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User Guide

AC1200 Wireless Dual Band Gigabit VoIP GPON Router
Archer XR500v

1910020842 REV1.0.0

Contents

About This Guide 1

Chapter 1. Get to Know Your GPON Router 2

1. 1. Product Overview 3
1. 2. Physical Appearance 3
1. 2. 1. LED 3
1. 2. 2. Ports and Antennas 5
1. 2. 3. Buttons 6

Chapter 2. Connect the Hardware 7

2. 1. Position Your GPON Router 8
2. 2. Connect Your GPON Router 8

Chapter 3. Log In to Your GPON Router 10

Chapter 4. Set Up Internet Connections 12

4. 1. Use Quick Setup Wizard 13
4. 2. Manually Set Up an Internet Connection 13
4. 3. Test Internet Connectivity 14
4. 4. Set Up an IPv6 Connection 14

Chapter 5. VoIP 16

5. 1. Connecting the Telephone 17
5. 2. Entering Telephone Information 17
5. 3. Telephone Book 19
5. 3. 1. Telephone Book 19
5. 3. 2. Emergency Calls 20
5. 4. Telephony Devices Management 21
5. 5. Call Log 23
5. 6. Calling via which number 23
5. 7. Call Blocks 24
5. 7. 1. Do Not Disturb 24
5. 7. 2. Blocking Certain Calls 25
5. 7. 3. Prevent from Dialing 25
5. 8. Forwarding Calls 26
5. 9. Call Through 27

5. 10. Voice Mail 29

Chapter 6. USB Settings 31

6. 1. Access the USB Storage Device 32
6. 1. 1. Access the USB Device Locally 32
6. 1. 2. Access the USB Device Remotely 34
6. 1. 3. Customize the Access Settings 35
6. 2. Media Sharing 38
6. 3. 3G/4G Settings 39
6. 3. 1. As a Backup Solution for Internet Access 39

Chapter 7. Parental Controls 41

Chapter 8. QoS 45

8. 1. Prioritize Internet Traffic with QoS 46
8. 1. 1. Basic Settings 46
8. 1. 2. Queue Settings 46
8. 2. Rule List 47
8. 2. 1. Rule Settings 47
8. 2. 2. Filter Settings 48

Chapter 9. Network Security 49

9. 1. Firewall & DoS Protection 50
9. 2. Service Filtering 51
9. 3. Access Control 52
9. 4. IP & MAC Binding 54

Chapter 10.NAT Forwarding 56

10. 1. Translate Address and Port by ALG 57
10. 2. Share Local Resources over the Internet by Virtual Server 58
10. 3. Open Ports Dynamically by Port Triggering 59
10. 4. Make Applications Free from Port Restriction by DMZ 60
10. 5. Make Xbox Online Games Run Smoothly by UPnP 61

Chapter 11.Specify Your Network Settings 63

11. 1. LAN Settings 64
11. 1. 1. Change the LAN IP Address 64
11. 1. 2. Use the Router as a DHCP Server 64
11. 1. 3. Reserve LAN IP Addresses 65

11. 2. IPv6 LAN Settings 66
11. 2. 1. Configure the RADVD Address Type 66
11. 2. 2. Configure the DHCPv6 Server Address Type 67
11. 3. Wireless Settings 68
11. 3. 1. Specify Basic Wireless Settings 68
11. 3. 2. Use WPS for Wireless Connection 70
11. 3. 3. Schedule Your Wireless Function 72
11. 3. 4. View Wireless Information 73
11. 3. 5. Advanced Wireless Settings 73
11. 4. Set Up a Dynamic DNS Service Account 74
11. 5. Create Static Routes 75
11. 6. Set Up the IPv6 Tunnel 78
11. 6. 1. Use the Public IPv6 Tunnel Service-6to4 78
11. 6. 2. Specify the 6rd Tunnel with Parameters Provided by Your ISP 79

Chapter 12.Manage your GPON Router 80

12. 1. Set System Time 81
12. 2. Update the Firmware 82
12. 2. 1. Local Upgrade 82
12. 3. Back up and Restore Configuration Settings 82
12. 4. Change the Administrator Account 83
12. 5. Local Management 84
12. 6. Remote Management 85
12. 7. System Log 86
12. 8. Monitor the Internet Traffic Statistics 87
12. 9. CWMP Settings 88

Appendix: Troubleshooting 95

About This Guide

This guide is a complement to Quick Installation Guide. The Quick Installation Guide provides instructions for quick internet setup, while this guide contains details of each function and demonstrates how to configure them in typical scenarios.

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 images, parameters and descriptions documents in this guide are used for demonstration only.

Conventions

In this guide, the following conventions are used:

Convention	Description
Underline	Hyperlinks are in teal and underlined. You can click to redirect to a website or a specific section.
Teal	Key information appears in teal, including management page text such as menus, items, buttons and so on.
>	The menu structures to show the path to load the corresponding page. For example, Advanced > Wireless > MAC Filtering means the MAC Filtering function page is under the Wireless menu that is located in the Advanced tab.
Note:	Ignoring this type of note might result in a malfunction or damage to the device.
Tips:	Indicates important information that helps you make better use of your device.
Symbols on the web page	• click to edit the corresponding entry. • click to delete the corresponding entry. • click to enable or disable the corresponding entry. • click to view more information about items on the page.

More Info

- The latest firmware and management app are available from the Download Center at http://www.tp-link.com/support.
- The Quick Installation Guide (QIG) can be found where you find this guide or inside the product packaging.
- 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://forum.tp-link.com.
- Our Technical Support contact information can be found at the Contact Technical Support page at http://www.tp-link.com/support.

Chapter 1

Get to Know Your GPON Router

This chapter introduces the router by detailing its main features and appearance.

It contains the following sections:

- Product Overview
- Physical Appearance

1. 1. Product Overview

TP-Link's GPON router is a combined wired/wireless network connection device with integrated high speed GPON ONT, NAT router, 4-port switch, and wireless N access point, reducing hassle of configuration and saving space.

With extremely high downstream and upstream access speed, the router gives you unparalleled surfing experience.

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

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

1. 2. Physical Appearance

1. 2. 1. LED

The router's LEDs are located on the front panel. You can check the router's working status by following the LED Explanation table.

LED Explanation

LED	Status	Indication
Power	On	Power is on.
	Off	Power is off.
GPON	On	The router is registered with the ISP.
	Flashing	The router is trying to register with the ISP.
	Off	The router is not yet registered with the ISP.
LOS	On	The router is unable to transmit optical signal.
	Flashing	No optical signal is received or the received signal is too weak.
	Off	The router is receiving optical signal properly.
Internet	On	Internet connection is available.
	Flashing	The router is transmitting or receiving data .
	Off	No Internet connection.
2.4GHz	On	The 2.4GHz wireless radio band is enabled.
	Flashing	The router is transmitting or receiving data via 2.4GHz band.
	Off	The 2.4GHz wireless radio band is disabled.
5GHz	On	The 5GHz wireless radio band is enabled.
	Flashing	The router is transmitting or receiving data via 5GHz band.
	Off	The 5GHz wireless radio band is disabled.
WPS	On/Off	Turns on when a WPS synchronization is established and automatically turns off about five minutes later.
	Flashing	A wireless device is trying to connect to the network via WPS. This process may take up to 2 minutes.
LAN	On	A device is connected to the LAN port but no data is being transmitted.
	Flashing	The LAN port is sending or receiving data.
	Off	No device is connected to the LAN port.
PHONE	On	The phone is off-hook.
	Flashing	The phone is ringing.
	Off	The phone is on-hook.

LED Explanation

LED	Status	Indication
USB	On	The USB device is ready to use.
	Flashing	A new USB device is being identified, or data is being transferred.
	Off	No USB device is plugged into the USB port.

Note:

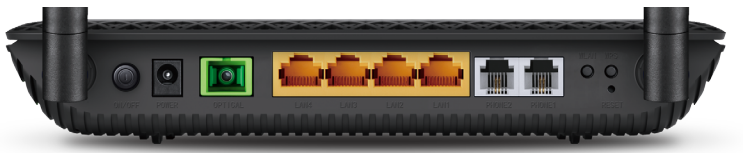
If the GPON LED is off or the LOS LED is on or flashing, check your Internet connection first, Refer to Connect Your GPON Router for more information about how to make Internet connection correctly. If you have already made a right connection, contact your ISP to make sure your Internet service is avaliable now.

1. 2. 2. Ports and Antennas

The router's back and side panel show the connection ports. Refer to the following for detailed instructions.

Item	Description
GPON	For connecting the router to the internet. Connect the port to the splitter via a fiber cable. For details, please refer to Connect Your GPON Router
USB	For connecting to a USB storage device.
LAN1, LAN2, LAN3, LAN4	For connecting the router to your PC or other Ethernet network devices.
POWER	For connecting the router to a power socket via the provided power adapter.
PHONE1/PHONE2	For connecting the phones to the router. Connect your phones to the RJ11 ports on the back panel. Note that you can only connect to two ports at most.

1. 2. 3. Buttons



The router's back panel shows the buttons. Refer to the following for detailed instructions.

Item	Description
ON/OFF	The switch for the power. Press it to power on or off the router.
RESET	Press and hold down for 5 seconds to reset the router into factory default settings.
WPS	The switch for the WPS function.
Wi-Fi	Press to turn both 2.4GHz and 5GHz Wi-Fi on or off.

Chapter 2

Connect the Hardware

This chapter contains the following sections:

- Position Your GPON Router
- Connect Your GPON Router

2. 1. Position Your GPON Router

With the router, you can access your network from anywhere within the wireless network coverage. However, the wireless signal strength and coverage varies depending on the environment your router is in. Obstacles may limit the range of the wireless signal, for example, concrete structures, thick walls.

For best Wi-Fi performance, and to keep your network secure, please:

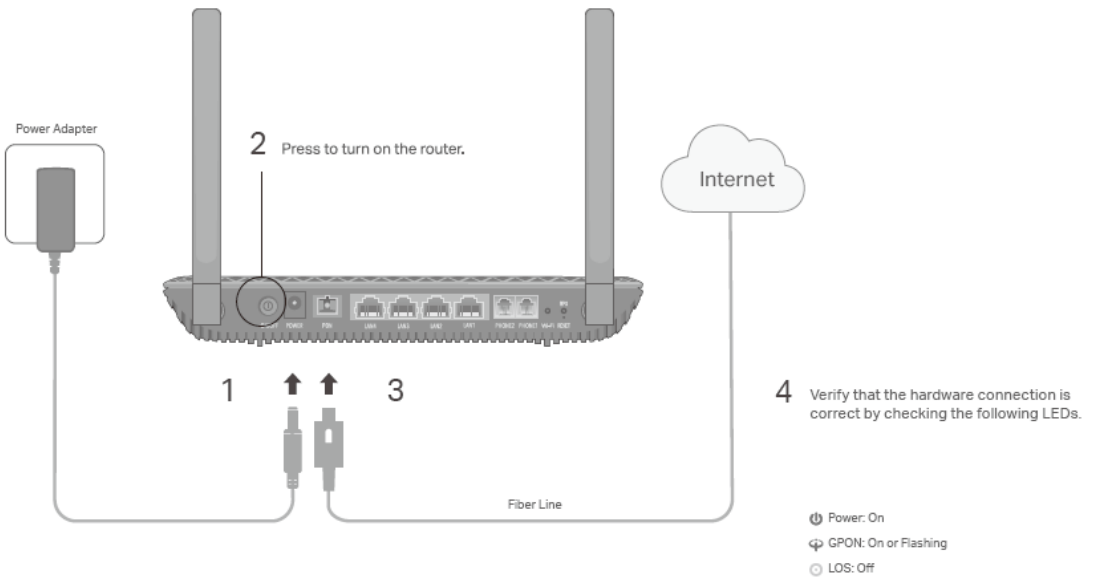
- Do not locate the router in a place where it will be exposed to moisture or excessive heat.
- Keep the product away from strong electromagnetic radiation and devices that emit electromagnetic waves.
- Place the router in a location where it can be connected to the various devices as well as to a power source.
- Make sure the cables and power cord are safely placed out of the way so they do not create a tripping hazard.

Tips: The router can be placed on a shelf or desktop.

2. 2. Connect Your GPON Router

Follow the steps below to connect your router.

1. onnect the power adapter and the fiber line. The electrical outlet shall be installed near the device and shall be easily accessible.



2. Connect your computer to the router.

Method 1: Wired

Connect your computer's Ethernet port to the LAN port on the router via the Ethernet cable.

Method 2: Wirelessly

Use the default SSID (Wireless Network Name) and Wireless Password printed on the product label of the router to connect wirelessly.

Method 3: Use 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:

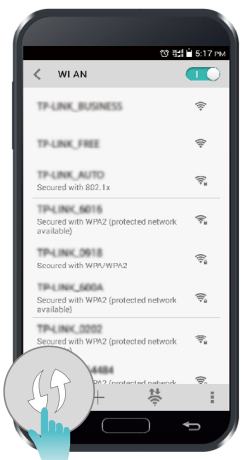
The WPS function cannot be configured if the wireless function of the router is disabled. Also, the WPS function will be disabled if your wireless encryption is WEP. Please make sure the wireless function is enabled and is configured with the appropriate encryption before configuring the WPS.

1) Tap the WPS icon on the device's screen.

2) Immediately press the WPS button on your router.

3) The WPS LED flashes for about two minutes during the WPS process.

4) When the WPS LED stabilizes and remains on, the client device has successfully connected to the router.



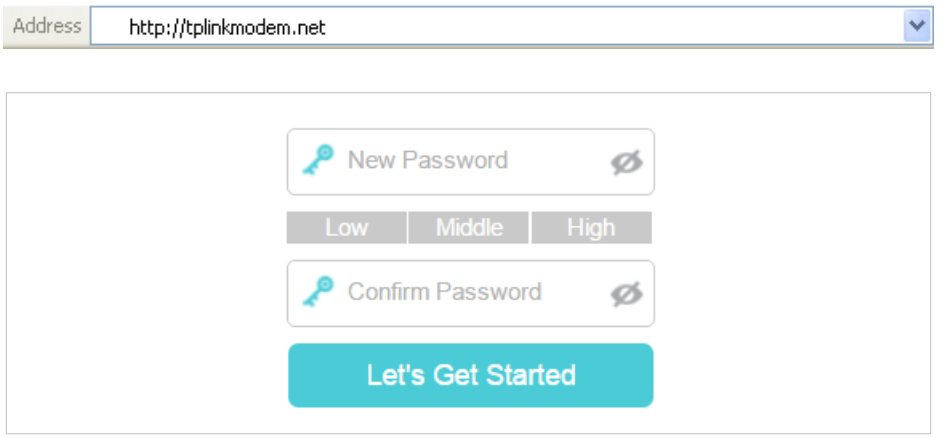
Chapter 3

Log In to Your GPON Router

With the web management page, it is easy to configure and manage the router. The web management page can be used on any Windows, Macintosh or UNIX OS with a Web browser, such as Microsoft Internet Explorer, Mozilla Firefox or Apple Safari.

Follow the steps below to log in to your router.

1. If the TCP/IP Protocol on your computer is set to the static (fixed) IP address, you need to change its settings to obtain an IP address automatically. Refer to Appendix: Troubleshooting to configure your computer.
2. Launch a web browser and go to http://tplinkmodem.net or http://192.168.1.1. Create a strong password and click Let's Get Started to log in.



Chapter 4

Set Up Internet Connections

This chapter introduces how to connect your router to the internet. The router is equipped with a web-based Quick Setup wizard. It has many ISP information built in, automates many of the steps and verifies that those steps have been successfully completed. Furthermore, you can also set up an IPv6 connection if your ISP provides IPv6 service.

This chapter includes the following sections:

- Use Quick Setup Wizard
- Manually Set Up an Internet Connection
- Test Internet Connectivity
- Set Up an IPv6 Connection

4. 1. Use Quick Setup Wizard

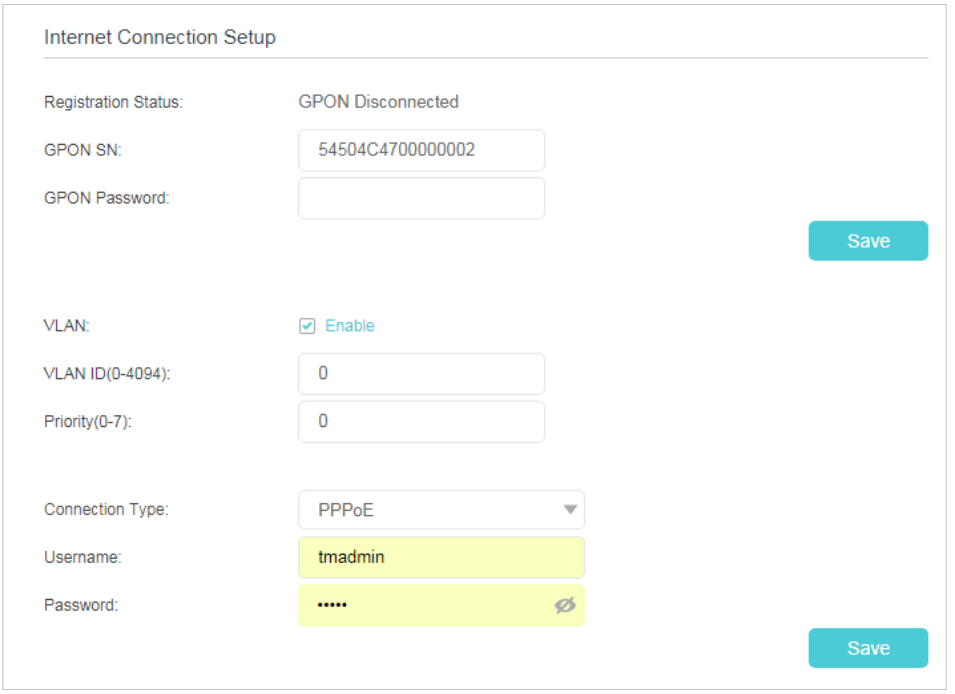
1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Select your Region and Time Zone, then click Next.
3. Follow the step-by-step instructions to connect your router to the internet.

Note:

1. If you have changed the preset wireless network name (SSID) and wireless password during the Quick Setup process, all your wireless devices must use the new SSID and password to connect to the router.

4. 2. Manually Set Up an Internet Connection

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Basic > Internet page. Enter the GPON SN and GPON password provided by your ISP. Click Save.



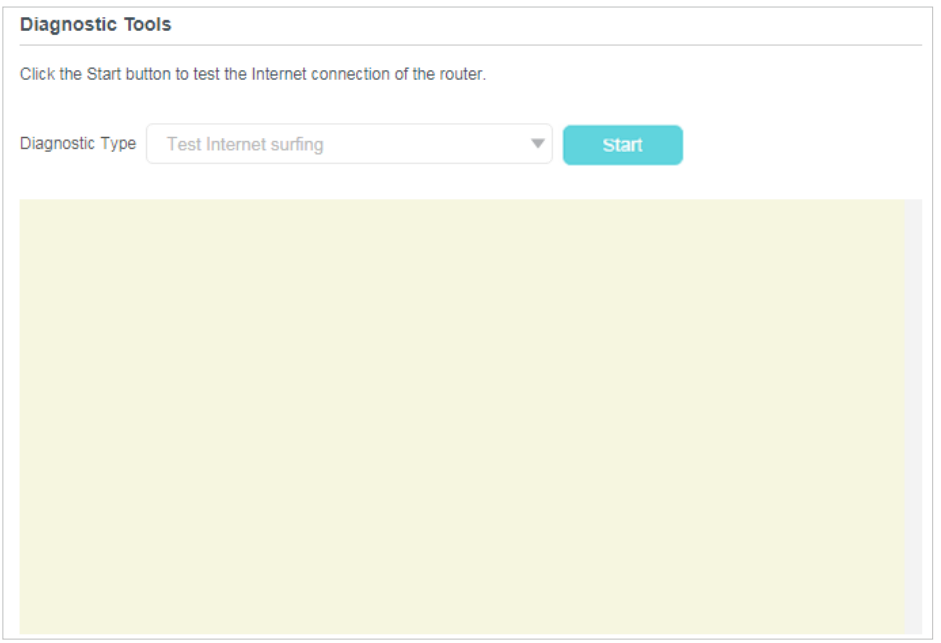
3. Enter the rest parameters provided by your ISP.
4. Click Save to make the settings effective, and you can refer to Test Internet Connectivity to test the Internet connection.

Tips: You can view and edit all internet connection settings on the Advanced > Network > Internet page.

4. 3. Test Internet Connectivity

After manually setting up the internet connection, you need to test the internet connectivity. The router provides a diagnostic tool to help you locate the malfunction.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > Diagnostics page.



3. Click Start to test the internet connectivity and you will see the test result in the gray box.

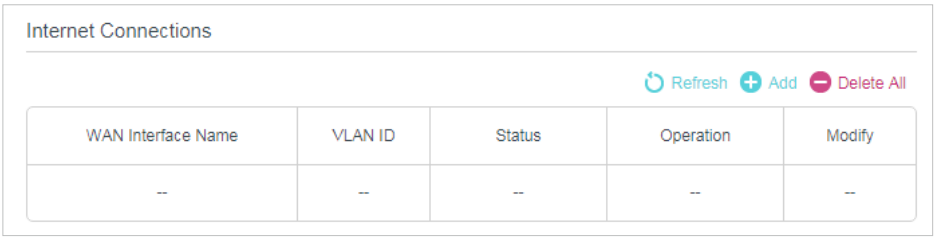
4. 4. Set Up an IPv6 Connection

If your ISP has provided a fiber line that supports IPv6 connection as well as some detailed IPv6 parameters, you can manually set up an IPv6 connection.

If your ISP provides an IPv4-only connection or IPv6 tunnel service, permit IPv6 connection by referring to Set Up the IPv6 Tunnel.

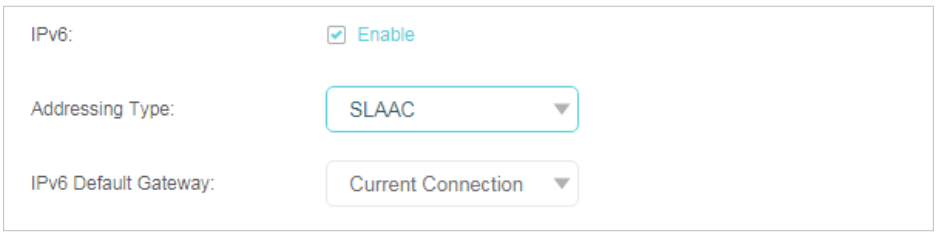
Follow the steps below to set up an IPv6 connection:

1. Make sure you have set up an IPv4 connection either manually or by using the Quick Setup wizard before setting up an IPv6 connection.
2. Visit http://tplinkmodem.net, and log in with the password you set for the router.
3. Go to Advanced > Network > Internet page.



4. Select your WAN Interface Name (Status should be Connected) and click the (Edit) icon.

5. Scroll down the page, enable IPv6, and configure the IPv6 parameters.



- Addressing Type: Consult your ISP for the addressing type (DHCPv6 or SLAAC). SLAAC is the most commonly used addressing type.
- IPv6 Gateway: Keep the default setting as Current Connection.

Note: If your ISP has provided the IPv6 address, click Advanced to reveal more settings. Check to use IPv6 specified by ISP and enter the parameters provided by your ISP.

6. Click Save to make the settings effective. Now IPv6 service is available for your network.

Chapter 5

VoIP

This chapter guides you on how to make telephone calls via Internet.

- Connecting the Telephone
- Entering Telephone Information
- Telephone Book
- Telephony Devices Management
- Call Log
- Calling via which number
- Call Blocks
- Forwarding Calls
- Call Through
- Voice Mail

5. 1. Connecting the Telephone

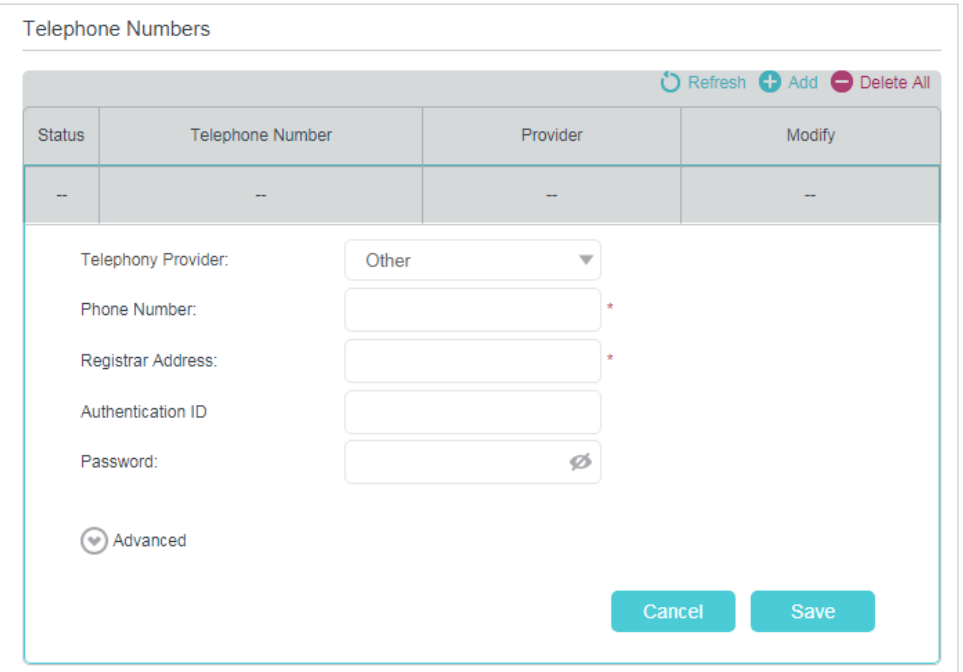
Connect your telephone to the RJ11 ports on the back panel. Please note that you can only connect to two ports (one to a Phone 1 and the other to a Phone 2) at most.

5. 2. Entering Telephone Information

Before using telephony services, you should first enter your telephone information provided by your telephony service provider.

Follow the steps below to enter information:

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Telephone Numbers to open the configuration page. Click Add and you will see the following screen.



3. Enter the necessary information as required, and click Save to make the settings effective.

Phone Number: The number you use to dial and answer.

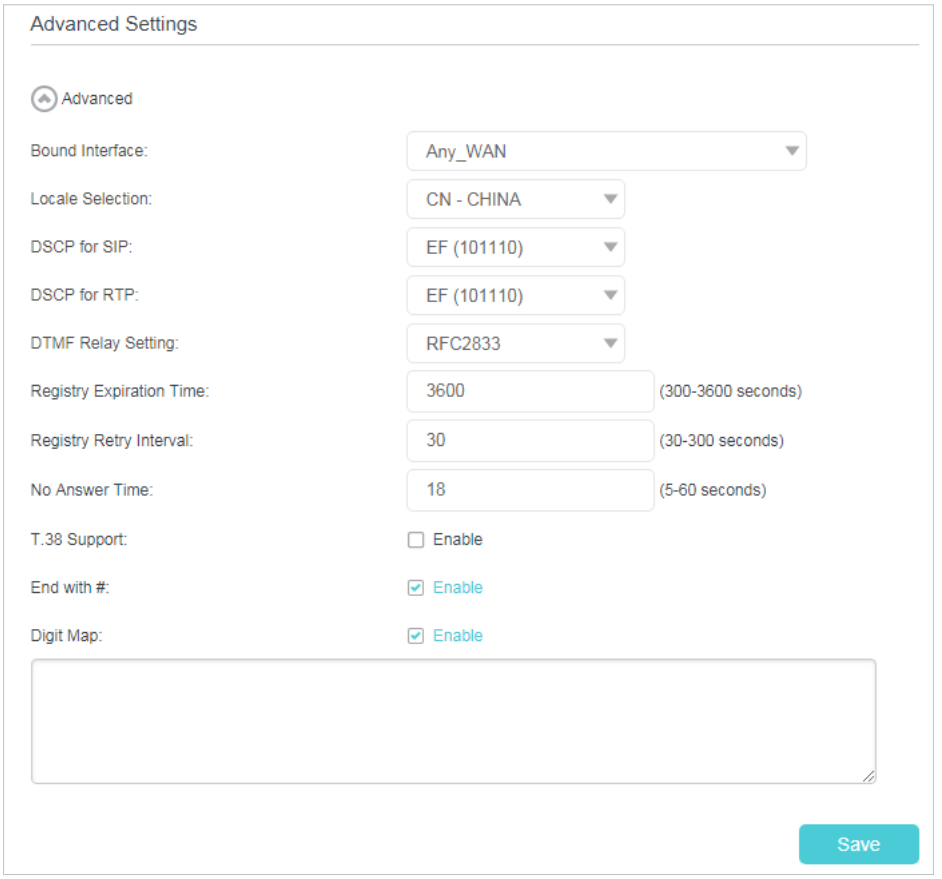
Registrar Address: Usually a domain name, if not, an IP address.

Authentication ID and Password: Not necessary information, but if you have, fill them in.

Advanced: Click to have more configuration.

To have more configuration on telephony settings

Click Advanced under Advanced Settings to configure more telephony settings.



Bound Interface: Bound Interface decides where to send/receive the VoIP traffic. An easy way to select the interface is to check the location of the SIP (Session Initiation Protocol) server. If it locates somewhere on the Internet then select Any_WAN. If it is on the local network, select LAN.

Locale Selection: Select a country where you are located. The router is embedded with some default parameters according to different countries such as ring tones. The default country is China.

DSCP for SIP/RTP: DSCP (Differentiated Services Code Point) is the first 6 bits in the ToS byte. DSCP marking allows users to assign specific application traffic to be executed in priority by the next Router based on the DSCP value. Select DSCP for the SIP (Session Initiation Protocol) and RTP (Real-time Transport Protocol) respectively. If you are unsure, please always keep the default value.

DTMF Relay Setting: DTMF is Dual Tone Multi Frequency. Options available are SIP-Info, RFC2833, and In-band. If you are unsure which one to choose, please always keep the default value.

- SIP INFO: If it is selected, the router will capture the DTMF tone and transfer it into SIP form. Then it will be sent to the remote end with SIP message.
- RFC2833: If it is selected, the router will capture the keypad number you pressed and transfer it into digital form then send to the other side; the receiver will generate the

tone according to the digital form it receives. This function is very useful when the network traffic congestion occurs and it still can remain the accuracy of DTMF tone.

- In-band: If it is selected, the router will send the DTMF tone as audio directly when you press the keypad on the phone.

Registry Expiration Time: Expiration time for the registration message sending.

Registration Retry Interval: Set the time duration for your SIP Registrar server to keep your registration record. Before the time expires, the Router will send another register request to SIP Registrar again. If you are unsure of it, please always keep the default value.

"No answer" Time: Set a time period, after which the caller is told that the call is not answered and he or she can leave a message if the voice mail function is enabled.

T 38 support: Select the checkbox to enable this function. T 38 specifies a protocol for transmitting a fax across IP network in real time. It allows the transfer of fax documents in real-time between two standard Group 3 facsimile terminals over the Internet or other networks using IP protocols. It will only function when both sites support this feature and are enabled.

End With '#': Choose whether to use "#" as the end signal of your dialing or not.

Digit Map: If enabled, the number will directly dial out when it matches the Digit Map.

When the Status column change to , your telephone information is successfully registered. At this time, you can pick up your phone, dial the number, and call via Internet!

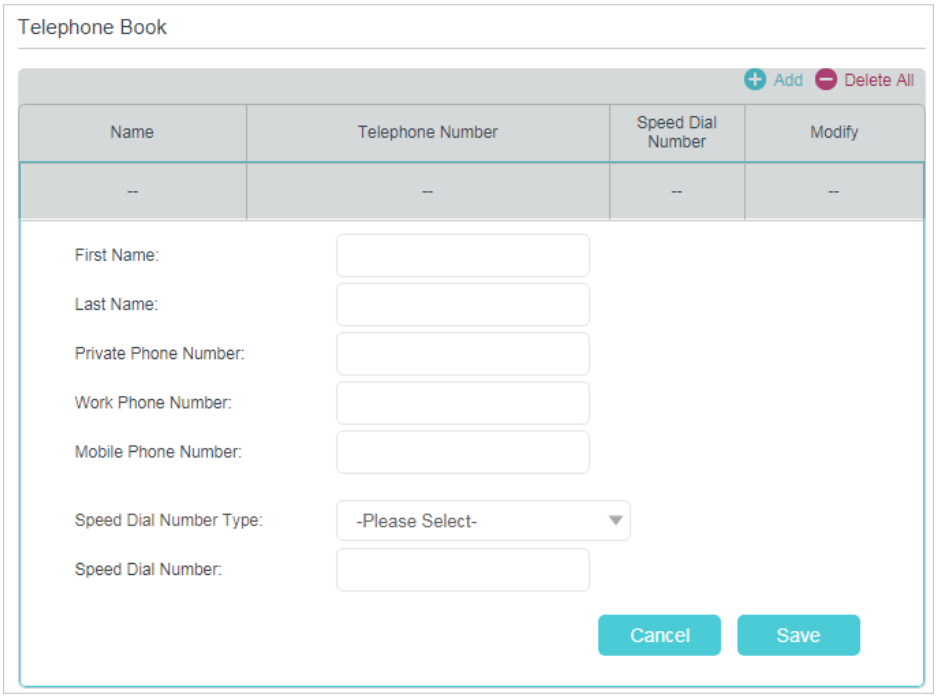
5. 3. Telephone Book

You can store all contacts on your router, have a telephone book, set speed dial number for some contacts and enable emergency calls.

5. 3. 1. Telephone Book

Follow the steps below to have a telephone book on the router.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Telephone Book. Click Add to enter a new contact's information.



3. You can set speed dial number for certain numbers. Speed dial function allows you to reach the desired party by dialing the reduced number of keys rather than a long phone number.
4. Click Save to save the settings.

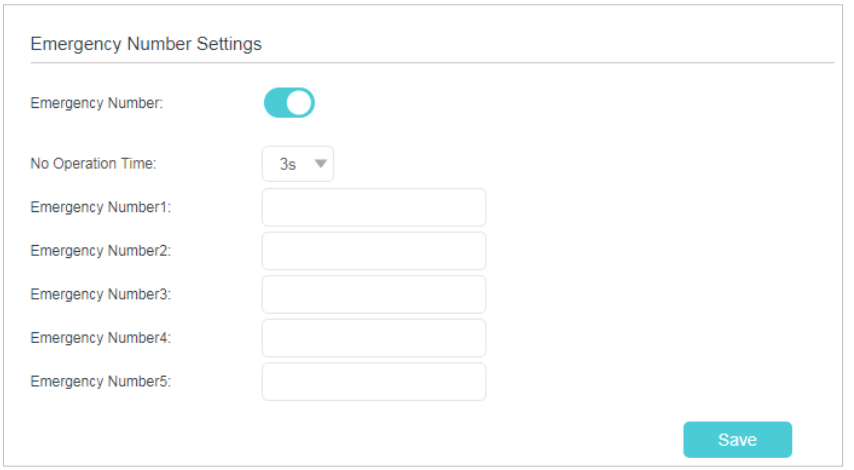
5. 3. 2. Emergency Calls

I want to:

Make my telephone automatically call a specific contact when the handset is picked up but no operation is done within a period of time. In this way the old, the kids, the patient or the pregnant in house are able to send signals for help when emergencies occur.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Telephone Book.



3. Enable Emergency Number.
4. No Operation Time: Set how long should the telephone wait before the first number is automatically dialed).
5. Emergency Number: Set the number to be automatically reached. If more than one number is set, the router will automatically call the next one if the previous is not answered.
6. Click Save to make the settings effective.

Done!

From now on, if you pick up your phone but do not dial within the no operation time, your phone will automatically call the emergency number!

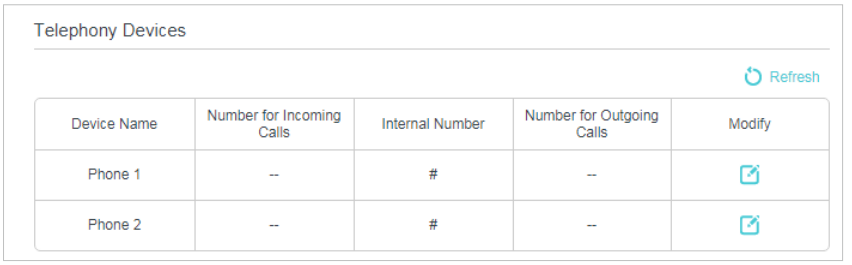
5. 4. Telephony Devices Management

I want to:

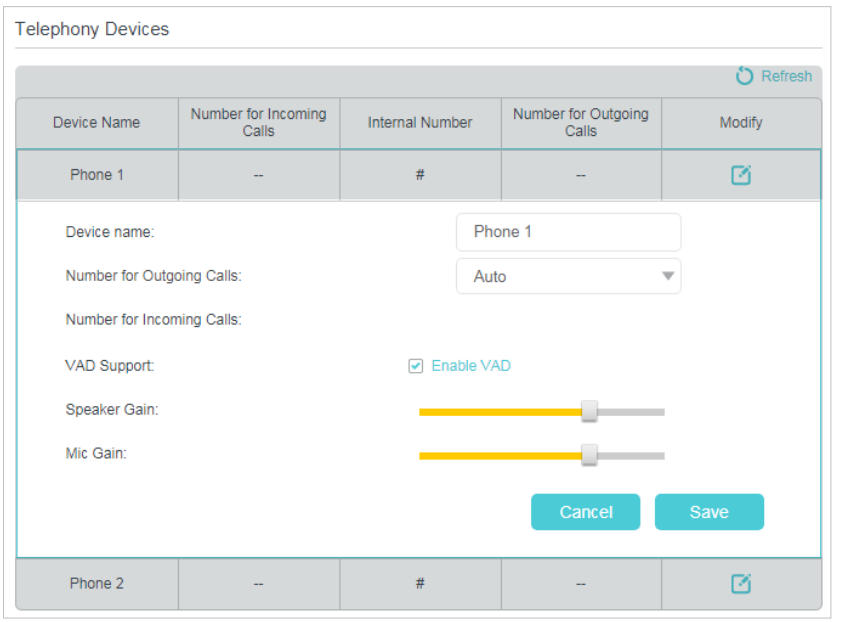
Bind different telephony devices with different incoming and outgoing call numbers, because I have more than one telephone number and telephony device and I don't want all telephones ring at the same time when a number is called.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Telephony Devices.



3. Click to manage your telephony devices.



4. Device Name: Name the telephone device here.
5. Number for Outgoing Calls: Assign an outgoing number for this phone.
6. Number for Incoming Calls: Tick the incoming number for this phone.
7. VAD Support: VAD (Voice Activation Detection) prevents transmitting the silence packets to consume the bandwidth. It is also known as Silence Suppression, a software application that ensures bandwidth when voice activity is activated.
8. Adjust the Speaker Gain slider to control the speaker sound.
9. Adjust the Mic Gain slider to control the speaker sound of microphone.
10. Click Save to make the settings effective.

Done!

Now your telephony devices are bound to different incoming call numbers and outgoing call numbers.

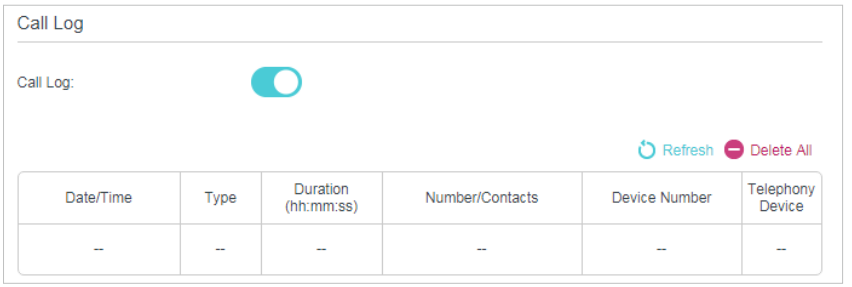
Tips:
Internal number showed on the table are used to make calls between telephony devices connected to the same router. It is preset and cannot be changed.

5. 5. Call Log

I want to: Have a call list recording detailed information of incoming calls and outgoing calls on your router.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Call Log.



3. Enable Call Log.

Done! From now on, all calls in and out are recorded here. If you've already had a telephone book, name of the contact would be shown on the call list.

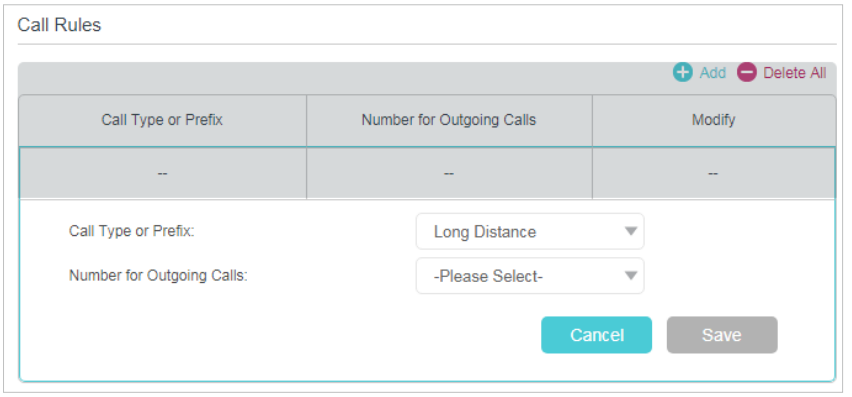
5. 6. Calling via which number

I want to: Use different outgoing numbers to call different types of numbers.

For example, one of my phone number has a relatively low charge in making long distance calls. I want all long distance calls to be dialed via this number.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Call Rules. Click Add to set call rules.



3. Choose Long Distance in Call Type or Prefix. Prefixes and call types can vary according to your own circumstances.
4. In Number for Outgoing Calls, choose the number that has low charge in making long distance calls.
5. Click Save to make the settings effective.

Done!

From now on, whenever you are dialing a long distance call, the call is made via the number you chose in step 5.

5. 7. Call Blocks

When you do not want calls to be received or dialed, use call block functions. This part consists of three functions: Do Not Disturb, Block Certain Calls and Prevent from Dialing.

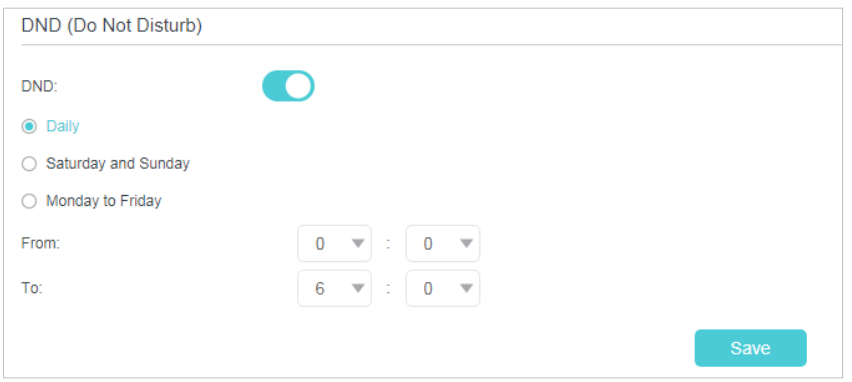
5. 7. 1. Do Not Disturb

I want to:

Have no telephone ring at a certain period of time.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > DND & Call Blocking.



3. Enable DND.
4. Set the day(s) when DND is enabled.
5. Click Save to make the settings effective.

Done!

Now, within this period of time, no telephone will ring, but all incoming calls would be recorded in call log. Enjoy your peaceful time and when you are back, check the call log to see what was missed.

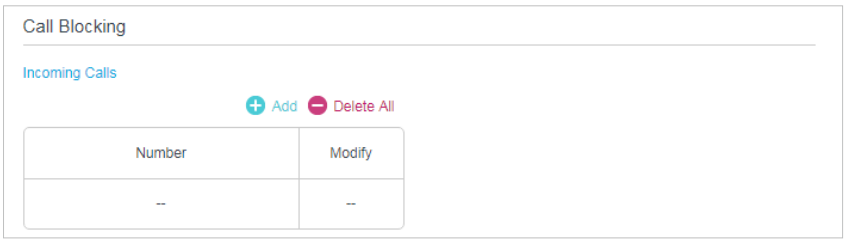
5. 7. 2. Blocking Certain Calls

I want to:

Block certain calls, for example, the anonymous calls, or calls from the annoying salesmen.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > DND & Call Blocking.



3. Click Add under Incoming Calls.
4. Choose to block a specific number or anonymous calls.
5. Click Save to make the settings effective.

Done!

Now your router will automatically callout matching to your dial plan.

5. 7. 3. Prevent from Dialing

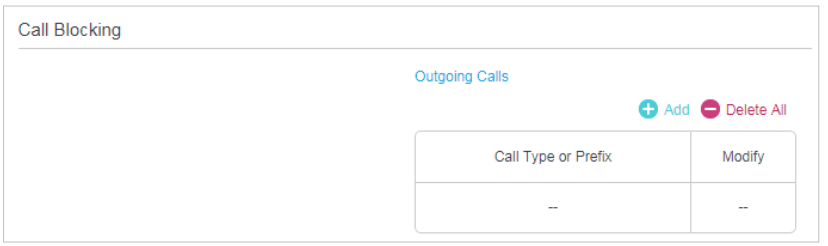
I want to:

Prevent my router from dialing a certain type of numbers.

For example, it costs a lot to call a mobile phone via my telephone number, so I don't want anyone to call a mobile phone using my number.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > DND & Call Blocking.



3. Click Add under Outgoing Calls.
4. Choose to prevent mobile phone from being dialed. Number type may vary according to your circumstances.
5. Click Save to make the settings effective.

Done!

Now your router will prevent all mobile phone from being dialed.

In addition:

Number type may vary according to your circumstances. You can also set prefix by choosing Calls with Specific Number Prefix. When a prefix is set, all numbers with this prefix is prevented from being called.

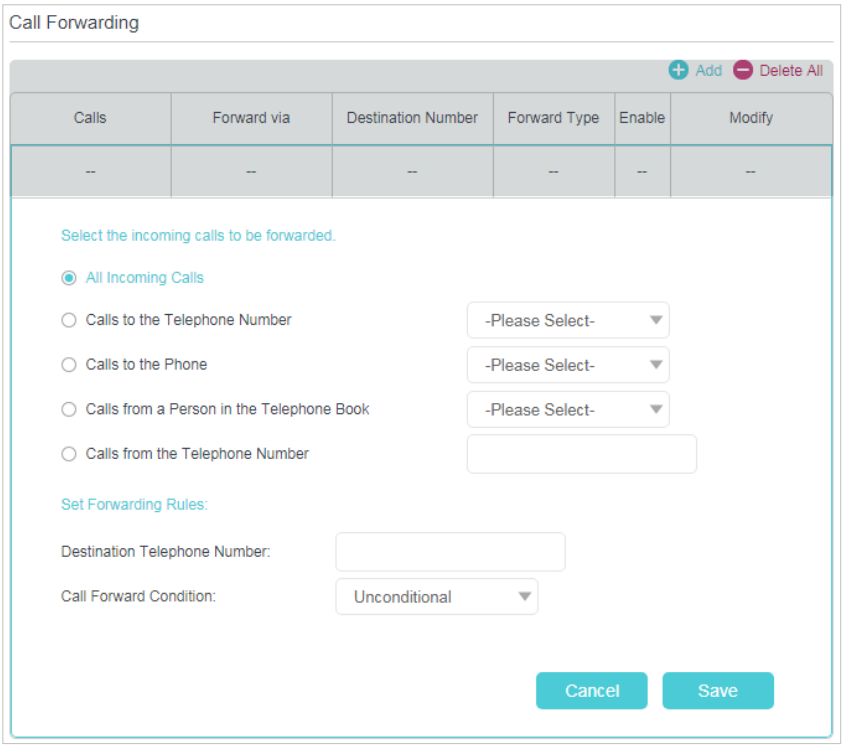
5. 8. Forwarding Calls

I want to:

Forward some incoming calls to a designated telephone number. For example, when no one answers the incoming call, it would be forwarded to my mobile phone so that I won't miss it.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Call Forwarding. Click Add to set how calls should be forwarded.



3. Select the incoming calls to be forwarded: Choose to forward which call or call type.
4. Destination Telephone Number: Set the destination where calls should be forwarded.
5. Call Forward Condition: Choose the forwarding type (Unconditional or No Answer) of the entry.
6. Click Save to make the settings effective.

Done!

Now your router will automatically forward the call according to your rule.

5. 9. Call Through

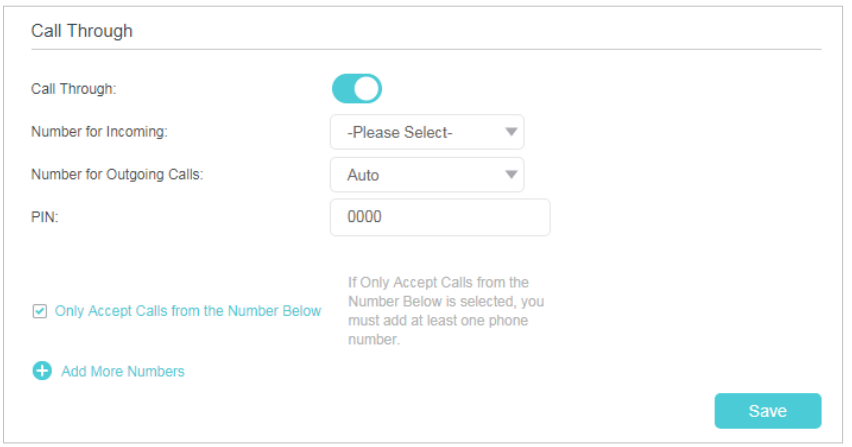
I want to:

Call someone through my telephone number registered on my router.

For example, I am away from home, and want to call a friend who is abroad. I can call the friend using my mobile phone of course, but that would cost a huge sum. meantime, my telephone number has a low charge in making international calls. So it would be great is I can call the friend using my mobile phone and my telephone number. Fortunately, you can do that.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Call Through. Enable Call Through.



3. Number for Incoming: Select the number you are going to use to call home via your mobile.
4. Number for Outgoing: Select the number you are going to use to call your friend who is abroad.
5. If you tick Only Accept Calls from the Numbers below, you should add numbers that are allowed to use Call Through function on your router. In this example, add your mobile phone.
6. Click Save to make the settings effective.

Done!

Now you could follow the process below to call your friend using your mobile phone and telephone number:

1. Use your moblie to call the incoming number you selected in step 4.
2. Put in the PIN code when you hear the tone, remember to end the PIN with a "#" . Change of the default PIN code is recommended.
3. Dial the number of your friend.
4. At this time, your friend will receive a call from the outgoing number your selected in the step 5. You can talk to your friend from your mobile phone.

5. 10. Voice Mail

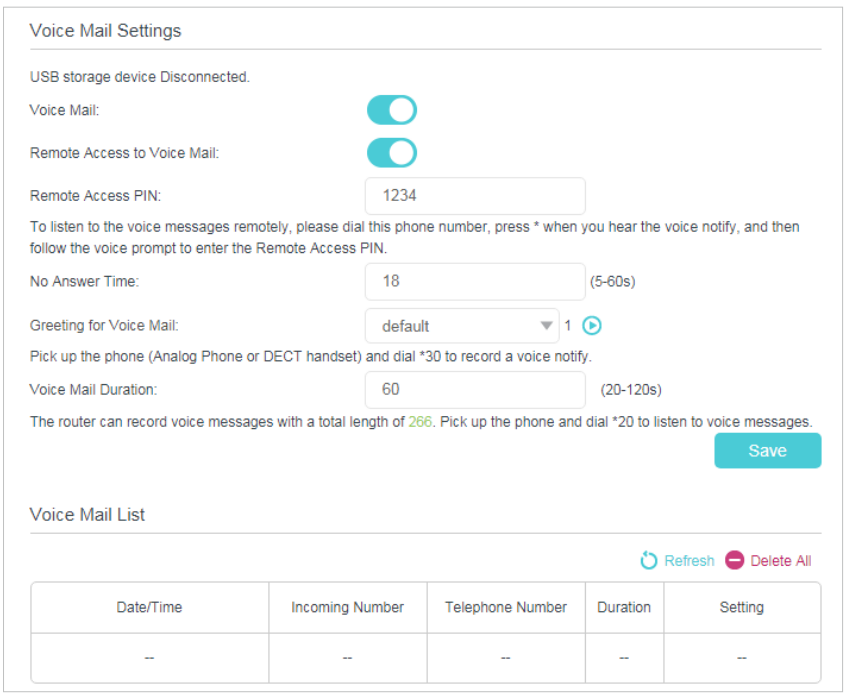
I want to:

Allow the caller who is not answered to leave a voice mail.

For example, I'm on my vocation, and cannot receive any call at the moment. If people who called can leave a voice mail, I would know what was going on when I was absent from home. Please note that you can use this feature with a storage device plugged into the USB port.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Telephony > Voice Mail.



3. Enable Voice Mail.
4. Remote Access Voice Mail: You can access your voice mail remotely. For the security of your voice mails, this function is disabled by default. This option is available only when you have created a new Remote Access PIN in this page.
5. Set the "No answer" Time. A time period. If the call is not answered within this time period, the caller can leave a voice mail.
6. Choose greetings for your Voice Mail. You can record the greeting by dialing *30 on the keyboard of your telephone.

7. Remote Access PIN: The PIN needed for listening to your voice mails remotely.
8. Set how long a voice mail can last at Voice Mail Duration.
9. Click Save to make the settings effective.

Done!

When a voice mail is recorded, the router will display it in the following table.

There are three ways to listen to these voice mails.

- Click on the table to listen.
- Press *20 on the telephone keyboard to listen.
- Dial the number of your telephone, press * when you hear the greeting and follow the voice prompt to enter the Remote Access PIN to listen.

Chapter 6

USB Settings

This chapter describes how to use the USB ports to share files, media from the USB storage devices over your home network locally, or remotely through the internet. You can also learn how to get wirelesse Internet access through 3G/4G mobile network.

The router supports USB external flash drives, hard drives.

This chapter contains the following sections:

- "Access the USB Storage Device"
- "Media Sharing"
- "3G/4G Settings"

6. 1. Access the USB Storage Device

Insert your USB storage device into the router's USB port and then access files stored there locally or remotely.

Tips:

- If you use USB hubs, make sure no more than 4 devices are connected to the router.
- If the USB storage device requires using bundled external power, make sure the external power has been connected.
- If you use a USB hard drive, make sure its file system is FAT32 or NTFS. Some routers also support the HFS+ and exFAT file systems.
- Before you physically disconnect a USB device from the router, safely remove it to avoid data damage: Go to Advanced > USB Sharing > USB Storage Device and click Remove.

6. 1. 1. Access the USB Device Locally

Insert your USB storage device into the router's USB port and then refer to the following table to access files stored on your USB storage device:

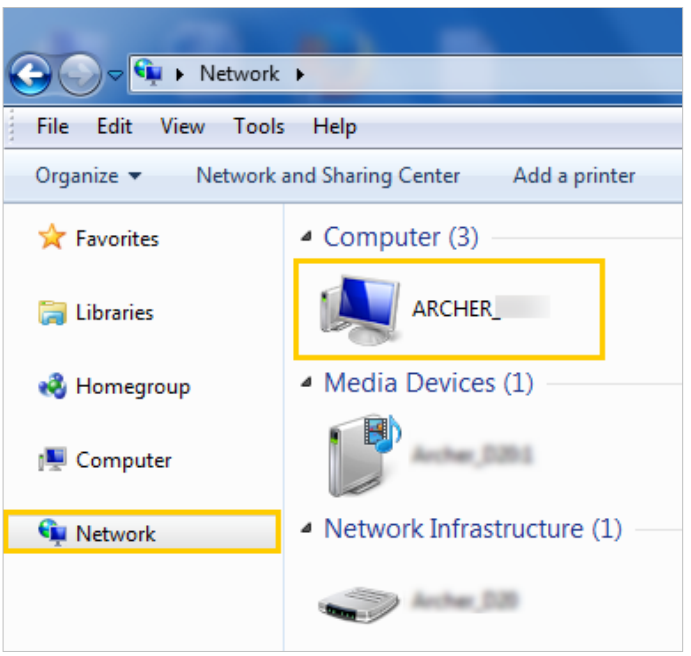
Windows computer

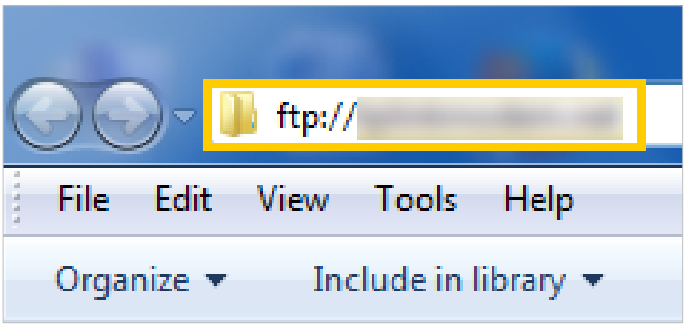
➢ **Method 1:**

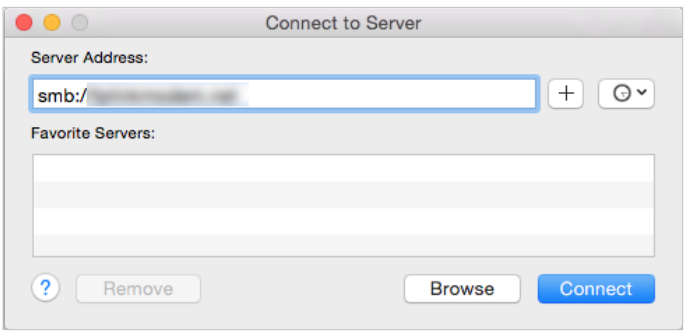
Go to Computer > Network, then click the Network Server Name (ARCHER_model number by default) in the Computer section.

Note:

1. Operations in different systems are similar. Here we take Windows 7 as an example.
2. Network Server Name can be customized on the web management page.



<table>
<tr><td>Windows computer</td><td>➢ Method 2:
Open the Windows Explorer (or go to Computer) and type the server address \\tplinkmodem.net or ftp://tplinkmodem.net in the address bar, then press Enter.
 

➢ Method 3:
Install an SFTP client (File Zilla) in your computer and configure the protocal parameters (enter the LAN address of the router and account username and password admin).</td></tr>
<tr><td>Mac</td><td>1) Select Go > Connect to Server
2) Type the server address smb://tplinkmodem.net.
3) Click Connect
 

4) When prompted, select the Guest radio box. (If you have set up a username and a password to deny anonymous access to the USB disks, you should select the Registered User radio box. To learn how to set up an account for the access, refer to “To Set up Authentication for Data Security”.)</td></tr>
<tr><td>Smart device</td><td>Use a third-party app for network files management.</td></tr>
</table>

6. 1. 2. Access the USB Device Remotely

You can access your USB disk outside the local area network. For example, you can:

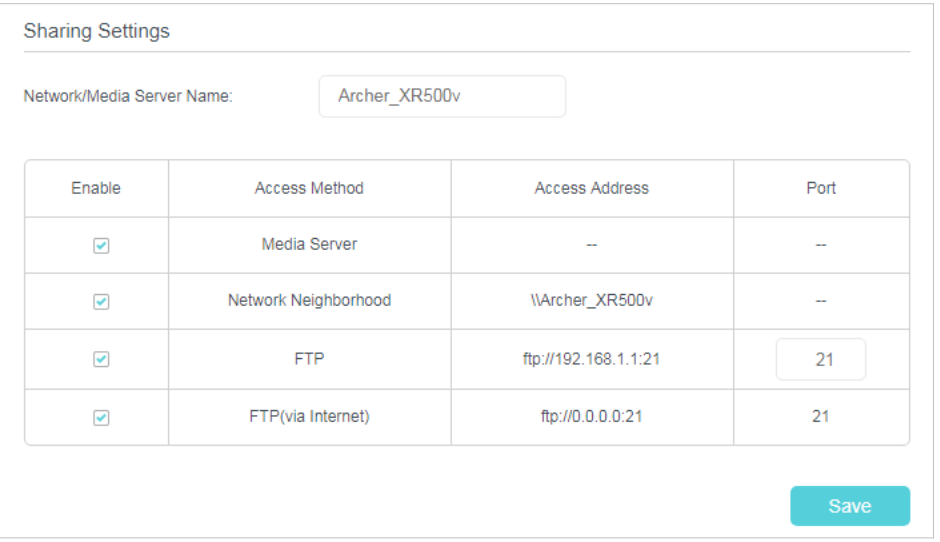
- Share photos and other large files with your friends without logging in to (and paying for) a photo-sharing site or email system.
- Get a safe backup for the materials for a presentation.
- Remove the files on your camera's memory card from time to time during your journey.

Note:

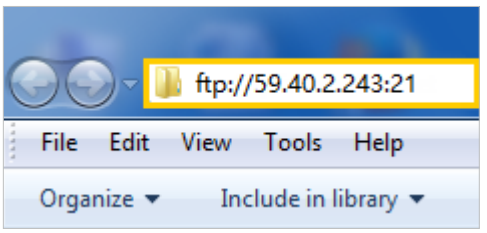
If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), you cannot use this feature because private addresses are not routed on the internet.

Follow the steps below to configure remote access settings.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > USB Sharing > USB Storage Device page.
3. Select the check box to enable FTP (via Internet), then click Save.



4. Refer to the following table to access your USB disk remotely.

Windows computer	1) Open the Windows Explorer (or go to Computer, only for Windows users) or open a web browser. 2) Type the server address in the address bar: Type in ftp://<WAN IP address of the router>:<port number> (such as ftp://59.40.2.243:21). If you have specified the domain name of the router, you can also type in ftp://<domain name>:<port number> (such as ftp://MyDomainName:21)  The Address Bar of the Windows Explorer (Windows 7) 3) Press Enter on the keyboard. 4) Access with the username and password you set in "To Set up Authentication for Data Security". Tips: You can also access the USB disk via a third-party app for network files management, which can resume broken file transfers.
Smart device	Use a third-party app for network files management.

Tips:

Click "Set Up a Dynamic DNS Service Account" to learn how to set up a domain name for your router.

6. 1. 3. Customize the Access Settings

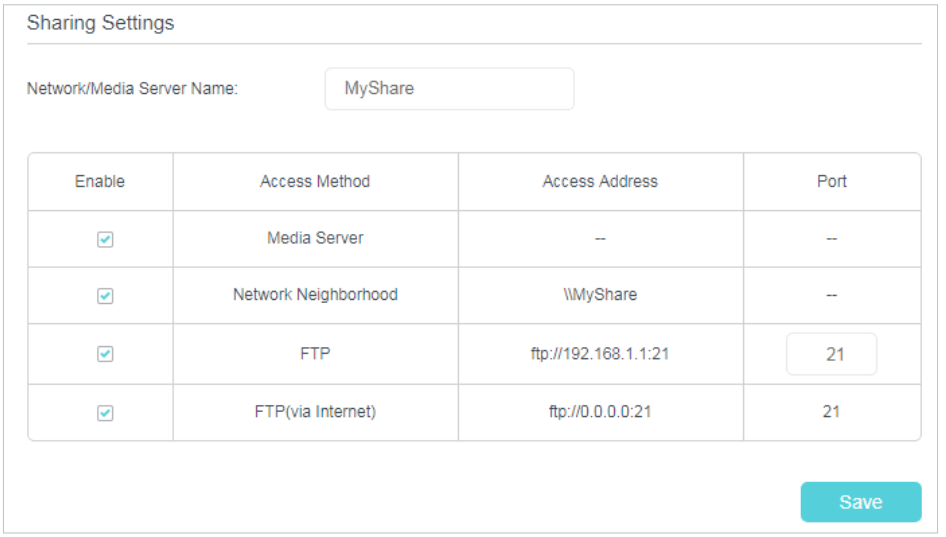
By default, all the network clients can access all folders on your USB disk. You can customize your sharing settings by setting a sharing account, sharing specific contents and setting a new sharing address on the router's web management page.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > USB Sharing > USB Storage Device page.

➢ **To Customize the Address of the USB Disk**

You can customize the server name and use the name to access your USB disk.

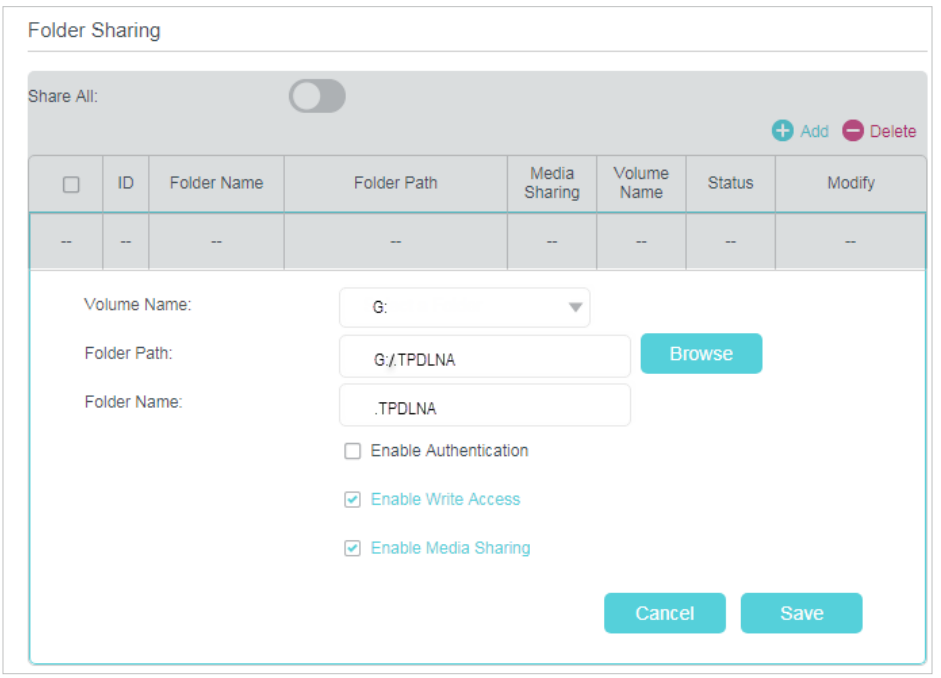
1. On the Sharing Settings part, make sure Network Neighborhood is ticked, and enter a Network/Media Server Name as you like, such as MyShare, then click Save.



2. Now you can access the USB disk by visiting \\MyShare (for Windows) or smb://MyShare (for Mac).

➢ **To Only Share Specific Content**

1. Focus on the Folder Sharing section. Click the button to disable Share All, then click Add to add a new sharing folder.



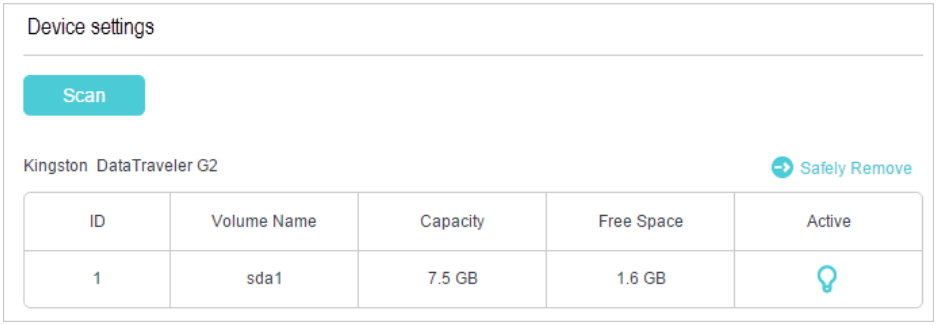
2. Select the Volume Name and Folder Path, then enter a Folder Name as you like.
3. Decide the way you share the folder:
   - Enable Authentication: By default, authentication is disabled for this folder sharing, you can tick the check box to enable authentication, and you will be

required to log in to the Sharing Account to access the USB disk. Refer to "To Set up Authentication for Data Security" to learn more.

- Enable Write Access: If you tick this check box, network clients can modify this folder.
- Enable Media Sharing: Tick to enable media sharing for this folder, and you can view photos, play music and watch movies stored on the USB disk directly from DLNA-supported devices. Click "Media Sharing" to learn more.

4. Click Save.

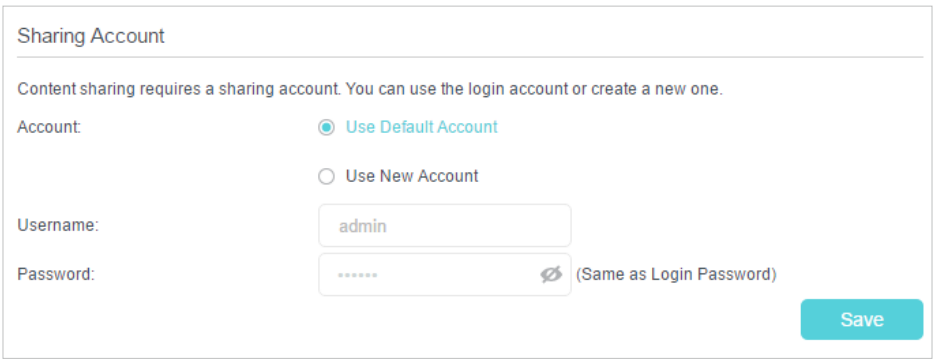
Tips:
The router can share eight volumes at most. You can click on the page to detach the corresponding volume you do not need to share.



➢ To Set up Authentication for Data Security

You can set up authentication for your USB device so that network clients will be required to enter the username and password when accessing the USB disk.

1. Under Sharing Account part, choose Use Default Account or Use New Account. The user name and password are both admin for the default account. If your choose Use New Account, you have to customize the username and a password.

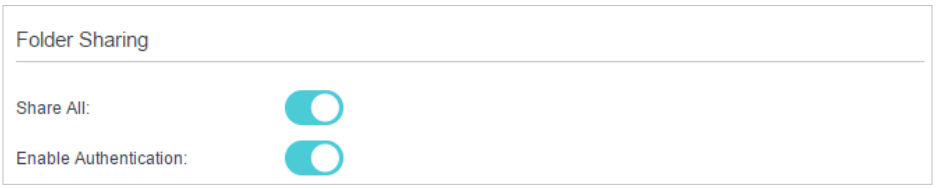


Note:
For Windows users, do not set the sharing username the same as the Windows username. Otherwise, Windows credential mechanism may cause the following problems:

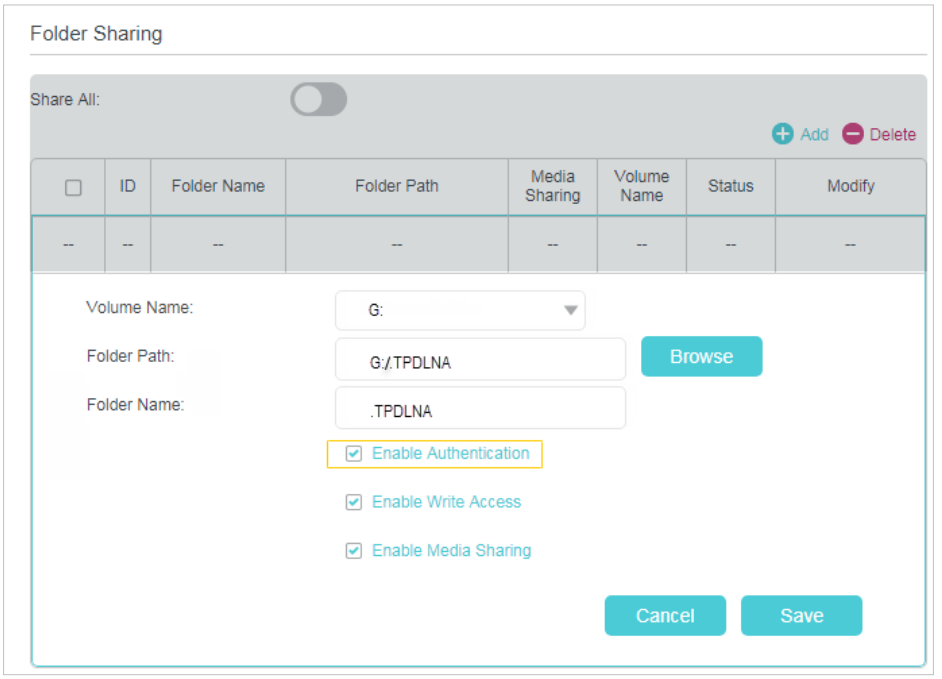
- If the sharing password is also the same as the Windows password, authentication will not work since the Windows system will automatically use its account information for USB access.

- If the sharing password is different from the Windows password, the Windows system will be unable to remember your credentials and you will always be required to enter the sharing password for USB access.

2. Eable Authentication to apply the account you just set.
   - If you leave Share All enabled, click the button to enable Authentication for all folders.



   - If Share All is disabled, enable Authentication for specify the folders.



Note:

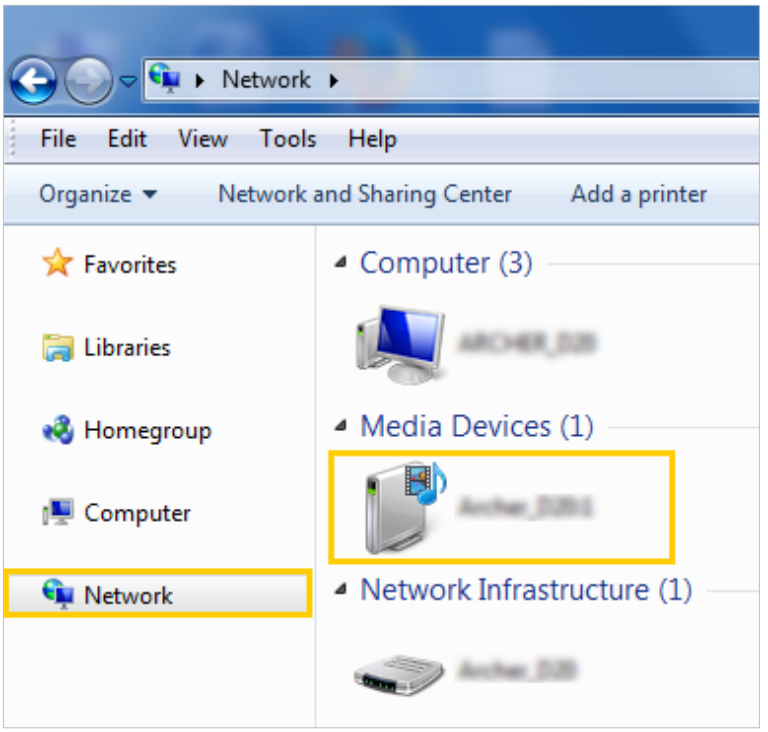
Due to Windows credential mechanism, you might be unable to access the USB disk after changing Authentication settings. Please log out from the Windows and try to access again. Or you can change the address of the USB disk by referring to "To Customize the Address of the USB Disk".

6. 2. Media Sharing

The feature of Media Sharing allows you to view photos, play music and watch movies stored on the USB disk directly from DLNA-supported devices, such as your computer, pad and PS2/3/4.

1. When your USB disk is inseted into the router, your DLNA-supported devices (such as your computer and pad) connected to the router can detect and play the media files on the USB disks.

2. Refer to the following table for detailed instructions.

Windows Computer	• Go to Computer > Network, then click the Media Server Name (Archer_ model number by default) in the Media Devices section. Note: Here we take Windows 7 as an example. 
Smart device	• Use a third-party DLNA-supported player.

6. 3. 3G/4G Settings

The router can be used as a 3G/4G wireless router if you have a 3G/4G USB modem. You can use your 3G/4G network an a backup solution for the Internet access:

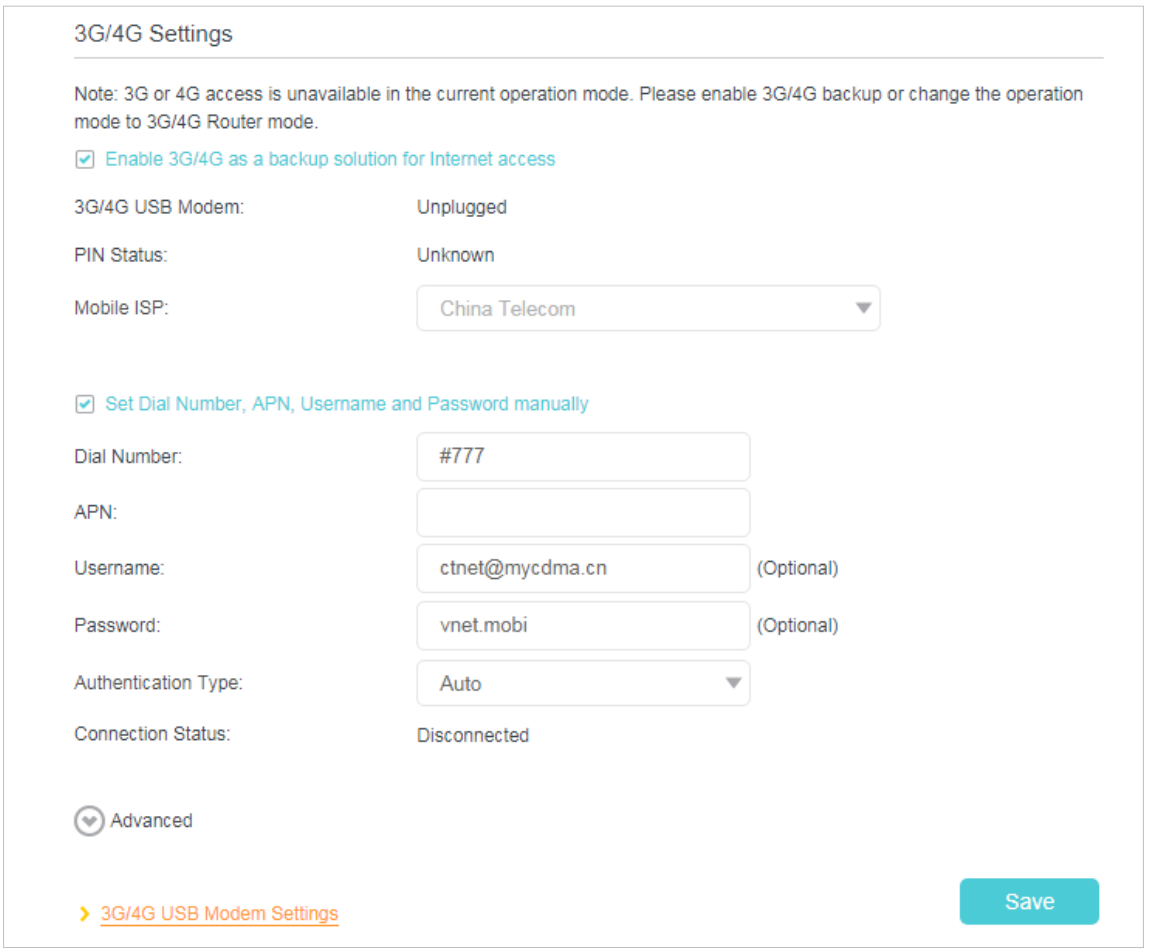
6. 3. 1. As a Backup Solution for Internet Access

Using 3G/4G network as a backup solution for Internet access, your router will be directly connected to the 3G/4G network when the original network service fails.

Follow the steps below to set your 3G/4G network as a backup for Internet access:

1. Plug your USB modem into the USB port of your router.

2. Visit http://tplinkmodem.net, then log in with the password you set for the router.
3. Go to Advanced > USB Settings > 3G/4G Settings, and select the box of Enable 3G/4G as a backup solution for internet access.



4. Verify that your 3G/4G USB Modem is successfully identified.

Note:
The 3G/4G USB modem will not be identified if it is incompatible with the router. Find the 3G/4G Compatibility List on the web page: http://www.tp-link.com/en/comp-list.html. If your USB modem is incompatible, contact our technical support.

5. Verify that the router has correctly recognized your Mobile ISP. When your Mobile ISP is correct, you have successfully set 3G/4G network as a backup solution for Internet access. Otherwise, select the box of Set the Dial Number, APN, Username and Password manually and enter the information provided by your 3G/4G network service provider.
6. Click Advanced to have more configurations if needed.
7. Click Save to make the settings effective.

Chapter 7

Parental Controls

This function allows you to block inappropriate, explicit and malicious websites and limit internet access during specified time periods.

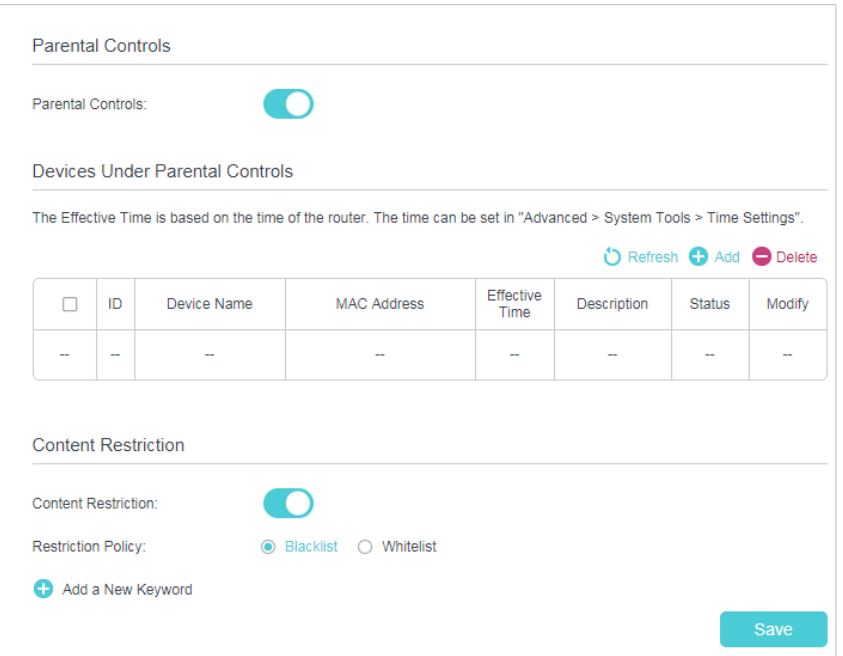
I want to:

Control what types of websites my children or other home network users can visit and the time of day they are allowed to access the internet.

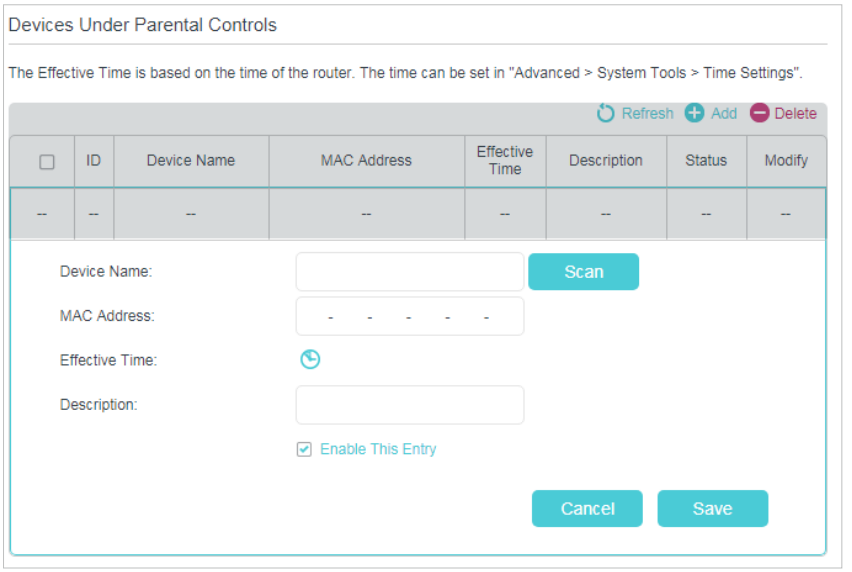
For example, I want to allow my children's devices (for example, a computer or a tablet) to access only www.tp-link.com and wikipedia.org from 18:00 (6PM) to 22:00 (10PM) on weekdays and not other time.

How can I do that?

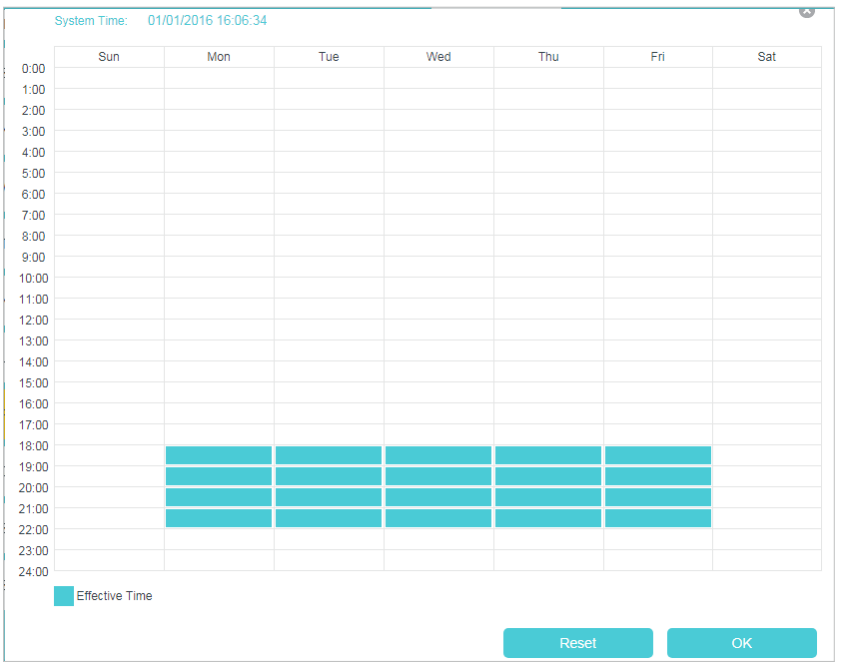
1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Basic or Advanced > Parental Controls and enable Parental Controls.



3. Click Add.

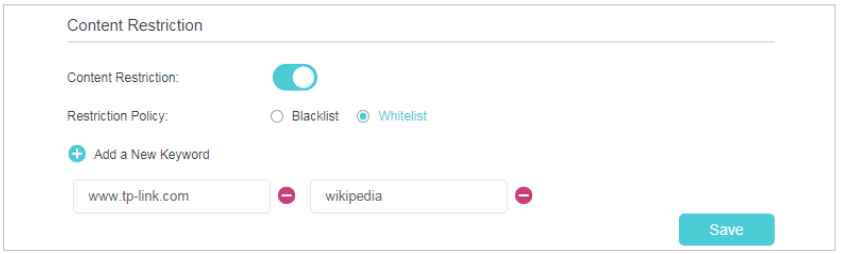


4. Click Scan, and add the device to be controlled. Or, enter the Device Name and MAC Address manually.
5. Click the icon to set the Effective Time. Drag the cursor over the appropriate cell(s) and click Save.



6. Enter a Description for the entry.
7. Select the check box to enable this entry and click Save.
8. Enable Content Restriction and select the restriction mode.
   1) In Blacklist mode, the controlled devices cannot access any websites containing the specified keywords during the Effective Time period.

2) In Whitelist mode, the controlled devices can only access websites containing the specified keywords during the Effective Time period.



9. Click Add a New Keyword. You can add many keywords for both Blacklist and Whitelist. Below are some sample entries to allow access.

   1) Enter a web address (for example, www.tp-link.com) or a web address keyword (for example, wikipedia) to only allow or block access to the websites containing that keyword.

   2) Specify the domain suffix (for example, .edu or .org) to allow access only to the websites with that suffix.

10. Enter the keywords or websites you want to add and click Save.

Done!

Now you can control your children's internet access according to your needs.

Chapter 8

QoS

This chapter explains how to create a QoS (Quality of Service) rule to prioritize your online activities, which minimizes the impact caused by heavy internet traffic.

It contains the following sections:

- Prioritize Internet Traffic with QoS
- Rule List

8. 1. Prioritize Internet Traffic with QoS

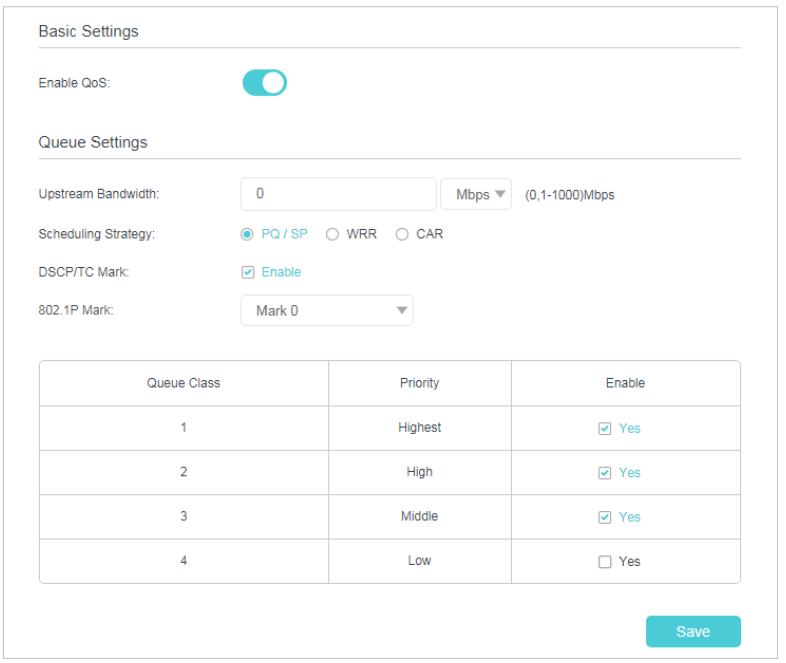
QoS (Quality of Service) is designed to ensure the efficient operation of the network when network congestion is encountered.

8. 1. 1. Basic Settings

1) Visit http://tplinkmodem.net, and log in with the account you set for the router.
2) Go to Advanced > Quality of Service > Basic Settings.
3) Enable QoS.

8. 1. 2. Queue Settings

1) Specify the parameters on Queue Settings.



- Upstream Bandwidth: Input the Upstream Bandwidth , the default value is 0, which means no limit.
- Scheduling Strategy: Select the way to schedule the queue.
  - PQ/SP: Scheduling according to the priority of the queue (Hightest, High, Middle, Low), and prioritize queues with higher priority.
  - WRR: Scheduling according to the weight of the broadband, and allocate the bandwidth of the queue according to the set weight.
- DSCP/TC Mark: Select the checkbox to enable the DSCP/TC Mark in the head of the packet IP.
- 802.1P Mark: Set the 802.1P value for the packet: Mark 0 (The value is set to 0),

Transparent (Keep the default value), Re-mark.

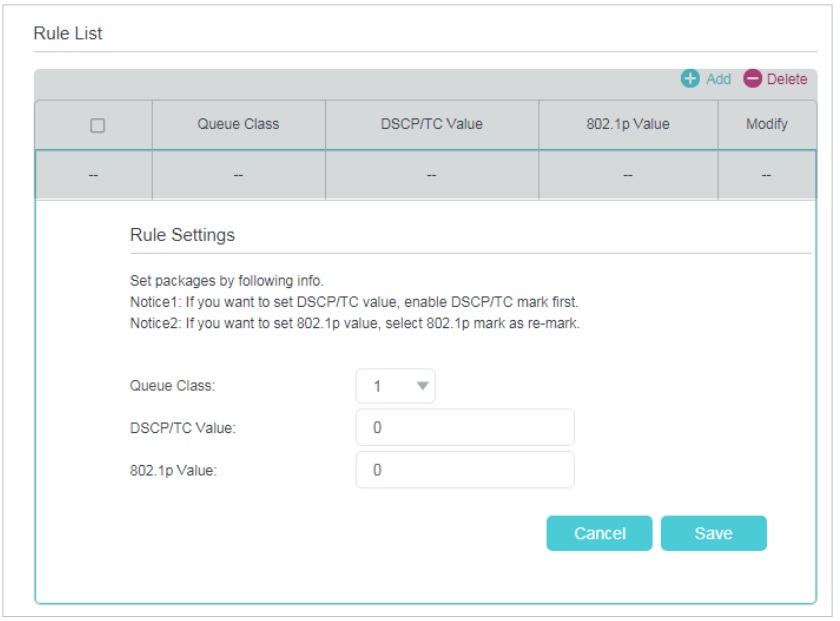
2) Click Save.

8. 2. Rule List

8. 2. 1. Rule Settings

Add rules for data classification .

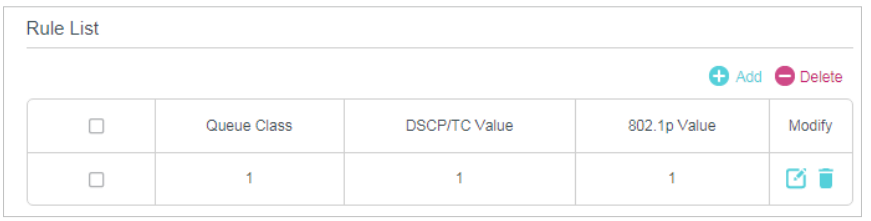
1. Click Add, you can set package by following info.



2. Select a Queue Class enabled in Queue Settings.

3. Enter DSCP/TC Value and 801p Value for this rule.

4. Click Save, you can see a new rule in the list.



Note:

1. If you want to set DSCP/TC value and 802.1p value, you need to enable DSCP/TC mark and select 802.1p mark as re-mark.
2. If you want to delete a QoS rule, click to remove the responding rule from the list.

Now for the packages in Queue Class 1, the DSCP/TC Value will be set to 1, and 802.p Value will be set to 1.

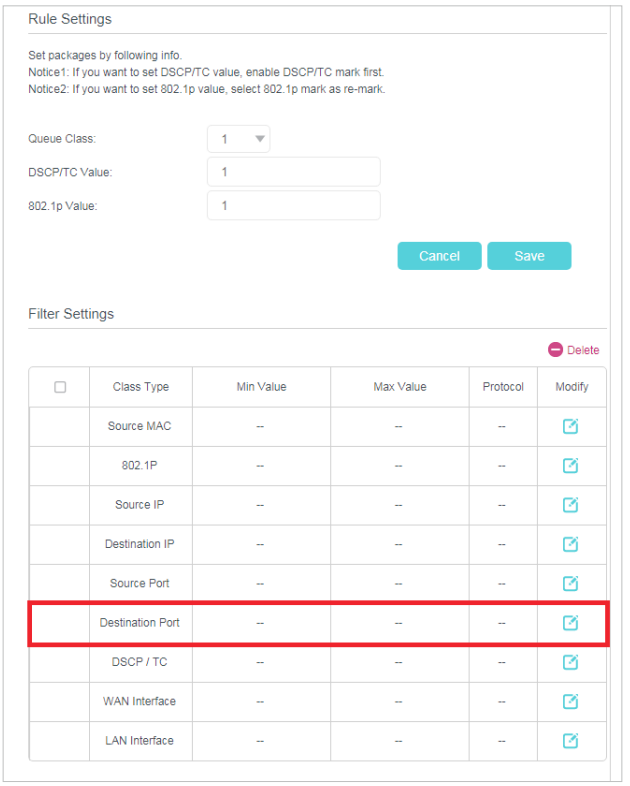
8. 2. 2. Filter Settings

After setting a new rule, You can assign data to Queue Class1 by Filter Settings.

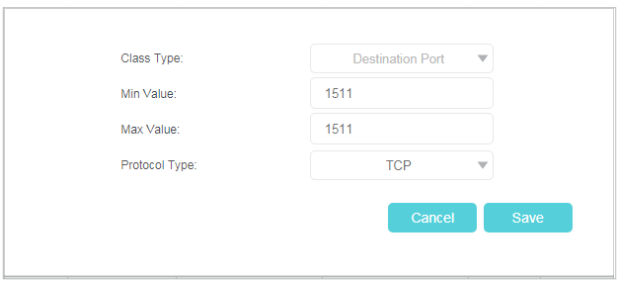
For example, to assign the TCP packet with destination port 1511 to Queue Class 1.

1. Click , you will see the Filter Settings page.

2. Click the button in the Destination port row.



3. Set the Min Value and Max Value to 1511, keep the Protocol Type default.



4. Click Save.

Now, all TCP packets with destination port 1511 will match to the Rule 1, the packet will be assigned to Queue Class 1, the DSCP/TC Value will be set to 1, and 802.p Value will be set to 1.

Chapter 9

Network Security

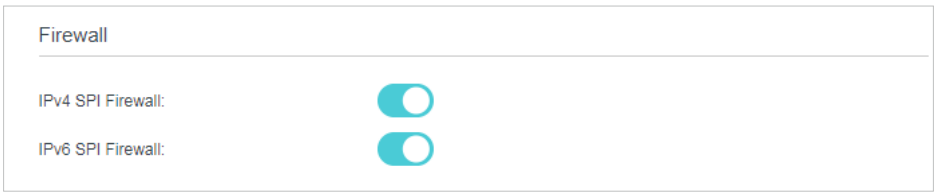
This chapter guides you on how to protect your home network from unauthorized users by implementing these three network security functions. You can block or allow specific client devices to access your wireless network using MAC Filtering, or using Access Control for wired and wireless networks, or you can prevent ARP spoofing and ARP attacks by using IP & MAC Binding.

- Firewall & DoS Protection
- Service Filtering
- Access Control
- IP & MAC Binding

9. 1. Firewall & DoS Protection

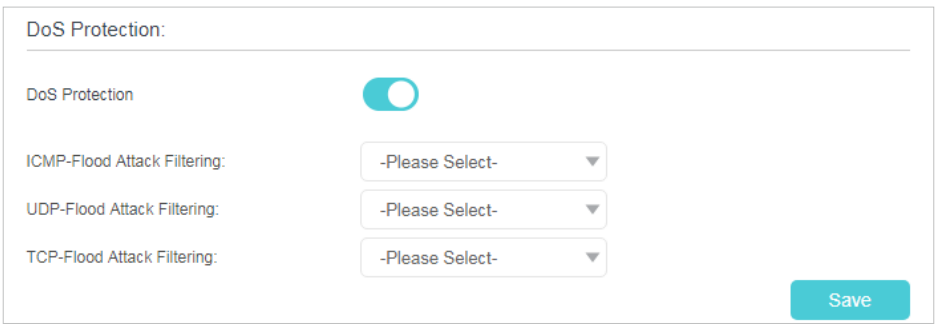
The SPI (Stateful Packet Inspection) Firewall and DoS (Denial of Service) Protection protect the router from cyber attacks.

The SPI Firewall can prevent cyber attacks and validate the traffic that is passing through the router based on the protocol. This function is enabled by default, and it's recommended to keep the default settings.



DoS Protection can protect your home network against DoS attacks from flooding your network with server requests. Follow the steps below to configure DoS Protection.

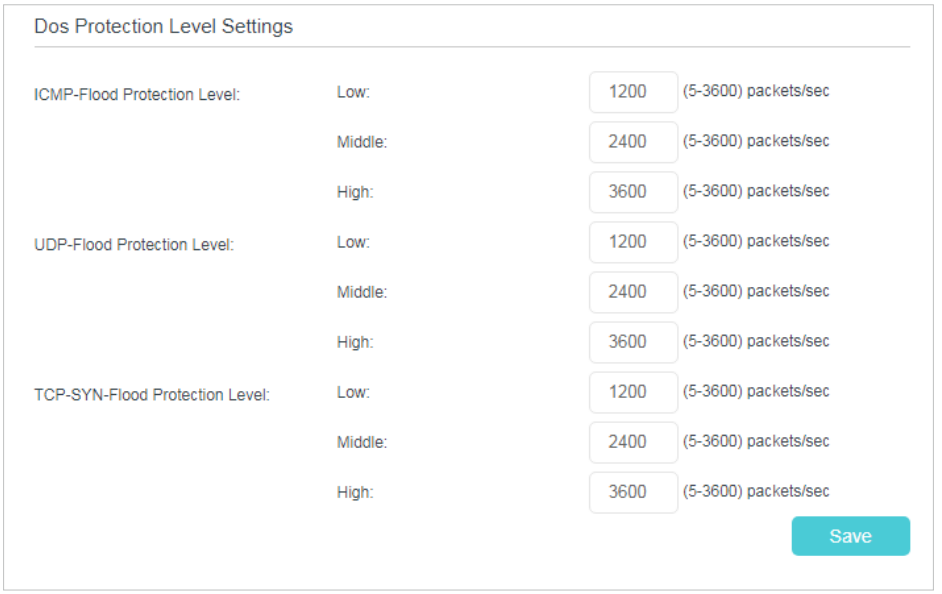
1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Security > Firewall & DoS Protection.



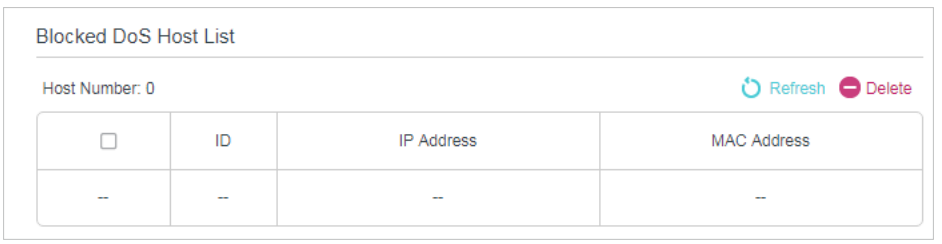
3. Enable DoS Protection.
4. Set the level (Low, Middle or High) of protection for ICMP-Flood Attack Filtering, UDP-Flood Attack Filtering and TCP-Flood Attack Filtering.
   - ICMP-Flood Attack Filtering - Enable to prevent the ICMP (Internet Control Message Protocol) flood attack.
   - UDP-Flood Attack Filtering - Enable to prevent the UDP (User Datagram Protocol) flood attack.
   - TCP-Flood Attack Filtering - Enable to prevent the TCP (Transmission Control Protocol) flood attack.
5. Click Save.

Tips:

1. The level of protection is based on the number of traffic packets. Specify the level at DoS Protection Level Settings.



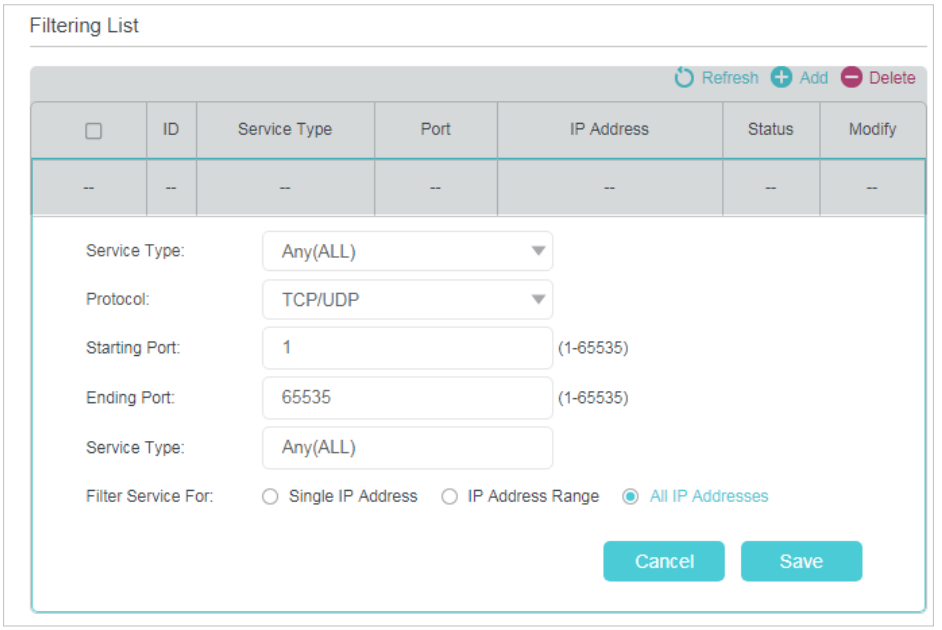
2. The protection will be triggered immediately when the number of packets exceeds the preset threshold value, and the vicious host will be displayed in the Blocked DoS Host List.



9. 2. Service Filtering

With Service Filtering, you can prevent certain users from accessing the specified service, and even block internet access completely.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Security > Service Filtering.
3. Toggle on Service Filtering.
4. Click Add.



5. Select a Service Type from the drop-down list and the following four fields will be auto-populated. Select Custom when your desired service type is not listed, and enter the information manually.
6. Specify the IP address(es) that this filtering rule will apply to.
7. Click Save.

Note: If you want to disable this entry, click the icon.

9. 3. Access Control

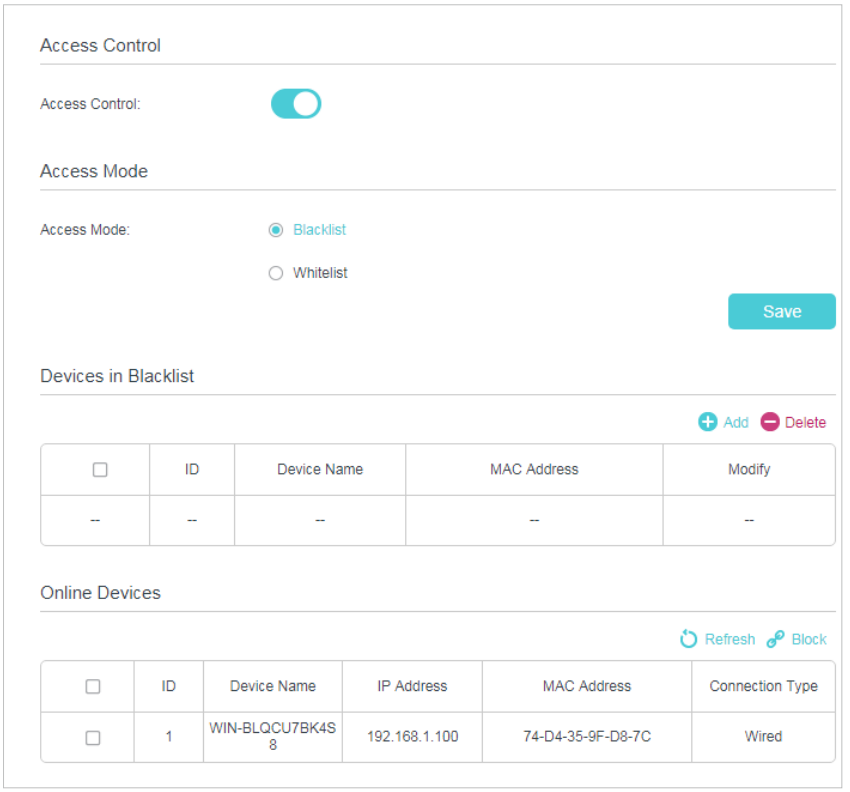
Access Control is used to block or allow specific client devices to access your network (via wired or wireless) based on a list of blocked devices (Blacklist) or a list of allowed devices (Whitelist).

I want to:

Block or allow specific client devices to access my network (via wired or wireless).

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Security > Access Control and enable Access Control.



3. Select the access mode to either block (recommended) or allow the device(s) in the list.

To block specific device(s)

1) Select Blacklist and click Save.

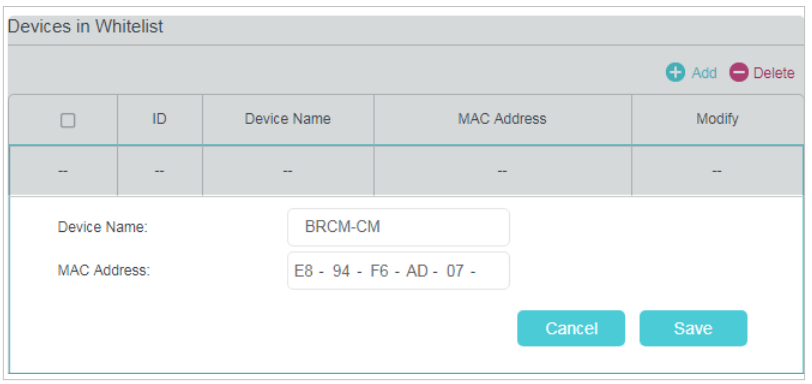
2) Select the device(s) to be blocked in the Devices Online table.

3) Click Block above the Online Devices table. The selected devices will be added to Devices in Blacklist automatically.

To allow specific device(s)

1) Select Whitelist and click Save.

2) Click Add.



3) Enter the Device Name and MAC Address. (You can copy and paste the information from Online Devices table if the device is connected to your network.)

4) Click Save.

Done!

Now you can block or allow specific client devices to access your network (via wired or wireless) using the Blacklist or Whitelist.

9. 4. IP & MAC Binding

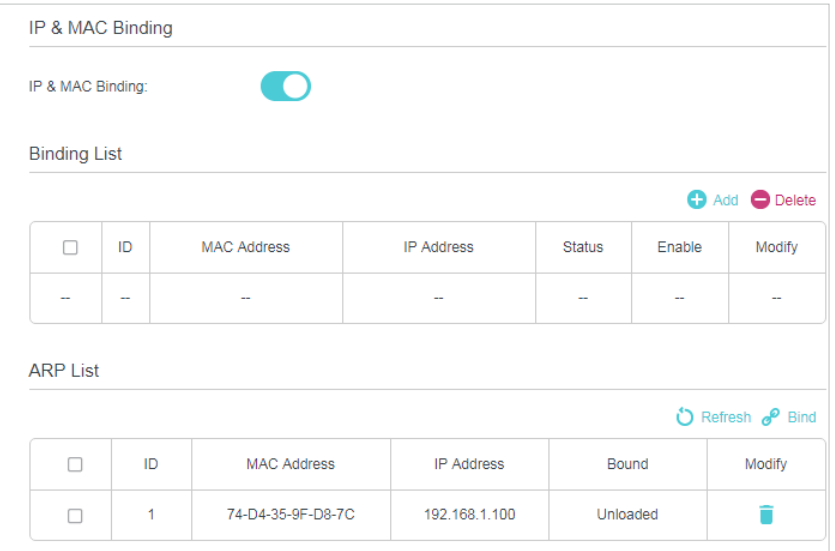
IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind a network device's IP address to its MAC address. This will prevent ARP spoofing and other ARP attacks by denying network access to a device with a matching IP address in the Binding list, but an unrecognized MAC address.

I want to:

Prevent ARP spoofing and ARP attacks.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Security > IP & MAC Binding and enable IP & MAC Binding.



3. Bind your device(s) according to your needs.

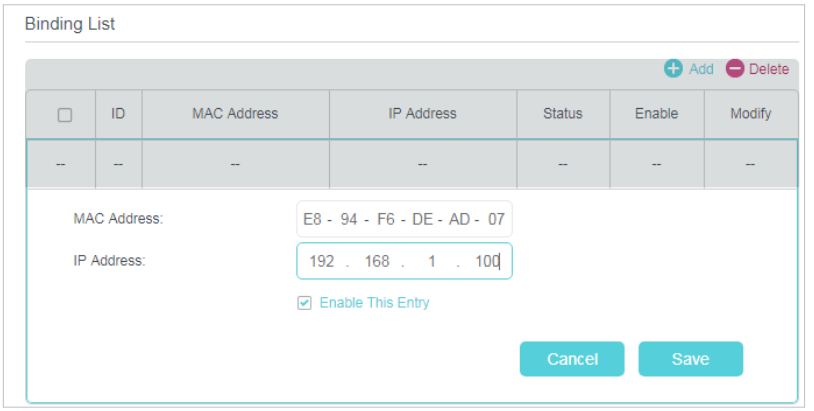
   To bind the connected device(s)

   1) Select the device(s) to be bound in the ARP List.

   2) Click Bind to add to the Binding List.

   To bind the unconnected device

   1) Click Add.



2) Enter the MAC address and IP address that you want to bind.

3) Select the check box to enable the entry and click Save.

Done!

Enjoy the internet without worrying about ARP spoofing and ARP attacks.

Chapter 10

NAT Forwarding

Router's NAT (Network Address Translation) feature makes the devices in the LAN use the same public IP address to communicate in the internet, which protects the local network by hiding IP addresses of the devices. However, it also brings about the problem that external host cannot initiatively communicate with the specified device in the local network.

The router can use a forwarding feature to remove the isolation of NAT and allow external internet hosts to intuitively communicate with the devices in the local network, thus enabling some special features.

TP-Link router includes four forwarding rules. If two or more rules are set, the priority of implementation from high to low is Virtual Servers, Port Triggering, UPNP and DMZ.

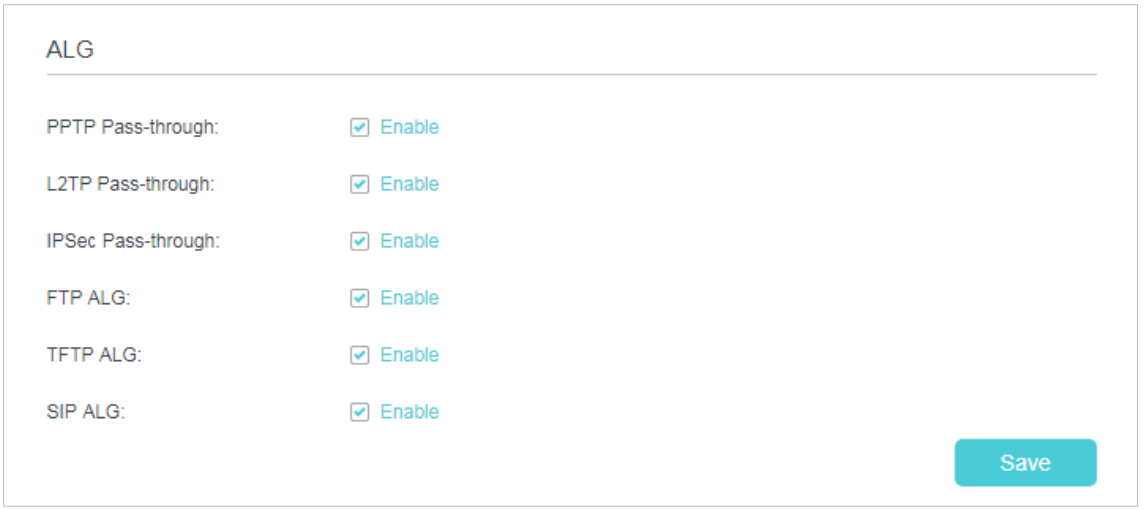
This chapter contains the following sections:

- "Translate Address and Port by ALG"
- "Share Local Resources over the Internet by Virtual Server"
- "Open Ports Dynamically by Port Triggering"
- "Make Applications Free from Port Restriction by DMZ"
- "Make Xbox Online Games Run Smoothly by UPnP"

10. 1. Translate Address and Port by ALG

ALG (Application Layer Gateway) allows customized NAT (Network Address Translation) traversal filters to be plugged into the gateway to support address and port translation for certain application layer "control/data" protocols: FTP, TFTP etc. Enabling ALG is recommended.

Visit http://tplinkmodem.net, and log in with the password you set for the router. Go to Advanced > NAT Forwarding > ALG.



- PPTP Pass-through: If enabled, it allows Point-to-Point sessions to be tunneled through an IP network and passed through the router.
- L2TP Pass-through: If enabled, it allows Layer 2 Point-to-Point sessions to be tunneled through an IP network and passed through the router.
- IPSec Pass-through: If enabled, it allows IPSec (Internet Protocol Security) to be tunneled through an IP network and passed through the router. IPSec uses cryptographic security services to ensure private and secure communications over IP networks.
- FTP ALG: If enabled, it allows FTP (File Transfer Protocol) clients and servers to transfer data via NAT.
- TFTP ALG: If enabled, it allows TFTP (Trivial File Transfer Protocol) clients and servers to transfer data via NAT.
- SIP ALG: If enabled, it allows clients communicate with SIP (Session Initiation Protocol) servers via NAT.

10. 2. Share Local Resources over the Internet by Virtual Server

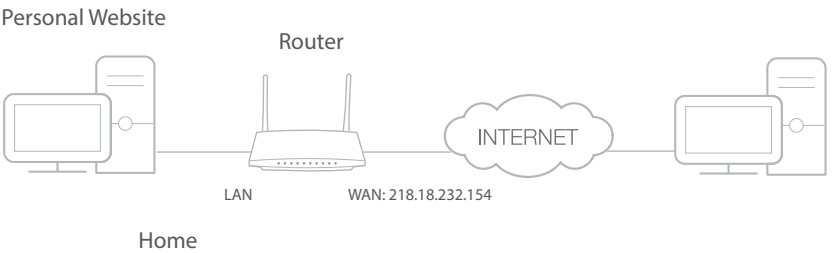
When you build up a server in the local network and want to share it on the internet, Virtual Server can realize the service and provide it to the internet users. At the same time virtual server can keep the local network safe as other services are still invisible from the internet.

Virtual server can be used for setting up public services in your local network, such as HTTP, FTP, DNS, POP3/SMTP and Telnet. Different service uses different service port. Port 80 is used in HTTP service, port 21 in FTP service, port 25 in SMTP service and port 110 in POP3 service. Please verify the service port number before the configuration.

I want to:

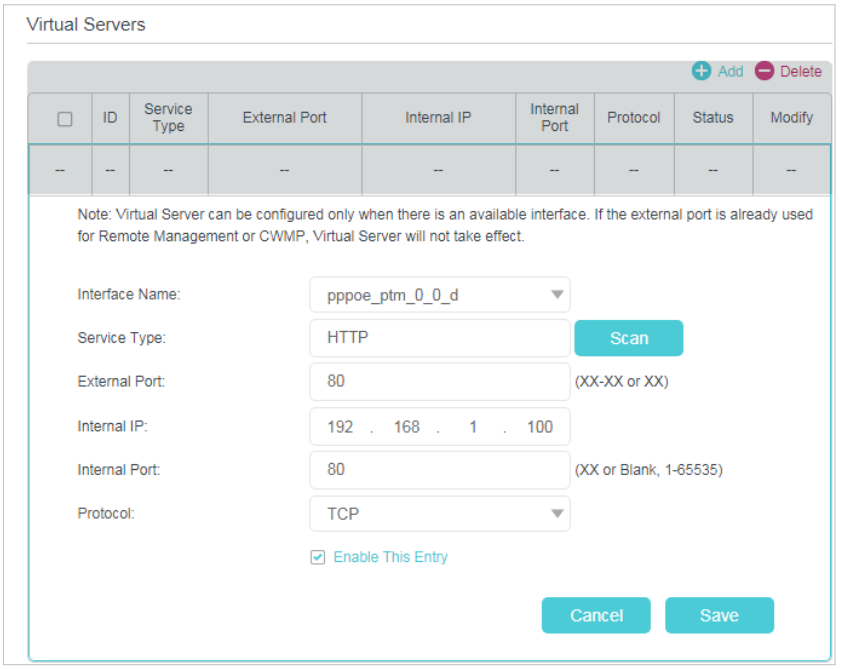
Share my personal website I've built in a local network with my friends through the internet.

For example, the personal website has been built on my home PC (192.168.1.100). I hope that my friends can visit my website. The PC is connected to the router with the WAN IP address 218.18.232.154.



How can I do that?

1. Assign a static IP address to your PC, for example 192.168.1.100.
2. Visit http://tplinkmodem.net, and log in with the password you set for the router.
3. Go to Advanced > NAT Forwarding > Virtual Servers, click Add.



4. Click Scan, and choose HTTP. The external port, internal port and protocol will be automatically filled with contents. Enter the PC's IP address 192.168.1.100 in the Internal IP field.
5. Click Save to save the settings.

Tips:

1. It is recommended to keep the default settings of Internal Port and Protocol if you are not clear about which port and protocol to use.
2. If the service you want to use is not in the Service Type, you can enter the corresponding parameters manually. You should verify the port number that the service needs.
3. You can add multiple virtual server rules if you want to provide several services from a router. Please note that the External Port cannot be overlapped.

Done!

Internet users can enter http://WAN IP (in this example: http://218.18.232.154) to visit your personal website.

Tips:

1. For a WAN IP that is assigned dynamically by ISP, it is recommended to apply and register a domain name for the WAN by DDNS, go to "Set Up a Dynamic DNS Service Account" for more information. Then you can use http://domain name to visit the website.
2. If you have changed the default External Port, you should use http://WAN IP: External Port or http://domain name: External Port to visit the website.

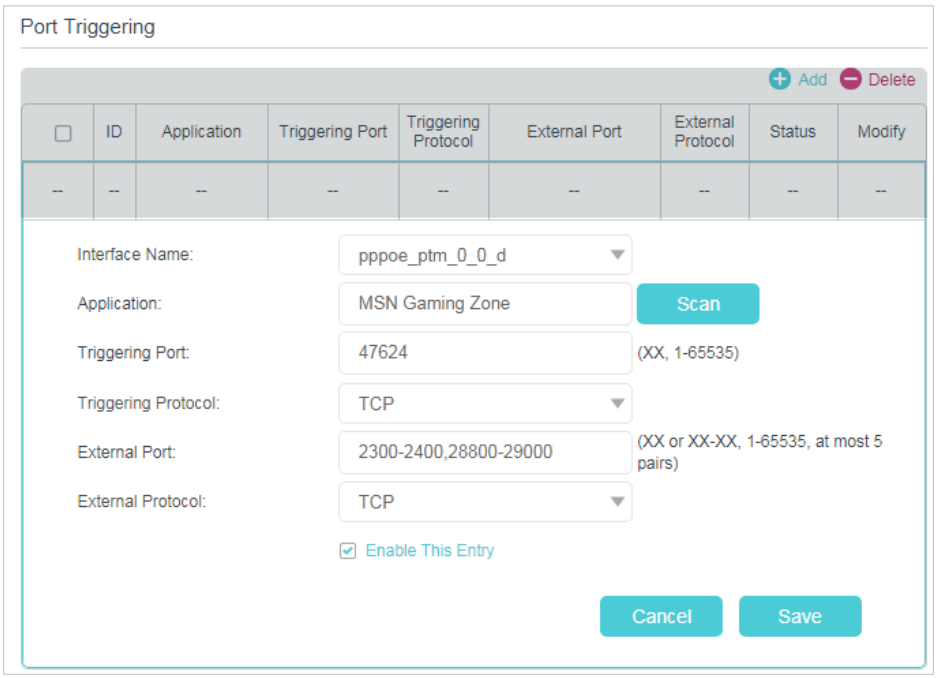
10. 3. Open Ports Dynamically by Port Triggering

Port triggering can specify a triggering port and its corresponding external ports. When a host in the local network initiates a connection to the triggering port, all the external ports will be opened for subsequent connections. The router can record the IP address of the host. When the data from the internet returns to the external ports, the

router can forward them to the corresponding host. Port triggering is mainly applied to online games, VoIPs and video players. Common applications include MSN Gaming Zone, Dialpad, Quick Time 4 players, and so on.

Follow the steps below to configure the port triggering rules:

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > NAT Forwarding > Port Triggering and click Add.



3. Click Scan, and select the desired application. The triggering port and protocol, the external port and protocol will be automatically filled with contents. Here we take MSN Gaming Zone as an example.
4. Click Save to save the settings.

Tips:

1. You can add multiple port triggering rules according to your network need.
2. If the application you need is not listed in the Existing Applications list, please enter the parameters manually. You should verify the external ports the application uses first and enter them into External Port field according to the format the page displays.

10. 4. Make Applications Free from Port Restriction by DMZ

When a PC is set to be a DMZ (Demilitarized Zone) host in the local network, it is totally exposed to the internet, which can realize the unlimited bidirectional communication between internal hosts and external hosts. The DMZ host becomes a virtual server with all ports opened. When you are not clear about which ports to open in some special

applications, like IP camera and database software, you can set the PC to be a DMZ host.

Note:

DMZ is most applicable when you don't know which ports to open. When it is enabled, the DMZ host is totally exposed to the internet, which may bring some potential safety hazard. If DMZ is not in use, please disable it in time.

I want to:

Make the home PC join the internet online game without port restriction.

For example, Due to some port restriction, when playing the online games, you can login normally but cannot join a team with other players. To solve this problem, set your PC as a DMZ with all ports opened.

How can I do that?

1. Assign a static IP address to your PC, for example 192.168.1.100.
2. Visit http://tplinkmodem.net, and log in with the password you set for the router.
3. Go to Advanced > NAT Forwarding > DMZ and select the checkbox to enable DMZ.

4. Enter the IP address 192.168.1.100 in the DMZ Host IP Address filed.
5. Click Save to save the settings.

Done!

The configuration is completed. You've set your PC to a DMZ host and now you can make a team to game with other players.

10. 5. Make Xbox Online Games Run Smoothly by UPnP

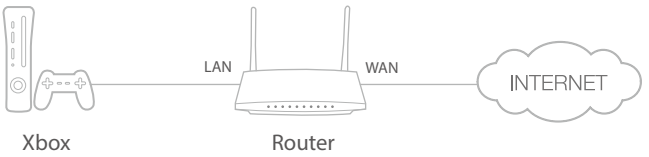
UPnP (Universal Plug and Play) protocol allows the applications or host devices to automatically find the front-end NAT device and send request to it to open the corresponding ports. With UPnP enabled, the applications or host devices in the both sides of NAT device can freely communicate with each other realizing the seamless connection of the network. You may need to enable the UPnP if you want

to use applications such as multiplayer gaming, peer-to-peer connections, real-time communication (for example, VoIP or telephone conference), or remote assistance.

Tips:

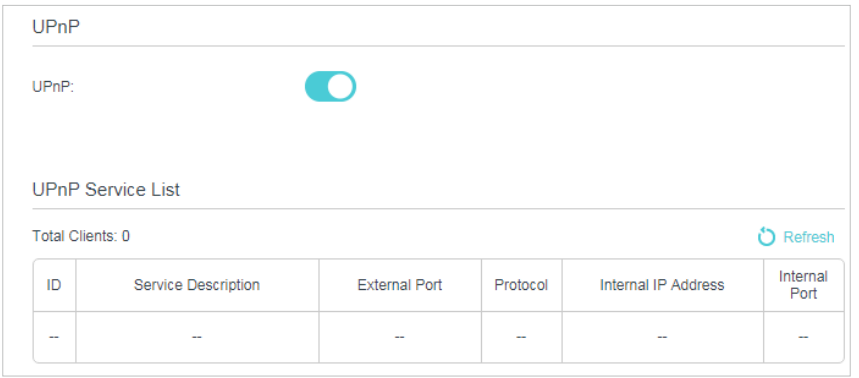
1. UPnP is enabled by default in this router.
2. Only the application supporting UPnP protocol can use this feature.
3. UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

For example, when you connect your Xbox to the router which has connected to the internet to play online games, UPnP will send request to the router to open the corresponding ports allowing the following data penetrating the NAT to transmit. Therefore, you can play Xbox online games without a hitch.



If necessary, you can follow the steps to change the status of UPnP.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router;
2. Go to Advanced > NAT Forwarding > UPnP and toggle on or off according to your needs.



Chapter 11

Specify Your Network Settings

This chapter introduces how to change the default settings or adjust the basic configuration of the router using the web management page.

It contains the following sections:

- LAN Settings
- IPv6 LAN Settings
- Wireless Settings
- Set Up a Dynamic DNS Service Account
- Create Static Routes
- Set Up the IPv6 Tunnel

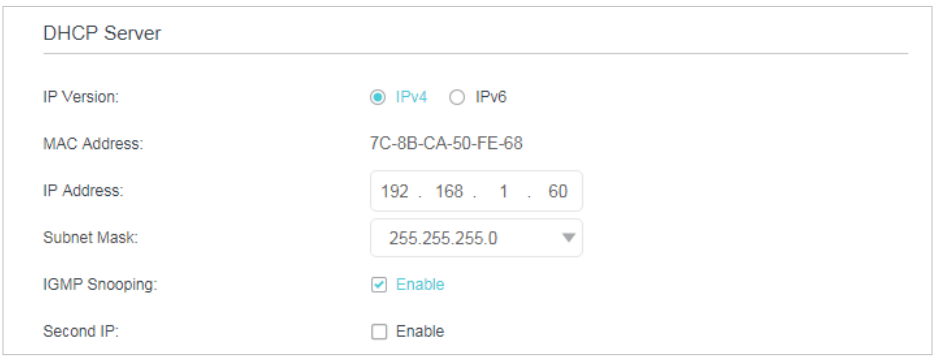
11. 1. LAN Settings

11. 1. 1. Change the LAN IP Address

The router is preset with a default LAN IP 192.168.1.1, which you can use to log in to its web management page. The LAN IP address together with the Subnet Mask also defines the subnet that the connected devices are on. If the IP address conflicts with another device in your local network or your network requires a specific IP subnet, you can change it.

Follow the steps below to change your IP address.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > LAN Settings page and select IPv4.



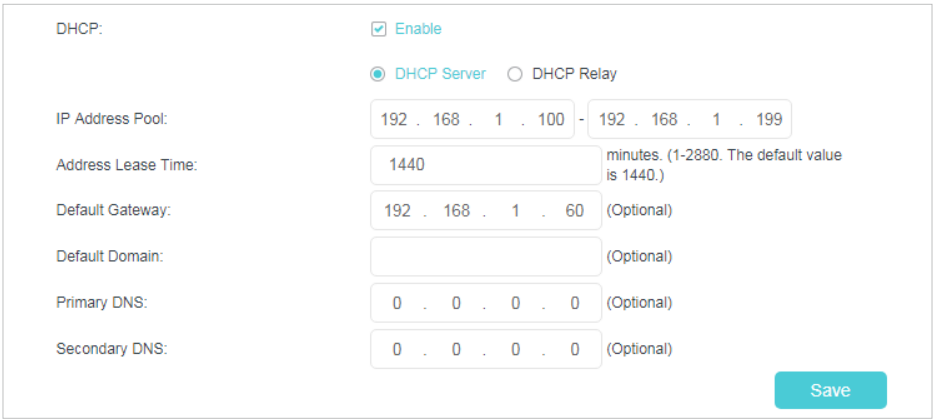
3. Type in a new IP Address appropriate to your needs.
4. Select the Subnet Mask from the drop-down list. The subnet mask together with the IP address identifies the local IP subnet.
5. Keep IGMP Snooping enabled by default. IGMP snooping is the process of listening to IGMP (Internet Group Management Protocol) network traffic. The function prevents hosts on a local network from receiving traffic for a multicast group they have not explicitly joined.
6. You can configure the router's Second IP and Subnet Mask for LAN interface through which you can also access the web management page.
7. Leave the rest of the default settings as they are.
8. Click Save to make the settings effective.

11. 1. 2. Use the Router as a DHCP Server

You can configure the router to act as a DHCP server to assign IP addresses to its clients. To use the DHCP server function of the router, you must configure all computers on the LAN to obtain an IP Address automatically.

Follow the steps below to configure DHCP server.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > LAN Settings page and select IPv4.



3. Select DHCP to enable the DHCP function and select DHCP Server.
4. Specify the IP Address Pool, the start address and end address must be on the same subnet with LAN IP. The router will assign addresses within this specified range to its clients. It is from 192.168.1.100 to 192.168.1.199 by default.
5. Enter a value for the Address Lease Time. The Address Lease Time is the amount of time in which a DHCP client can lease its current dynamic IP address assigned by the router. After the dynamic IP address expires, the user will be automatically assigned a new dynamic IP address. The default is 1440 minutes.
6. Keep the rest of the settings as default and click Save.

Note:

1. The router can be configured to work as a DHCP Relay. A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the device's interfaces can be configured as a DHCP relay. If it is enabled, the DHCP requests from local PCs will be forwarded to the DHCP server that runs on WAN side.
2. You can also appoint IP addresses within a specified range to devices of the same type by using Condition Pool feature. For example, you can assign IP addresses within the range (192.168.1.50 to192.168.1.80) to Camera devices, thus facilitating the network management. Enable DHCP feature and configure the parameters according to your situation on the Advanced > Network > LAN Settings page.

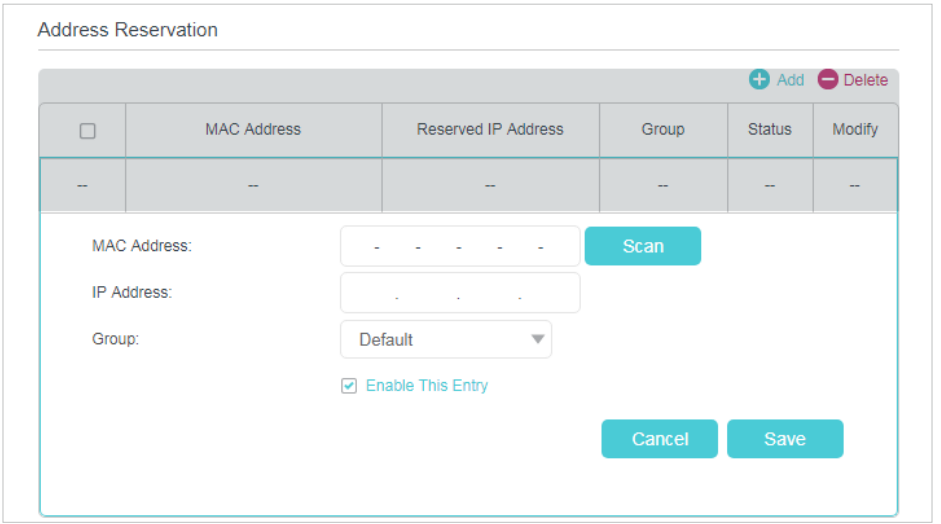
11. 1. 3. Reserve LAN IP Addresses

You can view and add a reserved address for a client. When you specify an IP address for a device on the LAN, that device will always receive the same IP address each time when it accesses the DHCP server. If there are some devices in the LAN that require permanent IP addresses, please configure Address Reservation on the router for the purpose.

Follow the steps below to reserve an IP address for your device.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.

2. Go to Advanced > Network > LAN Settings page and select IPv4.
3. Scroll down to locate the Address Reservation table and click Add to add an address reservation entry for your device.



4. Enter the MAC address of the device for which you want to reserve IP address.
5. Specify the IP address which will be reserved by the router.
6. Check to Enable this entry and click Save to make the settings effective.

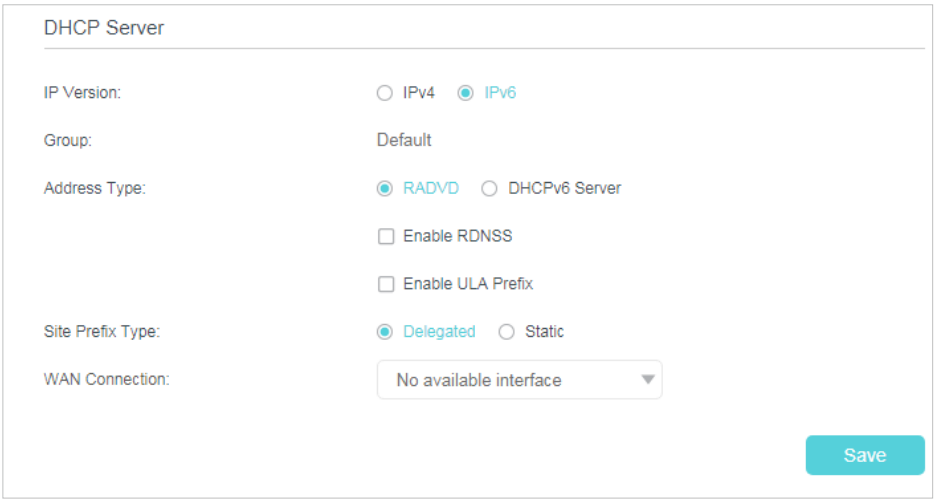
11. 2. IPv6 LAN Settings

Based on the IPv6 protocol, the router provides two ways to assign IPv6 LAN addresses:

- Configure the RADVD (Router Advertisement Daemon) address type
- Configure the DHCPv6 Server address type

11. 2. 1. Configure the RADVD Address Type

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > LAN Settings.
3. Select IPv6 to configure IPv6 LAN parameters.



1) Select the RADVD address type to make the router assign IPv6 address prefixes to hosts.

Note:

Do not select the Enable RDNSS and Enable ULA Prefix check boxes unless required by your ISP. Otherwise you may not be able to access the IPv6 network. For more information about RDNSS and ULA Prefix, contact our technical support.

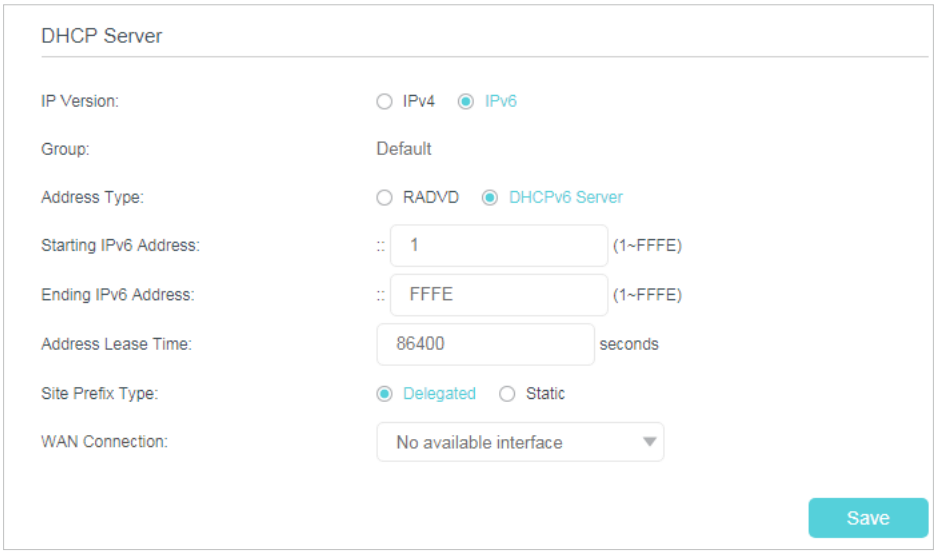
2) Keep Site Prefix Type as the default value Delegated. If your ISP has provided a specific IPv6 site prefix, select Static and enter the prefix.

3) Keep WAN Connection as the default value.

4. Click Save to make the settings effective.

11. 2. 2. Configure the DHCPv6 Server Address Type

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > LAN Settings.
3. Select IPv6 to configure IPv6 LAN parameters.



1) Select the DHCPv6 Server address type to make the router assign IPv6 addresses to hosts.

2) Specify the Start/End IPv6 Address for the IPv6 suffixes. The router will generate IPv6 addresses within the specified range.

3) Keep Address Leased Time as the default value.

4) Keep Site Prefix Type as the default value Delegated. If your ISP has provided a specific IPv6 site prefix, select Static and enter the prefix.

5) Keep WAN Connection as the default value.

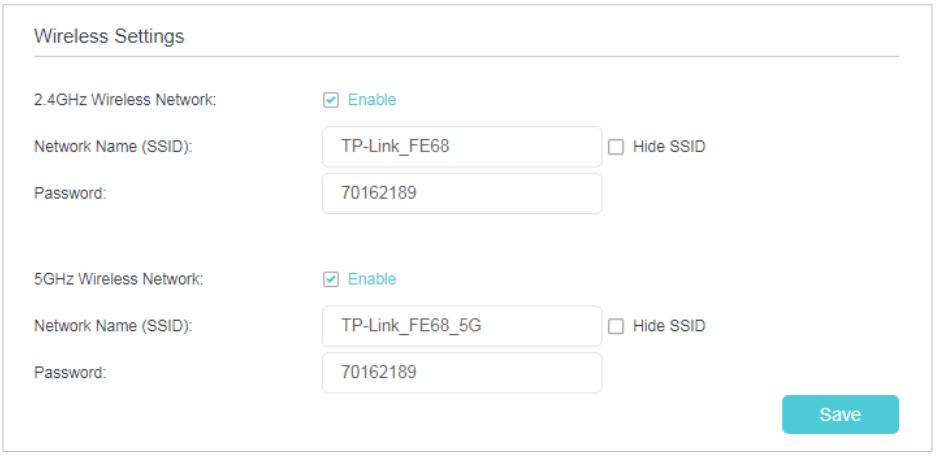
4. Click Save to make the settings effective.

11. 3. Wireless Settings

11. 3. 1. Specify Basic Wireless Settings

The router's wireless network name (SSID) and password, and security option are preset in the factory. The preset SSID and password can be found on the product label. You can customize the wireless settings according to your needs.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Basic > Wireless page.



➢ **To enable or disable the wireless function:**

Enable the 2.4 GHz or 5GHz Wireless Network. If you don't want to use the wireless function, just deselect the box. If you disable the wireless function, all the wireless settings won't be effective.

➢ **To change the wireless network name (SSID) and wireless password:**

Enter a new SSID using up to 32 characters. The value is case-sensitive.

Note:
If you use a wireless device to change the wireless settings, you will be disconnected after the new settings are effective. Please write down the new SSID and password for future use.

➢ **To hide SSID:**

Select Hide SSID, and your SSID will not be broadcast. Your SSID won't display on your wireless device when you scan for local wireless network list and you need to manually join the network.

➢ **To change the mode or channel:**

Go to Advanced > Wireless > Wireless Settings page and select the wireless network 2.4GHz or 5GHz.

Mode: Select the desired mode.

- 802.11n only: Select only if all of your wireless clients are 802.11n devices.
- 802.11g/n mixed: Select if you are using both 802.11g and 802.11n wireless clients.
- 802.11b/g/n mixed: Select if you are using a mix of 802.11b, 11g, and 11n wireless clients.

  Note: When 802.11n only mode is selected, only 802.11n wireless stations can connect to the router. It is strongly recommended that you select 802.11bgn mixed, and all of 802.11b, 802.11g, and 802.11n wireless stations can connect to the router.
- 802.11ac/n mixed (5GHz): Select if you are using both 802.11ac and 802.11n wireless clients.

- 802.11a/n/ac mixed (5GHz): Select if you are using a mix of 802.11a, 802.11n and 802.11ac wireless clients. It is strongly recommended that you select 11a/n/ac mixed.

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.

Channel Width: Select the channel width from the drop-down list. The default setting is Auto, which can adjust the channel width for your clients automatically.

Transmit Power: Select Low, Middle, or High to specify the data transmit power. The default and recommended setting is High.

➢ **To change the security option:**

1. Go to Advanced > Wireless > Wireless Settings page.
2. Select the wireless network 2.4GHz or 5GHz.
3. Select an option from the Security drop-down list. The router provides four options, No Security, WPA/WPA2 Personal (Recommended), WPA/WPA2 Enterprise, WEP. WPA2 uses the newest standard and the security level is the highest. We recommend you don't change the default settings unless necessary.

11. 3. 2. Use WPS for Wireless Connection

You can use WPS (Wi-Fi Protected Setup) to add a new wireless device to your existing network quickly and easily.

Method 1: Use the WPS button

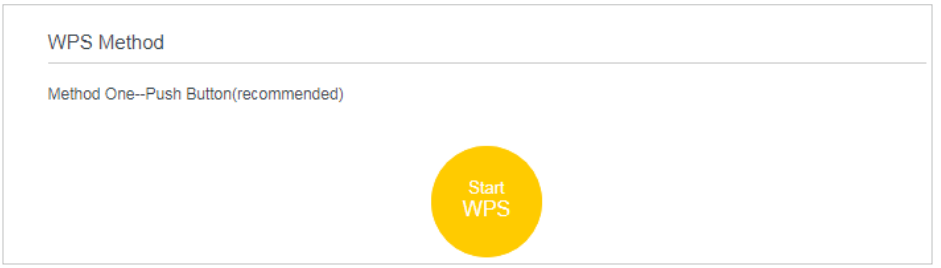
Use this method if your client device has a WPS button.

1. Press the WPS button of the router.
2. Press the WPS button of the client device directly.
3. The WPS LED flashes for about 2 minutes during the WPS process.
4. When the WPS LED is on, the client device has successfully connected to the router.

Method 2: Use the WPS button on the web management page

Use this method if your client device has a WPS button.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Wireless > WPS page.

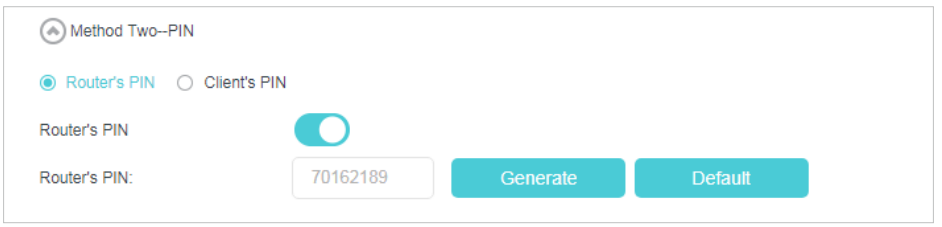


3. Click Start WPS on the page.
4. Press the WPS button of the client device directly.
5. The WPS LED of the router flashes for about 2 minutes during the WPS process.
6. When the WPS LED is on, the client device has successfully connected to the router.

Method 3: Enter the router's PIN on your client device

Use this method if your client device asks for the router's PIN.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Wireless > WPS page. Click Method Two--PIN.



3. Take a note of the Current PIN of the router. You can also click the Generate button to get a new PIN.
4. On the client device, enter the router's PIN. (The default PIN is also printed on the label of the router.)
5. The WPS LED flashes for about two minutes during the WPS process.
6. When the WPS LED is on, the client device has successfully connected to the router.

Note:

1. The WPS LED on the router will light on for five minutes if the device has been successfully added to the network.
2. The WPS function cannot be configured if the wireless function of the router is disabled. Please make sure the wireless function is enabled before configuring WPS.

Method 4: Enter the client device's PIN on the router

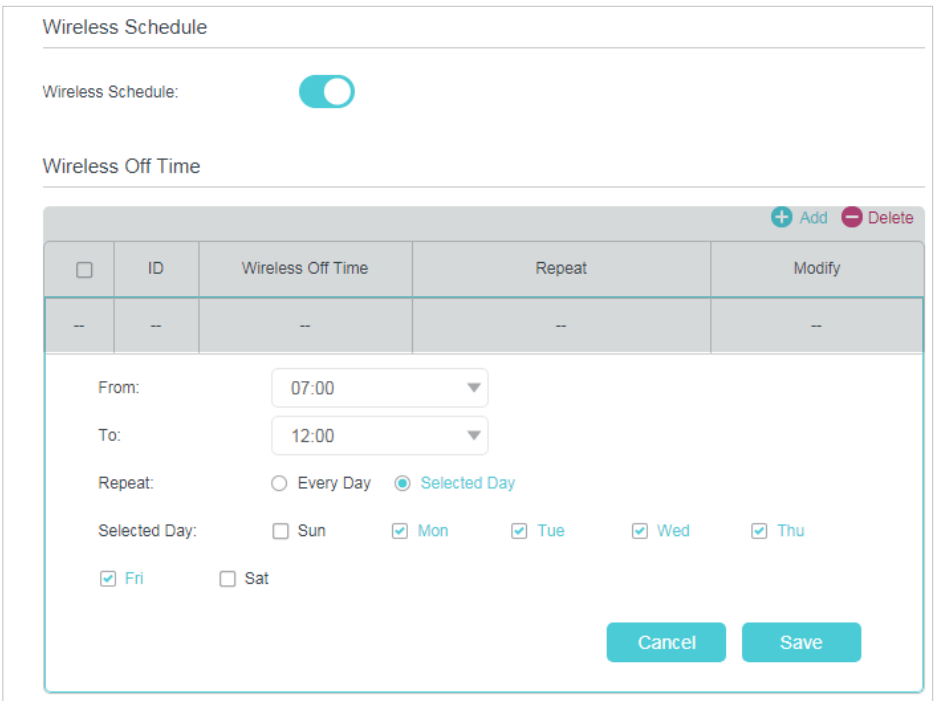
1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Wireless > WPS page. Click Method Two--PIN.

3. Select Client's PIN.
4. Enter the client device's PIN in the field. Then click the Connect button.
5. Connect successfully will appear on the above screen, which means the client device has successfully connected to the router.

11. 3. 3. Schedule Your Wireless Function

You can automatically turn off your wireless network (both 2.4GHz and 5GHz) when you do not need the wireless connection.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Wireless > Wireless Schedule page.
3. Toggle on the button to enable the Wireless Schedule feature.



4. Click Add to set the Wireless Off Time, and click Save to save the settings.

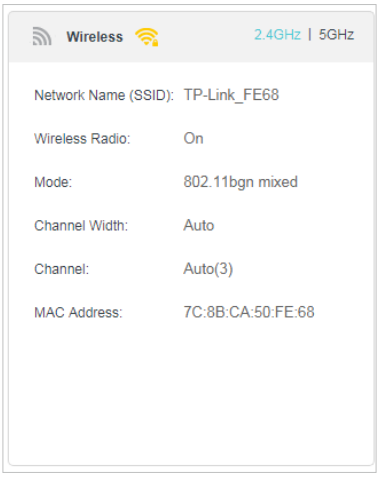
Note:

1. Make sure that the time of the router is correct before using this function. For details, refer to Set System Time.
2. The wireless LED (2.4GHz , 5GHz) will turn off if the corresponding wireless network is disabled.
3. The wireless network will be automatically turned on after the time period you set.

11. 3. 4. View Wireless Information

➢ **To view the detailed wireless network settings:**

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Status page. You can see the Wireless box.
3. Select 2.4GHz or 5GHz to view the wireless details.



Tips: You can also see the wireless details by clicking the router icon on Basic> Network Map.

➢ **To view the detailed information of the connected wireless clients:**

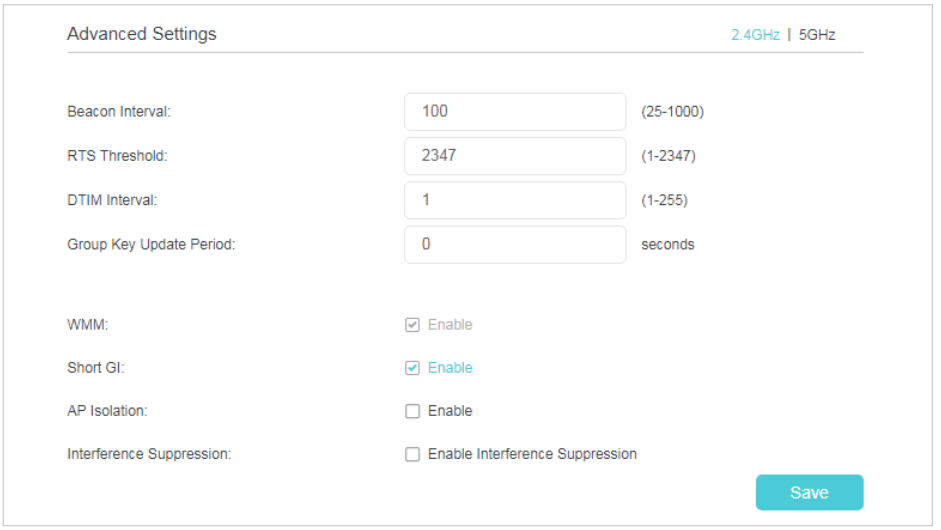
1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Wireless > Statistics page.
3. You can view the detailed information of the wireless clients, including its connected wireless band and security option as well as the packets transmitted.

Tips: You can also see the wireless details by clicking the wireless clients icon on Basic > Network Map.

11. 3. 5. Advanced Wireless Settings

Advanced wireless settings are for those who have a network concept. If you are not familiar with the settings on this page, it's strongly recommended that you keep the provided default values; otherwise it may result in lower wireless network performance.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Wireless > Advanced Settings page.



- Beacon Interval: Enter a value between 25 and 1000 in milliseconds to determine the duration between which beacon packets are broadcasted by the router to synchronize the wireless network. The default is 100 milliseconds.
- RTS Threshold: Enter a value between 1 and 2347 to determine the packet size of data transmission through the router. By default, the RTS (Request to Send) Threshold size is 2347. If the packet size is greater than the preset threshold, the router sends Request to Send frames to a particular receiving station and negotiates the sending of a data frame, or else the packet will be sent immediately.
- DTIM Interval: Enter a value between 1 and 255 to determine the interval of the Delivery Traffic Indication Message (DTIM). 1 indicates the DTIM Interval is the same as Beacon Interval.
- Group Key Update Period: Enter the number of seconds to control the time interval for the encryption key automatic renewal. The default is 0, indicating no key renewal.
- WMM: This feature guarantees the packets with high-priority messages being transmitted preferentially. WMM is enabled compulsively under 802.11n or 802.11ac mode.
- Short GI: This feature is enabled by default and recommended to increase the data capacity by reducing the Guard Interval (GI) time.
- AP Isolation: Select this check box to enable the AP Isolation feature that allows you to confine and restrict all wireless devices on your network from interacting with each other, but still able to access the internet. AP isolation is disabled by default.
- Interference Suppression: Enable this feature to reduce interference.

11. 4. Set Up a Dynamic DNS Service Account

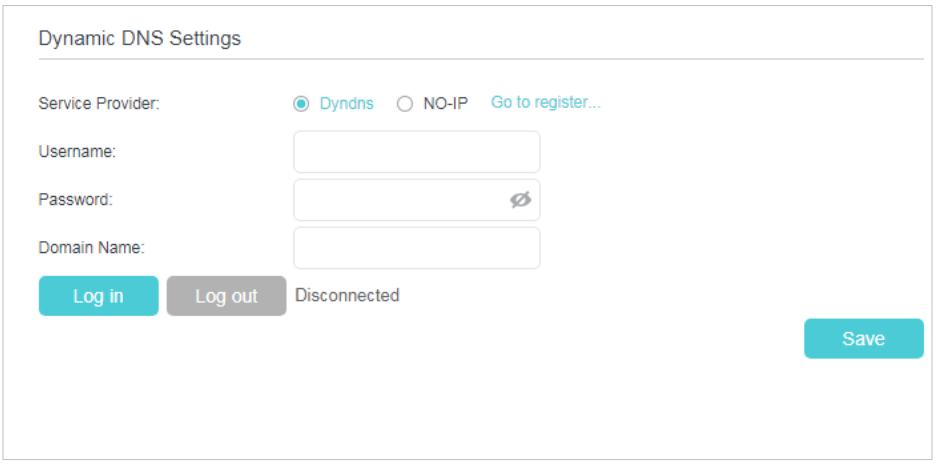
Most ISPs (Internet service providers) assign a dynamic IP address to the router and you can use this IP address to access your router remotely. However, the IP address

can change any time and you don't know when it changes. In this case, you might need the DDNS (Dynamic Domain Name Server) feature on the router to allow you and your friends to access your router and local servers (FTP, HTTP, etc.) using domain name, in no need of checking and remembering the IP address.

Note: DDNS does not work if the ISP assigns a private WAN IP address (such as 192.168.1.x) to the router.

To set up DDNS, please follow the instructions below:

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > Dynamic DNS.
3. Select the DDNS service provider (Dyndns or NO-IP).
4. Log in with your DDNS account, select a service provider and click Go to register ... Enter the username, password and domain name of the account (such as lisa.ddns.net).



5. Click Log in and Save.

Tips: If you want to use a new DDNS account, please Logout first, then login with the new account.

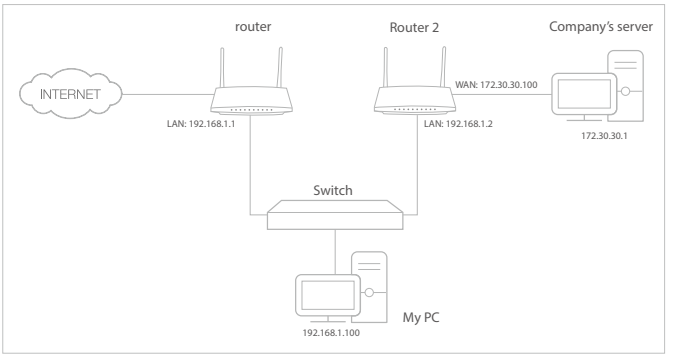
11. 5. Create Static Routes

A static route is a pre-determined path that network information must travel to reach a specific host or network. Data from one point to another will always follow the same path regardless of other considerations. Normal internet usage does not require this setting to be configured.

I want to: Visit multiple networks and multiple servers at the same time.

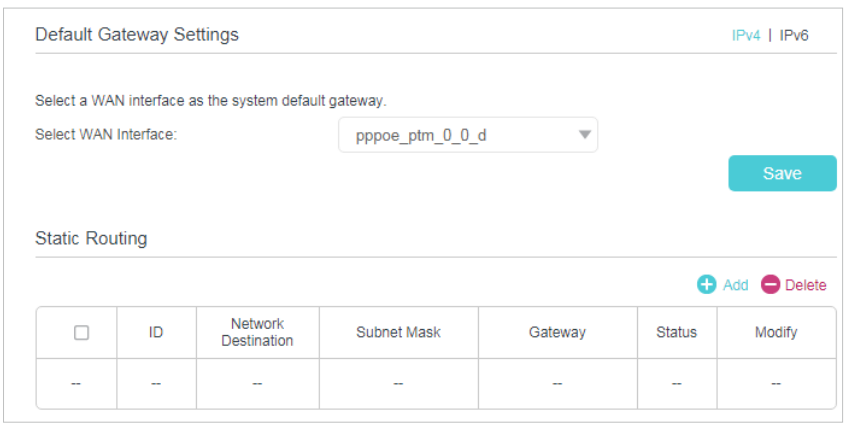
For example, in a small office, my PC can surf the internet, but I also want to visit my company's server. Now I have a switch and another router. I connect the devices as shown in the following figure so that the physical connection between my PC and my

company's server is achieved. To surf the internet and visit my company's network at the same time, I need to configure the static routing.

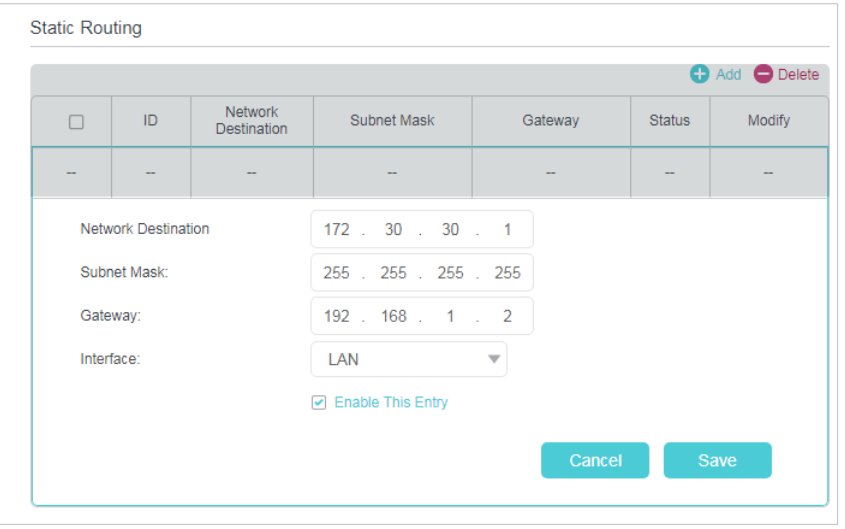


How can I do that?

1. Make sure the routers use different LAN IP addresses on the same subnet. Disable Router 2's DHCP function.
2. Visit http://tplinkmodem.net, and log in with the password you set for the router.
3. Go to Advanced > Network > Static Routing. Select your current WAN Interface and click Save.



4. Click Add to add a new static routing entry. Finish the settings according to the following explanations:



- Network Destination: The destination IP address that you want to assign to a static route. This IP address cannot be on the same subnet with the WAN IP or LAN IP of the router. In the example, the IP address of the company network is the destination IP address, so here enters 172.30.30.1.
- Subnet Mask: Determines the destination network with the destination IP address. If the destination is a single IP address, enter 255.255.255.255; otherwise, enter the subnet mask of the corresponding network IP. In the example, the destination network is a single IP, so here enters 255.255.255.255.
- Gateway: The IP address of the gateway device to which the data packets will be sent. This IP address must be on the same subnet with the router's IP which sends out the data. In the example, the data packets will be sent to the LAN port of Router 2 and then to the Server, so the default gateway should be 192.168.1.2.
- Interface: Determined by the port (WAN/LAN) that sends out the data packets. In the example, the data is sent to the gateway through the LAN port, so LAN should be selected.

5. Select the check box to enable this entry.
6. Click Save to save the settings.

Done!

Open a web browser on your PC. Enter the company server's IP address to visit the company network.

11. 6. Set Up the IPv6 Tunnel

The IPv6 Tunnel feature helps you obtain IPv6 resources based on an IPv4 WAN connection or vice versa.

IPv6 Tunnel is a transition mechanism that enables IPv6-only hosts to reach IPv4 services or vice versa and allows 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.

The router provides three tunneling mechanisms: 6to4, 6rd and DS-Lite. The way to set up 6rd and DS-Lite tunnel are similar.

11. 6. 1. Use the Public IPv6 Tunnel Service-6to4

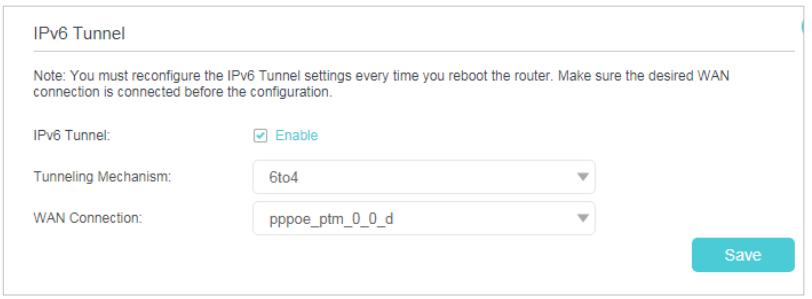
The 6to4 tunnel is a kind of public service. If there are any 6to4 servers on your network, you can use this mechanism to access IPv6 service. If your ISP provides you with an IPv4-only connection but you want to visit IPv6 websites, you can try to set up a 6to4 tunnel.

I want to:

Set up the IPv6 tunnel though my ISP doesn't provide me with the tunnel service.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > IPv6 Tunnel.
3. Tick the check box, select 6to4 as the tunneling mechanism and select a WAN connection from the drop-down list, then click Save.



Note:

If there is no available WAN connection to choose, make sure you have connected to the internet and the connection type is not Bridge.

Done!

Now you can visit the IPv6 websites with the 6to4 tunnel.

Note:
Still not being able to access IPv6 resources means that not any 6to4 public server was found in your network. You can contact your ISP to sign up for IPv6 connection service.

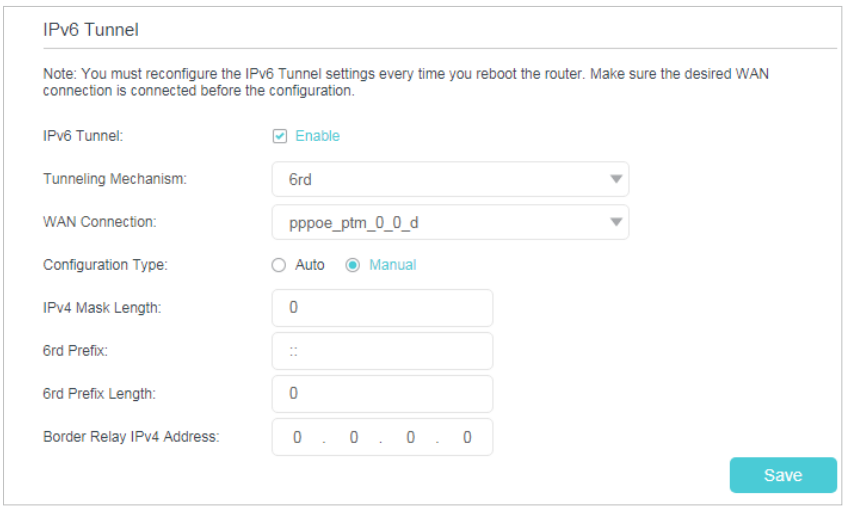
11. 6. 2. Specify the 6rd Tunnel with Parameters Provided by Your ISP

I want to:

Specify the 6rd tunnel with the parameters provided by my 6rd tunnel service provider.

How can I do that?

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > IPv6 Tunnel.
3. Tick the check box, select 6rd as the tunneling mechanism and select a WAN connection from the drop-down list.
4. According to the parameters provided by your ISP, choose Auto or Manual. More parameters are needed if you choose Manual.
5. Click Save.



Note:
If there is no available WAN connection to choose, make sure you have connected to the internet and the connection type is not Bridge.

Done!

Now you can visit the IPv6 websites with the 6rd tunnel.

Tips:
The way to set up DS-Lite tunnel is similar to that of 6rd tunnel. If you are provided with an IPv6-only WAN connection and have signed up for DS-Lite tunnel service, specify the DS-Lite tunnel by referring to the steps above.

Chapter 12

Manage your GPON Router

This chapter introduces how to change the system settings and administrate your router's network.

This chapter contains the following sections:

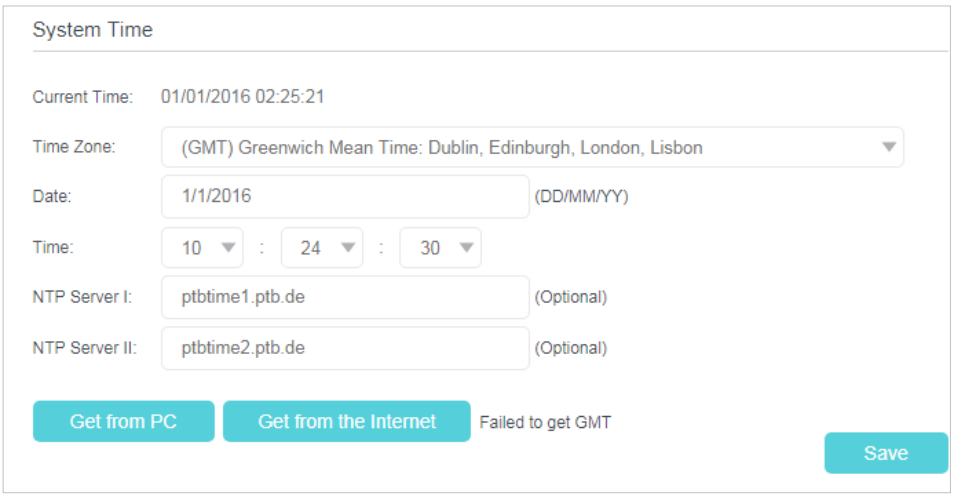
- Set System Time
- Update the Firmware
- Back up and Restore Configuration Settings
- Change the Administrator Account
- Local Management
- Remote Management
- System Log
- Monitor the Internet Traffic Statistics
- CWMP Settings

12. 1. Set System Time

System time is the time displayed while the router is running. The system time you configure here will be used for other time-based functions like Parental Controls and Wireless Schedule. You can manually set how to get the system time.

Follow the steps below to set your system time.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > Time Settings page.



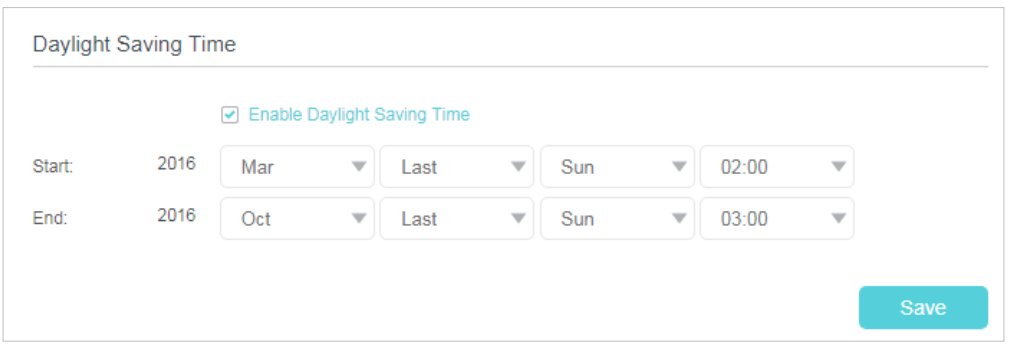
3. Configure the system time using the following methods:

   Manually: Select your time zone and enter your local time.

   Get from PC: Click this button if you want to use the current managing PC's time.

   Get from the Internet: Click this button if you want to get time from the internet. Make sure your router can access the internet before you select this way to get system time.

4. Click Save.
5. After setting the system time, you can set Daylight Saving Time according to your needs. Tick the check box to enable Daylight Saving Time, set the start and end time and then click Save to make the settings effective.



12. 2. Update the Firmware

TP-Link is dedicated to improving product features, giving you a better network experience.

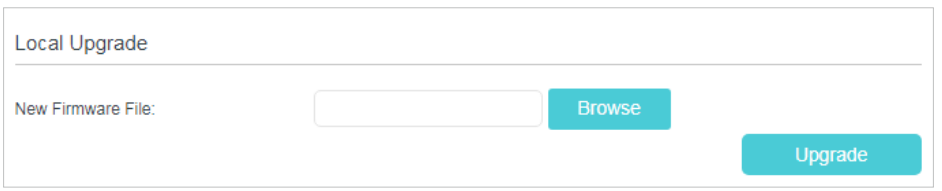
We will inform you through the web management page if there's any update firmware available for your router. The latest firmware can also be downloaded from the Support page of our website www.tp-link.com for free.

Note:

1. Make sure that you have a stable connection between the router and your computer. It is NOT recommended to upgrade the firmware wirelessly.
2. Make sure you remove any USB storage device connected to the router before the firmware upgrade to prevent data loss.
3. Back up your router configuration before upgrading the firmware.
4. Do NOT turn off the router during the firmware upgrade.

12. 2. 1. Local Upgrade

1. Download the latest firmware file for the router from our website www.tp-link.com.
2. Visit http://tplinkmodem.net, and log in with the password you set for the router.
3. Go to Advanced > System Tools > Firmware Upgrade.
4. Focus on the Device Information section. Make sure the downloaded firmware file matches with the Hardware Version.
5. Focus on the Local Upgrade section. Click Browse to locate the downloaded new firmware file, and click Upgrade.



6. Wait a few moments for the upgrading and rebooting.

12. 3. Back up and Restore Configuration Settings

The configuration settings are stored as a configuration file in the router. You can back up the configuration file to your computer for future use and restore the router to a previous settings from the backup file when needed. Moreover, if needed you can erase the current settings and reset the router to the default factory settings.

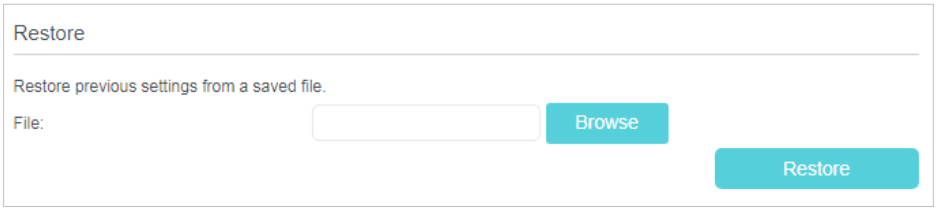
➢ **To back up configuration settings**

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Click Advanced > System Tools > Backup & Restore page.

3. Click Backup to save a copy of the current settings to your local computer. A conf. bin file will be stored to your computer.

➢ **To restore configuration settings**

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Click Advanced > System Tools > Backup & Restore page.



3. Click Browse to locate the previous backup configuration file, and click Restore.
4. Wait for the restoring and then the router will automatically reboot.

➢ **To reset the router to factory default settings**

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Click Advanced > System Tools > Backup & Restore page.
3. Click Restore to restore all configuration settings to default values, except your login. Click Factory Restore to reset the router.
4. Wait for the reset process to complete, and then the router will automatically reboot.

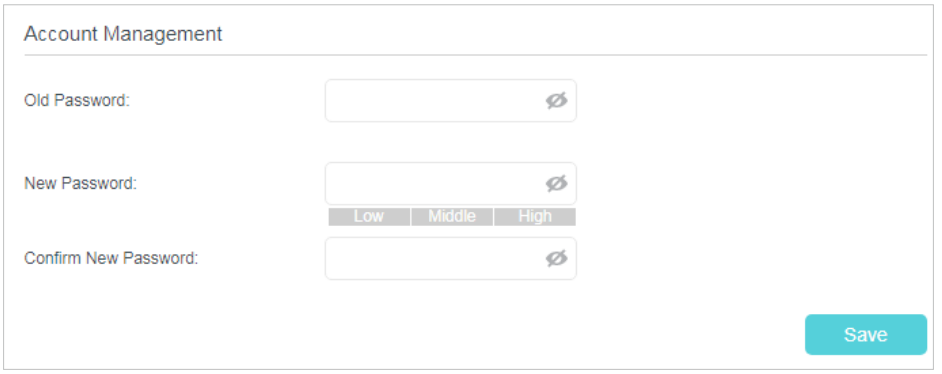
Note:

1. During the resetting process, do not turn off the router.
2. We strongly recommend you back up the current configuration settings before resetting the router.

12. 4. Change the Administrator Account

Admin account is used to log in to the router's web management page. You are required to set the admin account at first login. You can also change it on the web page.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > Administration page. Locate the Account Management section.



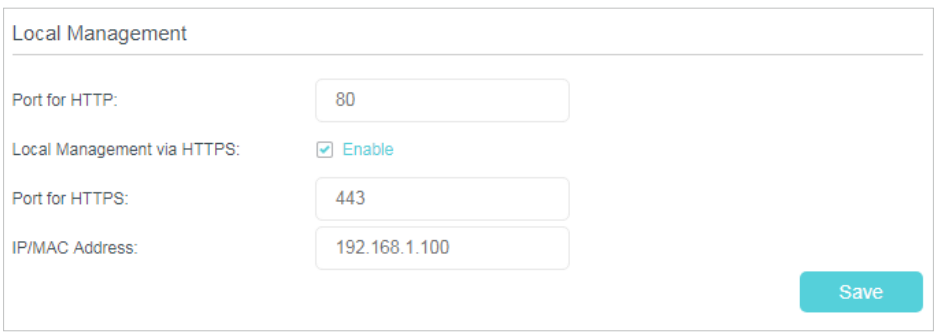
3. Enter the old password. Enter the new password and enter again to confirm.
4. Click Save to make the settings effective.

12. 5. Local Management

You can control the local devices' authority to manage the router via Local Management feature. By default all local connected devices are allowed to manage the router. You can also specify one device to manage the router and enable local management over a more secure way, HTTPS.

Follow the steps below to allow only the specific device to manage the router via the local management over HTTPS.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > Administration page. Locate the Local Management section.
3. Keep the Port as the default setting. Enable Management over HTTPS and keep the Port for HTTPS as the default setting. Enter the IP address or MAC address of the local device to manage the router.



4. Click Save.

Now, you can manage the router over both HTTP (http://tplinkmodem.net) and HTTPS (https://tplinkmodem.net).

Note:
If you want that all local devices can manage the router, just leave the IP/MAC Address field blank.

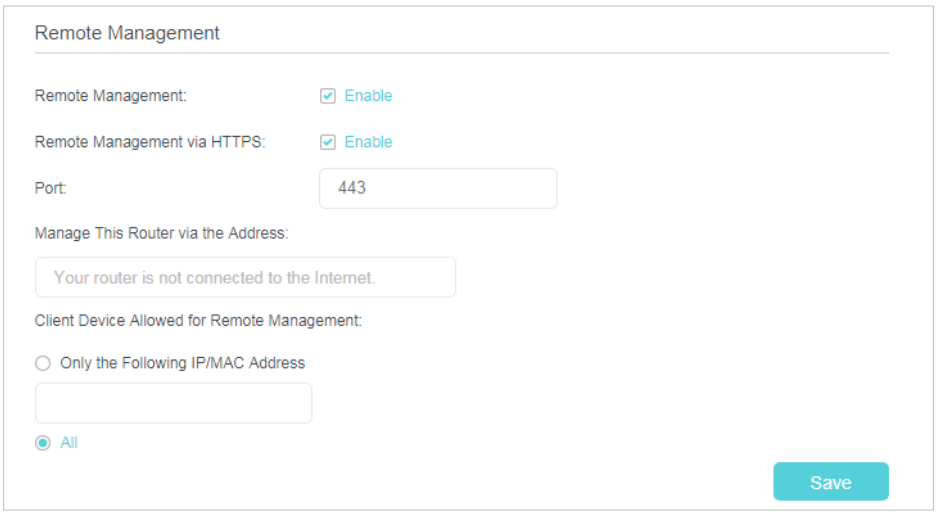
12. 6. Remote Management

By default, the remote devices are not allowed to manage the router from the internet. You can enable remote management over HTTP and/or HTTPS if needed. HTTPS is a more secure way to access the router.

Note:
If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), you cannot use the remote management feature because private addresses are not routed on the internet.

Follow the steps below to allow remote devices to manage the router over HTTPS.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > Administration page. Locate the Remote Management section.

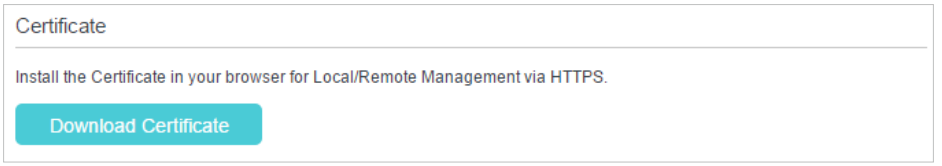


3. Tick the check box to enable Remote Management. Enable Remote Management via HTTPS to allow for HTTPS connection. Keep the Port as the default setting.
4. Set the client device allowed for remote management. Select All to allow all remote devices to manage the router. If you just want to allow a specific device to manage the router, select Only the Following IP/MAC Address and enter the IP/MAC address of the remote device.
5. Click Save.

All devices or the specific device on the internet can log in to your router using the address displayed on the Manage This Router via the Address field to manage the router.

Tips:

1. If you were warned about the certificate when visiting the web management page remotely, click Trust (or a similar option) to continue. To avoid this warning, you can download and install the certificate on the router's web management page at Advanced > System Tools > Administration.

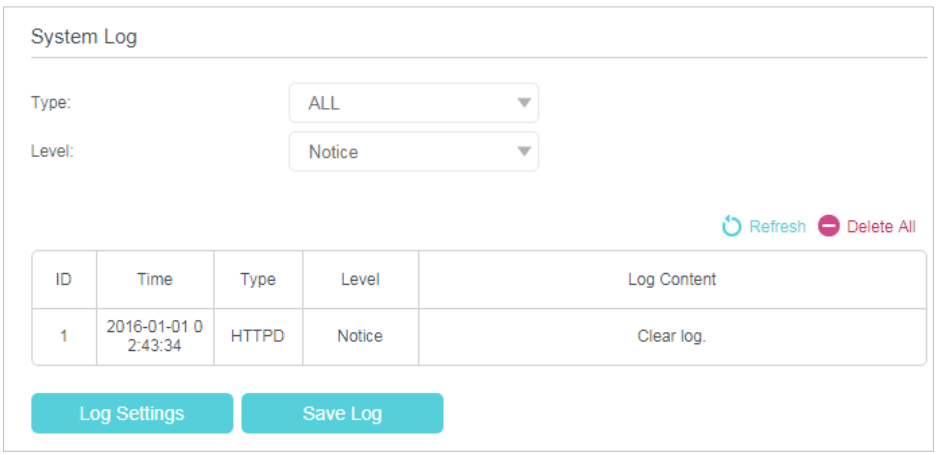


2. The router's WAN IP is usually a dynamic IP. Please refer to Set Up a Dynamic DNS Service Account if you want to log in to the router through a domain name.

12. 7. System Log

System Log can help you know what happened to your router, facilitating you to locate the malfunctions. For example when your router does not work properly, you will need to save the system log and send it to the technical support for troubleshooting.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Click Advanced > System Tools > System Log page.



➢ **To view the system logs:**

You can view specific system logs by selecting the log Type and Level.

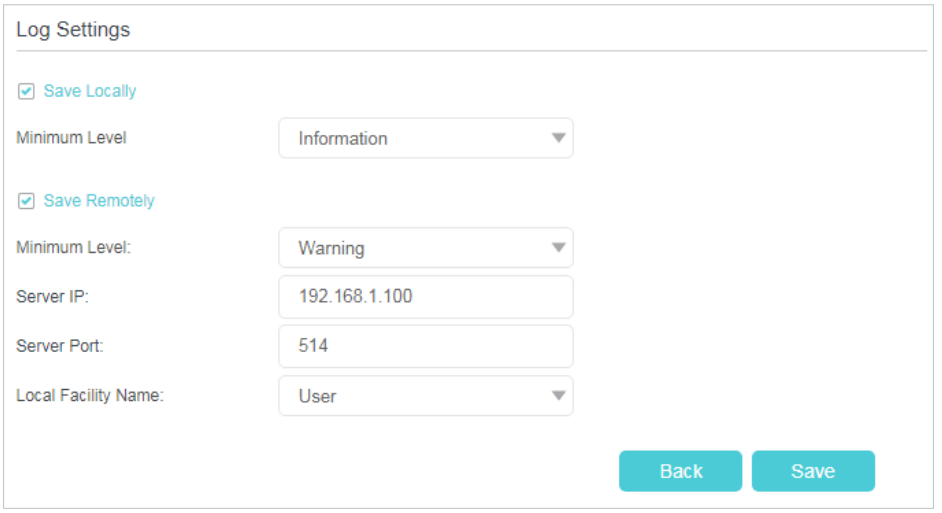
Click Refresh to refresh the log list.

➢ **To save the system logs:**

You can choose to save the system logs to your local computer or a remote server.

Click Save Log to save the logs in a txt file to your computer.

Click Log Settings to set the storage path of logs.

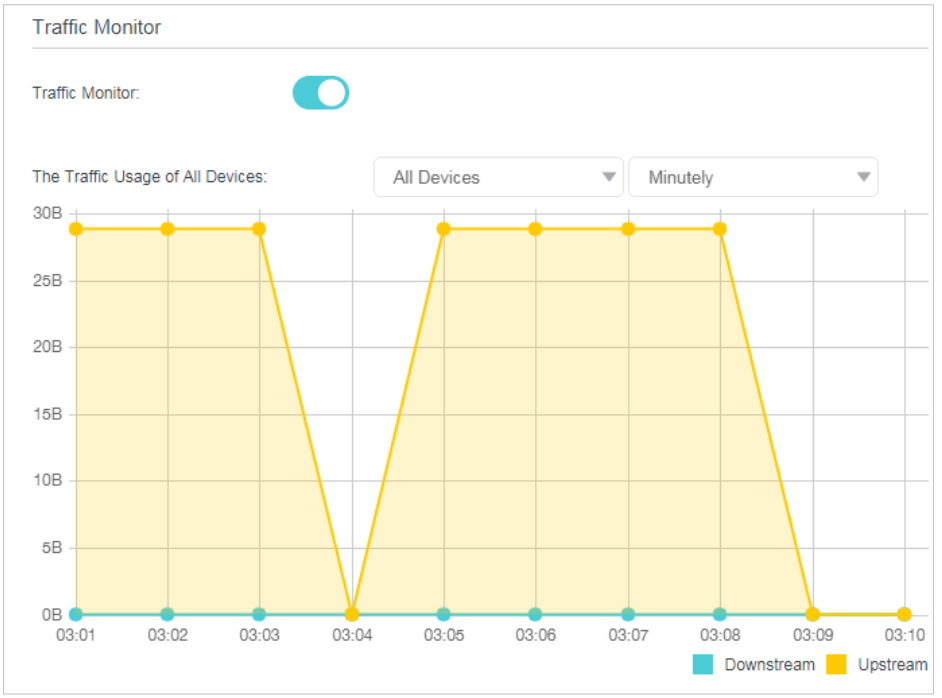


- Save Locally: Select this option to cache the system log to the router's local memory, select the minimum level of system log to be saved from the drop-down list. The logs will be shown in the table in descending order on the System Log page.
- Save Remotely: Select this option to send the system log to a remote server, select the minimum level of system log to be saved from the drop-down list and enter the information of the remote server. If the remote server has a log viewer client or a sniffer tool implemented, you can view and analyze the system log remotely in real-time.

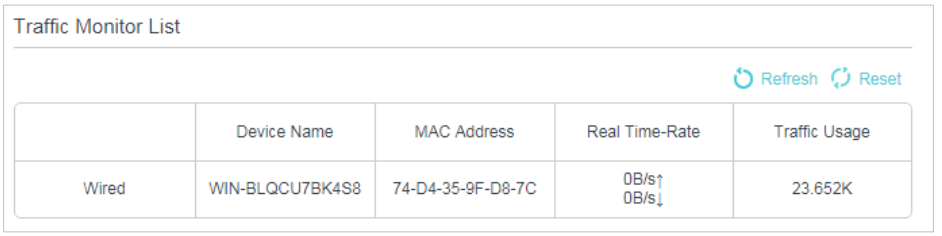
12. 8. Monitor the Internet Traffic Statistics

The Traffic Statistics page displays the traffic usage of a device in the past 10 minutes or that of all devices in the past 10 minutes/24 hours/7 days.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > Statistics.
3. Toggle on Traffic Monitor, select the Traffic Usage Devices from the dropdown list, If the desired device is selected, you can see the Upstream and Downstream of this device in the past ten minutes. If "All device" is selected, you can see the traffic usage of all devices in the past 10 minutes/24 hours/7 days. This function is disabled by default.



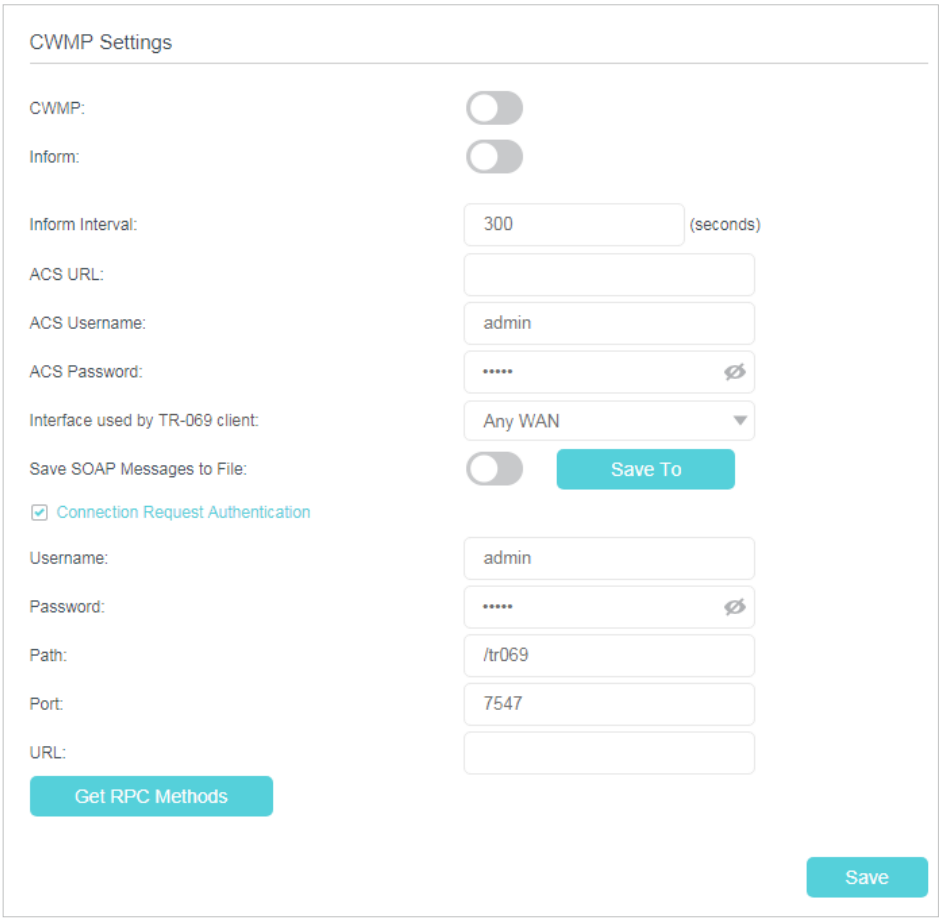
4. You can also go to Traffic Monitor List to view the traffic usage of all devices.



12. 9. CWMP Settings

The router supports CWMP (CPE WAN Management Protocol), also called TR-069. This collects information, performs diagnostics and configures the devices automatically via ACS (Auto-Configuration Server).

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > System Tools > CWMP Settings page.



- Enable CWMP: Toggle On to enable the CWMP (CPE WAN Management Protocol) feature.
- Inform: Enable this feature to send an Inform message to the ACS (Auto Configuration Server) periodically.
- Inform Interval: Enter the time interval in seconds when the Inform message will be sent to the ACS.
- ACS URL: Enter the web address of the ACS which is provided by your ISP.
- ACS Username/Password: Enter the username/password to log in to the ACS server.
- Interface used by TR-069 client: Select which interface to be used by the TR-069 client.
- Save SOAP messages to File: Toggle to enable and click Save To to save the messages to a specified file.
- Connection Request Authentication: Select this check box to enable authentication for the connection request.
- Username/Password: Enter the username/password for the ACS server to log in to the router.
- Path: Enter the path for the ACS server to log in to the router.

- Port: Enter the port that connects to the ACS server.
- URL: Enter the URL that connects to the ACS server.
- Get RPC methods: Click to get the methods to support CWMP.

Click Save to make the settings effective.

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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

CE

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 (2014/53/EU 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.

Restricted to indoor use.

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

EAC

Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device.
- Do not use damaged charger or USB cable to charge the device.
- Do not use any other chargers than those recommended
- Do not use the device where wireless devices are not allowed.
- Adapter shall be installed near the equipment and shall be easily accessible.
- Use only power supplies which are provided by manufacturer and in the original packing of this product.
-

For EU/EFTA, this product can be used in the following countries:

AT	BE	BG	CH	CY	CZ	DE	DK
EE	EL	EF	FI	FR	HR	HU	IE
IS	IT	LI	LT	LU	LV	MT	NL
NO	PL	PT	PO	SE	SI	SK	UK

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.
	Indoor use only
	Class II equipment

Appendix: Troubleshooting

T1. How do I restore my router's configuration to its factory default settings?

- With the router powered on, press and hold down the Reset button on the side panel of the router for until all LEDs turn on momentarily, then release the button.
- Use the Backup & Restore page, For details, please refer to the instruction in "To reset the router to factory default settings".

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

T2. What should I do if I forgot my password?

Web management page password:

- Alternatively, refer to T1 to reset the router, and then visit http://tplinkmodem.net to create a new login password.

Wireless network password:

1. The default Wireless Password/PIN is printed on the product label of the router.
2. If the default wireless password has been changed, log in to the router's web management page and go to Basic > Wireless to retrieve or reset your password.

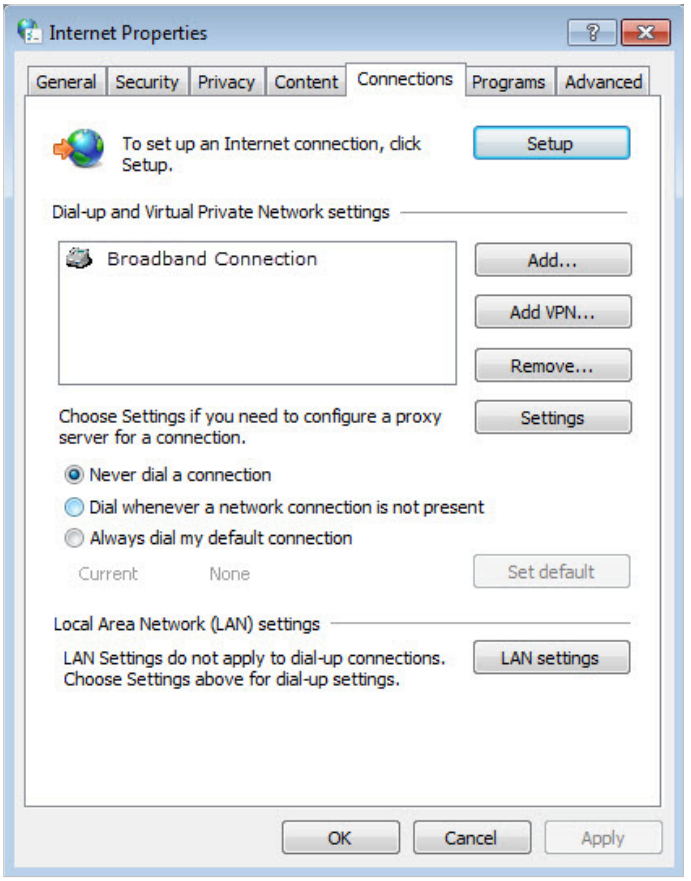
T3. What should I do if I cannot log in to the router's web management page?

- Make sure the router connects to the computer correctly and the corresponding LED indicator(s) light up.
- Make sure the IP address of your computer is configured to obtain an IP address automatically and obtain the DNS server address automatically.
- Make sure the default access you input is right.
- Check your computer's settings:

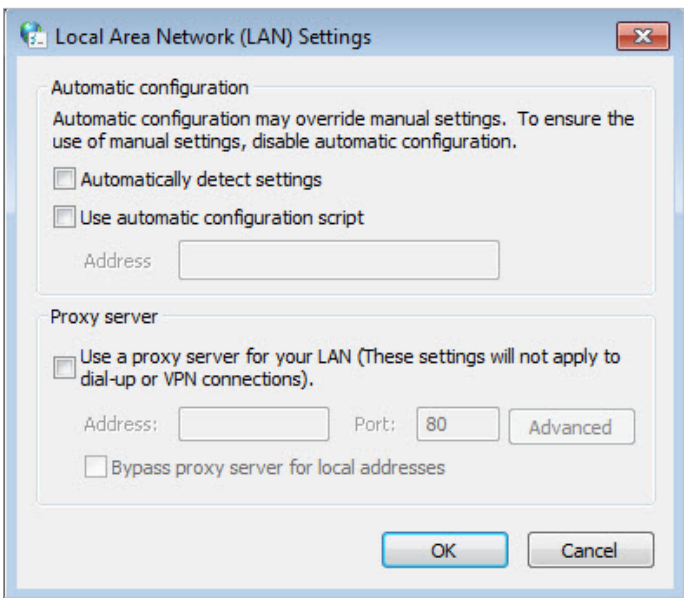
  1) Go to Start > Control Panel > Network and Internet, and click View network status and tasks;

  2) Click Internet Options on the bottom left;

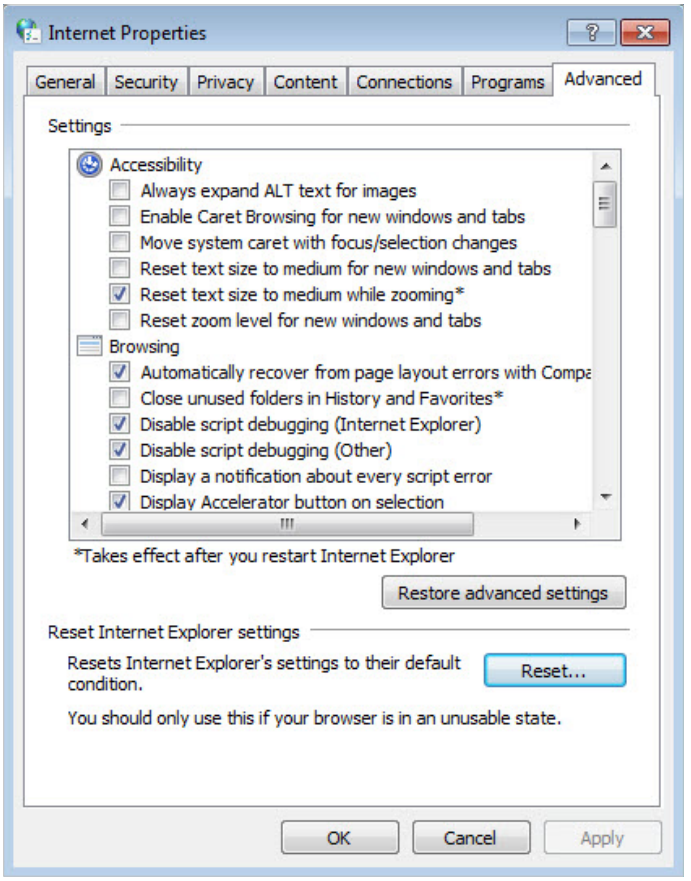
  3) Click Connections, select Never dial a connection;



4) Click LAN settings, deselect the following three options and click OK;



5) Go to Advanced > Restore advanced settings, click OK to save the settings.



- Change a web browser or computer and log in again.
- Reset the router to factory default settings: With the router powered on, press and hold down the WPS/RESET button on the rear panel of the router for 8 seconds until all LEDs turn back on momentarily, then release the button.

  Note: You'll need to reconfigure the router to surf the Internet once the router is reset.

  Open a web browser and log in again. If login fails, please contact the technical support.

T4. What should I do if I cannot access the internet?

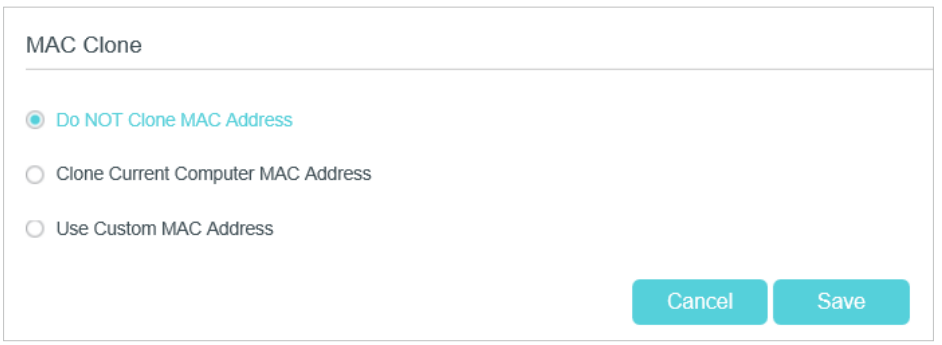
1. Check to see if all the connectors are connected well, including the telephone line, Ethernet cables and power adapter.
2. Check the GPON LED and make sure that it is lit and stable, indicating that the router is registered with the ISP. If not, make sure that the provided GPON SN and/or GPON Password are entered correctly in the Advanced > Network > GPON Settings page.
3. Check to see if you can log in to the web management page of the router. If you cannot, please adjust your computer's settings according to T3 and then see if you can access the internet. If the problem persists, please go to the next step.
4. Refer to T5 to clone the MAC address.

5. If you still cannot access the internet, please restore your router to its factory default settings and reconfigure your router by following the instructions in "Use Quick Setup Wizard".
6. Please contact our Technical Support if the problem persists.

T5. How to configure MAC address?

You can manually change the MAC address of the router. It is helpful when your internet access account provided by your ISP is bound to one specific MAC address, in other words, your ISP just permits only one computer with the authenticated MAC address to access the internet. In this case, you can use MAC Clone to allow more computers to access the internet via the same account.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Go to Advanced > Network > Internet page. Click the Add icon, and scroll down to get the MAC Clone section.



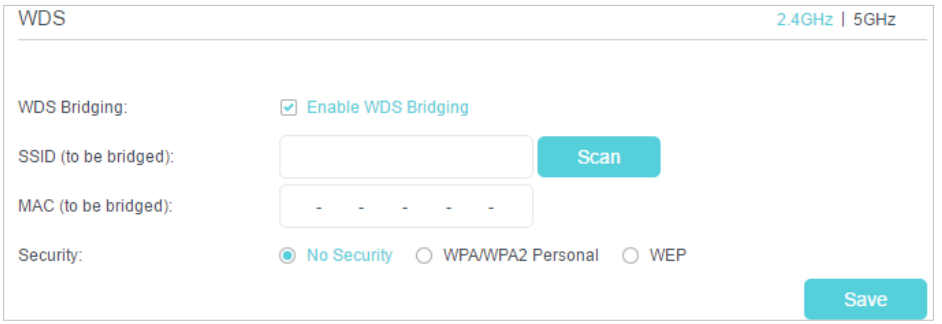
   - If you are using the computer with the authenticated MAC address to access the router, please select Use Current Computer MAC Address.
   - If you know the authenticated MAC address, please select Use Custom MAC Address and then enter the address.
3. Click Save to make the settings effective.

T6. How to use the WDS Bridging function to extend my wireless network?

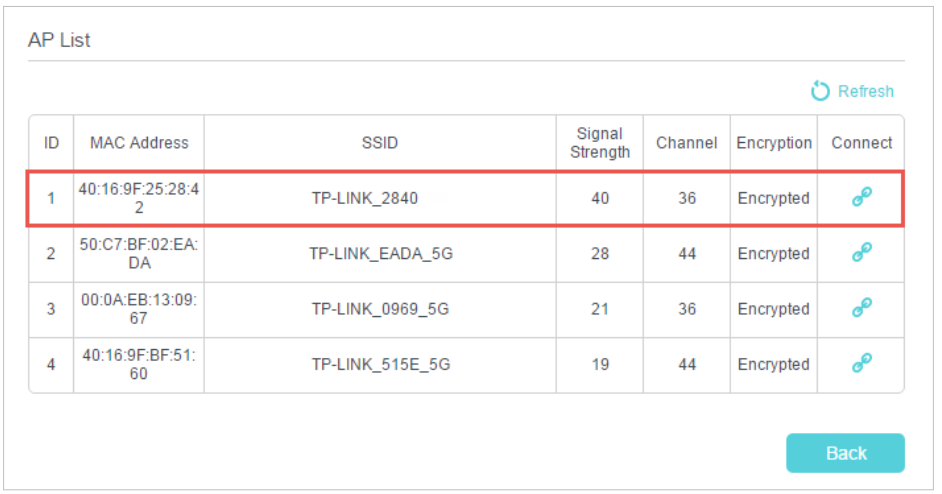
My house covers a large area. The wireless network coverage of the router I'm using (the root router) is limited. I want to use an extended router to extend the wireless network of the primary router. Follow the steps to configure the router.

1. Visit http://tplinkmodem.net, and log in with the password you set for the router.
2. Configure the LAN IP address of the router in the same subnet as the root router(255.255.255.0). For example, the IP address of the root router is 192.168.1.1, the IP address of the extended router should be from 192.168.1.2 to 192.168.1.254.).

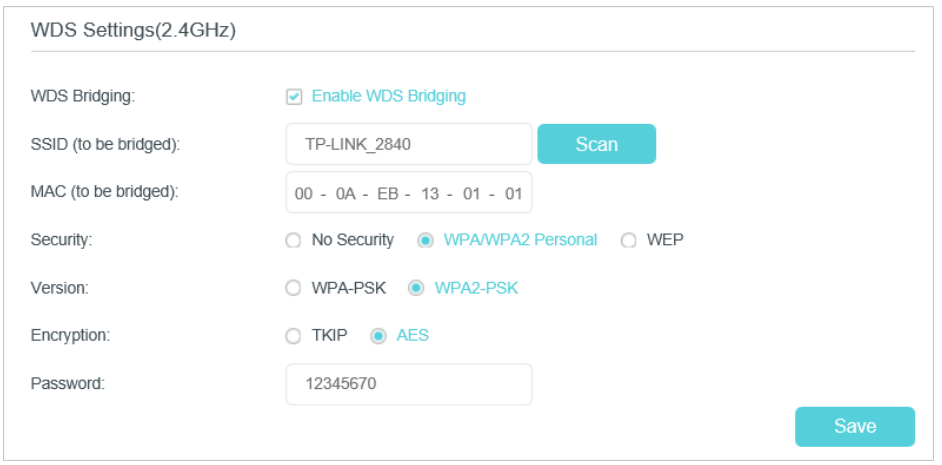
3. Go to Advanced > Wireless > Advanced Settings page. Locate the WDS section and select the checkbox to enable the WDS Bridging function.



4. Click Scan to scan all the AP devices and choose the root AP to be bridged.



5. Click the connect icon and then the SSID and MAC will be automatically filled in. Configure the Security settings as the AP you choose to be bridged.



6. Click Save to make the settings effective.
7. Go to Advanced > Network > LAN Settings page to disable DHCP.

Now, the root's wireless network is extended and you can use the router's SSID and password to enjoy the network.

Note: The extended router (router) can have different SSID and password from the root router, you can change your router's SSID and password on Basic > Wireless page.

T7. How can I change my computer's settings to obtain an IP address automatically?

To change the computer's network settings, follow the steps below.

- For MAC OS X:

1) Click the Apple icon, and select System Preferences from the drop-down list.

2) Click the Network icon.

3) Select Ethernet (for wired connection) or Wi-Fi (for wireless connection) in the left panel, then click Advanced.

4) Click TCP/IP.

5) From the Configure IPv4 drop-down list, select Using DHCP.

6) Click OK.

- For Windows 7/8/8.1/10:

1) Right-click the Network icon on the system tray and select Open Network and Sharing Center > Change adapter settings.

2) Right-click your network connection (wired or wireless) and select Properties.

3) Double-click Internet Protocol Version 4 (TCP/IPv4).

4) Select both Obtain an IP address automatically and Obtain DNS server address automatically, then click OK.

5) Click OK again to save your configuration.

- For Windows XP:

1) Right-click the Network icon on the system tray and select Open Network Connections.

2) Right-click your network connection (wired or wireless) and select Properties.

3) Double-click Internet Protocol (TCP/IP).

4) Select both Obtain an IP address automatically and Obtain DNS server address automatically, then click OK.

5) Click OK again to save your configuration.

T8. What should I do if I cannot find my wireless network or I cannot

connect the wireless network?

➢ **If you fail to find any wireless network, follow the steps below:**

1. Make sure the wireless function is enabled if you're using a laptop with built-in wireless adapter. You can refer to the relevant document or contact the laptop manufacturer.
2. Make sure the wireless adapter driver is installed successfully and the wireless adapter is enabled. You can refer to the relevant document or contact the wireless adapter manufacturer.

➢ **If you can find other wireless network except your own, follow the steps below:**

1. Check the Wi-Fi LED indicator on your wireless router/modem;
2. Make sure your computer/device is still in range of your router/modem. Move closer if you are currently too far away.
3. Go to Basic > Wireless page, and check the wireless settings, double-check your Wireless Name (SSID) is not hidden.
4. Connect to wireless network.

➢ **If you can find your wireless network but fail to connect, follow the steps below:**

1. Authentication problem: Network Security Key Mismatch.

   1) Sometimes you will be asked to type in a PIN number when you connect to the wireless network for the first time. This PIN number is different from the Wireless Password/Network Security Key, usually you can only find it on the label of your router.

   2) If you cannot find the PIN or PIN failed, you may choose "Connecting using a security key instead", and then type in the Network Security Key/Wireless Password;

3) If you continue to be told there is a network security key mismatch, it is suggested to check the wireless password on your router.

Note: Wireless password/Network Security Key is case sensitive.

4) Connect to wireless network.

2. Windows was unable to connect to XXXX /Cannot join this network/Taking longer than usual to connect to this network.

1) Check the wireless signal strength of your network, if it is weak (1~3 bars), please move the router closer and try again;

2) Change the wireless Channel of the router to 1,6,or 11 to reduce interference from other networks;

3) Re-install or update the driver for your wireless adapter of the computer;

4) Connect to wireless network.