TP-LINK®

Archer C59
User Guide

AC1350 Wireless Dual Band Router

REV1.0.0 1910011791

Contents

About This Guide 1

Chapter 1. Get to Know About Your Router 2

1. 1. Product Overview 3
1. 2. Panel Layout 3
1. 2. 1.Top View 3
1. 2. 2.The Back Panel 4

Chapter 2. Connect the Hardware 6

2. 1. Position Your Router 7
2. 2. Connect Your Router 7

Chapter 3. Log into Your Router 10

Chapter 4. Set Up Internet Connection 12

4. 1. Use Quick Setup Wizard 13
4. 2. Manually Set up Your Internet Connection 13
4. 3. Set Up an IPv6 Internet Connection 17

Chapter 5. Guest Network 21

5. 1. Create a Network for Guests 22
5. 2. Customize Guest Network Options 23

Chapter 6. USB Application 24

6. 1. Local Storage Sharing 25
6. 1. 1.Access the USB disk 25
6. 1. 2.Customize Your Settings 27
6. 2. Remote Access via FTP Server 30
6. 2. 1.Access the USB Disk 30
6. 2. 2.Customize Your Settings 33
6. 3. Media Sharing 34
6. 3. 1.Access the USB Disk 35
6. 3. 2.Customize Your Settings 36

6. 4. Printer Sharing 37

Chapter 7. Parental Controls 41

Chapter 8. QoS. 45

8. 1. Prioritize Internet Traffic with QoS. 46

Chapter 9. Network Security 50

9. 1. Protect the Network from Cyber Attacks 51
9. 2. Access Control 52
9. 3. IP & MAC Binding. 54

Chapter 10. NAT Forwarding 55

10. 1. Share Local Resources on the Internet by Virtual Servers 56
10. 2. Open Ports Dynamically by Port Triggering. 57
10. 3. Make Applications Free from Port Restriction by DMZ 58
10. 4. Make Xbox Online Games Run Smoothly by UPnP 59

Chapter 11. VPN Server. 61

11. 1. Use OpenVPN to Access Your Home Network. 62
11. 2. Use PPTP VPN to Access Your Home Network. 63

Chapter 12. Customize Your Network Settings 69

12. 1. Change the LAN Settings 70
12. 2. Configure to Support IPTV Service 70
12. 3. Specify DHCP Server Settings 72
12. 4. Set Up a Dynamic DNS Service Account 73
12. 5. Create Static Routes 74
12. 6. Specify Wireless Settings 76
12. 7. Use WPS for Wireless Connection 78
12. 7. 1.Set the Router's PIN 78
12. 7. 2.Use the WPS Wizard for Wi-Fi Connections 78

Chapter 13. Manage the Router 79

13. 1. Set Up System Time 80
13. 2. Test the Network Connectivity 81
13. 3. Upgrade the Firmware. 82

13. 3. 1.Online Upgrade 83
13. 3. 2.Local Upgrade 83
13. 3. 3.Restore Interrupted Upgrade after Power Failure 84
13. 4. Backup and Restore Configuration Settings 84
13. 5. Change the Administrator Account 86
13. 6. Password Recovery 86
13. 7. Local Management 87
13. 8. Remote Management 88
13. 9. System Log 89
13. 10. Monitor the Internet Traffic Statistics 91
13. 11. Control LEDs 92

FAQ 94

About This Guide

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

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

Conventions

In this guide the following conventions are used:

Convention	Description
Blue Italic	Hyperlinks are in blue italic. You can click to redirect to a website or a specific section.
Blue	Contents to be emphasized and texts on the web page are in blue, including the menus, items, buttons, etc.
>	The menu structures to show the path to load the corresponding page. For example, Advanced > Wireless > MAC Filtering means the MAC Filtering function page is under the Wireless menu that is located in the Advanced tab.
Note:	Ignoring this type of note might result in a malfunction or damage to the device.
Tips:	Indicates important information that helps you make better use of your device.
symbols on the web page	• click to edit the corresponding entry. • click to delete the corresponding entry. • click to enable or disable the corresponding entry. • click to view more information about items on the page.

More Info

The latest software, management app and utility can be found at 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 *http://www.tp-link.com*.

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

Our Technical Support contact information can be found at the *Contact Technical Support* page at *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.

This chapter 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 the 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 (view from left to right) are located on the front panel. You can check the router's working status by following the LED Explanation table.

LED Explanation

Name	Status	Indication
(Power)	On	System initialization completes.
	Flashing	System initialization or firmware upgrade is in process. Do not disconnect or power off the router.
	Off	Power is off.
(2.4GHz Wireless)	On	The 2.4GHz wireless band is working properly.
	Off	The 2.4 GHz wireless band is disabled.

LED Explanation

Name	Status	Indication
(5GHz Wireless)	On	The 5GHz wireless band is working properly.
	Off	The 5GHz wireless band is disabled.
(Internet)	Green On	Internet is available.
	Orange On	The router's Internet port is connected, but the Internet is not available.
	Off	The router's Internet port is not connected.
(Ethernet)	On	At least one Ethernet port is connected.
	Off	No Ethernet port is connected.
(USB)	On	The USB device is identified and ready to use.
	Flashing	The USB device is being identified.
	Off	No USB device is plugged into the USB port or the USB device is not identified or USB device has been safely ejected.
(WPS)	On/Off	Turns on when a WPS connection is established, and goes off about 5 minutes later.
	Flashing	A wireless device is trying to connect to the network via WPS. This process may take up to 2 minutes.

1. 2. 2. The Back Panel

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

Item	Description
WPS Button	Press this button, and immediately press the WPS button on your client device. The WPS LED of the router should change from flashing to solid on, indicating successful WPS connection.
Reset Button	Press this button for about 5 seconds to reset the router to its factory default settings.
Ethernet Ports (1/2/3/4)	For connecting your PCs or other wired network devices to the router.
Internet Port	For connecting to a DSL/Cable modem, or Ethernet port.
USB Port	For connecting to a USB storage device or a USB printer.
Power On/Off Button	Press this button to power on or off the router.
Power Port	For connecting the router to a power socket via the provided power adapter.
Wi-Fi Button	Press this button for about 2 seconds to turn on or off the wireless function of your router.
Antennas	Used for wireless operation and data transmitting. Upright them for the best Wi-Fi performance.

Chapter 2

Connect the Hardware

This chapter contains the following sections:

- *Position Your Router*
- *Connect Your Router*

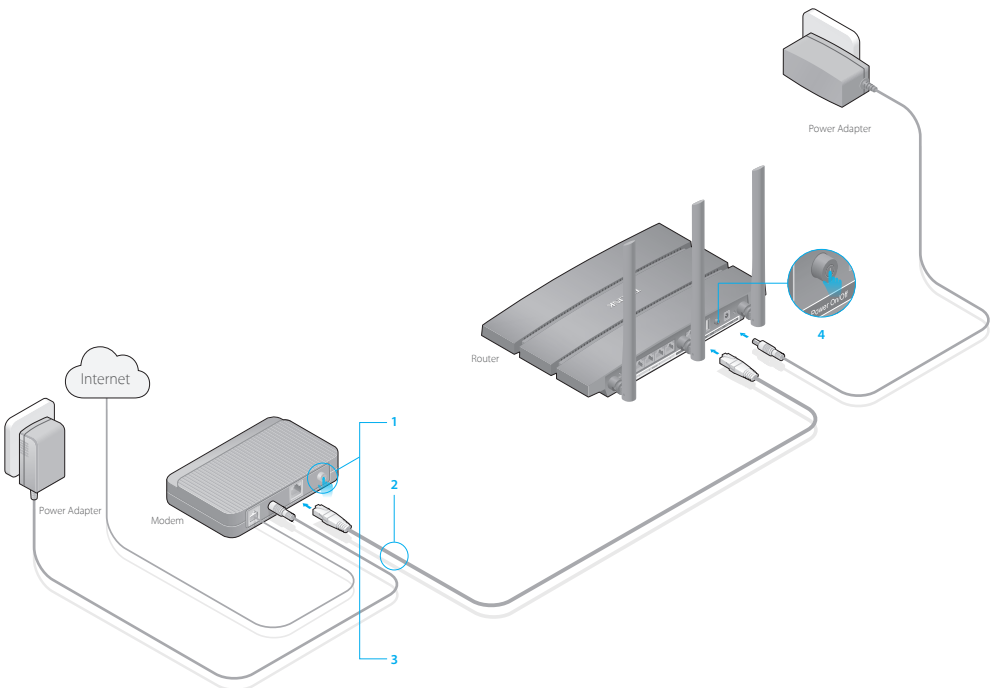
2. 1. Position Your Router

- The Product should not be located where it will be exposed to moisture or excessive heat.
- Place the router in a location where it can be connected to the various devices as well as to a power source.
- Make sure the cables and power cord are safely placed out of the way so they do not create a tripping hazard.
- The router can be placed on a shelf or desktop.
- Keep away from the strong electromagnetic radiation and the device of electromagnetic sensitive.

2. 2. Connect Your Router

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 Internet port, then follow step 4 and 5 to complete the hardware connection.



1) Turn off the modem, and remove the backup battery if it has one.

2) Connect the modem to the Internet port on your router with an Ethernet cable.

3) Turn on the modem, and then wait about **2 minutes** for it to restart.

4) Turn on the router.

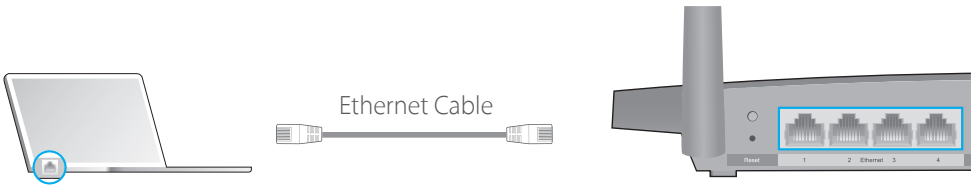
5) Verify that the hardware connection is correct by checking these LEDs.

Tips: If 2.4GHz LED and 5GHz LED are off, press the Wi-Fi button for about 2 seconds, and then check the LEDs again in a few seconds.

2. Connect your computer to the router.

- **Method 1: Wired**

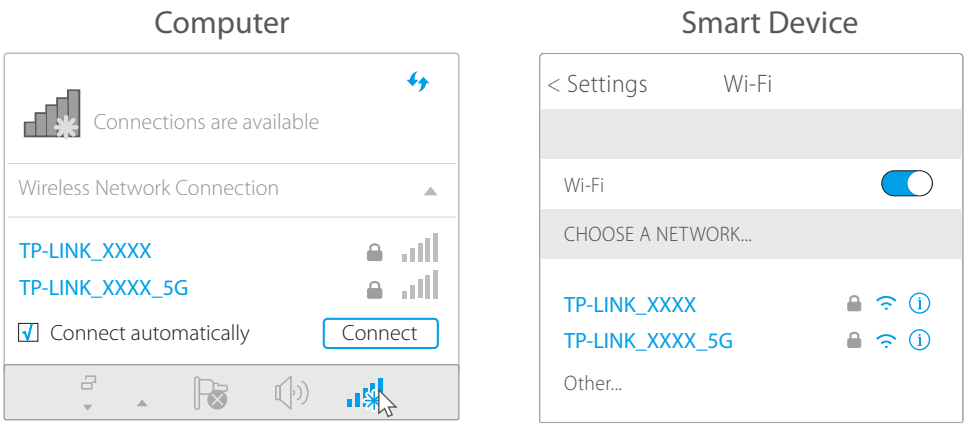
Turn off the Wi-Fi on your computer and connect the devices as shown below.



- **Method 2: Wirelessly**

1) Find the SSID (Network Name) and Wireless Password/PIN printed on the label at the bottom of the router.

2) Click the network icon of your computer or go to Wi-Fi Setting of your smart device, and then select the SSID to join the network.



- **Method 3: Use the WPS button**

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

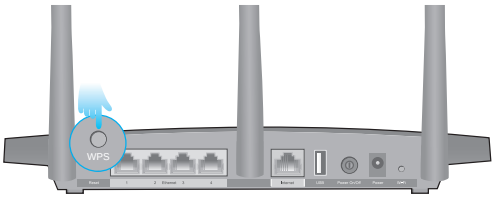
Note:

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

1. Tab the WPS icon on the device's screen.

2. Immediately press the WPS button on your router.

Close to



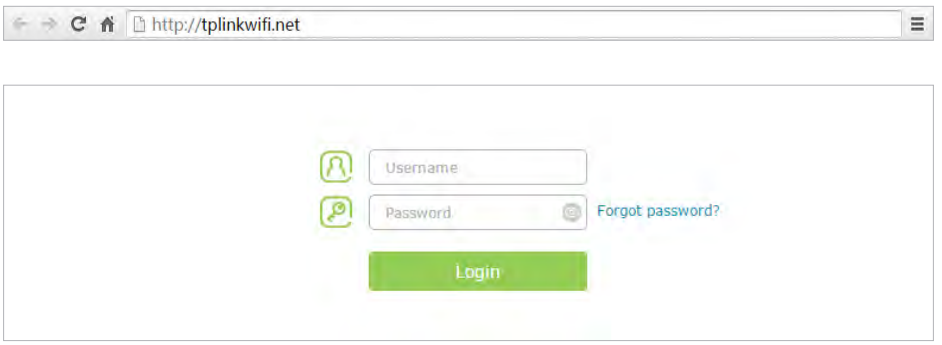
Chapter *3*

Log into Your Router

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

Follow the steps below to log into 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 username and password you set for the router. The default one is admin for both username and password.



Note:
If the login window does not appear, please refer to *FAQ* Section.

Chapter *4*

Set Up Internet Connection

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

This chapter contains the following sections:

- *Use Quick Setup Wizard*
- *Manually Set up Your Internet Connection*
- *Set Up an IPv6 Internet Connection*

4. 1. Use Quick Setup Wizard

The Quick Setup Wizard will guide you through the process to set up your router.

Tips:

If you need the IPv6 Internet connection, please refer to the section of *Set Up an IPv6 Internet Connection*.

Follow the steps below to set up your router.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Click Quick Setup on the top of the page. Then follow the step-by-step instructions to connect your router to the Internet.

Note:

During the quick setup process:

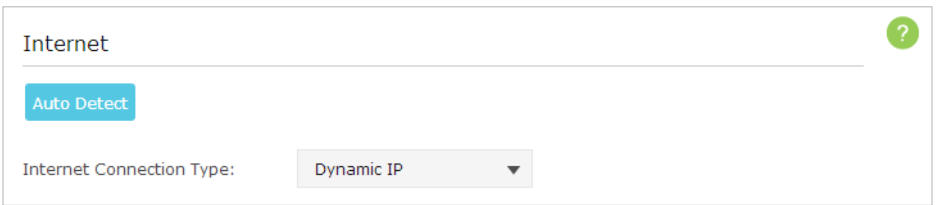
- If you are not sure of the Internet Connection Type, please click Auto Detect or contact your ISP for Internet connection information.
- If you have changed the preset wireless network name (SSID) and wireless password, all your wireless devices must use the new SSID and password to connect to the router.

4. 2. Manually Set up Your Internet Connection

In this part, you can check your current Internet connection settings. You can also modify the settings according to the service information provided by your ISP.

Follow the steps below to check or modify your Internet connection settings.

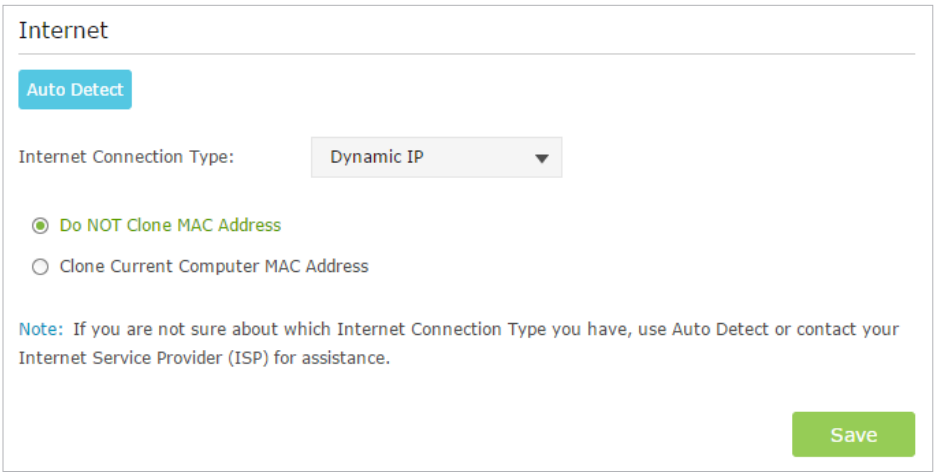
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Basic > Internet.
3. Select your Internet connection type from the drop-down list.



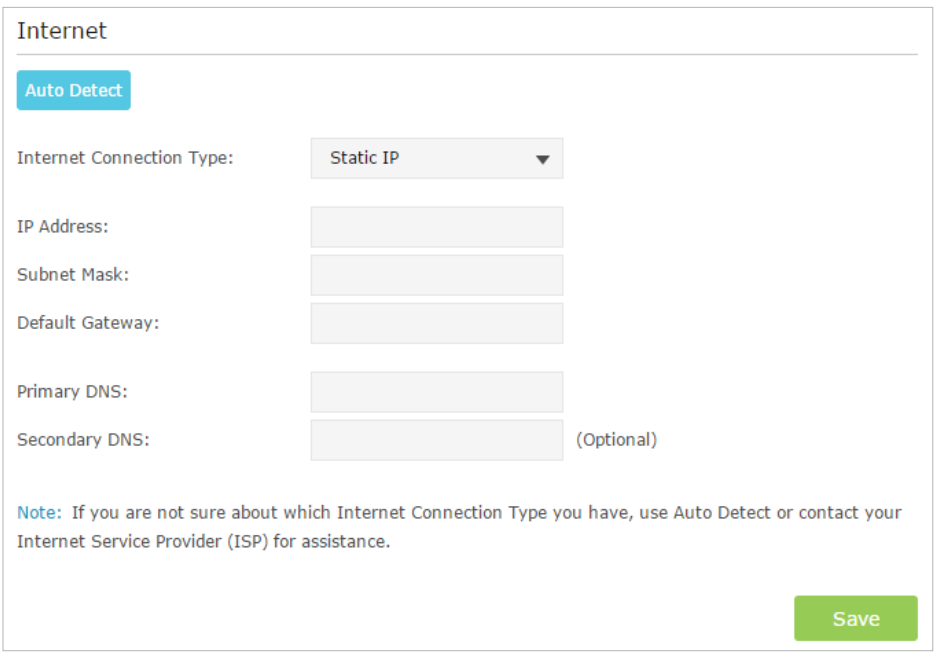
Note:

If you are unsure of what your connection type is, click Auto Detect. Since different connection types need different cables and connection information, you can also refer to the demonstrations in Step 4 to determine your connection type.

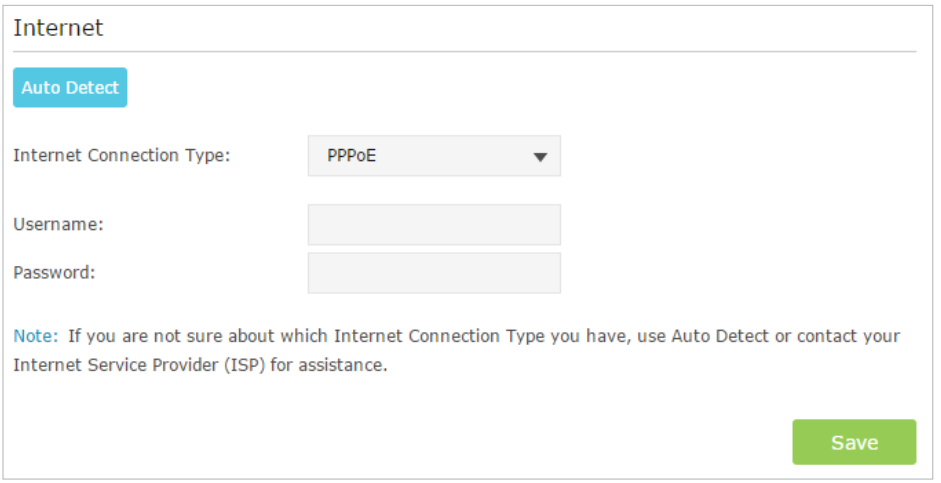
4. Follow the instructions on the page to continue the configuration. Parameters on the figures are just used for demonstration.
   1) If you choose Dynamic IP, you need to select whether to clone the MAC address or not. Dynamic IP users are usually equipped with a cable TV or fiber cable.



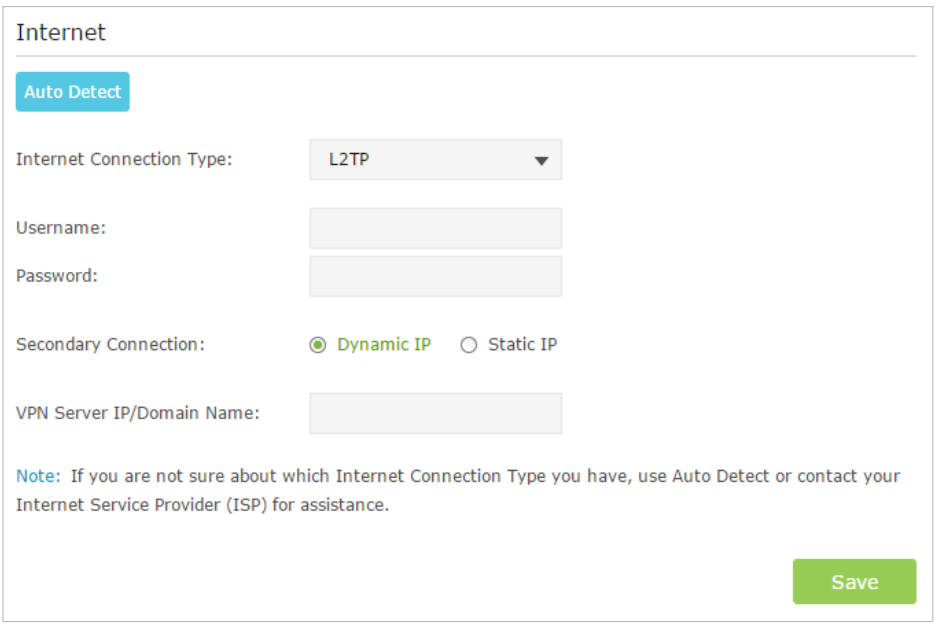
2) If you choose Static IP, enter the information provided by your ISP in the corresponding fields.



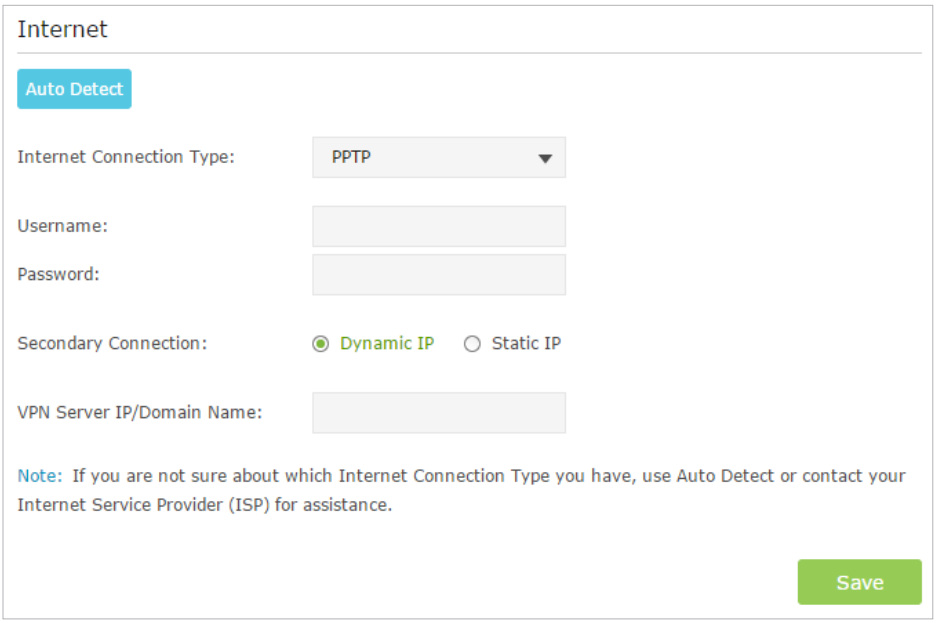
3) If you choose PPPoE, enter the username and password provided by your ISP. PPPoE users usually have DSL cable modem.



4) If you choose L2TP, enter the username and password and choose the Secondary Connection provided by your ISP. Different parameters are needed according to the Secondary Connection you have chosen.



5) If you choose PPTP, enter the username and password, and choose the Secondary Connection provided by your ISP. Different parameters are needed according to the Secondary Connection you have chosen.

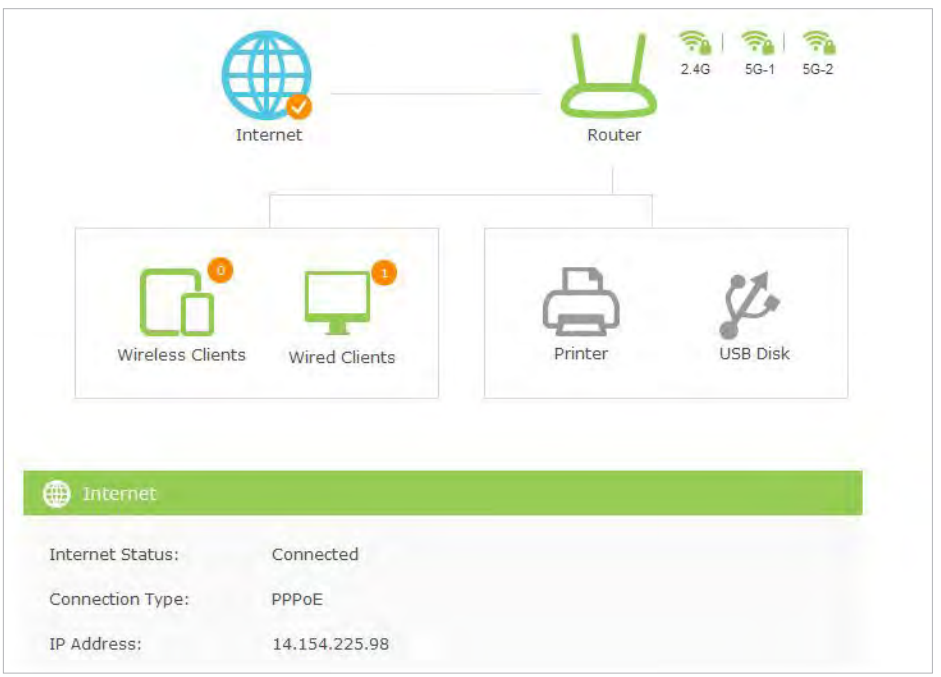


5. Click Save. To check your Internet connection, click Network Map on the left of the page.

Note:

It may take 1-2 minutes to make the settings valid.

6. After the connection succeeds, the screen will display as follows. Here we take PPPoE as an example.



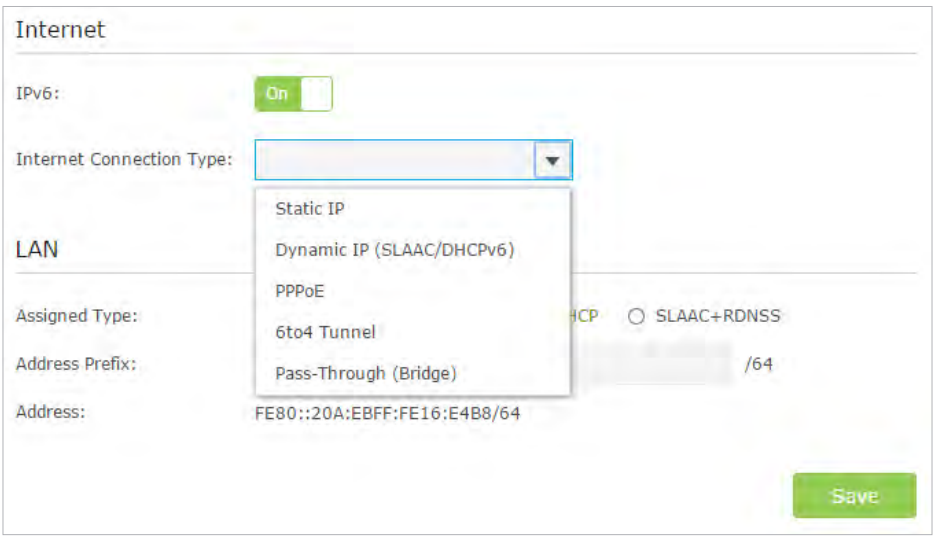
Tips:

1. If your Internet connection type is BigPond Cable, please go to Advanced > Network > Internet to set your router.
2. If you use Dynamic IP and PPPoE and you are provided with any other parameters that are not required on the page, please go to Advanced > Network > Internet to complete the configuration.
3. If you still cannot access the Internet, refer to the *FAQ* for further instructions.

4. 3. Set Up an IPv6 Internet Connection

Your ISP provides information about one of the following IPv6 Internet connection types: PPPoE, Dynamic IP(SLAAC/DHCPv6), Static IP, 6to4 tunnel, Pass-Through (Bridge).

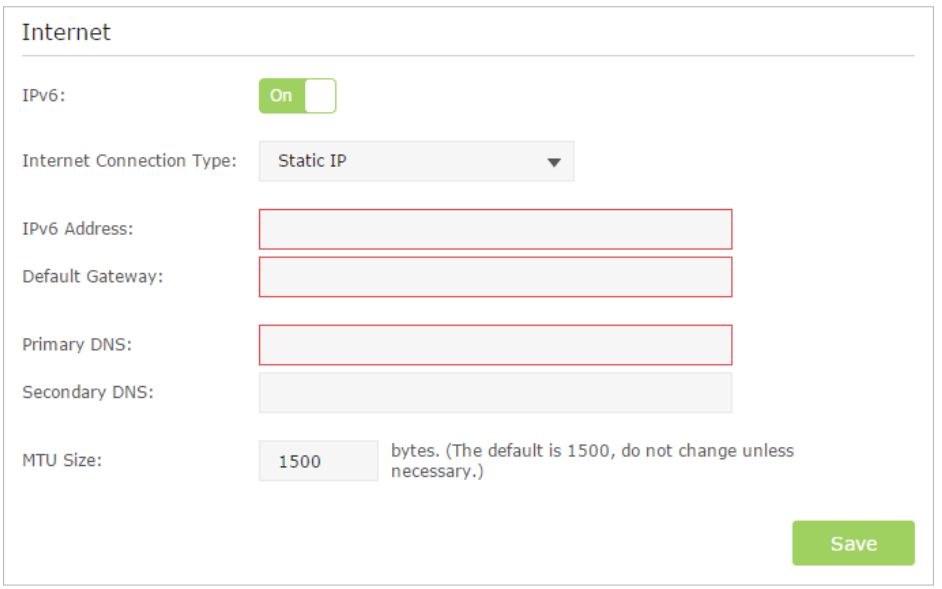
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > IPv6. Select the Internet connection type provided by your ISP.



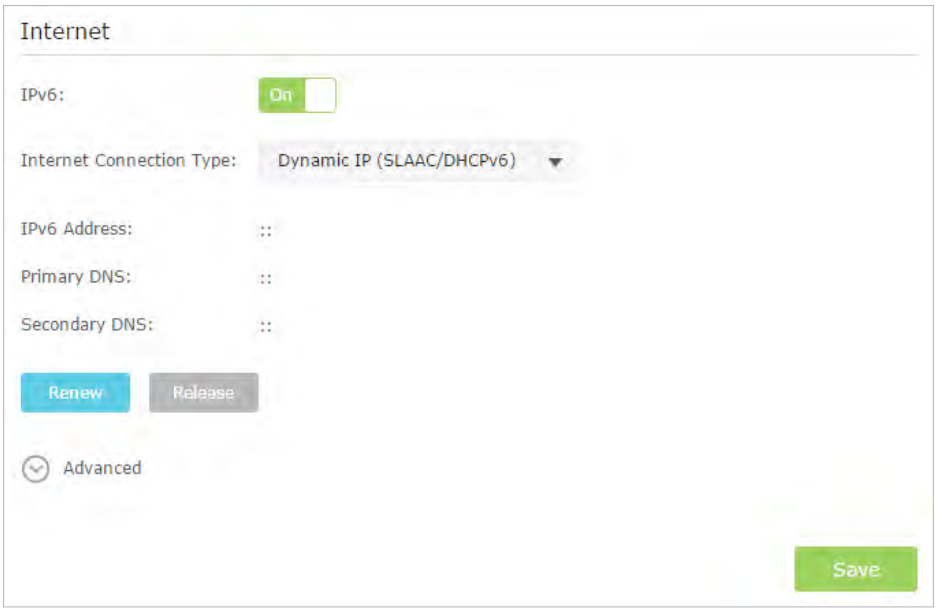
Tips:
If you do not know what your Internet connection type is, contact your ISP or judge according to the already known information provided by your ISP.

3. Fill in information as required by different connection types. Red blanks must be filled in.

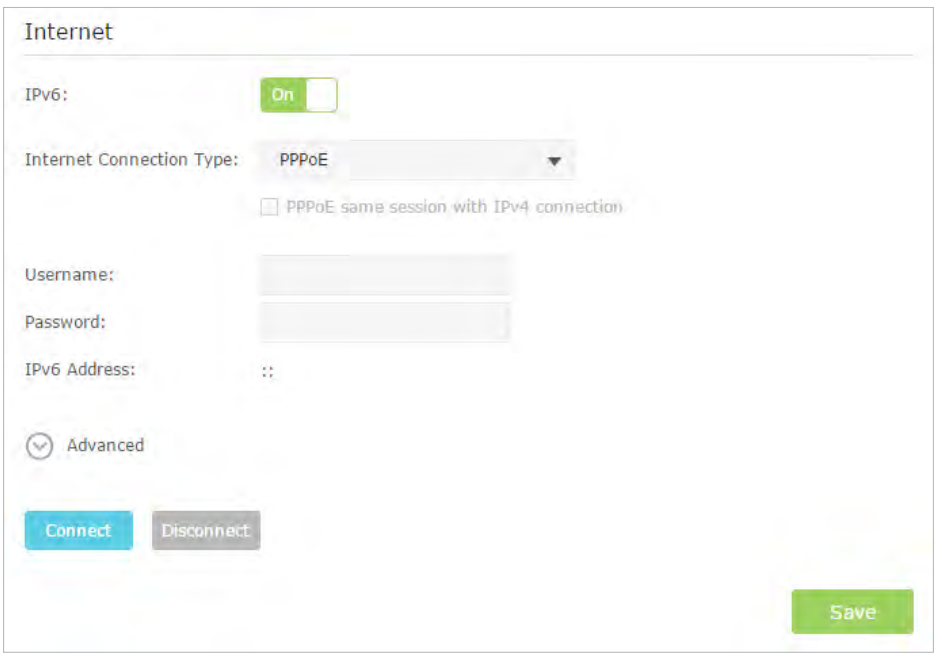
   1) Static IP: Fill in blanks and click Save.



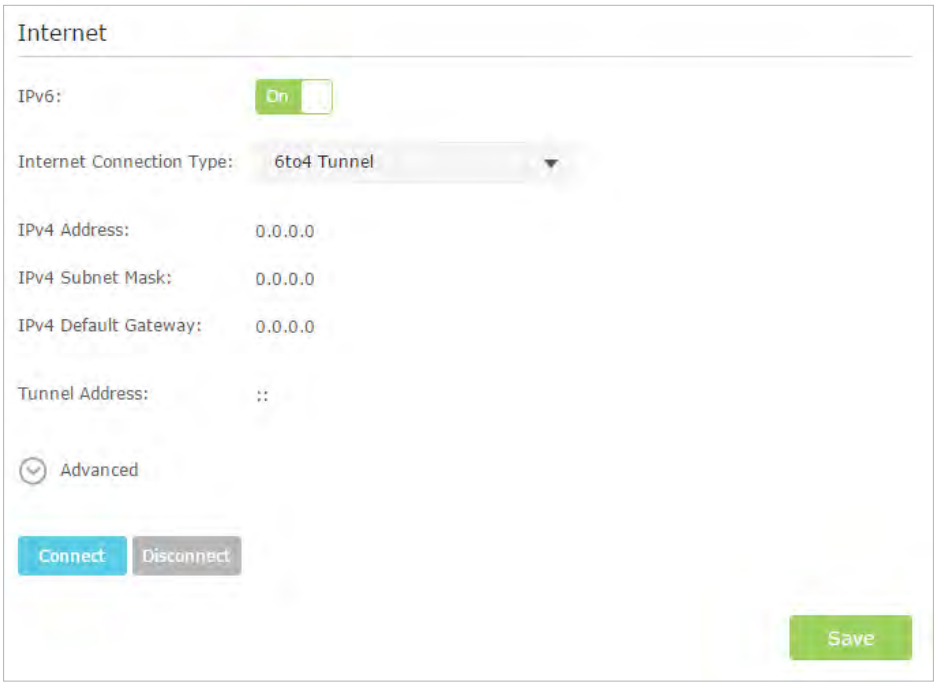
2) Dynamic IP(SLAAC/DHCPv6): Click Advanced to do more configuration if your ISP requires. Click Save and then click Renew to finish the configuration.



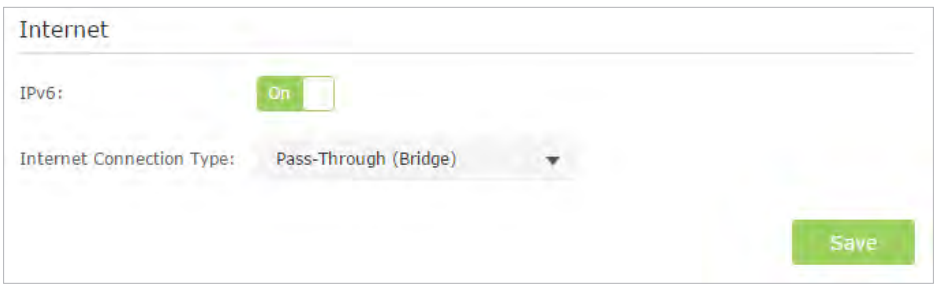
3) PPPoE: Fill in the Username and Password. Click Advanced to do more configuration if your ISP requires. Click Save and then click Connect to finish the configuration.



4) 6to4 Tunnel: An IPv4 Internet connection type is a prerequisite for this connection type (*Manually Set up Your Internet Connection*). Click Advanced to do more configuration if your ISP requires. Click Save and then click Connect to finish the configuration.



5) Pass-Through (Bridge): Click Save and skip to step 6.

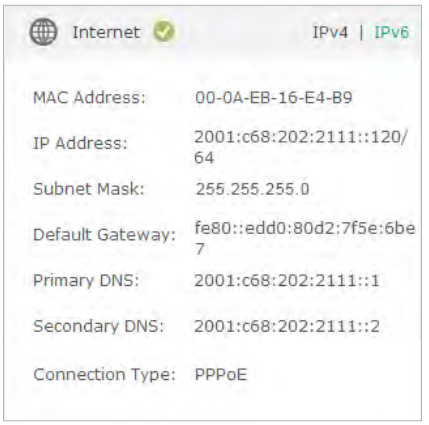


4. Configure LAN ports. Windows users are recommended to choose from the first two types. Fill in Address Prefix provided by your ISP, and click Save.

Tips:

Find Help on the management interface to know more about items.

5. Click Status to check whether you have successfully set up an IPv6 connection. The following figure is an example of a successful PPPoE configuration.



Tips:

Visit the *FAQ* if there is no Internet connection.

Chapter *5*

Guest Network

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

This chapter contains the following sections:

- *Create a Network for Guests*
- *Customize Guest Network Options*

5. 1. Create a Network for Guests

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > Guest Network. Locate the Wireless section.
3. Create a guest network according to your needs.
   1) Enable 2.4GHz Wireless network or 5GHz Wireless network.

   Note:

   Guest network and WDS cannot be enabled at the same time. If WDS was enabled, disable it at Advanced > System Tools > System Parameters.

   2) Customize the SSID. Don't select Hide SSID unless you want your guests to manually input the SSID for guest network access.

   3) Set Security to WPA/WPA2 Personal, keep the default Version and Encryption values, and customize your own password.

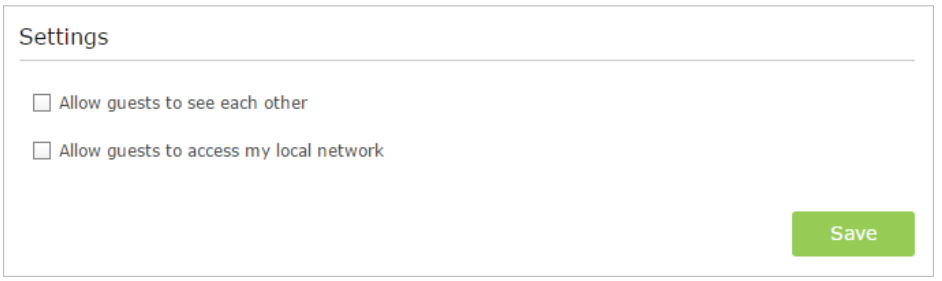
4. Click Save. Now your guests can access your guest network using the SSID and password you set!

Tips:

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

5. 2. Customize Guest Network Options

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



- Allow guests to see each other

  Select 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, Samba, Ping, and FTP.

- Allow guests to access my local network

  Select 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, Samba, Ping, and FTP.

4. Click Save. Now you can ensure network security and privacy!

Tips:

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

Chapter *6*

USB Application

This chapter describes how to share and access USB devices connected to the router among different clients. The router only supports USB external flash drives, hard drives and USB printers.

Note:
A very few TP-LINK Routers may not equipped with USB ports. Please ignore this chapter if your router doesn't have USB port(s).

This chapter contains the following sections:

- *Local Storage Sharing*
- *Remote Access via FTP Serverr*
- *Media Sharing*
- *Printer Sharing*

6. 1. Local Storage Sharing

Share your USB storage devices with different users on the network.

6. 1. 1. Access the USB disk

1. Connect Your USB Disk

   Insert your USB storage device into the router's USB port directly or using a USB cable. Wait several seconds until the USB LED becomes solid on.

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

2. Access Your USB Disk

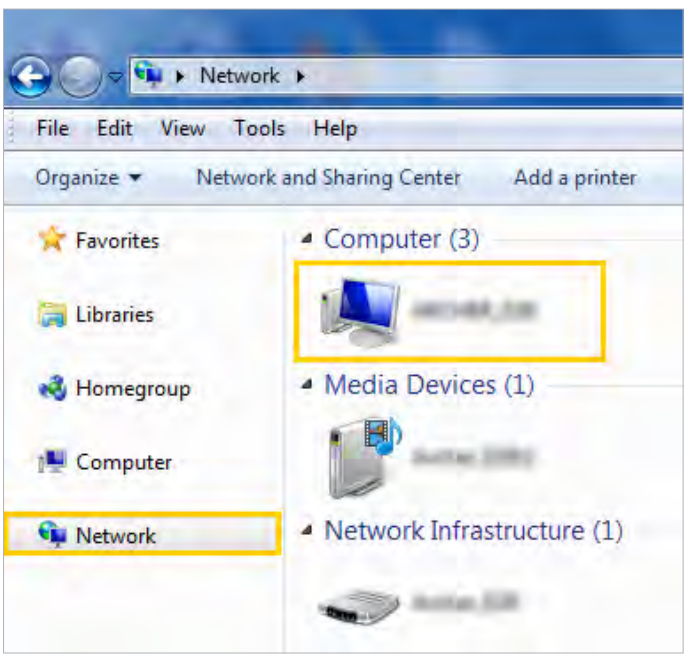
   By default, all the network clients can access all folders on your USB disk. Refer to the following table for access instructions. You can also customize your sharing content and set a sharing account by referring to *Customize Your Settings*.

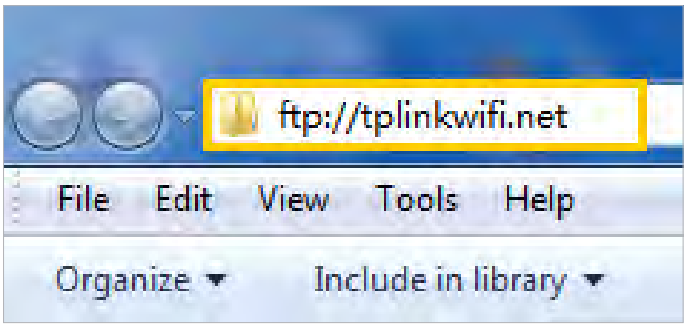
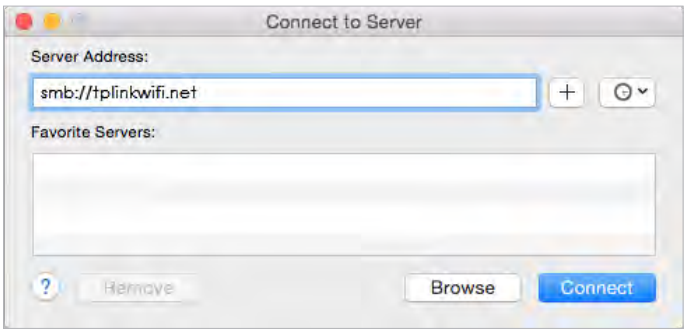
Windows computer

➢ **Method 1:**

Go to Computer > Network, then click the Network Server Name (*Model number*-share by default) in the Computer section.

Note:
Operations in different systems are similar. Here we take Windows 7 as an example.



Windows computer	➢ **Method 2:** Open the Windows Explorer (or go to Computer) and type the server address \\tplinkwifi.net or ftp://tplinkwifi.net in the address bar, then press [Enter]. 
Mac	1) Select Go > Connect to Server. 2) Type the server address smb://tplinkwifi.net. 3) Click Connect.  4) When prompted, select the Guest radio box. (If you have set up a username and a password to deny anonymous access to the USB disks, you should select the Registered User radio box. To learn how to set up an account for the access, refer to *To Set up Authentication for Data Security*.)
pad	Use a third-party app for network files management.

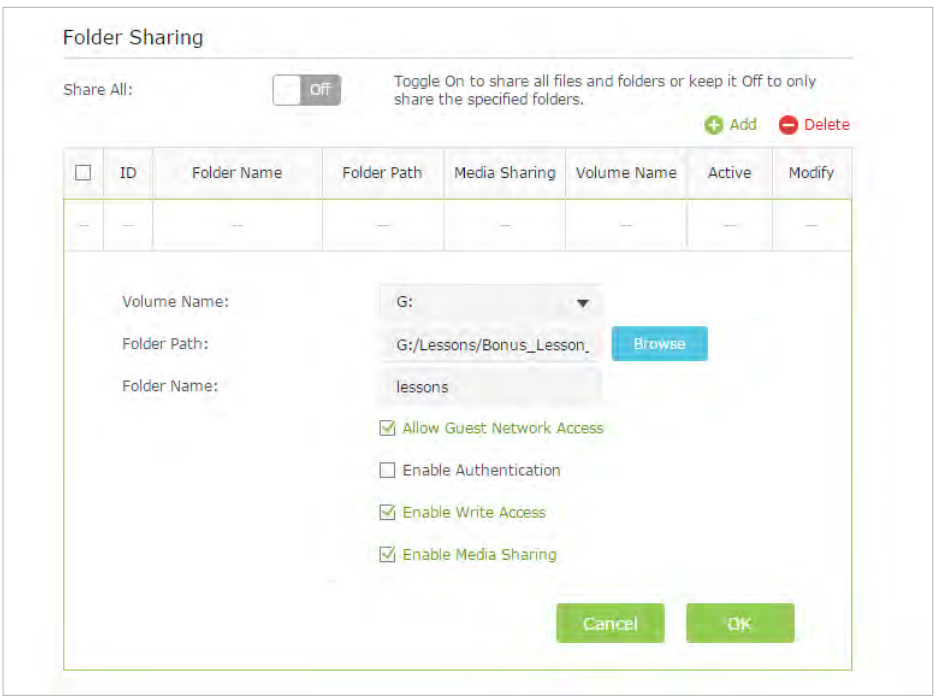
Tips:
You can also access your USB disk by using your Network/Media Server Name as the server address. Refer to *To Customize the Address of the USB Disk* to learn more.

6. 1. 2. Customize Your Settings

➢ To Only Share Specific Content

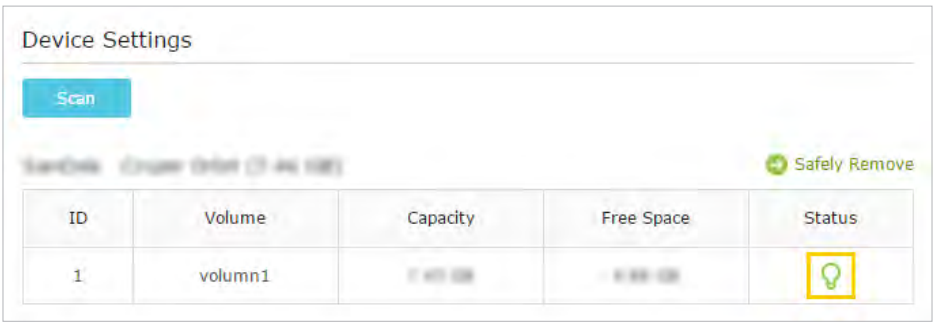
By default, Share All is enabled so all content on the USB disk is shared. If you want to only share specific folders, follow the steps below:

1. Visit *http://tplinkwifi.net*, then log in with the username and password you set for the router.
2. Select Basic > USB Settings > Sharing Access. Focus on the Folder Sharing section. Click the button to disable Share All, then click Add to add a new sharing folder.



3. Select the Volume Name and Folder Path, then enter a Folder Name as you like.
4. Decide the way you share the folder:
   - Allow Guest Network Access: If you tick this check box, guest network users can access the folder.
   - Enable Authentication: If you tick this check box, you will be required to use a username and password to access the folder. Refer to *To Set up Authentication for Data Security* to learn more.
   - Enable Write Access: If you tick this check box, network clients can modify the folder.
   - Enable Media Sharing: If you tick this check box, you can view photos, play music and watch movies in the folder directly from DLNA-supported devices. Click *Media Sharing* to learn more.
5. Click OK.

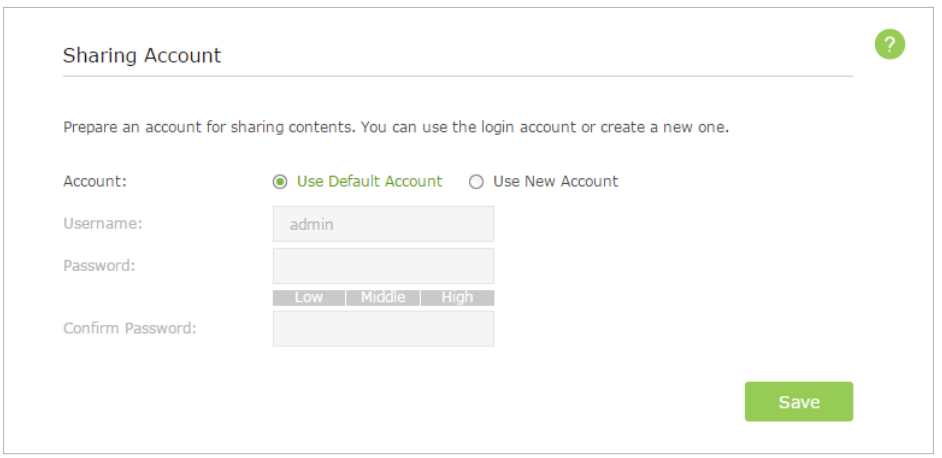
Tips:
The router can share 32 volumes at most. You can click on the page to detach the corresponding volume you do not need to share.



➢ To Set up Authentication for Data Security

If you enable Authentication, network clients will be required to enter the username and password you set when accessing the USB disk.

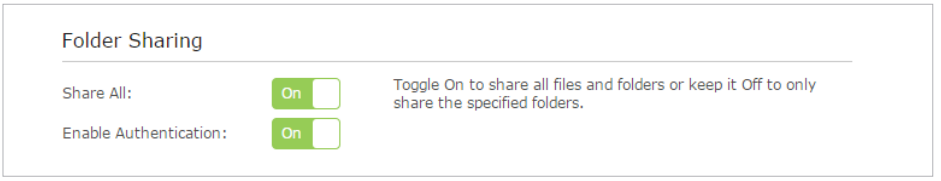
1. Visit *http://tplinkwifi.net*, then log in with the username and password you set for the router.
2. Select Advanced > USB Settings > Sharing Access. Focus on the Sharing Account section.



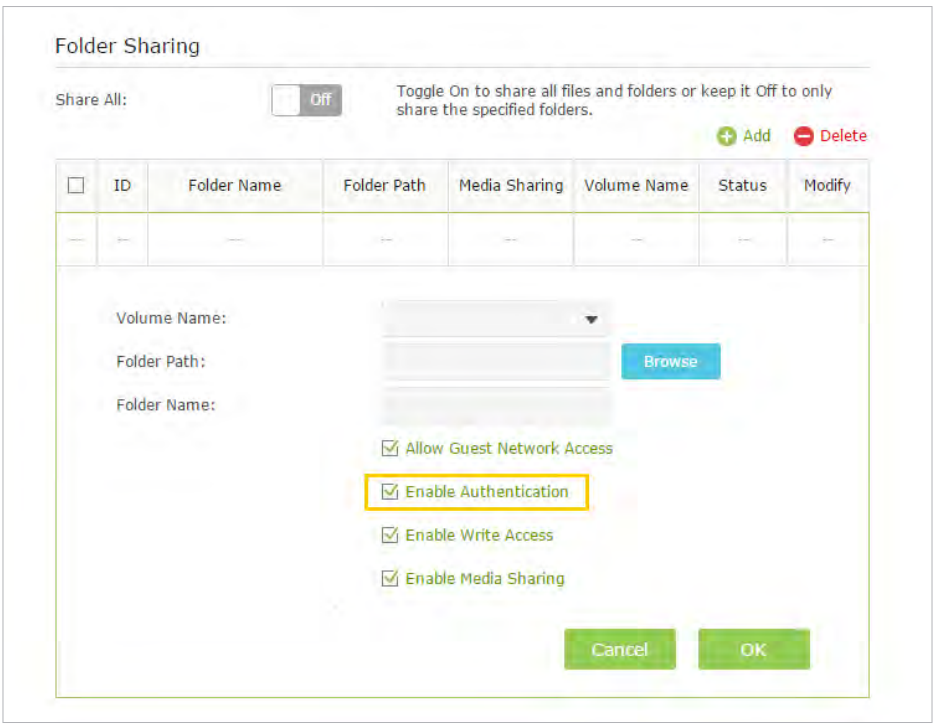
3. Choose Use Default Account (admin) or Use New Account and click Save.

Note:
For Windows users, do not set the sharing username the same as the Windows username. Otherwise, Windows credential mechanism may cause the following problems:
- If the sharing password is also the same as the Windows password, authentication will not work since the Windows will automatically use its account information for USB access.
- If the sharing password is different from the Windows password, the Windows will be unable to remember your credentials and you will always be required to enter the sharing password for USB access.

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



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



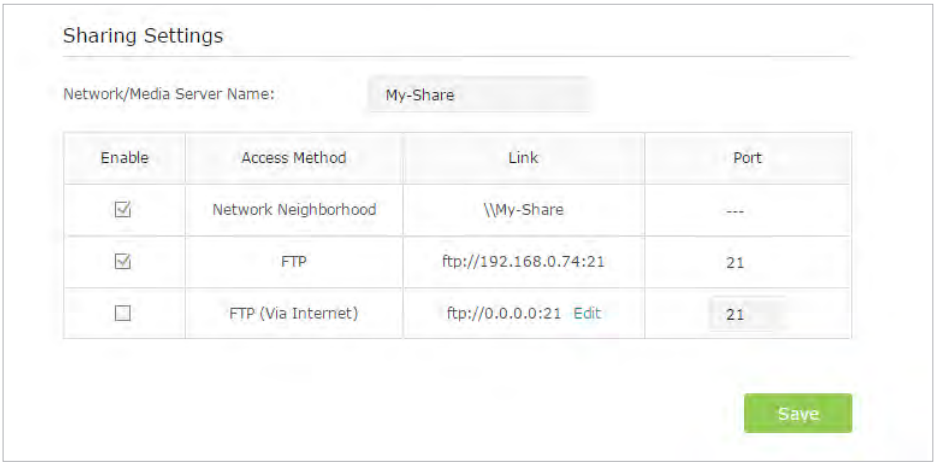
Note:

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

➢ To Customize the Address of the USB Disk

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

1. Visit *http://tplinkwifi.net*, then log in with the username and password you set for the router.
2. Select Advanced > USB Settings > Sharing Access. Focus on the Sharing Settings section.
3. Make sure Network Neighborhood is ticked, and enter a Network/Media Server Name as you like, such as My-Share, then click Save.



4. Now you can access the USB disk by visiting \\My-Share (for Windows) or smb://My-Share (for Mac).

6. 2. Remote Access via FTP Server

You can access your USB disk outside the local area network.

For example:

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

Note:

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

6. 2. 1. Access the USB Disk

1. **Connect Your USB Disk**

   Insert your USB storage device into the router's USB port directly or using a USB cable. Wait several seconds until the USB LED becomes solid on.

   Tips:

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

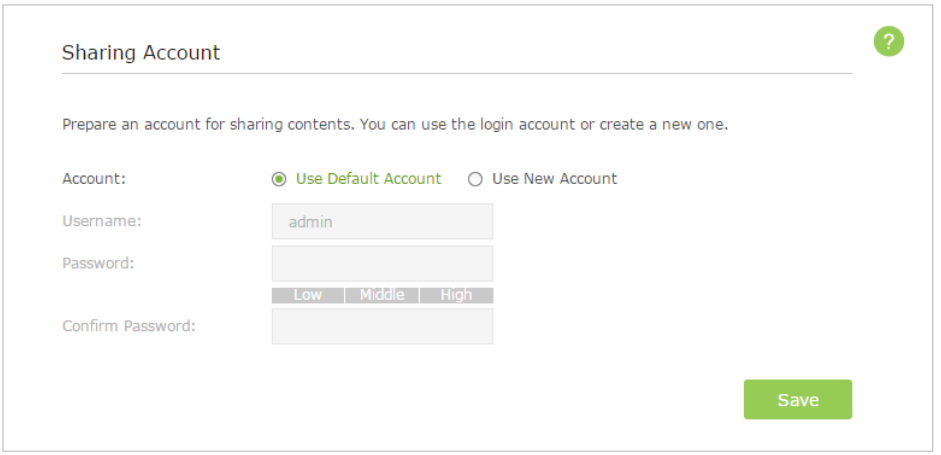
2. Enable Authentication for Data Security

It is strongly recommended that you set and apply a sharing account for data security.

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

2) Select Advanced > USB Settings > Sharing Access.

3) Choose Use default Account (admin) or Use New Account and click Save.



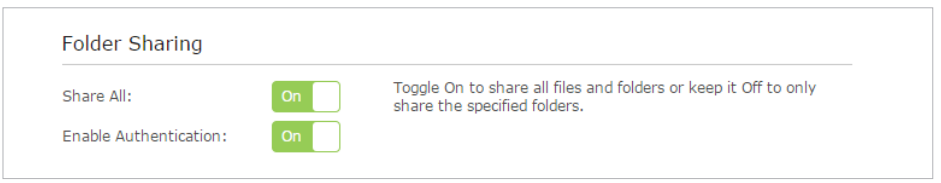
Note:

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

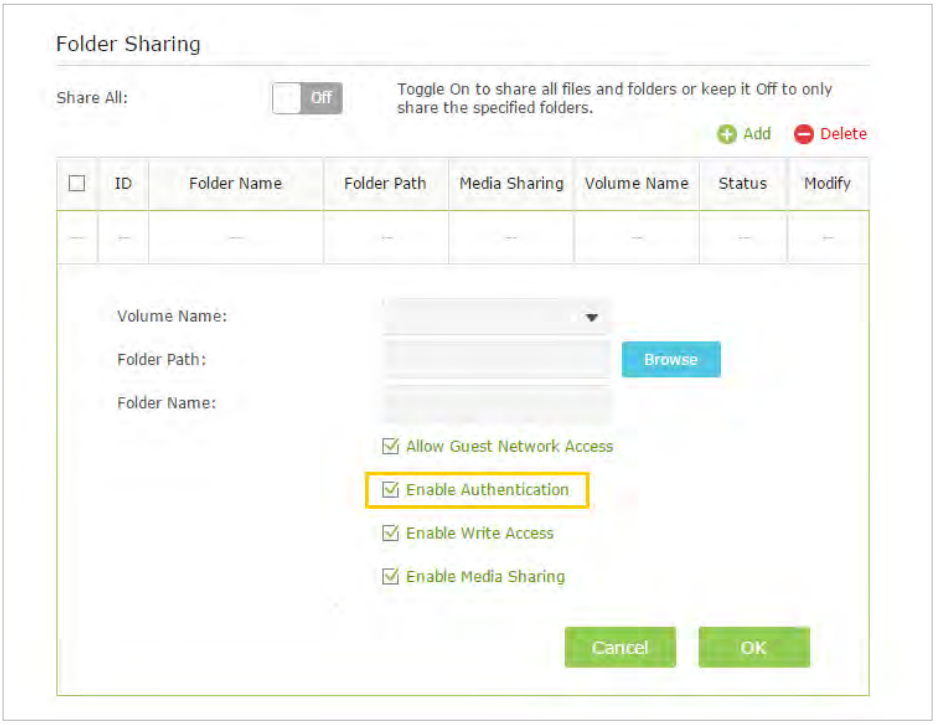
- If the sharing password is also the same as the Windows password, authentication will not work since the Windows will automatically use its account information for USB access.
- If the sharing password is different from the Windows password, the Windows will be unable to remember your credentials and you will always be required to enter the sharing password for USB access.

4) Enable Authentication to apply the sharing account.

- If you leave Share All enabled, click the button to enable Authentication for all folders.



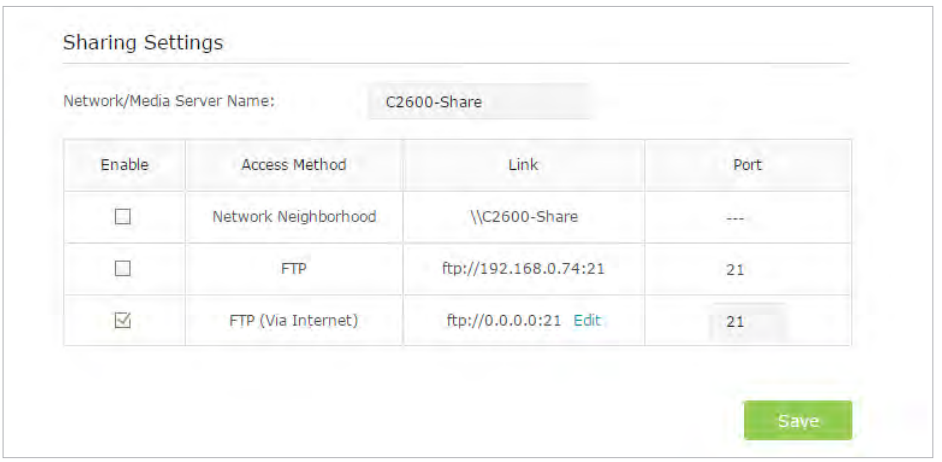
- If Share All is disabled, enable Authentication for specific folders.



Note:
Due to Windows credential mechanism, you might be unable to access the USB disk after changing Authentication settings. Please log out from Windows and try to access again.

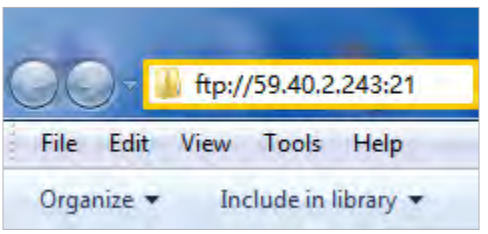
3. Enable the FTP (via Internet)

Select the check box to enable FTP(via Internet), then click Save.



4. Access Your USB Disk via Internet

Now different clients with Internet connection can access the USB disk:

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

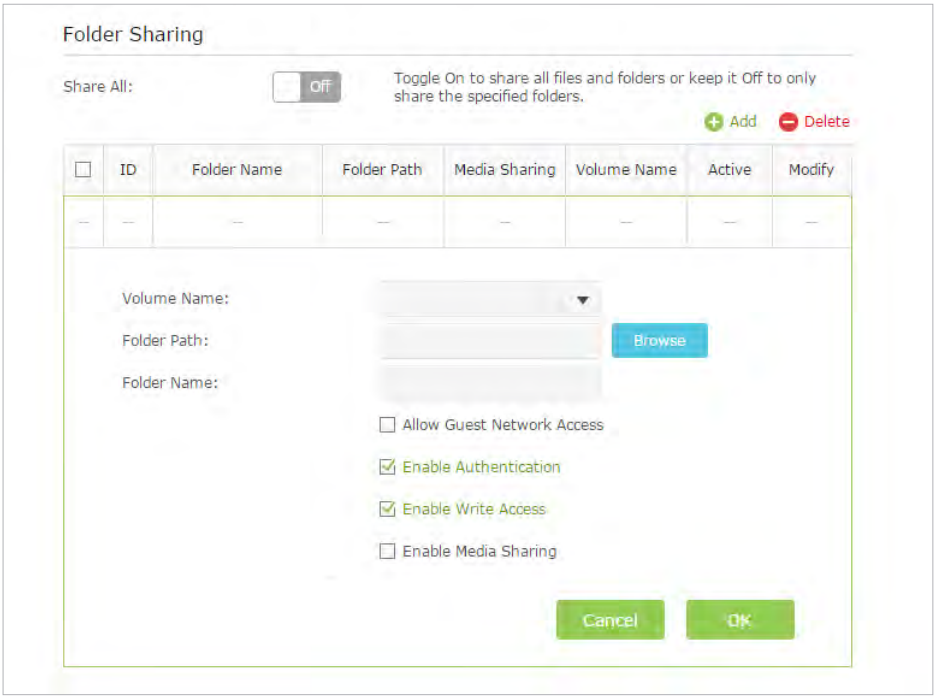
Tips:
Click *Set Up a Dynamic DNS Service Account* to learn how to set up a domain name for you router.

6. 2. 2. Customize Your Settings

➢ **To Only Share Specific Content**

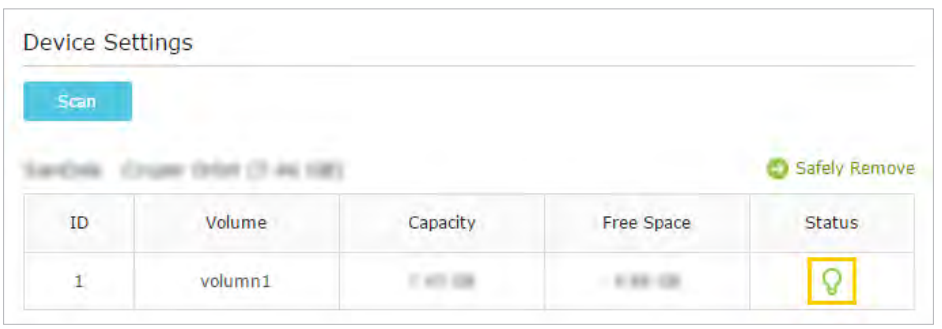
By default, Share All is enabled so all content on the USB disk is shared. If you want to only share specific folders, follow the steps below:

1. Visit *http://tplinkwifi.net*, then log in with the username and password you set for the router.
2. Select Basic > USB Settings > Sharing Access. Focus on the Folder Sharing section. Click the button to disable Share All, then click Add to add a new sharing folder.



3. Select the Volume Name and Folder Path, then specify the Folder Name as you like.
4. Tick Enable Authentication. If you allow network clients to modify this folder, tick Enable Write Access.
5. Click OK.

Tips:
The router can share 32 volumes at most. You can click on the page to detach the corresponding volume you do not need to share.



6. 3. Media Sharing

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

6. 3. 1. Access the USB Disk

1. Connect Your USB Disk

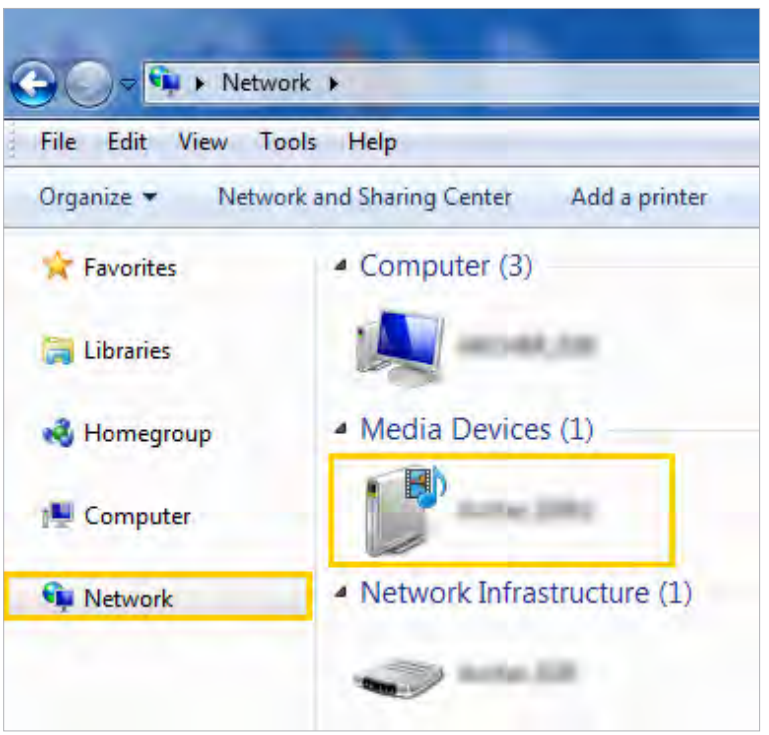
Insert your USB storage device into the router's USB port directly or using a USB cable. Wait several seconds until the USB LED becomes solid on.

Tips:

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

2. Access the Media Files on Your USB Disk

Now the DLNA-supported devices (such as your computer and pad) connected to the router can detect and play the media files on the USB disks.

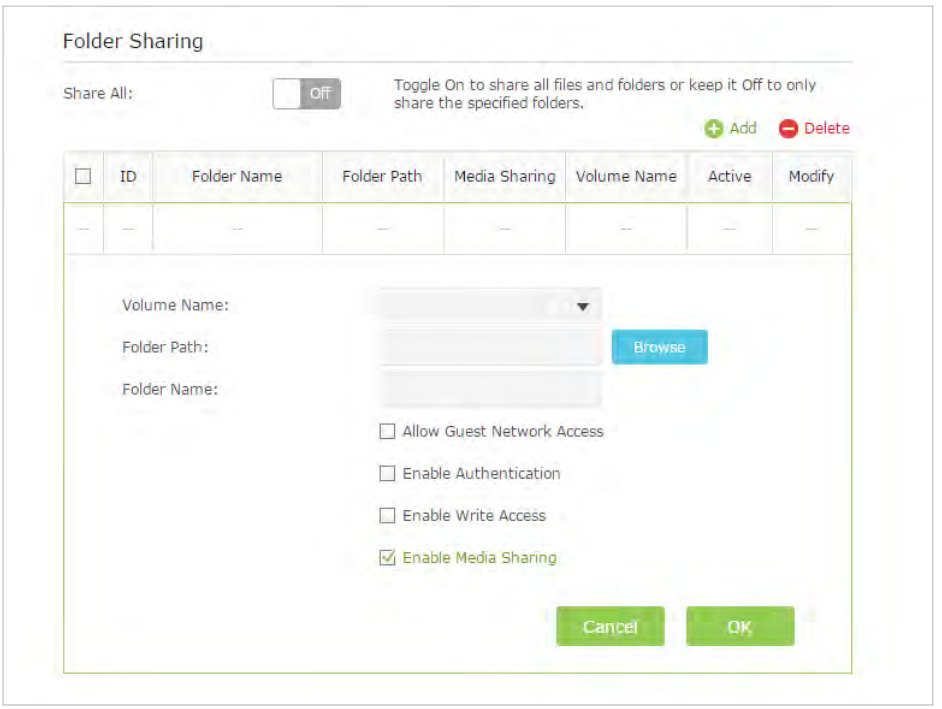
Windows computer	• Go to Computer > Network, then click the Media Server Name (*Model number-share* by default) in the Media Devices section. Note: Here we take Windows 7 as an example. 
Pad	• Use a third-party DLNA-supported player.

6. 3. 2. Customize Your Settings

➢ To Only Share Specific Content

By default, Share All is enabled so all content on the USB disk is shared. If you want to only share specific folders, follow the steps below:

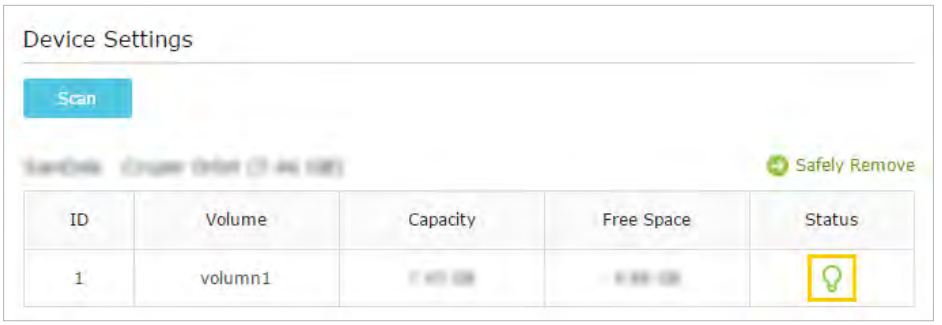
1. Visit *http://tplinkwifi.net*, then log in with the username and password you set for the router.
2. Select Basic > USB Settings > Sharing Access.
3. Focus on the section of Folder Sharing. Click the button to disable Share All, then click Add to add a new sharing folder.



4. Select the Volume Name and Folder Path, then enter a Folder Name as you like.
5. Tick Enable Media Sharing and click OK.

Tips:

The router can share 32 volumes at most. You can click on the page to detach the corresponding volume you do not need to share.



6. 4. Printer Sharing

The Printer Sharing feature helps you share a printer with different computers connected to the router.

Note:
Printers unlisted on this page may be incompatible with the router:
http://www.tp-link.com/common/compatible/print-server/.

1. **Install the Driver of the Printer**

   Make sure you have installed the driver of the printer on each computer that needs printer service.

   If you do not have the driver, contact the printer manufacturer.

2. **Connect the Printer**

   Cable a printer to the USB port with the USB cable. Wait several seconds until the USB LED becomes solid on.

3. **Install the TP-LINK USB Printer Controller Utility**

   TP-LINK USB Printer Controller Utility helps you access the shared printer. Download and Install the utility on each computer that needs printer service.

   1) Visit *http://www.tp-link.com/app/usb/*.

   2) Click PC Utility (for Windows users) or Mac Utility to download the installation file and uncompress it.

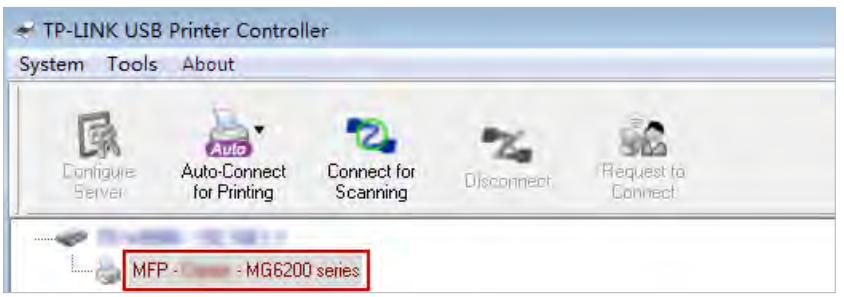
3) Open the uncompressed folder, then click TP-LINK USB Printer Controller Setup (for Windows users) or TP-Link UDS Printer Controller Installer (for Mac users) to install the utility.

4. Access the Printer

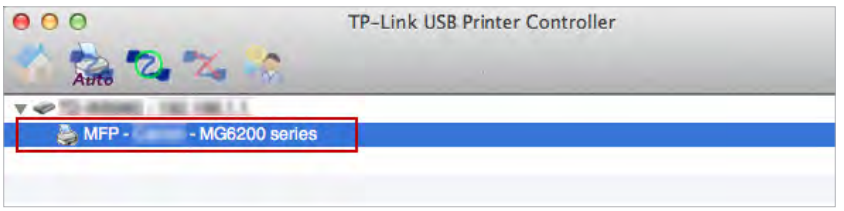
You should set the shared printer as Auto-Connect Printer on every computer that needs printer service.

1) Double-click the icon on your desktop to launch the USB Printer Controller.

2) Highlight the printer you share.

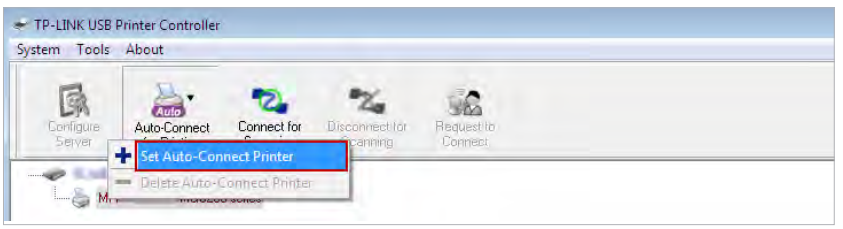


Windows

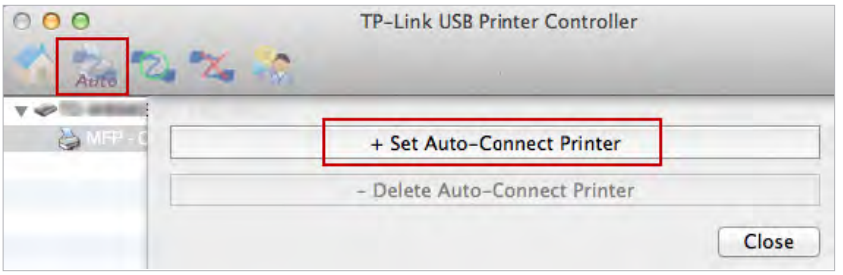


Mac

3) Click the Auto-Connect for printing tab to pull down a list, then select Set Auto-Connect Printer.

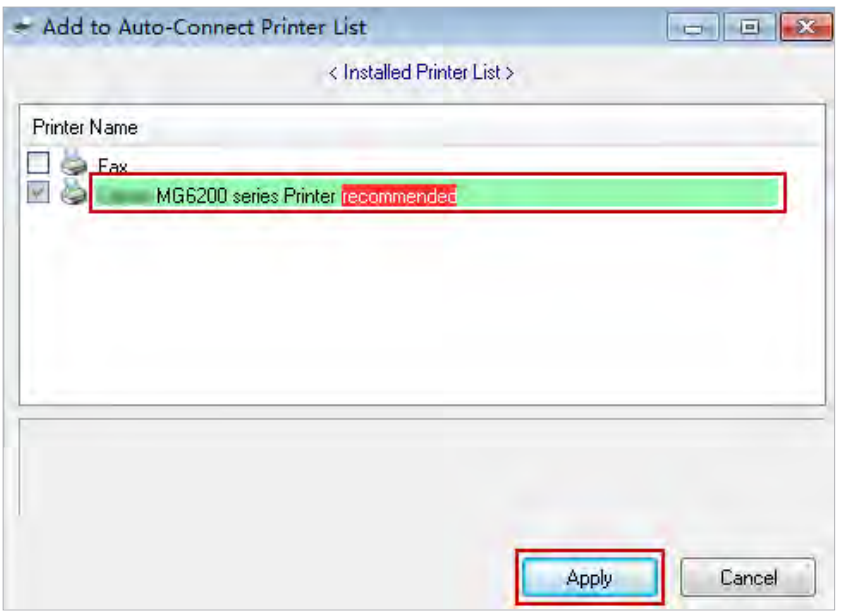


Windows

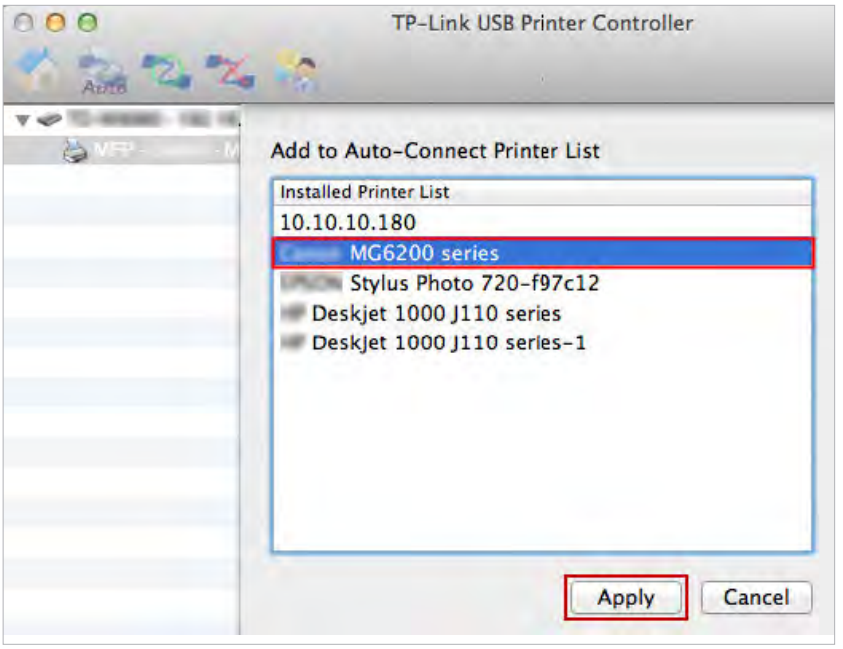


Mac

4) Select the printer you share, then click Apply.

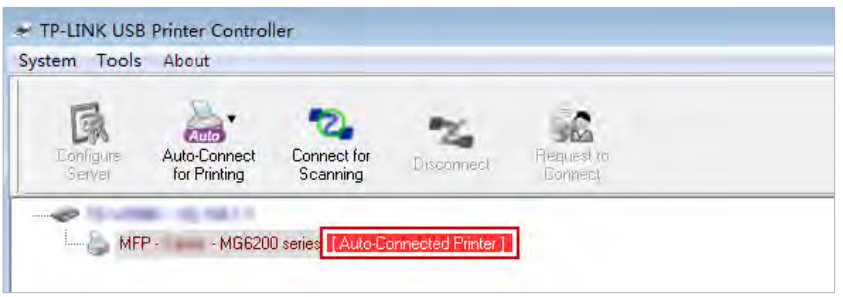


Windows



Mac

5) You will see the printer marked as Auto-Connect Printer. Now you can print with this printer.



Windows

Mac

Tips:

The Print Server also allows different clients to share the scan feature of MFPs (Multi-Function Printers). To scan with TP-LINK USB Printer Controller, right-click the printer and select Network Scanner. Then, a scanning window will pop up. Finish the scanning process by following on-screen instructions.

Chapter 7

Parental Controls

This function allows you to block inappropriate, explicit and malicious websites, and controls access to specified websites at specified time.

I want to:

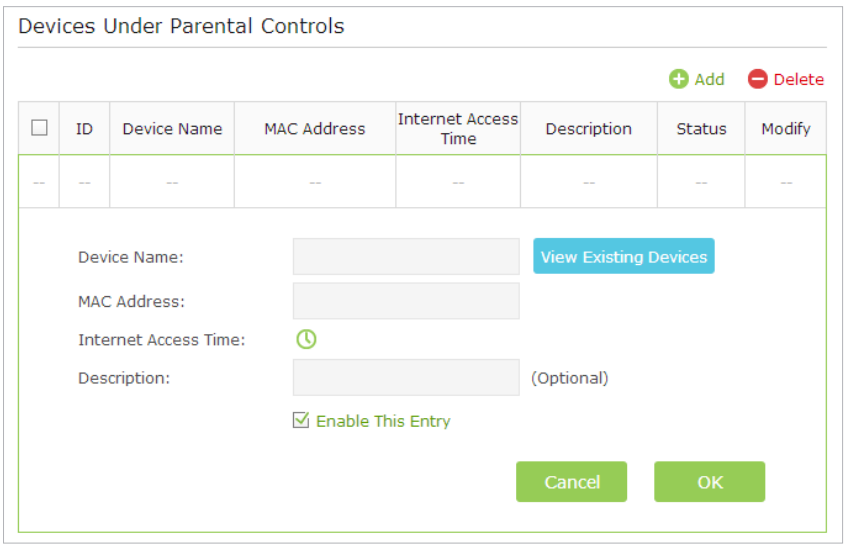
Control the times of day my children or other home network users are allowed to access the Internet and even types of websites they can visit.

For example, I want to allow my children's devices (e.g. a computer or a tablet) to access only *www.tp-link.com* and *Wikipedia.org* from 18:00 (6PM) to 22:00 (10PM) at the weekend and not other times.

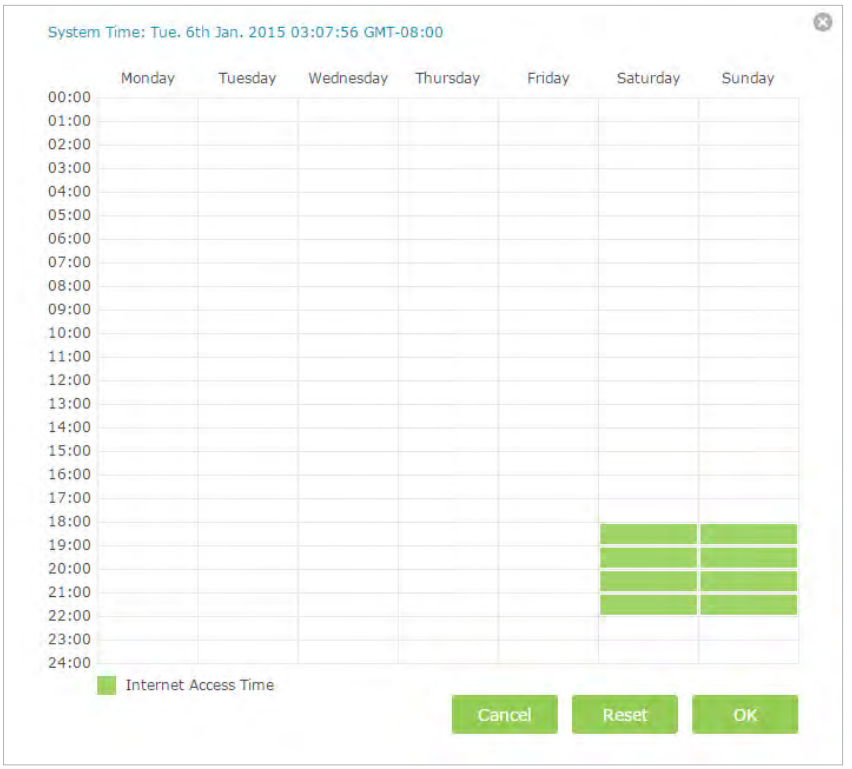
How can I do that?

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

3. Click Add. And then Click View Existing Devices, and select the access device. Or, input the Device Name and MAC Address manually.

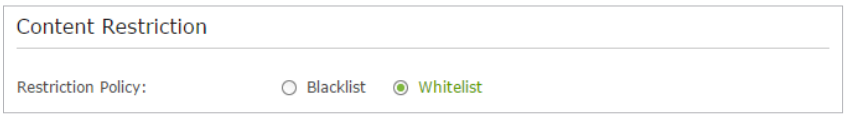


4. Click the icon to set the Internet Access Time. Drag the cursor over the appropriate cell(s) and click OK.



5. Enter a Description for the entry. Keep the Enable This Entry checkbox selected. Click OK.

6. Select Whitelist as the restriction policy.



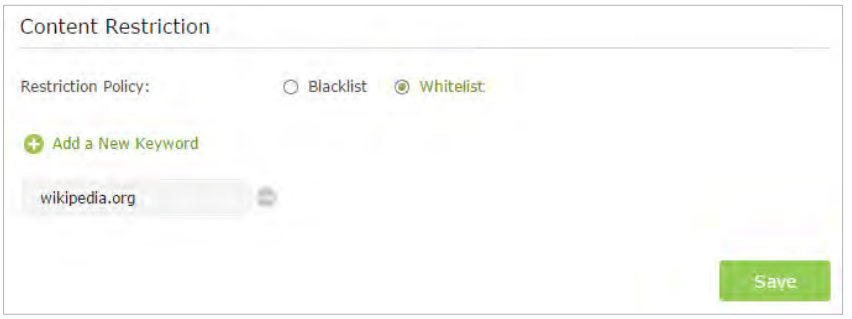
Tips:

1. With Blacklist selected, the controlled devices cannot access any websites containing the specified keywords during the Internet Access Time period.
2. With Whitelist selected, the controlled devices can only access websites containing the specified keywords during the Internet Access Time period.

7. Click Add a New Keyword. Enter a keyword or a website and click Save.

   You can add up to 32 keywords for either Blacklist or Whitelist. Below are some sample entries to allow access.

   - Enter a web address (e.g. wikipedia.org) or a web address keyword (e.g. wikipedia) to only allow or block access to the websites containing that keyword.
   - Specify the domain suffix (eg. .edu or .org) to allow access only to the websites with that suffix.
   - If you wish to block all Internet browsing access, do not add any keyword to the Whitelist.



Done!

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

Chapter 8

QoS

This chapter introduces how to create a QoS (Quality of Service) rule to specify prioritization of traffic and minimize the impact caused when the connection is under heavy load.

This chapter contains the following sections:

- *Prioritize Internet Traffic with QoS*
- *Update the Database*

8. 1. Prioritize Internet Traffic with QoS

QoS (Quality of Service) is designed to ensure the efficient operation of the network when come across network overload or congestion.

I want to:

Specify priority levels for some devices or applications.

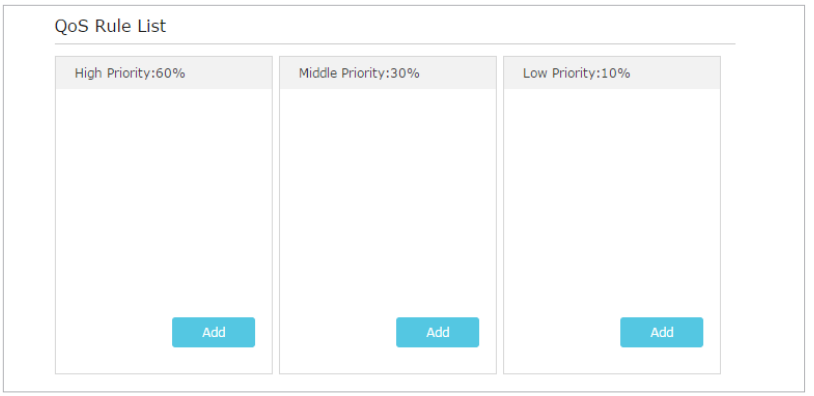
For example, I have several devices that are connected to my wireless network. I would like to :

- Set my ftp server with faster surfing speed;
- Set my phone an intermediate speed on the Internet;
- Set the WIFI-GUEST with slower surfing speed.

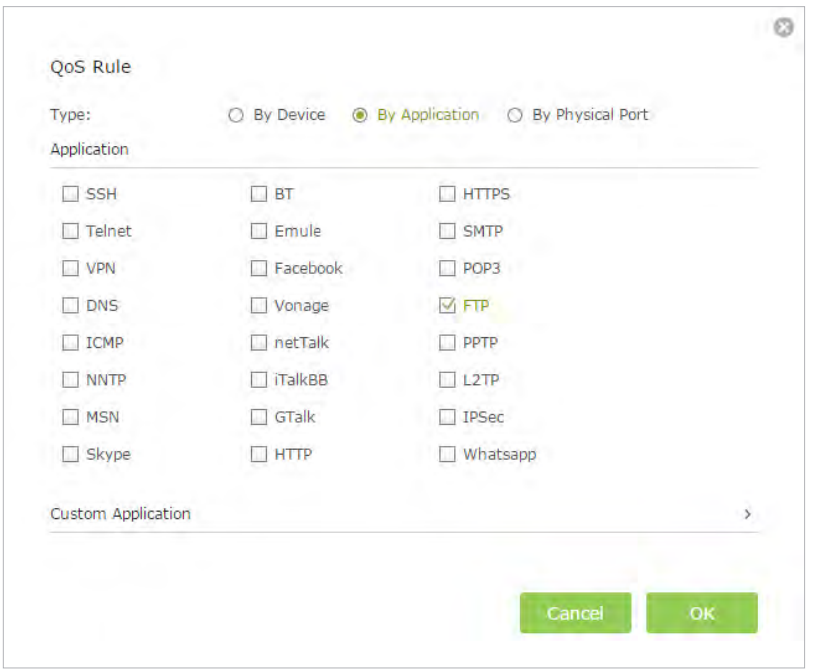
How can I do that?

1. Enable QoS and set bandwidth allocation.
   1) Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
   2) Go to Advanced > QoS > Settings.
   3) Select Enable QoS.
   4) Input the maximum upload and download bandwidth provided by your service provider. 1Mbps is equal to 1000Kbps.
   5) Click Advanced and drag the scroll bar to set the bandwidth priority percentage.
   6) Click Save.

2. Add a high priority QoS rule for the ftp server.
   1) Click Add in the High Priority section.

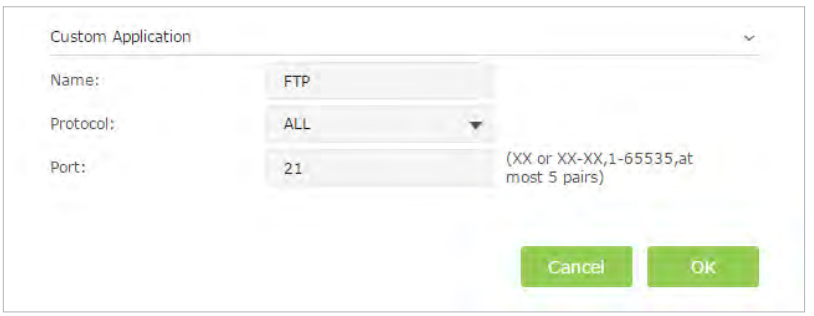


2) Select By Application and select ftp in the list. Then click OK.



Tips:

If your application isn't listed on the screen, click Custom Application to add application manually.

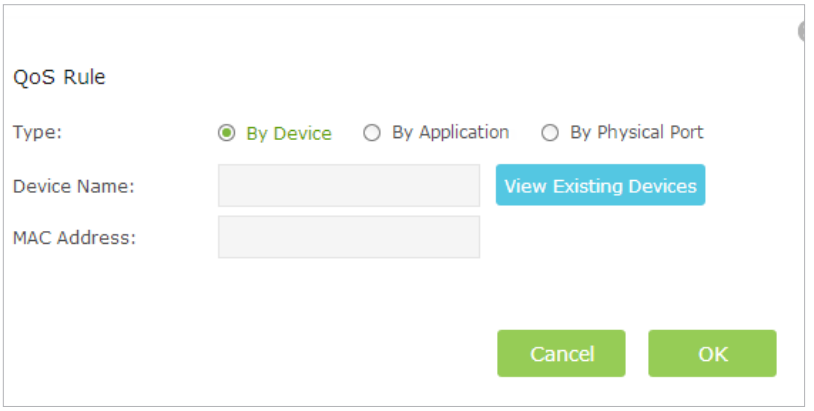


- Name: Enter a name for your applicaiton.
- Protocol: Select the protocol for your application, if your are not sure, select ALL.

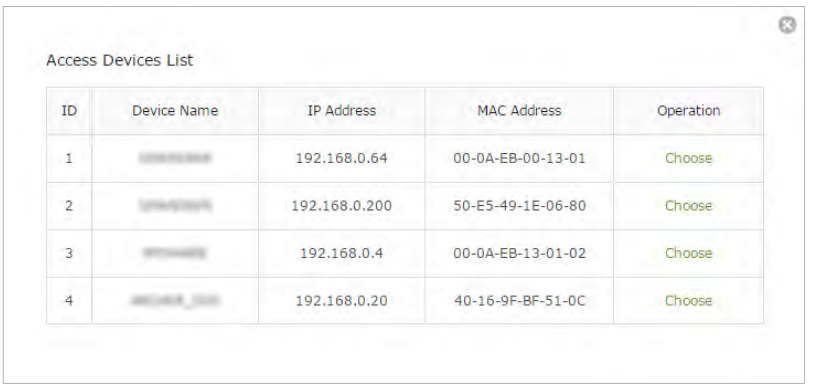
- Port: Enter the destination port for your application, usually each application has a fixed port, please ensure you enter the correct the port. In this case, the destination port for ftp is 21.

3. Add a middle priority QoS rule for the phone.

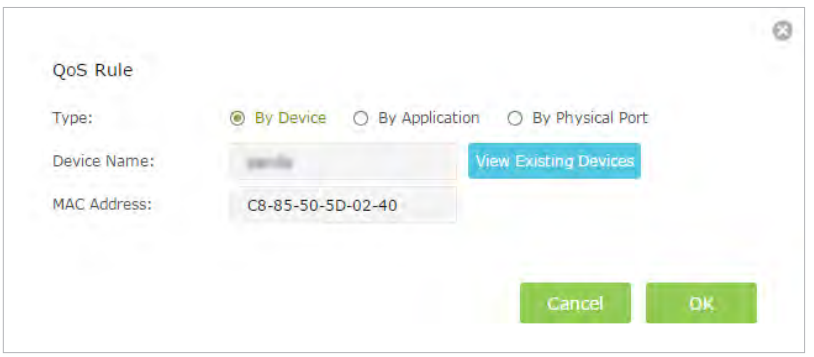
1) Select By Device and then click View Existing Devices.



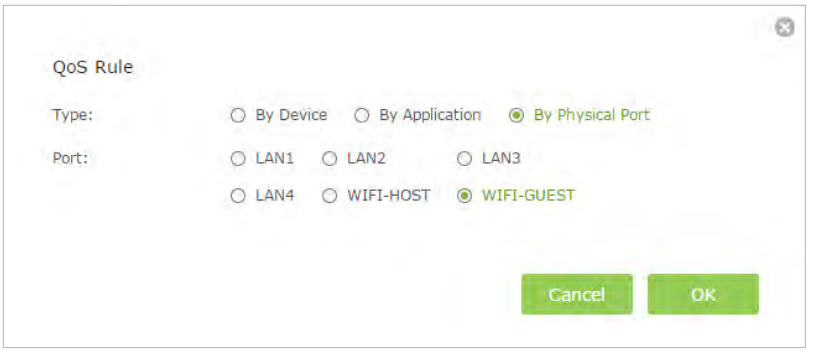
2) Choose the respective device from the list.



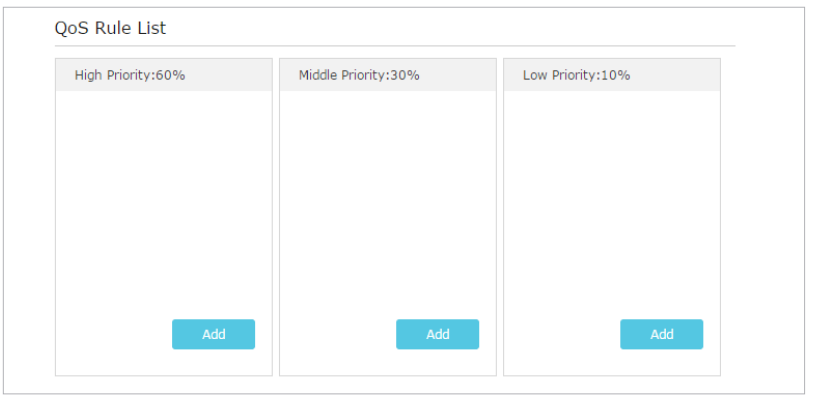
3) Click OK.



4. Add a low priority rule for the WIFI-GUEST: Select By Physical Port and then select WIFI-HOST. Click OK.



5. The QoS rules list will display in the table.



Tips:

If you want to delete a QoS rule, click to remove the responding rule from the list.

Done!

Now QoS is implemented to Prioritize Internet Traffic.

Chapter *9*

Network Security

This chapter guides you on how to protect your home network from cyber attacks and unauthorized users by implementing these three network security functions. You can protect your home network against DoS (Denial of Service) attacks from flooding your network with server requests using DoS Protection, block or allow specific client devices to access your network using Access Control, or you can prevent ARP spoofing and ARP attacks using IP & MAC Binding.

This chapter contains the following sections:

- *Protect the Network from Cyber Attacks*
- *Access Control*
- *IP & MAC Binding*

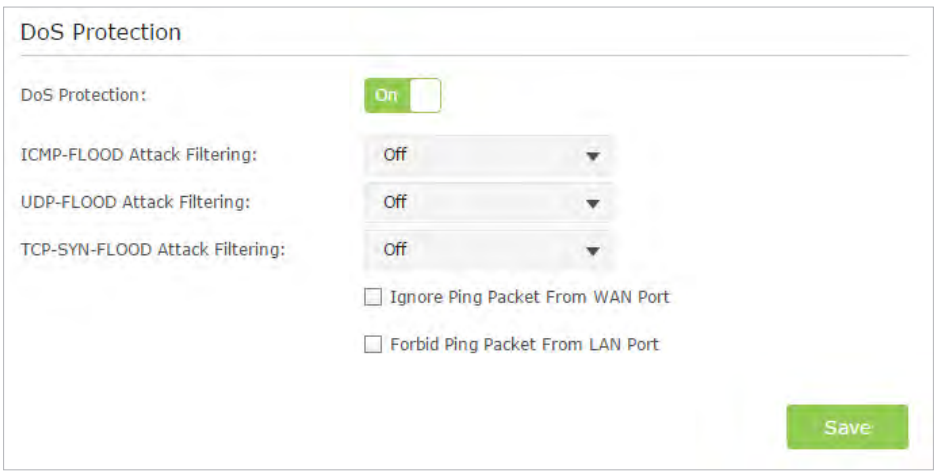
9. 1. Protect the Network from Cyber Attacks

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

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

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

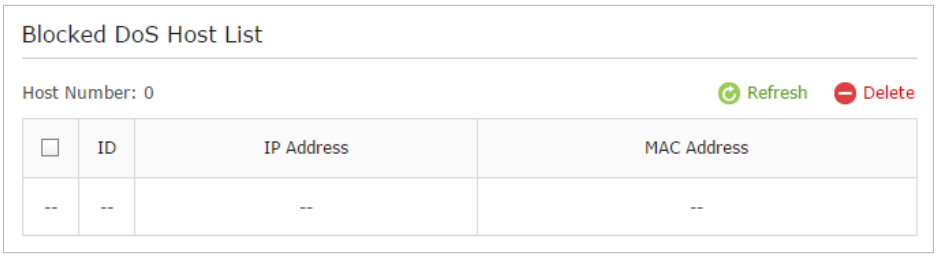
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > Security > Settings.



3. Enable DoS Protection.
4. Set the level (Off, Low, Middle or High) of protection for ICMP-FLOOD Attack Filtering, UDP-FlOOD Attack Filtering and TCP-SYN-FLOOD Attack Filtering.
   - ICMP-FLOOD Attack Filtering - Enable to prevent the ICM (PInternet Control Message Protocol) flood attack.
   - UDP-FlOOD Attack Filtering - Enable to prevent the UDP (User Datagram Protocol) flood attack.
   - TCP-SYN-FLOOD Attack Filtering - Enable to prevent the TCP-SYN (Transmission Control Protocol-Synchronize) flood attack.

Tips:

The level of protection is based on the number of traffic packets. The protection will be triggered immediately when the number of packets exceeds the preset threshold value (the value can be set on Advanced > System Tools > System Parameters > DoS Protection Level Settings), and the vicious host will be displayed in the Blocked DoS Host List.



5. If you want to ignore the ping packets from the WAN port, select Ignore Ping Packet From WAN Port; if you want to ignore the ping packets form the LAN port, select Ignore Ping Packet From LAN Port.
6. Click Save.

9. 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).

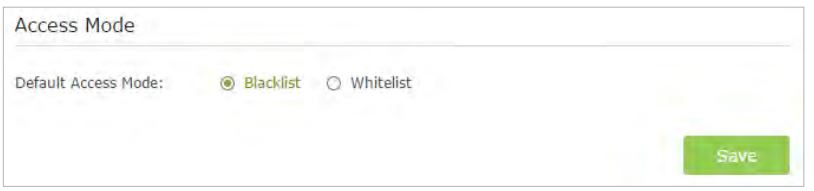
How can I do that?

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > Security > Access Control.
3. Enable Access Control.

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

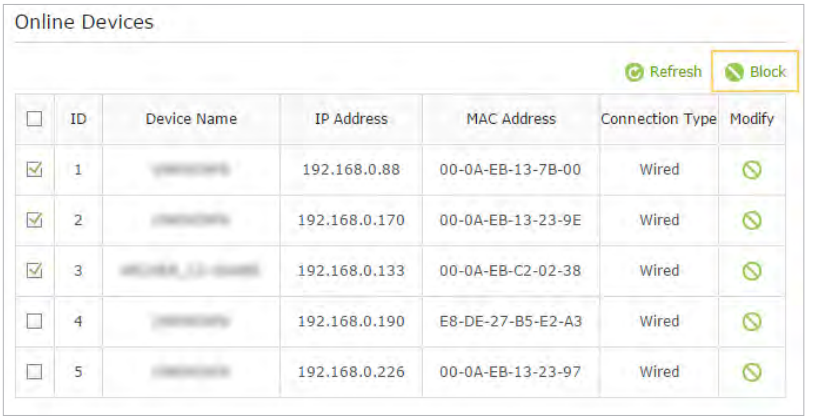
   To block specific device(s)

   1) Select Blacklist and click Save.



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

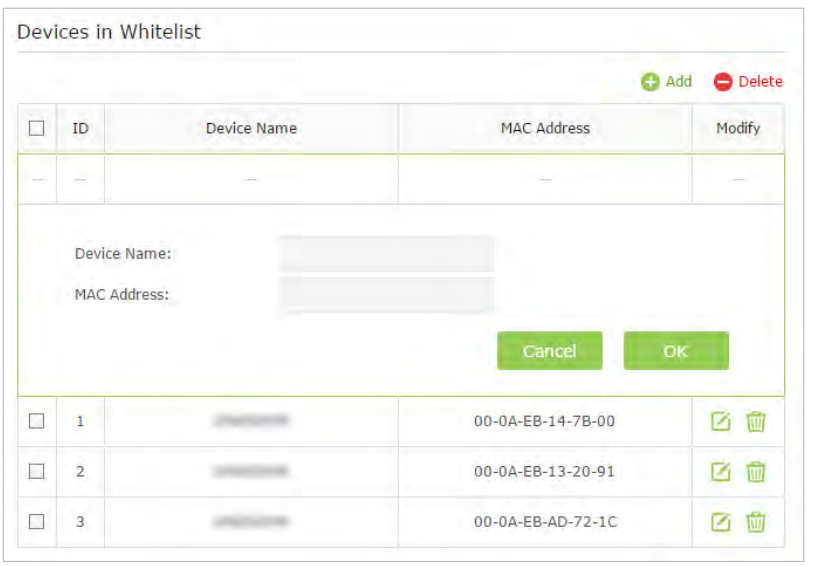
3) Click Block above the Online Devices table. The selected devices will be added to Devices in Blacklist automatically.



To allow specific device(s)

1) Select Whitelist and click Save.

2) Click Add in the Devices in Whitelist section. Enter the Device Name and MAC Address (You can copy and paste the information from the Online Devices list if the device is connected to your network).



3) Click OK.

Done!

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

9. 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 an 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 username and password you set for the router.
2. Go to Advanced > Security > IP & MAC Binding.
3. Enable ARP Binding.

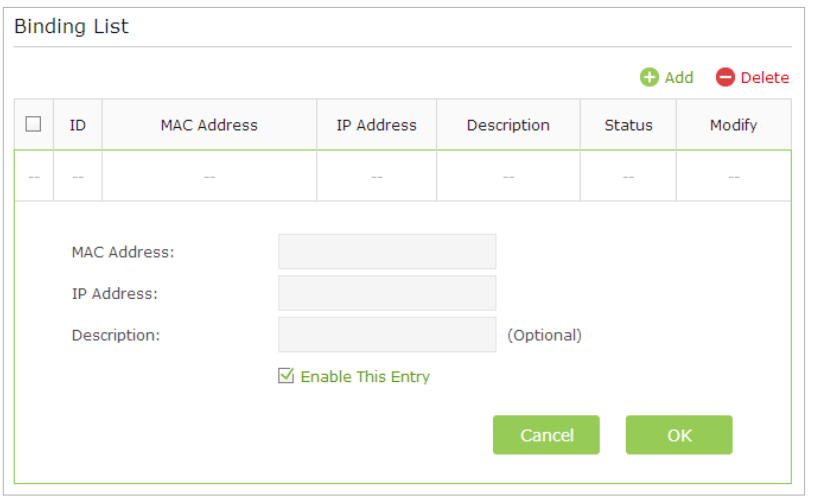
4. Bind your device(s) according to your need.

   To bind the connected device(s):

   Click to add the corresponding device to the Binding List.

   To bind the unconnected device

   1) Click Add in Binding List section.



   2) Enter the MAC address and IP address that you want to bind. Enter a Description for this binding entry.

   3) Tick the Enable This Entry check box and click OK.

Done! Now you don't need to worry about ARP spoofing and ARP attacks!

Chapter *10*

NAT Forwarding

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

With forwarding feature the router can penetrate the isolation of NAT and allows the external hosts on the Internet to initiatively communicate with the devices in the local network, thus to realize some special functions.

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

This chapter contains the following sections:

- *Share Local Resources on the Internet by Virtual Servers*
- *Open Ports Dynamically by Port Triggering*
- *Make Applications Free from Port Restriction by DMZ*
- *Make Xbox Online Games Run Smoothly by UPnP*

10. 1. Share Local Resources on the Internet by Virtual Servers

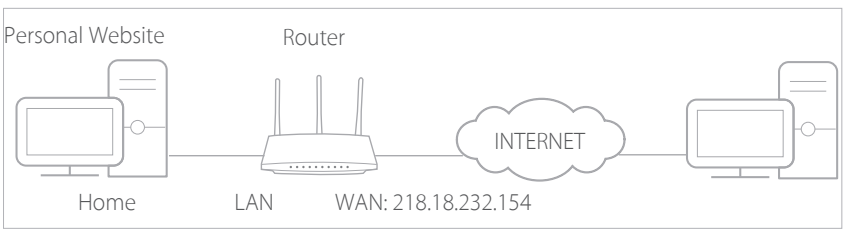
When you build up a server in the local network and want to share it on the Internet, Virtual Servers can realize the service and provide it to the Internet users. At the same time Virtual Servers can keep the local network safe as other services are still invisible from the Internet.

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

I want to:

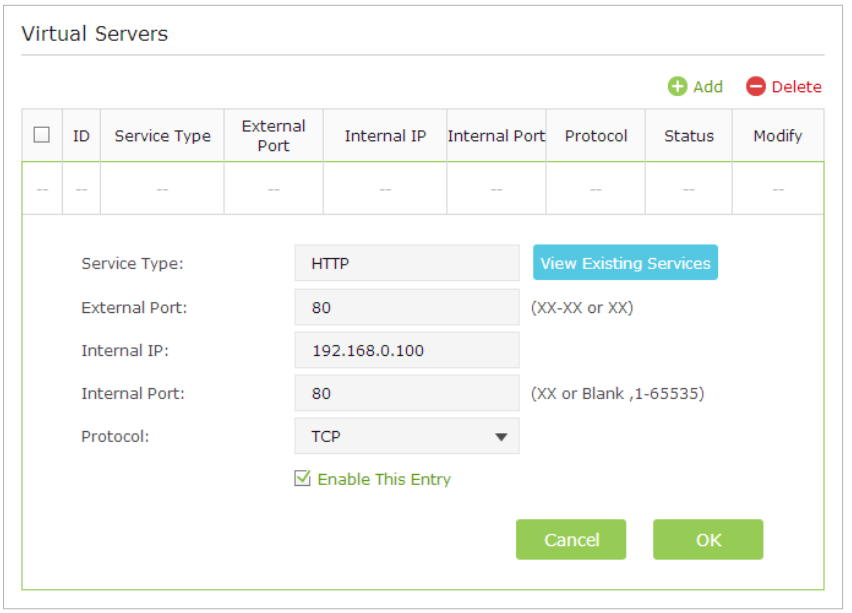
Share my personal website I've built in local network with my friends through the Internet.

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



How can I do that?

1. Assign a static IP address to your PC, for example 192.168.0.100.
2. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
3. Go to Advanced > NAT Forwarding > Virtual Servers.
4. Click Add. Click View Existing Services and select HTTP. The External Port, Internal Port and Protocol will be automatically filled with contents. Enter the PC's IP address 192.168.0.100 into the Internal IP field.
5. Click OK.



Tips:

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

Tips:

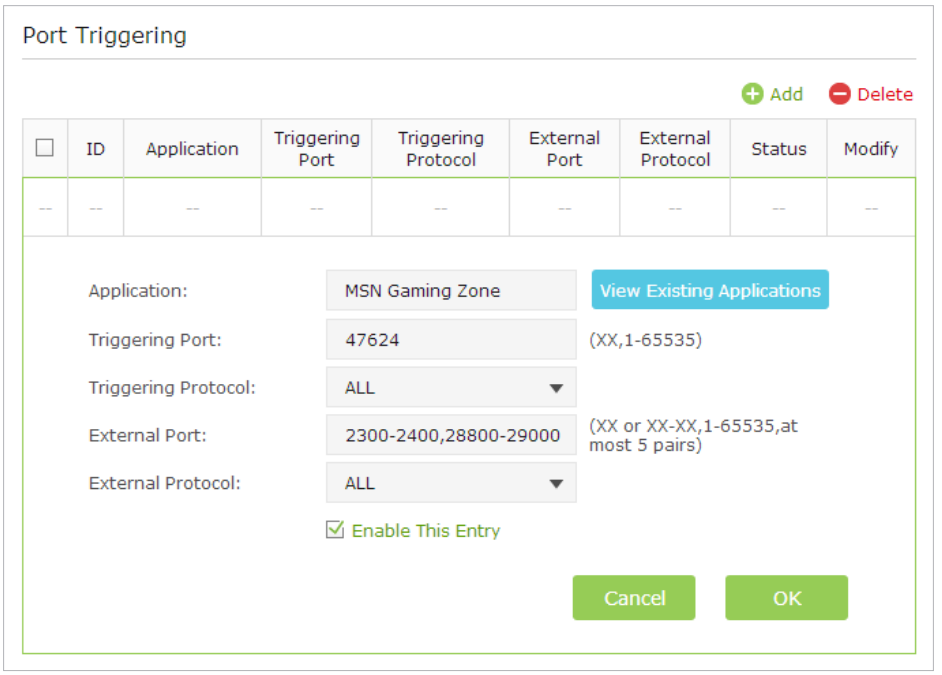
1. WAN IP should be a public IP address. For the WAN IP is assigned dynamically by ISP, it is recommended to apply and register a domain name for the WAN referring to *Set Up a Dynamic DNS Service Account*. Then users on the Internet can use http:// domain name to visit the website.
2. If you have changed the default External Port, you should use http:// WAN IP: External Port or http:// domain name: External Port to visit the website.

10. 2. Open Ports Dynamically by Port Triggering

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

Follow the steps below to configure the Port Triggering rules:

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > NAT Forwarding > Port Triggering and click Add.
3. Click View Existing Applications, and select the desired application. The External Port, Internal Port and Protocol will be automatically filled with contents. The following picture takes application MSN Gaming Zone as an example.
4. Click OK.



Tips:

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

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

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

Note:
When DMZ is enabled, the DMZ host is totally exposed to the Internet, which may bring some potential safety hazard. If DMZ is not in use, please disable it in time.

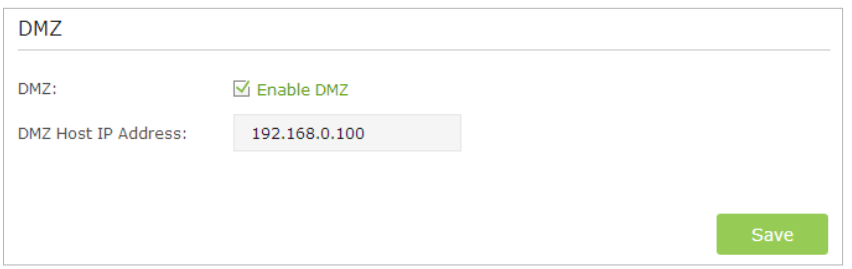
I want to:

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

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

How can I do that?

1. Assign a static IP address to your PC, for example 192.168.0.100.
2. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
3. Go to Advanced > NAT Forwarding > DMZ and select Enable DMZ.
4. Enter the IP address 192.168.0.100 in the DMZ Host IP Address filed.



5. Click Save.

Done!

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

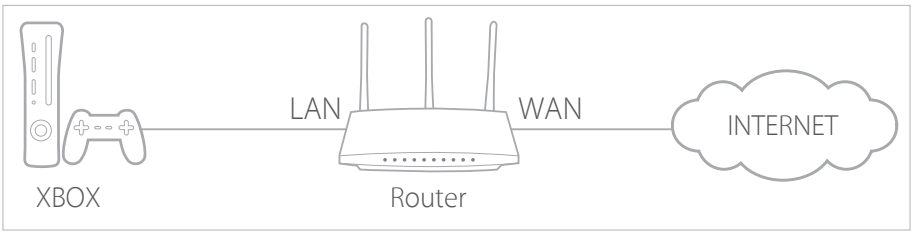
10. 4. Make Xbox Online Games Run Smoothly by UPnP

UPnP (Universal Plug and Play) protocol allows the applications or host devices to automatically find the front-end NAT device and send request to it to open the corresponding ports. With UPnP enabled, the applications or host devices on both sides of NAT device can freely communicate with each other realizing the seamless connection of the network. You may need to enable the UPnP if you want to use applications for multiplayer gaming, peer-to-peer connections, real-time communication (such as VoIP or telephone conference) or remote assistance, etc.

Tips:

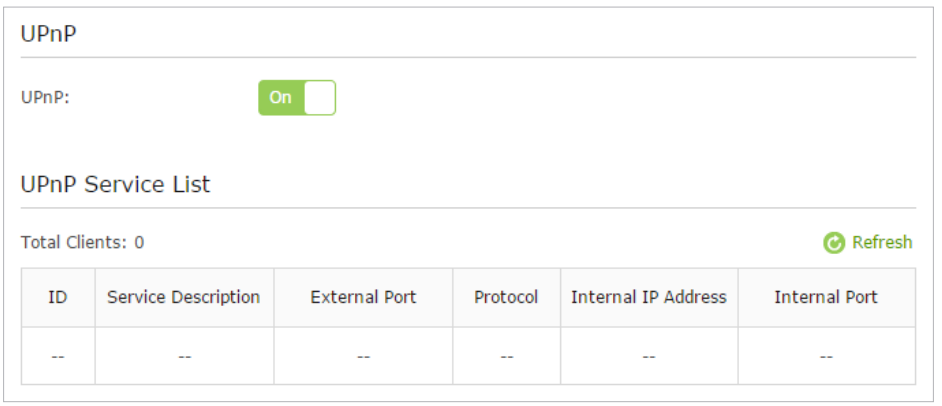
1. UPnP is enabled by default in this router.
2. Only the application supporting UPnP protocol can use this feature.
3. UPnP feature needs the support of operating system (e.g. Windows Vista/ Windows 7/ Windows 8, etc. Some of operating system need to install the UPnP components).

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



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

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



Chapter *11*

VPN Server

The VPN (Virtual Private Networking) Server allows you to access your home network in a secured way through Internet when you are out of home. The router offers two ways to setup VPN connection: OpenVPN and PPTP (Point to Point Tunneling Protocol) VPN.

OpenVPN is somewhat complex but with greater security and more stable. It is suitable for restricted environment, such as campus network and company intranet.

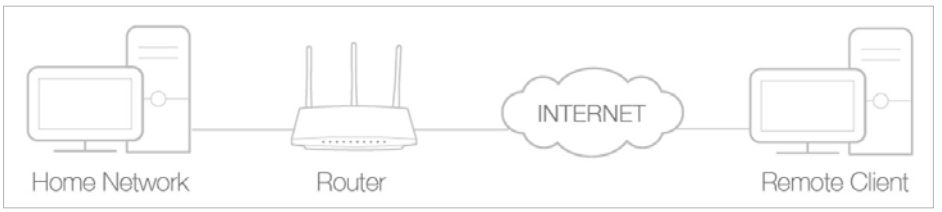
PPTP VPN is more easily used and its speed is faster, it's compatible with most operating systems and also supports mobile devices. Its security is poor and your packets may be cracked easily, and PPTP VPN connection may be prevented by some ISP.

This chapter contains the following sections, please choose the appropriate VPN server connection type according to your needs.

- *Use OpenVPN to Access Your Home Network*
- *Use PPTP VPN to Access Your Home Network*

11. 1. Use OpenVPN to Access Your Home Network

In the OpenVPN connection, the home network can act as a server, and the remote client can access the server through the router which acts as an OpenVPN Server gateway. To use the VPN feature, you should enable OpenVPN Server on your router, and install and run VPN client software on the remote client. Please follow the steps below to set up an OpenVPN connection.



Step1. Set up OpenVPN Server on Your Router

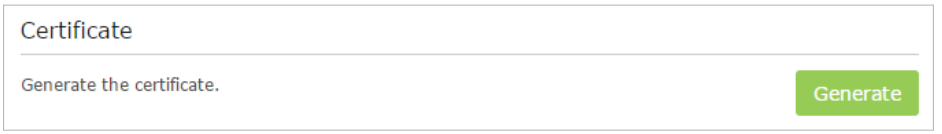
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > VPN Server > OpenVPN, and select Enable VPN Server.

Note:

1. Before you enable VPN Server, we recommend you configure Dynamic DNS Service (recommended) or assign a static IP address for router's WAN port and synchronize your System Time with Internet.
2. The first time you configure the OpenVPN Server, you may need to Generate a certificate before you enable the VPN Server.

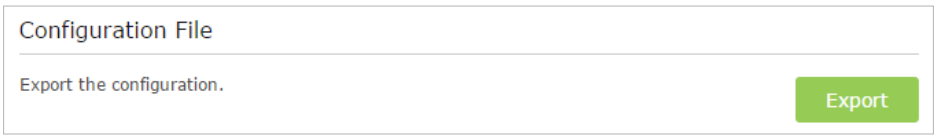
3. Select the Servive Type (communication protocol) for OpenVPN Server: UDP, TCP.
4. Enter a VPN Service Port to which a VPN client connects, and the port number should be between 1024 and 65535.
5. In VPN Subnet/Netmask field, enter the range of IP addresses that can be leased to the client by the OpenVPN server.
6. Select your Client Access type., select Home Network Only if you only want the remote client to access your home network, select Internet and Home Network if the remote client also want to access Internet through VPN Server.

7. Click Save.
8. Click Generate to generate a new certificate.



Note:
If you have already generated one, please skip this step, or click Generate to update the certificate.

9. Click Export to save the OpenVPN configuration file. Remote client will use this configuration file to access your router.



Step 2. Configure OpenVPN Connection on Your Remote Client

1. Visit *http://openvpn.net/index.php/download/community-downloads.html* to download the OpenVPN software, and install it on your client where you want to run the OpenVPN client utility.

Note:
You need to install the OpenVPN client utility on each client that you plan to use for VPN connections to your router. Mobile devices should download third-party app from Google Play or Apple App Store.

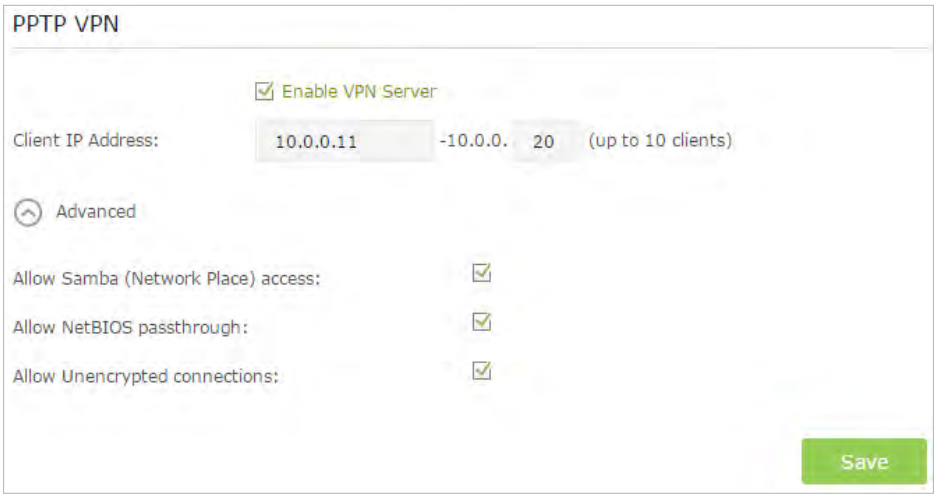
2. After the installation, copy the file exporting from your router to OpenVPN client utility's "config" folder (for Windows): C:\Program Files\OpenVPN\config. The path is depending on where the OpenVPN client utility is installed on.
3. Run the OpenVPN client utility and connect it to OpenVPN Server.

11. 2. Use PPTP VPN to Access Your Home Network

PPTP VPN Server is used to create a VPN connection for remote client. To use the VPN feature, you should enable PPTP VPN Server on your router, and configure the PPTP connection on the remote client. Please follow the steps below to set up a PPTP VPN connection.

Step 1. Set up PPTP VPN Server on Your Router

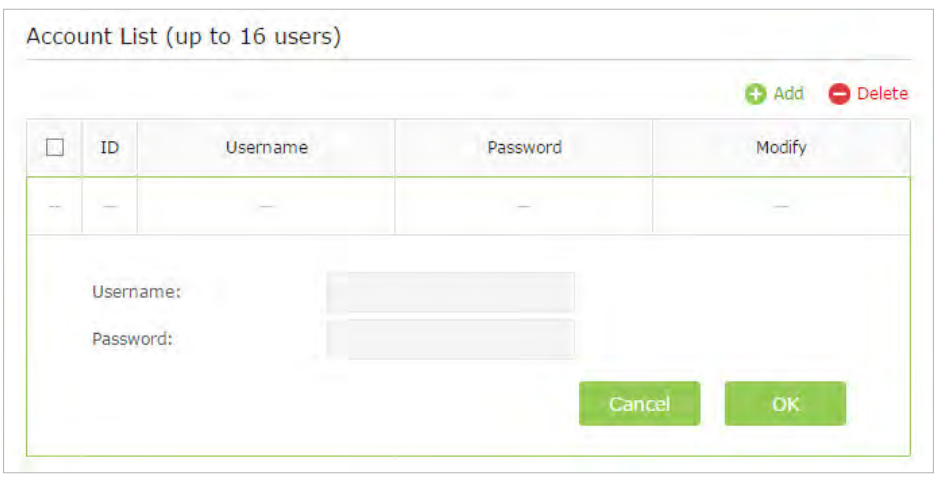
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > VPN Server > PPTP VPN, and select Enable VPN Server.



Note:

Before you enable VPN Server, we recommend you configure Dynamic DNS Service (recommended) or assign a static IP address for router's WAN port and synchronize your System Time with Internet.

3. In the Client IP Address filed, enter the range of IP addresses (up to 10 clients) that can be leased to the client by the PPTP VPN server.
4. Click Advanced to set the PPTP connection permission according to your needs.
   - Select Allow Samba (Network Place) access to allow your VPN client to access your local Samba server.
   - Select Allow NetBIOS passthrough to allow your VPN client to access your Samba server using NetBIOS name.
   - Select Allow Unencrypted connections to allow unencrypted connections to your VPN server.
5. Click Save.
6. Configure the PPTP VPN connection account for the remote client, you can create up to 16 accounts.



1) Click Add.

2) Enter the Username and Password to authenticate clients to the PPTP VPN Server.

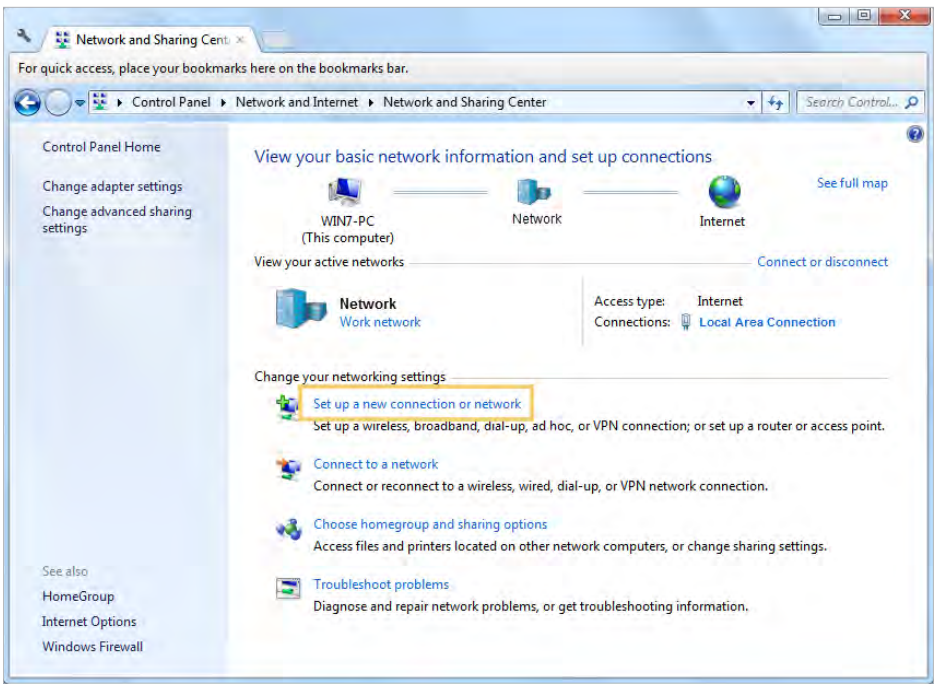
3) Click OK.

Step 2. Configure PPTP VPN Connection on Your Remote Client

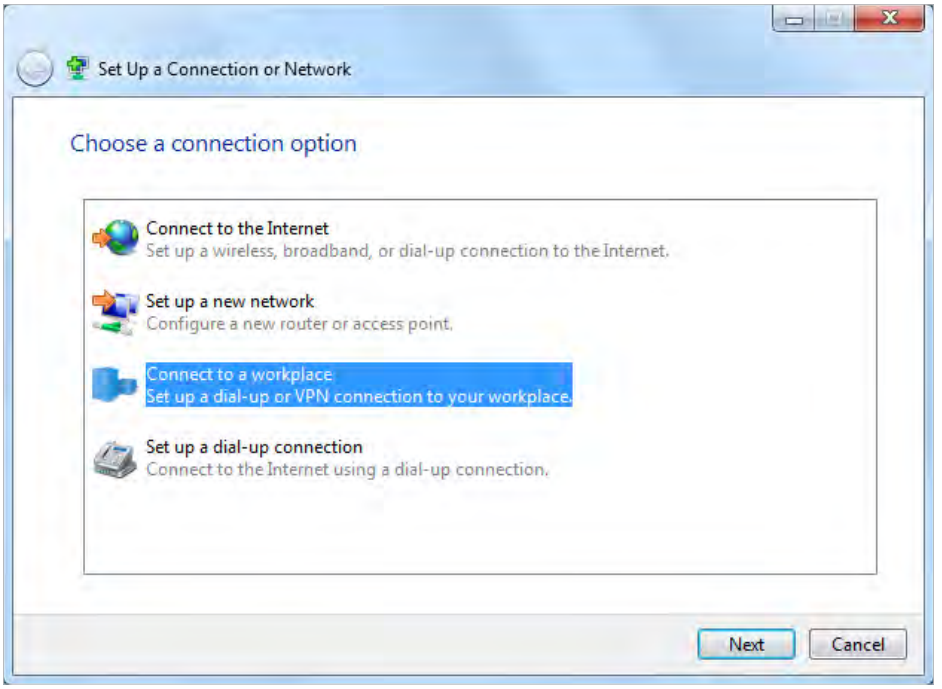
Remote client can use Windows built-in PPTP software or third-party PPTP software to connect to PPTP Server. Here we use Windows built-in PPTP software as an example.

1. Go to Start > Control Panel > Network and Internet > Network and Sharing Center.

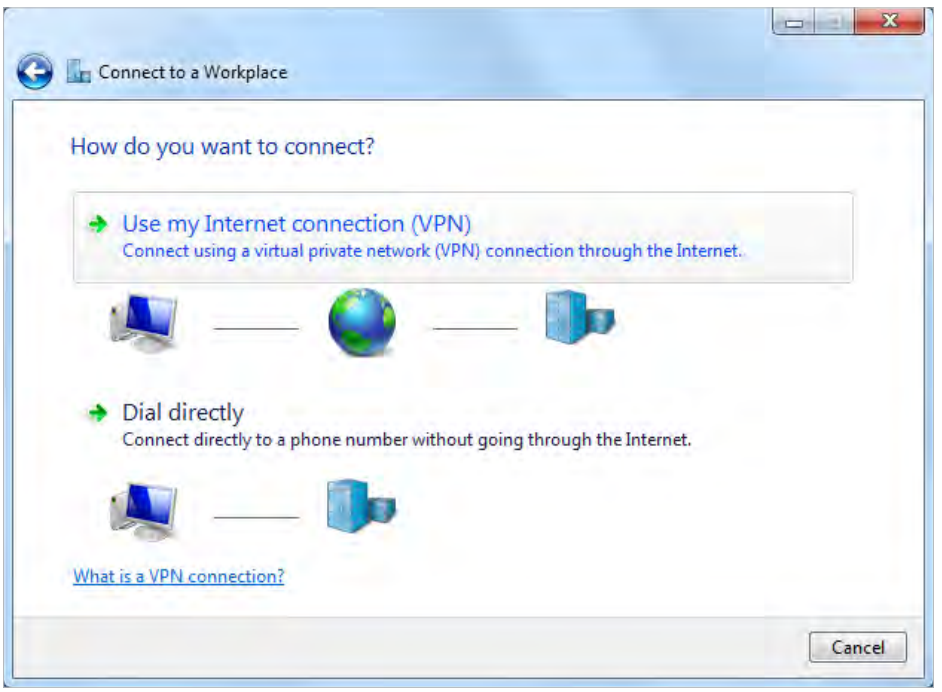
2. Select Set up a new connection or network.



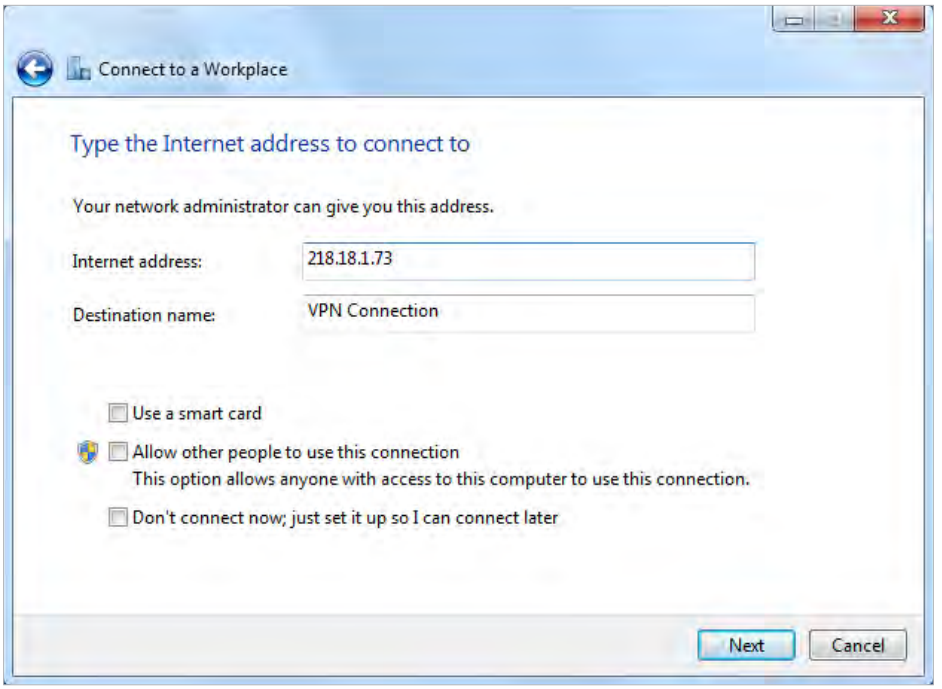
3. Select Connect to a workplace and click Next.



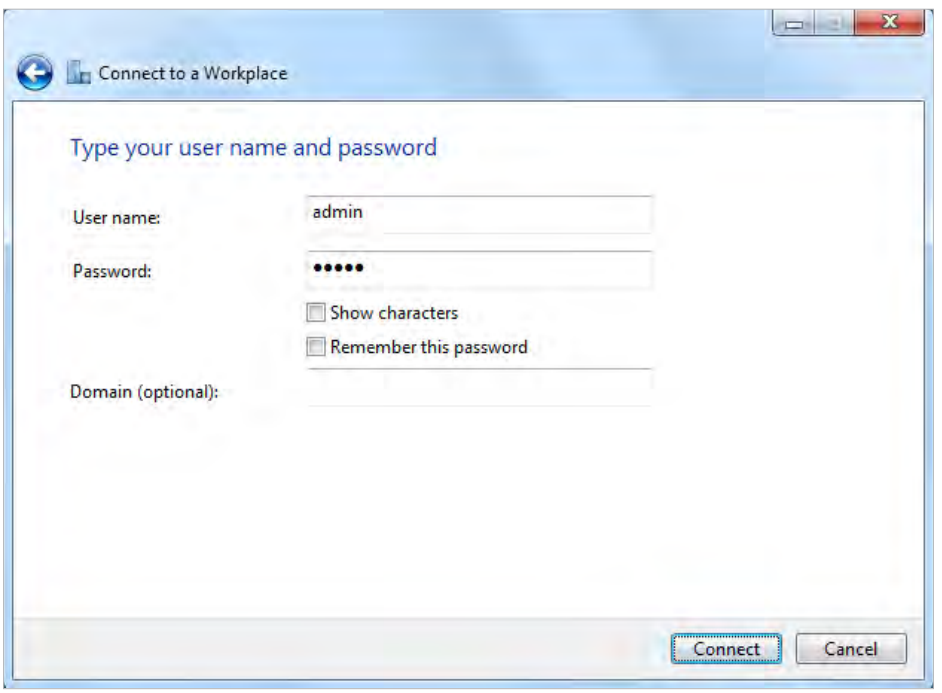
4. Select Use my Internet connection (VPN).



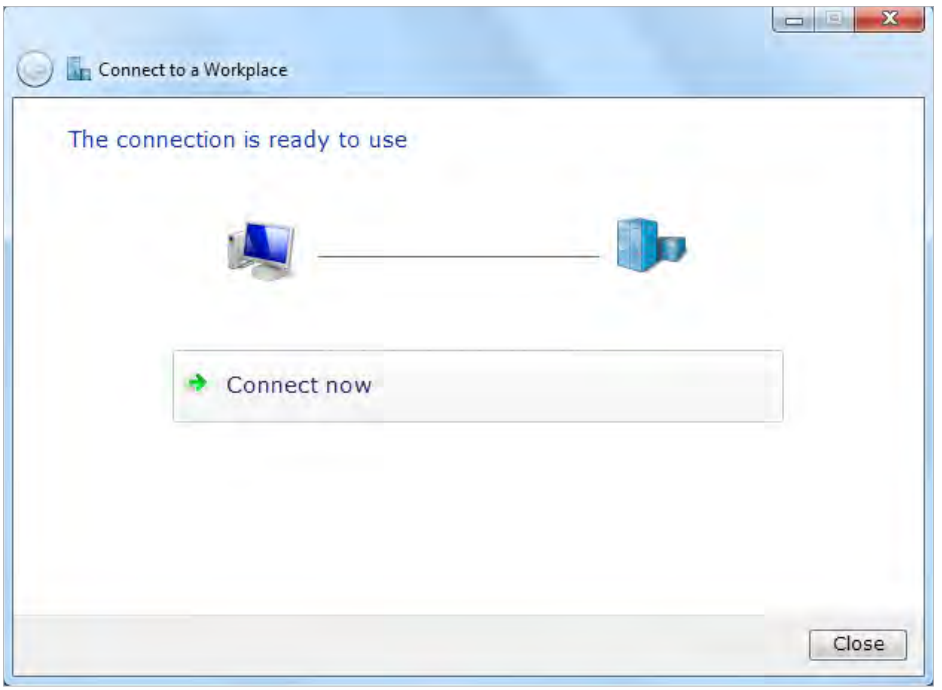
5. Enter the WAN IP address of the router (for example: 218.18.1.73) in the Internet address field. Click Next.



6. Enter the User name and Password, it's the username and password you have set on your router, and click Connect.



7. The PPTP VPN connection is created and ready to use.



Chapter *12*

Customize Your Network Settings

This chapter guides you on how to configure advanced network features.

This chapter contains the following sections:

- *Change the LAN Settings*
- *Configure to Support IPTV Service*
- *Specify DHCP Server Settings*
- *Set Up a Dynamic DNS Service Account*
- *Create Static Routes*
- *Specify Wireless Settings*
- *Use WPS for Wireless Connection*

12. 1. Change the LAN Settings

The router is preset with a default LAN IP 192.168.0.1, which you can use to log in to its web management page. The LAN IP address together with the Subnet Mask also defines the subnet that the connected devices are on. If the IP address conflicts with another device on your local network or your network requires a specific IP subnet, you can change it.

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. Type in a new IP Address appropriate to your needs. And leave the Subnet Mask as the default settings.

4. Click Save.

Note:

If you have set the Virtual Server, DMZ or DHCP address reservation, and the new LAN IP address is not in the same subnet with the old one, then you should reconfigure these features.

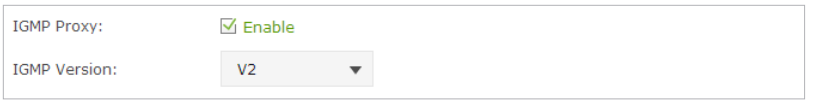
12. 2. Configure to Support IPTV Service

I want to:

Configure IPTV setup to enable Internet/IPTV/Phone service provided by my Internet Service Provider (ISP).

How can I do that?

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > Network > IPTV.
3. **If your ISP provides the networking service based on IGMP technology**, e.g., British Telecom(BT) and Talk Talk in UK:
   1) Tick the IGMP Proxy checkbox and select the IGMP Version, either V2 or V3, as required by your ISP.



2) Click Save.

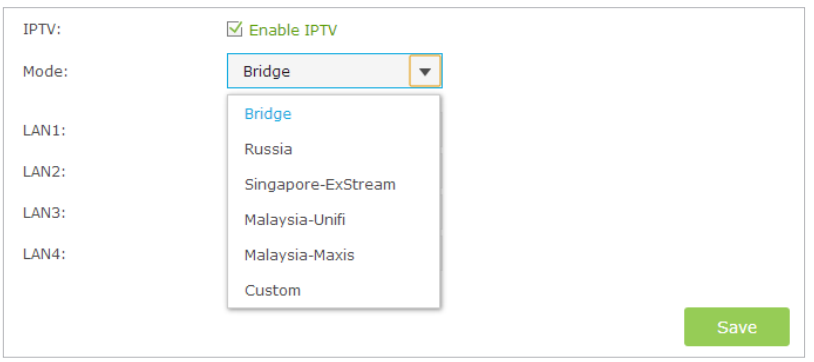
3) After configuring IGMP proxy, IPTV can work behind your router now. You can connect your set-top box to any of the router's Ethernet port.

If IGMP is not the technology your ISP applies to provide IPTV service:

1) Tick Enable IPTV.

2) Select the appropriate Mode according to your ISP.

- Select Bridge if your ISP is not listed and no other parameters are required, and then skip to Step 4.
- Select Custom if your ISP is not listed but provides necessary parameters.



3) After you have selected a mode, the necessary parameters are predetermined. You can perform other configuration, e.g. enter the IPTV Multicast VLAN ID and select the IPTV Multicast VLAN Priority in Russia mode according to your ISP.

4) For Russia, Singapore-ExStream, Malaysia-Unifi and Malaysia-Maxis mode, connect the set-top box to the predetermined LAN port. For Bridge and Custom mode, select the LAN type and connect the set-top box to the corresponding port.

5) Click Save.

Done!

Your IPTV setup is done now! You may need to configure your set-top box before enjoying your TV.

Tips

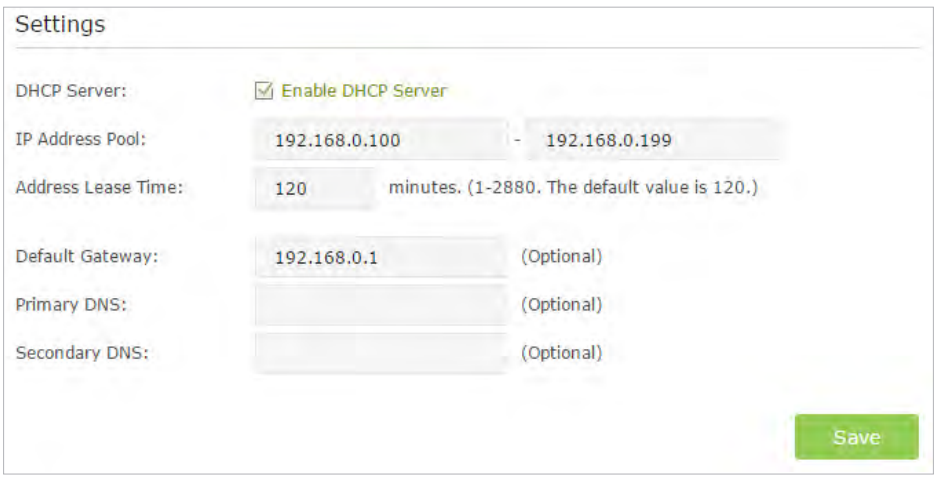
Qos and IPTV cannot be enabled at the same time.

12. 3. Specify DHCP Server Settings

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 the DHCP Server if necessary, and you can reserve LAN IP addresses for specified client devices.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > Network > DHCP Server.

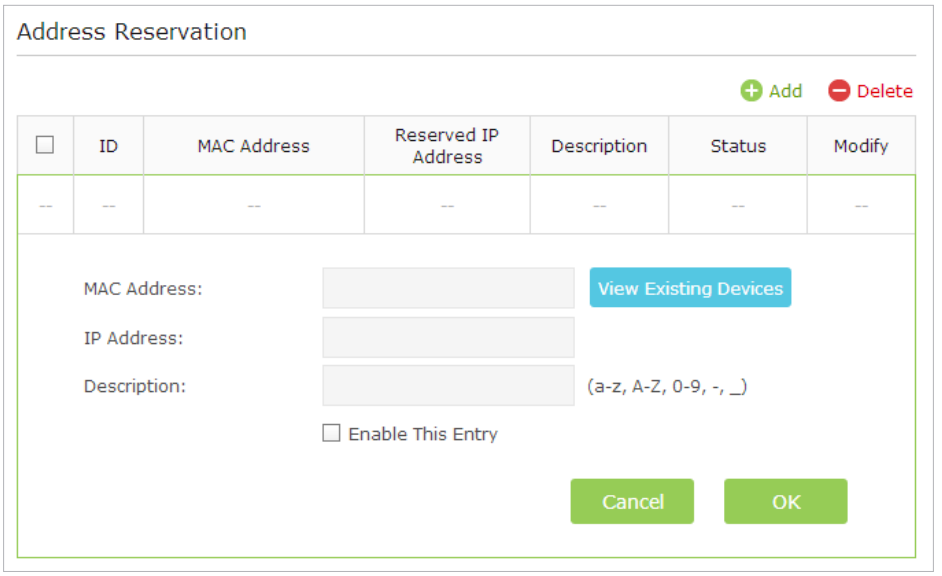
➢ **To specify the IP address that the router assigns:**



1. Make sure that the Enable DHCP Server checkbox is selected.
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 and is the same as the LAN IP address of the router.
4. Click Save.

➢ **To reserve an IP address for a specified client device:**

1. Click Add in the Address Reservation section.



2. Click View Exsiting Devices or enter the MAC address of the client device.
3. Enter the IP address to reserve for the client device.
4. Enter the Description for this entry.
5. Tick the Enable This Entry checkbox and click OK.

12. 4. Set Up a Dynamic DNS Service Account

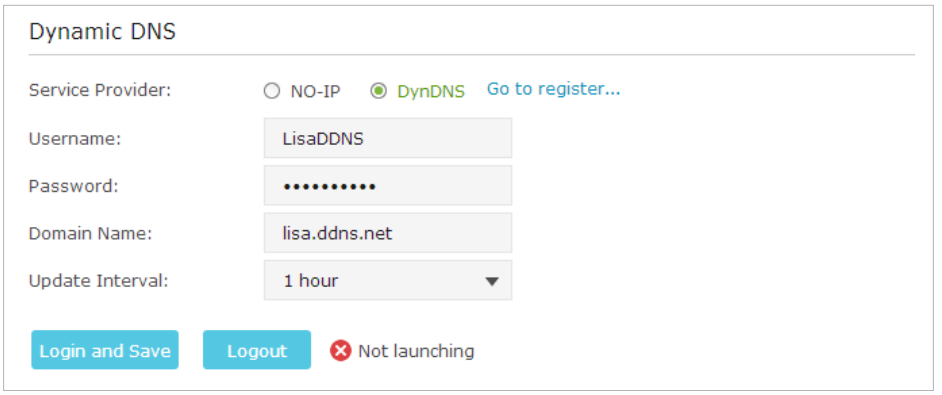
Most ISPs assign a dynamic IP address to the router and you can use this IP address to access your router remotely. However, the IP address can change any time and you don't know when it changes. In this case, you might apply the DDNS (Dynamic Domain Name Server) feature on the router to allow you and your friends to access your router and local servers (FTP, HTTP, etc.) using domain name without checking and remembering the IP address.

Note:

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

To set up DDNS, please follow the instructions below:

1. Visit *http://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, select a service provider and click Go to register.



4. Enter the username, password and domain name of the account (such as lisadns.ddns.net).
5. Click Login and Save.

Tips:

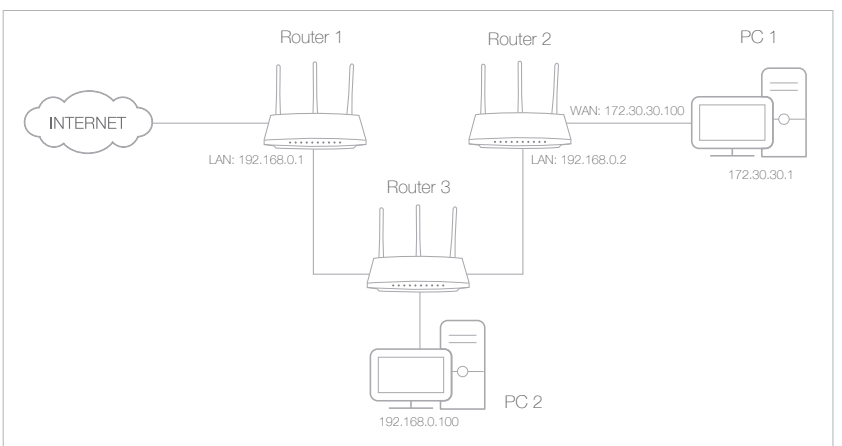
If you want to use a new DDNS account, please logout first, and then login with the new account.

12. 5. Create Static Routes

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.

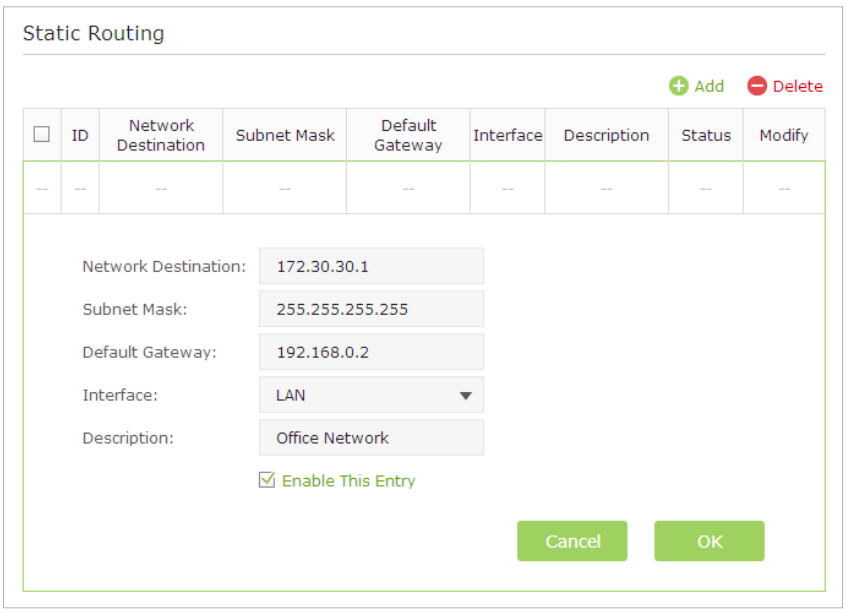
I want to: Visit multiple networks and servers at the same time.

For example, in a small office, my PC can surf the Internet, but I also want to visit my company's network. Now I have a switch and another router. I connect the devices as shown in the following figure so that the physical connection between my PC and my company's server is 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 router's LAN IP addresses to two different IP addresses on the same subnet. Disable Router 2's DHCP function.
2. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
3. Go to Network > Advanced Routing.
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 the router. In the example, the IP address of the company network is the destination IP address, so here enter 172.30.30.1.

Subnet Mask: Determines the destination network with the destination IP address. If the destination is a single IP address, enter 255.255.255.255; otherwise, enter the subnet mask of the corresponding network IP. In the example, the destination network is a single IP, so here enter 255.255.255.255.

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 2 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, so LAN should be selected.

Description: Enter a description for this static routing entry.

5. Click OK.
6. Check the System Routing Table below. If you can find the entry you've set, the static routing is set successfully.

System Routing Table

Active Routes Number: 3 Refresh

ID	Network Destination	Subnet Mask	Gateway	Interface
1	192.168.0.2	255.255.255.255	0.0.0.0	lan
2	172.30.30.1	255.255.255.255	192.168.0.2	lan
3	192.168.0.0	255.255.255.0	0.0.0.0	lan

Done!

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

12. 6. Specify Wireless Settings

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

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

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

1. Go to Basic > Wireless.
2. The wireless radio is enabled by default, if you want to disable the wireless function of the router, just clear the Enable Wireless Radio checkbox. In this case, all the wireless settings will be invalid.

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

1. Go to Basic > Wireless.
2. Create a new SSID in Network Name (SSID) and customize the password for the network in Password. The value is case-sensitive.

Note:

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

➢ To hide SSID:

1. Go to Basic > Wireless.
2. Select Hide SSID, and your SSID won't display when you scan for local wireless networks on your wireless device and you need to manually join the network.

➢ To change the security option:

1. Go to Advanced > Wireless > Wireless Settings.

2. Select the wireless network 2.4GHz or 5GHz.
3. Select an option from the Security drop-down list. We recommend you don't change the default settings unless necessary. If you select other options, configure the related parameters according to the help page.

In addition

- Mode - Select a transmission mode according to your wireless client devices. It is recommended to just leave it as default.
- Channel Width - Select a channel width (bandwidth) for the wireless network.
- Channel - Select an operating channel for the wireless network. It is recommended to leave the channel to Auto, if you are not experiencing the intermittent wireless connection issue.
- Transmit Power - Select either High, Middle or Low to specify the data transmit power. The default and recommended setting is High.

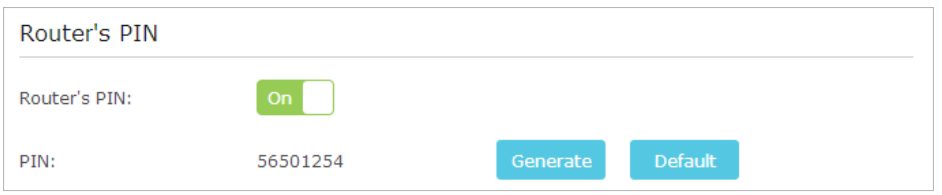
12. 7. Use WPS for Wireless Connection

Wi-Fi Protected Setup (WPS) provides an easier approach to set up a security-protected Wi-Fi connection.

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

12. 7. 1. Set the Router's PIN

Router's PIN is enabled by default to allow wireless devices to connect to the router using the PIN. You can use the default one or generate a new one.

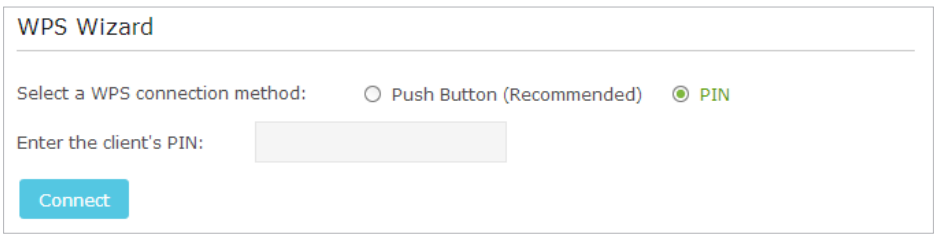


Note:

1. If you want to enable/disable the WPS feature, go to System Tools > System Parameters > WPS, select or clear the Enable WPS check box.
2. 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 the router.

12. 7. 2. Use the WPS Wizard for Wi-Fi Connections

1. Select a setup method:
   - **Push Button(Recommended)**: Click Connect on the screen. Within two minutes, press the WPS button on the client device.
   - **PIN**: Enter the client's PIN, and click Connect.



2. Success will appear on the above screen and the WPS LED on the router will keep on for five minutes if the client has been successfully added to the network.

Chapter *13*

Manage the Router

This chapter will show you the configuration for managing and maintaining your router.

This chapter includes the following sections:

- *Set Up System Time*
- *Test the Network Connectivity*
- *Upgrade the Firmware*
- *Backup and Restore Configuration Settings*
- *Change the Administrator Account*
- *Password Recovery*
- *Local Management*
- *Remote Management*
- *System Log*
- *Monitor the Internet Traffic Statistics*
- *Control LEDs*

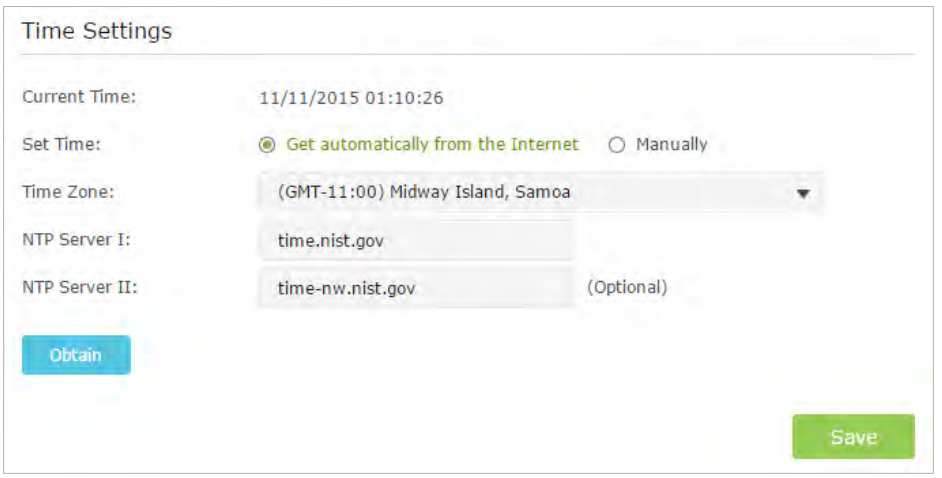
13. 1. Set Up System Time

System time is the time displayed while the router is running. The system time you configure here will be used for other time-based functions like Parental Controls. You can choose the way you prefer to obtain the system time.

Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router. Go to Advanced > System Tools > Time Settings.

➢ **To get time from the Internet:**

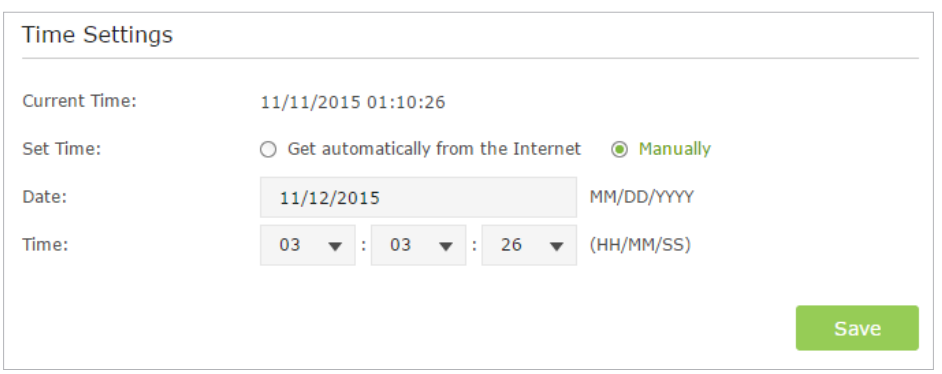
1. In the Set Time field, select Get automatically from the Internet.



2. Select your local Time Zone from the drop-down list.
3. In the NTP Server I fileld, enter the IP address or domain name of your desired NTP Server.
4. In the NTP Server II fileld, enter the IP address or domain name of the second NTP Server. (Optional)
5. Click Obtain to get the current Internet time and click Save.

➢ **To manually set the date and time:**

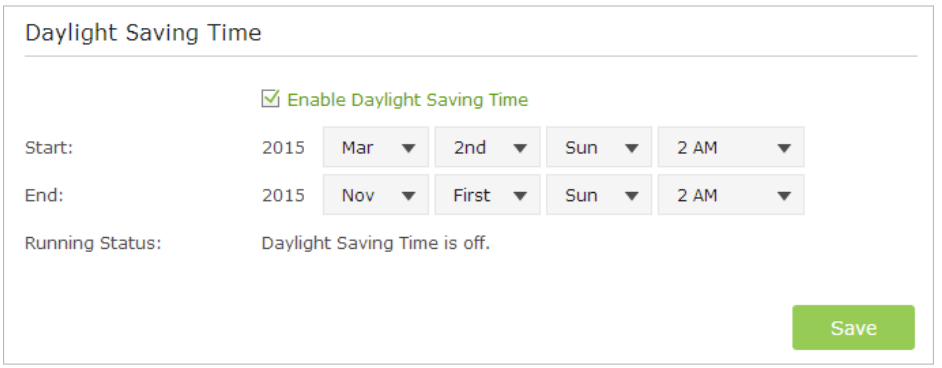
1. In the Set Time field, select Manually.



2. Set the current Date (In MM/DD/YYYY format).
3. Set the current Time (In HH/MM/SS format).
4. Click Save.

➢ **To set up Daylight Saving Time:**

1. Select Enable Daylight Saving Time.

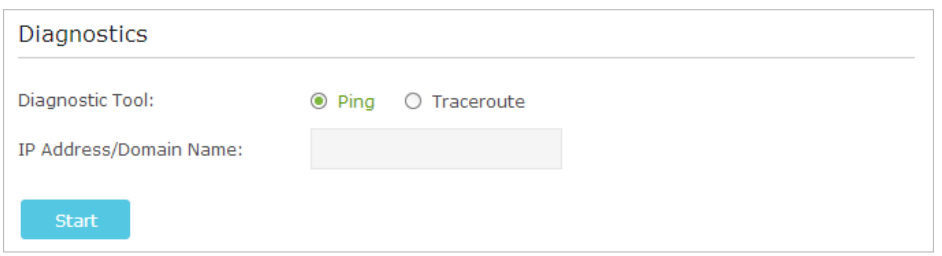


2. Select the correct Start date and time when daylight saving time starts at your local time zone.
3. Select the correct End date and time when daylight saving time ends at your local time zone.
4. Click Save.

13. 2. Test the Network Connectivity

Diagnostics 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 username and password you set for the router.
2. Go to Advanced > System Tools > Diagnostics.



3. Enter the information with the help of page tips:
   1) Choose Ping or Traceroute 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.

- Traceroute 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.

4. Click Start to begin the diagnostics.

Tips:

Click Advanced, you can modify the ping count, ping packet size or the Traceroute Max TTL. It's recommended to keep the default value.

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

```
PING www.Yahoo.com (116.214.12.74): 64 data bytes
Reply from 116.214.12.74:  bytes=64  ttl=50  seq=1  time=51.640 ms
Reply from 116.214.12.74:  bytes=64  ttl=50  seq=2  time=53.671 ms
Reply from 116.214.12.74:  bytes=64  ttl=50  seq=3  time=56.045 ms
Reply from 116.214.12.74:  bytes=64  ttl=50  seq=4  time=57.857 ms

--- Ping Statistic "www.Yahoo.com" ---
Packets: Sent=4, Received=4, Lost=0 (0.00% loss)
Round-trip min/avg/max = 51.640/54.803/57.857 ms
```

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

```
traceroute to www.Yahoo.com (116.214.12.74), 20 hops max, 38 byte packets
 1  219.133.12.1 (219.133.12.1)  19.556 ms  22.274 ms  22.024 ms
 2  113.106.38.77 (113.106.38.77)  30.115 ms  22.649 ms  20.931 ms
 3  *  *  *
 4  183.56.65.14 (183.56.65.14)  26.210 ms  29.428 ms  28.272 ms
 5  *  202.97.60.25 (202.97.60.25)  29.272 ms  25.461 ms
 6  202.97.60.46 (202.97.60.46)  27.335 ms  27.616 ms  28.272 ms
 7  202.97.60.149 (202.97.60.149)  22.805 ms  24.024 ms  24.711 ms
 8  202.97.6.30 (202.97.6.30)  47.610 ms  54.452 ms  61.137 ms
 9  r4105-s2.tp.hinet.net (220.128.6.110)  51.171 ms  50.515 ms  56.107 ms
10  220.128.11.190 (220.128.11.190)  60.950 ms  60.200 ms  60.419 ms
```

13. 3. Upgrade the Firmware

TP-LINK aims at providing better network experience for users.

We will inform you throught the web management page if there's any update firmware available for your router. Also, the latest firmware will be released at TP-LINK official website, you can download it from the Support page of our website *www.tp-link.com* for free.

Note:

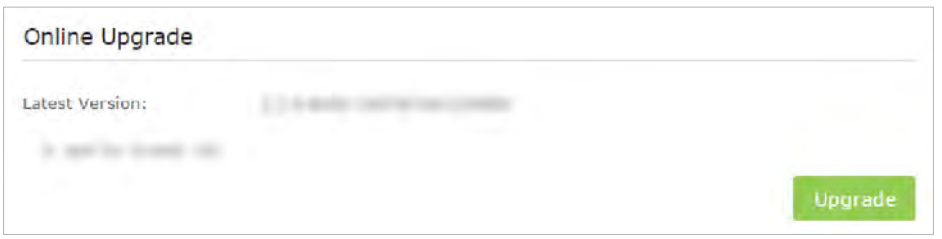
1. Make sure you remove all attached USB storage devices from the router before the firmware upgrade to prevent data loss.
2. Backup your router configuration before firmware upgrade.
3. Do NOT turn off the router during the firmware upgrade.

13. 3. 1. Online Upgrade

1. Visit *http://tplinkwifi.net*, and log in with the username and password you've set for the router.
2. When the latest firmware is available for your router, the update icon will display in the top-right corner of the page. Click the icon to go to the Firmware Upgrade page.

   Alternatively, you can go to Advanced > System Tools > Firmware Upgrade, and click Check for upgrade to see whether the latest firmware is released.

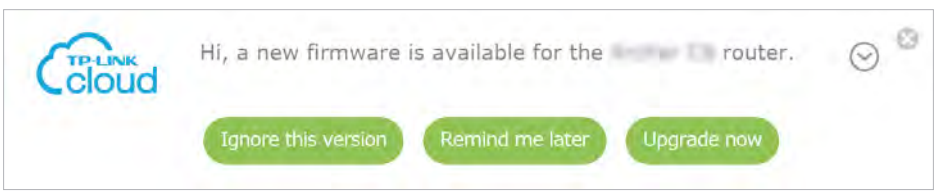
3. Focus on the Online Upgrade section, and click Upgrade.



4. Wait a few moments for the upgrade and reboot to complete.

Tips:

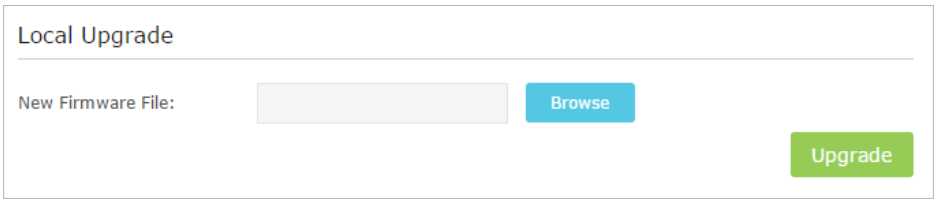
If there's a new and important firmware update for your router, you will see the notification (similar as shown below) on your computer as long as a web browser is opened. Click Upgrade now, and log into the web management page with the username and password you set for the router. You will see the Firmware Upgrade page.



13. 3. 2. Local Upgrade

1. Download the latest firmware file for the router from *www.tp-link.com*.
2. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
3. Go to Advanced > System Tools > Firmware Upgrade.
4. Focus on the Device Information section. Make sure the downloaded firmware file is matched with the Hardware Version.

5. Focus on the Local Upgrade section. Click Browse to locate the downloaded new firmware file, and click Upgrade.

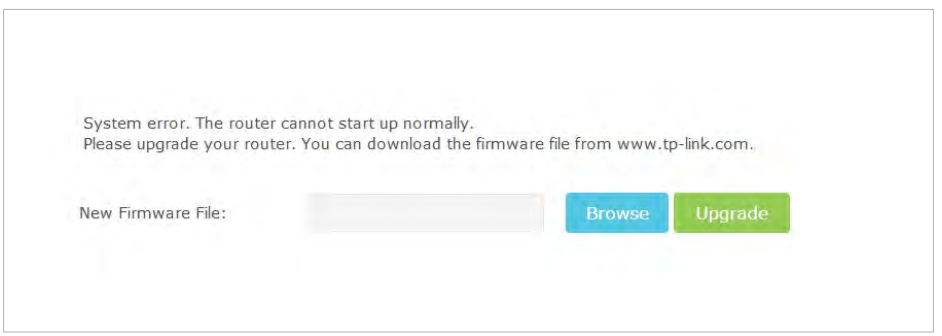


6. Wait a few moments for the upgrade and reboot to complete.

13. 3. 3. Restore Interrupted Upgrade after Power Failure

If your router cannot start up after an upgrade interruption due to power failure, do follow the steps below to restore the interrupted upgrade. Otherwise, your router cannot work again.

1. Make sure you have the latest firmware file in your computer. If not, try another way to connect your computer to the Internet and download the latest firmware file from *www.tp-link.com*.
2. Connect your computer to the router with an Ethernet cable.
3. Visit *http://tplinkwifi.net* and you will see the following upgrade page.



4. Click Browse and select the downloaded firmware file.
5. Click Upgrade and wait for a few minutes until the router completes the upgrading and restarts.

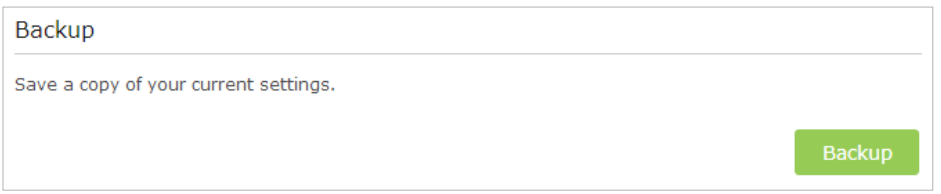
13. 4. Backup and Restore Configuration Settings

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

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

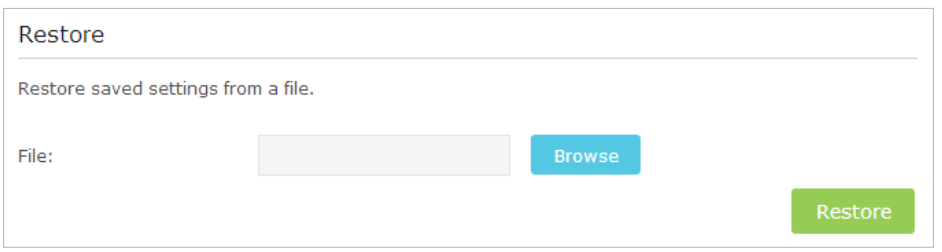
➢ **To backup configuration settings:**

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



➢ **To restore configuration settings:**

1. Click Browse to locate the backup configuration file stored on your computer, and click Restore.

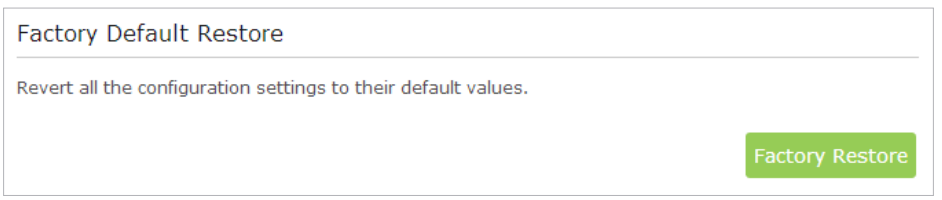


2. Wait a few moments for the restoring and rebooting.

Note: During the restoring process, do not turn off or reset the router.

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

1. Click Factory Restore to reset the router.



2. Wait a few moments for the resetting and rebooting.

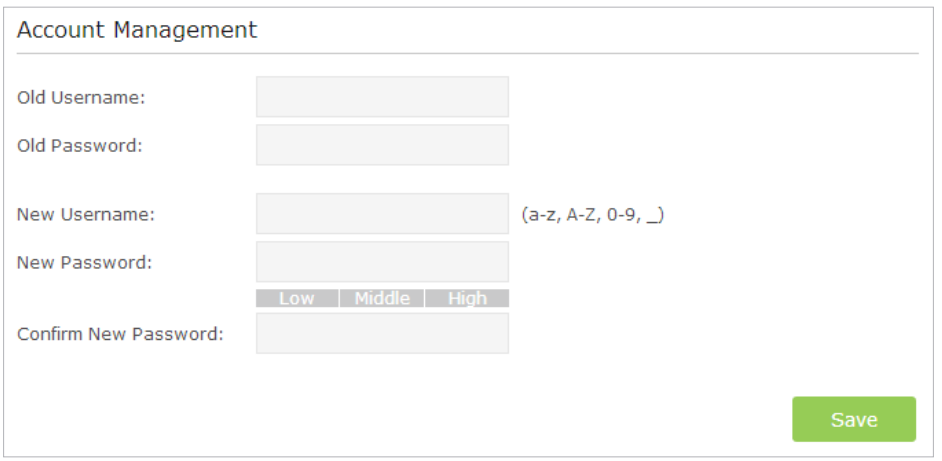
Note:

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

13. 5. Change the Administrator Account

The account management feature allows you to change your login username and password of the web management page.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > Administration and focus on the Account Management section.



3. Enter the old username and old password. Enter the new username and enter the new password twice (both case-sensitive). Click Save.
4. Use the new username and password for the following logins.

13. 6. Password Recovery

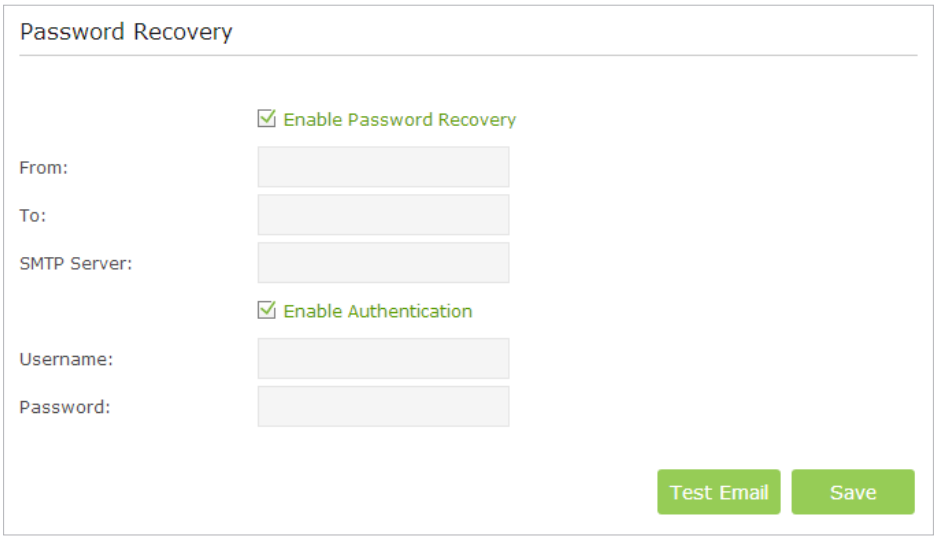
This feature allows you to recover your default login username and password in case you forget them.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > Administration and focus on the Password Recovery section.
3. Select the Enable Password Recovery checkbox.
4. Specify a mailbox (From) for sending the recovery letter and enter its SMTP Server address. Specify a mailbox (To) for receiving the recovery letter. If the mailbox (From) to send the recovery letter requires encryption, select Enable Authentication and enter its username and password.

Tips:

- SMTP server is available for users in most webmail systems. For example, the SMTP server address of Gmail is smtp.gmail.com. You can refer to their Help page to learn the SMTP server address.

- Generally, Enable Authentication should be selected if the login of the mailbox requires username and password.



5. Click Save.

You can click Test Email to test whether the configuration is successful. To recover the default login username and password, please refer to *FAQ*.

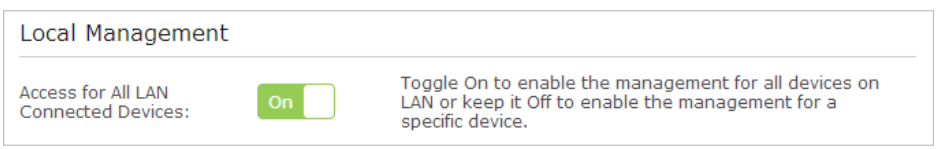
13. 7. Local Management

This feature allows you to limit the number of client devices on your LAN from accessing the router by using the MAC address-based authentication.

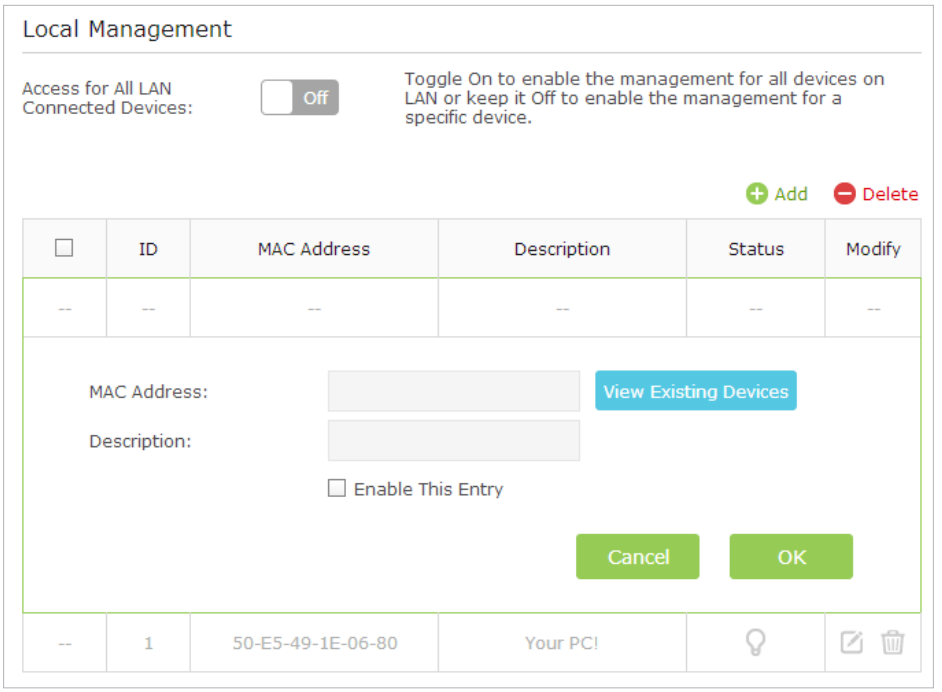
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > Administration and complete the settings In Local Management section according to your needs.

- **Allow all LAN connected devices to manage the router:**

Toggle on Access for All LAN Connected Devices.



- **Allow specific devices to manage the router:**
  1) Toggle off Access for All LAN Connected Devices.
  2) Click Add.



3) Click View Existing Devices and select the device to manage the router from the Existing Devices list, or enter the MAC address of the device manually.

4) Specify a Description for this entry.

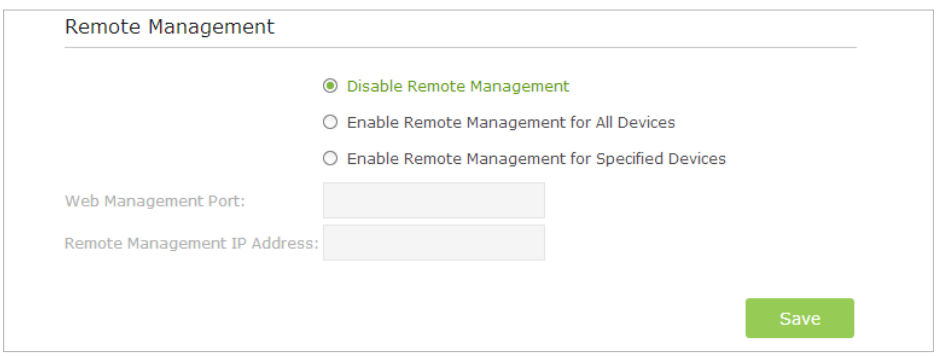
5) Tick the Enable This Entry checkbox.

6) Click OK.

13. 8. Remote Management

This feature allows you to control remote devices' authority to manage the router.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > Administration and complete the settings in Remote Management section according to your needs.



- **Forbid all devices to manage the router remotely:** Select Disable Remote Management and click Save.
- **Allow all devices to manage the router remotely:**
  1) Select Enable Remote Management for All Devices.
  2) Enter Web Management Port (1024-65535 or 80).
  3) 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:

1. You can find the WAN IP address of the router on Basic > Network Maps > Internet.
2. The router's WAN IP is usually a dynamic IP. Please refer to *Set Up a Dynamic DNS Service Account* if you want to log in to the router through a domain name.

- **Allow specific devices to manage the router remotely:**
  1) Select Enable Remote Management for Specified Devices.
  2) Enter Web Management Port (1024-65535 or 80).
  3) In Remote Management IP address, enter the IP address of the remote device to manage the router.
  4) 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*).

Tips:

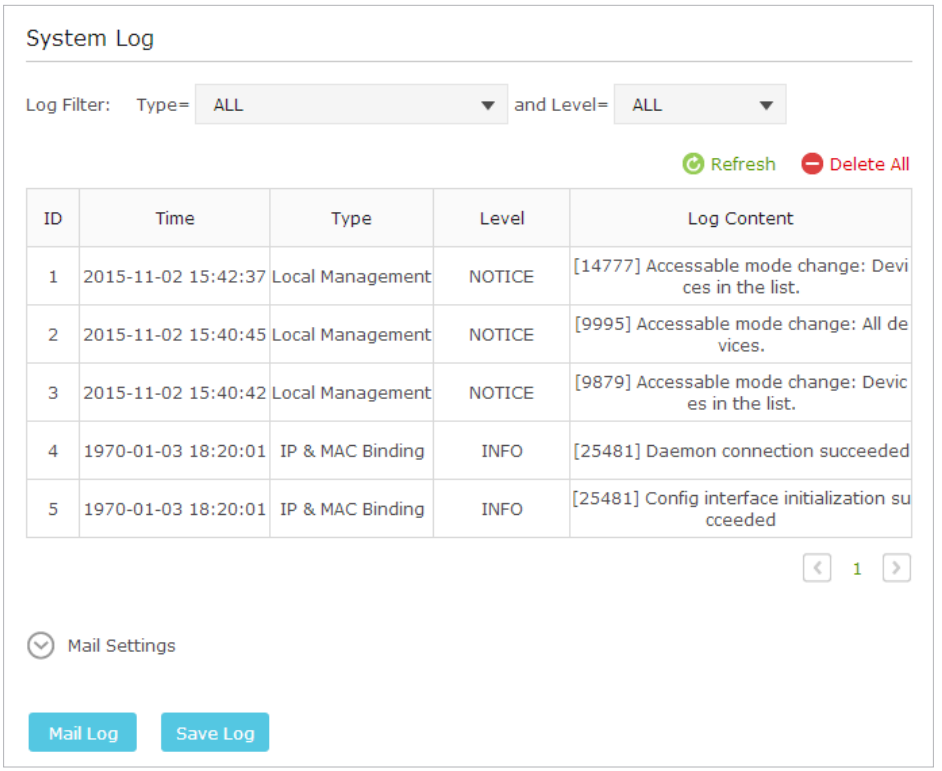
The router's WAN IP is usually a dynamic IP. Please refer to *Set Up a Dynamic DNS Service Account* if you want to log in to the router through a domain name.

13. 9. System Log

When the router does not work properly, you can save the system log and send it to the technical support for troubleshooting.

➢ **To Save the System Log in Local:**

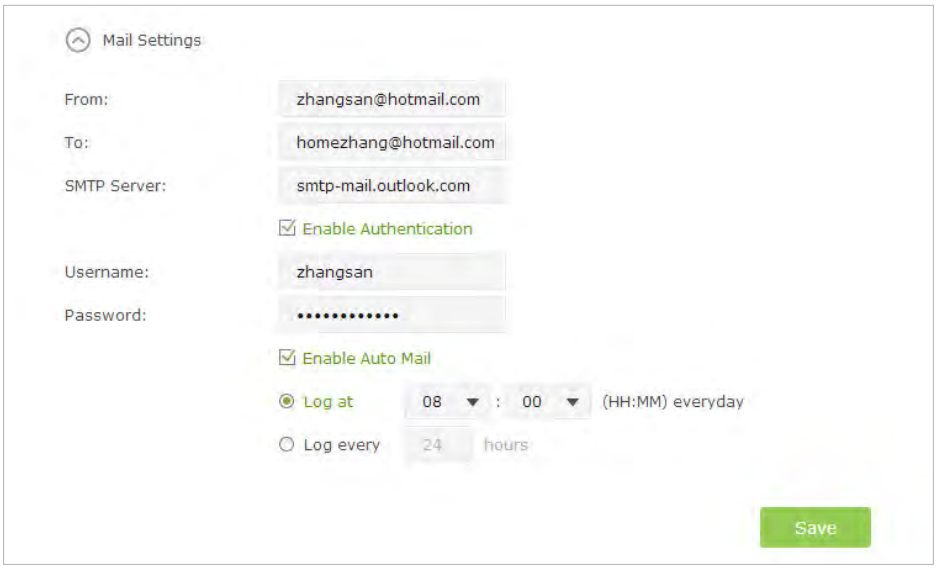
1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > System Log.
3. Choose the type and level of the system logs according to your need.
4. Click Save Log to save the system logs to local.



➢ **To Send the System Log to a Mailbox at a Fixed Time:**

For example, I want to check my router's working status at a fixed time every day, however, it's too troublesome to log in to the web interface every time I want to go checking. It would be great if the system logs could be sent to my mailbox at 8 a.m. every day.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > System Log.
3. Click Mail Settings.
4. Enter the information with the help of page tips:



1) From: Enter the email address used for sending the system log.

2) To: Enter the recipient's email address, which can be the same as or different from the sender's email address.

3) SMTP Server: Enter the SMTP server address.

Tips: SMTP server is available for users in most webmail systems. For example, the SMTP server address of Hotmail is smtp-mail.outlook.com. You can refer to their Help page to learn the SMTP server address.

4) Select Enable Authentication.

Tips: Generally, Enable Authentication should be selected if the login of the mailbox requires username and password.

5) Username: Enter the email address used for sending the system log.

6) Password: Enter the password to login the sender's email address.

7) Select Enable Auto Mail.

Tips: The router will send the system log to the designated email address if this option is enabled.

8) Set a fixed time. The recipient will receive the system log sent at this time every day.

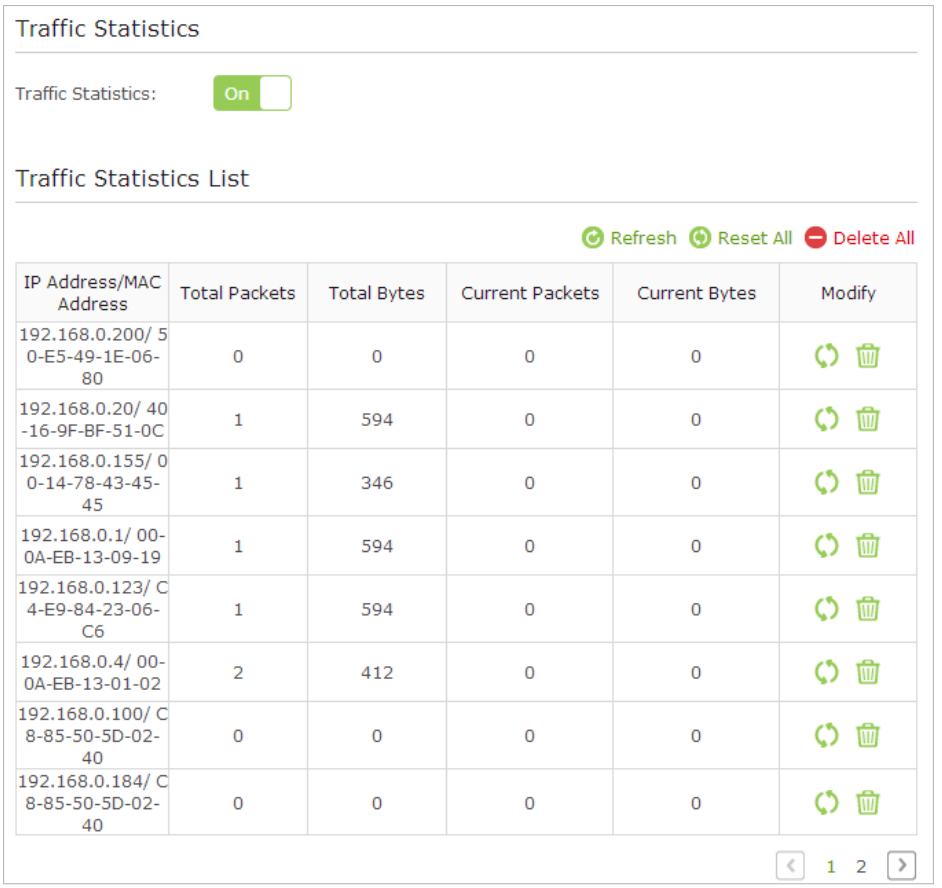
5. Click Save.

13. 10. Monitor the Internet Traffic Statistics

The Traffic Statistics page displays the network traffic of the LAN, WAN and WLAN sent and received packets, allows you to monitor the volume of Internet traffic statistics.

1. Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
2. Go to Advanced > System Tools > Traffic Statistics.

3. Toggle on Traffic Statistics, and then you can monitor the traffic statistics in Traffic Statistics List section.



IP Address/MAC Address	Total Packets	Total Bytes	Current Packets	Current Bytes	Modify
192.168.0.200/ 50-E5-49-1E-06-80	0	0	0	0	
192.168.0.20/ 40-16-9F-BF-51-0C	1	594	0	0	
192.168.0.155/ 00-14-78-43-45-45	1	346	0	0	
192.168.0.1/ 00-0A-EB-13-09-19	1	594	0	0	
192.168.0.123/ C4-E9-84-23-06-C6	1	594	0	0	
192.168.0.4/ 00-0A-EB-13-01-02	2	412	0	0	
192.168.0.100/ C8-85-50-5D-02-40	0	0	0	0	
192.168.0.184/ C8-85-50-5D-02-40	0	0	0	0	

Click Refresh to update the statistic information on the page.

Click Reset All to reset all statistic values in the list to zero.

Click Delete All to delete all statistic information in the list.

Click to reset the statistic information of the specific device.

Click to delete the specific device item in the list.

13. 11. Control LEDs

The router LEDs indicate router activities and behavior. You can turn on or turn off the LEDs from the web management page.

➢ **To turn on or off the LEDs:**

- Press the LED button on the router (if available) about 2 seconds to turn on or off the LEDs.
- Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router. Click the LED icon on the top right of the page.

➢ **To turn off LEDs during Night Mode Period:**

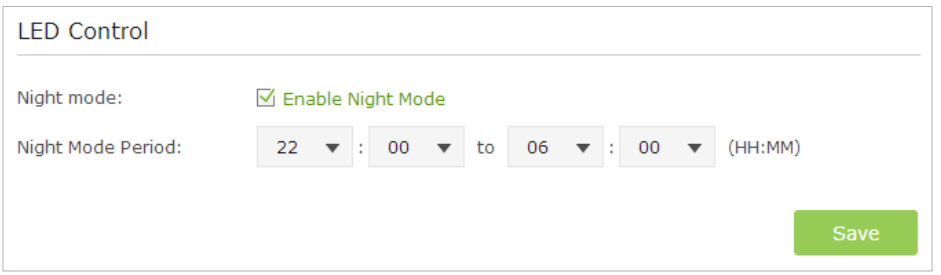
1) Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.

2) Go to Advanced > System Tools > System Parameters.

3) In the LED Control section, select the Enable Night Mode checkbox.

4) Specify a time period in the Night Mode Period according to your need, and the LEDs will be off during this period.

5) Click Save to make the settings effective.



FAQ

Q1. What can I do if I forgot 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 a cable and follow the steps below:

1. Visit *http://tplinkwifi.net*.
2. Go to Advanced > Wireless > Wireless Settings to retrieve or reset your wireless password.

Q2. What can I do if I forgot my login password of the web management page?

The default username and password of the web management page are admin (in lowercase). **If your router supports Password Recovery and you have enabled it**, please follow the steps below to reset the password without resetting the router:

Note: Make sure the Internet access is available before using this method.

1. Visit *http://tplinkwifi.net*.
2. Click Forgot password > Send Code, the verification code will be sent to the mailbox you set.
3. Log into your mailbox to copy the verification code.
4. Paste the verification code on the window which pops up in Step 2.
5. Click Confirm (the default login username and password will be reset as admin after the click).
6. Use admin (in lowercase) as both username and password to login.

Tips: Please refer to *Password Recovery* to learn how to configure Password Recovery.

If you have altered the username and password but Password Recovery is disabled:

1. Reset the router to factory default settings: press and hold the Reset button for about 7 seconds and then release;
2. Visit *http://tplinkwifi.net*, enter admin (in lowercase) as both username and password to 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.

Q3. I cannot log into the router's web management page, what can I do?

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

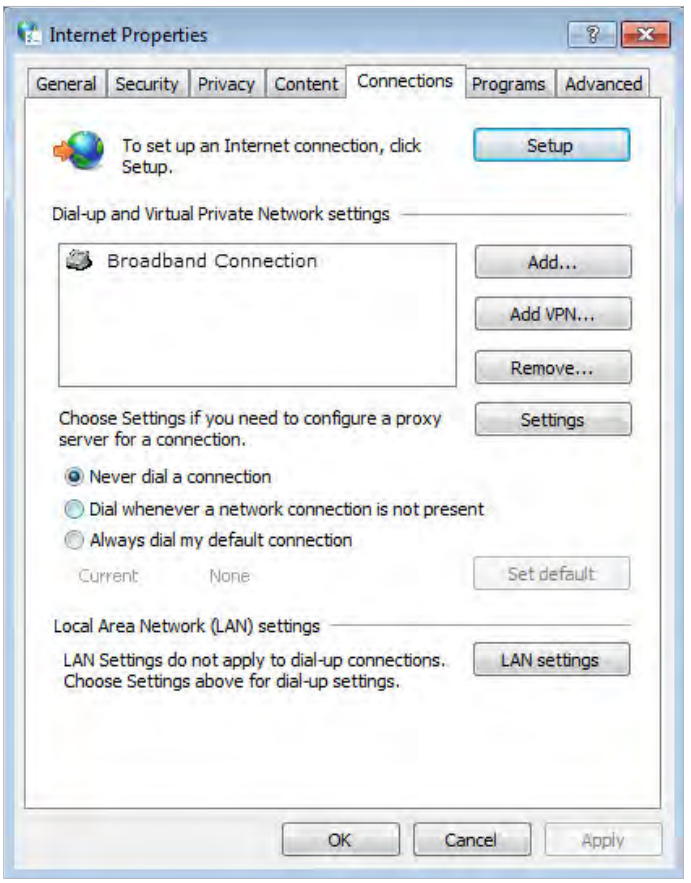
- Make sure the router connect to the computer correctly and the corresponding LED indicator(s) light up.

- 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 login: *http://tplinkwifi.net*.
- Check your computer's settings:

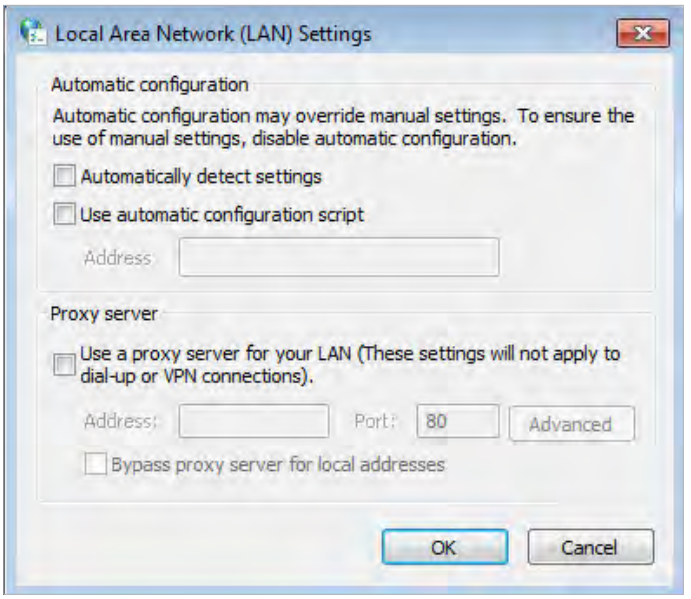
  1) Go to *Start* > *Control Panel* > *Network and Internet*, and click View network status and tasks.

  2) Click Internet Options on the bottom left.

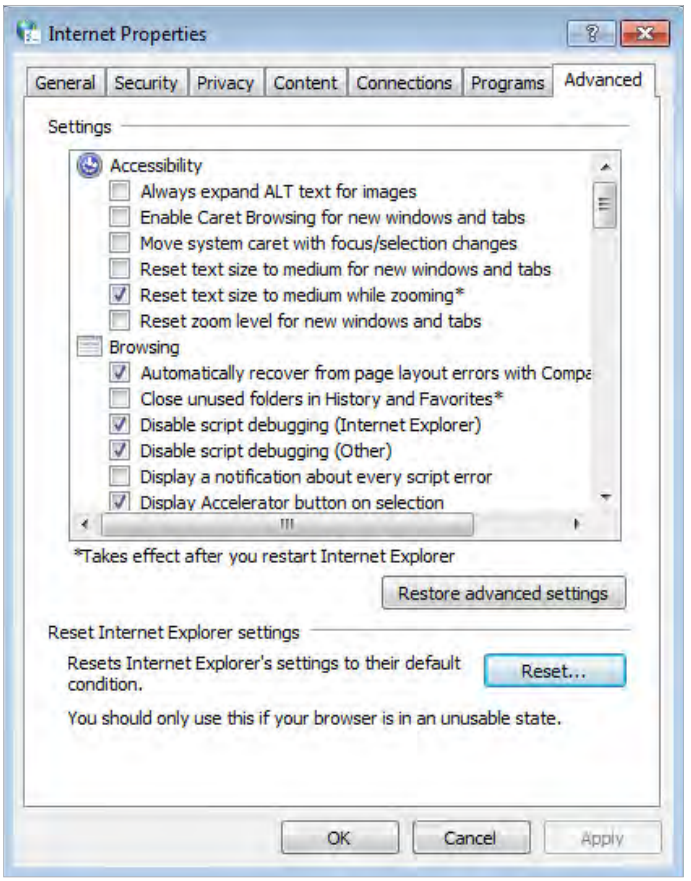
  3) Click Connections and select Never dial a connection.



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



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



- Use another web browser or computer to login again.
- Reset the router to factory default settings and try again. If 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.

Q4. How to use the WDS Bridging function to extend my wireless network?

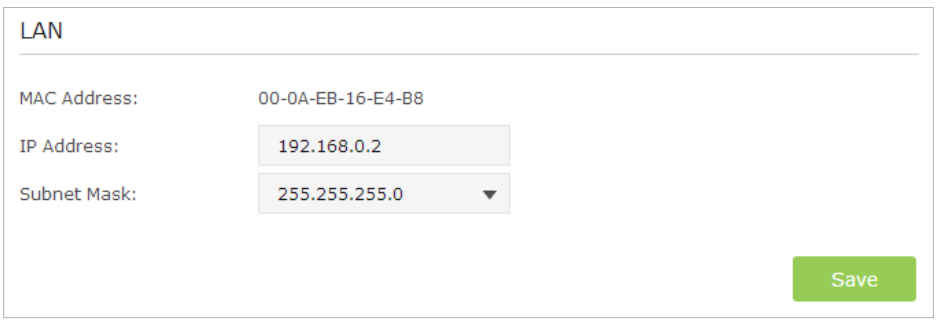
For example, my house covers a large area. The wireless coverage of the router I'm using (the root router) is limited. I want to use an extended router to extend the wireless network of the root router.

Note:

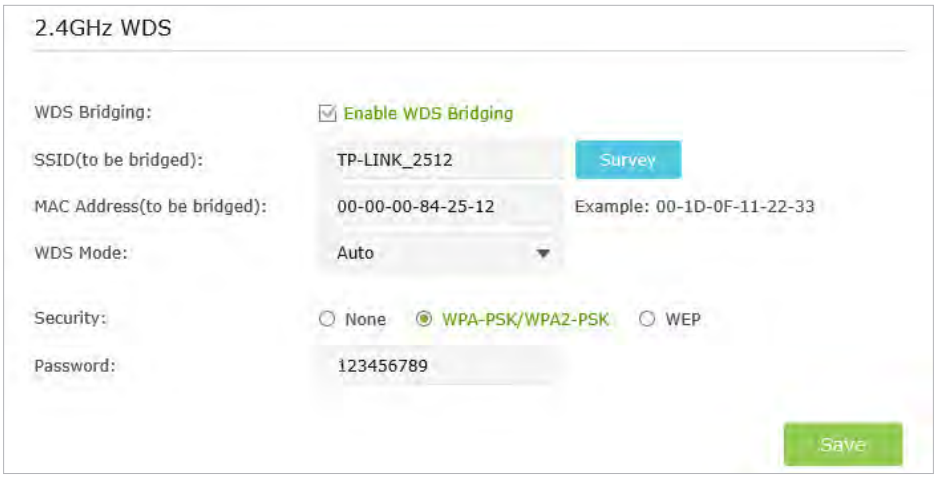
- WDS bridging only requires configuration on the extended router.
- WDS bridging function can be enabled either in 2.4GHz frequency or 5GHz frequency for a dual-band router. We use the WDS bridging function in 2.4GHz frequency as example.

1. Visit *http://tplinkwifi.net*, and log into with the username and password you set for the router.
2. Configure the IP address of the router:
   1) Go to Advanced > Network > LAN, configure the IP address of the extended router to be in the same subnet with the root router; (For example, the IP address of the root router is 192.168.0.1, the IP address of the extended router can be 192.168.0.2~192.168.0.254. We take 192.168.0.2 as example.)
   2) Click Save.

   Note: Log into the web management page again if the IP address of the router is altered.



3. Survey the SSID to be bridged:
   1) Go to Advanced > System Tools > System Parameters and focus on the 2.4GHz WDS section, click Enable WDS Bridging.
   2) Click Survey, locate the root router's SSID and click Choose (Here we take TP-LINK_2512 as example).
   3) If the root router has wireless password, you should enter the wireless password of the root router.
   4) Click Save.



4. Disable DHCP:

1) Go to Network > DHCP Server.

2) Deselect Enable DHCP Server and click Save.

Now you can go to Advanced > Status > Wireless to check the WDS status. When the WDS status is Run, it means WDS bridging is successfully built.

Q5. I cannot access the Internet even though the configuration is finished, what can I do?

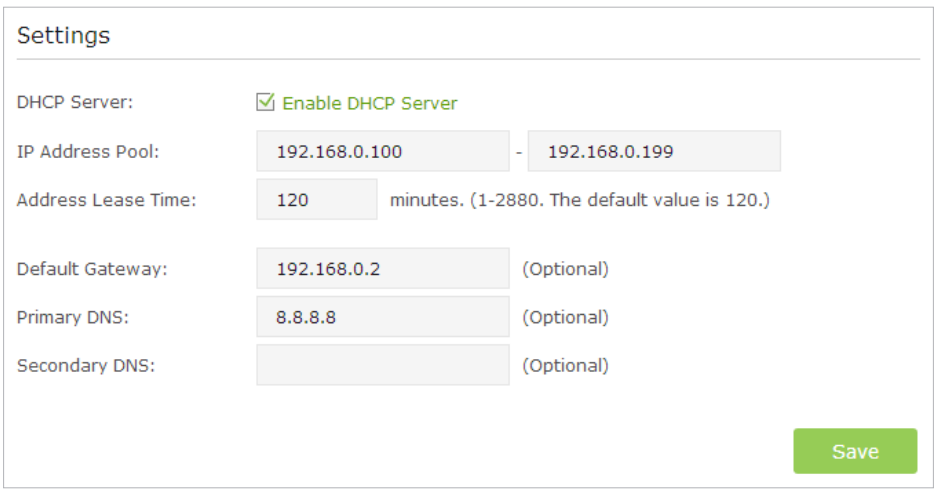
1. Visit *http://tplinkwifi.net*.

2. Go to Advanced > Status to check Internet status:

As the follow picture shows, 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, click Save.

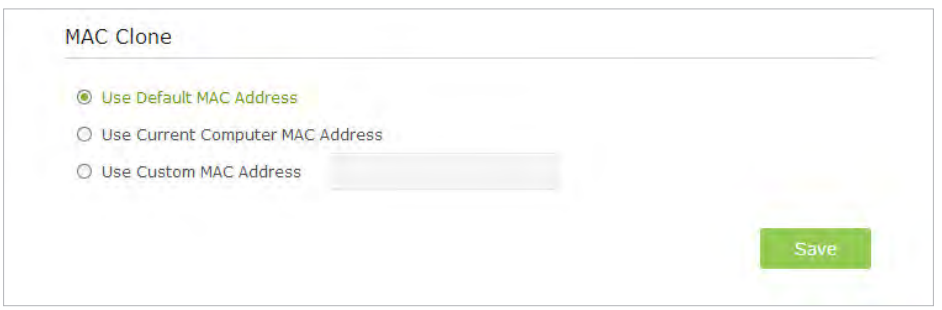
  Tips: 8.8.8.8 is a safe and public DNS server operated by Google.



- Power cycle the modem and the TP-LINK router.
  1) Power off your modem and TP-LINK router, leave them off for 1 minute.
  2) Power on your modem first, wait about 2 minutes until it gets a solid cable or Internet light.
  3) Power back TP-LINK router.
  4) 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.

As the picture below shows, 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.
  1) Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.
  2) Go to Advanced > Network > Internet and focus on the MAC Clone section.
  3) Choose an option to your need (Enter the MAC address if Use Custom MAC Address is selected), 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 LAN IP address as the follow picture shows. Here we take 192.168.2.1 as an example.

4) Click Save.

- Power cycle the modem and the TP-LINK router.

  1) Power off your modem and TP-LINK router, leave them off for 1 minute.

  2) Power on your modem first, wait about 2 minutes until it get a solid cable or Internet light.

  3) Power back TP-LINK router.

  4) Wait another 1 or 2 minutes and check the Internet access.

- Double check the Internet Connection Type.

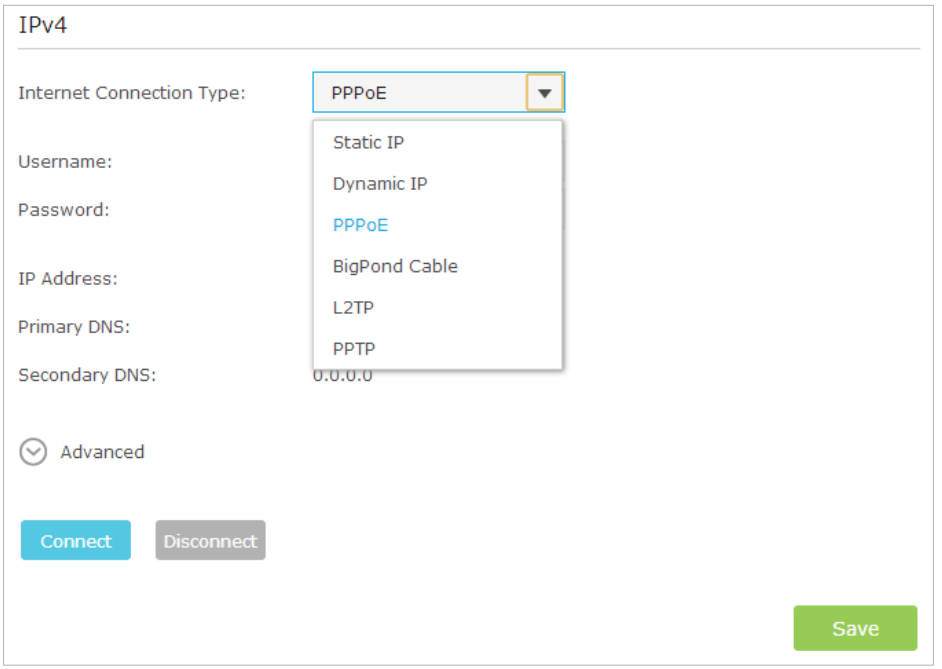
  1) Confirm your Internet Connection Type, which can be learned from the ISP.

  2) Visit *http://tplinkwifi.net*, and log in with the username and password you set for the router.

  3) Go to Advanced > Network > Internet.

  4) Select your Internet Connection Type and fill in other parameters with the help of page tips.

  5) Click Save.



6) Power cycle the modem and the TP-LINK router again.

- 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. I cannot find my wireless network or I cannot connect the wireless network, what can I do?

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 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 on Troubleshoot and windows might be able to fix the problem by itself.

  - **On Windows XP**

  1) 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 on My Computer on desktop, select Manage to open Computer Management window.

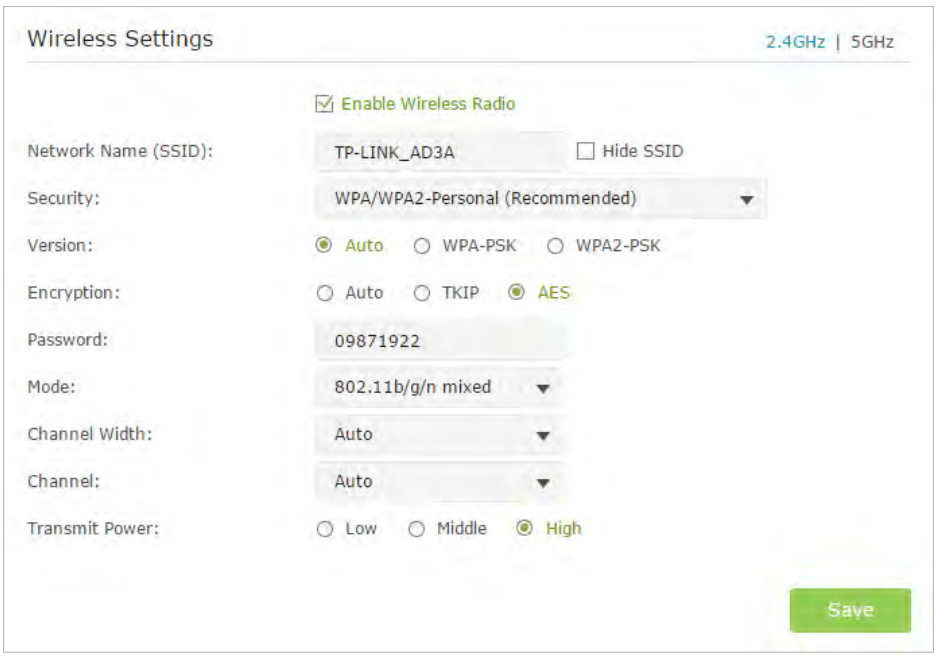
4) Expand Services and Applications > Services, find and locate Wireless Zero Configuration in the Services list on the right side.

5) Right click Wireless Zero Configuration, and then select Properties.

6) Change Startup type to Automatic, click on Start button 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:

- Check the WLAN LED indicator on your wireless router/modem.
- Make sure your computer/device is still in the range of your router/modem, move closer if it is currently too far away.
- Go to Advanced > Wireless > Wireless Settings, and check the wireless settings, double check your Wireless Network Name and SSID is not hided.



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

- **Authenticating problem/password mismatch:**

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

2) If you cannot find the PIN or PIN failed, you may choose Connecting using a security key instead, and then type in the 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.

COPYRIGHT & TRADEMARKS

Specifications are subject to change without notice. TP-LINK is a registered trademark of TP-LINK TECHNOLOGIES CO., LTD. Other brands and product names are trademarks or registered trademarks of their respective holders.

No part of the specifications may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from TP-LINK TECHNOLOGIES CO., LTD. Copyright © 2016 TP-LINK TECHNOLOGIES CO., LTD. All rights reserved.

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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

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

FCC RF Radiation Exposure Statement

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

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

The device is restricted in indoor environment only.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

CE Mark Warning

CE 1588 ⓘ

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

RF Exposure Information

This device meets the EU requirements (1999/519/EC) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

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

Restricted to indoor use.

Canadian Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux norms CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

1. cet appareil ne doit pas provoquer d'interférences et
2. cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

Caution:

The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

Avertissement:

Le dispositif fonctionnant dans la bande 5150-5250 MHz est réservé uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

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行；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。

減少電磁波影響，請妥適使用。

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。

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

EAC

Safety Information

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

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

AT	BE	BG	CH	CY	CZ	DE	DK
EE	ES	FI	FR	GB	GR	HR	HU
IE	IS	IT	LI	LT	LU	LV	MT
NL	NO	PL	PT	RO	SE	SI	SK

Explanations of the symbols on the product label

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