



User Guide

300Mbps Wi-Fi Router TL-WR844N

Contents

Abol	ut This Guide	1
Chap	oter 1. Get to Know About Your Router	2
1. 1.	Product Overview	3
1. 2.	Panel Layout	
	1. 2. 1.Top View	
	1. 2. 2.The Back Panel	
Chap	oter 2. Connect to the Internet	6
2. 1.	Position Your Router	
2. 2.	Connect to the Internet	
	2. 2. 1.Wireless Router Mode	
	2. 2. 2.WISP Mode	10
	2. 2. 3.Range Extender Mode	11
	2. 2. 4.Access Point Mode	12
Chap	oter 3. Log In to the Router	14
Chap	oter 4. Configure the Router in Wireless Router Mode	16
4. 1.	Operation Mode	17
4. 2.	Network	17
	4. 2. 1.Status	17
	4. 2. 2.Internet	19
	4. 2. 3.MAC Clone	25
	4. 2. 4.LAN	26
	4. 2. 5.IPTV	26
	4. 2. 6. DHCP	27
	4. 2. 7.Dynamic DNS	29
	4. 2. 8.Static Routing	30
4. 3.	Wireless	31
	4. 3. 1. Wireless Settings	31
	4. 3. 2.Guest Network	33
	4. 3. 3. Wireless Schedule	34
	4. 3. 4.WPS	35
	4. 3. 5. Additional Wireless Settings	36

4. 4.	NAT Forwarding	37
	4. 4. 1.Port Forwarding	38
	4. 4. 2.Port Triggering	39
	4. 4. 3.DMZ	40
	4. 4. 4.UPnP	41
4. 5.	Parental Controls	43
4. 6.	QoS	45
4. 7.	Security	46
	4. 7. 1.Firewall	47
	4. 7. 2.Access Control	47
	4. 7. 3.IP & MAC Binding	49
4. 8.	IPv6	51
	4. 8. 1.IPv6 Status	51
4. 9.	System	54
	4. 9. 1.Firmware Upgrade	54
	4. 9. 2.Backup & Restore	54
	4. 9. 3.Change Password	55
	4. 9. 4.Local Management	56
	4. 9. 5.Remote Management	57
	4. 9. 6.System Log	59
	4. 9. 7. Diagnostic	59
	4. 9. 8.Time Settings	61
	4. 9. 9.Reboot	62
	4. 9. 10.LED Control	63
Chap	oter 5. Configure the Router in WISP Mode	64
5. 1.	Operation Mode	65
5. 2.	Network	65
	5. 2. 1.Status	65
	5. 2. 2.Internet	67
	5. 2. 3.MAC Clone	73
	5. 2. 4.LAN	74
	5. 2. 5. DHCP	74
	5. 2. 6.Dynamic DNS	76
	5. 2. 7. Static Routing	77
5. 3.	Wireless	
	5. 3. 1.Wireless Settings	79
	5. 3. 2.Guest Network	80

	5. 3. 3. Wireless Schedule	81
	5. 3. 4.WPS	82
	5. 3. 5. Additional Wireless Settings	84
5. 4.	NAT Forwarding	85
	5. 4. 1.Port Forwarding	85
	5. 4. 2.Port Triggering	87
	5. 4. 3.DMZ	88
	5. 4. 4.UPnP	89
5. 5.	Parental Controls	90
5. 6.	QoS	
5. 7.	Security	94
	5. 7. 1.Firewall	94
	5. 7. 2.Access Control	95
	5. 7. 3.IP & MAC Binding	97
5. 8.	IPv6	98
	5. 8. 1.IPv6 Status	98
5. 9.	System	
	5. 9. 1.Firmware Upgrade	101
	5. 9. 2.Backup & Restore	102
	5. 9. 3.Change Password	103
	5. 9. 4.Local Management	103
	5. 9. 5.Remote Management	105
	5. 9. 6.System Log	106
	5. 9. 7.Diagnostic	107
	5. 9. 8.Time Settings	108
	5. 9. 9.Reboot	110
	5. 9. 10.LED Control	110
Chap	oter 6. Configure the Router in Access Point Mode	112
6. 1.	Operation Mode	113
6. 2.	Firmware Upgrade	113
6. 3.	Backup & Restore	114
6. 4.	Administration	115
	6. 4. 1.Change Password	115
	6. 4. 2.Local Management	116
6. 5.	System Log	117
6. 6.	Diagnostic	117
6. 7.	Time Settings	119
6.8.	Reboot	120

6. 9.	LED Control	121
Chap	ter 7. Configure the Router in Range Extender Mode	122
7. 1.	Operation Mode	123
7. 2.	Firmware Upgrade	123
7. 3.	Backup & Restore	124
7. 4.	Administration	125
	7. 4. 1.Change Password	125
	7. 4. 2.Local Management	126
7. 5.	System Log	127
7. 6.	Time Settings	127
7.7.	Reboot	
7. 8.	LED Control	129
FAQ.		131

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.

Note: Features available in the router may vary by model and software version. Router availability may also vary by region or ISP. All images, steps, and descriptions in this guide are only examples and may not reflect your actual router experience.

Conventions

In this guide the following conventions are used:

Convention	Description
<u>Underlined</u>	Underlined words or phrases are hyperlinks. You can click to redirect to a website or a specific section.
Teal	Contents to be emphasized and texts on the web page are in teal, including the menus, items, buttons 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.

*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.

More Info

The latest software, management app and utility are available from the Download Center at www.tp-link.com/support.

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

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

TP-Link Community is provided for you to share knowledge and discuss our products at https://community.tp-link.com.

Our Technical Support contact information can be found at the <u>Contact Technical Support</u> page at https://www.tp-link.com/support/.

Chapter 1

Get to Know About Your Router

This chapter introduces what the router can do and shows its appearance.

It contains the following sections:

- Product Overview
- Panel Layout

1. 1. Product Overview

The TP-Link router is designed to fully meet the need of Small Office/Home Office (SOHO) networks and users demanding higher networking performance. The powerful antennas ensure continuous Wi-Fi signal to all your devices while boosting widespread coverage throughout your home, and the built-in Ethernet ports supply high-speed connection to your wired devices.

Moreover, it is simple and convenient to set up and use the TP-Link router due to its intuitive web interface and the powerful Tether app.

1. 2. Panel Layout

1. 2. 1. Top View



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

LED	Indication	
©	Orange	Solid on: Router Mode: The WAN port is connected, but internet is not available. Access Point Mode: The WAN port is not connected. Range Extender Mode: The router is not connected to the host network. WISP Mode: Internet is not available. Blinking: The WAN port is not connected while in Router Mode.
Internet LED	Green	Solid on: Router/WISP Mode: Internet is available. Access Point Mode: The WAN port is connected. Range Extender Mode: The router is connected to the host network. Blinking: The system is starting up or firmware is being upgraded*.
LAN LED	Green	Solid on: At least one LAN port is connected.
⊘ Wi-Fi LED	Green	Solid on: Wireless function is enabled. Blinking: WPS connection is in progress. This may take up to 2 minutes.

^{*} To avoid device damage, do not disconnect or power off your router during the upgrade.

1. 2. 2. The Back Panel



The following parts (view from left to right) are located on the rear panel.

Item	Description
Power Port	For connecting the router to a power socket via the provided power adapter.
WAN Port	For connecting to a DSL/Cable modem, or an Ethernet port.
LAN Ports (1/2/3/4)	For connecting your PCs or other wired network devices to the router.
WPS/RESET Button	To enable the WPS function, press this button for 1 second. If you have a WPS-supported device, you can press this button to quickly establish connection between the router and the client device and automatically configure wireless security for your wireless network.
	Press and hold this button for more than 5 seconds until the Internet LED blinks to reset the router to its factory default settings.
Antennas	Used for wireless operation and data transmitting. Upright them for the best Wi-Fi performance.

Chapter 2

Connect to the Internet

This chapter contains the following sections:

- Position Your Router
- Connect to the Internet

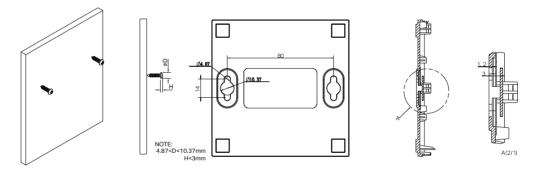
2. 1. Position Your Router

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

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

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

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



Note:

The diameter of the screw, 4.87mm<D<10.37mm, and the distance of two screws is 80mm. The screw that project from the wall need around 4mm based, and the length of the screw need to be at least 20mm to withstand the weight of the product.

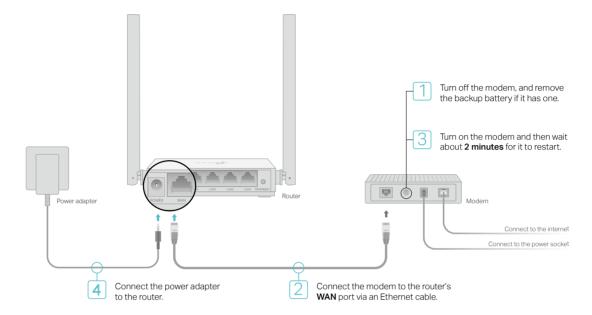
2. 2. Connect to the Internet

The Router provides four working modes: Wireless Router, WISP, Range Extender and Access Point. You can choose the mode to better suit your network needs and follow the guide to complete the configuration.

2. 2. 1. Wireless Router Mode

1. Follow the steps below to connect your router.

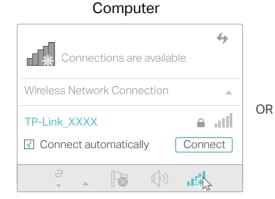
If your internet connection is through an Ethernet cable from the wall instead of through a DSL / Cable / Satellite modem, connect the Ethernet cable directly to the router's WAN port, and then skip steps 1 to 3.



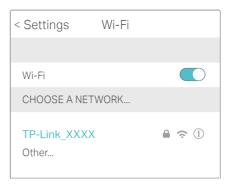
- 1) Turn off the modem, and remove the backup battery if it has one.
- 2) Connect the modem to the router's WAN port with an Ethernet cable.
- 3) Turn on the modem, and then wait about 2 minutes for it to restart.
- 4) Connect the power adapter to the router.
- 2. Connect your computer to the router.
 - Method 1: Wired

Turn off the Wi-Fi on your computer and connect the devices as shown below.

- Method 2: Wirelessly
- 1) Find the SSID (Network Name) and Wireless Password printed on the label at the bottom of the router.
- 2) Click the network icon of your computer or go to Wi-Fi Settings of your smart device, and then select the SSID to join the network.



Smart Device

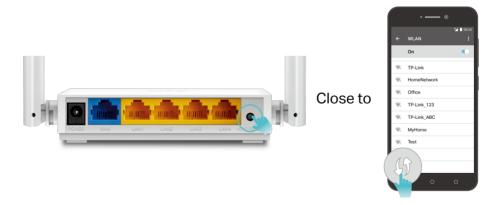


· Method 3: Use the WPS button

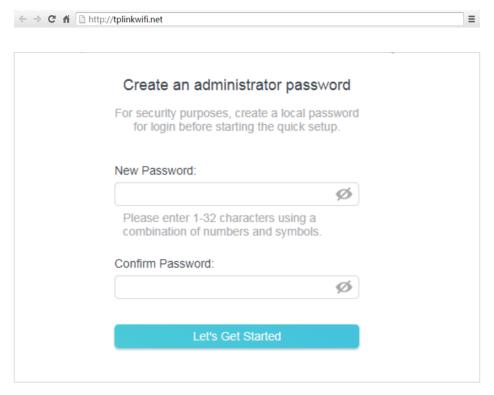
Wireless devices that support WPS, including Android phones, tablets, most USB network cards, can be connected to your router through this method.

Note:

- WPS is not supported by iOS devices.
- 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) Tab the WPS icon on the device's screen. Here we take an Android phone as an example.
- 2) Immediately press the WPS button on your router.



3. Enter http://tplinkwifi.net in the address bar of a web browser. Create a password to log in.



Note:

If the above screen does not pop-up, it means that your IE Web-browser has been set to a proxy. Go to menu Tools > Internet Options > Connections > LAN Settings, in the screen that appears, untick the Using Proxy checkbox, and click OK.

- 4. Follow the Quick Setup to set up the internet connection.
- **5.** Enjoy! For wireless devices, you may have to reconnect to the wireless network if you have customized the SSID (wireless name) and password during the configuration.

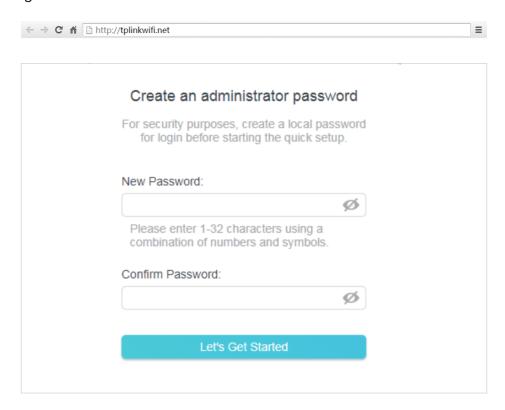
2. 2. 2. WISP Mode

This mode connects to the ISP network wirelessly in areas without wired service.



- 1. Connect the power adapter to the router and power on the router.
- 2. Connect a computer to the router via an Ethernet cable or wirelessly by using the SSID (wireless name) and password printed on the bottom label of the router.

3. Enter http://tplinkwifi.net in the address bar of a web browser. Create a password to log in.



- **4.** Click Change Mode in the top right corner and select WISP Mode. Wait for the router to reboot.
- 5. Follow the Quick Setup to set up the internet connection.
- **6.** Enjoy! Connect your devices to the wireless network and enjoy the internet.

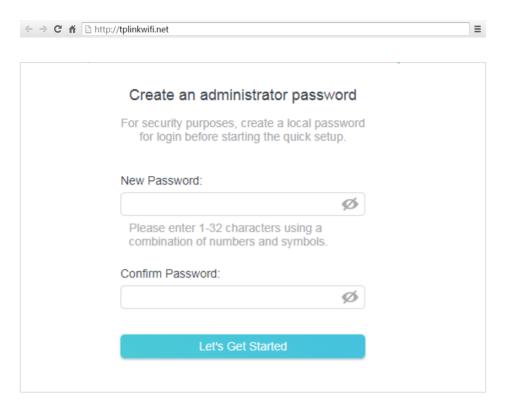
2. 2. 3. Range Extender Mode

This mode boosts your home wireless coverage.

Note:

Some functions like NAT and Parental Controls cannot work in Range Extender Mode.

- 1. Connect the power adapter to the router.
- 2. Connect a computer to the router via an Ethernet cable or wirelessly by using the SSID (wireless name) and password printed on the bottom label of the router.
- 3. Enter http://tplinkwifi.net in the address bar of a web browser. Create a password to log in.



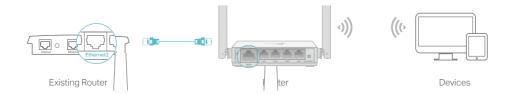
- **4.** Click Change Mode in the top right corner and select Range Extender Mode. Wait for the router to reboot.
- 5. Follow the Quick Setup to set up the internet connection.
- **6.** Relocate: Place the router between your host router and the Wi-Fi dead zone. The location you choose must be within the range of your existing host network.



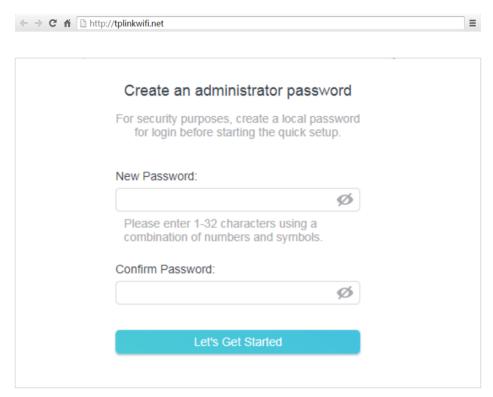
7. Enjoy! You can customize the SSID and password of the extended network.

2. 2. 4. Access Point Mode

This mode connects your router to your existing network to extend Wi-Fi.



- 1. Connect the power adapter to the router.
- 2. Connect the router to your existing host router's Ethernet port via an Ethernet cable as shown above.
- 3. Connect a computer to the router via an Ethernet cable or wirelessly by using the SSID (network name) and password printed on the bottom label of the router.
- **4.** Enter http://tplinkwifi.net in the address bar of a web browser. Create a password to log in.



Note:

If the above screen does not pop-up, it means that your IE Web-browser has been set to a proxy. Go to menu Tools > Internet Options > Connections > LAN Settings, in the screen that appears, untick the Using Proxy checkbox, and click OK.

- 5. Click Change Mode in the top right corner and select Access Point Mode. Wait for the router to reboot.
- **6.** Follow the Quick Setup to set up the internet connection.
- 7. Enjoy! Connect to the wireless network by using the SSID (network name) and password of the router.

Chapter 3

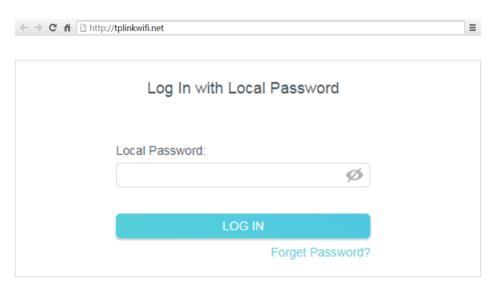
Log In to the Router

This chapter introduces how to log in to the web management page of the router.

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

Follow the steps below to log in to your router.

- 1. Set up the TCP/IP Protocol in Obtain an IP address automatically mode on your computer.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.



Note:

If the login window does not appear, please refer to the FAQ section.

Chapter 4

Configure the Router in Wireless Router Mode

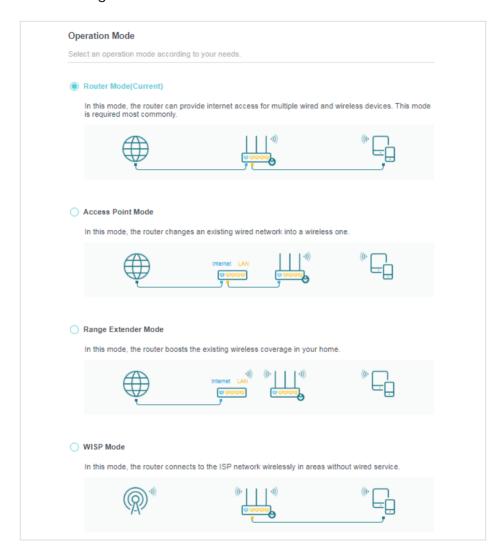
This chapter presents how to configure the various features of the router working as a wireless router.

It contains the following sections:

- Operation Mode
- Network
- Wireless
- NAT Forwarding
- Parental Controls
- QoS
- Security
- IPv6
- System

4. 1. Operation Mode

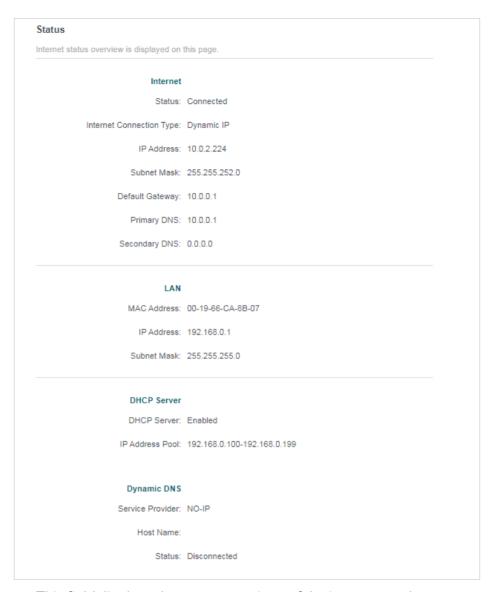
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Operation Mode.
- 3. Select the working mode as needed and click SAVE.



4. 2. Network

4. 2. 1. Status

- 4. Visit http://tplinkwifi.net, and log in with password you set for the router.
- 5. Go to Advanced > Network > Status. You can view the current status information of the router.



- Internet This field displays the current settings of the internet, and you can configure them on the Advanced > Network > Internet page.
 - Status Indicates whether the router has been connected to the internet.
 - Internet Connection Type Indicates the way in which your router is connected to the internet.
 - IP Address The WAN IP address of the router.
 - Subnet Mask The subnet mask associated with the WAN IP address.
 - Default Gateway The Gateway currently used is shown here. When you use
 Dynamic IP as the internet connection type, click Renew or Release here to
 obtain new IP parameters dynamically from the ISP or release them.
 - Primary & Secondary DNS The IP addresses of DNS (Domain Name System) server.

- LAN This field displays the current settings of the LAN, and you can configure them on the Advanced > Network > LAN page.
 - MAC Address The physical address of the router.
 - IP Address The LAN IP address of the router.
 - Subnet Mask The subnet mask associated with the LAN IP address.
- DHCP Server This field displays the current settings of DHCP (Dynamic Host Configuration Protocol) Server, and you can configure them on the Network > DHCP Server page.
 - DHCP Server Indicates whether the DHCP server is enabled of disabled. It is enabled by default and the router acts as a DHCP server.
 - IP Address Pool The IP address range for the DHCP server to assign IP addresses.
- Dynamic DNS This field displays the current settings of the Dynamic DNS (Domain Name System), and you can configure them on the Advanced > Network > Dynamic DNS page.
 - Service Provider The Dynamic DNS service provider you have signed up for.
 - Host Name The Domain Name you have entered in the Dynamic DNS page.
 - Status The status of the Dynamic DNS service connection.

4. 2. 2. Internet

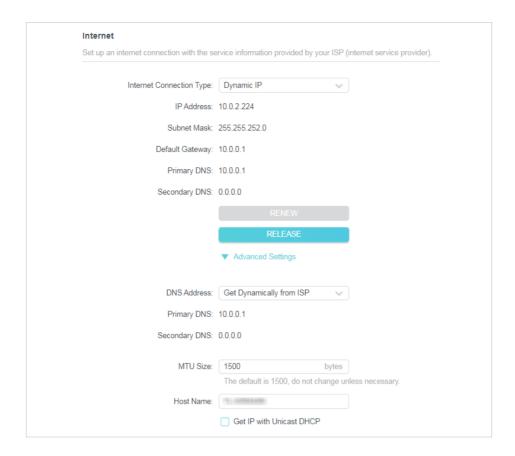
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > Internet.
- 3. Set up the internet connection and click SAVE.

Dynamic IP

If your ISP provides the DHCP service, please select Dynamic IP, and the router will automatically get IP parameters from your ISP.

Click RENEW to renew the IP parameters from your ISP.

Click RELEASE to release the IP parameters.



- MTU Size The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 bytes. It is not recommended that you change the default MTU size unless required by your ISP.
- Host Name This option specifies the name of the router.
- Get IP with Unicast DHCP A few ISPs' DHCP servers do support the broadcast applications. If you cannot get the IP address normally, you can choose this option (it is rarely required).

Static IP

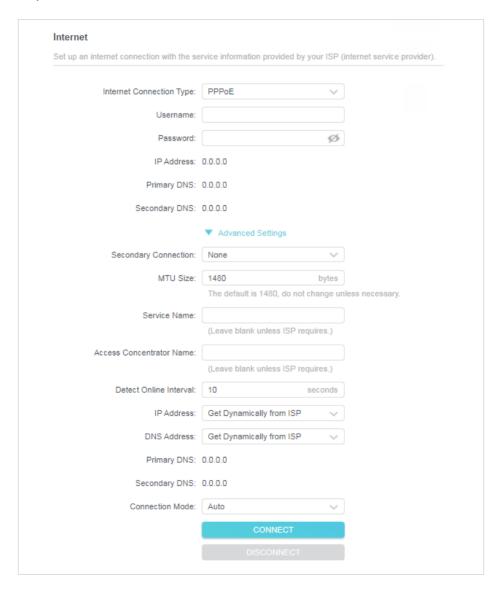
If your ISP provides a static or fixed IP address, subnet mask, default gateway and DNS setting, please select Static IP.



- IP Address Enter the IP address in dotted-decimal notation provided by your ISP.
- Subnet Mask Enter the subnet mask in dotted-decimal notation provided by your ISP. Normally 255.255.255.0 is used as the subnet mask.
- Default Gateway Enter the gateway IP address in dotted-decimal notation provided by your ISP.
- Primary/Secondary DNS (Optional) Enter one or two DNS addresses in dotteddecimal notation provided by your ISP.
- MTU Size The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 bytes. It is not recommended that you change the default MTU size unless required by your ISP.

PPPoE

If your ISP provides PPPoE connection, select PPPoE.



- Username/Password Enter the user name and password provided by your ISP. These fields are case-sensitive.
- Secondary Connection It's available only for PPPoE connection. If your ISP provides an extra connection type, select Dynamic IP or Static IP to activate the secondary connection.
- MTU Size The default MTU size is 1480 bytes. It is not recommended that you change the default MTU size unless required by your ISP.
- Service Name The service name should not be configured unless you are sure it is necessary for your ISP. In most cases, leaving these fields blank will work.
- Access Concentrator Name The access concentrator name should not be configured unless you are sure it is necessary for your ISP. In most cases, leaving these fields blank will work.
- Detect Online Interval The router will detect Access Concentrator online at every interval. The default value is 10. You can input the value between 0 and 120. The value 0 means no detect.
- IP Address The default setting is to get an IP address dynamically from your ISP. If your ISP does not automatically assign IP addresses to the router, please select Use the Following IP Address and enter the IP address provided by your ISP in dotteddecimal notation.
- DNS Address The default setting is to get an IP address dynamically from your ISP. If
 your ISP does not automatically assign DNS addresses to the router, please select Use
 the Following DNS Addresses and enter the IP address in dotted-decimal notation of
 your ISP's primary DNS server. If a secondary DNS server address is available, enter
 it as well.
- Connection Mode Select an appropriate connection mode that determines how to connect to the internet.
 - Auto In this mode, the internet connection reconnects automatically any it gets disconnected.
 - On Demand In this mode, the internet connection will be terminated automatically after a specified inactivity period (Max Idle Time) and be reestablished when you attempt to access the internet again.
 - Time-based In this mode, the internet connection is only established in a specific timeframe. If this option is selected, enter the start time and end time. Both are in HH:MM format.
 - Manual In this mode, the internet connection is controlled manually by clicking the Connect/Disconnect button. This mode also supports the Max Idle Time function as On Demand mode. Enter a maximum time (in minutes), the internet connection can be inactive before it is terminated into the Max Idle Time. The

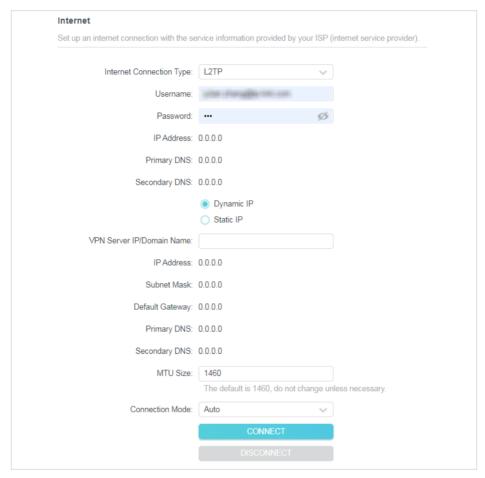
default value is 15 minutes. If you want the internet connection remains active all the time, enter 0 (zero).

Note:

Sometimes the connection cannot be terminated although you have specified the Max Idle Time because some applications are visiting the internet continually in the background.

L2TP

If your ISP provides L2TP connection, please select L2TP.



- Username/Password Enter the username and password provided by your ISP. These fields are case-sensitive.
- VPN Server IP/ Domain Name Enter the VPN server's IP address or domain name provided by your ISP.
- MTU Size The default MTU size is "1460" bytes, which is usually fine. It is not recommended that you change the default MTU Size unless required by your ISP.
- Connection Mode
 - Auto In this mode, the internet connection reconnects automatically any it gets disconnected.

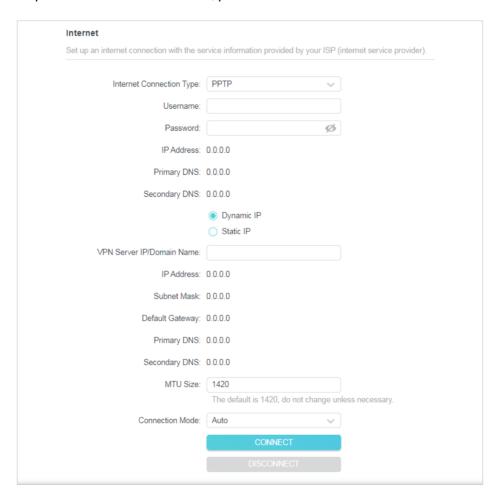
- On Demand In this mode, the internet connection will be terminated automatically after a specified inactivity period (Max Idle Time) and be reestablished when you attempt to access the internet again.
- Manual In this mode, the internet connection is controlled manually by clicking
 the Connect/Disconnect button. This mode also supports the Max Idle Time
 function as On Demand mode. Enter a maximum time (in minutes), the internet
 connection can be inactive before it is terminated into the Max Idle Time. The
 default value is 15 minutes. If you want the internet connection remains active
 all the time, enter 0 (zero).

Note:

Sometimes the connection cannot be terminated although you have specified the Max Idle Time because some applications are visiting the internet continually in the background.

PPTP

If your ISP provides PPTP connection, please select PPTP.



 Username/Password - Enter the username and password provided by your ISP. These fields are case-sensitive.

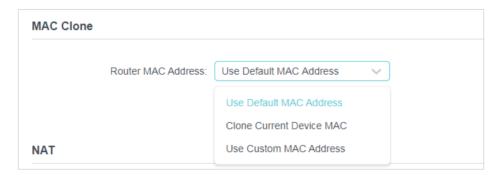
- VPN Server IP/ Domain Name Enter the VPN server's IP address or domain name provided by your ISP.
- MTU Size The default MTU size is "1420" bytes, which is usually fine. It is not recommended that you change the default MTU Size unless required by your ISP.
- Connection Mode
 - Auto In this mode, the internet connection reconnects automatically any it gets disconnected.
 - On Demand In this mode, the internet connection will be terminated automatically after a specified inactivity period (Max Idle Time) and be reestablished when you attempt to access the internet again.
 - Manual In this mode, the internet connection is controlled manually by clicking the Connect/Disconnect button. This mode also supports the Max Idle Time function as On Demand mode. Enter a maximum time (in minutes), the internet connection can be inactive before it is terminated into the Max Idle Time. The default value is 15 minutes. If you want the internet connection remains active all the time, enter 0 (zero).

Note:

Sometimes the connection cannot be terminated although you have specified the Max Idle Time because some applications are visiting the internet continually in the background.

4. 2. 3. MAC Clone

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > Internet and locate the MAC Clone section.
- 3. Configure the WAN MAC address and click SAVE.



- Use Default MAC Address Do not change the default MAC address of your router in case the ISP does not bind the assigned IP address to the MAC address.
- Use Current MAC Address Select to copy the current MAC address of the computer that is connected to the router, in case the ISP binds the assigned IP address to the MAC address.

 Use Custom MAC Address - Select if your ISP requires you to register the MAC address and enter the correct MAC address in this field, in case the ISP binds the assigned IP address to the specific MAC address.

Note:

- You can only use the MAC Address Clone function for PCs on the LAN.
- If you have changed the WAN MAC address when the WAN connection is PPPoE, it will not take effect until the connection is re-established.

4. 2. 4. LAN

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > LAN.
- 3. Configure the IP parameters of the LAN and click SAVE.



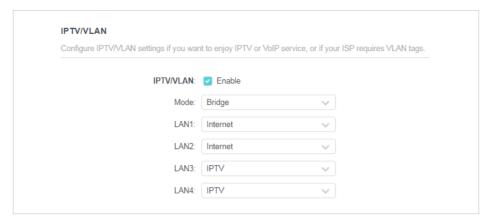
- MAC Address The physical address of the LAN ports. The value can not be changed.
- IP Address Enter the IP address in dotted-decimal notation of your router (the default one is 192.168.0.1).
- Subnet Mask An address code that determines the size of the network. Normally 255.255.255.0 is used as the subnet mask.

Note:

- If you have changed the IP address, you must use the new IP address to log in.
- If the new IP address you set is not in the same subnet as the old one, the IP address pool in the DHCP Server will be configured automatically, but the Virtual Server and DMZ Host will not take effect until they are re-configured.

4. 2. 5. IPTV

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > IPTV/VLAN.
- 3. Configure the WAN MAC address and click Save.

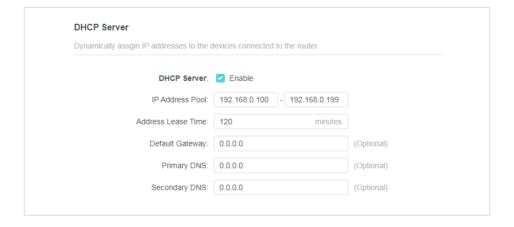


- IPTV/VLAN Select to enable the IPTV feature.
- Mode Select the appropriate mode according to your ISP.
- LAN 1/2/3/4 Assign your LAN port to whether function as the internet supplier or as the IPTV supplier.

4, 2, 6, DHCP

By default, the DHCP (Dynamic Host Configuration Protocol) Server is enabled and the router acts as a DHCP server; it dynamically assigns TCP/IP parameters to client devices from the IP Address Pool. You can change the settings of DHCP Server if necessary, and you can reserve LAN IP addresses for specified client devices.

- To specify the IP address that the router assigns:
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > DHCP Server and locate the DHCP Server section.



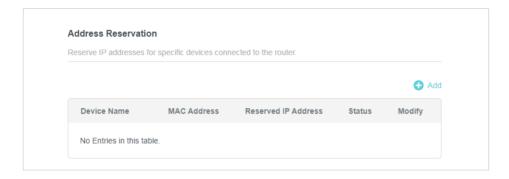
- 1. Tick the Enable checkbox.
- 2. Enter the starting and ending IP addresses in the IP Address Pool.

- 3. Enter other parameters if the ISP offers. The Default Gateway is automatically filled in and is the same as the LAN IP address of the router.
- 4. Click SAVE.

Note:

To use the DHCP server function of the router, you must configure all computers on the LAN as Obtain an IP Address automatically.

- To reserve an IP address for a specified client device:
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > DHCP Server and locate the Address Reservation section.
- 3. Click Add in the Address Reservation section.



4. Click VIEW CONNECTED DEVICES and select the you device you want to reserve an IP for. Then the MAC and IP Address will be automatically filled in. You can also enter the MAC and IP address of the client device.



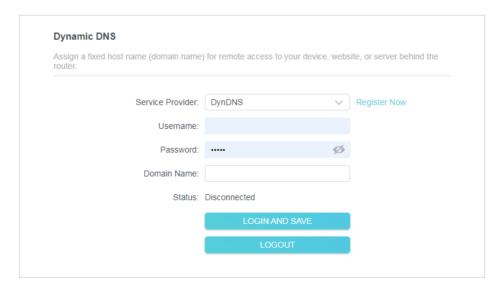
- To check the DHCP client list:
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > DHCP Server and locate the DHCP Client List section. You can see the device information of the list.
- 3. Click Refresh to see the current attached devices.



4. 2. 7. Dynamic DNS

The router offers the DDNS (Dynamic Domain Name System) feature, which allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (named by yourself) and a dynamic IP address. Thus your friends can connect to your server by entering your domain name no matter what your IP address is. Before using this feature, you need to sign up for DDNS service providers such as www.comexe.cn, www. dyndns.org, or www.noip.com. The Dynamic DNS client service provider will give you a password or key.

- 1. Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2. Go to Advanced > Network > Dynamic DNS.
- 3. Select the DDNS Service Provider: NO-IP or DynDNS. If you don't have a DDNS account, you have to register first by clicking Register Now.



- 4. Enter the Username for your DDNS account.
- 5. Enter the Password for your DDNS account.
- 6. Enter the Domain Name you received from dynamic DNS service provider here.

- 7. If your service provider is NO-IP, select WAN IP binding to ensure that the domain name is bound to the WAN IP of this router.
- 8. Click LOGIN AND SAVE.

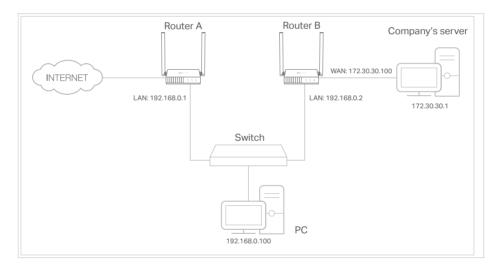
4. 2. 8. Static Routing

Static Routing is a form of routing that is configured manually by a network administrator or a user by adding entries into a routing table. The manually-configured routing information guides the router in forwarding data packets to the specific destination.

I want to:

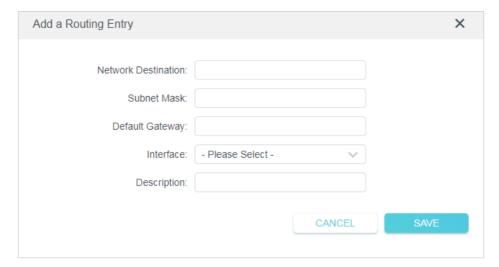
Visit multiple networks and servers at the same time.

For example, in a small office, my PC can surf the internet through Router A, but I also want to visit my company's network. Now I have a switch and Router B. I connect the devices as shown in the following figure so that the physical connection between my PC and my company's server is established. 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. Change the routers' LAN IP addresses to two different IP addresses on the same subnet. Disable Router B's DHCP function.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for Router A.
- 3. Go to Advanced > Network > Routing and locate the Static Routing section.
- 4. Click Add and finish the settings according to the following explanations:

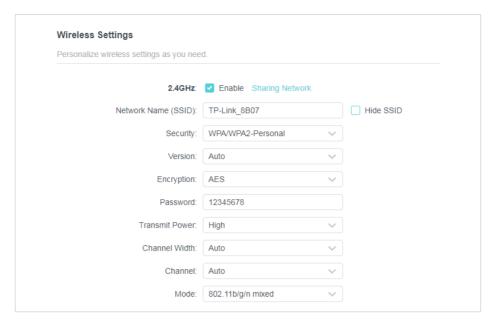


- Network Destination The destination IP address that you want to assign to a static route. This IP address cannot be on the same subnet with the WAN IP or LAN IP of Router A. In the example, the IP address of the company network is the destination IP address, so here enter 172.30.30.1.
- Subnet Mask The Subnet Mask determines which portion of an IP address is the network portion, and which portion is the host portion.
- Default 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 data. In the example, the data packets will be sent to the LAN port of Router B and then to the Server, so the default gateway should be 192.168.0.2.
- Interface: Determined by the port (WAN/LAN) that sends out data packets. In the example, the data are sent to the gateway through the LAN port of Router A, so LAN should be selected.
- Description: Enter a description for this static routing entry.
- 5. Click SAVE.
- 6. Check the Routing Table below. If you can find the entry you've set, the static routing is set successfully.

4.3. Wireless

4. 3. 1. Wireless Settings

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > Wireless Settings.
- 3. Configure the wireless settings for the wireless network and click SAVE.



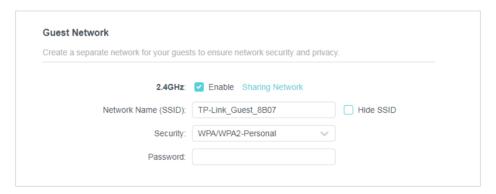
- 2.4GHz Select this checkbox to enable the 2.4GHz wireless network.
- Network Name (SSID) Enter a value of up to 32 characters. The same Name (SSID)
 must be assigned to all wireless devices in your network.
- Hide SSID Select this checkbox if you want to hide the 2.4GHz network name (SSID) from the Wi-Fi network list. In this case, you need to manually join the network.
- Security Select an option from the Security drop-down list.
 - None No security. It is highly recommend you enable the wireless security to protect your wireless network from unauthorized access.
 - WPA-PSK/WPA2-Personal It's the WPA/WPA2 authentication type based on pre-shared passphrase. It's also the recommended security type.
 - WPA /WPA2-Enterprise It's based on Radius Server.
 - WEP It is based on the IEEE 802.11 standard.
- Version Keep default version value.
- Encryption Select Auto, TKIP or AES. We recommend you keep the default settings.
- Transmit Power Select High, Middle or Low to specify the data transmit power. The default and recommended setting is High.
- Channel Width 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. If you select auto, then AP will choose the best
 channel automatically.
- Channel This field determines which operating frequency will be used. The default channel is set to Auto. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- Mode You can choose the appropriate "Mixed" mode.

4. 3. 2. Guest Network

Guest Network allows you to provide Wi-Fi access for guests without disclosing your host network. When you have guests in your house, apartment, or workplace, you can create a guest network for them. In addition, you can customize guest network settings to ensure network security and privacy.

Create a Guest Network

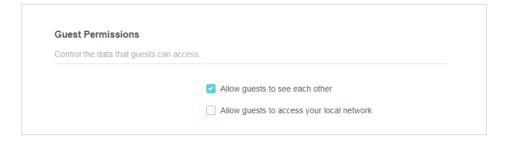
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Wireless or Advanced > Wireless > Guest Network.
- 3. Enable the 2.4GHz Guset Network.



- 4. Create a network name for your guest network.
- 5. Select the Security type and create the Password of the guest network.
- **6.** Click SAVE. Now you guests can access your guest network using the SSID and password you set!

• Customize Guest Network Options

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 1. Go to Advanced > Wireless > Guest Network. Locate the Guest Permissions section.
- 2. Customize guest network options according to your needs.



Allow guests to see each other

Tick this checkbox if you want to allow the wireless clients on your guest network to communicate with each other via methods such as network neighbors and Ping.

Allow guests to access my local network

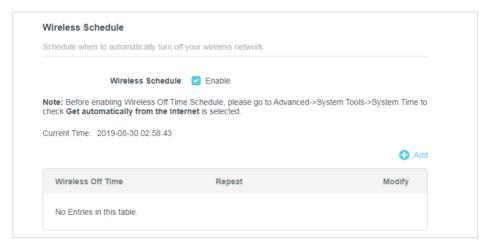
Tick this checkbox if you want to allow the wireless clients on your guest network to communicate with the devices connected to your router's LAN ports or main network via methods such as network neighbors and Ping.

3. Click SAVE. Now you can ensure network security and privacy!

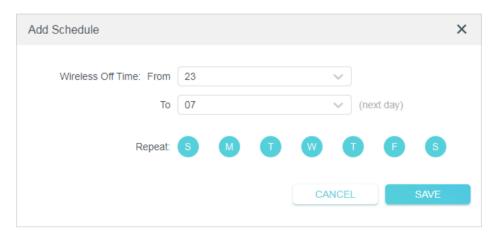
4. 3. 3. Wireless Schedule

The wireless function can be automatically off at a specific time when you do not need the wireless function.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > Wireless Schedule.
- 3. Enable the Wireless Schedule function.



4. Click Add to specify a wireless off period during which you need the wireless off automatically, and click SAVE.



Note:

- The effective wireless schedule is based on the time of the router. You can go to Advanced > System > Time to modify the time.
- $\bullet\,$ The wireless network will be automatically turned on after the time period you set.

4. 3. 4. WPS

WPS (Wi-Fi Protected Setup) can help you to quickly and securely connect to a network. This section will guide you to add a new wireless device to your router's network quickly via WPS.

Note:

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

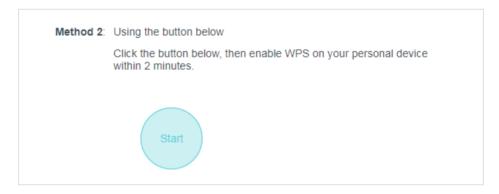
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > WPS.
- 3. Follow one of the following two methods to connect your client device to the router's Wi-Fi network.

Method ONE: Push the WPS Button

- 1. Click Start on the screen.
- 2. Within two minutes, press the WPS button on your device. A Device-(XX-XX-XX-XX-XX-XX-XX) Connected message should appear on the screen and the LED should change from blinking to solid on, indicating successful WPS connection.

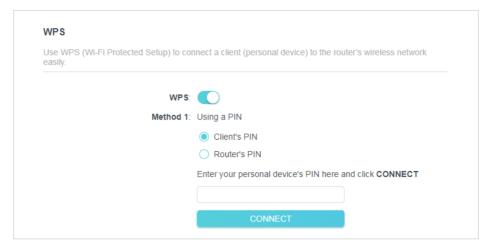
Note:

XX-XX-XX-XX-XX is the MAC address of your device.



Method TWO: Using a PIN

- Connects via the Client's PIN
- 1. Keep the WPS Status as Enabled and select Client's PIN.



- 2. Enter the PIN of your device and click CONNECT. Then your device will get connected to the router.
- Connects via the Router's PIN
- 1. Keep the WPS Status as Enabled and select Router's PIN.



2. Enter the PIN on your personal device. You can use the default PIN or generate a new one.

Note:

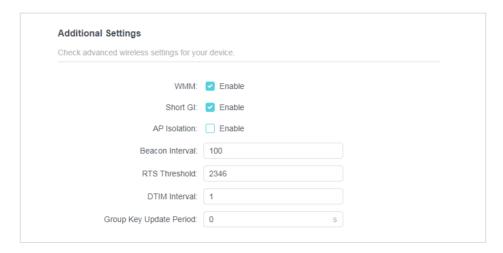
PIN (Personal Identification Number) is an eight-character identification number preset to each router. WPS supported devices can connect to your router with the PIN. The default PIN is printed on the label of your router.

4. 3. 5. Additional Wireless Settings

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > Additional Settings.
- 3. Configure the advanced settings of your wireless network and click Save.

Note:

If you are not familiar with the setting items on this page, it's strongly recommended to keep the provided default values; otherwise it may result in lower wireless network performance.



- Enable WMM WMM function can guarantee the packets with high-priority messages being transmitted preferentially. It is strongly recommended to enable this function.
- Enable Short GI It is recommended to enable this function, for it will increase the data capacity by reducing the guard interval time.
- AP Isolation This function isolates all connected wireless stations so that wireless stations cannot access each other through WLAN.
- Beacon Interval Enter a value between 40-1000 milliseconds for Beacon Interval here. Beacon Interval value determines the time interval of the beacons. The beacons are the packets sent by the router to synchronize a wireless network. The default value is 100.
- RTS Threshold Here you can specify the RTS (Request to Send) Threshold. If the
 packet is larger than the specified RTS Threshold size, the router will send RTS frames
 to a particular receiving station and negotiate the sending of a data frame. The default
 value is 2346.
- DTIM Interval This value determines the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. You can specify the value between 1-255 Beacon Intervals. The default value is 1, which indicates the DTIM Interval is the same as Beacon Interval.
- Group Key Update Period Enter a number of seconds (minimum 30) to control the time interval for the encryption key automatic renewal. The default value is 0, meaning no key renewal.

4. 4. NAT Forwarding

The router's NAT (Network Address Translation) feature makes the devices on the LAN use the same public IP address to communicate on the internet, which protects the

local network by hiding IP addresses of the devices. However, it also brings about the problem that external hosts cannot initiatively communicate with the specified devices in the local network.

With the forwarding feature, the router can traverse the isolation of NAT so that clients on the internet can reach devices on the LAN and realize some specific functions.

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

4. 4. 1. Port Forwarding

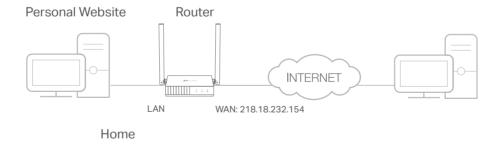
When you build up a server in the local network and want to share it on the internet, Port Forwarding can realize the service and provide it to internet users. At the same time Port Forwarding can keep the local network safe as other services are still invisible from the internet.

Port Forwarding can be used to set 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.

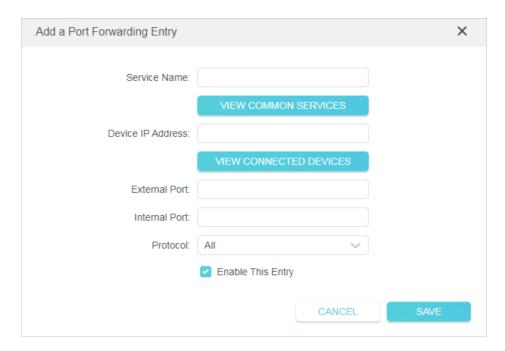
I want to:

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

For example, the personal website has been built in my home PC (192.168.0.100). I hope that my friends on the internet can visit my website in some way. My PC is connected to the router with the WAN IP address 218.18.232.154.



- 1. Set your PC to a static IP address, for example 192.168.0.100.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to Advanced > NAT Forwarding > Port Forwarding.
- 4. Click Add.



- 5. Click VIEW COMMON SERVICES and select HTTP. The External Port, Internal Port and Protocol will be automatically filled in.
- 6. Click VIEW CONNECTED DEVICES and select your home PC. The Device IP Address will be automatically filled in. Or enter the PC's IP address 192.168.0.100 manually in the Device IP Address field.

7. Click SAVE.

Note:

- 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.
- If the service you want to use is not in the Common Services list, you can enter the corresponding parameters manually. You should verify the port number that the service needs.
- You can add multiple virtual server rules if you want to provide several services in a router. Please note that the External Port should not be overlapped.

Done!

Users on the internet can enter http:// WAN IP (in this example: http:// 218.18.232.154) to visit your personal website.

Note:

- If you have changed the default External Port, you should use http:// WAN IP: External Port to visit the website.
- The WAN IP should be a public IP address. For the WAN IP is assigned dynamically by the ISP, it is recommended to apply and register a domain name for the WAN referring to Dynamic DNS. Then users on the internet can use http://domain.name to visit the website.

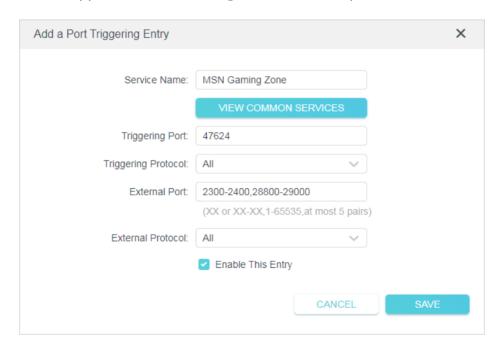
4. 4. 2. Port Triggering

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

of the host. When the data from the internet return to the external ports, the router can forward them to the corresponding host. Port triggering is mainly applied to online games, VoIPs, video players and common applications including MSN Gaming Zone, Dialpad, Quick Time 4 players and more.

Follow the steps below to configure the port triggering rules:

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > NAT Forwarding > Port Triggering.
- 3. Click Add.
- 4. Click VIEW COMMON SERVICES, and select the desired application. The Triggering Port, Triggering Protocol and External Port will be automatically filled in. The following picture takes application MSN Gaming Zone as an example.



5. Click SAVE.

Note:

- · You can add multiple port triggering rules as needed.
- The triggering ports can not be overlapped.
- If the application you need is not listed in the Common Services list, please enter the parameters manually. You should verify the external ports the application uses first and enter them in External Ports field. You can input at most 5 groups of ports (or port sections). Every group of ports must be set apart with ",". For example, 2000-2038, 2050-2051, 2085, 3010-3030.

4. 4. 3. DM7

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

Note:

DMZ is more applicable in the situation that users are not clear about which ports to open. When it is enabled, the DMZ host is totally exposed to the internet, which may bring some potential safety hazards. 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 log in normally but cannot join a team with other players. To solve this problem, set your PC as a DMZ host with all ports opened.

How can I do that?

- 1. Assign a static IP address to your PC, for example 192.168.0.100.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to Advanced > NAT Forwarding > DMZ and select Enable.
- 4. Click VIEW CONNECTED DEVICES and select your PC. The DMZ Host IP Address will be automatically filled in. Or enter the PC's IP address 192.168.0.100 manually in the DMZ Host IP Address field.



5. Click SAVE.

Done!

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

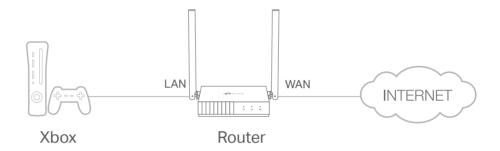
4. 4. 4. UPnP

The 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 on the local network and the internet 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 for multiplayer gaming, peer-to-peer connections, real-time communication (such as VoIP or telephone conference) or remote assistance, etc.

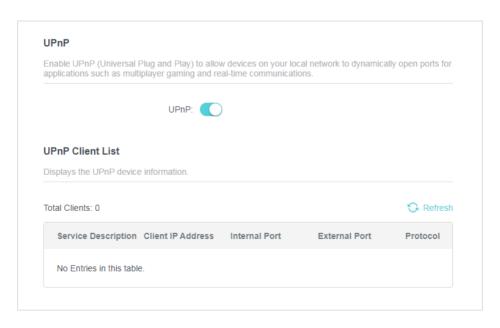
- Ø Tips
- UPnP is enabled by default in this router.
- Only the application supporting UPnP protocol can use this feature.
- UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

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



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

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



4. 5. Parental Controls

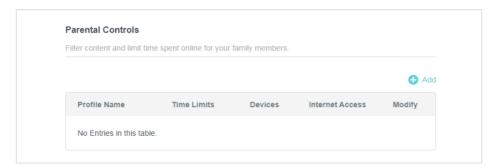
Parental Controls allows you to set up unique restrictions on internet access for each member of your family. You can block inappropriate content, set daily limits for the total time spent online and restrict internet access to certain times of the day.

I want to:

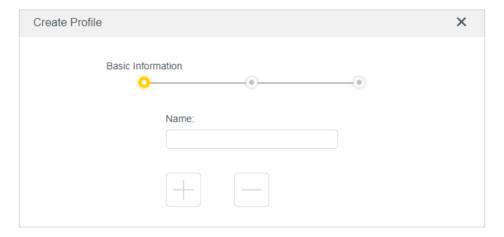
Block access to inappropriate online content for my child's devices, restrict internet access to 2 hours every day and block internet access during bed time (10 PM to 7 AM) on school nights (from Sunday to Thursday).

How can I do that?

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Parental Controls.
- 3. Click Add to create a profile for a family member.

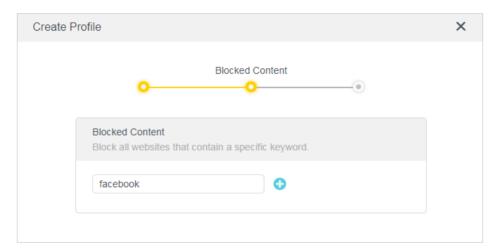


4. Add basic profile information.

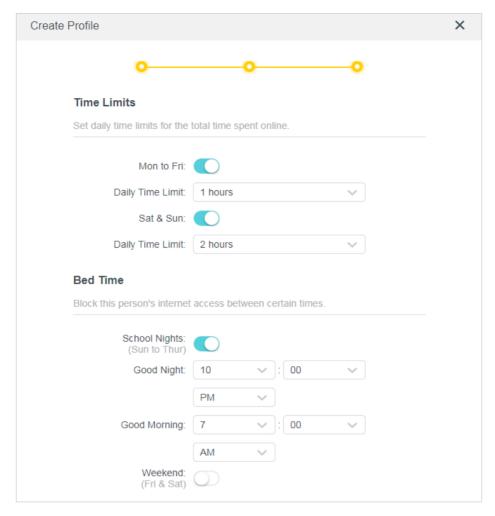


- 1) Enter a Name for the profile to make it easier to identify.
- 2) Under Devices, click + .
- 3) Select the devices that belong to this family member. Access restrictions will be applied to these devices. Click ADD when finished.

- Note: Only devices that have previously been connected to your router's network are listed here. If you are unable to find the device you want to add, connect it to your network and then try again.
- 4) Click NEXT.
- 5. Block content for this profile.



- 1) Enter the key word of the website that you want to block. Click if want to block multiple websites.
- 2) Click NEXT.
- 6. Set time restrictions on internet access.



- 1) Enable Time Limits on Monday to Friday and Saturday & Sunday then set the allowed online time to 2 hours each day.
- 2) Enable Bed Time on School Nights (from Sunday to Thursday) and use the up/down arrows or enter times in the fields. Devices under this profile will be unable to access the internet during this time period.
- 3) Click SAVE.

Note: The effective time limits are based on the time of the router. You can go to Advanced > System > Time to modify the time.

Done!

The amount of time your child spends online is controlled and inappropriate content is blocked on their devices.

4. 6. QoS

QoS (Quality of Service) is designed to ensure the efficient operation of the network when come across network overload or congestion. Devices set as high priority will be

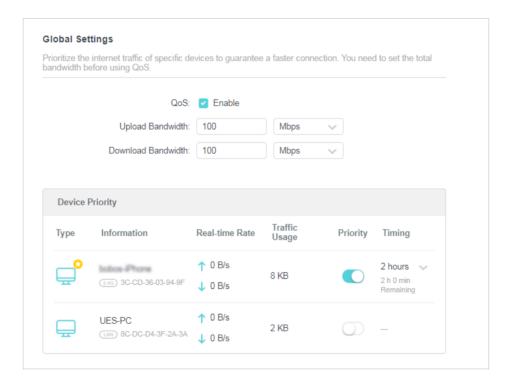
allocated more bandwidth and so continue to run smoothly even when there are many devices connected to the network.

I want to:

Ensure a fast connection of my computer while I play online games for the next 2 hours.

How can I do that

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > QoS.
- 3. Tick the Enable checkbox of QoS.
- 4. Enter the maximum upload and download bandwidths provided by your internet service provider, and then click SAVE. 1Mbps equals to 1,000Kbps.
- 5. Find your computer in the Device Priority section and toggle on Priority. Select 2 hours from the drop-down list of Timing. Your computer will be prioritized for the next 2 hours.



Done!

You can now enjoy playing games without lag on your computer for the next 2 hours.

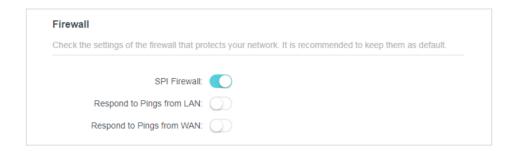
4.7. Security

This function allows you to protect your home network from cyber attacks and unauthorized users by implementing these network security functions.

4. 7. 1. Firewall

The SPI (Stateful Packet Inspection) Firewall protects the router from cyber attacks and validate the traffic that is passing through the router based on the protocol. This function is enabled by default.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Security > Firewall, and configure the parameters as you need. It's recommended to keep the default settings.



4. 7. 2. 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:

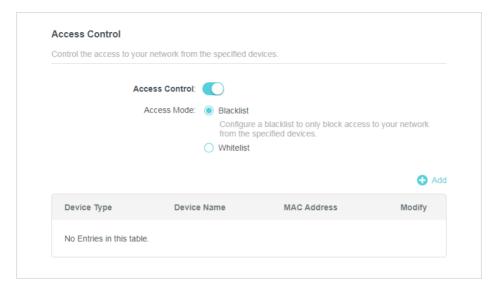
Block or allow specific client devices to access my network (via wired or wireless).

How can I do that?

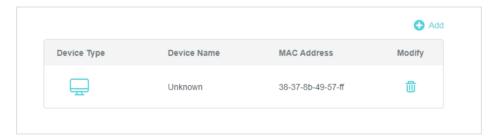
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Security > Access Control:
- 3. Select the access mode to either block (recommended) or allow the device(s) in the list.

To block specific device(s):

1) Select Blacklist and click SAVE.

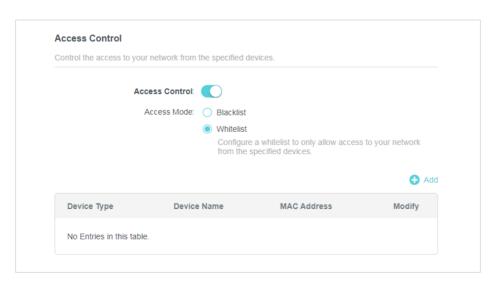


2) Click Add and select devices you want to be blocked. You can see the devices have been added to the blacklist.



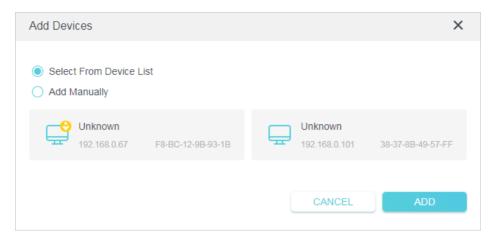
To allow specific device(s):

1) Select Whitelist and click SAVE.



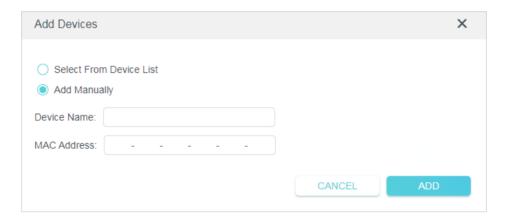
- 2) Add devices to the whitelist.
- Add connected devices

Click Select From Device List and select the devices you want to be allowed.



Add unconnected devices

Click Add Manually and enter the Device Name and MAC Address of the device you want to be allowed.



Done!

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

4.7.3. IP & MAC Binding

IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind 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 matching IP address in the Binding list, but unrecognized MAC address.

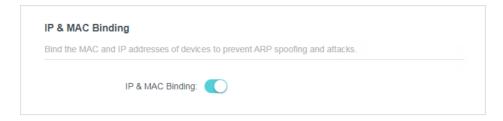
I want to:

Prevent ARP spoofing and ARP attacks.

How can I do that?

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

- 2. Go to Advanced > Security > IP & MAC Binding.
- 3. Enable IP & MAC Binding and click SAVE.



4. Bind your device(s) according to your need.

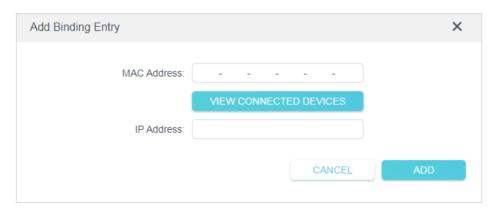
To bind the connected device(s):

Locate the ARP List section and enable Bind to bind the IP and MAC addresses of a specific device.



To add a binding entry:

- 1) Click Add in the Binding List section.
- 2) Click VIEW CONNECTED DEVICES and select the device you want to bind. Or enter the MAC Address and IP Address that you want to bind.
- 3) Click ADD.



4.8. IPv6

This function allows you to enable IPv6 function and set up the parameters of the router's Wide Area Network (WAN) and Local Area Network (LAN).

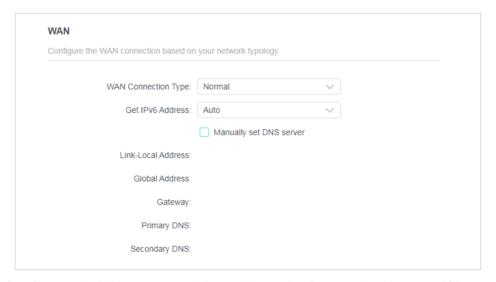
4. 8. 1. IPv6 Status

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > IPv6, and you can view the current IPv6 status information of the router.
- 3. Enable IPv6 and select the mode: Router or Pass-Through (Bridge).
- If you select Router:

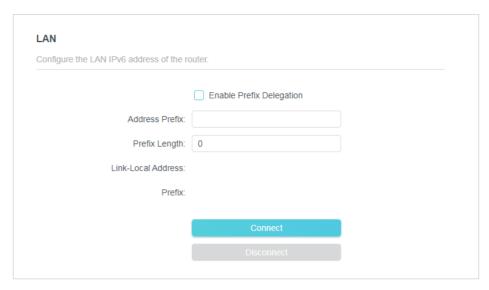


Fill in WAN and LAN information as required by different connection types.

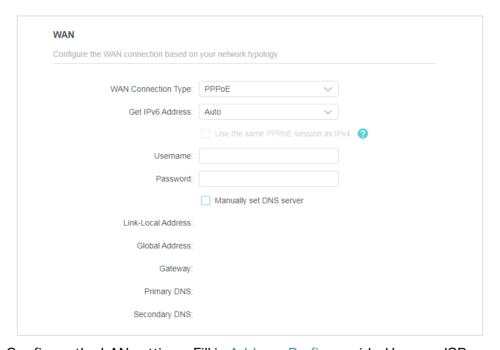
- Normal: The default connection type.
- 1) Configure the WAN settings.



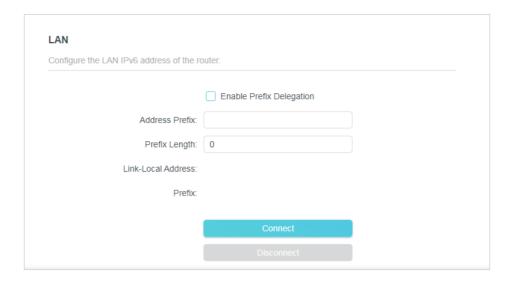
2) Configure the LAN settings. Fill in Address Prefix provided by your ISP.



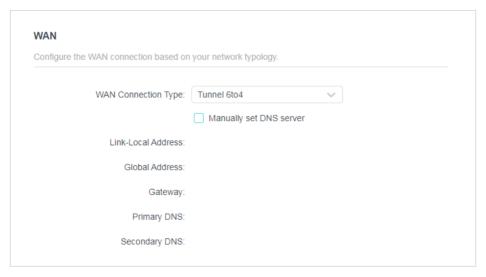
- 3) Click SAVE.
- PPPoE: Select this type if your ISP uses PPPoEv6, and provides a username and password.
- 1) Configure the WAN settings.



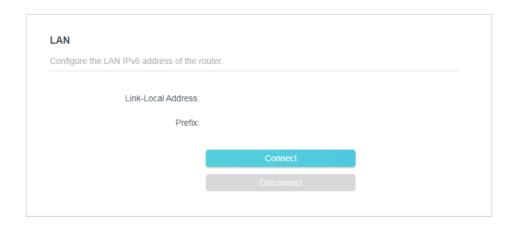
2) Configure the LAN settings. Fill in Address Prefix provided by your ISP.



- Tunnel 6to4: Select this type if your ISP uses 6 to 4 deployment fort assigning address.
- 1) Configure the WAN settings.



2) Configure the LAN settings.



• If you select Pass-Through (Bridge):

Click SAVE. No configuration is required.

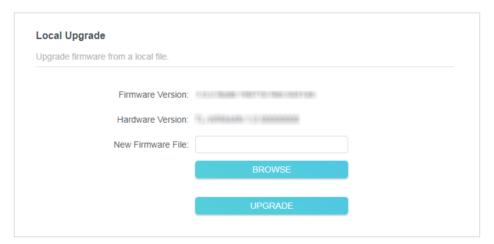


4.9. System

4. 9. 1. Firmware Upgrade

TP-Link is dedicated to improving and richening the product features, giving users a better network experience. We will release the latest firmware at TP-Link official website www.tp-link.com. You can download the latest firmware file from the Support page of our website and upgrade the firmware to the latest version.

- 1. Download the latest firmware file for the router from our website www.tp-link.com.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to Advanced > System > Firmware Upgrade.
- 4. Click BROWSE to locate the downloaded firmware file, and click UPGRADE.



4. 9. 2. Backup & Restore

The configuration settings are stored as a configuration file in the router. You can back up the configuration file in your computer for future use and restore the router to the previous settings from the backup file when needed.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Backup & Restore.

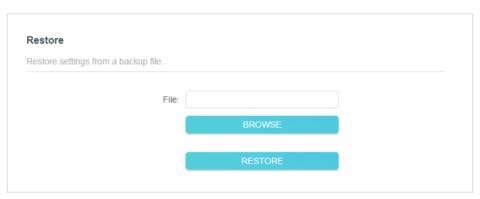
• To back up configuration settings:

Click BACK UP to save a copy of the current settings in your local computer. A ".bin" file of the current settings will be stored in your computer.



To restore configuration settings:

- Click BROWSE to locate the backup configuration file stored in your computer, and click RESTORE.
- 2. Wait a few minutes for the restoring and rebooting.



To reset the router to factory default settings:

1. Click FACTORY RESTORE to reset the router.



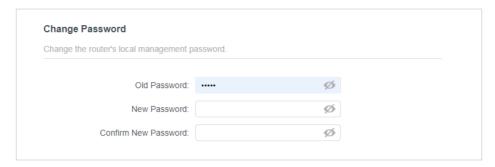
2. Wait a few minutes for the restoring and rebooting.

Note:

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

4. 9. 3. Change Password

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Administration, and focus on the Change Password section.



- 3. Enter the old password, then a new password twice (both case-sensitive). Click SAVE.
- 4. Use the new password for future logins.

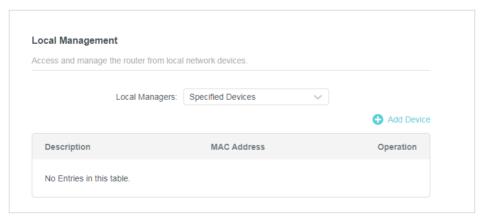
4. 9. 4. Local Management

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Administration, and focus on the Local Management section.
- Allow all LAN connected devices to manage the router:

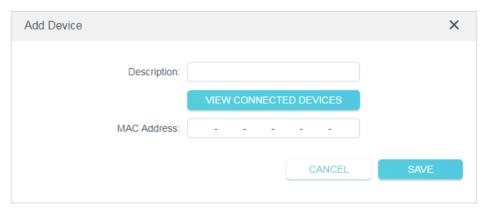
Select All Devices for Local Managers.



- Allow specific devices to manage the router:
- 1. Select All Devices for Local Managers and click SAVE.



2. Click Add Device.



- 3. Click VIEW CONNECTED DEVICES and select the device to manage the router from the Connected Devices list, or enter the MAC address of the device manually.
- 4. Specify a Description for this entry.
- 5. Click SAVE.

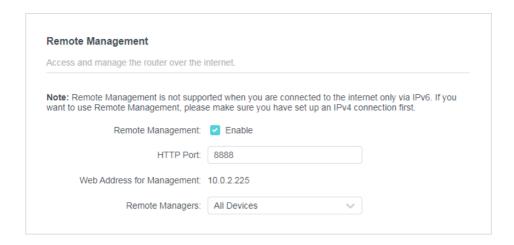
4. 9. 5. Remote Management

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- Go to Advanced > System > Administration, and focus on the Remote Management section.
- Forbid all devices to manage the router remotely:

Do not tick the Enable checkbox of Remote Management.



Allow all devices to manage the router remotely:

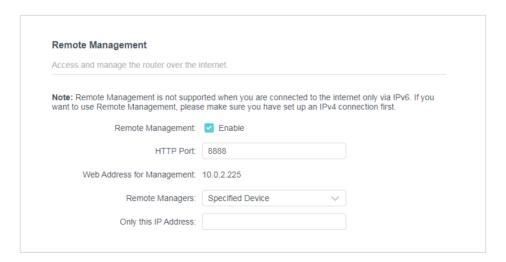


- 1. Tick the Enable checkbox of Remote Management.
- 2. Keep the HTTP port as default setting (recommended) or enter a value between 1024 and 65535.
- 3. Select All Devices for Remote Managers.
- 4. Click SAVE.

Devices on the internet can log in to http://Router's WAN IP address:port number (such as http://113.116.60.229:1024) to manage the router.



- You can find the WAN IP address of the router on Network Map > Internet.
- The router's WAN IP is usually a dynamic IP. Please refer to <u>Dynamic DNS</u> if you want to log in to the router through a domain name
- Allow a specific device to manage the router remotely:



- 1. Tick the Enable checkbox of Remote Management.
- 2. Keep the HTTP port as default setting (recommended) or enter a value between 1024 and 65535.

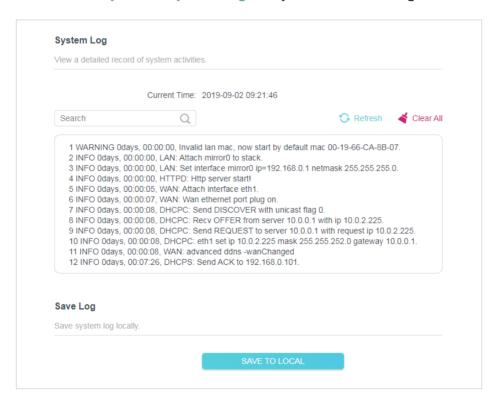
- 3. Select Specified Device for Remote Managers.
- 4. In the Only this IP Address field, enter the IP address of the remote device to manage the router.
- 5. Click SAVE.

Devices using this WAN IP can manage the router by logging in to http://Router's WAN IP:port number (such as http://113.116.60.229:1024).

Ø Tips: The router's WAN IP is usually a dynamic IP. Please refer to <u>Dynamic DNS</u> if you want to log in to the router through a domain name.

4. 9. 6. System Log

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > System Log, and you can view the logs of the router.

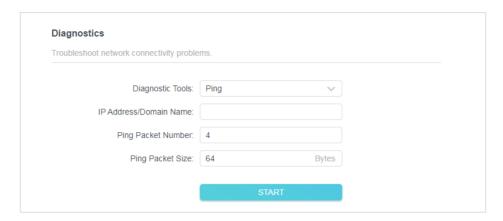


3. Click SAVE TO LOCAL to save the system logs to a local disk.

4. 9. 7. Diagnostic

Diagnostic is used to test the connectivity between the router and the host or other network devices.

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



3. Enter the information:

- 1) Choose Ping or Tracert as the diagnostic tool to test the connectivity.
- Ping is used to test the connectivity between the router and the tested host, and measure the round-trip time.
- Tracert is used to display the route (path) your router has passed to reach the tested host, and measure transit delays of packets across an Internet Protocol network.
- 2) Enter the IP Address or Domain Name of the tested host.
- 3) Modify the Ping Count number and the Ping Packet Size. It's recommended to keep the default value.
- 4) If you have chosen Tracert, you can modify the Traceroute Max TTL. It's recommended to keep the default value.
- 4. Click START to begin the diagnostics.

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Ping.

```
Finding host yahoo.com by DNS server (1 of 2).

Pinging yahoo.com [98.138.219.231] with 64 bytes of data:

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=0).

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=1).

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=2).

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=3).

Ping statistics for 98.138.219.231:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss).

Approximate round trip times in milli-seconds:

Minimum = 233ms, Maximum = 233ms, Average = 233ms
```

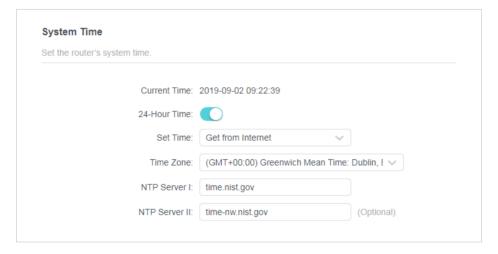
The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Tracert.

```
Finding host yahoo.com by DNS server (1 of 2).
Tracing route to yahoo.com [72.30.35.10]
over a maximum of 20 hops:
1 1 ms 1 ms 1 ms 10.0.0.1
2 1 ms 1 ms 1 ms 116.24.64.1
3 1 ms 1 ms 1 ms 202.105.155.185
4 1 ms 1 ms 1 ms 183.56.65.2
5 * 1 ms * 202.97.94.150
6 16 ms 16 ms 16 ms 202.97.94.94
7 150 ms 150 ms 150 ms 202.97.27.242
8 166 ms 166 ms 166 ms 202.97.50.74
9 150 ms 150 ms 150 ms 4.53.210.145
```

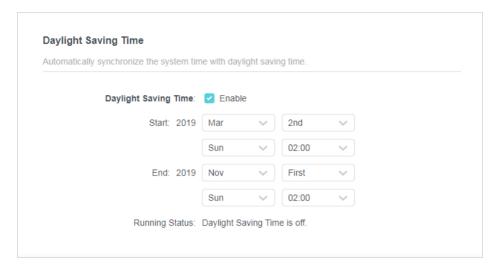
4. 9. 8. Time Settings

This page allows you to set the time manually or to configure automatic time synchronization. The router can automatically update the time from an NTP server via the internet.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Time.
- To set System Time:



- Select the way in which the router gets its time: Get from Internet, Get from Managing Device, Manually.
- 2. Select your local Time Zone.
- 3. Enter the address or domain of the NTP Server 1 or NTP Server 2.
- 4. Click SAVE.
- To set up Daylight Saving Time:
- 1. Select Enable Daylight Saving Time.



- 2. Select the start time from the drop-down list in the Start fields.
- 3. Select the end time from the drop-down list in the End fields.
- 4. Click SAVE.

Note:

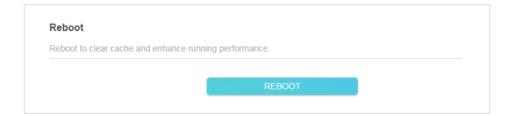
This setting will be used for some time-based functions such as firewall. You must specify your time zone once you log in to the router successfully; otherwise, time-based functions will not take effect.

4. 9. 9. Reboot

Some settings of the router will take effect only after rebooting, and the system will reboot automatically. You can also reboot the router to clear cache and enhance running performance.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Reboot, and you can restart your router.
- To reboot the router manually:

Click REBOOT, and wait a few minutes for the router to reboot.



- To set the router to reboot regularly:
- 1. Tick the Enable box of Reboot Schedule.
- Specify the Reboot Time when the router reboots and Repeat to decide how often it reboots.

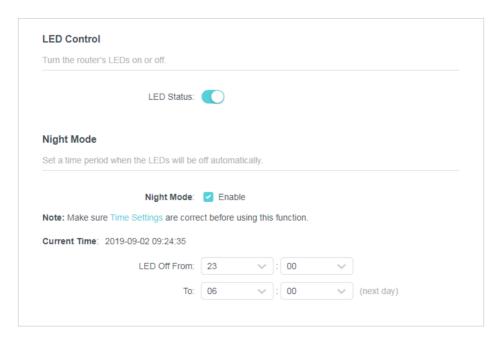
3. Click SAVE.

Reboot Schedule		
Set when and how often the router reboo	ts automatically.	
Reboot Schedule:	Enable	
Note: Make sure Time Settings are corre	ct before using this function.	
Current Time: 2019-09-02 09:23:51		
Reboot Time:	00 🗸 : 00	~
Repeat:	Every Day	~

4. 9. 10. LED Control

The LED of the router indicates its activities and status. You can enable the Night Mode feature to specify a time period during which the LED is off.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > LED Control.
- 3. Enable Night Mode.



- 4. Specify the LED off time, and the LED will be off during this period every day.
- Note: The effective LED off time is based on the time of the router. You can go to Advanced > System > Time to modify the time.
- 5. Click SAVE.

Chapter 5

Configure the Router in WISP Mode

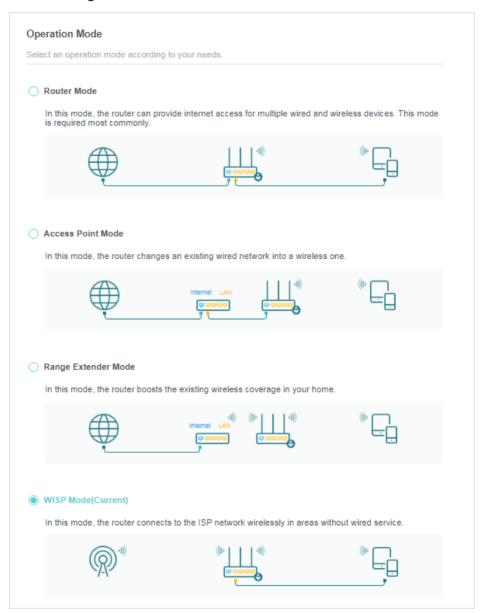
This chapter presents how to configure the various features of the router working in WISP mode.

It contains the following sections:

- Operation Mode
- Network
- Wireless
- NAT Forwarding
- Parental Controls
- QoS
- Security
- IPv6
- System

5. 1. Operation Mode

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Operation Mode.
- 3. Select the working mode as needed and click SAVE.

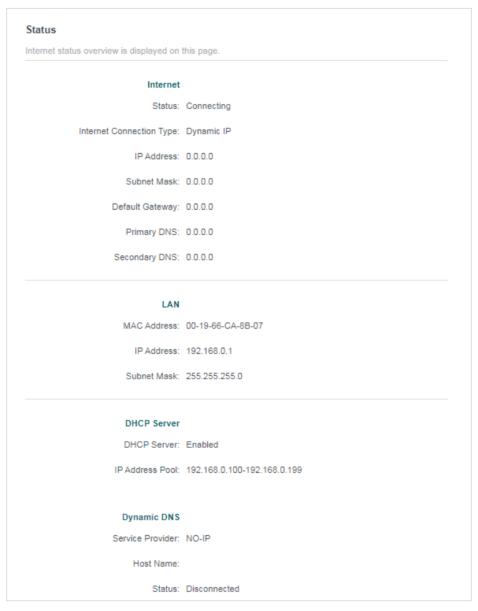


5. 2. Network

5. 2. 1. Status

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

2. Go to Advanced > Network > Status. You can view the current status information of the router.



- Internet This field displays the current settings of the internet, and you can configure them on the Advanced > Network > Internet page.
 - Status Indicates whether the router has been connected to the internet.
 - Internet Connection Type Indicates the way in which your router is connected to the internet.
 - IP Address The WAN IP address of the router.
 - Subnet Mask The subnet mask associated with the WAN IP address.

- Default Gateway The Gateway currently used is shown here. When you use
 Dynamic IP as the internet connection type, click Renew or Release here to
 obtain new IP parameters dynamically from the ISP or release them.
- Primary & Secondary DNS The IP addresses of DNS (Domain Name System) server.
- LAN This field displays the current settings of the LAN, and you can configure them on the Advanced > Network > LAN page.
 - MAC Address The physical address of the router.
 - IP Address The LAN IP address of the router.
 - Subnet Mask The subnet mask associated with the LAN IP address.
- DHCP Server This field displays the current settings of DHCP (Dynamic Host Configuration Protocol) Server, and you can configure them on the Network > DHCP Server page.
 - DHCP Server Indicates whether the DHCP server is enabled of disabled. It is enabled by default and the router acts as a DHCP server.
 - IP Address Pool The IP address range for the DHCP server to assign IP addresses.
- Dynamic DNS This field displays the current settings of the Dynamic DNS (Domain Name System), and you can configure them on the Advanced > Network > Dynamic DNS page.
 - Service Provider The Dynamic DNS service provider you have signed up for.
 - Host Name The Domain Name you have entered in the Dynamic DNS page.
 - Status The status of the Dynamic DNS service connection.

5. 2. 2. Internet

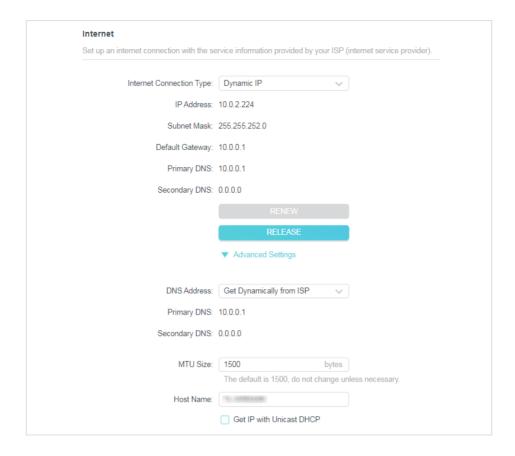
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > Internet.
- 3. Set up the internet connection and click SAVE.

Dynamic IP

If your ISP provides the DHCP service, please select Dynamic IP, and the router will automatically get IP parameters from your ISP.

Click RENEW to renew the IP parameters from your ISP.

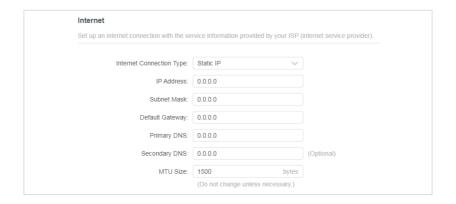
Click RELEASE to release the IP parameters.



- MTU Size The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 bytes. It is not recommended that you change the default MTU size unless required by your ISP.
- Host Name -This option specifies the name of the router.
- Get IP with Unicast DHCP A few ISPs' DHCP servers do support the broadcast applications. If you cannot get the IP address normally, you can choose this option (it is rarely required).

Static IP

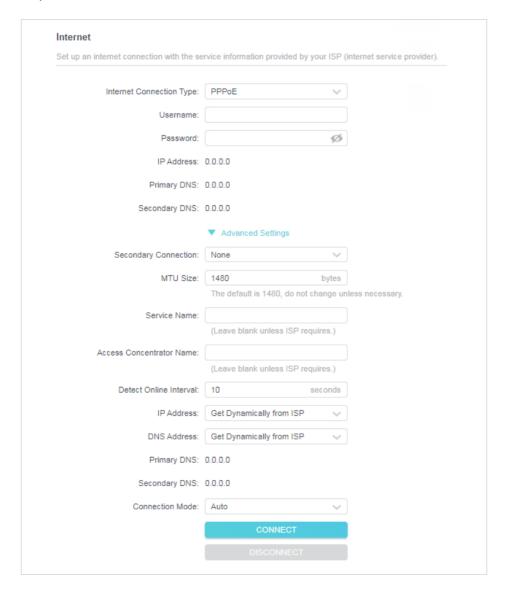
If your ISP provides a static or fixed IP address, subnet mask, default gateway and DNS setting, please select Static IP.



- IP Address Enter the IP address in dotted-decimal notation provided by your ISP.
- Subnet Mask Enter the subnet mask in dotted-decimal notation provided by your ISP. Normally 255.255.255.0 is used as the subnet mask.
- Default Gateway Enter the gateway IP address in dotted-decimal notation provided by your ISP.
- Primary/Secondary DNS (Optional) Enter one or two DNS addresses in dotteddecimal notation provided by your ISP.
- MTU Size The normal MTU (Maximum Transmission Unit) value for most Ethernet networks is 1500 bytes. It is not recommended that you change the default MTU size unless required by your ISP.

PPPoE

If your ISP provides PPPoE connection, select PPPoE.



- Username/Password Enter the username and password provided by your ISP. These fields are case-sensitive.
- Secondary Connection It's available only for PPPoE connection. If your ISP provides an extra connection type, select Dynamic IP or Static IP to activate the secondary connection.
- MTU Size The default MTU size is 1480 bytes. It is not recommended that you change the default MTU size unless required by your ISP.
- Service Name The service name should not be configured unless you are sure it is necessary for your ISP. In most cases, leaving these fields blank will work.
- Access Concentrator Name The access concentrator name should not be configured unless you are sure it is necessary for your ISP. In most cases, leaving these fields blank will work.
- Detect Online Interval The router will detect Access Concentrator online at every interval. The default value is 10. You can input the value between 0 and 120. The value 0 means no detect.
- IP Address The default setting is to get an IP address dynamically from your ISP. If your ISP does not automatically assign IP addresses to the router, please select Use the Following IP Address and enter the IP address provided by your ISP in dotteddecimal notation.
- DNS Address The default setting is to get an IP address dynamically from your ISP.If
 your ISP does not automatically assign DNS addresses to the router, please select Use
 the Following DNS Addresses and enter the IP address in dotted-decimal notation of
 your ISP's primary DNS server. If a secondary DNS server address is available, enter
 it as well.
- Connection Mode Select an appropriate connection mode that determines how to connect to the internet.
 - Auto In this mode, the internet connection reconnects automatically any it gets disconnected.
 - On Demand In this mode, the internet connection will be terminated automatically after a specified inactivity period (Max Idle Time) and be reestablished when you attempt to access the internet again.
 - Time-based In this mode, the internet connection is only established in a specific timeframe. If this option is selected, enter the start time and end time. Both are in HH:MM format.
 - Manual In this mode, the internet connection is controlled manually by clicking the Connect/Disconnect button. This mode also supports the Max Idle Time function as On Demand mode. Enter a maximum time (in minutes), the internet connection can be inactive before it is terminated into the Max Idle Time. The

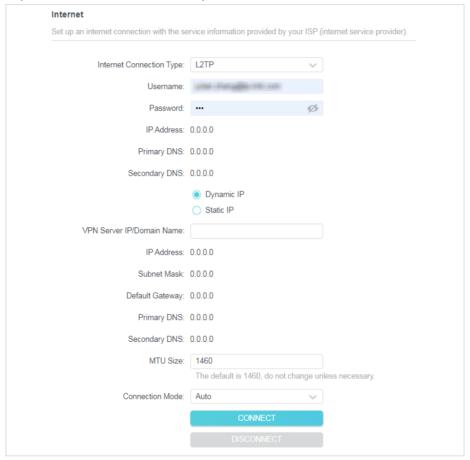
default value is 15 minutes. If you want the internet connection remains active all the time, enter 0 (zero).

Note:

Sometimes the connection cannot be terminated although you have specified the Max Idle Time because some applications are visiting the internet continually in the background.

L2TP

If your ISP provides L2TP connection, please select L2TP.



- Username/Password Enter the username and password provided by your ISP. These fields are case-sensitive.
- VPN Server IP/ Domain Name Enter the VPN server's IP address or domain name provided by your ISP.
- MTU Size The default MTU size is "1460" bytes, which is usually fine. It is not recommended that you change the default MTU Size unless required by your ISP.
- Connection Mode
 - Auto In this mode, the internet connection reconnects automatically any it gets disconnected.
 - On Demand In this mode, the internet connection will be terminated automatically after a specified inactivity period (Max Idle Time) and be reestablished when you attempt to access the internet again.

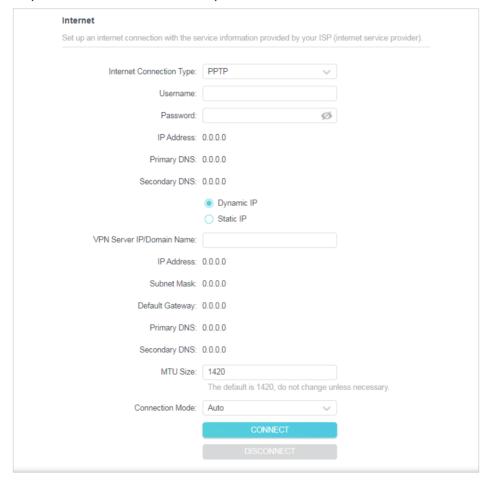
 Manual - In this mode, the internet connection is controlled manually by clicking the Connect/Disconnect button. This mode also supports the Max Idle Time function as On Demand mode. Enter a maximum time (in minutes), the internet connection can be inactive before it is terminated into the Max Idle Time. The default value is 15 minutes. If you want the internet connection remains active all the time, enter 0 (zero).

Note:

Sometimes the connection cannot be terminated although you have specified the Max Idle Time because some applications are visiting the internet continually in the background.

PPTP

If your ISP provides PPTP connection, please select PPTP.



- Username/Password Enter the username and password provided by your ISP. These fields are case-sensitive.
- VPN Server IP/ Domain Name Enter the VPN server's IP address or domain name provided by your ISP.
- MTU Size The default MTU size is "1420" bytes, which is usually fine. It is not recommended that you change the default MTU Size unless required by your ISP.

Connection Mode

- Auto In this mode, the internet connection reconnects automatically any it gets disconnected.
- On Demand In this mode, the internet connection will be terminated automatically after a specified inactivity period (Max Idle Time) and be reestablished when you attempt to access the internet again.
- Manual In this mode, the internet connection is controlled manually by clicking the Connect/Disconnect button. This mode also supports the Max Idle Time function as On Demand mode. Enter a maximum time (in minutes), the internet connection can be inactive before it is terminated into the Max Idle Time. The default value is 15 minutes. If you want the internet connection remains active all the time, enter 0 (zero).

Note:

Sometimes the connection cannot be terminated although you have specified the Max Idle Time because some applications are visiting the internet continually in the background.

5. 2. 3. MAC Clone

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > Internet and locate the MAC Clone section.
- 3. Configure the WAN MAC address and click SAVE.



- Use Default MAC Address Do not change the default MAC address of your router in case the ISP does not bind the assigned IP address to the MAC address.
- Use Current MAC Address Select to copy the current MAC address of the computer that is connected to the router, in case the ISP binds the assigned IP address to the MAC address.
- Use Custom MAC Address Select if your ISP requires you to register the MAC address and enter the correct MAC address in this field, in case the ISP binds the assigned IP address to the specific MAC address.

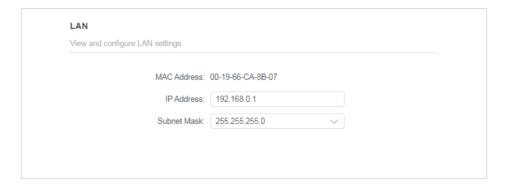
Note:

• You can only use the MAC Address Clone function for PCs on the LAN.

 If you have changed the WAN MAC address when the WAN connection is PPPoE, it will not take effect until the connection is re-established.

5. 2. 4. LAN

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > LAN.
- 3. Configure the IP parameters of the LAN and click SAVE.



- MAC Address The physical address of the LAN ports. The value can not be changed.
- IP Address Enter the IP address in dotted-decimal notation of your router (the default one is 192.168.0.1).
- Subnet Mask An address code that determines the size of the network. Normally 255.255.255.0 is used as the subnet mask.

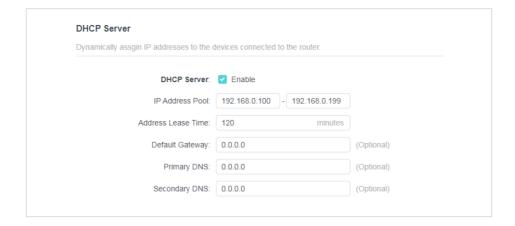
Note:

- If you have changed the IP address, you must use the new IP address or http://tplinkwifi.net to log in.
- If the new IP address you set is not in the same subnet as the old one, the IP address pool in the DHCP Server will be configured automatically, but the Virtual Server and DMZ Host will not take effect until they are re-configured.

5. 2. 5. DHCP

By default, the DHCP (Dynamic Host Configuration Protocol) Server is enabled and the router acts as a DHCP server; it dynamically assigns TCP/IP parameters to client devices from the IP Address Pool. You can change the settings of DHCP Server if necessary, and you can reserve LAN IP addresses for specified client devices.

- To specify the IP address that the router assigns:
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > DHCP Server and locate the DHCP Server section.



- 1. Tick the Enable checkbox.
- 2. Enter the starting and ending IP addresses in the IP Address Pool.
- 3. Enter other parameters if the ISP offers. The Default Gateway is automatically filled in and is the same as the LAN IP address of the router.
- 4. Click SAVE.

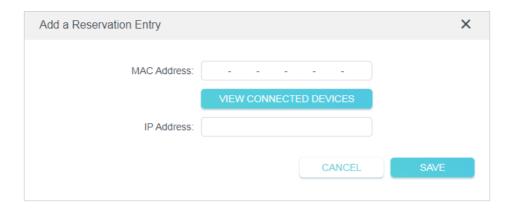
Note:

To use the DHCP server function of the router, you must configure all computers on the LAN as Obtain an IP Address automatically.

- To reserve an IP address for a specified client device:
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- Go to Advanced > Network > DHCP Server and locate the Address Reservation section.
- 3. Click Add in the Address Reservation section.



4. Click VIEW CONNECTED DEVICES and select the you device you want to reserve an IP for. Then the MAC and IP Address will be automatically filled in. You can also enter the MAC and IP address of the client device.



To check the DHCP client list:

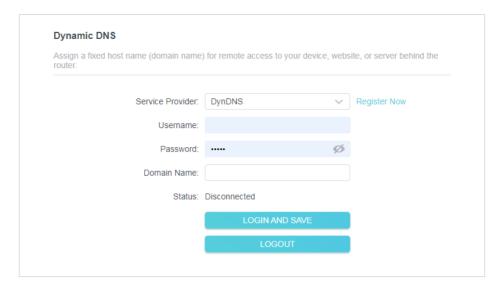
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > DHCP Server and locate the DHCP Client List section. You can see the device information of the list.
- 3. Click Refresh to see the current attached devices.



5. 2. 6. Dynamic DNS

The router offers the DDNS (Dynamic Domain Name System) feature, which allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (named by yourself) and a dynamic IP address. Thus your friends can connect to your server by entering your domain name no matter what your IP address is. Before using this feature, you need to sign up for DDNS service providers such as www.comexe.cn, www. dyndns.org, or www.noip.com. The Dynamic DNS client service provider will give you a password or key.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Network > Dynamic DNS.
- 3. Select the DDNS Service Provider: NO-IP or DynDNS. If you don't have a DDNS account, you have to register first by clicking Register Now.



- 4. Enter the Username for your DDNS account.
- 5. Enter the Password for your DDNS account.
- 6. Enter the Domain Name you received from dynamic DNS service provider here.
- 7. If your service provider is NO-IP, select WAN IP binding to ensure that the domain name is bound to the WAN IP of this router.
- 8. Click LOGIN AND SAVE.

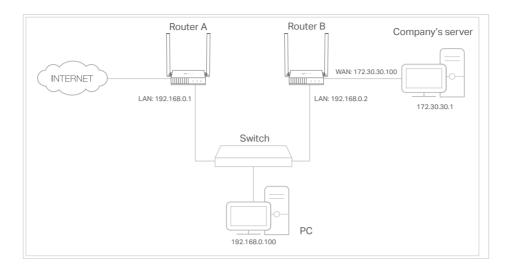
5. 2. 7. Static Routing

Static Routing is a form of routing that is configured manually by a network administrator or a user by adding entries into a routing table. The manually-configured routing information guides the router in forwarding data packets to the specific destination.

I want to:

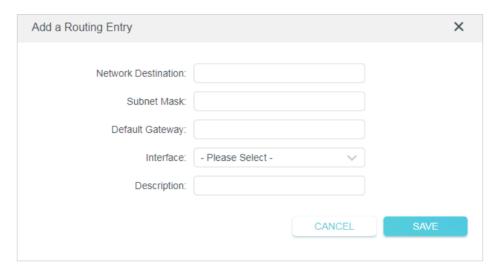
Visit multiple networks and servers at the same time.

For example, in a small office, my PC can surf the internet through Router A, but I also want to visit my company's network. Now I have a switch and Router B. I connect the devices as shown in the following figure so that the physical connection between my PC and my company's server is established. 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. Change the routers' LAN IP addresses to two different IP addresses on the same subnet. Disable Router B's DHCP function.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for Router A.
- 3. Go to Advanced > Network > Routing and locate the Static Routing section.
- 4. Click Add and 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 Router A. In the example, the IP address of the company network is the destination IP address, so here enter 172.30.30.1.
- Subnet Mask The Subnet Mask determines which portion of an IP address is the network portion, and which portion is the host portion.
- Default 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

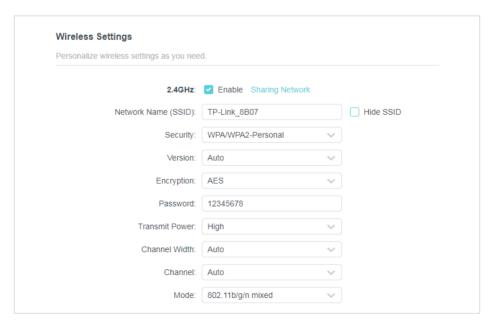
router's IP which sends out data. In the example, the data packets will be sent to the LAN port of Router B and then to the Server, so the default gateway should be 192.168.0.2.

- Interface: Determined by the port (WAN/LAN) that sends out data packets. In the example, the data are sent to the gateway through the LAN port of Router A, so LAN should be selected.
- Description: Enter a description for this static routing entry.
- 5. Click SAVE.
- **6.** Check the Routing Table below. If you can find the entry you've set, the static routing is set successfully.

5.3. Wireless

5. 3. 1. Wireless Settings

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > Wireless Settings.
- 3. Configure the wireless settings for the wireless network and click SAVE.



- 2.4GHz Select this checkbox to enable the 2.4GHz wireless network.
- Network Name (SSID) Enter a value of up to 32 characters. The same Name (SSID)
 must be assigned to all wireless devices in your network.
- Hide SSID Select this checkbox if you want to hide the 2.4GHz network name (SSID) from the Wi-Fi network list. In this case, you need to manually join the network.

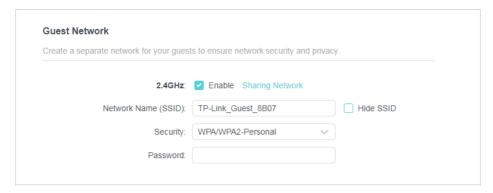
- Security Select an option from the Security drop-down list.
 - None No security. It is highly recommend you enable the wireless security to protect your wireless network from unauthorized access.
 - WPA-PSK/WPA2-Personal It's the WPA/WPA2 authentication type based on pre-shared passphrase. It's also the recommended security type.
 - WPA /WPA2-Enterprise It's based on Radius Server.
 - WEP It is based on the IEEE 802.11 standard.
- Version Keep default version value.
- Encryption Select Auto, TKIP or AES. We recommend you keep the default settings.
- Transmit Power Select High, Middle or Low to specify the data transmit power. The default and recommended setting is High.
- Channel Width 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. If you select auto, then AP will choose the best
 channel automatically.
- Channel This field determines which operating frequency will be used. The default channel is set to Auto. It is not necessary to change the wireless channel unless you notice interference problems with another nearby access point.
- Mode You can choose the appropriate "Mixed" mode.

5. 3. 2. Guest Network

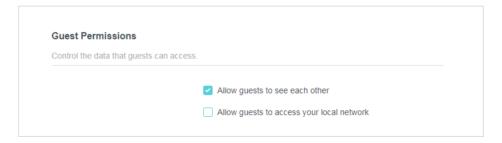
Guest Network allows you to provide Wi-Fi access for guests without disclosing your host network. When you have guests in your house, apartment, or workplace, you can create a guest network for them. In addition, you can customize guest network settings to ensure network security and privacy.

Create a Guest Network

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Wireless or Advanced > Wireless > Guest Network.
- 3. Enable the 2.4GHz Guset Network.



- 4. Create a network name for your guest network.
- 5. Select the Security type and create the Password of the guest network.
- **6.** Click SAVE. Now you guests can access your guest network using the SSID and password you set!
- Customize Guest Network Options
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- Go to Advanced > Wireless > Guest Network and locate the Guest Permissions section.
- 2. Customize guest network options according to your needs.



Allow guests to see each other

Tick this checkbox if you want to allow the wireless clients on your guest network to communicate with each other via methods such as network neighbors and Ping.

Allow guests to access my local network

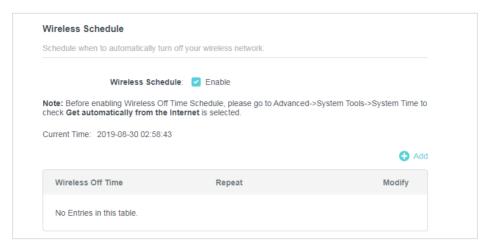
Tick this checkbox if you want to allow the wireless clients on your guest network to communicate with the devices connected to your router's LAN ports or main network via methods such as network neighbors and Ping.

3. Click SAVE. Now you can ensure network security and privacy!

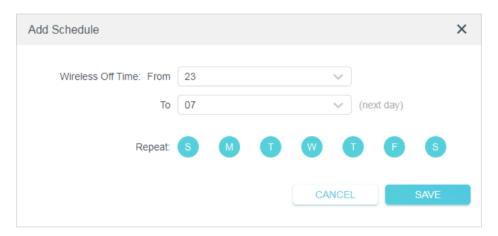
5. 3. 3. Wireless Schedule

The wireless function can be automatically off at a specific time when you do not need the wireless function.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > Wireless Schedule.
- 3. Enable the Wireless Schedule function.



4. Click Add to specify a wireless off period during which you need the wireless off automatically, and click SAVE.



Note:

- The effective wireless schedule is based on the time of the router. You can go to Advanced > System > Time to modify
 the time.
- The wireless network will be automatically turned on after the time period you set.

5. 3. 4. WPS

WPS (Wi-Fi Protected Setup) can help you to quickly and securely connect to a network. This section will guide you to add a new wireless device to your router's network quickly via WPS.

Note:

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

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

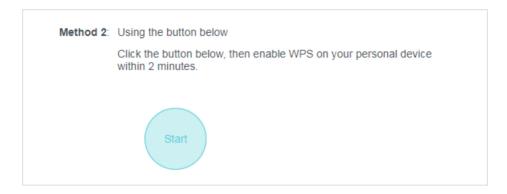
3. Follow one of the following two methods to connect your client device to the router's Wi-Fi network.

Method ONE: Push the WPS Button

- 1. Click Start on the screen.
- 2. Within two minutes, press the WPS button on your device. A Device-(XX-XX-XX-XX-XX-XX-XX-XX) Connected message should appear on the screen and the \$\infty\$ LED should change from blinking to solid on, indicating successful WPS connection.

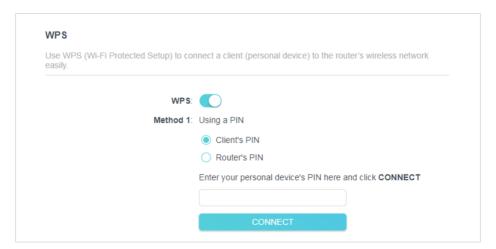
Note:

XX-XX-XX-XX-XX is the MAC address of your device.

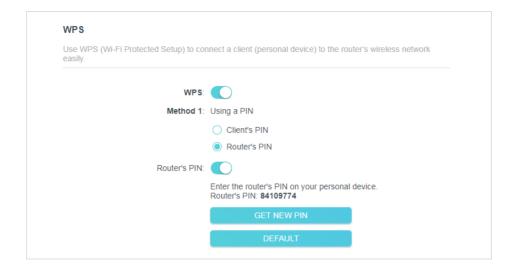


Method TWO: Using a PIN

- Connects via the Client's PIN
- 1. Keep the WPS Status as Enabled and select Client's PIN.



- 2. Enter the PIN of your device and click CONNECT. Then your device will get connected to the router.
- Connects via the Router's PIN
- 1. Keep the WPS Status as Enabled and select Router's PIN.



2. Enter the PIN on your personal device. You can use the default PIN or generate a new one.

Note:

PIN (Personal Identification Number) is an eight-character identification number preset to each router. WPS supported devices can connect to your router with the PIN. The default PIN is printed on the label of your router.

5. 3. 5. Additional Wireless Settings

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Wireless > Additional Settings.
- 3. Configure the advanced settings of your wireless network and click Save.

Note

If you are not familiar with the setting items on this page, it's strongly recommended to keep the provided default values; otherwise it may result in lower wireless network performance.



• Enable WMM - WMM function can guarantee the packets with high-priority messages being transmitted preferentially. It is strongly recommended to enable this function.

- Enable Short GI It is recommended to enable this function, for it will increase the data capacity by reducing the guard interval time.
- AP Isolation This function isolates all connected wireless stations so that wireless stations cannot access each other through WLAN.
- Beacon Interval Enter a value between 40-1000 milliseconds for Beacon Interval here. Beacon Interval value determines the time interval of the beacons. The beacons are the packets sent by the router to synchronize a wireless network. The default value is 100.
- RTS Threshold Here you can specify the RTS (Request to Send) Threshold. If the
 packet is larger than the specified RTS Threshold size, the router will send RTS frames
 to a particular receiving station and negotiate the sending of a data frame. The default
 value is 2346.
- DTIM Interval This value determines the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. You can specify the value between 1-255 Beacon Intervals. The default value is 1, which indicates the DTIM Interval is the same as Beacon Interval.
- Group Key Update Period Enter a number of seconds (minimum 30) to control the time interval for the encryption key automatic renewal. The default value is 0, meaning no key renewal.

5. 4. NAT Forwarding

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

With the forwarding feature, the router can traverse the isolation of NAT so that clients on the internet can reach devices on the LAN and realize some specific functions.

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

5. 4. 1. Port Forwarding

When you build up a server in the local network and want to share it on the internet, Port Forwarding can realize the service and provide it to internet users. At the same time

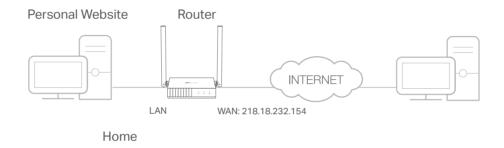
Port Forwarding can keep the local network safe as other services are still invisible from the internet.

Port Forwarding can be used to set 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.

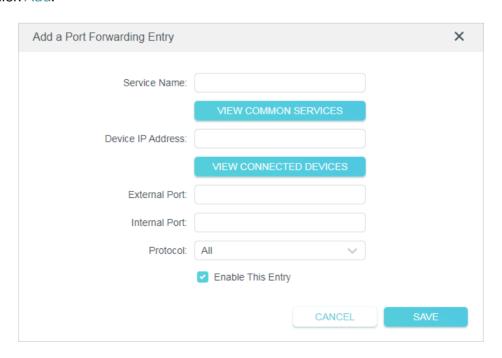
I want to:

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

For example, the personal website has been built in my home PC (192.168.0.100). I hope that my friends on the internet can visit my website in some way. My PC is connected to the router with the WAN IP address 218.18.232.154.



- 1. Set your PC to a static IP address, for example 192.168.0.100.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to Advanced > NAT Forwarding > Port Forwarding.
- 4. Click Add.



- 5. Click VIEW COMMON SERVICES and select HTTP. The External Port, Internal Port and Protocol will be automatically filled in.
- 6. Click VIEW CONNECTED DEVICES and select your home PC. The Device IP Address will be automatically filled in. Or enter the PC's IP address 192.168.0.100 manually in the Device IP Address field.

7. Click SAVE.

Note:

- 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.
- If the service you want to use is not in the Common Services list, you can enter the corresponding parameters manually. You should verify the port number that the service needs.
- You can add multiple virtual server rules if you want to provide several services in a router. Please note
 that the External Port should not be overlapped.

Done!

Users on the internet can enter http:// WAN IP (in this example: http:// 218.18.232.154) to visit your personal website.

Note:

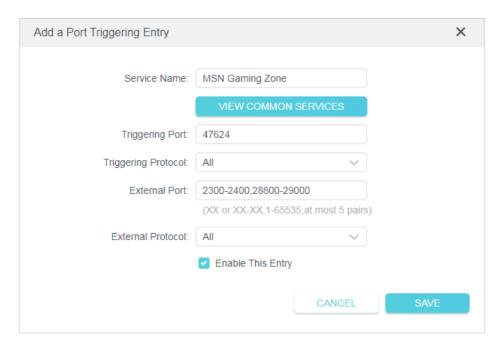
- If you have changed the default External Port, you should use http:// WAN IP: External Port to visit the website.
- The WAN IP should be a public IP address. For the WAN IP is assigned dynamically by the ISP, it is recommended to apply and register a domain name for the WAN referring to Dynamic DNS. Then users on the internet can use http://domain.name to visit the website.

5. 4. 2. Port Triggering

Port triggering can specify a triggering port and its corresponding external ports. When a host in the local network initiates a connection to the triggering port, all the external ports will be opened for subsequent connections. The router can record the IP address of the host. When the data from the internet return to the external ports, the router can forward them to the corresponding host. Port triggering is mainly applied to online games, VoIPs, video players and common applications including MSN Gaming Zone, Dialpad, Quick Time 4 players and more.

Follow the steps below to configure the port triggering rules:

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > NAT Forwarding > Port Triggering.
- 3. Click Add.
- 4. Click VIEW COMMON SERVICES, and select the desired application. The Triggering Port, Triggering Protocol and External Port will be automatically filled in. The following picture takes application MSN Gaming Zone as an example.



5. Click SAVE.

Note:

- · You can add multiple port triggering rules as needed.
- · The triggering ports can not be overlapped.
- If the application you need is not listed in the Common Services list, please enter the parameters manually. You should verify the external ports the application uses first and enter them in External Ports field. You can input at most 5 groups of ports (or port sections). Every group of ports must be set apart with ",". For example, 2000-2038, 2050-2051, 2085, 3010-3030.

5. 4. 3. 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, such as IP camera and database software, you can set the PC to be a DMZ host.

Note:

DMZ is more applicable in the situation that users are not clear about which ports to open. When it is enabled, the DMZ host is totally exposed to the internet, which may bring some potential safety hazards. 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 log in normally but cannot join a team with other players. To solve this problem, set your PC as a DMZ host with all ports opened.

How can I do that?

- 1. Assign a static IP address to your PC, for example 192.168.0.100.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to Advanced > NAT Forwarding > DMZ and select Enable.
- 4. Click VIEW CONNECTED DEVICES and select your PC. The DMZ Host IP Address will be automatically filled in. Or enter the PC's IP address 192.168.0.100 manually in the DMZ Host IP Address field.



5. Click SAVE.

Done!

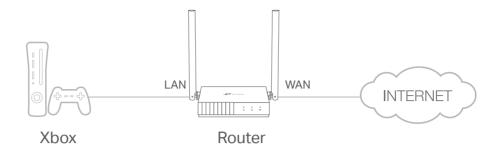
You've set your PC to a DMZ host and now you can make a team to game with other players.

5. 4. 4. UPnP

The 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 on the local network and the internet 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 for multiplayer gaming, peer-to-peer connections, real-time communication (such as VoIP or telephone conference) or remote assistance, etc.

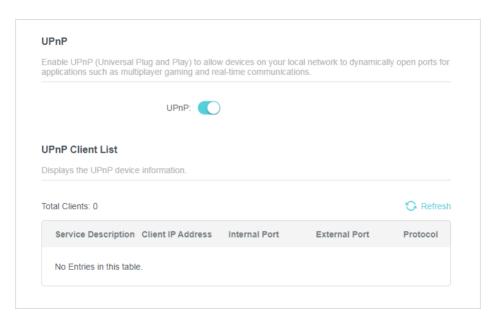
- Tips:
- · UPnP is enabled by default in this router.
- · Only the application supporting UPnP protocol can use this feature.
- UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

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



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

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



5. 5. Parental Controls

Parental Controls allows you to set up unique restrictions on internet access for each member of your family. You can block inappropriate content, set daily limits for the total time spent online and restrict internet access to certain times of the day.

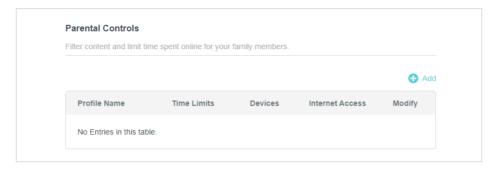
I want to:

Block access to inappropriate online content for my child's devices, restrict internet access to 2 hours every day and block internet access during bed time (10 PM to 7 AM) on school nights (from Sunday to Thursday).

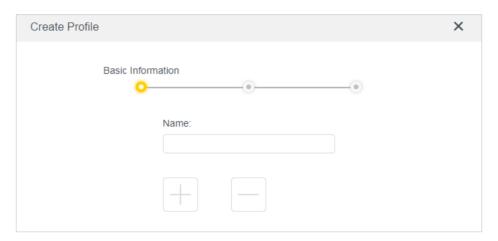
How can I do that?

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

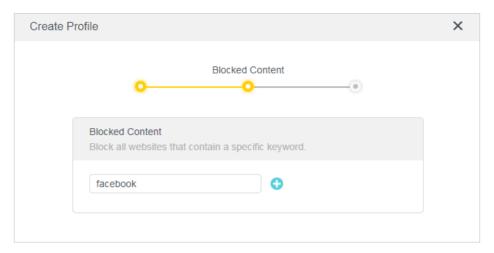
- 2. Go to Advanced > Parental Controls.
- 3. Click Add to create a profile for a family member.



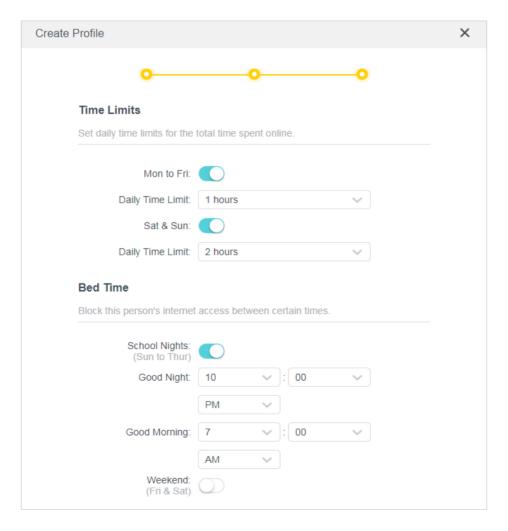
4. Add basic profile information.



- 1) Enter a Name for the profile to make it easier to identify.
- 2) Under Devices, click + .
- 3) Select the devices that belong to this family member. Access restrictions will be applied to these devices. Click ADD when finished.
- Note: Only devices that have previously been connected to your router's network are listed here. If you are unable to find the device you want to add, connect it to your network and then try again.
- 4) Click NEXT.
- 5. Block content for this profile.



- 1) Enter the key word of the website that you want to block. Click if want to block multiple websites.
- 2) Click NEXT.
- 6. Set time restrictions on internet access.



- 1) Enable Time Limits on Monday to Friday and Saturday & Sunday then set the allowed online time to 2 hours each day.
- 2) Enable Bed Time on School Nights (from Sunday to Thursday) and use the up/down arrows or enter times in the fields. Devices under this profile will be unable to access the internet during this time period.
- 3) Click SAVE.

Note: The effective time limits are based on the time of the router. You can go to Advanced > System > Time to modify the time.

Done!

The amount of time your child spends online is controlled and inappropriate content is blocked on their devices.

5. 6. QoS

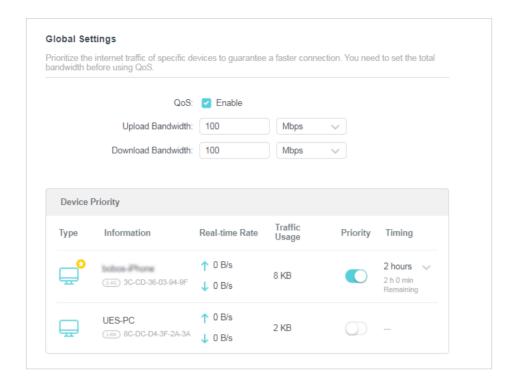
QoS (Quality of Service) is designed to ensure the efficient operation of the network when come accross network overload or congestion. Devices set as high priority will be allocated more bandwidth and so continue to run smoothly even when there are many devices connected to the network.

I want to:

Ensure a fast connection of my computer while I play online games for the next 2 hours.

How can I do that

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > QoS.
- 3. Tick the Enable checkbox of QoS.
- 4. Enter the maximum upload and download bandwidths provided by your internet service provider, and then click SAVE. 1Mbps equals to 1,000Kbps.
- 5. Find your computer in the Device Priority section and toggle on Priority. Select 2 hours from the drop-down list of Timing. Your computer will be prioritized for the next 2 hours.



Done!

You can now enjoy playing games without lag on your computer for the next 2 hours.

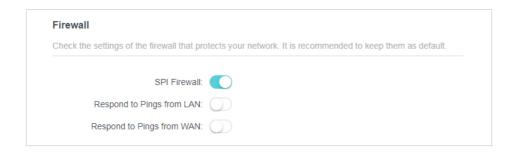
5.7. Security

This function allows you to protect your home network from cyber attacks and unauthorized users by implementing these network security functions.

5. 7. 1. Firewall

The SPI (Stateful Packet Inspection) Firewall protects the router from cyber attacks and validate the traffic that is passing through the router based on the protocol. This function is enabled by default.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Security > Firewall, and configure the parameters as you need. It's recommended to keep the default settings.



5. 7. 2. 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:

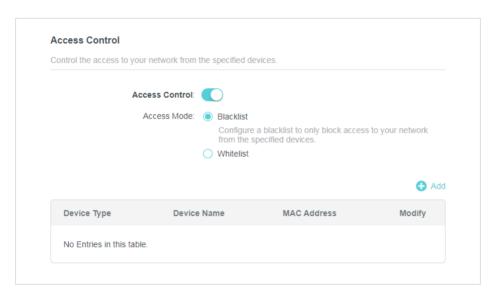
Block or allow specific client devices to access my network (via wired or wireless).

How can I do that?

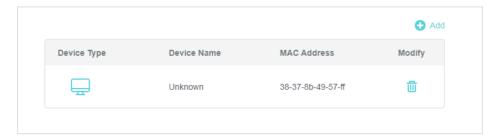
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Security > Access Control:
- 3. Select the access mode to either block (recommended) or allow the device(s) in the list.

To block specific device(s):

1) Select Blacklist and click SAVE.

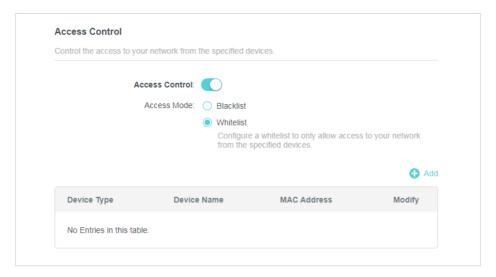


2) Click Add and select devices you want to be blocked. You can see the devices have been added to the blacklist.



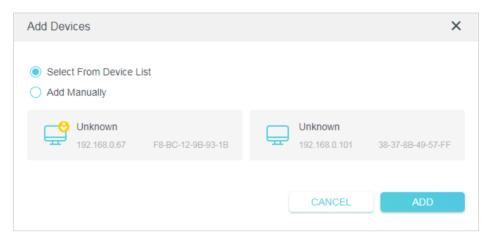
To allow specific device(s):

1) Select Whitelist and click SAVE.



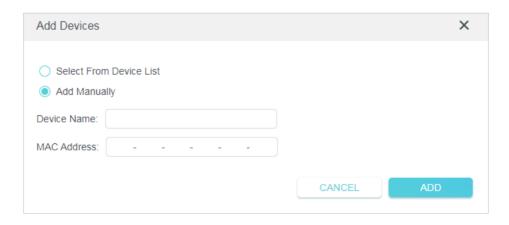
- 2) Add devices to the whitelist.
- · Add connected devices

Click Select From Device List and select the devices you want to be allowed.



· Add unconnected devices

Click Add Manually and enter the Device Name and MAC Address of the device you want to be allowed.



Done!

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

5. 7. 3. IP & MAC Binding

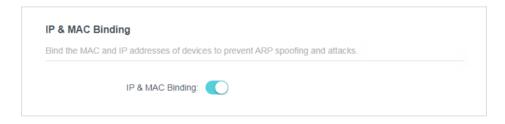
IP & MAC Binding, namely, ARP (Address Resolution Protocol) Binding, is used to bind network device's IP address to its MAC address. This will prevent ARP Spoofing and other ARP attacks by denying network access to a device with matching IP address in the Binding list, but unrecognized MAC address.

I want to:

Prevent ARP spoofing and ARP attacks.

How can I do that?

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > Security > IP & MAC Binding.
- 3. Enable IP & MAC Binding and click SAVE.



4. Bind your device(s) according to your need.

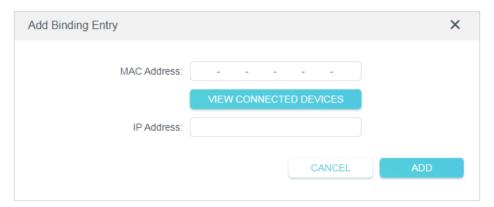
To bind the connected device(s):

Locate the ARP List section and enable Bind to bind the IP and MAC addresses of a specific device.



To add a binding entry:

- 1) Click Add in the Binding List section.
- 2) Click VIEW CONNECTED DEVICES and select the device you want to bind. Or enter the MAC Address and IP Address that you want to bind.
- 3) Click ADD.



5.8. IPv6

This function allows you to enable IPv6 function and set up the parameters of the router's Wide Area Network (WAN) and Local Area Network (LAN).

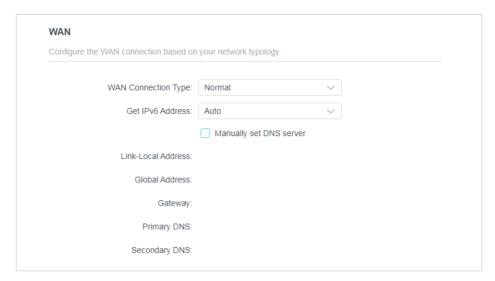
5. 8. 1. IPv6 Status

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > IPv6, and you can view the current IPv6 status information of the router.
- 3. Enable IPv6 and select the mode: Router or Pass-Through (Bridge).
- If you select Router:

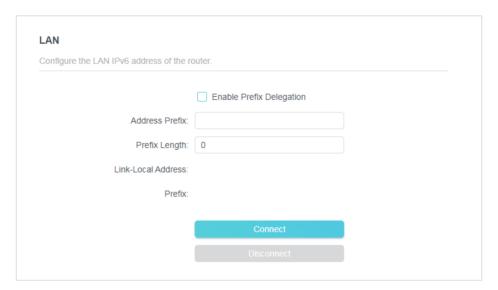


Fill in WAN and LAN information as required by different connection types.

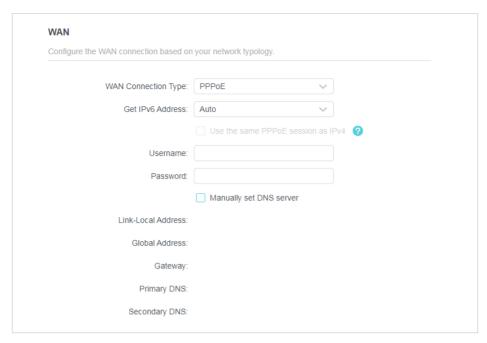
- Normal: The default connection type.
- 1) Configure the WAN settings.



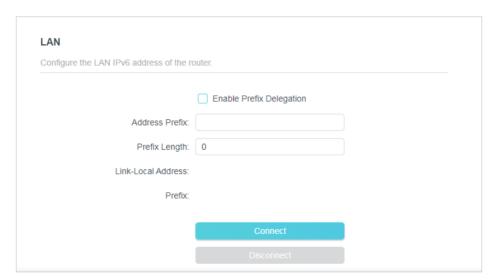
2) Configure the LAN settings. Fill in Address Prefix provided by your ISP.



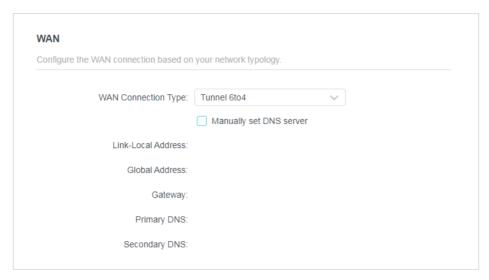
- 3) Click SAVE.
- PPPoE: Select this type if your ISP uses PPPoEv6, and provides a username and password.
- 1) Configure the WAN settings.



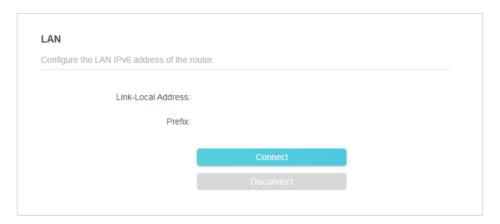
2) Configure the LAN settings. Fill in Address Prefix provided by your ISP.



- 4. Tunnel 6to4: Select this type if your ISP uses 6 to 4 deployment fort assigning address.
- 1) Configure the WAN settings.



2) Configure the LAN settings.



• If you select Pass-Through (Bridge):

Click SAVE. No configuration is required.



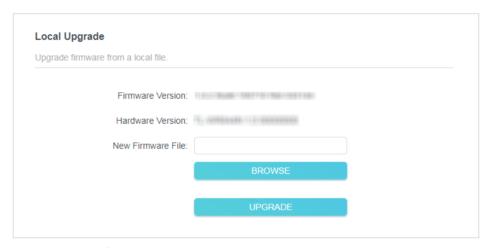
5.9. System

5. 9. 1. Firmware Upgrade

TP-Link is dedicated to improving and richening the product features, giving users a better network experience. We will release the latest firmware at TP-Link official website

<u>www.tp-link.com</u>. You can download the latest firmware file from the Support page of our website and upgrade the firmware to the latest version.

- 1. Download the latest firmware file for the router from our website www.tp-link.com.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to Advanced > System > Firmware Upgrade.
- 4. Click BROWSE to locate the downloaded firmware file, and click UPGRADE.



5. 9. 2. Backup & Restore

The configuration settings are stored as a configuration file in the router. You can back up the configuration file in your computer for future use and restore the router to the previous settings from the backup file when needed.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Backup & Restore.

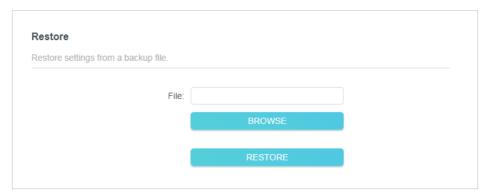
To back up configuration settings:

Click BACK UP to save a copy of the current settings in your local computer. A ".bin" file of the current settings will be stored in your computer.



To restore configuration settings:

- Click BROWSE to locate the backup configuration file stored in your computer, and click RESTORE.
- 2. Wait a few minutes for the restoring and rebooting.



- To reset the router to factory default settings:
- 1. Click FACTORY RESTORE to reset the router.



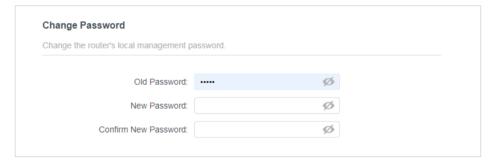
2. Wait a few minutes for the restoring and rebooting.

Note

- During the resetting process, do not turn off or reset the router.
- · We strongly recommend you back up the current configuration settings before resetting the router.

5. 9. 3. Change Password

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Administration, and focus on the Change Password section.



- 3. Enter the old password, then a new password twice (both case-sensitive). Click SAVE.
- 4. Use the new password for future logins.

5. 9. 4. Local Management

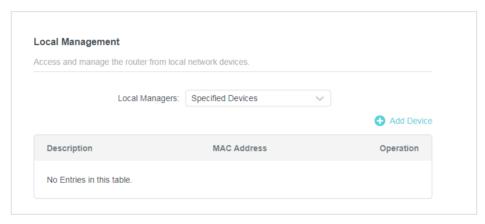
1. Visit http://tplinkwifi.net, and log in with the password you set for the router.

- 2. Go to Advanced > System > Administration, and focus on the Local Management section.
- Allow all LAN connected devices to manage the router:

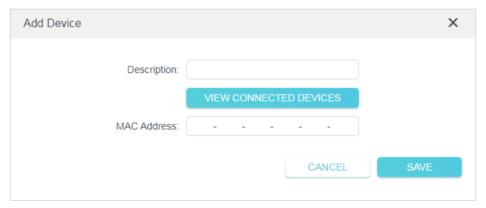
Select All Devices for Local Managers.



- Allow specific devices to manage the router:
- 1. Select All Devices for Local Managers and click SAVE.



2. Click Add Device.



- 3. Click VIEW CONNECTED DEVICES and select the device to manage the router from the Connected Devices list, or enter the MAC address of the device manually.
- 4. Specify a Description for this entry.
- 5. Click SAVE.

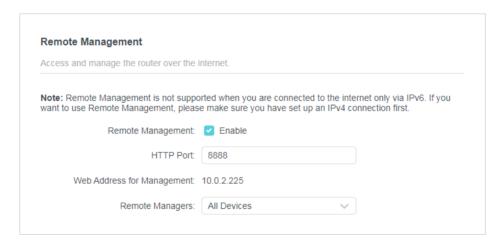
5. 9. 5. Remote Management

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- Go to Advanced > System > Administration, and focus on the Remote Management section.
- · Forbid all devices to manage the router remotely:

Do not tick the Enable checkbox of Remote Management.



Allow all devices to manage the router remotely:



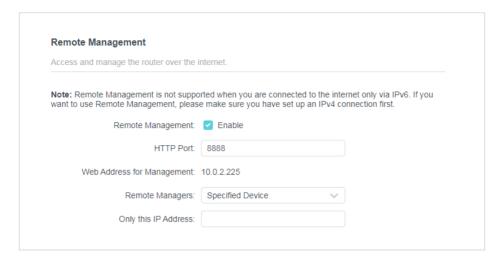
- 1. Tick the Enable checkbox of Remote Management.
- 2. Keep the HTTP port as default setting (recommended) or enter a value between 1024 and 65535.
- 3. Select All Devices for Remote Managers.
- 4. Click SAVE.

Devices on the internet can log in to http://Router's WAN IP address:port number (such as http://113.116.60.229:1024) to manage the router.

Tips

- You can find the WAN IP address of the router on Network Map > Internet.
- The router's WAN IP is usually a dynamic IP. Please refer to <u>Dynamic DNS</u> if you want to log in to the router through a domain name.

Allow a specific device to manage the router remotely:



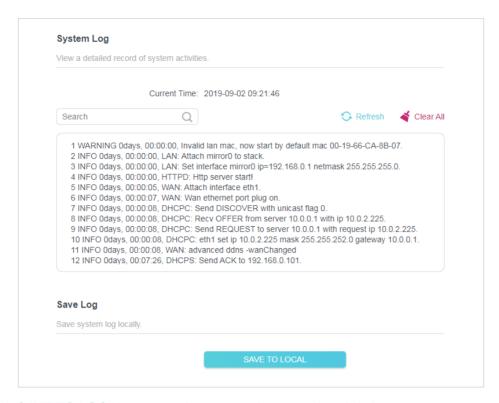
- 1. Tick the Enable checkbox of Remote Management.
- 2. Keep the HTTP port as default setting (recommended) or enter a value between 1024 and 65535.
- 3. Select Specified Device for Remote Managers.
- 4. In the Only this IP Address field, enter the IP address of the remote device to manage the router.
- 5. Click SAVE.

Devices using this WAN IP can manage the router by logging in to http://Router's WAN IP:port number (such as http://113.116.60.229:1024).

Ø Tips: The router's WAN IP is usually a dynamic IP. Please refer to <u>Dynamic DNS</u> if you want to log in to the router through a domain name.

5. 9. 6. System Log

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > System Log, and you can view the logs of the router.

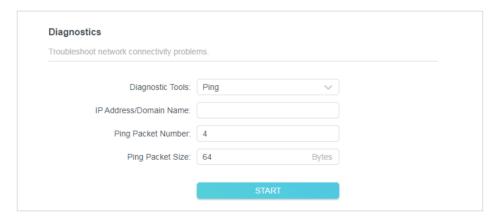


3. Click SAVE TO LOCAL to save the system logs to a local disk.

5. 9. 7. Diagnostic

Diagnostic is used to test the connectivity between the router and the host or other network devices.

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



- 3. Enter the information:
 - 1) Choose Ping or Tracert as the diagnostic tool to test the connectivity.
 - Ping is used to test the connectivity between the router and the tested host, and measure the round-trip time.

- Tracert is used to display the route (path) your router has passed to reach the tested host, and measure transit delays of packets across an Internet Protocol network.
- 2) Enter the IP Address or Domain Name of the tested host.
- 3) Modify the Ping Count number and the Ping Packet Size. It's recommended to keep the default value.
- 4) If you have chosen Tracert, you can modify the Traceroute Max TTL. It's recommended to keep the default value.
- 4. Click START to begin the diagnostics.

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Ping.

```
Finding host yahoo.com by DNS server (1 of 2).
Pinging yahoo.com [98.138.219.231] with 64 bytes of data:
Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=0).
Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=1).
Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=2).
Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=3).
Ping statistics for 98.138.219.231:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss).
Approximate round trip times in milli-seconds:
Minimum = 233ms, Maximum = 233ms, Average = 233ms
```

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Tracert.

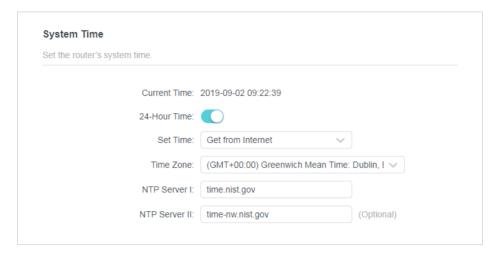
```
Finding host yahoo.com by DNS server (1 of 2).
Tracing route to yahoo.com [72.30.35.10]
over a maximum of 20 hops:
1 1 ms 1 ms 1 ms 10.0.0.1
2 1 ms 1 ms 1 ms 116.24.64.1
3 1 ms 1 ms 1 ms 202.105.155.185
4 1 ms 1 ms 1 ms 183.56.65.2
5 * 1 ms * 202.97.94.150
6 16 ms 16 ms 16 ms 202.97.94.94
7 150 ms 150 ms 150 ms 202.97.27.242
8 166 ms 166 ms 166 ms 202.97.50.74
9 150 ms 150 ms 150 ms 4.53.210.145
```

5. 9. 8. Time Settings

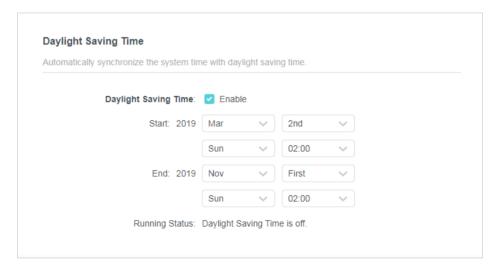
This page allows you to set the time manually or to configure automatic time synchronization. The router can automatically update the time from an NTP server via the internet.

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

To set System Time:



- 1. Select the way in which the router gets its time: Get from Internet, Get from Managing Device, Manually.
- 2. Select your local Time Zone.
- 3. Enter the address or domain of the NTP Server 1 or NTP Server 2.
- 4. Click SAVE.
- To set up Daylight Saving Time:
- 1. Select Enable Daylight Saving Time.



- 2. Select the start time from the drop-down list in the Start fields.
- 3. Select the end time from the drop-down list in the End fields.
- 4. Click SAVE.

Note:

This setting will be used for some time-based functions such as firewall. You must specify your time zone once you log in to the router successfully; otherwise, time-based functions will not take effect.

5. 9. 9. Reboot

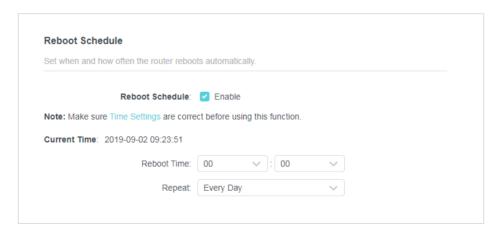
Some settings of the router will take effect only after rebooting, and the system will reboot automatically. You can also reboot the router to clear cache and enhance running performance.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > Reboot, and you can restart your router.
- To reboot the router manually:

Click REBOOT, and wait a few minutes for the router to reboot.



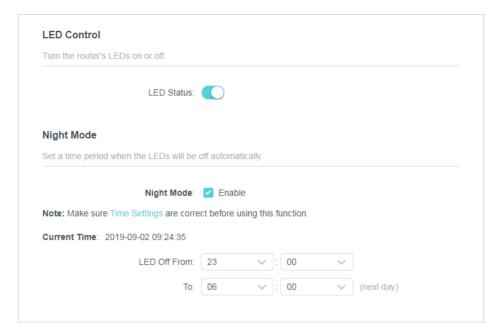
- To set the router to reboot regularly:
- 1. Tick the Enable box of Reboot Schedule.
- Specify the Reboot Time when the router reboots and Repeat to decide how often it reboots.
- 3. Click SAVE.



5. 9. 10. LED Control

The LED of the router indicates its activities and status. You can enable the Night Mode feature to specify a time period during which the LED is off.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to Advanced > System > LED Control.
- 3. Enable Night Mode.



- 4. Specify the LED off time, and the LED will be off during this period every day.
- Note: The effective LED off time is based on the time of the router. You can go to Advanced > System > Time to modify the time.
- 5. Click SAVE.

Chapter 6

Configure the Router in Access Point Mode

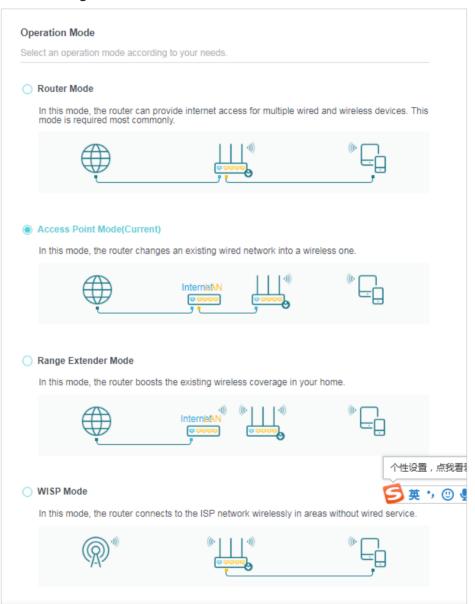
This chapter presents how to configure the various features of the router working as an access point.

It contains the following sections:

- Operation Mode
- Firmware Upgrade
- Backup & Restore
- Administration
- System Log
- Diagnostic
- Time Settings
- Reboot
- LED Control

6. 1. Operation Mode

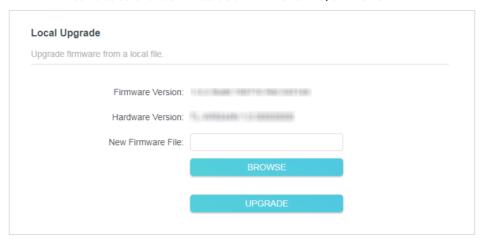
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Operation Mode.
- 3. Select the working mode as needed and click SAVE.



6. 2. Firmware Upgrade

TP-Link is dedicated to improving and richening the product features, giving users a better network experience. We will release the latest firmware at TP-Link official website www.tp-link.com. You can download the latest firmware file from the Support page of our website and upgrade the firmware to the latest version.

- 1. Download the latest firmware file for the router from our website www.tp-link.com.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to System > Firmware Upgrade.
- 4. Click BROWSE to locate the downloaded firmware file, and click UPGRADE.



6.3. Backup & Restore

The configuration settings are stored as a configuration file in the router. You can back up the configuration file in your computer for future use and restore the router to the previous settings from the backup file when needed.

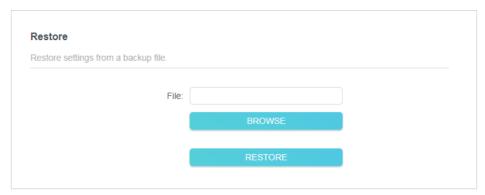
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Backup & Restore.

To back up configuration settings:

Click BACK UP to save a copy of the current settings in your local computer. A ".bin" file of the current settings will be stored in your computer.



- To restore configuration settings:
- 1. Click BROWSE to locate the backup configuration file stored in your computer, and click RESTORE.
- 2. Wait a few minutes for the restoring and rebooting.



- To reset the router to factory default settings:
- 1. Click FACTORY RESTORE to reset the router.



2. Wait a few minutes for the restoring and rebooting.

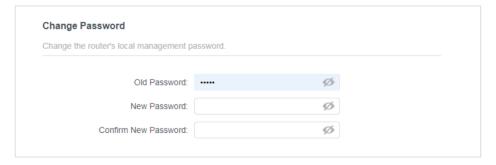
Note:

- During the resetting process, do not turn off or reset the router.
- · We strongly recommend you back up the current configuration settings before resetting the router.

6. 4. Administration

6. 4. 1. Change Password

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Administration, and focus on the Change Password section.



- 3. Enter the old password, then a new password twice (both case-sensitive). Click SAVE.
- 4. Use the new password for future logins.

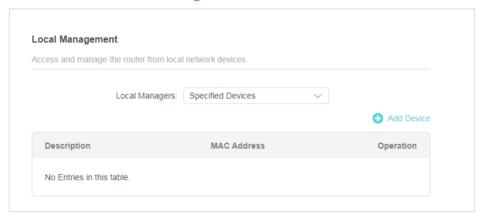
6. 4. 2. Local Management

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Administration, and focus on the Local Management section.
- Allow all LAN connected devices to manage the router:

Select All Devices for Local Managers.



- · Allow specific devices to manage the router:
- 1. Select All Devices for Local Managers and click SAVE.



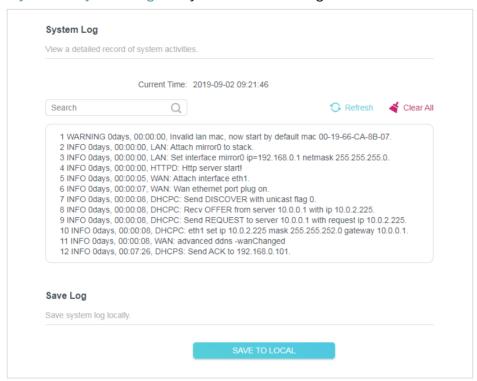
2. Click Add Device.



- 3. Click VIEW CONNECTED DEVICES and select the device to manage the router from the Connected Devices list, or enter the MAC address of the device manually.
- 4. Specify a Description for this entry.
- 5. Click SAVE.

6. 5. System Log

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > System Log, and you can view the logs of the router.

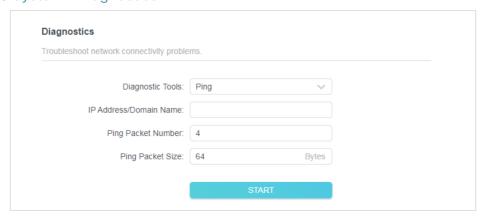


3. Click SAVE TO LOCAL to save the system logs to a local disk.

6. 6. Diagnostic

Diagnostic is used to test the connectivity between the router and the host or other network devices.

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



3. Enter the information:

- 1) Choose Ping or Tracert as the diagnostic tool to test the connectivity.
- Ping is used to test the connectivity between the router and the tested host, and measure the round-trip time.
- Tracert is used to display the route (path) your router has passed to reach the tested host, and measure transit delays of packets across an Internet Protocol network.
- 2) Enter the IP Address or Domain Name of the tested host.
- 3) Modify the Ping Count number and the Ping Packet Size. It's recommended to keep the default value.
- 4) If you have chosen Tracert, you can modify the Traceroute Max TTL. It's recommended to keep the default value.

4. Click START to begin the diagnostics.

The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Ping.

```
Finding host yahoo.com by DNS server (1 of 2).

Pinging yahoo.com [98.138.219.231] with 64 bytes of data:

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=0).

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=1).

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=2).

Reply from 98.138.219.231: bytes=64 time=233ms TTL=48 (seq=3).

Ping statistics for 98.138.219.231:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss).

Approximate round trip times in milli-seconds:

Minimum = 233ms, Maximum = 233ms, Average = 233ms
```

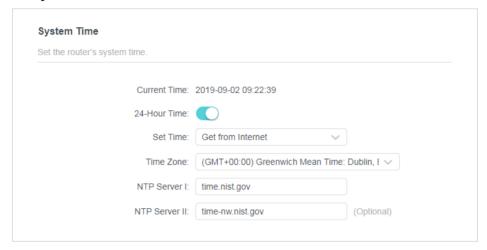
The figure below indicates the proper connection between the router and the Yahoo server (www.Yahoo.com) tested through Tracert.

```
Finding host yahoo.com by DNS server (1 of 2).
Tracing route to yahoo.com [72.30.35.10]
over a maximum of 20 hops:
1 1 ms 1 ms 1 ms 10.0.0.1
2 1 ms 1 ms 1 ms 116.24.64.1
3 1 ms 1 ms 1 ms 202.105.155.185
4 1 ms 1 ms 1 ms 183.56.65.2
5 * 1 ms * 202.97.94.150
6 16 ms 16 ms 202.97.94.94
7 150 ms 150 ms 150 ms 202.97.27.242
8 166 ms 166 ms 166 ms 202.97.50.74
9 150 ms 150 ms 150 ms 4.53.210.145
```

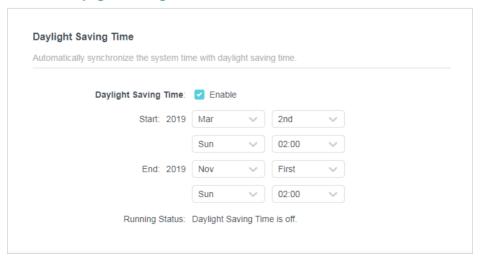
6. 7. Time Settings

This page allows you to set the time manually or to configure automatic time synchronization. The router can automatically update the time from an NTP server via the internet.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Time.
- To set System Time:



- Select the way in which the router gets its time: Get from Internet, Get from Managing Device, Manually.
- 2. Select your local Time Zone.
- 3. Enter the address or domain of the NTP Server 1 or NTP Server 2.
- 4. Click SAVE.
- To set up Daylight Saving Time:
- 1. Select Enable Daylight Saving.



- 2. Select the start time from the drop-down list in the Start fields.
- 3. Select the end time from the drop-down list in the End fields.
- 4. Click SAVE.

Note:

This setting will be used for some time-based functions such as firewall. You must specify your time zone once you log in to the router successfully; otherwise, time-based functions will not take effect.

6.8. Reboot

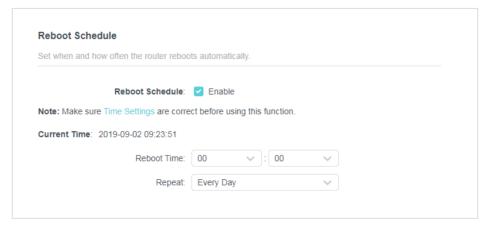
Some settings of the router will take effect only after rebooting, and the system will reboot automatically. You can also reboot the router to clear cache and enhance running performance.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Reboot, and you can restart your router.
- To reboot the router manually:

Click REBOOT, and wait a few minutes for the router to reboot.



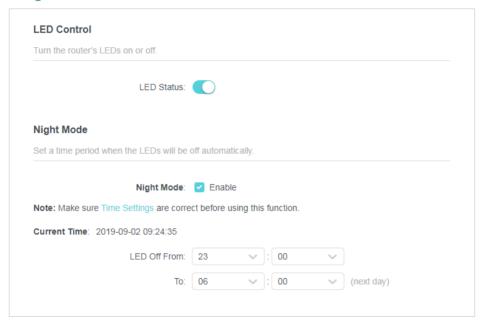
- To set the router to reboot regularly:
- 1. Tick the Enable box of Reboot Schedule.
- 2. Specify the Reboot Time when the router reboots and Repeat to decide how often it reboots.
- 3. Click SAVE.



6. 9. LED Control

The LED of the router indicates its activities and status. You can enable the Night Mode feature to specify a time period during which the LED is off.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > LED Control.
- 3. Enable Night Mode.



- 4. Specify the LED off time, and the LED will be off during this period every day.
- Note: The effective LED off time is based on the time of the router. You can go to Advanced > System > Time to modify the time.
- 5. Click SAVE.

Chapter 7

Configure the Router in Range Extender Mode

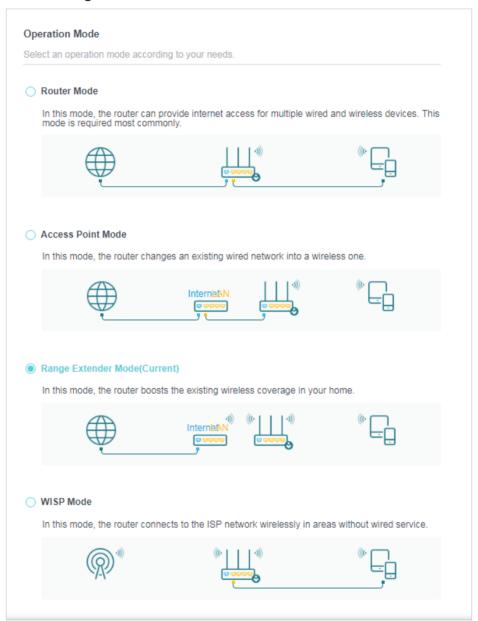
This chapter presents how to configure the various features of the router working as a range extender.

It contains the following sections:

- Operation Mode
- Firmware Upgrade
- Backup & Restore
- Administration
- System Log
- Time Settings
- Reboot
- LED Control

7. 1. Operation Mode

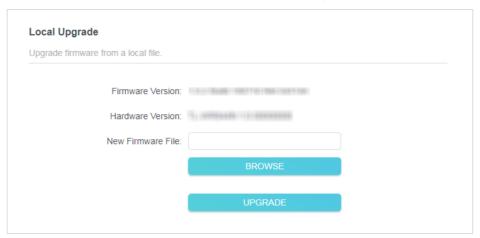
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Operation Mode.
- 3. Select the working mode as needed and click SAVE.



7. 2. Firmware Upgrade

TP-Link is dedicated to improving and richening the product features, giving users a better network experience. We will release the latest firmware at TP-Link official website www.tp-link.com. You can download the latest firmware file from the Support page of our website and upgrade the firmware to the latest version.

- 1. Download the latest firmware file for the router from our website www.tp-link.com.
- 2. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 3. Go to System > Firmware Upgrade.
- 4. Click BROWSE to locate the downloaded firmware file, and click UPGRADE.



7. 3. Backup & Restore

The configuration settings are stored as a configuration file in the router. You can back up the configuration file in your computer for future use and restore the router to the previous settings from the backup file when needed.

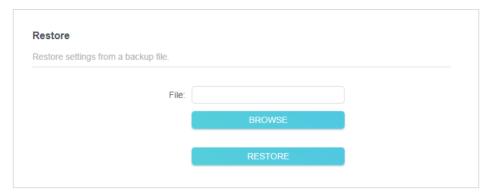
- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Backup & Restore.

To back up configuration settings:

Click BACK UP to save a copy of the current settings in your local computer. A ".bin" file of the current settings will be stored in your computer.



- To restore configuration settings:
- 1. Click BROWSE to locate the backup configuration file stored in your computer, and click RESTORE.
- 2. Wait a few minutes for the restoring and rebooting.



- To reset the router to factory default settings:
- 1. Click FACTORY RESTORE to reset the router.



2. Wait a few minutes for the restoring and rebooting.

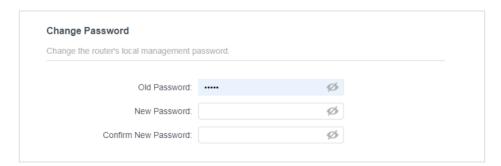
Note:

- During the resetting process, do not turn off or reset the router.
- · We strongly recommend you back up the current configuration settings before resetting the router.

7. 4. Administration

7. 4. 1. Change Password

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Administration, and focus on the Change Password section.



- 3. Enter the old password, then a new password twice (both case-sensitive). Click SAVE.
- 4. Use the new password for future logins.

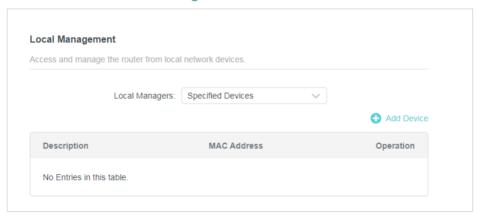
7. 4. 2. Local Management

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Administration, and focus on the Local Management section.
- Allow all LAN connected devices to manage the router:

Select All Devices for Local Managers.



- · Allow specific devices to manage the router:
- 1. Select All Devices for Local Managers and click SAVE.



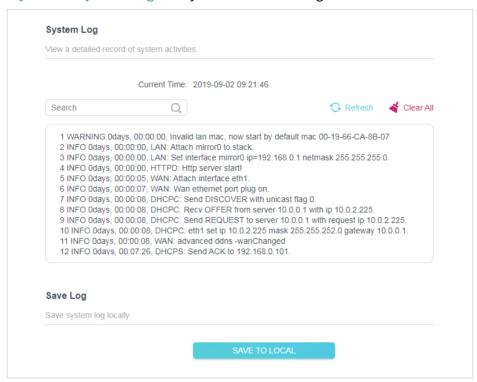
2. Click Add Device.



- 3. Click VIEW CONNECTED DEVICES and select the device to manage the router from the Connected Devices list, or enter the MAC address of the device manually.
- 4. Specify a Description for this entry.
- 5. Click SAVE.

7. 5. System Log

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > System Log, and you can view the logs of the router.

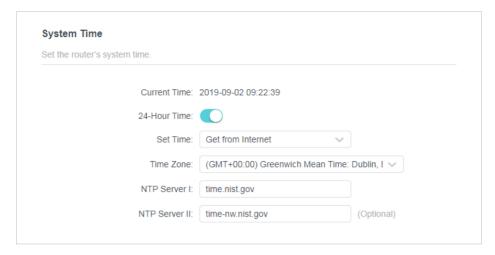


3. Click SAVE TO LOCAL to save the system logs to a local disk.

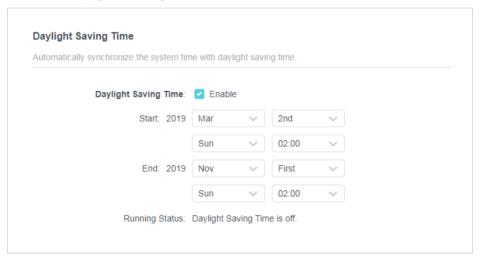
7. 6. Time Settings

This page allows you to set the time manually or to configure automatic time synchronization. The router can automatically update the time from an NTP server via the internet.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Time.
- To set System Time:



- Select the way in which the router gets its time: Get from Internet, Get from Managing Device, Manually.
- 2. Select your local Time Zone.
- 3. Enter the address or domain of the NTP Server 1 or NTP Server 2.
- 4. Click SAVE.
- To set up Daylight Saving Time:
- 1. Select Enable Daylight Saving.



- 2. Select the start time from the drop-down list in the Start fields.
- 3. Select the end time from the drop-down list in the End fields.
- 4. Click SAVE.

Note:

This setting will be used for some time-based functions such as firewall. You must specify your time zone once you log in to the router successfully; otherwise, time-based functions will not take effect.

7.7. Reboot

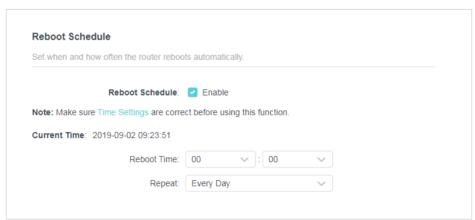
Some settings of the router will take effect only after rebooting, and the system will reboot automatically. You can also reboot the router to clear cache and enhance running performance.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > Reboot, and you can restart your router.
- To reboot the router manually:

Click REBOOT, and wait a few minutes for the router to reboot.



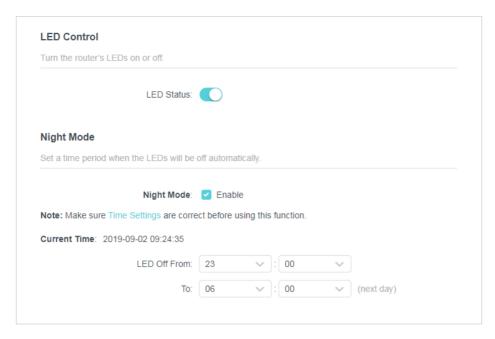
- To set the router to reboot regularly:
- 1. Tick the Enable box of Reboot Schedule.
- 2. Specify the Reboot Time when the router reboots and Repeat to decide how often it reboots.
- 3. Click SAVE.



7. 8. LED Control

The LED of the router indicates its activities and status. You can enable the Night Mode feature to specify a time period during which the LED is off.

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- 2. Go to System > LED Control.
- 3. Enable Night Mode.



- 4. Specify the LED off time, and the LED will be off during this period every day.
- Note: The effective LED off time is based on the time of the router. You can go to Advanced > System > Time to modify the time.
- 5. Click SAVE.

FAQ

Q1. What should I do if I forget my wireless password?

The default wireless password is printed on the label of the router. If the password has been altered, please connect your computer to the router using an Ethernet cable and follow the steps below:

- 1. Visit http://tplinkwifi.net, and log in with the password you set for the router.
- Go to Wireless or Advanced > Wireless > Wireless Settings or to retrieve or reset your wireless password.

Q2. How can I restore my router to its factory default settings?

Use a pin to press and hold the RESET button for more than 5 seconds until the Internet LED blinks to reset the router to its factory default settings.

Q3. What should I do if I forget my login password of the web management page?

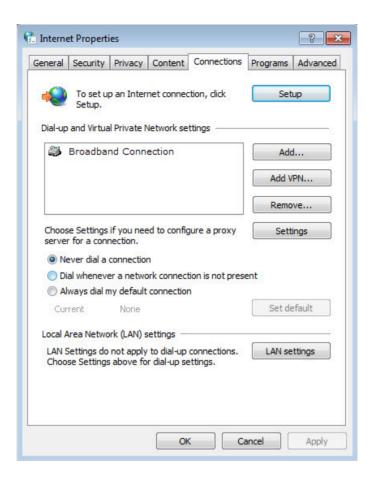
- 1. Refer to Q2 to reset the router to its factory default settings.
- 2. Visit http://tplinkwifi.net, and create a password for future login.

Note: You'll need to reconfigure the router to surf the Internet once the router is reset, and please mark down your new password for future use.

Q4. What should I do if I cannot log in to the router's web management page?

This can happen for a variety of reasons. Please try the methods below to log in again.

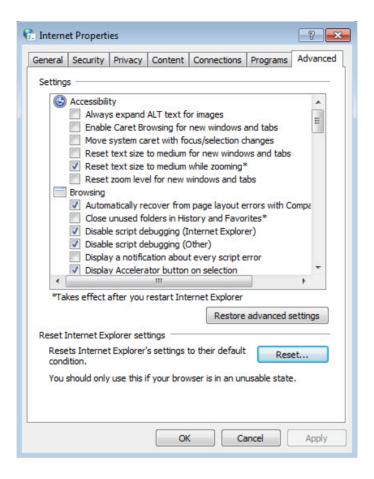
- Make sure your computerthe has connected to the router correctly and the corresponding LED light up.
- Make sure the IP address of your computer is configured as Obtain an IP address automatically and Obtain DNS server address automatically.
- Make sure you enter the correct IP address to log in: http://tplinkwifi.net or 192.168.0.1.
- 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 and select Never dial a connection.



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



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



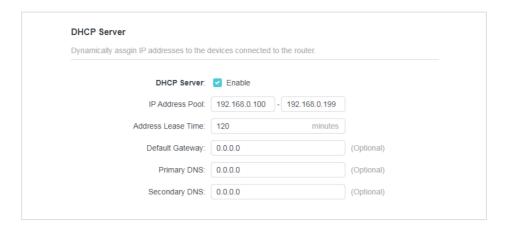
- Use another web browser or computer to log in again.
- Reset the router to factory default settings and try again. If the login still fails, please contact the technical support.
 - Note: You'll need to reconfigure the router to surf the internet once the router is reset.

Q5. What should I do if I cannot access the internet even though the configuration is finished?

- 1. Visit http://tplinkwifi.net, and log in to with the password you set for the router.
- 2. Go to Advanced > Network > Status to check the Internet status:

If IP Address is a valid one, please try the methods below and try again:

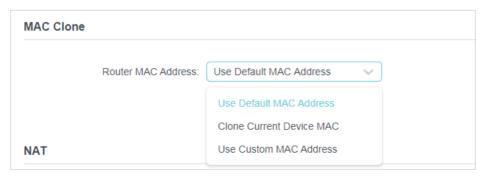
- Your computer might not recognize any DNS server addresses, please manually configure DNS server.
 - 1) Go to Advanced > Network > DHCP Server.
 - 2) Enter 8.8.8.8 as Primary DNS, and click Save.
 - Tips: 8.8.8.8 is a safe and public DNS server operated by Google.



- Restart the modem and the router.
 - 1) Power off your modem and the router, and leave them off for 1 minute.
 - 2) Power on your modem first, and wait about 2 minutes.
 - 3) Power on the router, and wait another 1 or 2 minutes and check the Internet access.
- Reset the router to factory default settings and reconfigure the router.
- Upgrade the firmware of the router.
- Check the TCP/IP settings on the particular device if all other devices can get internet from the router.

If the IP Address is 0.0.0.0, please try the methods below and try again:

- Make sure the physical connection between the router and the modem is proper.
- Clone the MAC address of your computer.
 - Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
 - Go to Advanced > Network > Internet, select Clone Current Device MAC and click SAVE.



@ Tips:

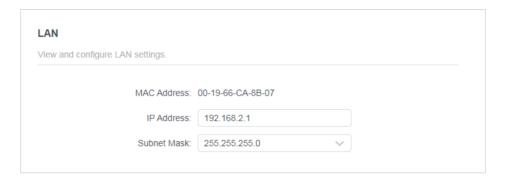
Some ISP will register the MAC address of your computer when you access the Internet for the first time
through their Cable modem, if you add a router into your network to share your Internet connection, the ISP will
not accept it as the MAC address is changed, so we need to clone your computer's MAC address to the router.

- . The MAC addresses of a computer in wired connection and wireless connection are different.
- Modify the LAN IP address of the router.

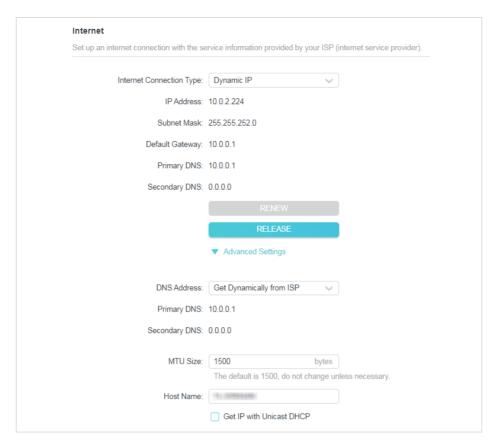
Note:

Most TP-Link routers use 192.168.0.1/192.168.1.1 as their default LAN IP address, it may conflict with the IP range of your existent ADSL modem/router. If so, the router is not able to communicate with your modem and cause you can't access the Internet. To resolve this problem, we need to change the LAN IP address of the router to avoid such conflict, for example, 192.168.2.1.

- 1) Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
- 2) Go to Advanced > Network > LAN.
- 3) Modify the LANIP address as the follow picture shows. Here we take 192.168.2.1 as an example.
- 4) Click Save.



- · Restart the modem and the router.
 - 1) Power off your modem and the router, and leave them off for 1 minute.
 - 2) Power on your modem first, and wait about 2 minutes.
 - 3) Power on the router, and wait another 1 or 2 minutes and check the internet access.
- Double check the Internet Connection Type.
 - 1) Confirm your Internet Connection Type, which can be learned from the ISP.
 - 2) Visit http://tplinkwifi.net, and log in with the username and password you set for the router.
 - 3) Go to Advanced > Network > WAN.
 - 4) Select your Internet Connection Type and fill in other parameters.
 - 5) Click SAVE.



- 6) Restart the modem and the router.
- Please upgrade the firmware of the router.

If you've tried every method above but cannot access the internet, please contact the technical support.

Q6. What should I do if I cannot find my wireless network or I cannot connect to the wireless network?

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

- Make sure the wireless function of your device is enabled if you're using a laptop with a built-in wireless adapter. You can refer to the relevant document or contact the laptop manufacturer.
- Make sure the wireless adapter driver is installed successfully and the wireless adapter is enabled.
 - On Windows 7
 - 1) If you see the message No connections are available, it is usually because the wireless function is disabled or blocked somehow.
 - 2) Clicking Troubleshoot and windows might be able to fix the problem by itself.
 - On Windows XP

- If you see the message Windows cannot configure this wireless connection, this is usually because windows configuration utility is disabled or you are running another wireless configuration tool to connect the wireless.
- 2) Exit the wireless configuration tool (the TP-Link Utility, for example).
- 3) Select and right click My Computer on Desktop, and select Manage to open Computer Management window.
- 4) Expand Services and Applications > Services, and find and locate Wireless Zero Configuration in the Services list on the right side.
- 5) Right click Wireless Zero Configuration, and then select Properties.
- 6) Change Startup type to Automatic, click Start and make sure the Service status is Started. And then click OK.

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

• Make sure your computer/device is still in the range of your router/modem. Move closer if it is currently too far away.

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

- Authenticating problem/password 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 router.



- If you cannot find the PIN or PIN failed, you may choose Connecting using a security key instead, and then type in the Wireless Password/Network Security Key.
- 3) If it continues to show note of Network Security Key Mismatch, it is suggested to confirm the wireless password of your wireless router.

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

- Windows unable to connect to XXXX / Can not join this network / Taking longer than usual to connect to this network:
 - Check the wireless signal strength of your network, if it is weak (1~3 bars), please move the router closer and try again.
 - Change the wireless Channel of the router to 1,6,or 11 to reduce interference from other networks.
 - Re-install or update the driver for your wireless adapter of the computer.

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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, 2011/65/EU and (EU)2015/863.

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.

Industry Canada Statement

CAN ICES-3 (B)/NMB-3(B)

Korea Warning Statements:

당해 무선설비는 운용중 전파혼신 가능성이 있음.

NCC Notice & BSMI Notice:

注意!

依據低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅 自變更頻率、加大功率或變更原設計之特性或功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,並改善至無干擾時方得繼續使用。前項合法通信,指依電信規定作業之無線電信。低功率射頻電機需忍受合法通信或工業、科學以及醫療用電波輻射性電機設備之干擾。

安全諮詢及注意事項

- 請使用原裝電源供應器或只能按照本產品注明的電源類型使用本產品。
- 清潔本產品之前請先拔掉電源線。請勿使用液體、噴霧清潔劑或濕布進行清潔。
- 注意防潮,請勿將水或其他液體潑灑到本產品上。

- 插槽與開口供通風使用,以確保本產品的操作可靠並防止過熱,請勿堵塞或覆蓋開口。
- 請勿將本產品置放於靠近熱源的地方。除非有正常的通風,否則不可放在密閉位置中。
- 請不要私自打開機殼,不要嘗試自行維修本產品,請由授權的專業人士進行此項工作。

限用物質含有情況標示聲明書

產品元件名 稱	限用物質及其化學符號					
	鉛 Pb	鎘 Cd	汞 Hg	六價鉻 CrVI	多溴聯苯 PBB	多溴二苯醚 PBDE
PCB	0	0	0	0	0	0
外殼	0	0	0	0	0	0
電源供應器	_	0	0	0	0	0

備考 1. "超出 0.1 wt %" 及 "超出 0.01 wt %" 系指限用物質之百分比含量超出百分比含量基準值。

備考 2. "○" 系指該項限用物質之百分比含量未超出百分比含量基準值。

備考 3. "一" 系指該項限用物質為排除項目。



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

EAC

Safety Information

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

Please read and follow the above safety information when operating the device. We cannot guarantee that no accidents or damage will occur due to improper use of the device. Please use this product with care and operate at your own risk.

Explanations of the symbols on the product label

Symbol	Explanation			
	Class II equipment			
\sim	AC voltage			
	DC voltage			
⊹⊛ -↔	Polarity of output terminals			
\triangle	Indoor use only			
VI	Energy efficiency Marking			
A	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.			