

User Guide

300Mbps Wireless N VDSL/ADSL Modem Router TD-W9960

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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 documented in this guide are used for demonstration only.

Conventions

In this guide, the following conventions are used:

Convention	Description
<u>Underline</u>	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.
Ø 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 https://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 https://www.tp-link.com.
- A Technical Support Forum is provided for you to discuss our products at https://forum.tp-link.com.
- Our Technical Support contact information can be found at the Contact Technical Support page at https://www.tp-link.com/support.

Speed/Coverage Disclaimer

Maximum wireless signal rates are the physical rates derived from IEEE Standard 802.11 specifications. Actual wireless data throughput and wireless coverage are not guaranteed and will vary as a result of 1) environmental factors, including building materials, physical objects, and obstacles, 2) network conditions, including local interference, volume and density of traffic, product location, network complexity, and network overhead, and 3) client limitations, including rated performance, location, connection, quality, and client condition.

Get to Know Your Modem Router

This chapter introduces the modem router by detailing its main features and appearance. It contains the following sections:

- Product Overview
- Physical Appearance

1. 1. Product Overview

TP-Link's modem router is a combined wired/wireless network connection device with wireless router and DSL modem capabilities.

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

Ethernet ports and adjustable antennas enable the modem router to provide wired and wireless access for multiple computers and mobile devices.

With an array of additional features, the modem router is the perfect hub for your home or business network.

1. 2. Physical Appearance

1. 2. 1. LEDs



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

LED Explanation

Indicator	Status	Indication
	On	The system has started up successfully.
(Power)	Flash	The system is starting up.
	Off	The modem router is off. Please ensure that the power adapter is connected correctly.
	On	DSL line is synchronized and ready to use.
(DSL)	Flash	DSL synchronization is in progress.
(Off	There is no connection to the DSL Port or DSL synchronization fails.
(Internet)	On	The network is available with a successful internet connection.
(Internet)	Off	There is no successful internet connection.
	On	The wireless function is working properly.
⊗ (Wi-Fi)	Flash	WPS handshaking is in process. The LED will turn solid on if a wireless device is connected to the network. If there is no wireless connection, it will keep flashing for 2 minutes before turning solid on (if the wireless function is disabled during WPS handshaking, it will go off).
	Off_	The wireless function is disabled.
C (LAN)	On	There is at least one device connected to the LAN port.
₩ (LAN)	Off	There is no device connected to the LAN port.

1. 2. 2. Ports and Antennas



The modem router's back panel shows the connection ports, buttons and antennas. Refer to the following for detailed instructions.

Item	Description
POWER	For connecting the modem router to a power socket via the provided power adapter.
Power ON/OFF Button	Press this button to power on or power off the modem router.
WPS	Press to start a WPS synchronization.
RESET	Press and hold until all the LEDs turn on momentarily to reset the modem router to factory default settings.
LAN1, LAN2, LAN3, LAN4/WAN	For connecting the modem router to your PC or other Ethernet network devices. In wireless router mode, the LAN4/WAN port is used for connecting to a Cable/FTTH/VDSL/ADSL device.
DSL	For connecting the modem router to the internet. Connect the port to the splitter or directly connect the port to the phone jack via a phone cable. For details, please refer to Connect Your Modem Router.
Antennas	Used for wireless data transmission. Position them upright for the best performance.

Connect the Hardware

This chapter contains the following sections:

- Position Your Modem Router
- Connect Your Modem Router

2. 1. Position Your Modem Router

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

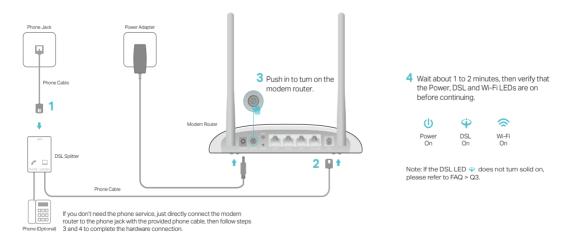
For best Wi-Fi performance, and to keep your network secure:

- Do not locate the modem 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 modem router in a location where it can be connected to the various devices as well as to a power source.
- Make sure the cables and power cord are safely placed out of the way so they do not create a tripping hazard.
- Tips: The modem router can be placed on a shelf or desktop.

2. 2. Connect Your Modem Router

Follow the steps below to connect your modem router.

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



2. Connect your computer to the modem router.

Method 1: Wired

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

Chapter 2 Connect the Hardware

Method 2: Wirelessly

Use the default SSID (Wireless Network Name) and Wireless Password printed on the included Wi-Fi Info Card or on the product label of the modem 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 modem router.
- 3) The Wi-Fi LED flashes quickly.
- 4) When the Wi-Fi LED stabilizes and remains on, the client device has successfully connected to the modern router.



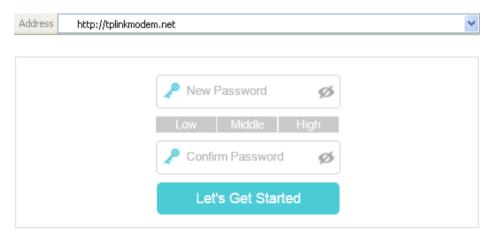


Log In to Your Modem Router

With the web management page, it is easy to configure and manage the modem 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 modem router.

- 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 <u>Appendix: Troubleshooting</u> to configure your computer.
- 2. Launch a web browser and go to http://192.168.1.1. Create a strong password and click Let's Get Started to log in.



Note:

If you have registered a TP-Link ID and bind your cloud router to it, the login password you created here should be ineffective. Please log in to the cloud router using your TP-Link ID.

Set Up Internet Connections

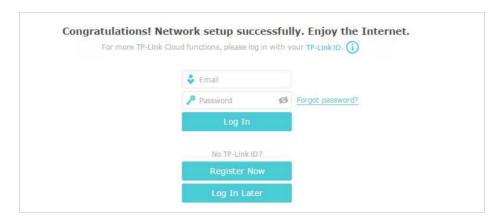
This chapter introduces how to connect your modem router to the internet. The modem router is equipped with a web-based Quick Setup wizard. It has many ISP information built in, automates many of the steps and verifies that those steps have been successfully completed. Furthermore, you can also set up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

4. 1. Use Quick Setup Wizard

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the modem router.
- 2. Click Quick Setup on the top of the page. Then follow the step-by-step instructions to connect your router to the internet.
- 3. To enjoy a more complete service from TP-Link (remote management, TP-Link DDNS, etc.), log in with your TP-Link ID or click Register Now to get one. Then follow the instructions to bind the modem router to your TP-Link ID.

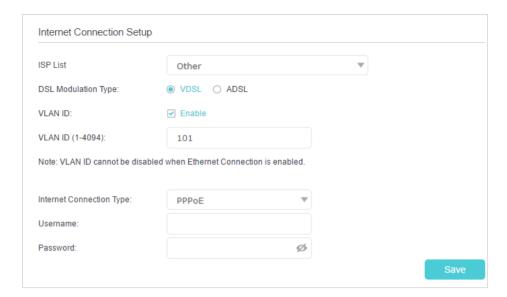


Note:

- 1. To learn more about the TP-Link Cloud service, please refer to the TP-Link Cloud section.
- 2. If you do not want to register a TP-Link ID for now, you may click Log In Later to proceed.
- 3. 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 account you set for the modem router.
- Go to Basic > Internet page. Select your ISP, and related information will be automatically filled in. For some ISPs, you may need to manually specify some information provided. If you can't find your ISP in the ISP List, select Other and then enter the information provided by your ISP.



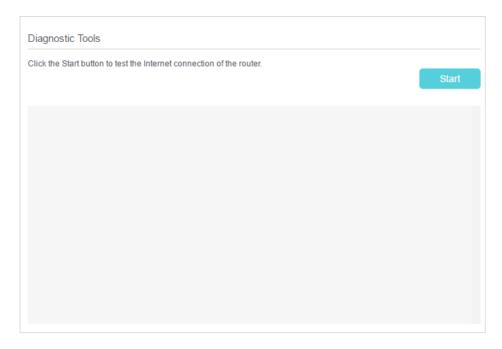
3. Click Save to make the settings effective, and you can refer to <u>Test Internet Connectivity</u> to test the internet connection.

@ 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 modem router provides a diagnostic tool to help you locate the source of any problems.

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the modem 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 DSL 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 <u>Set Up the IPv6 Tunnel</u>.

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 account you set for the modem 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.

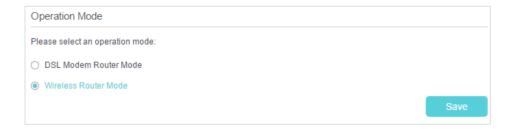
Note: If your ISP has provided the IPv6 address, click Advanced to reveal more settings. Check to use IPv6 specified by ISP and enter the parameters provided by your ISP.

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

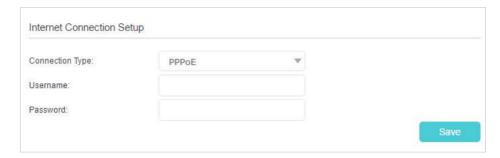
4. 5. Wireless Router Mode

If you already have a modem or your internet comes via an Ethernet jack on the wall, you can set up the modem router as a regular wireless router to share the internet.

- Find the WAN port (labeled as LAN4/WAN) on the modem router, and connect it
 to your existing modem or the Ethernet jack on the wall. Then connect the power
 adapter and turn on the modem router. If you connect an existing modem, reboot it
 to get the modem router connected to the internet.
- Connect your computer to the modem router. For details, refer to <u>Connect Your</u> Modem Router.
- 3. Visit_http://tplinkmodem.net, and log in with the account you set for the modem router.
- 4. Go to Advanced > Operation Mode, select the Wireless Router Mode, and click Save. The modem router will reboot.



5. Go to Basic > Internet, select the Connection Type, and enter the information provided by your ISP.



6. Click Save to make the settings effective.



- 1. You can view and edit all internet connections on Advanced > Network > Internet page.
- 2. In the Wireless Router Mode, you can also permit IPv6 connection by setting up an IPv6 connection or the IPv6 tunnel just as in the DSL Modem Router Mode. For details, refer to <u>Set Up an IPv6 Connection</u> and <u>Set Up the IPv6 Tunnel</u>.

TP-Link Cloud Service

TP-Link Cloud service provides a better way to manage your cloud devices. Log in to your router with a TP-Link ID, and you can easily monitor and manage your home network when you are out and about via the Tether app on your smartphone or tablet. To ensure that your router stays new and gets better over time, the TP-Link Cloud will notify you when an important firmware upgrade is available. Surely you can also manage multiple TP-Link Cloud devices with a single TP-Link ID.

This chapter introduces how to register a new TP-Link ID, bind or unbind TP-Link IDs to manage your router, and the Tether app with which you can manage your home network no matter where you may find yourself.

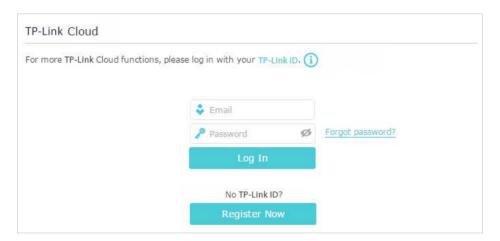
It contains the following sections:

- Register a TP-Link ID
- Change Your TP-Link ID Information
- Manage the User TP-Link IDs
- Manage the Router via TP-Link Tether App

5. 1. Register a TP-Link ID

If you have skipped the registration during the Quick Setup process, you can:

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Basic > TP-Link Cloud.
- 3. Click Register Now and follow the instructions to register a TP-Link ID.



4. After activating your TP-Link ID, come back to the TP-Link Cloud page to log in. The first-time login TP-Link ID will be bound automatically to your cloud router as an Admin.

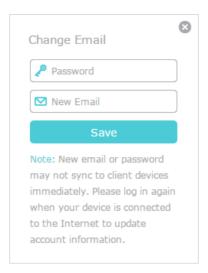
Note

- · Once the router is bound to your TP-Link ID, you need to log in to the router with the TP-Link ID.
- If you want to unbind the admin TP-Link ID from your router, please go to Basic > TP-Link Cloud, click Unbind in the Device Information section.

5. 2. Change Your TP-Link ID Information

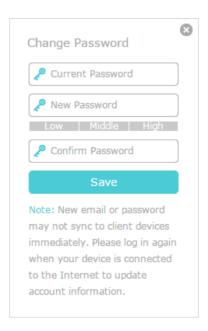
Follow the steps below to change your email address and password of your TP-Link ID as needed.

- 1. Visit http://tplinkmodem.net, and log in with your TP-Link ID.
- 2. Go to Basic > TP-Link Cloud, and focus on the Account Information section.
- > Change your email address
- 1. Click Mehind the Email.
- 2. Enter the password of your TP-Link ID, then the new email address. And click Save.



Change your password

- 1. Click Mehind the Password.
- 2. Enter the current password, then a new password twice. And click Save.



5. 3. Manage the User TP-Link IDs

The first-time login TP-Link ID will be bound automatically to your router as an Admin account. An admin account can add or remove other TP-Link IDs to the same router as Users. Admin account and User accounts both can monitor and manage the router locally or remotely, except that user accounts cannot:

• Reset the router to its factory default settings from the web management page or the Tether app.

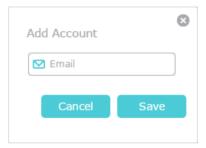
• Add/remove other TP-Link IDs to/from the router.

5. 3. 1. Add an TP-Link ID to Manage the Router

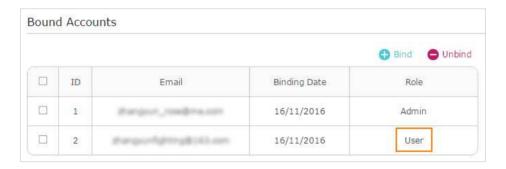
- 1. Visit http://tplinkmodem.net, and log in with your TP-Link ID.
- 2. Go to Basic > TP-Link Cloud, and focus on the Bound Accounts section.
- 3. Click 🔂 Bind , enter another TP-Link ID as needed and click Save.

Note:

If you need another TP-Link ID, you can install the app. Launch the app to register a new one.

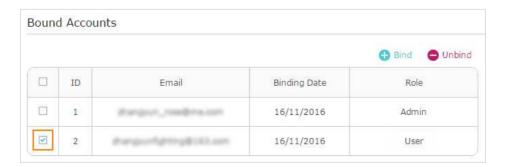


4. The new TP-Link ID will be displayed in the Bound Accounts table as a User.



5. 3. 2. Remove TP-Link ID(s) From Managing the Router

- 1. Visit http://tplinkmodem.net, and log in with your TP-Link ID.
- 2. Go to Basic > TP-Link Cloud, and focus on the Bound Accounts section.
- 3. Check the box(es) of the TP-Link ID(s) you want to remove and click Unbind.



5. 4. Manage the Router via TP-Link Tether App

1. Open the Apple App Store or Google Play and search the key word "TP-Link Tether" or simply scan the QR code to download and install the app.



OR







- 2. Connect your device to the router's wireless network.
- 3. Launch the Tether app, select the model of your router and log in with your TP-Link ID or the password your set for the router.
- 4. On the home page, you can check your internet status and connected devices manage your router as needed.

IPTV

IPTV is the abbreviation of Internet Protocol Television. The service can only be delivered through the Internet, and our modem router provides a specific LAN port for IPTV.

By automatically separating IPTV from Internet surfing, you can enjoy a high quality of video streaming and fast browsing speeds at the same time.

Chapter 6 IPTV

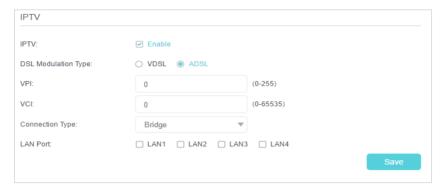
I want to:

Configure the modem router to enable Internet Protocol Television (IPTV) Services.

For example, I already bought IPTV service, but this service can only be delivered through the Internet. Therefore, I need to configure my modem router first.

How can I do that?

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > IPTV to open the configuration page.



- 3. Click Enable to enable this function.
- 4. Select your DSL modulation type.
- 5. Specify a LAN port for IPTV connection and connect the set-top box to this port.
- 6. If you select VDSL modulation type, check to enable VLAN and set the VLAN ID. If you select ADSL, fill in PVC parameters (VPI and VCI). VLAN ID and PVC parameters are all provided by your IPTV service provider.
- 7. Click Save to make the settings effective.

Done!

Modem router configuration is complete! You may still need to configure settings on your set-top box before enjoying your IPTV service.

Guest Network

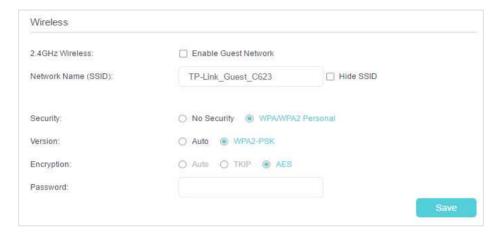
This function allows you to provide Wi-Fi access for guests without disclosing your main network. When you have guests in your house, apartment, or workplace, you can create a guest network for them. In addition, you can assign network authorities and bandwidth for guests to ensure network security, privacy, and fluency.

- Create a Network for Guests
- Customize Guest Network Options

Chapter 7 Guest Network

7. 1. Create a Network for Guests

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Guest Network. Locate the Wireless Settings section.
- 3. Create 2.4GHz guest network according to your needs.



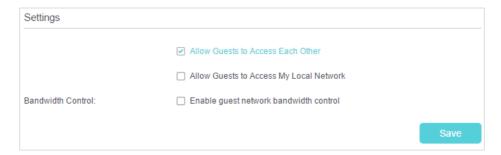
- 1) Check Enable Guest Network.
- 2) Set an easy-to-identify SSID. Don't select Hide SSID unless you want your guests and other people to manually input this SSID for Wi-Fi access.
- 3) Set Security to WPA/WPA2 Personal, keep the default Version and Encryption values, and set an easy-to-remember password.
- **4.** Click Save. Now your guests can access your guest network using the SSID and password you set!

Tips:

To view guest network information, go to Advanced > Status and find the Guest Network section.

7. 2. Customize Guest Network Options

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Guest Network.



3. Assign network authorities and bandwidth according to your needs.

Chapter 7 Guest Network

Allow Guests to Access Each Other

Select this check box to allow the clients in your guest network to access each other's files.

Allow Guests to Access My Local Network

Select this check box to allow the clients in your guest network to access your local network, not just the internet.

Enable guest network bandwidth control

Select this check box to specify the upstream and downstream bandwidth ranges for your guest network. To configure guest network bandwidth control, the bandwidth control function should be enabled first. Please go to Advanced > Bandwidth Control to enable it.

4. Click Save. Now users in your guest network can enjoy only the network authorities at the priority you assigned!



To view guest network information, go to Advanced > Status and find the Guest Network section.

Parental Controls

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

Chapter 8 Parental Controls

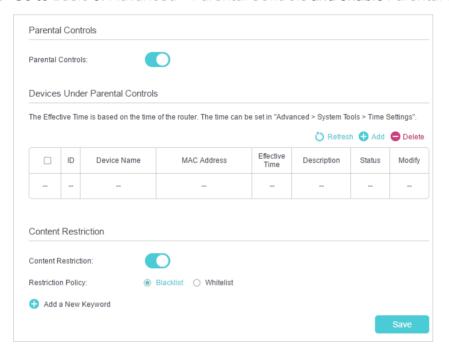
I want to:

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.

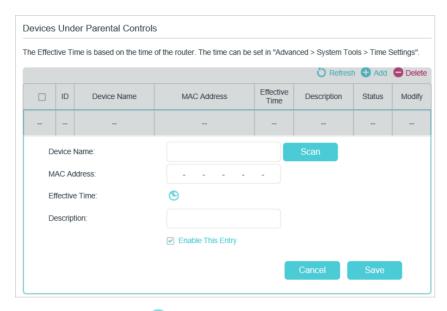
How can I do that?

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

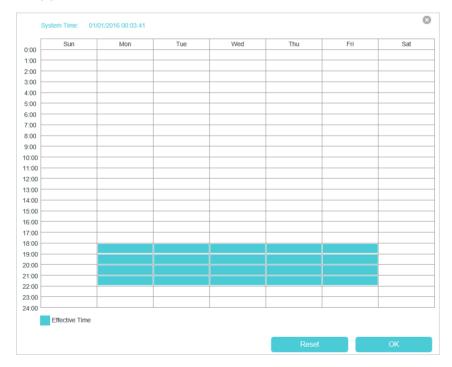


3. Click Add.

Chapter 8 Parental Controls



- 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 OK.
- 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.

Chapter 8 Parental Controls

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.

Bandwidth Control

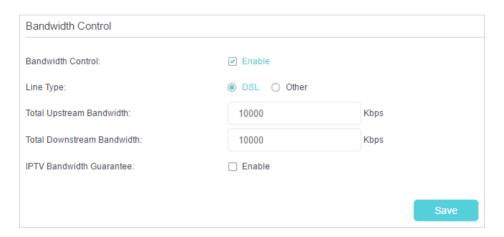
Bandwidth Control allows you to configure the Upstream Bandwidth and Downstream Bandwidth of the network, and the combined throughput should not exceed 1000000 Kbps. For optimal bandwidth control, please select the correct Line Type and consult your ISP for the total allowed bandwidth for upstream and downstream.

- To Configure Bandwidth Control
- Controlling Rules

Chapter 9 Bandwidth Control

9. 1. To Configure Bandwidth Control

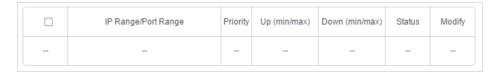
- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Bandwidth Control, Locate the Bandwidth Control section.
- 3. Enable bandwidth control.



- **4.** Select the correct Line Type of your broadband connection.
- 5. Enter the total upload and download speed through the WAN port in the Total Upstream Bandwidth and Total Downstream Bandwidth field.
- 6. (Optional) Enable IPTV Bandwidth Guarantee.
 - Upstream Bandwidth Guarantee Enter a value in Kbps to guarantee sufficient upload bandwidth for IPTV service.
 - Downstream Bandwidth Guarantee Enter a value in Kbps to guarantee sufficient download bandwidth for IPTV service.
- 7. Click Save to make the settings effective.

9. 2. Controlling Rules

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Bandwidth Control. Locate the Controlling Rules section.



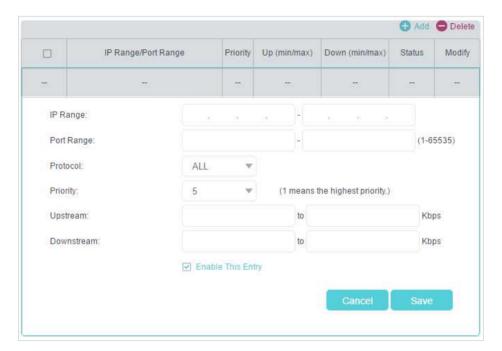
 IP Range/Port Range- The range of IP addresses and port numbers to be controlled. Chapter 9 Bandwidth Control

• Priority - The priority level for Bandwidth Control rules. 1 is the highest priority level and 8 is the lowest priority level. The total upload and download bandwidth will be allocated to guarantee the minimal rate of all bandwidth control rules.

- UP (min/max) The minimum and maximum upload bandwidth (in Kbps) through the WAN port.
- Down (min/max) The minimum and maximum download bandwidth (in Kbps) through the WAN port.
- Status The status of this rule either Enabled or Disabled.
- Modify Click to modify the rule.

> To add a Bandwidth Control rule

- 1. Click Add.
- 2. Enter the information as shown in the figure below.



3. Click Save.

Chapter 10

Network Security

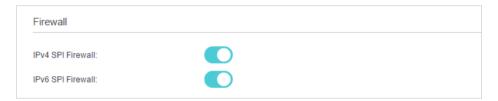
This chapter guides you on how to protect your home network from unauthorized users by implementing these three network security functions. You can block or allow specific client devices to access your wireless network using MAC Filtering, or using Access Control for wired and wireless networks, or you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

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

10. 1. Firewall & DoS Protection

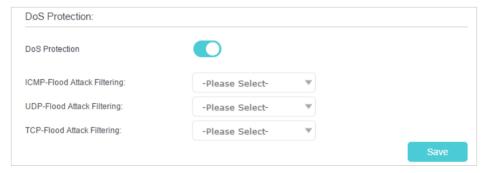
The SPI (Stateful Packet Inspection) Firewall and DoS (Denial of Service) Protection protect the router from cyber attacks.

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.

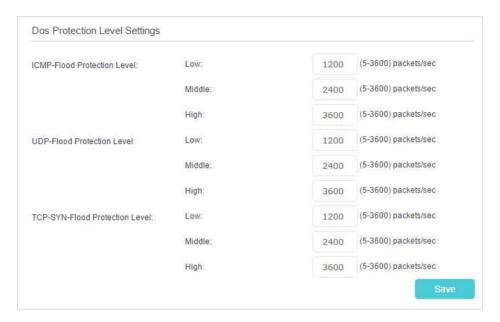


DoS Protection can protect your home network against DoS attacks from flooding your network with server requests. Follow the steps below to configure DoS Protection.

- 1. Visit http://tplinkmodem.net, and log in with the account 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.



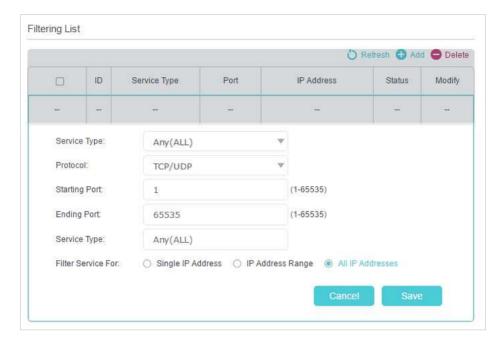
2. The protection will be triggered immediately when the number of packets exceeds the preset threshold value, and the vicious host will be displayed in the Blocked DoS Host List.



10. 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 account 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 \bigcirc icon.

10.3. Access Control

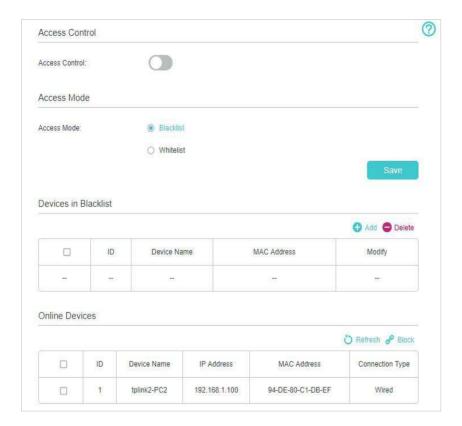
Access Control is used to block or allow specific client devices to access your network (via wired or wireless) based on a list of blocked devices (Blacklist) or a list of allowed devices (Whitelist).

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 account 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 Online Devices 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 (wired or wireless) using the Blacklist or Whitelist.

10. 4. IP & MAC Binding

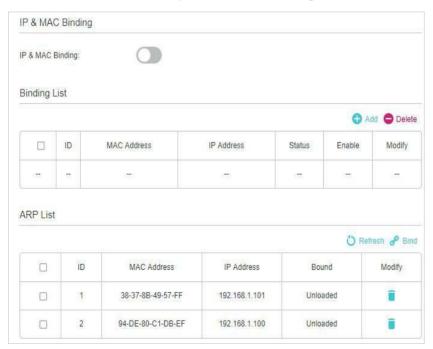
IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind a network device's IP address to its MAC address. This will prevent ARP spoofing and other ARP attacks by denying network access to a device with a matching IP address in the Binding list, but an unrecognized MAC address.

I want to:

Prevent ARP spoofing and ARP attacks.

How can I do that?

- 1. Visit http://tplinkmodem.net, and log in with the account 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 11

NAT Forwarding

Modem 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 modem 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 modem 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.

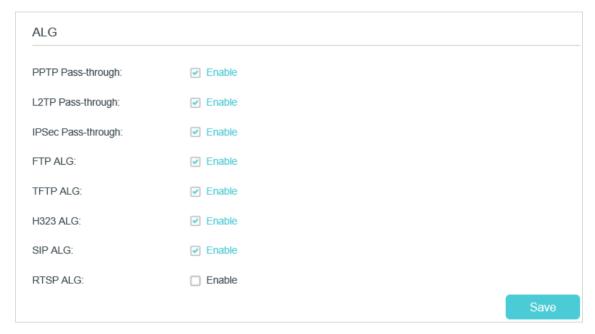
This chapter contains the following sections:

- 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

11. 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, H323 etc. Enabling ALG is recommended.

Visit http://tplinkmodem.net, and log in with the account 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.
- H323 ALG: If enabled, it allows Microsoft NetMeeting clients to communicate via NAT.
- SIP ALG: If enabled, it allows clients communicate with SIP (Session Initiation Protocol) servers via NAT.

 RTSP ALG: If enabled, it allows RTSP (Real-Time Stream Protocol) clients and servers to transfer data via NAT.

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

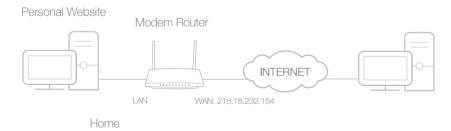
When you build up a server in the local network and want to share it on the internet, Virtual Server can realize the service and provide it to the internet users. At the same time virtual server can keep the local network safe as other services are still invisible from the internet.

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:

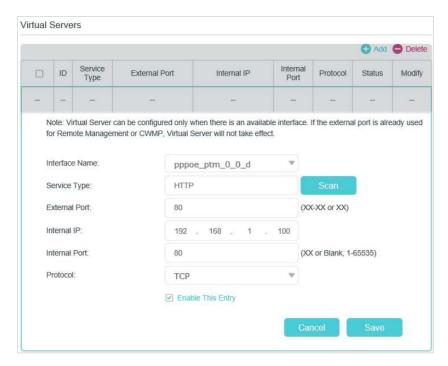
Share my personal website I've built in a local network with my friends through the internet.

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 modem 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 account 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 modem 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 <u>Set Up a Dynamic DNS Service Account</u> 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.

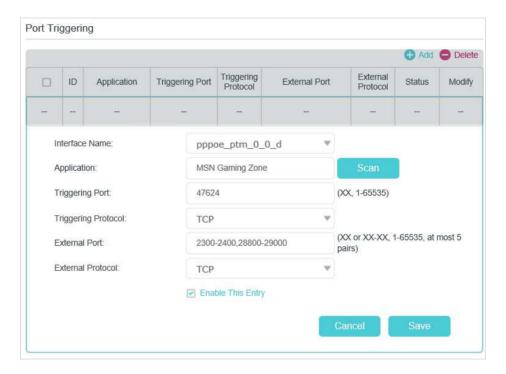
11.3. Open Ports Dynamically by Port Triggering

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 modem router can record the IP address of the host. When the data from the internet returns to the external ports, the

modem 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 account 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.

11. 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 account 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.

11. 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:

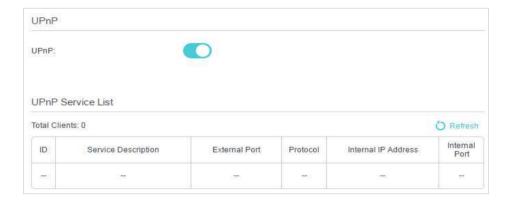
- 1. UPnP is enabled by default in this modem router.
- 2. Only the application supporting UPnP protocol can use this feature.
- 3. UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

For example, when you connect your Xbox to the modem router which has connected to the internet to play online games, UPnP will send request to the modem 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 account you set for the modem router;
- Go to Advanced > NAT Forwarding > UPnP and toggle on or off according to your needs.



Chapter 12

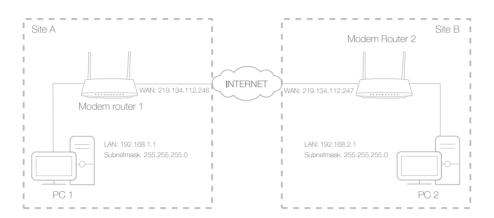
IPSec VPN

VPN (Virtual Private Networking) allows you to access your home network in a secured way through the internet when you are out of the house. The router offers IPSec (Internet Protocol Security) VPN to set up VPN connection.

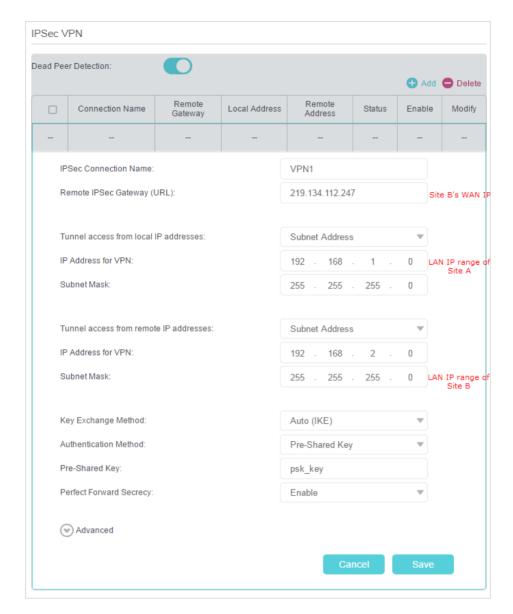
IPSec (IPSecurity) is a set of services and protocols defined by IETF (Internet Engineering Task Force) to provide high security for IP packets and prevent attacks.

IPSec VPN is used to create a VPN connection between local and remote networks. To use IPSec VPN, you should check that both local and remote routers support IPSec VPN feature. Then, follow the steps below to set up an IPSec VPN connection.

1. The typical VPN topology is here. Site A refers to local network, and Site B refers to the remote network that is to be connected. Record Site A and Site B's LAN and WAN IP addresses before you start configuration.



- 2. Configuration on Site A (local network).
 - 1) Visit http://tplinkmodem.net, and log in with the account you set for the router.
 - 2) Go to Advanced > VPN > IPSec VPN, and click Add.



- 3) In the IPSec Connection Name column, specify a name.
- 4) In the Remote IPSec Gateway (URL) column, Enter Site B's WAN IP address.
- 5) Configure Site A's LAN.
 In the Tunnel access from local IP addresses column, we take Subnet Address as an example. Input the LAN IP range of Site A in the IP Address for VPN column, and input Subnet Mask of Site A.
- 6) Configure Site B's LAN.
 In the Tunnel access from remote IP addresses column, we take Subnet Address as an example. Input the LAN IP range of Site B in the IP Address for VPN column, and input Subnet Mask of Site B.
- 7) Select the Key Exchange Method for the policy. We select Auto(IKE) here.

8) Enter the Pre-Shared Key for IKE authentication. Then keep Perfect Forward Secrecy enabled.

Note: Make sure Site A and Site B use the same key.

9) Leave the Advanced Settings as default value. Then click Save.



Note: The Status column is Down after the configuration, and it will change to UP only when Site A and Site B are communicating via the VPN connection.

- 3. Configuration on Site B (remote network). Refer to step 2 configuration on Site A and make sure that Site A and Site B use the same pre-shared keys and Perfect Forward Secrecy settings.
- 4. Check the VPN connection. You can ping site B' LAN IP from your computer in site A to verify that the IPSec VPN connection is set up correctly.
- Tips: To check the VPN connection, you can do the following.
- 1. On the host in Site A, press [Windows Logo] + [R] to open Run dialog. Input "cmd" and hit OK.



2. In the CLI window, type in "ping 192.168.2.x" ("192.168.2.x" can be IP address of any host in Site B). Then press [Enter].

```
Microsoft Windows XP [Uersion 5.1.2600]

(C) Copyright 1985-2001 Microsoft Corp.

C: Wsers Administrator)ping 192.168.2.100

Pinging 192.168.2.100 with 32 bytes of data:

Reply from 192.168.2.100: bytes=32 time(1ms TIL=128 Rep
```

- 3. If Ping proceeds successfully (gets replies from host in Site B), the IPSec connection is working properly now.
- 5. Now IPSec VPN is implemented to establish a connection.

Note:

- 1. The product supports a maximum of ten simultaneous connections.
- 2. If one of the sites has been offline for a while, for example, if Site A has been disconnected, on Site B you need to click Disable and then click Enable after Site A back on line in order to re-establish the IPSec tunnel.

Chapter 13

Specify Your Network Settings

This chapter introduces how to change the default settings or adjust the basic configuration of the modem 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

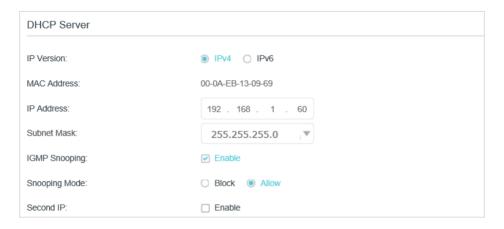
13. 1. LAN Settings

13. 1. 1. Change the LAN IP Address

The modem 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 account 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 modem 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.

13. 1. 2. Use the Modem Router as a DHCP Server

You can configure the modem router to act as a DHCP server to assign IP addresses to its clients. To use the DHCP server function of the modem 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 account 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 modem 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 modem 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:

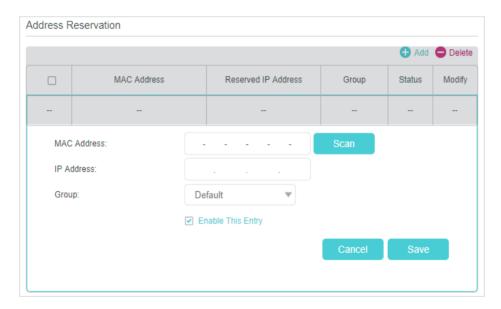
- The modem router can be configured to work as a DHCP Relay. A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the device's interfaces can be configured as a DHCP relay. If it is enabled, the DHCP requests 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 to 192.168.1.80) 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.

13. 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 account 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.

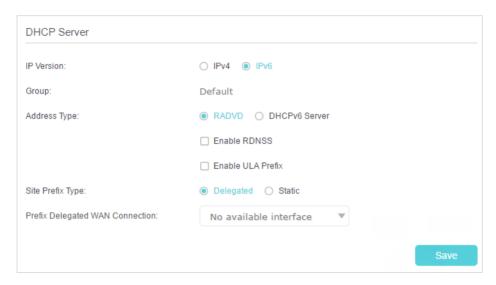
13. 2. IPv6 LAN Settings

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

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

13. 2. 1. Configure the RADVD Address Type

- 1. Visit http://tplinkmodem.net, and log in with the account 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 modem router assign IPv6 address prefixes to hosts.

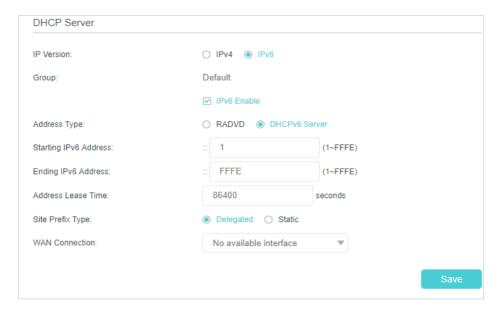
Note:

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 Prefix Delegated WAN Connection as the default value.
- 4. Click Save to make the settings effective.

13. 2. 2. Configure the DHCPv6 Server Address Type

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



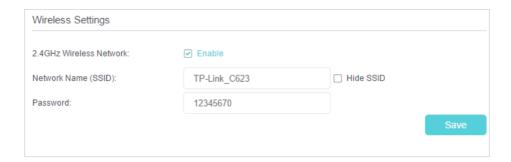
- 1) Select the DHCPv6 Server address type to make the modem router assign IPv6 addresses to hosts.
- 2) Specify the Start/End IPv6 Address for the IPv6 suffixes. The modern router will generate IPv6 addresses within the specified range.
- 3) Keep Address Lease Time as the default value.
- 4) Keep Site 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 Prefix Delegated WAN Connection as the default value.
- 4. Click Save to make the settings effective.

13. 3. Wireless Settings

13. 3. 1. Specify Basic Wireless Settings

The modem 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.

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



> To enable or disable the wireless function:

Enable the 2.4 GHz 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.

Mode: Select the desired mode.

- 802.11n only: Select only if all of your wireless clients are 802.11n devices.
- 802.11gn mixed: Select if you are using both 802.11g and 802.11n wireless clients.
- 802.11bgn 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 modem 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 modem router.

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 Automatic, 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.
- Select an option from the Security drop-down list. The router provides four options, None, 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.

13. 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 the modem router for 1 second.
- 2. Press the WPS button of the client device directly.
- 3. The Wi-Fi LED flashes during the WPS process.
- **4.** When the WPS LED turns solid on, the client device has successfully connected to the modem 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 account you set for the router.
- 2. Go to Advanced > Wireless > WPS page.



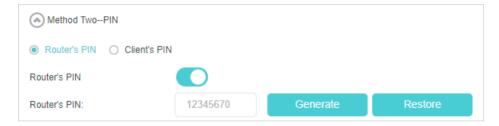
- 3. Click Start WPS on the page.
- 4. Press the WPS button of the client device directly.
- 5. The Wi-Fi LED of the router flashes quickly.

6. When the Wi-Fi LED turns solid on, the client device has successfully connected to the modern router.

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

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

- 1. Visit http://tplinkmodem.net, and log in with the account 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 modem router. You can also click the Generate button to get a new PIN.
- **4.** On the client device, enter the modem router's PIN. (The default PIN is also printed on the label of the modem router.)
- 5. The Wi-Fi LED of the router flashes quickly.
- **6.** When the Wi-Fi LED turns solid on, the client device has successfully connected to the modem router.

Note:

The WPS function cannot be configured if the wireless function of the modem router is disabled. Please make sure the wireless function is enabled before configuring WPS.

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

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



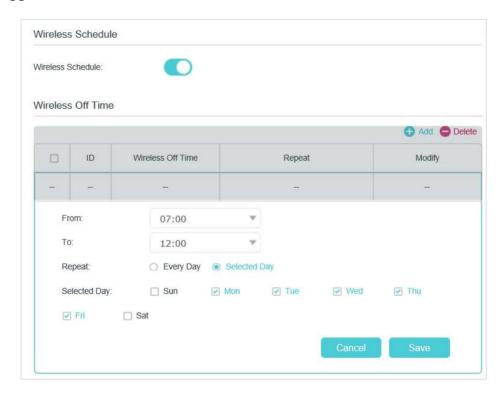
- 3. Select Client's PIN.
- 4. Enter the client device's PIN in the field. Then click the Connect button.
- 5. The Wi-Fi LED of the router flashes quickly.

6. When the Wi-Fi LED turns solid on, the client device has successfully connected to the modern router.

13. 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 account you set for the router.
- 2. Go to Advanced > Wireless > Wireless Schedule page.
- 3. Toggle on the button to enable the Wireless Schedule feature.



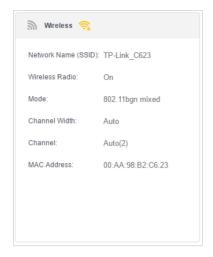
- 4. Click Add to set the Wireless Off Time, and click Save to save the settings.
- 5. Repeat steps 3 and 4 to set another entry.

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 network will be automatically turned on after the time period you set.

13. 3. 4. View Wireless Information

- To view the detailed wireless network settings:
- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Status page. You can see the Wireless box.



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:

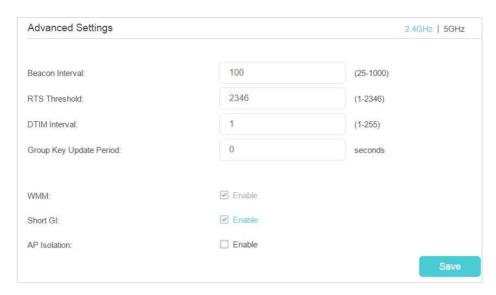
- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Wireless > Statistics page.
- 3. You can view the detailed information of the wireless clients, including its connected wireless band and security option as well as the packets transmitted.

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

13. 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 account 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 2346 to determine the packet size of
 data transmission through the router. By default, the RTS (Request to Send) Threshold
 size is 2346. 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.

13. 4. Set Up a Dynamic DNS Service Account

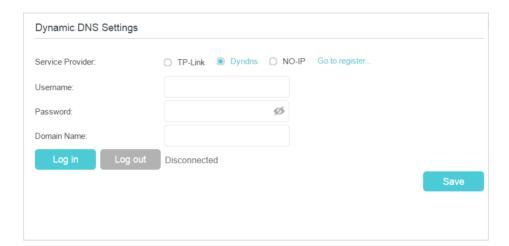
Most ISPs (Internet service providers) assign a dynamic IP address to the router and you can use this IP address to access your router remotely. However, the IP address can change any time and you don't know when it changes. In this case, you might need

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 modem router.

To set up DDNS, please follow the instructions below:

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. Go to Advanced > Network > Dynamic DNS.
- 3. Select the DDNS service provider (TP-Link, Dyndns or NO-IP).
- 4. To use TP-Link DDNS service, you should log in with your TP-Link ID.
- 5. If you choose other DDNS service, you should also 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).



6. Click Log in and Save.

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

13. 5. Create Static Routes

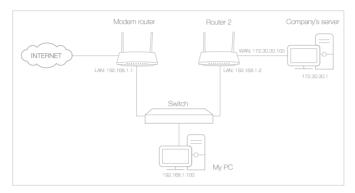
A static route is a pre-determined path that network information must travel to reach a specific host or network. Data from one point to another will always follow the same path regardless of other considerations. Normal internet usage does not require this setting to be configured.

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.

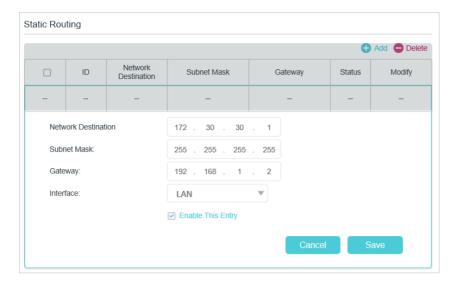


How can I do that?

- 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 account 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 make the settings effective.

Done!

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

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

13. 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 account 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.

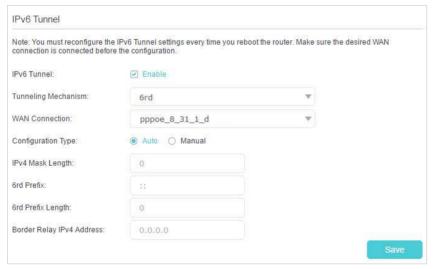
13. 6. 2. Specify the 6rd Tunnel with Parameters Provided by Your ISP

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 account 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.



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 14

Administrate Your Network

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

This chapter contains the following sections:

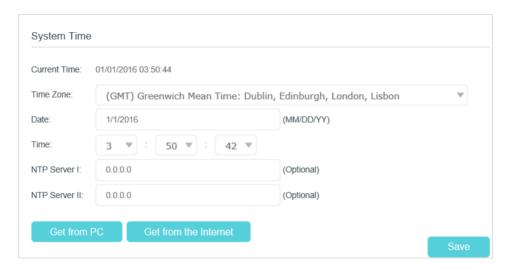
- Set System Time
- Update the Firmware
- Back up and Restore Configuration Settings
- Change the Administrator Account
- Local Management
- Remote Management
- System Log
- **CWMP Settings**
- SNMP Settings

14. 1. Set System Time

System time is the time displayed while the modem 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 modem 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 time of the current managing PC.

Get GMT: Click this button if you want to get time from the internet. Make sure your modem 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.



14. 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.

14. 2. 1. Online Upgrade

- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 2. If there's any firmware update available for your router, the update icon will display on the top-right corner of the page. Click the icon to go to the Firmware Upgrade page.

Alternatively, you can go to Advanced > System Tools > Firmware Upgrade, and click Check for Upgrades to see if there's any new firmware.



Tips:

If there's any new important firmware update for your router, you will see the notification (similar as shown below) on your computer when open a new web page. Click Upgrade now, and log into the web management page. You will see the Firmware Upgrade page.



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

14. 2. 2. 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 account 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.

14. 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 modem router to a previous settings from the backup file when needed. Moreover, if needed you can erase the current settings and reset the modem router to the default factory settings.

> To back up configuration settings

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



- 2. Click Browse to locate the previous backup configuration file, and click Restore.
- 3. Wait for the restoring and then the modem router will automatically reboot.
- To reset the modem router to factory default settings
- 1. Visit http://tplinkmodem.net, and log in with the account you set for the router.
- 1. Click Advanced > System Tools > Backup & Restore page.
- 2. Click Restore to restore all configuration settings to default values, except your login and TP-Link ID information. Click Factory Restore to reset the modem router.
- 3. Wait for the reset process to complete, and then the modem router will automatically reboot.

Note:

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

14. 4. Change the Administrator Account

Admin account is used to log in to the modem 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 account 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.

14.5. Local Management

You can control the local devices' authority to manage the modem router via Local Management feature. By default all local connected devices are allowed to manage the modem router. You can also specify one device to manage the modem 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 account 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 Local Management via 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 modem router.



4. Click Save.

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

Note:

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

14. 6. Remote Management

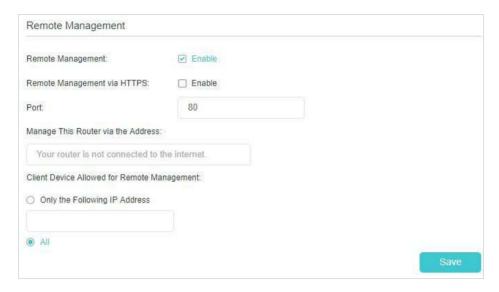
By default, the remote devices are not allowed to manage the modem router from the internet. You can enable remote management over HTTP and/or HTTPS if needed. HTTPS is a more secure way to access the router.

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 modern router over HTTPS.

- 1. Visit http://tplinkmodem.net, and log in with the account 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 modem router. If you just want to allow a specific device to manage the modem router, select Only the Following IP Address and enter the IP 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 modem router.



 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 modem router's web management page at Advanced > System Tools > Administration.

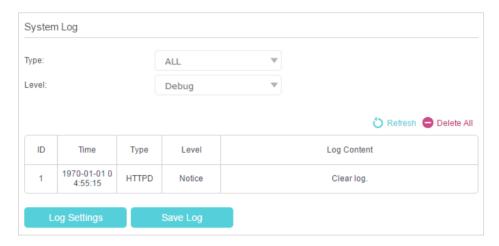
Certificate	
nstall the Certificate in your browser for Local/Remote Management via HTTPS.	
Download Certificate	

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

14.7. System Log

System Log can help you know what happened to your modem router, facilitating you to locate the malfunctions. For example when your modem 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 account you set for the router.
- 1. 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.

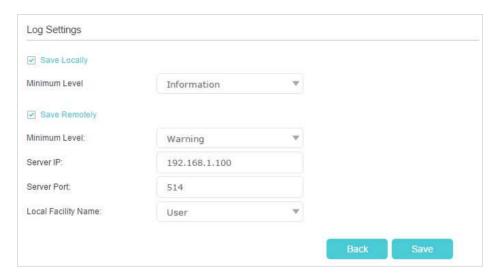
Click Refresh to refresh the log list.

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.

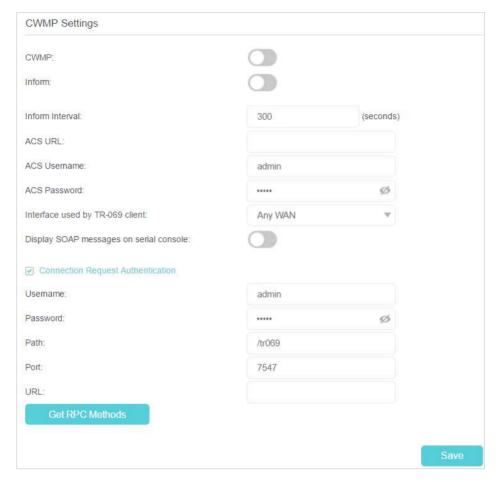


- Save Locally: Select this option to cache the system log to the router's local memory, select the minimum level of system log to be saved from the drop-down list. The logs will be shown in the table in descending order on the System Log page.
- Save Remotely: Select this option to send the system log 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.

14.8. CWMP Settings

The modem 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 account you set for the router.
- 2. Go to Advanced > System Tools > CWMP Settings page.



- 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.
- Display SOAP messages on serial console: Toggle to enable or disable this feature.
- 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.

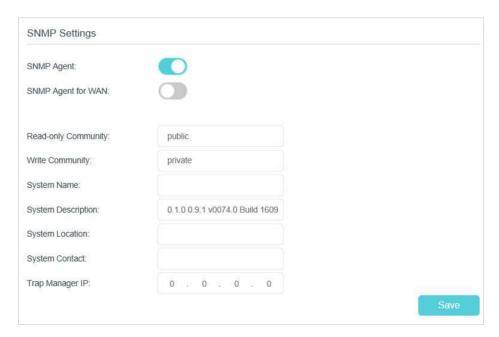
Click Save to make the settings effective.

14.9. SNMP Settings

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

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

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



 SNMP Agent: Toggle On to enable the built-in SNMP agent that allows the router to operate as the operational role in receiving and processing of SNMP messages, sending responses to the SNMP manager, and triggering SNMP traps when an event occurs.

- Read-only Community: Displays the default public community string that protects the router from unauthorized access.
- Write Community: Displays the default write community string that protects the router from unauthorized changes.
- System Name: Displays the administratively-assigned name for this managed device.
- System Description: Displays the textual description of the managed device. This value should include the full name and version identification of the system's hardware type, software operating-system, and networking software.
- System Location: Displays the physical location of this device (for example, the telephone closet, 3rd floor).
- System Contact: Displays the textual identification of the contact person for this managed device, together with information on how to contact this person.
- Trap Manager IP: Displays the IP address of the host to receive the traps.

You are suggested to keep the default settings. Click Save to make the settings effective.

Appendix: Troubleshooting

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

With the modem router powered on, press and hold down the RESET button on the side panel of the modem router until all the LEDs turn ob momentarily, then release the button.

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

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

Web management page password:

- If you are using a TP-Link ID to log in, click Forgot password on the login page and then follow the instructions to reset the password.
- Alternatively, refer to <u>T1</u> to reset the router, and then visit http://tplinkmodem.net to create a new login password.

Wireless network password:

- The default Wireless Password/PIN is printed on the product label of the modem router.
- If the default wireless password has been changed, log in to the modem 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 modem router's web management page?

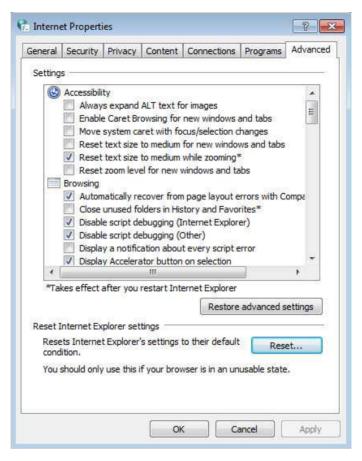
- If the computer is set a static IP address, change its settings to obtain an IP address automatically.
- Make sure http://tplinkmodem.net or <a href
- Make sure the default access you input is right.
- Check your computer's settings:
 - Go to Start > Control Panel > Network and Internet, and click 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 modem router to factory default settings. Refer to <u>Back up and Restore</u>
 <u>Configuration Settings</u> for detailed information. Open a web browser and log in
 again. If login fails, please contact our Technical Support.

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

- Ensure all connections are secure, including telephone lines, Ethernet cables and power adapters.
- Check to see if you can log in to the web management page of the modem router.
 If you cannot, please adjust your computer's settings according to <u>T3</u> and then see if you can access the internet. If the problem persists, please go to the next step.
- Consult your ISP and make sure the VPI/VCI, Connection Type, account username and password are correct. If there are any mistakes, please correct the settings and try again.
- Refer to T5 to clone the MAC address.
- If you still cannot access the internet, please restore your modem router to its factory default settings and reconfigure your modem router by following the instructions in <u>Use Quick Setup Wizard</u>.

Please contact our Technical Support if the problem persists.

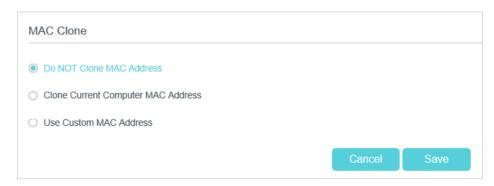
T5. What should I do if the DSL LED ♥ does not turn solid on?

- Check your cables and make sure they are all plugged in correctly, including the telephone lines and power adapter.
- Restore your modem router to its factory default settings. Refer to <u>T1</u> to reset the modem router.
- Remove the DSL splitter, directly connect the modem router to the phone jack and follow this guide to reconfigure the modem router.
- Contact your ISP (internet service provider) to check the status of your DSL line.
- If the problem persists, please contact our Technical Support.

T6. How do I clone a MAC address?

You can manually change the MAC address of the modem 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 password you set for the modem 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 modem 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.

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:
- 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:
- 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:

 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 LED 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.
 - 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 modem 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 modem 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.

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CE Mark Warning



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

OPERATING FREQUENCY(the maximum transmitted power)

2400 MHz -2483.5 MHz(20dBm)

EU declaration of conformity

TP-Link hereby declares that the device is in compliance with the essential requirements and other relevant provisions of directives 2014/53/EU, 2009/125/EC and 2011/65/EU.

The original EU declaration of conformity may be found at https://www.tp-link.com/en/ce

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.



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



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. If you have any questions, please don't hesitate to contact us.

Explanation of the symbols on the product label

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