

KPSPIN

NETWORK MANAGEMENT HANDBOOK



KPSPIN NETWORK MANAGEMENT HANDBOOK

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Vimeo Video Link to training: <https://vimeo.com/565530221>

1. OBJECTIVES

Overall Objectives:

- Familiarize users with the router interface, menu and settings.
- Equip and enable users to easily manage and troubleshoot basic network problems.
- Allow users to login into the router and perform basic router configurations.
- Allow users to report on the network failure.
- Allow users to control network access.

Specific Objectives:

- Access router interface using PC
- Create Wireless Network
- Create Guest Network
- View connected devices to the internet
- Create and Modify Wireless password
- Create and manage administrators
- Create , Modify the DHCP server Settings
- Learn about things to AVOID / ‘DO NOT CHANGE’ settings.

2. TPLINK ROUTER INTERFACE AND SETUP

Requirements:

- Working Laptop/ Tablet/ Smartphone/ Desktop Computer
- Wired or Wireless Connection to the router (Preferably cable)
- Router (in this case Tplink router)
- Basic knowledge on IT (Using computer)
- Working Modern Internet Browser (Chrome, Edge, Opera)

2.1 Router Interface:



Model installed at KPSPIN locations: TP-LINK RW840N

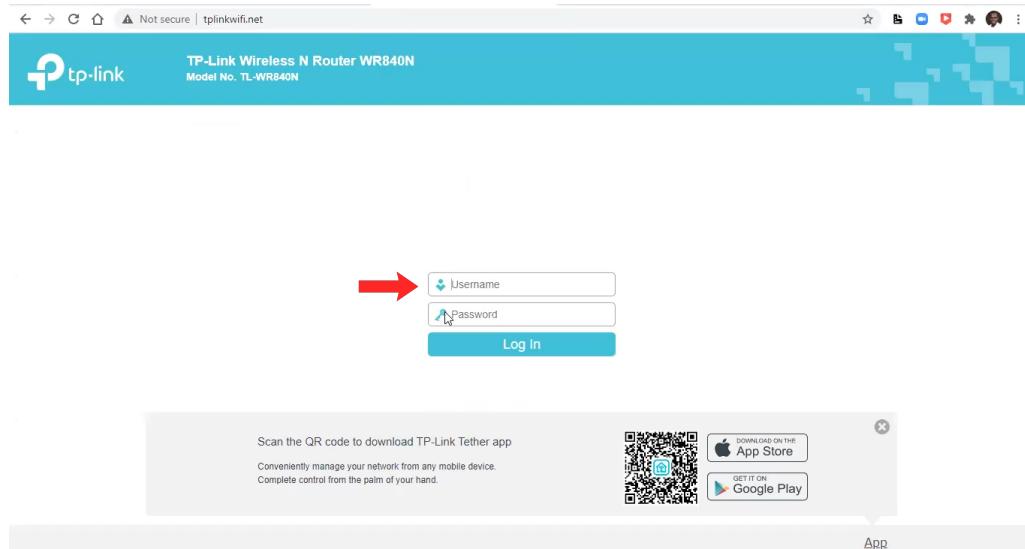
2.2 Connecting the router:

- Using Ethernet cable, connect the router to a laptop on any of the **yellow ports** of the router (do not use the blue port on the router).
- Power the router and laptop pc.
- Give the router about 2 minutes to boot/ load /start up.

3. TP LINK ROUTER MANAGEMENT PORTAL

Login and Network Setup (11:55 in video)

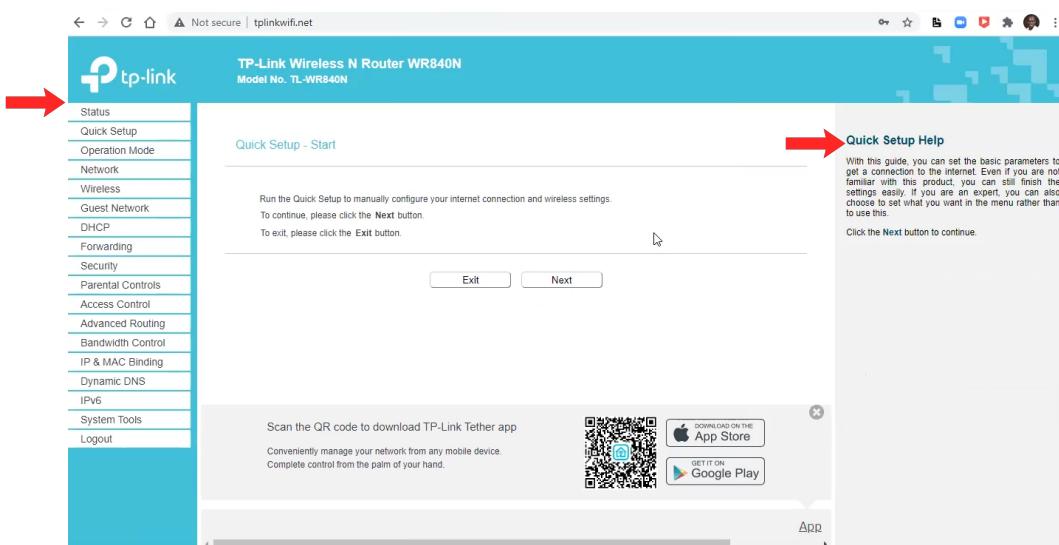
- After setting up the router, Open internet browser and type <http://tplinkwifi.net> or the ip (**192.168.0.1**)



- You will be asked to enter password (for current router firmware) or to enter username and password (for old firmware or routers).
- Enter **admin** for both username and password (lowercase)
- You can later choose to change the username and password of the router for security reasons.

Management Portal (17:35)

- On the left side there is a menu list with various management options. The **Quick Setup Help** on the right side is a handy guide for information about each feature.



- **Status:** information about connections and summary of all the current settings

The screenshot shows the 'Status' page of the TP-Link Wireless N Router WR840N. The left sidebar has a yellow 'Status' tab highlighted with a red arrow. The main content area displays various system and network parameters. In the 'Status' section, it shows Firmware Version: 0.9.1.4.16 v00011 Build 180614 Rel.40494n and Hardware Version: TL-WR840N v6 00000007. The 'LAN' section shows MAC Address: 1C:3B:F3:07:63:06, IP Address: 192.168.0.1, and Subnet Mask: 255.255.255.0. The 'Wireless 2.4GHz' section shows Operation Mode: Router. It includes a QR code for the Tether app and download links for the App Store and Google Play. On the right side, there is a 'Status Help' panel with detailed descriptions of LAN and Wireless parameters.

- Mac address, IP Address
- Firmware and Hardware version
- LAN (Local Area Network: MAC address, IP)
- Wireless 2.4 GHz
- WAN: Router IP given by Internet Service provider, Default Gateway IP
- (17:43)

- **Quick Setup:** helps to set up the network connection

The screenshot shows the 'Quick Setup - Start' page of the TP-Link Wireless N Router WR840N. A red arrow points to the 'Quick Setup' tab in the left sidebar. The main content area contains instructions for manually configuring internet connection and wireless settings. It features a large 'Next' button with a red arrow pointing to it. To the right, there is a 'Quick Setup Help' panel with a warning message about using the guide for basic setup and a note that experts can choose to set parameters directly. The bottom of the page includes a QR code for the Tether app and download links for the App Store and Google Play.

- **Operation Mode:** provides various modes for how the router can be used: in the case of KPSPIN, they are used as **Wireless Routers**.

Not secure | tpmlinkwifi.net

TP-Link Wireless N Router WR840N
Model No. TL-WR840N

Operation Mode

Select an Operation Mode:

- Wireless Router
- WISP
- Access Point
- Range Extender

Operation Mode Help

Wireless Router: In this mode, the device enables multiple users to share the Internet connection via Ethernet port. The LAN devices share the same IP from ISP through Wireless port. While connecting to Internet, the Ethernet port works as a LAN port.

WISP: In this mode, the device enables multiple users to share Internet connection from WISP. The LAN port devices share the same IP from WISP through Wireless port. While connecting to WISP, the Wireless port works as a WAN port. The Ethernet port acts as a LAN port.

Access Point: In this mode, this device can be connected to a wired network and transform the wired access into wireless that multiple devices can share together, especially for a home, office or hotel where only wireless connection is required.

Range Extender: In this mode, the device can copy and reinforce the existing wireless signal to extend the coverage of the signal, especially for a large space to eliminate signal-blind corners.

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App

- **Network Tab:** provides various network options for the router

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TP-Link Wireless N Router WR840N
Model No. TL-WR840N

WAN Settings

Connection Type:

IP Address: 192.168.100.253
Subnet Mask: 255.255.255.0
Gateway: 192.168.100.1

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WAN Help

WAN Connection Type:

If your ISP is running a DHCP server, select the Dynamic IP option.

If your ISP provides a static or fixed IP Address, Subnet Mask, Gateway and DNS setting, select the Static IP option.

If your ISP provides a PPPoE connection, select PPPoE option.

If your ISP provides BigPond Cable (or Heart Beat Signal) connection, please select BigPond Cable option.

If your ISP provides L2TP connection, please select L2TP option.

If your ISP provides PPTP connection, please select PPTP option.

If you don't know how to choose the appropriate connection type, click the Detect button to allow the Router to automatically search your Internet connection type. The detected connection type will be reported when an active Internet service is successfully detected by the Router. This report is for your reference only. To make sure the connection type is correct, please refer to the ISP. The various types of Internet connections that the Router can detect are as follows:

- PPPoE - Connections which use PPPoE that requires a user name and password.
- Dynamic IP - Connections which use dynamic IP address assignment.
- Static IP - Connections which use static IP

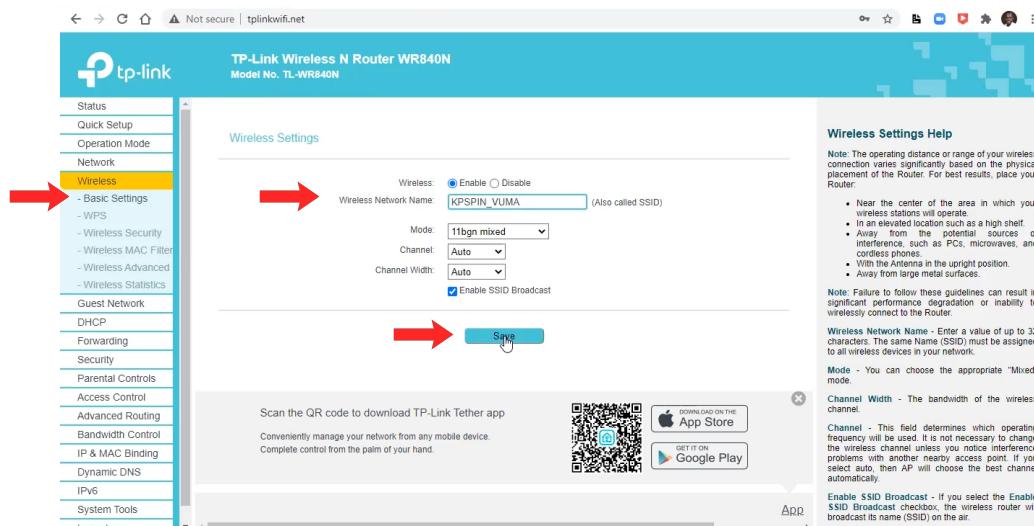
4. SETTING UP WIFI

Router Management Portal -> Wireless Tab

- Click on the Wireless tab in the wifi management portal navigation pane on the left.
- In the section under the Wireless tab, you will see several options like Basic Settings, WPS, Wireless Security, etc.

○ Basic Settings (21:35)

- Under the Wireless Tab, select the Basic Settings option.
- In the **Wireless Network Name**, enter the preferred name of the Wi-Fi, for example, KPSPIN@VUMA
- Leave mode , channel and channel width as set (DO NOT CHANGE)
- Check **Enable SSID Broadcast**
- **Save** and wait until changes are saved successfully!



○ Wireless Security (24:00)

- Next, click on the Wireless Security section.
- Select the wireless security mode which is recommended (mostly is WPA/WPA2-Personal)
- In the **Version** drop-down, select WPA2-PSK
- Go to **Wireless password** and enter your secure and preferred password. (This is what people will use to access Wi-Fi)
- Leave the other setting unchanged and click save.
- Setting the Wi-Fi Coverage area: (You can choose to reduce the distance from which someone can connect to the Wi-Fi)
- Scroll down and click **Save**.

TP-Link Wireless N Router WR840N
Model No. TL-WR840N

Status
Quick Setup
Operation Mode
Network
Wireless
- Basic Settings
- WPS
- Wireless Security
- Wireless MAC Filter
- Wireless Advanced
- Wireless Statistics
Guest Network
DHCP
Forwarding
Security
Parental Controls
Access Control
Advanced Routing
Bandwidth Control
IP & MAC Binding
Dynamic DNS
IPv6
System Tools
Logout

Disable Wireless Security
 WPA/WPA2 - Personal (Recommended)
Version: WPA2-PSK
Encryption: AES
Wireless Password: KPSIN VUMA
Group Key Update Period: 0

WPA/WPA2 - Enterprise
Version: Auto
Encryption: Auto
RADeUS Server IP:
RADeUS Server Port: 1812 (1-65535, 0 stands for default port 1812)
RADeUS Server Password:
Group Key Update Period: 0

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Wireless Security Help
You can select one of the following security options:

- Disable Wireless Security - The wireless security function can be enabled or disabled. If disabled, the wireless stations will be able to connect the device without encryption. It is recommended strongly that you enable one of following option to enable security.
- WPA/WPA2 - Personal - Select WPA based on pre-shared passphrase.
- WPA/WPA2 - Enterprise - Select WPA based on Radius Server.
- WEP - Select 802.11 WEP security.

Each security option has its own setting as described follows.
WPA/WPA2 - Personal Version - You can select one of following versions:

- Auto - Select WPA/PSK or WPA2-PSK automatically based on the wireless station's capability and request.
- WPA-PSK - Pre-shared key of WPA.
- WPA2-PSK - Pre-shared key of WPA2.

Version - You can select one of following versions:

- Auto - Select WPA/PSK or WPA2-PSK automatically based on the wireless station's capability and request.
- WPA-PSK - Pre-shared key of WPA.
- WPA2-PSK - Pre-shared key of WPA2.

Encryption - You can select either Auto, or TKIP or AES.

Wireless Password - You can enter ASCII or Hexadecimal characters. For Hexadecimal, the length should be between 8 and 64 characters, for ASCII, the length should be between 8 and 63 characters.

○ Wireless Advanced (28:30)

- Next, click on the Wireless Advanced section.
- In the **Transmission Power** drop-down list, select High for maximum range (about 100 meters coverage)
- Check the **Enable Short GI** and **Enable Client Isolation** options.
- Leave the other setting unchanged and click **Save**.

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Status
Quick Setup
Operation Mode
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- Basic Settings
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Guest Network
DHCP
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Advanced Routing
Bandwidth Control
IP & MAC Binding
Dynamic DNS
IPv6
System Tools
Logout

Wireless Advanced
Transmit Power: **High**
Beacon Interval: 100 (40-1000)
RTS Threshold: 2346 (1-2346)
Fragmentation Threshold: 2346 (256-2346)
DTIM Interval: 1 (1-15)
 Enable Short GI
 Enable Client Isolation
 Enable WMM

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Wireless Advanced Help

- Transmit Power - Here you can specify the transmission power of the wireless signal. You can select High, Middle or Low which you would like. High is the default setting and is recommended.
- Beacon Interval - The beacons are the packets sent by the Router to synchronize a wireless network. Beacon Interval value determines the time interval of the beacons. You can specify a value between 40-1000 milliseconds. The default value is 100.
- RTS Threshold - Here you can specify the RTS (Request to Send) Threshold. If the packet is larger than the specified RTS Threshold, the Router will send RTS frames to a particular receiving station and negotiate the sending of a data frame. The default value is 2346.
- Fragmentation Threshold - This value is the maximum size determining whether packets will be fragmented. Setting the Fragmentation Threshold too low may result in poor network performance since wireless packets 2346 is the default setting and is recommended.
- DTIM Interval - This value determines the interval of the wireless traffic indication message (DTIM). You can specify the value between 1-15 Beacon intervals. The default value is 1, which indicates the DTIM Interval is the same as Beacon Interval.
- Enable Short GI - Short Guard Interval is recommended for it will increase the data capacity by reducing the guard interval time.
- Enable Client Isolation - Isolate all connected wireless stations so that wireless stations cannot access each other through

o **Wireless Statistics (31:00)**

- Finally, click on the Wireless Advanced section.
- Under the wireless tab go to wireless statistics and view devices that are connected to the Wi-Fi, the amount of traffic (packets/load) each device consumes and the SSID it connects from. NOTE: You CAN NOT block user from using the Wi-Fi from here)

The screenshot shows the 'Wireless Statistics' page of the TP-Link WR840N router's web interface. The left sidebar has a 'Wireless' section with a yellow background, containing links for Basic Settings, WPS, Wireless Security, Wireless MAC Filter, Wireless Advanced, and Wireless Statistics. A red arrow points to the 'Wireless Advanced' link. The main content area displays a table of connected wireless stations. The table has columns for ID, MAC Address, Current Status, Received Packets, Sent Packets, and SSID. One row is shown with ID 1, MAC Address 88:46:04:24:B9:20, Current Status Associated, Received Packets 4, Sent Packets 4, and SSID KPSPIN_VUMA. Below the table is a QR code for the TP-Link Tether app and download links for the App Store and Google Play. A note at the bottom right says the page will refresh automatically every 5 seconds.

ID	MAC Address	Current Status	Received Packets	Sent Packets	SSID
1	88:46:04:24:B9:20	Associated	4	4	KPSPIN_VUMA

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Wireless Statistics Help
This page shows MAC Address, Current Status, Received Packets, Sent Packets and SSID for each connected wireless station.

- MAC Address - the connected wireless station's MAC address
- Current Status - the connected wireless station's running status
- Received Packets - packets received by the station
- Sent Packets - packets sent by the station
- SSID - SSID that the station associates with

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

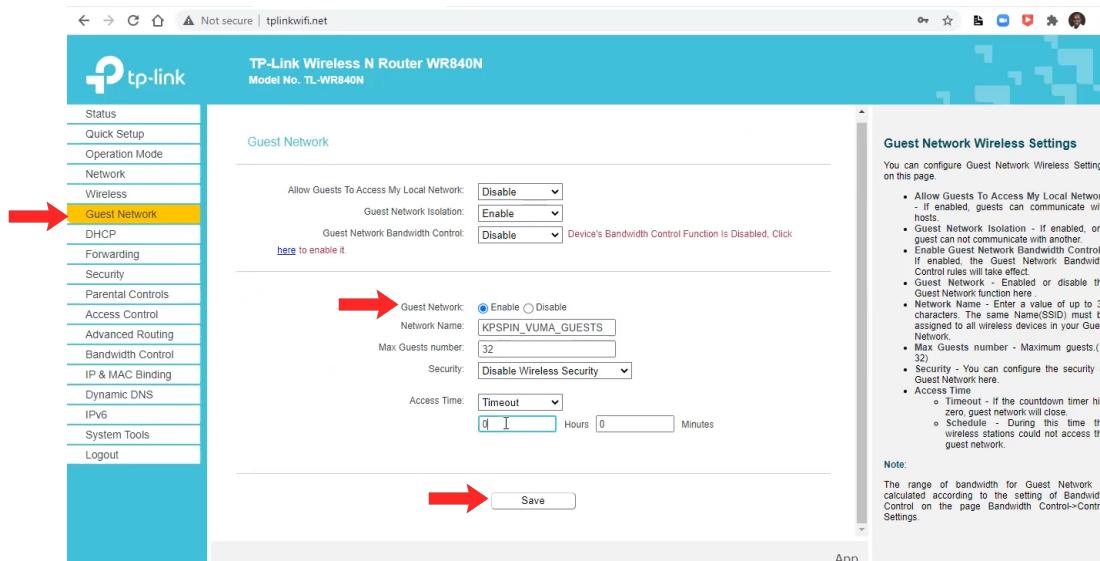
Note: This page will be refreshed automatically every 5 seconds.

5. SETTING UP GUEST WIFI

- Guest network allows you to specify the time duration for which users/guests can use the internet.
- You can control the bandwidth / internet speed guests can consume.
- You can set timeout for all / specific users e.g. at 8pm internet goes off and reconnects maybe at 9am.
- You can specify the maximum number of guests who can connect to the Wi-Fi e.g. maybe 10 guests.

Router Management Portal -> Guest Network (35:40)

- Select the Router Management option in the navigation panel on the left.
- Enable **Guest Network**.
- In **Network Name**, enter the preferred name of the Guest network e.g. KPSPIN_VUMA_GUESTS.
- Set the **Maximum Guests number** e.g. 32
- Under **Security** select WPA/WPA2-Personal
- Enter **Wireless Password**.
- In the section of **Wireless Schedule** click disable (But if you wish to set time schedule you can enable and specify time limits)
- Leave other settings unchanged and click **Save**.



6. DHCP SETTINGS

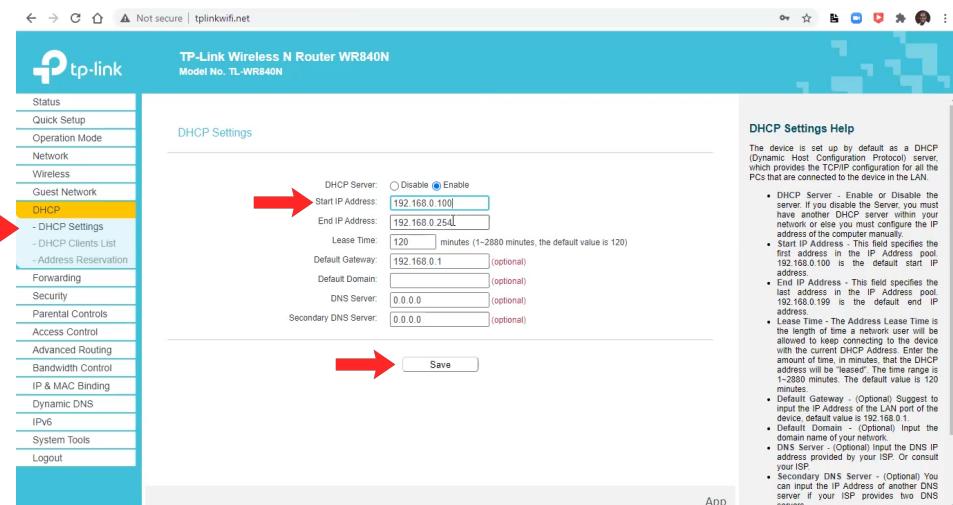
- Every device that will be connected to your network will require and must have a unique identifier assigned by the router to access the internet. This identifier is called Internet Protocol (IP).
- IP is allocated or given out by DHCP Server.
- IP address looks like this one: 192.168.1.20 and every device must have a number like this which is not similar to any other address (must be unique).
- In most cases you might need to leave these settings unchanged unless you have a specific reason as to why.
- By default TP-Link Router assign DHCP Server to allocate 99 set of IP addresses. This means that only 99 devices / users can connect to the router at a given period/time.
- However, this is something you can change, for example from 192.168.100.4-192.168.100.254 to allow for 250 devices to connect to the router at the same time. (The difference between 254 and 004 is the number of allowed devices)
- Note: you should be mindful of the quality of service and performance as 99 clients is the number that allows TP-Link to serve best).

Router Management Portal -> DHCP (41:55)

- Click on the Wireless tab in the wifi management portal navigation pane on the left.
- In the section under the DHCP tab, you will see several options like DHCP Settings, DHCP Clients List, Address Reservation.

o DHCP Settings

- Under the DHCP tab, select DHCP Settings.
- Enable **DHCP Server**.
- Enter **Start IP Address** e.g. 192.168.100.5
- Enter **End IP Address** E.g. 192.168.100.254
- Leave other settings unchanged and **Save**.



o DHCP Clients List

- To view the current connected devices, click on DHCP Clients List.
- You will see **Client Name:** device name (Sometime vendor name e.g. OPPO) under.
- **MAC address:** Device ID
- **Assigned IP:** IP Address allocated to devices
- **Lease Time:** Amount of time allocated to the device before the IP is assigned to another device
- You can click the **Refresh** button to see the current list.
- NO CHANGES SHOULD MADE HERE.

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Model No. TL-WR840N

DHCP Clients List

This page displays information of all DHCP clients on the network.

ID	Client Name	MAC Address	Assigned IP	Lease Time
1	Engineer	30:8D:99:C1:FA:E1	192.168.0.100	01:17:41

DHCP Clients List Help

This page shows Client Name, MAC Address, Assigned IP and Lease Time of each DHCP Client connected to the device.

- Client Name - The name of the DHCP client.
- MAC Address - The MAC address of the client.
- Assigned IP - The IP address that the device has allocated to the DHCP client.
- Lease Time - The time of the DHCP client leased.

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

o Address Reservation

- Can be used to reserve an IP address for specific devices in the network (for example: the server).
- Under the address reservation selection, you can add the device's **MAC Address** and **IP Address**.
- Select **Status** as Enabled to activate the reservation.

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DHCP Address Reservation

This page displays the static IP address assigned by the DHCP Server and allows you to adjust these configurations by clicking the corresponding fields.

	MAC Address	IP Address	Status	Edit
<input type="checkbox"/>				<input type="button" value="Edit"/>

Address Reservation Help

When you specify a reserved IP address for a PC in the LAN, that PC will always receive the same IP address every time it connects to the router. The DHCP server Reserved IP addresses could be assigned to servers that require permanent IP settings.

- MAC Address - The MAC Address of the PC you want to reserve an IP address for.
- IP Address - The IP address that the device reserved.
- Status - Shows whether the entry is enabled or not.
- Edit - To edit or delete an existing entry.

To Reserve IP Addresses, you can follow these steps:

1. Enter the MAC Address (The format for the MAC address is XX:XX:XX:XX:XX:XX) and the IP Address in dotted decimal notation of the computer you wish to add.
2. Click the Save button.

To edit a IP Address, you can follow these steps:

1. Select the reserved address entry, as you have saved, with it. If you want to delete the entry, select the entry and click the Delete Selected button.
2. If you want to enable the entry, select the entry and click the Enable Selected button.
3. Click the Save button.

Click the Add New button to add a new Address Reservation entry.

Click the Enable Selected button to enable the entry.

7. CREATE AND MANAGE NETWORK ADMINISTRATORS

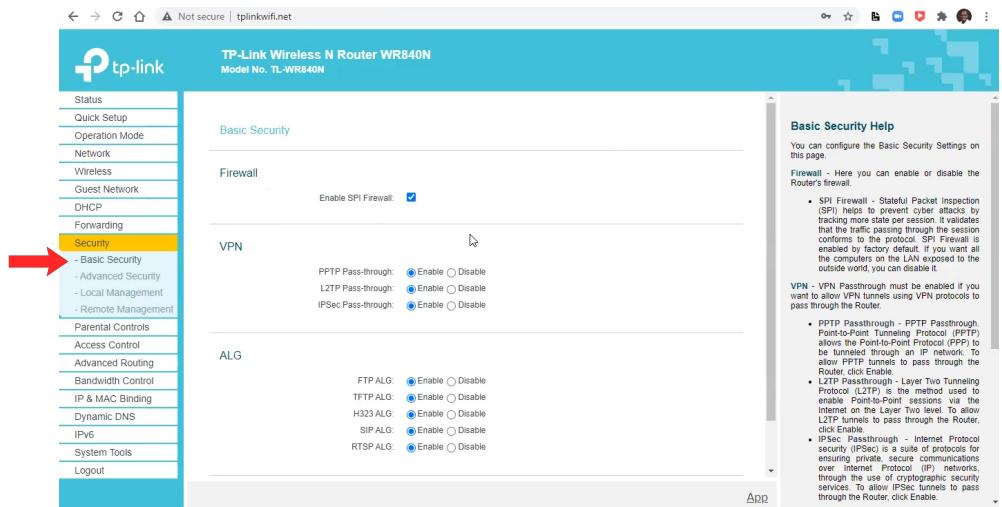
- This setting will allow you to restrict devices that can access the router web interface and settings.
- To do this you can specifically identify devices which are known to you and you trust can perform router settings. We call these devices as administrators.

Router Management Portal -> Security (53:30)

- Click on the Security in the wifi management portal navigation pane on the left.
- In the section under the Security tab, you will see several options like Basic Security, Advanced Security, Local Management and Remote Management

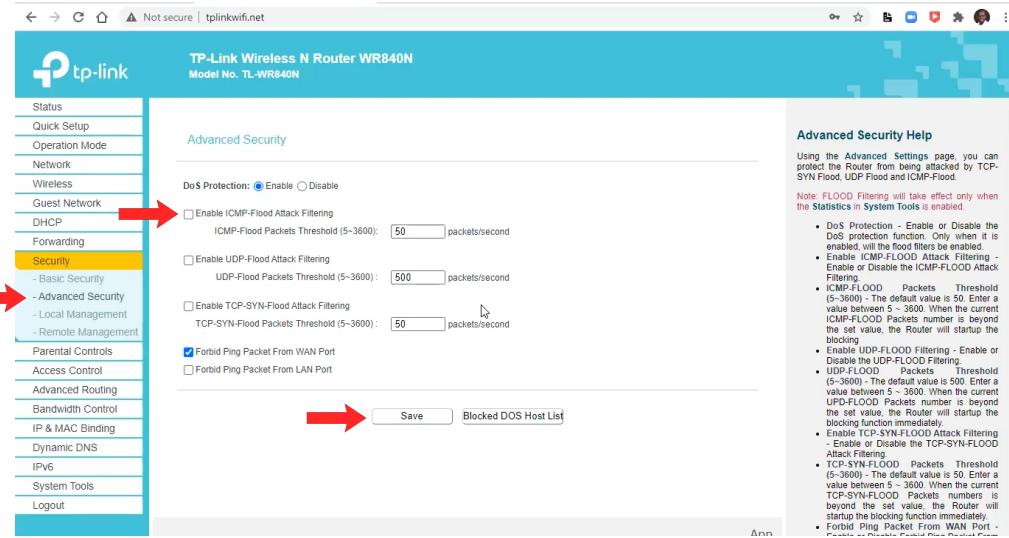
o Security

- Under the Security tab, you will see the Basic Security page.
- By default, all basic security measures are activated. DO NOT CHANGE anything.



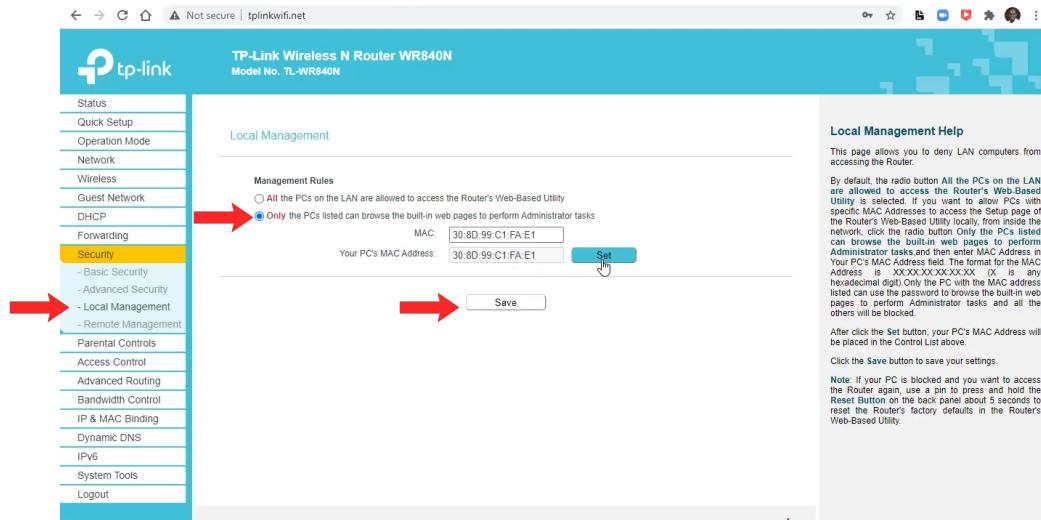
o Advanced Security

- Under the Security, select Advanced Security.
- DoS should always be enabled to protect the network from cyber attacks.
- (Check all the following checkboxes)
- Enable ICMP- Flood Attack Filtering.
- Enable UDP- Flood Attack Filtering.
- Enable TCP- SYN- Flood Attack Filtering.
- Enable Forbid Ping Packet From WAN Port.
- Enable Forbid Ping Packet From LAN Port.
- Click **Save**



o Local Management

- Under local management, you can restrict which devices can access the Router Management Database.
- Under the Security tab, open the Local Management page.
- Click the second option which says **ONLY PCs listed ...**
- NOTE: The first option is always your PC's MAC address thereafter you can add others (people/devices with management roles).
- Set and click **Save**.



8. CHANGING MANAGEMENT ACCESS RIGHTS

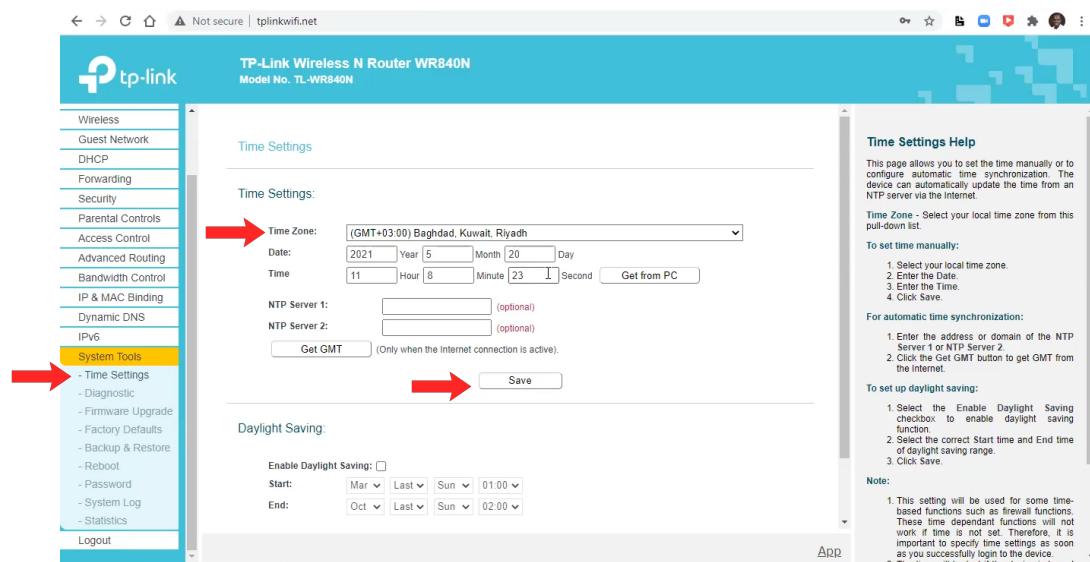
Here you will learn how to change the username and password of the router from default values. These are the rights administrators will use to login into the router interface. Please keep them safe and secure!

Router Management Portal -> System Tools (59:30)

- Click on the System Tools in the wifi management portal navigation pane on the left.
- In the section under the System Tools tab, you will see several options like Time Settings, Diagnostics, Firmware Upgrade, etc.

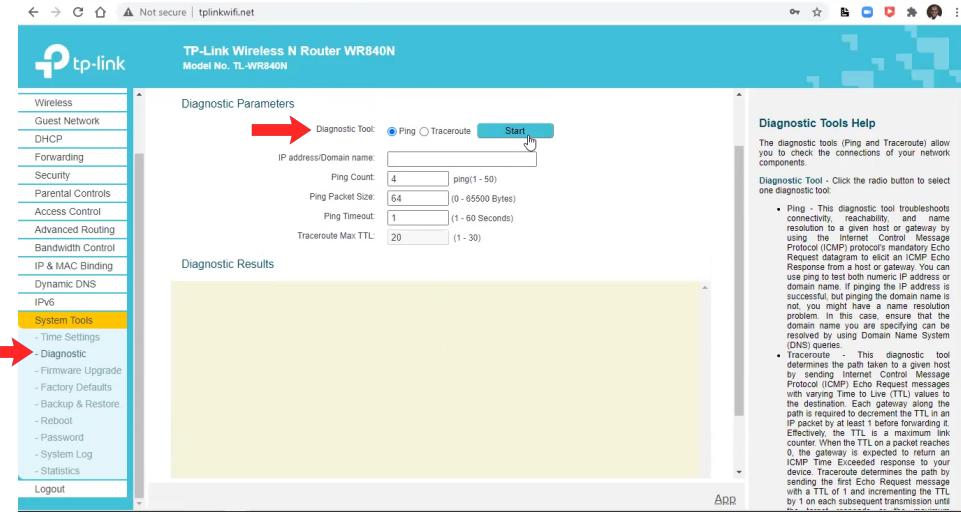
○ Time Settings (59:50)

- Under the System Tools tab, open the Time Settings page.
- Set the **Time Zone** to your preferred time zone, for eg GMT+3 for Nairobi.
- You can set the current **Date** and **Time** to allow the system to maintain accurate logs.
- Click **Save**.



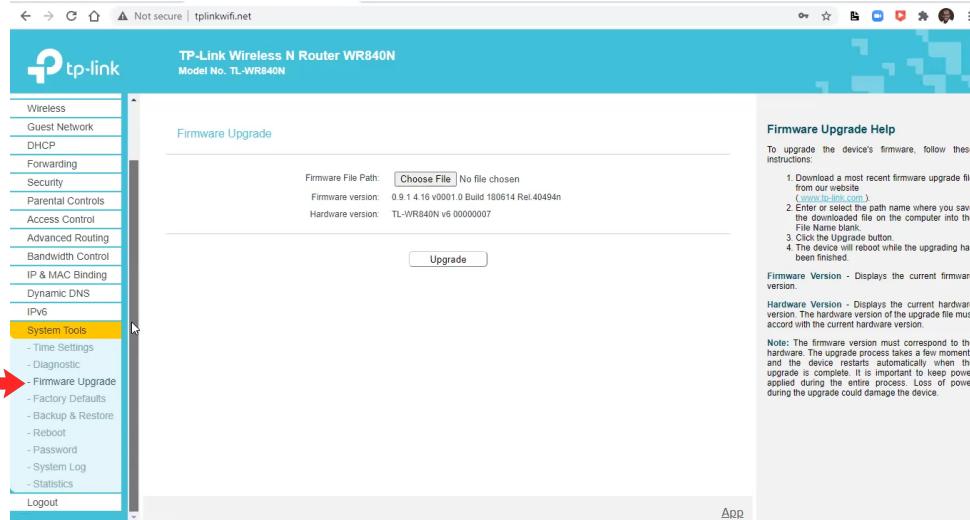
○ Diagnostic Tools (1:01:17)

- To test whether the router is receiving network connection or not, open the Diagnostics page.
- You can select **Ping** to reach a certain device/ IP to check if there is a complete connection.
- Disconnected- no results, Connected- results



- **Firmware Upgrade (1:02:20)**

- Used to upgrade the firmware (software) of the router.
- It is automatically set to upgrade the router at a time when there is least activity on the Network.



- **Password (1:03:45)**

- You will be asked to enter both **Old Username** and **Old Password**. (Use admin for both).
- Then enter your preferred **New Username** and **New Password** and then confirm the new password to make sure they are similar.
- Click **Save** (router automatically reboots upon updating password).

TP-Link Wireless N Router WR840N
Model No. TL-WR840N

Password

Username and password can contain between 1 - 15 characters and may not include spaces.

Old User Name:	admin
Old Password:
New User Name:	TNET_WIRELESS
New Password:	██████████
Confirm password:	██████████

Save **Clear All**

Password Help

It is strongly recommended that you change the device's default user name and password. All users who try to access the device's web-based utility will be prompted for the device's user name and password.

Note: The new user name and password must not exceed 15 characters in length and must not include any spaces. Enter the new Password twice to confirm it.

Click the Save button when finished.
Click the Clear All button to clear all.

○ System Log (1:04:00)

- They collect information and maintain log of all the changes that happen in the router.
- You can save these logs manually/ automatically under the System Logs tab.

TP-Link Wireless N Router WR840N
Model No. TL-WR840N

System Log

Log Type:	ALL	Log Level:	Debug	
54	2021-05-20 07:54:00	DHCP	Notice	Recv ACK from server 192.168.100.1 with ip 192.168.100.253 lease time 600
55	2021-05-20 07:54:59	DHCP	Notice	Send REQUEST to server 192.168.100.1 with request ip 192.168.100.253
56	2021-05-20 07:48:59	DHCP	Notice	Recv DNS server address 192.168.100.1,1.10.16.0.2
57	2021-05-20 07:48:58	DHCP	Notice	Recv ACK from server 192.168.100.1 with ip 192.168.100.253 lease time 600
58	2021-05-20 07:45:58	DHCP	Notice	Send REQUEST to server 192.168.100.1 with request ip 192.168.100.253
59	2021-05-20 07:43:58	DHCP	Notice	Recv DNS server address 192.168.100.1,1.10.16.0.2
60	2021-05-20 07:43:57	DHCP	Notice	Recv ACK from server 192.168.100.1 with ip 192.168.100.253 lease time 600
61	2021-05-20 07:38:57	DHCP	Notice	Send REQUEST to server 192.168.100.1 with request ip 192.168.100.253
62	2021-05-20 07:38:57	DHCP	Notice	Recv DNS server address 192.168.100.1,1.10.16.0.2
63	2021-05-20 07:38:56	DHCP	Notice	Recv ACK from server 192.168.100.1 with ip 192.168.100.253 lease time 600

System Log Help

Log Type - By selecting the log type, only logs of this type will be shown.

Log Level - By selecting the log level, only logs of this level will be shown.

Refresh - Refresh the page to show the latest log list.

Clear Log - All the logs will be deleted from the device permanently, not just from the page.

Save Log - Click to save all the logs in a txt file.

Log Settings - Click to set the logs in the screen.

- Save Locally - If Save Locally is selected, events will be recorded in the local memory.
- Minimum Level - Select the Minimum level in the drop-down list; for the Minimum Level, all logged events above or equal to the selected level will be displayed.
- Save Remotely - If Save Remotely is selected, events will be sent to the specified IP address and UDP port of the remote system log server.

TP-Link Wireless N Router WR840N
Model No. TL-WR840N

Syslog Settings

Save Locally Minimum Level: Information

Save Remotely

System Log Help

Log Type - By selecting the log type, only logs of this type will be shown.

Log Level - By selecting the log level, only logs of this level will be shown.

Refresh - Refresh the page to show the latest log list.

Clear Log - All the logs will be deleted from the device permanently, not just from the page.

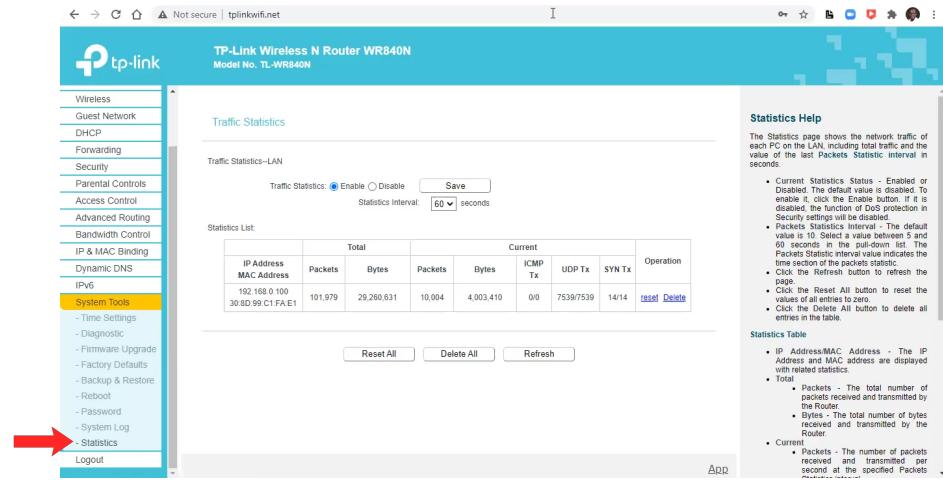
Save Log - Click to save all the logs in a txt file.

Log Settings - Click to set the logs in the screen.

- Save Locally - If Save Locally is selected, events will be recorded in the local memory.
- Minimum Level - Select the Minimum level in the drop-down list; for the Minimum Level, all logged events above or equal to the selected level will be displayed.
- Save Remotely - If Save Remotely is selected, events will be sent to the specified IP address and UDP port of the remote system log server.

- **Statistics (1:06:50)**

- Under Statistics, you can see the current users connected to their network and their bandwidth usage.



The screenshot shows the TP-Link Wireless N Router WR840N Statistics page. The left sidebar menu is visible, showing various system tools like Time Settings, Diagnostic, and Statistics. A red arrow points to the 'Statistics' link in this menu. The main content area displays 'Traffic Statistics' for the LAN interface. It includes a configuration section for enabling traffic statistics and setting the statistics interval (60 seconds). Below this is a 'Statistics List' table showing network traffic details for a single IP address (192.168.0.100) over the last 60 seconds. The table has columns for IP Address, MAC Address, Packets, Bytes, Current ICMP Tx, UDP Tx, SYN Tx, and Operation. At the bottom of the table are buttons for 'Reset All', 'Delete All', and 'Refresh'. To the right of the table is a 'Statistics Help' section with detailed explanations for each statistic and a 'Statistics Table' section with definitions for terms like IP Address/MAC Address, Total, and Current.

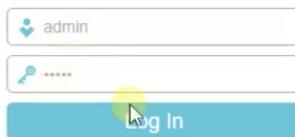
IP Address MAC Address	Total			Current			Operation
	Packets	Bytes	Packets	Bytes	ICMP Tx	UDP Tx	
192.168.0.100 30:8D:99:C1:FA:E1	101,979	29,260,631	10,004	4,003,410	0/0	7539/7539	14/14

9. CHECKING FOR DEVICES CONNECTED TO THE NETWORK

- Enter IP address in browser search bar



- Login to the tp-link router management portal.
- On the menu to the left of the page, scroll and select “DHCP Client List”



- Clients on the network will be displayed on the page. Page displays different devices connected to the network.

ID	Client Name	MAC Address	Assigned IP	Lease Time
1	DESKTOP-62BHCN0	70:1C:E7:E2:49:4D	192.168.0.108	01:57:52
2	vivo-1716	94:14:7A:9D:93:76	192.168.0.100	01:55:29
3	Hostname	A8:32:9A:00:C7:BD	192.168.0.101	01:25:46
4	vivo-1606	94:14:7A:93:94:B8	192.168.0.109	01:33:12
5	OPPO-F9	50:29:F5:45:B7:9F	192.168.0.105	01:43:30
6	vivo-1816	80:8A:9B:49:F5:4B	192.168.0.114	01:47:56

10. FAQ's

Does allowing for additional users negatively impact the speed of each user?

Yes - there is only a certain amount of connectivity that is shared among all the users on the network. More users on the network means each user gets a smaller share.

How do we change the number of guests allowed on the network?

In the menu on the left, click "Guest Network". From the form in the center of the webpage, change the value of "Max Guests number".

What does client isolation mean, and should it be enabled?

With client isolation enabled, users connected to the internet cannot look at what other users are sending over the internet. This is an important feature to have enabled because we do not want a malicious user stealing personal information or data from other users without them knowing.

How can we monitor which users are using greater amounts of data?

In the menu on the left, click System Tools > Statistics. In the center of the webpage, there is a list of the IP Addresses of the devices on the network. The total number of bytes is an appropriate measure of network usage for the device.

Is there a way to physically reset the router?

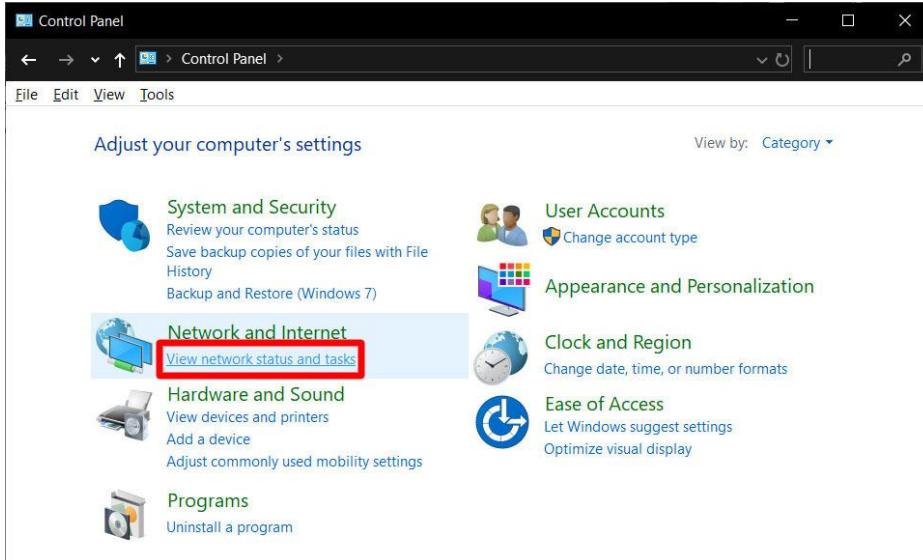
Yes, there is a button on the router that can be held down to reset the router to factory settings. However, resetting the router will also require reconfiguration, which requires Tunapanda to send a network engineer.

11. APPENDIX: FINDING YOUR ROUTER'S DEFAULT GATEWAY IP

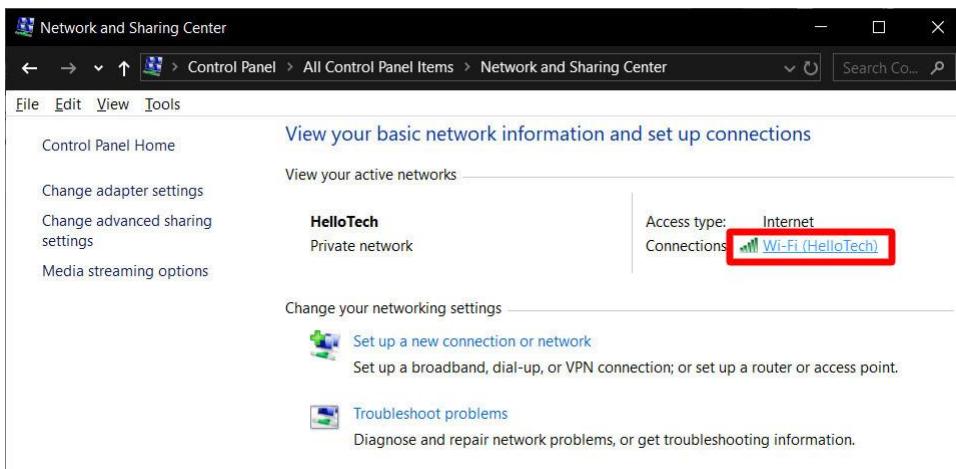
You can use the following steps to find your router's Default Gateway IP address to access its relevant WiFi Management Portal.

11.1. Finding Router Default Gateway IP Address Via Control Panel

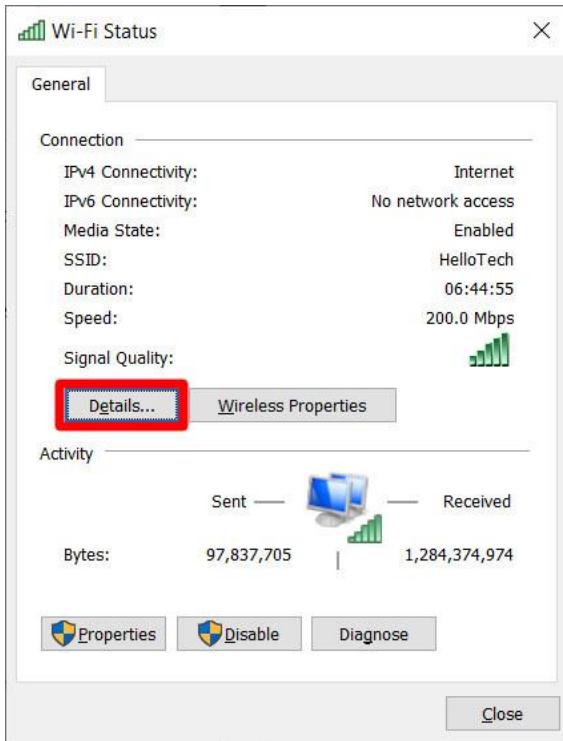
- Open the Windows search bar and type **Control Panel** in the search box.
- Hit Enter. You can also double click on the Control Panel app.
- Under **Network and Internet**, click on **View network status and tasks**.



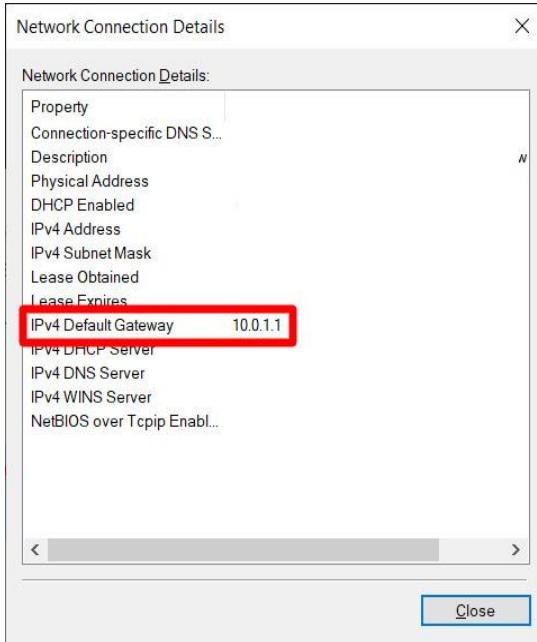
- Then click on the link for Connection: WiFi. If you are connecting directly to your router with an Ethernet cable, this might say Connection: Ethernet instead.



- Then click on Details in the pop-up box.

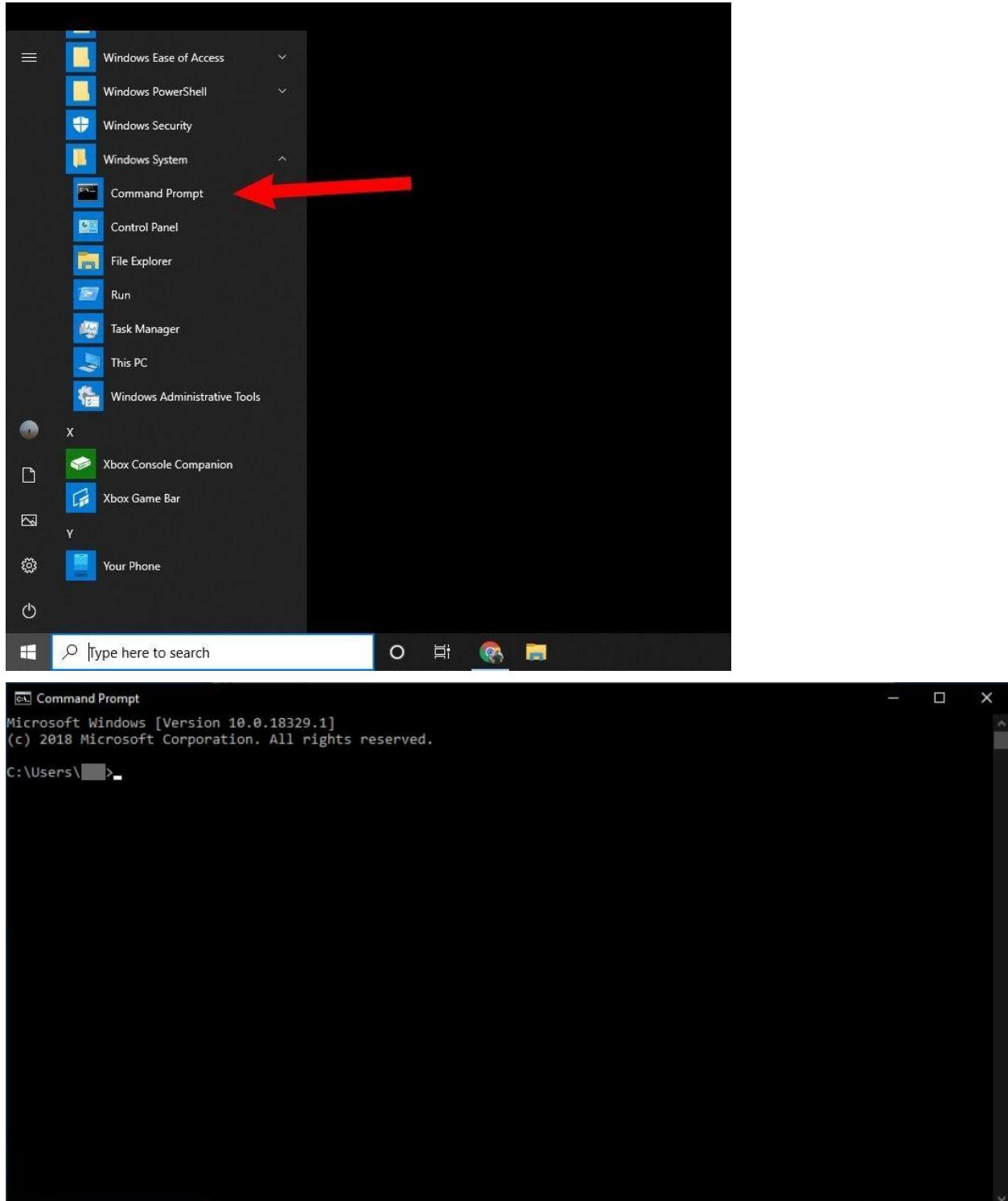


- Your router's IP address will be next to IPv4 Default Gateway.



11.2 Finding Router Default Gateway Ip Address Via Command Prompt

- Open command prompt using the bottom search toolbar. A window named 'Command Prompt' should pop-up.



- Type ‘ipconfig’ and press Enter/Return

```
C:\ Command Prompt
C:\Users\... >ipconfig

Windows IP Configuration

Ethernet adapter vEthernet (Wide Networking Switch (jg)):

  Connection-specific DNS Suffix  . :
  Link-local IPv6 Address . . . . . : fe80::4099:1
  IPv4 Address. . . . . : 10.0.0.2
  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 10.0.0.1

Wireless LAN adapter Wi-Fi:

  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 1:

  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 3:

  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix  . :

Ethernet adapter vEthernet (Default Switch):
```

- Read the value of ‘Default Gateway’

```
C:\ Command Prompt
C:\Users\... >ipconfig

Windows IP Configuration

Ethernet adapter vEthernet (Wide Networking Switch (jg)):

  Connection-specific DNS Suffix  . :
  Link-local IPv6 Address . . . . . : fe80::4099:1
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  Subnet Mask . . . . . : 255.255.255.0
  Default Gateway . . . . . : 10.0.0.1

Wireless LAN adapter Wi-Fi:

  Media State . . . . . : Media disconnected
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Wireless LAN adapter Local Area Connection* 1:

  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 3:

  Media State . . . . . : Media disconnected
  Connection-specific DNS Suffix  . :

Ethernet adapter vEthernet (Default Switch):
```

- Video walk through: <https://www.youtube.com/watch?v=X8SFK609WOA>