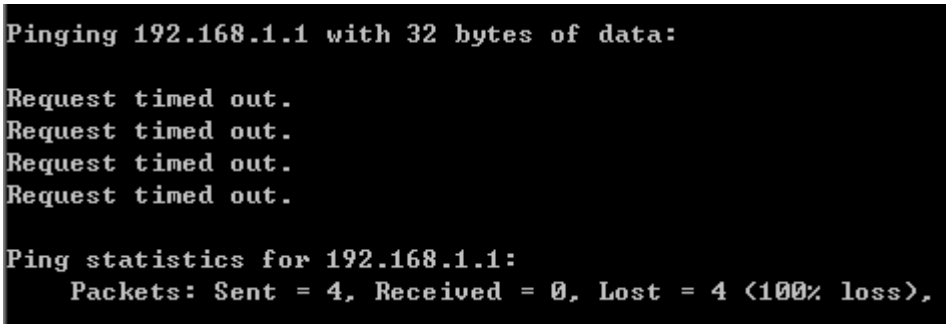
- If the result displayed is similar to the screen below, the connection between your PC and the router has been established.

```
Pinging 192.168.1.1 with 32 bytes of data:

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

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

- If the result displayed is similar to the screen shown below, it means that your PC has not connected to the router.



You can check it by following the steps below:

1) Is the connection between your PC and the router correct?

   The LEDs of LAN port which you link to the device and the LEDs on your PC's adapter should be lit.

2) Is the TCP/IP configuration for your PC correct?

   If the router's IP address is 192.168.1.1, your PC's IP address must be within the range of 192.168.1.2 ~ 192.168.1.254.

Appendix B: Troubleshooting

T1. What can I do if I don't know or forget my password?

1) For default wireless password: Please refer to the Wireless Password/PIN labeled on the bottom of the modem router.

2) For the web management page password: Reset the modem router first and then use the default username and password: admin/admin.

T2. How do I restore my modem router's configuration to its factory default settings?

With the modem router powered on, press and hold the RESET button on the rear panel for about 8 seconds before releasing it.

☞ Note:

Once the modem router is reset, the current configuration settings will be lost and you will need to re-configure the router.

T3. What can I do if I cannot access the web management page?

1) Configure your computer's IP Address.

For Mac OS X

- Click the Apple icon on the upper left corner of the screen.
- Go to System Preferences → Network.
- Select Airport on the left menu bar, and then click Advanced for wireless configuration; or select Ethernet for wired configuration.
- In the Con-figure IPv4 box under TCP/IP, select Using DHCP.
- Click Apply to save the settings.

For Windows 7

- Click Start → Control Panel → Network and Internet → View network status → Change adapter settings.
- Right-click Wireless Network Connection (or Local Area Connection), and then click Properties.
- Select Internet Protocol Version 4 (TCP/IPv4), and then click Properties.
- Select Obtain an IP address automatically and Obtain DNS server address automatically. Then click OK.

For Windows XP

- Click Start → Control Panel → Network and Internet Connections → Network Connections.
- Right-click Wireless Network Connection (or Local Area Connection), and then click Properties.
- Select Internet Protocol (TCP/IP), and then click Properties.

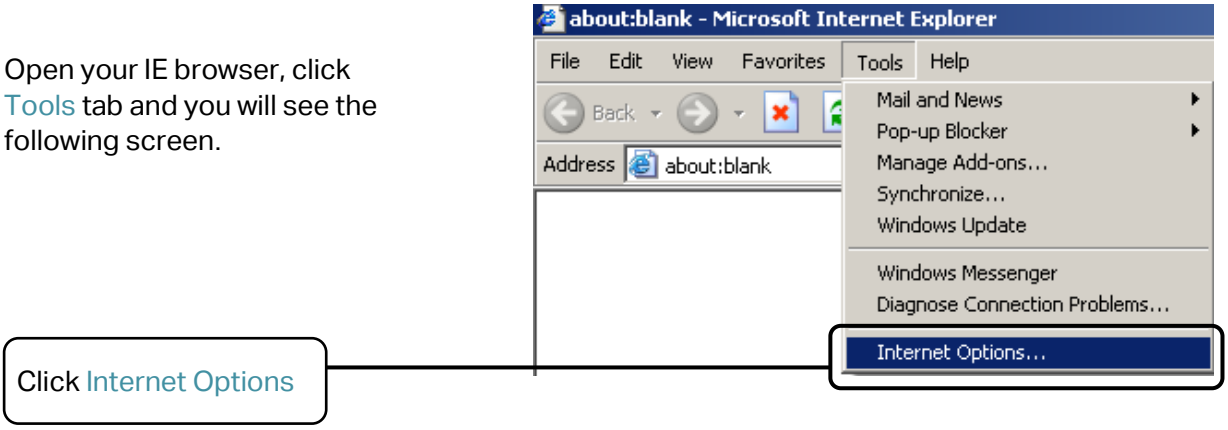
- Select Obtain an IP address automatically and Obtain DNS server address automatically. Then click OK.

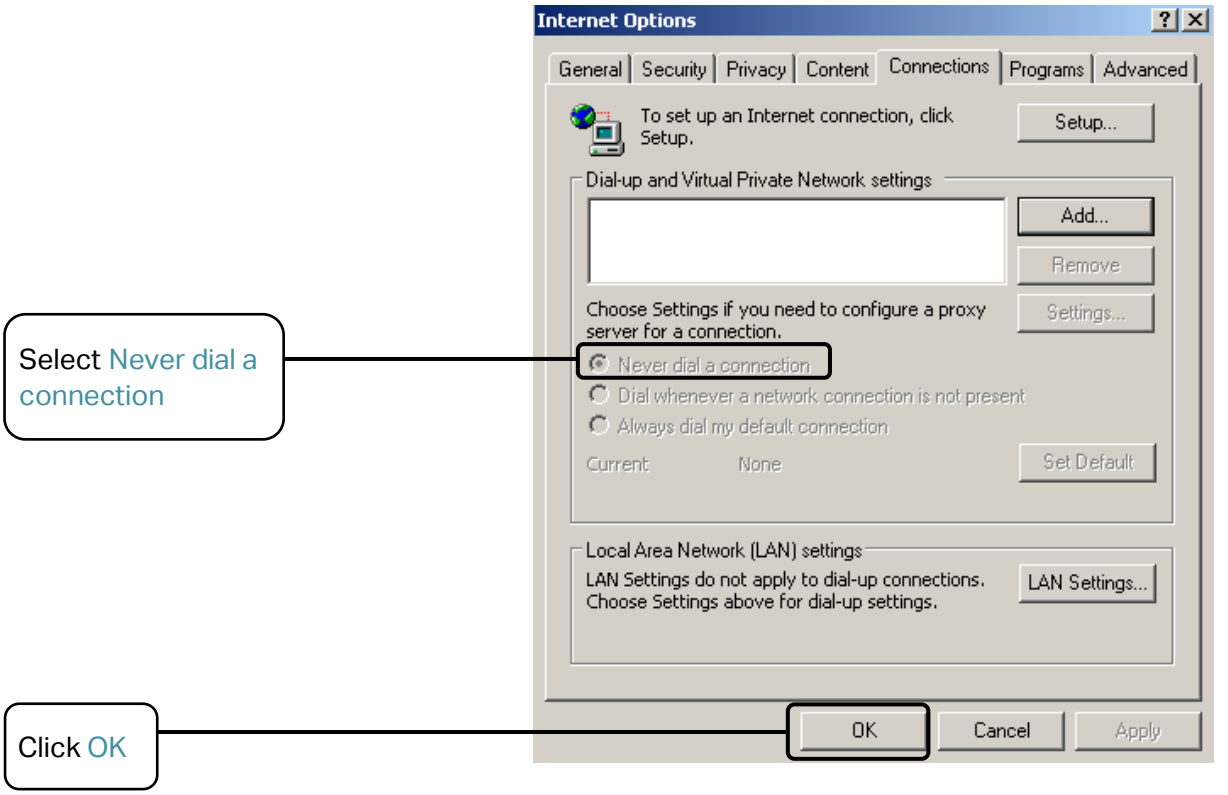
For Windows 8

- Move your mouse to the lower right corner and you will see Search icon in the Popups. Go to → Apps. Type Control Panel in the search box and press Enter, then you will go to Control Panel.
- Click View network status and tasks → Change adapter settings.
- Right-click Ethernet and then select Properties.
- Double-click Internet Protocol Version 4 (TCP/IPv4). Select Obtain an IP address automatically, choose Obtain DNS server address automatically and then click OK.

2) Configure your IE browser

Open your IE browser, click Tools tab and you will see the following screen.





Now, try to log in to the web management page again after the above settings have been configured. If you still cannot access the configuration page, please restore your modem router's factory default settings and reconfigure your modem router following the instructions in Chapter 3 Quick Start. Please feel free to contact our Technical Support if the problem still exists.

T4. What can I do if I cannot access the Internet?

1) Check to see if all the connectors are connected well, including the telephone line, Ethernet cables and power adapter.
2) Check to see if you can log on to the web management page of the modem router. If you can, try the following steps. If you cannot, please set your computer referring to T3 then try to see if you can access the Internet. If the problem persists, please go to the next step.
3) Consult your ISP and make sure all the VPI/VCI, Connection Type, account username and password are correct. If there are any mistakes, please correct the settings and try again.
4) If you still cannot access the Internet, please restore your modem router to its factory default settings and reconfigure your modem router by following the instructions in Chapter 3 Quick Start.
5) Please feel free to contact our Technical Support if the problem still exists.

T5. How can I configure the USB features?

Please refer to our Application Guides. They can be found on the web: http://www.tp-link.com/app/usb.

☞ Note:

For more details about Troubleshooting and Technical Support contact information, please refer to the support page at http://www.tp-link.com.

COPYRIGHT & TRADEMARKS

http://www.tp-link.com

FCC 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 or more of the following measures:

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

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1） This device may not cause harmful interference.

2） This device must accept any interference received, including interference that may cause undesired operation.

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

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

"To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

CE Mark Warning

CE1588

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.

RF Exposure Information

This device meets the EU requirements (1999/5/EC Article 3.1a) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

The device complies with RF specifications when the device used at 20 cm from your body.

Продукт сертифіковано згідно с правилами системи УкрСЕПРО на відповідність вимогам нормативних документів та вимогам, що передбачені чинними законодавчими актами України.

Safety Information

- When product has power button, the power button is one of the way to shut off the product; when there is no power button, the only way to completely shut off power is to disconnect the product or the power adapter from the power source.
- Don't disassemble the product, or make repairs yourself. You run the risk of electric shock and voiding the limited warranty. If you need service, please contact us.
- Avoid water and wet locations.
- Adapter shall be installed near the equipment and shall be easily accessible.
- The plug considered as disconnect device of adapter.
- Use only power supplies which are provided by manufacturer and in the original packing of this product. If you have any questions, please don't hesitate to contact us.

Explanation of the symbols on the product label

Symbol	Explanation
	DC voltage
	RECYCLING This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment. User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.