

# User Guide

## ASUS ExpertWiFi EBM68

AX7800 Tri Band WiFi Router

Model: EBM68



**ASUS**  
IN SEARCH OF INCREDIBLE

E22959

First Edition

December 2023

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# 1 Getting to know your EBM68

## 1.1 Welcome!

Thank you for purchasing an ASUS ExpertWiFi EBM68!

The ultra-thin and stylish EBM68 features a 2.4GHz, 5GHz-1 and 5GHz-2 triple bands for an unmatched concurrent wireless HD streaming; SMB server, UPnP AV server, and FTP server for 24/7 file sharing; a capability to handle 300,000 sessions; and the ASUS Green Network Technology, which provides up to 70% power-saving solution.

## 1.2 Package contents

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> ExpertWiFi EBM68  | <input checked="" type="checkbox"/> Network cable (RJ-45) |
| <input checked="" type="checkbox"/> Power adapter     | <input checked="" type="checkbox"/> Wall-mount kit        |
| <input checked="" type="checkbox"/> Quick Start Guide | <input checked="" type="checkbox"/> Warranty card         |

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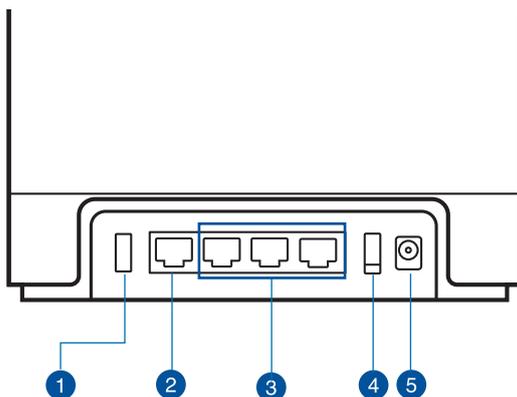
### NOTES:

- If any of the items are damaged or missing, contact ASUS for technical inquiries and support. Refer to **Service and Support** at the back of this user manual.
  - Keep the original packaging material in case you would need future warranty services such as repair or replacement.
-

## 1.3 Your wireless router

- 1 Plug the adapter into the DCIN port and press the switch to turn on the system.
- 2 The power LED will light up when your hardware is ready.

### Button and Port Explanations



- 
- 1 **USB 3.2 Gen 1x1 port**  
Insert a USB 3.2 Gen 1x1 device such as a USB hard disk or a USB flash drive into this port.
  - 2 **2.5G / 1G WAN port**  
Connect your optical modem to this port with a network cable.
  - 3 **LAN 1 ~ 3 ports**  
Connect your PC to a LAN port with a network cable.
  - 4 **Power switch**  
Switch to turn on or off the system.
  - 5 **Power (DCIN) port**  
Insert the bundled AC adapter into this port and connect your router to a power source.
-

## LED indications during the process of using 160MHz for the backhaul connection

The process starts one minute after the node has connected to the main router with a strong backhaul connection. During this process, the LED indicator of the router keeps static green. The network is currently available for connection, but the performance might be limited.

Step	Router status	Router LED	Time length
1	Checking connection strength	Static green	1 minute
2	Monitoring radar signal	Static green	1 minute (Obey FCC Regulations) 10 minutes (Obey CE Regulations)
3	Using 160MHz for the backhaul connection	Static white	

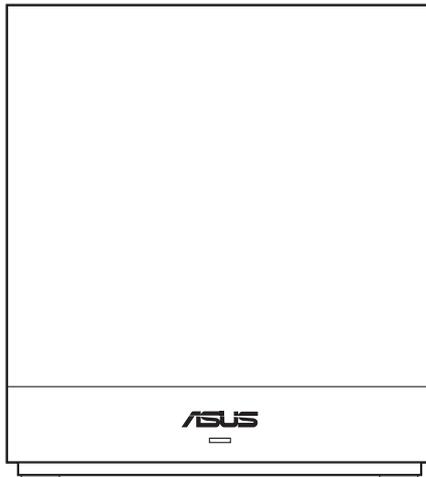
### Specifications:

<b>DC Power adapter</b>	DC Output: +12V with max 3A current		
<b>Operating Temperature</b>	0~40°C	Storage	0~70°C
<b>Operating Humidity</b>	50~90%	Storage	20~90%

## 1.4 Positioning your router

For the best wireless signal transmission between the wireless router and the network devices connected to it, ensure that you:

- Place the wireless router in a centralized area for a maximum wireless coverage for the network devices.
- Keep the device away from metal obstructions and away from direct sunlight.
- Keep the device away from 802.11g or 20MHz only Wi-Fi devices, 2.4GHz computer peripherals, Bluetooth devices, cordless phones, transformers, heavy-duty motors, fluorescent lights, microwave ovens, refrigerators, and other industrial equipment to prevent signal interference or loss.
- Always update to the latest firmware. Visit the ASUS website at <http://www.asus.com> to get the latest firmware updates.



## 1.5 Setup Requirements

To set up your wireless network, you need a computer that meets the following system requirements:

- Ethernet RJ-45 (LAN) port (10Base-T/100Base-TX/1000BaseTX)
- IEEE 802.11a/b/g/n/ac wireless capability
- An installed TCP/IP service
- Web browser such as Internet Explorer, Firefox, Safari, or Google Chrome

---

### NOTES:

- If your computer does not have built-in wireless capabilities, you may install an IEEE 802.11a/b/g/n/ac WLAN adapter to your computer to connect to the network.
  - With its triple band technology, your wireless router supports 2.4GHz, 5GHz-1, and 5GHz-2 wireless signals simultaneously. This allows you to do Internet-related activities such as Internet surfing or reading/writing e-mail messages using the 2.4GHz band while simultaneously streaming high-definition audio/video files such as movies or music using the 5GHz band.
  - Some IEEE 802.11n devices that you want to connect to your network may or may not support 5GHz band. Refer to the device's manual for specifications.
  - The Ethernet RJ-45 cables that will be used to connect the network devices should not exceed 100 meters.
-

## 1.6 Router Setup

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### **IMPORTANT!**

- Use a wired connection when setting up your wireless router to avoid possible setup problems.
  - Before setting up your ASUS wireless router, do the following:
    - If you are replacing an existing router, disconnect it from your network.
    - Disconnect the cables/wires from your existing modem setup. If your modem has a backup battery, remove it as well.
    - Reboot your cable modem and computer (recommended).
- 

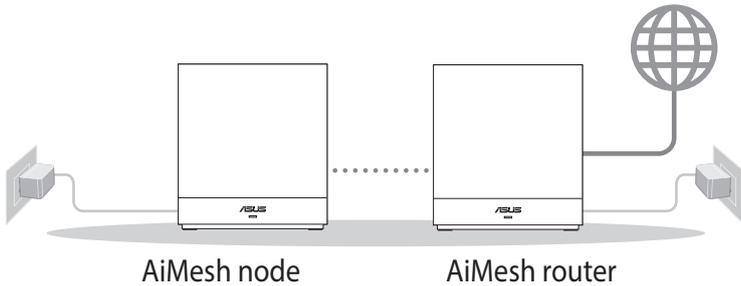


### **WARNING!**

- The power supply cord(s) must be plugged into socket-outlet(s) that is /are provided with a suitable earth ground. Connect the equipment only to a nearby socket outlet that is easily accessible.
  - If the Adapter is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
  - DO NOT use damaged power cords, accessories, or other peripherals.
  - DO NOT mount this equipment higher than 2 meters.
  - Use this product in environments with ambient temperatures between 0°C (32°F) and 40°C (104°F).
-

## 1.6.1 Wired connection

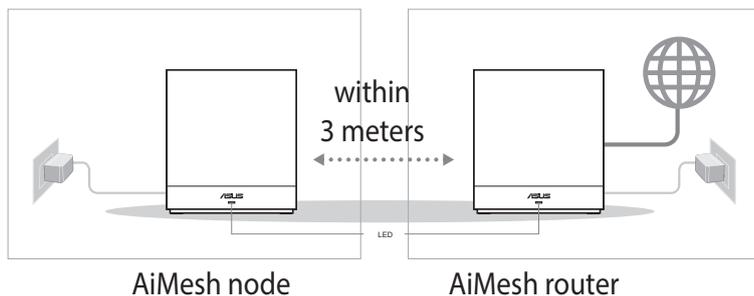
**NOTE:** You can use either a straight-through cable or a crossover cable for wired connection.



### To set up your wireless router via wired connection:

1. Insert your wireless router's AC adapter to the DCIN port and plug it to a power outlet.
2. Using the bundled network cable, connect your computer to your wireless router's LAN port.
3. Using another network cable, connect your modem to your wireless router's WAN port.
4. Insert your modem's AC adapter to the DCIN port and plug it to a power outlet.

## 1.6.2 Wireless connection



### To set up your wireless router via wireless connection:

1. Insert your wireless router's AC adapter to the DCIN port and plug it to a power outlet.
2. Using the bundled network cable, connect your modem to your wireless router's WAN port.
3. Insert your modem's AC adapter to the DCIN port and plug it to a power outlet.
4. Install an IEEE 802.11a/b/g/n/ac WLAN adapter on your computer.

---

**NOTE:** For details on connecting to a wireless network, refer to the WLAN adapter's user manual.

---

## 2 Getting started

### 2.1 Logging into the Web GUI

Your ASUS Wireless Router comes with an intuitive web graphical user interface (GUI) that allows you to easily configure its various features through a web browser such as Microsoft Edge, Safari, or Google Chrome.

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**NOTE:** The features may vary with different firmware versions.

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#### **Connecting to your network wirelessly:**

1. On your computer, click the network icon  in the notification area to display the available wireless networks.
2. Select the wireless network of EBM68, then click **Connect**.
3. Key in the network security key that is shown on the rating label of EBM68, then click **OK**.
4. Wait while your computer establishes connection to the wireless network successfully. The connection status is displayed and the network icon displays the connected  status.

#### **Connecting to your network wiredly:**

To log into the web GUI:

1. On your web browser, enter <http://expertwifi.net>.
2. Follow the instructions for setup.

## 2.2 Auto-detection of WAN

The Quick Internet Setup (QIS) function guides you in quickly setting up your Internet connection.

---

**NOTE:** When setting the Internet connection for the first time, press the Reset button on your wireless router to reset it to its factory default settings.

---

### Auto-detection of WAN:

#### 1. Log into the Web GUI.

The wireless router automatically detects the ISP connection type for setup.



---

### NOTES:

- For details on changing your wireless router's login username and password, refer to section **3.2.2 System**.
  - The wireless router's login username and password is different from the 2.4GHz/5GHz network name (SSID) and security key. The wireless router's login username and password allows you to log into your wireless router's Web GUI to configure your wireless router's settings. The 2.4GHz/5GHz network name (SSID) and security key allows Wi-Fi devices to log in and connect to your 2.4GHz/5GHz network.
-

2. Choose advanced setting for an ISP connection type such as **Automatic IP (DHCP)**, **PPPoE**, or **Static IP**. Key in the necessary information for your ISP connection type.

---

**IMPORTANT!** Obtain the necessary information from your ISP about the Internet connection type.

---

The screenshot shows the 'Internet' settings page. At the top, there is a blue header with the 'ASUS BUSINESS' logo. Below the header, the page is titled 'Internet Connection type'. A sub-header reads: 'Please select the Internet connection type from the options below. If you do not know the Internet connection type, contact your ISP.' There are three main options, each with a right-pointing arrow: 'Automatic IP', 'PPPoE', and 'Static IP'. Below these is a checkbox labeled 'DHCP Option' which is currently unchecked. At the bottom center, there is a rounded 'Previous' button.

for Automatic IP (DHCP)

The screenshot shows the 'Wireless Settings' page. At the top, there is a blue header with the 'ASUS BUSINESS' logo. Below the header, the page is titled 'Wireless Settings'. A sub-header reads: 'Assign a unique name or SSID (Service Set Identifier) to help identify your wireless network.' There are two input fields: '網路名稱 (SSID)' with the value 'ASUS\_DO\_EBM68' and '無線加密' with a value of '\*\*\*\*\*'. Below these is a checkbox labeled 'Separate 2.4 GHz and 5 GHz' which is unchecked. At the bottom, there is a link that says '如何找到WiFi密碼' and two buttons: a rounded 'Previous' button and a solid blue 'Apply' button.

## for PPPoE



**Internet**  
ISP Account Setting

Enter the username and password for your Internet connection information. These settings were given by your Internet Service Provider (ISP).

Username  
\_\_\_\_\_

Password   
\_\_\_\_\_

[Previous](#) [Next](#)

## for Static IP



**Internet**  
Static IP

Your ISP should give you the information about IP, subnet mask, gateway, and DNS address. If not, please contact your ISP.

IP Address  
192.168.1.215  
\_\_\_\_\_

Subnet Mask  
255.255.255.0  
\_\_\_\_\_

Default Gateway  
192.168.1.1  
\_\_\_\_\_

DNS Server1  
192.168.1.1  
\_\_\_\_\_

DNS Server2  
\_\_\_\_\_

[Previous](#) [Next](#)

---

## NOTES:

- The auto-detection of your ISP connection type takes place when you configure the wireless router for the first time or when your wireless router is reset to its default settings.
  - If QIS failed to detect your Internet connection type, click **Skip to manual setting** and manually configure your connection settings.
- 

3. Enter your username, password or keep the default login information and configure the wireless settings. Click **Apply** when done.

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### 本地端登入

Username / Password  
Settings

設定本機登入使用者名稱和密碼，以防止他人未經授權擅自存取您的 ASUS 網路裝置。

帳號  
admin

New password  
\*\*\*\*\*

Use default Local Login Password  
The default encrypted Local Login Password provides a secure login process when you connect to this ASUS networking device locally.

[如何找到本地端登入密碼](#)

Previous Next

ASUS | BUSINESS

### Wireless Settings

Assign a unique name or SSID (Service Set Identifier) to help identify your wireless network.

網路名稱 (SSID)  
ASUS\_D0\_EBM68

無線加密  
\*\*\*\*\*

Separate 2.4 GHz and 5 GHz

[如何找到WiFi密碼](#)

Previous Apply

---

**NOTE:** If you want to assign different SSIDs for your 2.4GHz, 5GHz-1, 5GHz-2 wireless connection, tick **Separate 2.4GHz and 5GHz**.

---

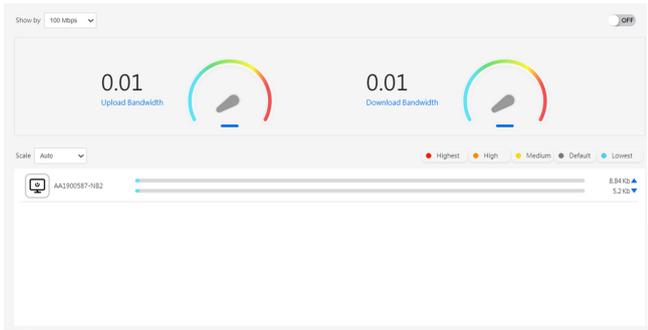
# 3 Configuring EBM68

## 3.1 Adaptive QoS

### 3.1.1 Bandwidth Monitor

Bandwidth Monitor allows you to monitor the total and each client's download and upload bandwidth usage.

To use **Bandwidth Monitor**, go to **Settings > Adaptive QoS > Bandwidth Monitor**.



---

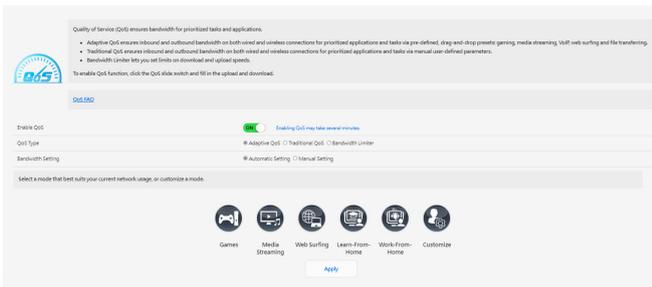
**NOTE:** For more information, please visit <https://www.asus.com/support/faq/1008717>.

---

### 3.1.2 QoS

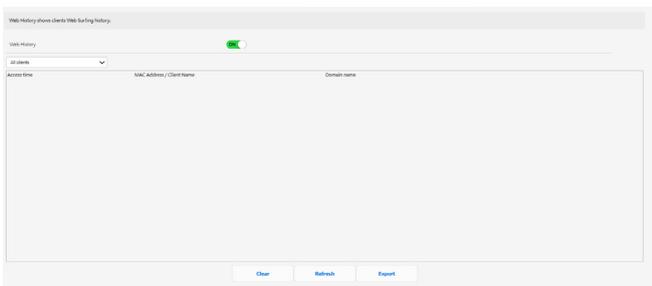
Quality of Service (QoS) ensures the bandwidth for prioritized tasks and applications.

1. **Adaptive QoS** ensures inbound and outbound bandwidth on both wired and wireless connections for prioritized applications and tasks via pre-defined, drag-and-drop presets: gaming, media streaming, VoIP, web browsing and file transfer.
2. **Traditional QoS** ensures inbound and outbound bandwidth on both wired and wireless connections for prioritized applications and tasks via manual user-defined parameters.
3. **Bandwidth Limiter** lets you set limits on download and upload speeds.



### 3.1.3 Web History

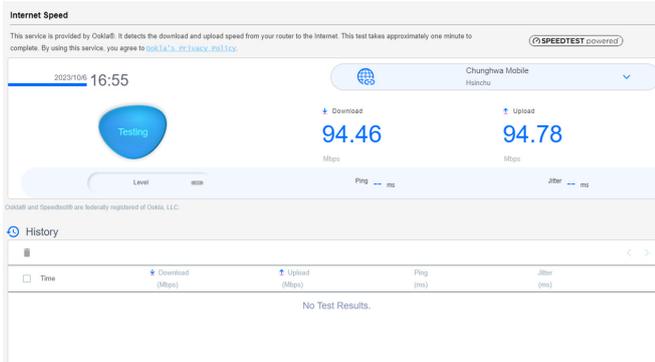
**Web History** page displays the clients' web browsing history.



### 3.1.4 Internet Speed

This service is provided by Ookla®. It detects the download and upload speed from your router to the Internet.

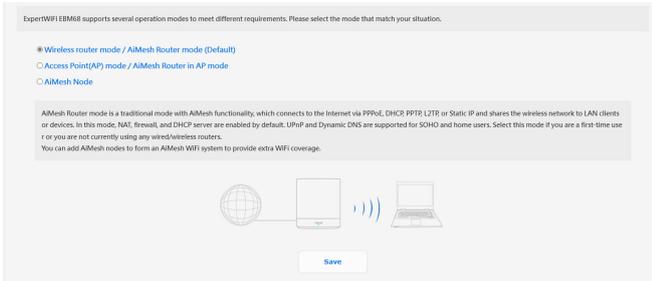
Click **GO** to have an internet speed test, which takes approximately one minute to complete.



## 3.2 Administration

### 3.2.1 Operation Mode

The Operation Mode page allows you to select the appropriate mode for your network.



#### To set up the operating mode:

1. From the navigation panel, go to **Settings > Administration > Operation Mode**.
2. Select any of these operation modes:
  - **Wireless router mode (default):** In wireless router mode, the wireless router connects to the Internet and provides Internet access to available devices on its own local network.
  - **Repeater mode:** This mode turns the router into a wireless repeater to extend the range of your signal.
  - **Access Point mode:** In this mode, the router creates a new wireless network on an existing network.
3. Click **Save**.

---

**NOTE:** The router will reboot when you change the modes.

---

### 3.2.2 System

The **System** page allows you to configure your wireless router settings.

**To set up the System settings:**

1. From the navigation panel, go to **Settings > Administration > System**.
2. You can configure the following settings:
  - **Change router login password:** You can change the password and login name for the wireless router by entering a new name and password.
  - **USB setting:** You can Enable HDD Hibernation and change USB mode.
  - **WPS button behavior:** The physical WPS button on the wireless router can be used to activate WPS.
  - **Time Zone:** Select the time zone for your network.
  - **NTP Server:** The wireless router can access a NTP (Network time Protocol) server in order to synchronize the time.
  - **Network Monitoring:** You can enable DNS Query to check Resolve Hostname and Resolved IP Addresses, or enable Ping, then check your Ping Target.
  - **Auto Logout:** You can set the time of auto-logout.
  - **Enable WAN down browser redirect notice:** This feature allows the browser to display a warning page when the router is disconnected from Internet. When disabled, the warning page will not appear.
  - **Enable Telnet:** Click **Yes** to enable Telnet services on the network. Click **No** to disable Telnet.
  - **Authentication Method:** You can select HTTP, HTTPS, or both protocols to secure router access.
  - **Enable Reboot Scheduler:** When enabled, you can set the Date to Reboot and Time of Day to Reboot.
  - **Enable Web Access from WAN:** Select **Yes** to allow devices outside the network to access the wireless router GUI settings. Select **No** to prevent access.

- **Enable Access Restrictions:** Click **Yes** if you want to specify the IP addresses of devices that are allowed to access to the wireless router GUI settings from WAN/LAN.
  - **Service:** This feature allows you to configure Enable Telnet/Enable SSH/SSH Port/Allow Password Login/Authorized Keys/Idle Timeout.
3. Click **Apply**.

## 3.2.3 Firmware Upgrade

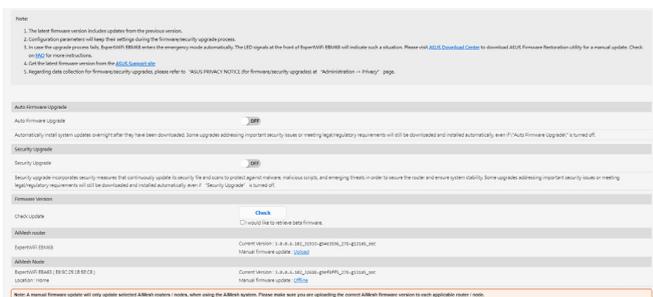
**NOTE:** Download the latest firmware from the ASUS website at <http://www.asus.com>.

### To upgrade the firmware:

1. From the navigation panel, go to **Settings > Administration > Firmware Upgrade**.
2. In the **New Firmware File** field, click **Browse** to locate the downloaded file.
3. Click **Upload**.

### NOTES:

- When the upgrade process is complete, wait for some time for the system to reboot.
- If the upgrade process fails, the wireless router automatically enters rescue mode and the power LED indicator on the front panel starts flashing slowly. To recover or restore the system, refer to section **4.2 Firmware Restoration**.



### 3.2.4 Restore/Save/Upload Setting

#### To restore/save/upload wireless router settings:

1. From the navigation panel, go to **Settings > Administration > Restore/Save/Upload Setting**.
2. Select the tasks that you want to do:
  - **Factory default:** Initialize all the settings, and clear all the data log for AiProtection, Traffic Analyzer and Web History.
  - **Save setting:** Click on this checkbox if you want to share the configuration file for debugging. Since the original password in the configuration file will be removed, please do not import the file into your router.
  - **Restore setting:** Upload the restoration settings you want to apply.

---

**IMPORTANT!** If issues occur, upload the latest firmware version and configure new settings. Do not restore the router to its default settings.

---

This function allows you to save current settings of ExpertWiFi EBM68 to a file, or load settings from a file.

Factory default	<input type="button" value="Restore"/>	<input checked="" type="checkbox"/> Initialize all the settings, and clear all the data log for AiProtection, Traffic Analyzer, and Web History.
Save setting	<input type="button" value="Save setting"/>	<input type="checkbox"/> Click on this checkbox if you want to share the config file for debugging. Since the original password in the config file will be removed, please do not import the file into your router.
Restore setting	<input type="button" value="Upload"/>	

## 3.2.5 Feedback

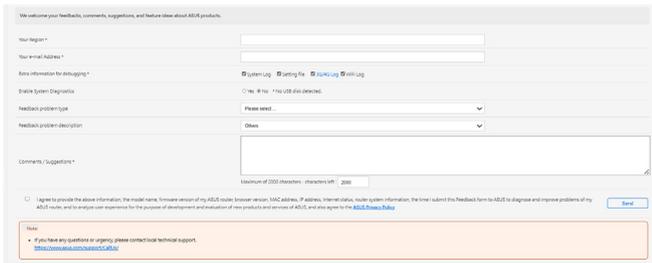
### To use Feedback:

1. From the navigation panel, go to **Settings > Administration > Feedback**.
2. Enter your region, e-mail address, extra information for debugging, comments and suggestions, and send your router log back for troubleshooting.

---

### IMPORTANT!

- Describe your comments on the situation in details to get a quick response.
  - Please agree with the ASUS Privacy Policy.
- 



The screenshot shows the ASUS Feedback form. At the top, it says "We value your feedback, comments, suggestions, and feature ideas about ASUS products." The form includes the following fields and options:

- Your Region \***: A text input field.
- Your email Address \***: A text input field.
- Extra information for debugging \***: Radio buttons for  System Log,  Setting file,  System Log, and  Shell Log.
- Enable system diagnostics**: Radio buttons for  Yes (New) and  No (Old data disabled).
- Feedback problem type**: A dropdown menu with "Please select..." as the current selection.
- Feedback problem description**: A dropdown menu with "Other" as the current selection.
- Comments / suggestions \***: A large text area.
- Maximum of 2000 characters (characters left): 2000**
- I agree to provide the above information, the model name, firmware version of my ASUS router, browser version, MAC address, IP address, Internet access, router system information, the time I submit this Feedback form to ASUS to diagnose and resolve problems of my ASUS router, and to analyze user experience for the purposes of development and evaluation of new products and services of ASUS, and also agree to the [ASUS Privacy Policy](#).**
- 

**Note**

- If you have any questions or urgently please contact local technical support. [https://www.asus.com/support/ASUS](#)

### 3.2.6 Privacy

#### 1. For account binding, DDNS and Remote connection (ASUS Router app/Lyra app/AiCloud/AiDisk):

Please note that your information, including your product model name, firmware version, Internet status, IP Address, MAC address and DDNS name, will be collected by ASUS through the above functions.

If you want to disable sharing your information with ASUS through the above functions, please click **Withdraw** below. However, please note that these features/functions may not work if you stop sharing your information with ASUS.

---

#### IMPORTANT!

- After you click **Withdraw**, there will be some changes as listed below:
  - The DDNS name you are currently using will not be kept in your router.
  - ASUS Router app, Lyra app, AiCloud, AiDisk can be used only when your device is in the same LAN with the router.

---

#### 2. ASUS PRIVACY Notice (for firmware/security upgrade):

Please note that your information will be collected by ASUS router for firmware/security upgrade purposes. If you want to disable sharing your information with ASUS router, please click **Withdraw** below.

---

**IMPORTANT!** Clicking **Withdraw** here may result in the failure of upgrading to the latest firmware and getting the most up-to-date protection on your ASUS router. However, to protect the security of your router and ensure the compliance with laws, upgrades addressing important security issues or meeting legal/regulatory requirements will still be downloaded and installed automatically.

---

## 3.3 AiMesh

### 3.3.1 Setting up the wireless settings

To protect your wireless network from unauthorized access, you need to configure its security settings.

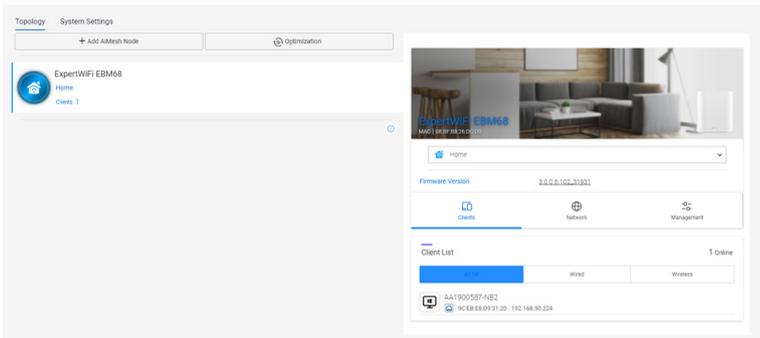
#### To set up the wireless settings:

1. From the navigation panel, go to **AiMesh > Topology**.
2. You can configure the wired and wireless connection, manage the network status and the LED status.

---

**NOTE:** You can set up different wireless security settings for your 2.4GHz, 5GHz-1, 5GHz-2 wireless connection.

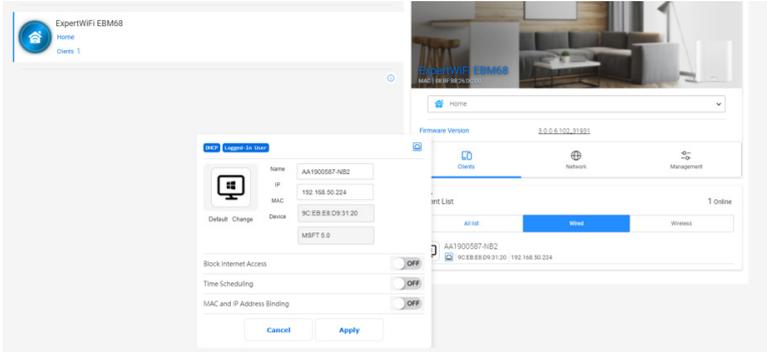
---



3. Go to **AiMesh > System Settings** to enable or disable Ethernet Backhaul Mode, configure Roaming Block List, reset the system settings to factory defaults or reboot the system.



### 3.3.2 Managing your network clients



#### To manage your network clients:

1. From the navigation panel, go to **AiMesh > Topology**.
2. Select the **Clients** icon to display your network client's information such as the client's name, MAC and IP address.
3. You can block the client's access to your network, disable its time scheduling or disable its MAC and IP binding by moving the slider to **OFF**.
4. Click **Apply** when done.

## 3.4 AiProtection

AiProtection provides real-time monitoring that detects malware, spyware, and unwanted access. It also filters unwanted websites and apps and allows you to schedule a time that a connected device is able to access the Internet.

The screenshot shows the AiProtection Router Security Assessment interface. On the left, there is a navigation menu with icons for Router Security Assessment, Malicious Sites Blocking, Two-Way IPS, and Infected Device Prevention and Blocking. The main content area is titled 'ROUTER SECURITY ASSESSMENT' and contains a list of security features with their status indicators. The status indicators are color-coded: green for 'Strong', yellow for 'Medium', and orange for 'Weak'.

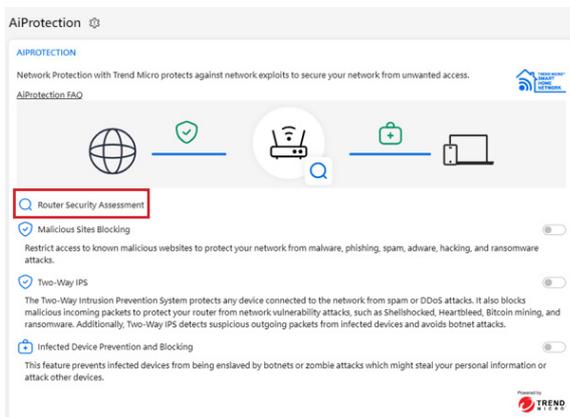
Feature	Status
Default router login username and password changed	Strong
Wireless password strength check	Strong
WPS Disabled	Strong
DMZ Disabled	Strong
Port forwarding disabled	Strong
PING from WAN disabled	Strong
Disable guest login for Network Place Share	Strong
Vulnerability Protection enabled	Weak

### 3.4.1 Network Protection

Network Protection prevents network exploits and secures your network from unwanted access.

#### To assess your router security:

1. From the navigation panel, go to **AiProtection**.
2. Click **Router Security Assessment** to display the security assessment results.



ROUTER SECURITY ASSESSMENT			
Scan your router to find vulnerabilities and offer available options to enhance your devices protection.			
Password			
Default router login username and password changed	No	Wireless password strength check	Strong
WAN / LAN			
Wireless encryption enabled	Strong	WPS Disabled	Yes
UPnP service disabled	No	DMZ disabled	Yes
Port trigger disabled	Yes	Port forwarding disabled	Yes
Web access from WAN disabled	Yes	PING from WAN disabled	Yes
Anonymous login to FTP share disabled	Yes	Disable guest login for Network Place Share	Yes
AiProtection			
Malicious Website Blocking enabled	No	Vulnerability Protection enabled	No
Infected Device Prevention and Blocking	No		

**IMPORTANT!** Items marked as **Yes** on the **ROUTER SECURITY ASSESSMENT** page are considered to be at a safe status. Items marked as **No** are highly recommended to be configured accordingly.

3. (Optional) From the **ROUTER SECURITY ASSESSMENT** page, manually configure the items marked as **No**. To do this:
  - a. Click an item.

**NOTE:** When you click an item, the utility forwards you to the item's setting page.

- b. From the item's security settings page, configure and make the necessary changes and click **Apply** when done.
  - c. Go back to the **ROUTER SECURITY ASSESSMENT** page and click **Close** to exit the page.
4. To automatically configure the security settings, click **Secure Your Router**.
5. When a message prompt appears, click **OK**.

### To enable the network protection:

1. From the navigation panel, go to **AiProtection**.
2. Select the type of protection you want to implement and slide it on. You can choose among **Malicious Sites Blocking**, **Two-Way IPS** and **Infected Device Prevention and Blocking**.

#### Malicious Sites Blocking

This feature restricts access to known malicious websites to protect your network from malware, phishing, spam, adware, hacking and ransomware attacks.

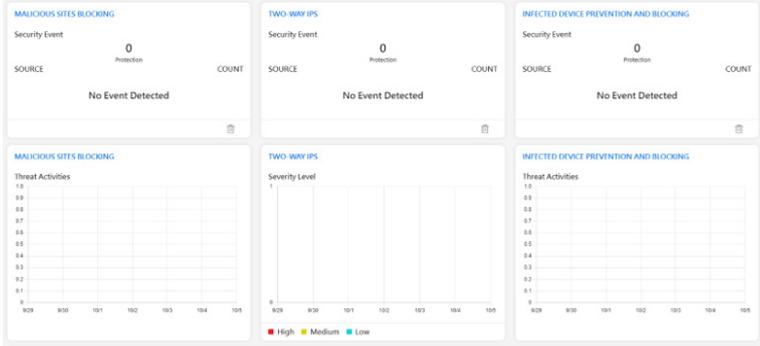
#### Two-Way IPS

Two-Way IPS (Intrusion Prevention System) protects the connected devices from spam or DDoS attacks. It also blocks malicious incoming packets to protect your router from network vulnerability attacks, such as Shellshocked, Heartbleed, Bitcoin mining, and ransomware. Additionally, Two-Way IPS detects suspicious outgoing packets from infected devices and avoids botnet attacks.

#### Infected Device Prevention and Blocking

This feature prevents infected devices from being enslaved by botnets or zombie attacks which might steal your personal information or attack other devices.

3. Agree with **Trend Micro End User License Agreement**.



## 3.5 Dashboard

Dashboard allows you to manage your network such as internet connection, client connection, DNS benchmark, system status, ethernet port, and traffic monitor.

The screenshot shows a network management dashboard with several key components highlighted by red and green boxes:

- QIS (Quick Internet Setup)**: Located at the top left, it includes a 'Quick Internet Setup' button.
- Model Name**: A box highlights the text 'ASUS | BUSINESS | Expert WiFi E41MGE' and the system time 'System Time: 15:12:27'.
- Command Buttons**: A box at the top right contains 'Logout', 'Reboot', and 'English' buttons.
- Navigation Panel**: A vertical sidebar on the left contains icons for 'Dashboard', 'Status', 'WAN', 'LAN', 'WiFi', 'VPN', 'Traffic Monitor', and 'Settings'.
- Dashboard Information**: The main content area is titled 'Dashboard Information' and contains three panels:
  - PRIMARY WAN**: Shows 'INTERNET CONNECTION' as 'Primary WAN' with 'Connected' status and 'Automatic IP' (192.168.123.86). It also lists 'CONNECTION TYPE', 'WAN IP', 'SUBNET MASK', 'GATEWAY', and 'DNS'.
  - CLIENTS**: A donut chart shows 3 wireless clients and 0 wired clients. A table below lists clients: 2.4 GHz (1), 5 GHz-1 (2), and 5 GHz-2 (0).
  - DNS BENCHMARK**: A table showing ping times for various services: CLOUDFLARE (4.24 ms), HNET (4.36 ms), GOOGLE (4.41 ms), CLOUDFLARE (4.90 ms), and GOOGLE (5.09 ms).

# 3.6 Device access control

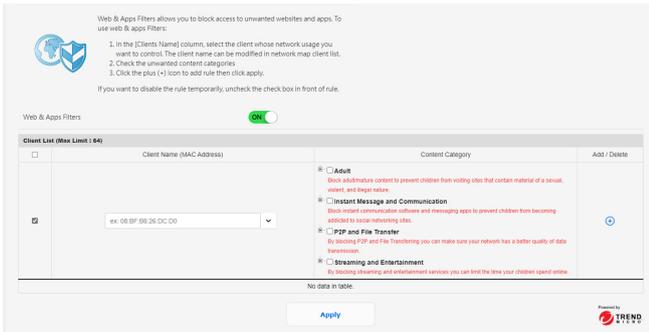
## 3.6.1 Web & Apps Filters

Web & Apps Filters allows you to block access to unwanted websites and apps.

### To use Web & Apps Filters:

1. From the navigation panel, go to **Settings > Device access control > Web & Apps Filters**.
2. Slide the bar to **ON** to enable **Web & Apps Filters**.
3. In the **Client Name** column, select the client on which you want to control the network usage. The client name can be modified in the network map client list.
4. Check the unwanted content categories.
5. Click **+** to add a rule and click **Apply**.

If you want to disable a rule temporarily, uncheck the rule.



## 3.6.2 Time Scheduling

Time Scheduling allows you to set up a scheduled time for specific devices' Internet access.

### To use Time Scheduling:

1. From the navigation panel, go to **Settings > Device access control > Time Scheduling**.
2. Slide the bar to **ON** to enable **Enable Time Scheduling**.
3. From the **Client Name** column, select or key in the client's name from the drop down list box.
4. Click **+** to add the client's profile.
5. Click **Apply** to save the settings.

By enabling Block All Devices, all of the connected devices will be blocked from internet access.

Enable block all devices

This feature allows you to set up a scheduled time for specific devices' internet access.



1. In [Client Name] column, select a device you would like to manage. You can also manually key in MAC address in this column.
2. In the [Add / Delete] column, click the plus (+) icon to add the client.
3. In [Time Management] column, click the edit icon to set a schedule.
4. Click [Apply] to save the configurations.

Enable Time Scheduling

System Time **Fri, Oct 06 16:42:29 2023**

Client List (Max Limit : 64)			
Select all	Client Name (MAC Address)	Time Management	Add / Delete
Time	ex: 08:9F:3B:26:D0:D0	..	+

No data in table.

**Apply**

# 3.7 Firewall

## 3.7.1 General

The wireless router can serve as a hardware firewall for your network.

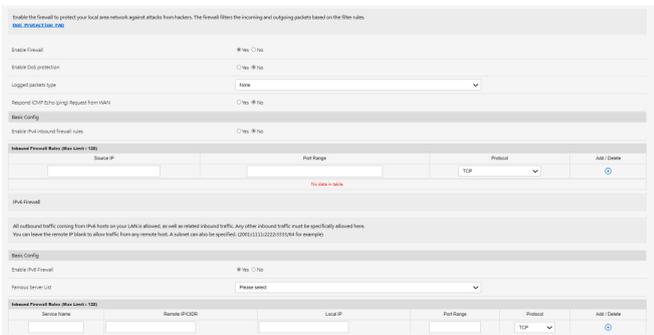
---

**NOTE:** The Firewall feature is enabled by default.

---

### To set up basic Firewall settings:

1. From the navigation panel, go to **Settings > Firewall > General**.
2. On the **Enable Firewall** field, select **Yes**.
3. On the **Enable DoS** protection, select **Yes** to protect your network from DoS (Denial of Service) attacks though this may affect your router's performance.
4. You can also monitor packets exchanged between the LAN and WAN connection. On the Logged packets type, select **Dropped, Accepted, or Both**.
5. Click **Apply**.



## 3.7.2 URL Filter

You can specify keywords or web addresses to prevent access to specific URLs.

**NOTE:** The URL Filter is based on a DNS query. If a network client has already accessed a website such as `http://www.abcxxx.com`, then the website will not be blocked (a DNS cache in the system stores previously visited websites). To resolve this issue, clear the DNS cache before setting up the URL Filter.

### To set up a URL filter:

1. From the navigation panel, go to **Settings > Firewall > URL Filter**.
2. On the **Enable URL Filter** field, select **Enabled**.
3. Enter a URL and click **+**.
4. Click **Apply**.



### 3.7.3 Keyword filter

Keyword filter blocks access to webpages containing specified keywords.

#### To set up a keyword filter:

1. From the navigation panel, go to **Settings > Firewall > Keyword Filter**.
2. On the **Enable Keyword Filter** field, select **Enabled**.
3. Enter a word or phrase and click **+**.
4. Click **Apply**.

---

#### NOTES:

- The Keyword Filter is based on a DNS query. If a network client has already accessed a website such as `http://www.abccxx.com`, then the website will not be blocked (a DNS cache in the system stores previously visited websites). To resolve this issue, clear the DNS cache before setting up the Keyword Filter.
  - Web pages compressed using HTTP compression cannot be filtered. HTTPS pages also cannot be blocked using a keyword filter.
- 



## 3.7.4 Network Services Filter

The Network Services Filter blocks LAN to WAN packet exchanges and restricts network clients from accessing specific web services such as Telnet or FTP.

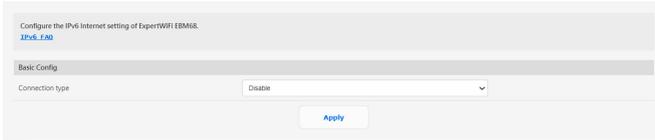
### To set up a Network Service filter:

1. From the navigation panel, go to **Settings > Firewall > Network Service Filter**.
2. On the **Enable Network Services Filter** field, select **Yes**.
3. Select the Filter table type. **Deny List** blocks the specified network services. **Allow List** limits access to only the specified network services.
4. Specify the day and time when the filters will be active.
5. To specify a Network Service to filter, enter the Source IP, Destination IP, Port Range, and Protocol. Click **+**.
6. Click **Apply**.

The screenshot shows the configuration page for the Network Services Filter. At the top, there is a warning message: "NOTE: If you add the subject to the Allow List, IP addresses outside the subject will not be able to access the Internet or any Internet services." Below this, the "Network Services Filter" section is visible. The "Enable Network Services Filter" checkbox is checked. The "Filter Table Type" is set to "Deny List". The "User Defined Applications" dropdown is set to "User Defined". There are two "Time of Day to Enable LAN to WAN Filter" sections, each with a "Day" dropdown (set to "All") and a "Time" range selector (set to "00:00" to "23:59"). Below these is a "Filtered TCP/IP packet types" table with columns for "Source IP", "Port Range", "Destination IP", "Port Range", "Protocol", and "Add/Change". The "Protocol" dropdown is set to "TCP". A red error message "The data is invalid" is displayed below the table, and an "Apply" button is at the bottom.

## 3.8 IPv6

This wireless router supports IPv6 addressing, a system that supports more IP addresses. Contact your ISP if your Internet service supports IPv6.



### To set up IPv6:

1. From the navigation panel, go to **Settings** > **IPv6**.
2. Select your **Connection type**. The configuration options vary depending on your selected connection type.
3. Enter your IPv6 LAN and DNS settings.
4. Click **Apply**.

---

### NOTES:

- Please refer to your ISP regarding specific IPv6 information for your Internet service.
  - For more information, please visit <https://www.asus.com/support/FAQ/113990>.
-

## 3.9 LAN

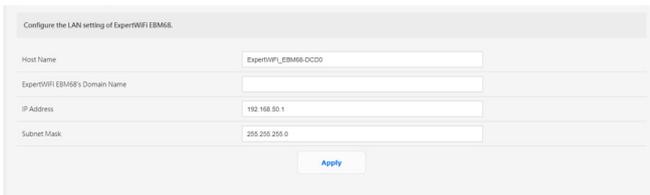
### 3.9.1 LAN IP

The LAN IP screen allows you to modify the LAN IP settings of your wireless router.

---

**NOTE:** Any changes to the LAN IP address will be reflected on your DHCP settings.

---



Configure the LAN setting of ExpertWiFi EBM68.

Host Name	ExpertWiFi_EBM68-DC00
ExpertWiFi EBM68's Domain Name	
IP Address	192.168.80.1
Subnet Mask	255.255.255.0

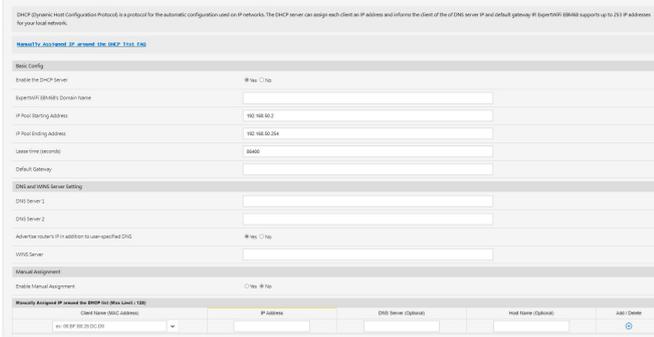
Apply

#### To modify the LAN IP settings:

1. From the navigation panel, go to **Settings > LAN > LAN IP**.
2. Modify the **IP Address** and **Subnet Mask**.
3. When done, click **Apply**.

### 3.9.2 DHCP Server

DHCP (Dynamic Host Configuration Protocol) is a protocol for the automatic configuration used on IP networks. The DHCP server can assign an IP address to each client and inform the client of the DNS server IP and default gateway IP.



#### To configure the DHCP server:

1. From the navigation panel, go to **Settings > LAN > DHCP Server**.
2. In the **Enable the DHCP Server** field, tick **Yes**.
3. In the **Domain Name** text box, enter a domain name for the wireless router.
4. In the **IP Pool Starting Address** field, key in the starting IP address.
5. In the **IP Pool Ending Address** field, key in the ending IP address.
6. In the **Lease Time** field, specify in seconds when an assigned IP address will expire. Once it reaches this time limit, the DHCP server will then assign a new IP address.

---

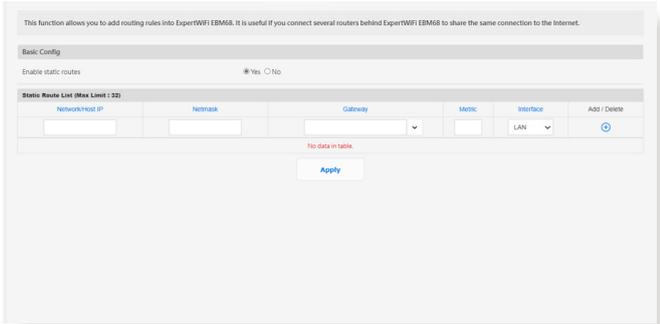
**NOTES:**

- We recommend that you use an IP address format of 192.168.1.xxx (where xxx can be any number between 2 and 254) when specifying an IP address range.
  - An IP Pool Starting Address should not be greater than the IP Pool Ending Address.
- 

7. In the **DNS and Server Settings** section, key in your DNS Server and WINS Server IP address if needed.
8. Your wireless router can also manually assign IP addresses to devices on the network. On the **Enable Manual Assignment** field, choose **Yes** to assign an IP address to specific MAC addresses on the network. Up to 32 MAC Addresses can be added to the DHCP list for manual assignment.

### 3.9.3 Route

This function allows you to add routing rules to the router. It is useful if you connect several routers behind EBM68 to share the same connection to the Internet.



#### To configure the LAN Routing table:

1. From the navigation panel, go to **Settings > LAN > Route**.
2. On the **Enable static routes** field, choose **Yes**.
3. On the **Static Route List**, enter the network information of other access points or nodes. Click ⊕ or ⊖ to add or remove a device on the list.
4. Click **Apply**.

### 3.9.4 IPTV

The wireless router supports connection to IPTV services through an ISP or a LAN. The IPTV tab provides the configuration settings needed to set up IPTV, VoIP, multicasting, and UDP for your service. Contact your ISP for specific information regarding your service.

To watch IPTV, the WAN port must be connected to the Internet. Please go to [WAN - Dual WAN](#) to confirm that WAN port is assigned to primary WAN.

LAN Port	
Select ISP Profile	None
Choose IPTV STB Port	None
Special Applications	
Use DHCP routes	Microsoft
Enable multicasting routing	Disable
UDP Proxy (Udpxy)	0

Apply

### 3.9.5 Switch Control

Allows you to set up the router for the function of switch control. You can combine two 1Gbps LAN ports to deliver up to 2Gbps wired speeds via bonding to your compatible NAS or other high-bandwidth network device.

---

#### NOTES:

- To use the Link Aggregation Control Protocol (LACP) function, the devices must support IEEE 802.3ad protocol.
  - The LAN aggregation function can be operated by pairing the LAN3 port with the LAN2 port.
- 

Setting ExpertWiFi EBMAid switch control.

Jumbo Frame	Enable
Bonding/ Link aggregation	Enable

Enable Bonding (802.3ad) support for your wired client and then connect it to your Router's LAN3 and LAN2 port.

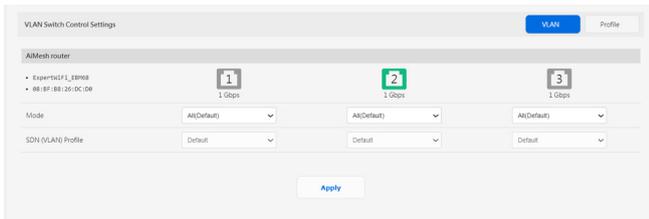
Apply

### 3.9.6 VLAN

A VLAN (Virtual Local Area Network) is a logical network created within a larger physical network. VLANs allow you to segment a network into smaller, virtual sub-networks, which can be used to isolate traffic and improve network performance.

#### To set up VLAN:

1. From the navigation panel, go to **Settings > LAN > VLAN**.
2. Click the **Profile** tab and then **+** to create a VLAN profile. You can assign your own VLAN ID.
3. **Port isolation** restricts the access right of different devices in the same VLAN. You are now creating a “VLAN-only-Network”, which means a network with VID but without DHCP.



4. Click **VLAN** tab to select a port with specific profile and mode (**Trunk / Access**).

---

**NOTE:** You can select one of the following default modes:

**All (Default)** allows all tagged and untagged packets to access.

**Access** mode allows a selected SDN(VLAN) to access. You can select profiles created by Guest Network pro or by VLAN.

**Trunk** mode:

- **Allow all tagged:** Only tagged packets are allowed to access.
  - **With selected SDN(VLAN):** Only selected SDN or VLAN is allowed to access.
- 

5. When done, click **Apply**.

---

**NOTE:** For more information, please visit <https://www.asus.com/support/FAQ/1049415/>.

---

## 3.10 Network Tools

To use network tools, from the navigation panel, go to **Settings > Network Tools**.

### 3.10.1 Network Analysis

Send ICMP ECHO\_REQUEST packets to network hosts.

### 3.10.2 Netstat

Display the network details.

### 3.10.3 Wake on LAN

The WOL (Wake-On-LAN) feature lets you wake up a computer from any device in the network.

### 3.10.4 Smart Connect Rule

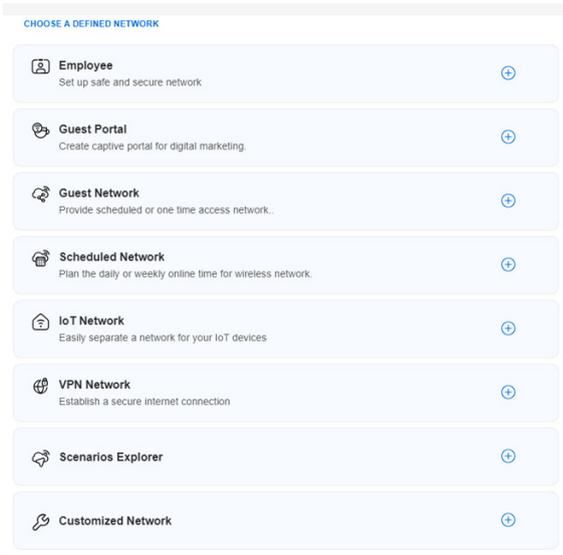
Set up the Smart Connect related information.

## 3.11 Self-Defined Network

A Self-Defined Network (SDN) provides up to five SSIDs to separate and prioritize devices for different business uses and network alternatives, creating network segments for employees, guest portals, guest networks, scheduled networks, IoT networks and VPN networks.

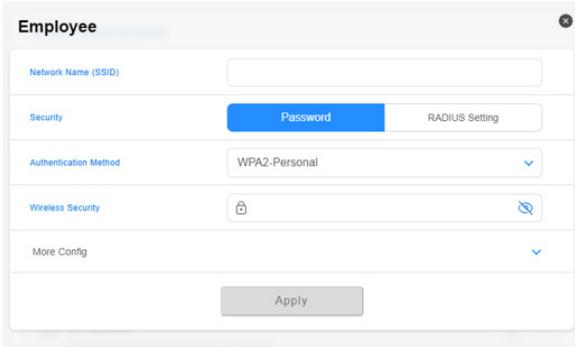
### To create a Self-Defined Network:

1. From the navigation panel, go to **Self-Defined Network**.
2. Choose a defined network that fits your specific scenario.



### 3.11.1 Employee

Allows you to set up access level for different users to enhance network security. Recommended for offices that assign permissions to different departments.

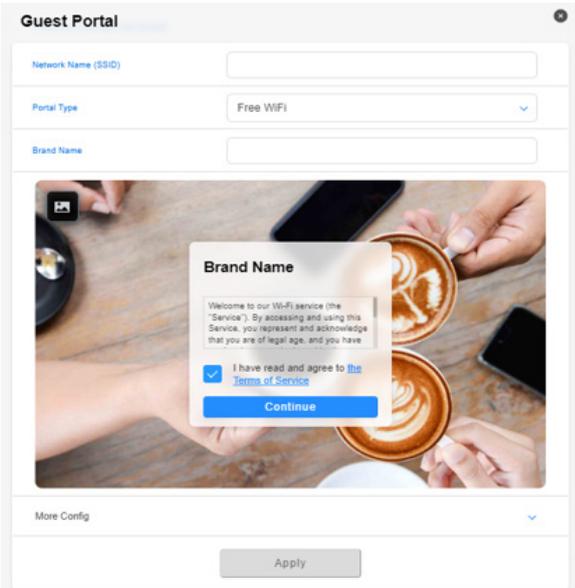


The screenshot shows the 'Employee' configuration window. It includes the following fields and options:

- Network Name (SSID): An empty text input field.
- Security: Two radio buttons, with 'Password' selected and 'RADIUS Setting' unselected.
- Authentication Method: A dropdown menu set to 'WPA2-Personal'.
- Wireless Security: A lock icon and a link icon.
- More Config: A dropdown arrow.
- Apply: A grey button at the bottom.

### 3.11.2 Guest Portal

Enables you to create a guest portal for digital marketing. Recommended for use in restaurants, hotels or food trucks.



The screenshot shows the 'Guest Portal' configuration window. It includes the following fields and options:

- Network Name (SSID): An empty text input field.
- Portal Type: A dropdown menu set to 'Free WiFi'.
- Brand Name: An empty text input field.
- Preview: A large image showing a coffee shop scene with a semi-transparent overlay. The overlay contains:
  - Brand Name: A header.
  - Welcome to our Wi-Fi service (the "Service"). By accessing and using this Service, you represent and acknowledge that you are of legal age, and you have
  - A checked checkbox next to the text: 'I have read and agree to the [Terms of Service](#)'.
  - A blue 'Continue' button.
- More Config: A dropdown arrow.
- Apply: A grey button at the bottom.

### 3.11.3 Guest Network

Provides temporary visitors with scheduled or one time access to the network. Recommended for use in shopping malls, gyms or for visitors.

The screenshot shows the 'Guest Network' configuration window. It includes a 'Network Name (SSID)' field, a 'Security' section with an 'Open System' button and a 'Password' field, and a 'WiFi Scheduling' section with a green toggle switch. Under 'WiFi Scheduling', there are radio buttons for 'Scheduled' and 'One Time Access', with 'One Time Access' selected. Below these are buttons for '30 mins', '1 hr(s)', '2 hr(s)', '4 hr(s)', '6 hr(s)', and 'Custom'. The '2 hr(s)' button is highlighted in blue. At the bottom, there is a 'More Config' dropdown and an 'Apply' button.

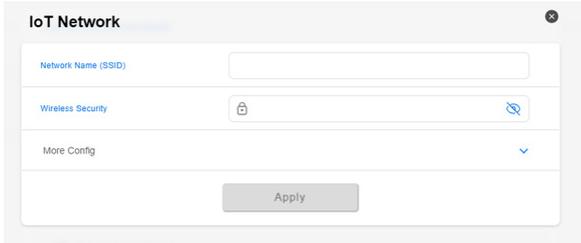
### 3.11.4 Scheduled Network

Plans the daily or weekly online time for the wireless network. Recommended for distance learning, classroom or children's use.

The screenshot shows the 'Scheduled Network' configuration window. It includes a 'Network Name (SSID)' field, a 'Wireless Security' section with a lock icon and a key icon, and a 'WiFi Scheduling' section with a green toggle switch. Under 'WiFi Scheduling', there is an 'Online schedule' section with a refresh icon and an up arrow icon. Below this are two rows: 'WEEKDAY(S)' with a time range of '17:00 - 21:00' and a green toggle switch, and 'WEEKEND' with a time range of '16:00 - 22:00' and a green toggle switch. At the bottom, there is a 'More Config' dropdown and an 'Apply' button.

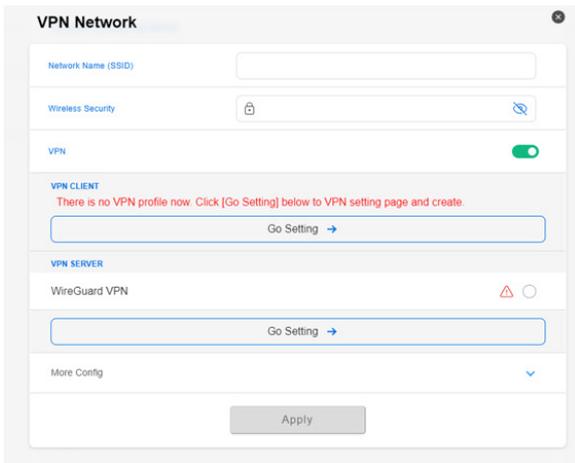
### 3.11.5 IoT Network

Allows you to set up a separate network for IoT devices easily. Recommended for use with surveillance devices, voice assistants, lighting, doorbell cams, smart locks and sensors.



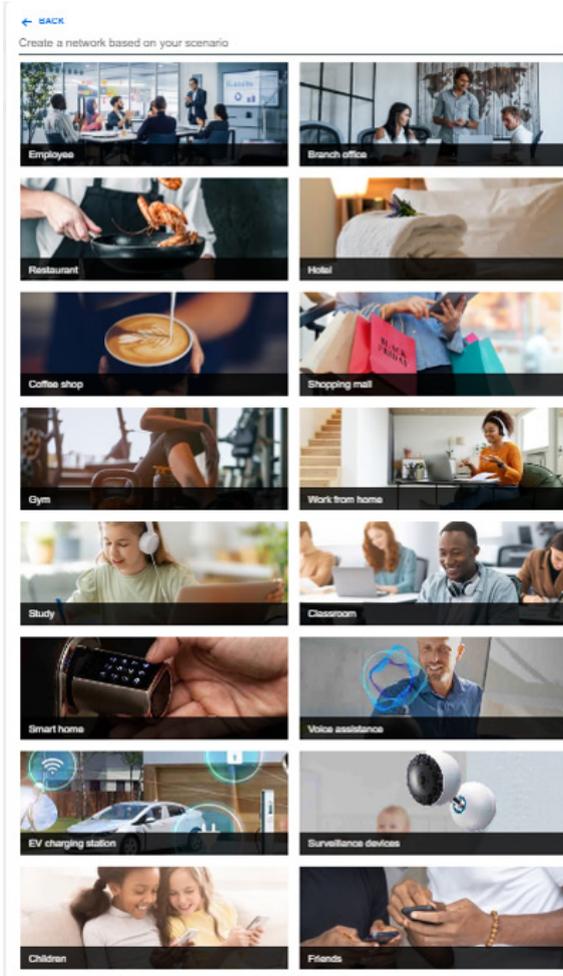
### 3.11.6 VPN Network

Helps establish a secure Internet connection using VPN.



### 3.11.7 Scenario Explorer

If you have no idea which network to create, you can choose the sector that corresponds to your affiliation to create the network.



### 3.11.8 Customized Network

Allows you to select the option of a personalized network.

**Customized Network** ✕

Network Name (SSID)

Wireless Security  🔒 🔓

More Config ⌵

## 3.12 System Log

System Log contains your recorded network activities.

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**NOTE:** System log resets when the router is rebooted or powered off.

---

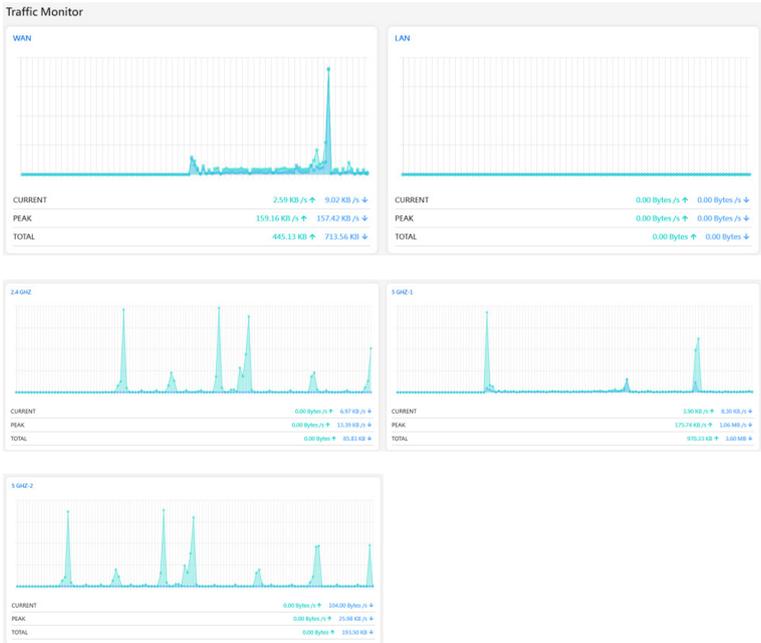
### To view your system log:

1. From the navigation panel, go to **Settings > System Log**.
2. You can view your network activities in any of these tabs:
  - General Log
  - DHCP Leases
  - Wireless Log
  - Port Forwarding
  - Routing Table
  - IPv6
  - Connections

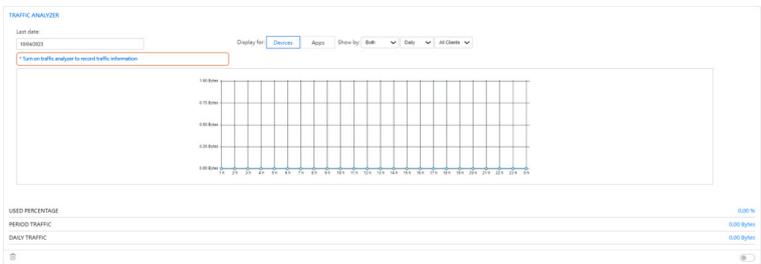
# 3.13 Traffic Monitor

## 3.13.1 Traffic Monitor

The traffic monitor feature allows you to access the bandwidth usage and speed of your Internet, wired, or wireless networks. It allows you to monitor network traffic in real-time or on a daily basis. It also offers an option to display the network traffic within the last 24 hours.



## 3.13.2 Traffic Analyzer



## 3.14 USB Application

### 3.14.1 Media Server

Media server allows you to set up the iTunes and UPnP server.



To launch the Media Server setting page, go to **Settings > USB Application > Media Server**.

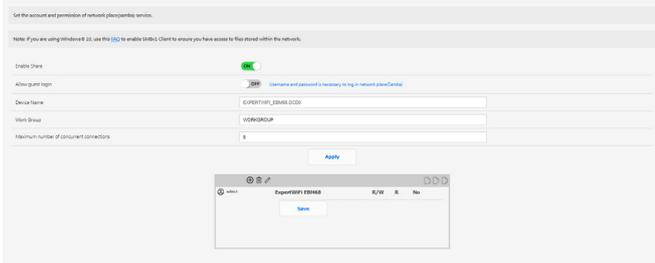
Refer to the following for the descriptions of the fields:

- **Enable iTunes Server:** Select ON/OFF to enable/disable the iTunes Server.
- **Enable UPnP Media Server** Select ON/OFF to enable/disable the UPnP Media Server.
- **Media Server Name:** Enters the name of the media server.
- **Media Server Path Setting:** Select **All Disks Shared** or **Manual Media Server Path**.

When done, click **Apply**.

### 3.14.2 Network Place (Samba) Share

Network Place (Samba) Share allows you to set up the accounts and permissions for the Samba service.



To use Samba share, go to **Settings > USB Application > Network Place (Samba) Share.**

### 3.14.3 FTP Share

FTP Share allows you to set up the accounts and permissions for the FTP service.



To use FTP share, go to **Settings > USB Application > FTP Share.**

## 3.14.4 Network Printer Server

### 3.14.4.1 ASUS EZ Printer Sharing

ASUS EZ Printing Sharing utility allows you to connect a USB printer to your wireless router's USB port and set up the print server. This allows your network clients to print and scan files wirelessly.

---

**NOTE:** The print server function is supported on Windows® 10 and Windows® 11.

---

#### To set up the EZ Printer sharing mode:

1. From the navigation panel, go to **Settings > USB Application > Network Printer Server**.
2. Click **Download Now!** to download the network printer utility.

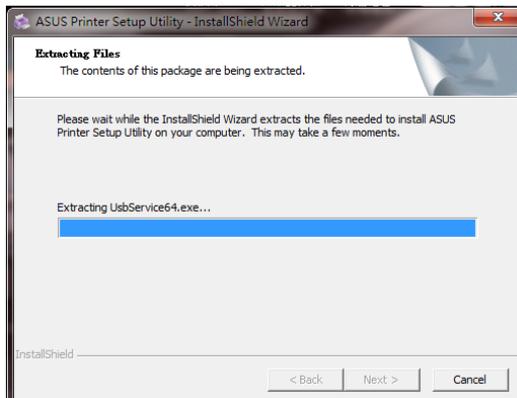
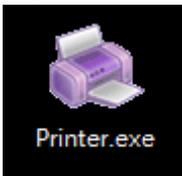


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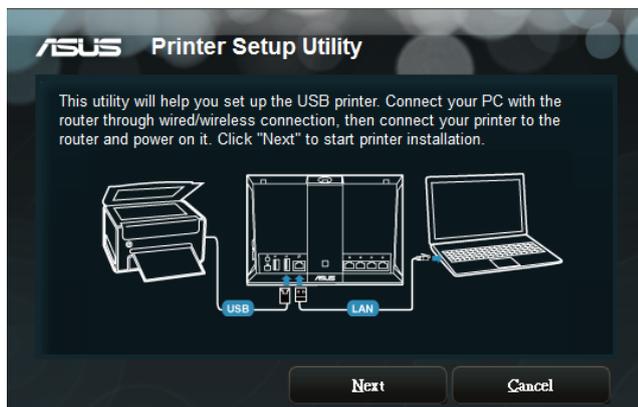
**NOTE:** Network printer utility is supported on Windows® 10 and Windows® 11 only. To install the utility on Mac OS, select **Use LPR protocol for sharing printer**.

---

3. Unzip the downloaded file and click the Printer icon to run the network printer setup program.



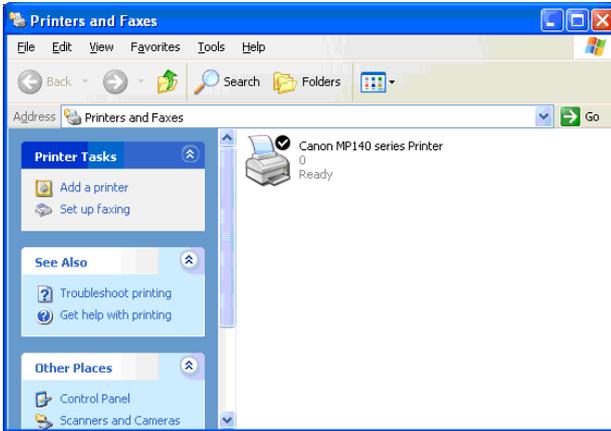
4. Follow the onscreen instructions to set up your hardware, then click **Next**.



5. Wait a few minutes for the initial setup to finish. Click **Next**.
6. Click **Finish** to complete the installation.
7. Follow the Windows® OS instructions to install the printer driver.



8. After the printer's driver installation is complete, network clients can now use the printer.

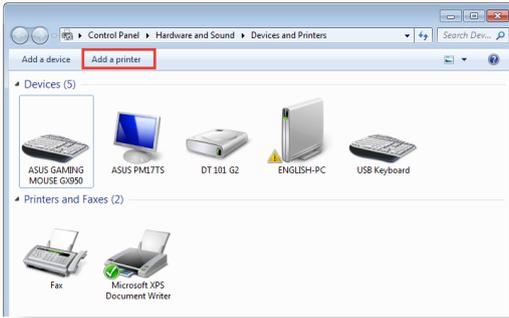


### 3.14.4.2 Using LPR to Share Printer

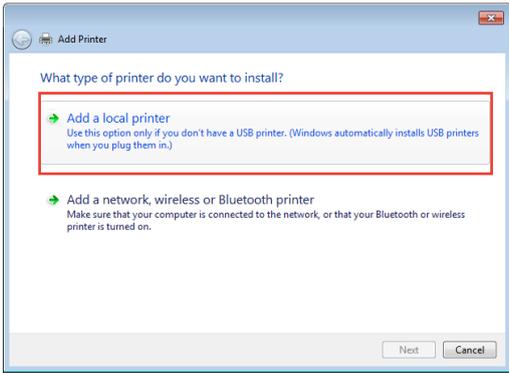
You can share your printer with computers running on Windows® and MAC operating system using LPR/LPD (Line Printer Remote/ Line Printer Daemon).

#### To share your LPR printer:

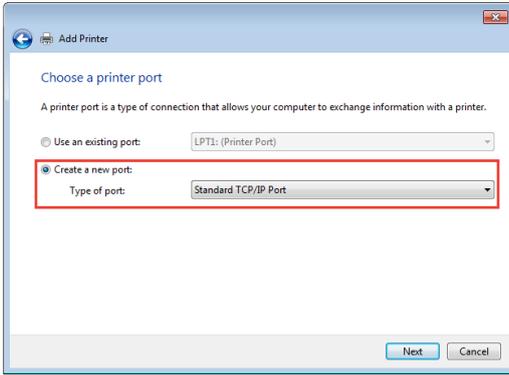
1. From the Windows® desktop, click **Start > Devices and Printers > Add a printer** to run the **Add Printer Wizard**.



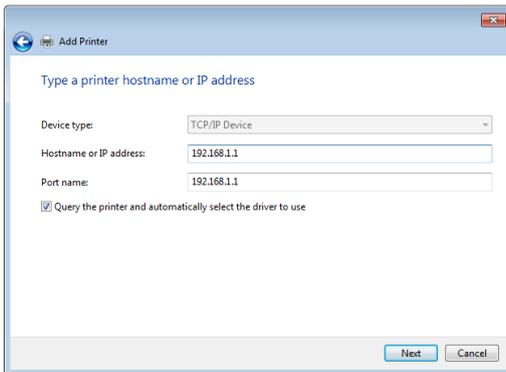
2. Select **Add a local printer** and then click **Next**.



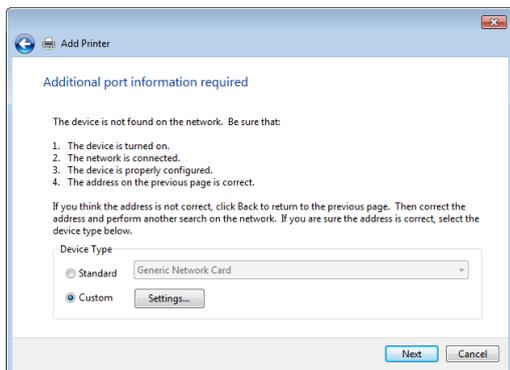
3. Select **Create a new port** then set **Type of Port** to **Standard TCP/IP Port**. Click **New Port**.



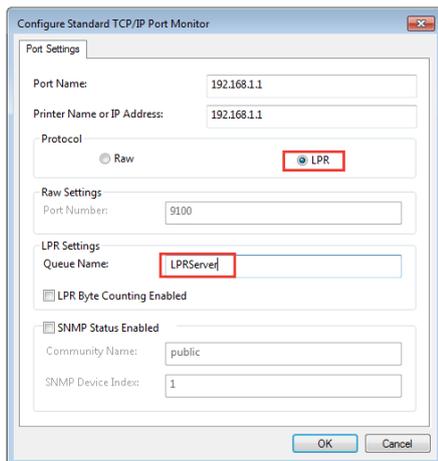
4. In the **Hostname or IP address** field, key in the IP address of the wireless router then click **Next**.



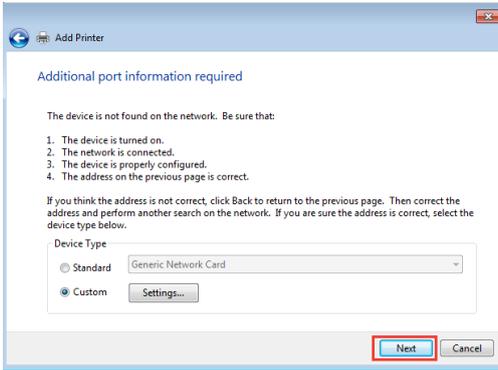
## 5. Select **Custom** then click **Settings**.



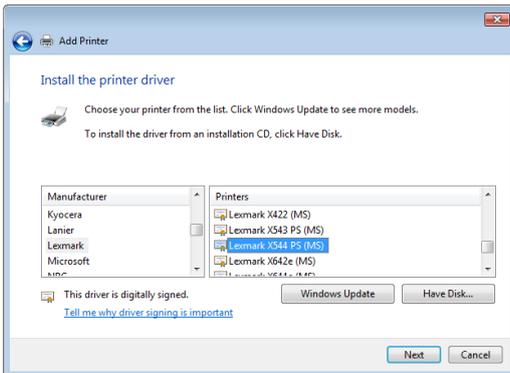
## 6. Set **Protocol** to **LPR**. In the **Queue Name** field, key in **LPRServer** then click **OK** to continue.



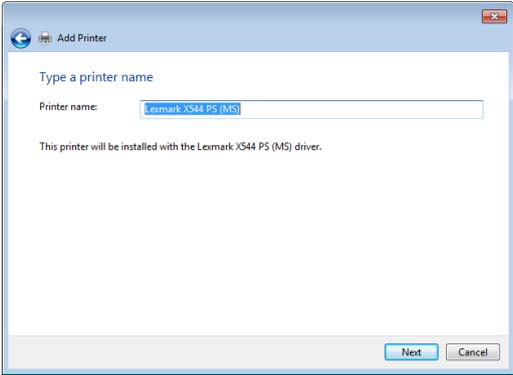
7. Click **Next** to finish setting up the standard TCP/IP port.



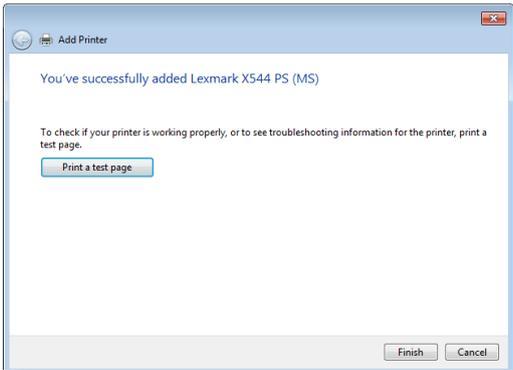
8. Install the printer driver from the vendor-model list. If your printer is not in the list, click **Have Disk** to manually install the printer drivers from a CD-ROM or file.



9. Click **Next** to accept the default name for the printer.



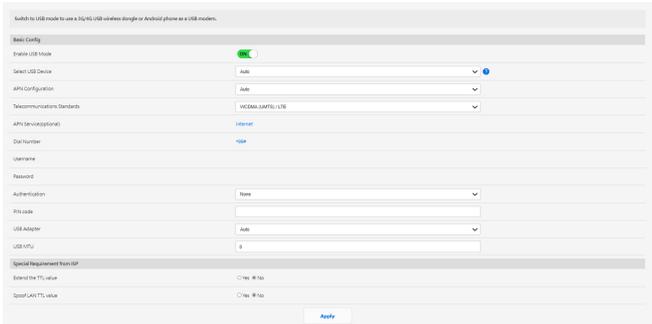
10. Click **Finish** to complete the installation.



### 3.14.5 USB Modem

Switch to the USB mode to use a 3G/4G USB wireless dongle or Android phone as a USB modem.

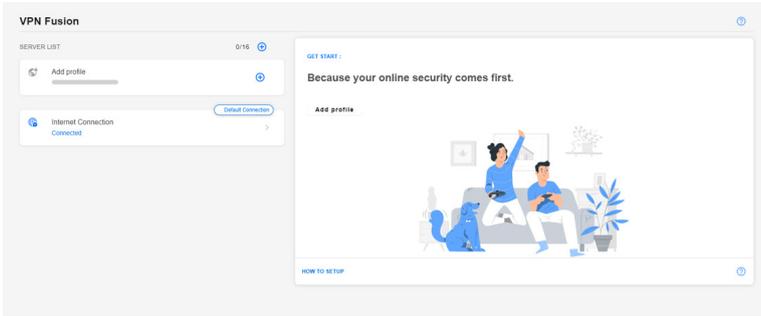
To use USB modem, go to **Settings > USB Application > USB Modem**.



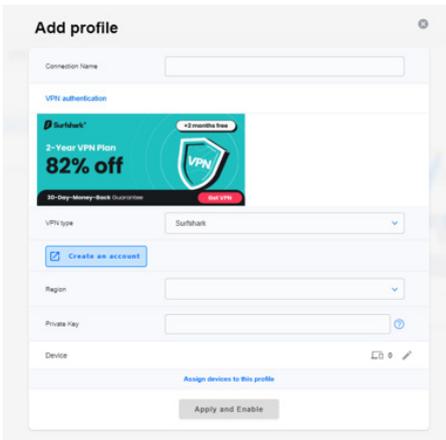
## 3.15 VPN Fusion

### 3.15.1 Creating a VPN fusion

VPN Fusion allows you to connect to multiple VPN servers simultaneously and assign your client devices to connect to different VPN tunnels.

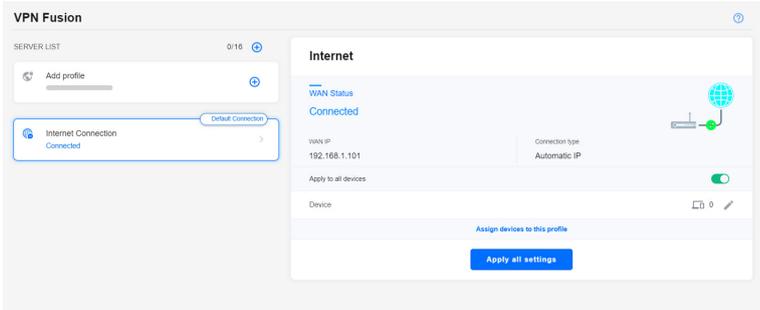


1. From the navigation panel, go to **VPN Fusion**.
2. Click **+** on the **Add profile** field to set up a new VPN tunnel.
3. Complete the VPN configuration including the connection name, VPN type, region, private key and device.
4. Click **Apply and Enable**.



### 3.15.2 Internet Connection

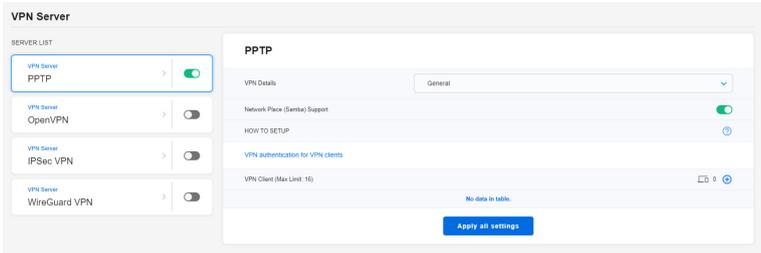
Allows you to manage the WAN status of the connected devices.



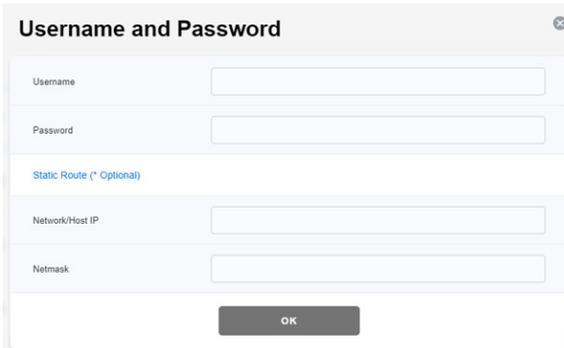
## 3.16 VPN Server

### 3.16.1 PPTP

1. From the navigation panel, go to **VPN Server > PPTP** and move the slider to the right (it is set to off on the left side by default).
2. On the **VPN Client (Max Limit: 16)** field, click **+** to add an account.



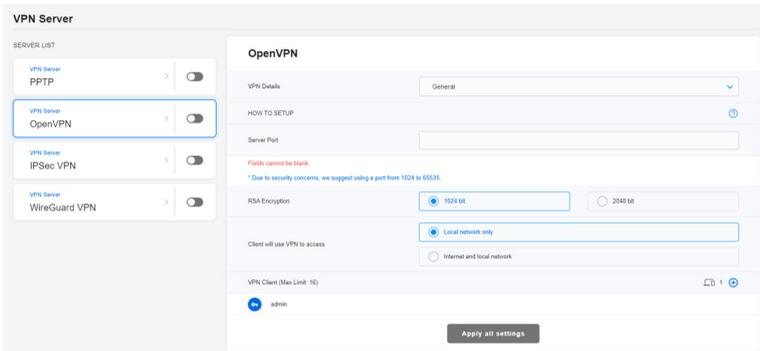
3. Enter customized *[Username]* and *[Password]*, and click **OK**.



**NOTE:** Once the *[Username]* and *[Password]* are set, they cannot be changed. For more information, please visit <https://www.asus.com/support/FAQ/114892/>.

### 3.16.2 OpenVPN

1. From the navigation panel, go to **VPN Server > OpenVPN** and move the slider to the right (it is set to off on the left side by default).
2. Configure the general settings in the **VPN Details** field.
3. Enter your username and password in the blank column.
4. On the **VPN Client (Max Limit: 16)** field, click **+** to add an account.
5. The password is automatically hidden. Click **Apply all settings**.



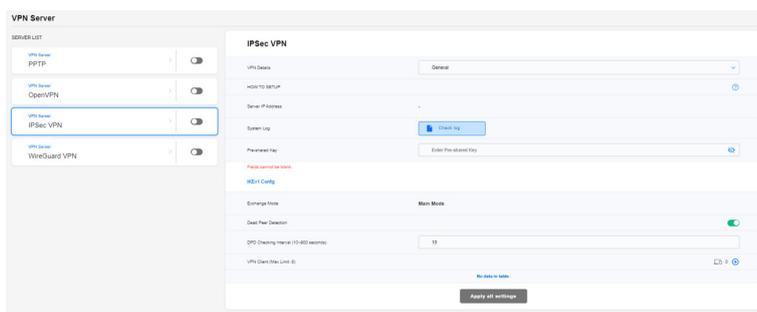
---

**NOTE:** For more information, please visit <https://www.asus.com/support/FAQ/1008713/>.

---

### 3.16.3 IPsec VPN

1. From the navigation panel, go to **VPN Server** > **IPsec VPN** and move the slider to the right (it is set to off on the left side by default).
2. Enter a key in the **Pre-shared Key** field.
3. On the **VPN Client (Max Limit: 8)** field, click ⊕ to add an account.
5. Enter customized *[Username]* and *[Password]*, and click **Apply all settings**.



**NOTE:** Once the *[Username]* and *[Password]* are set, they cannot be changed. For more information, please visit <https://www.asus.com/support/FAQ/1044190/>.

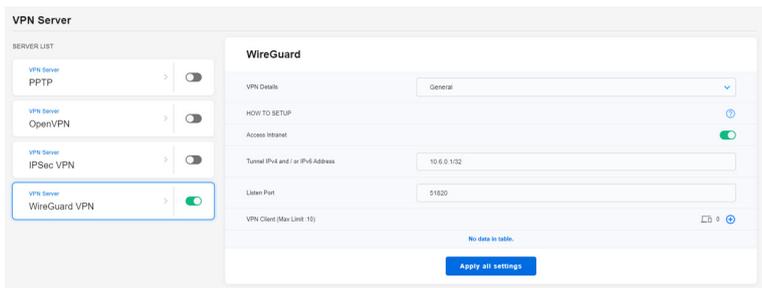
### 3.16.4 WireGuard® VPN

1. From the navigation panel, go to **VPN Server > WireGuard VPN**.
2. On the **VPN Client (Max Limit: 10)** field, click ⊕ to add an account. For general devices such as laptops or smart phones, click **Apply**.
3. Click **Apply all settings** to enable the WireGuard® VPN.
4. Click “...” for more details.

---

**NOTE:** If you are using a smart phone to connect to WireGuard® VPN, please download WireGuard® app from Google Play or App Store, and scan the code in the app to download the configuration file.

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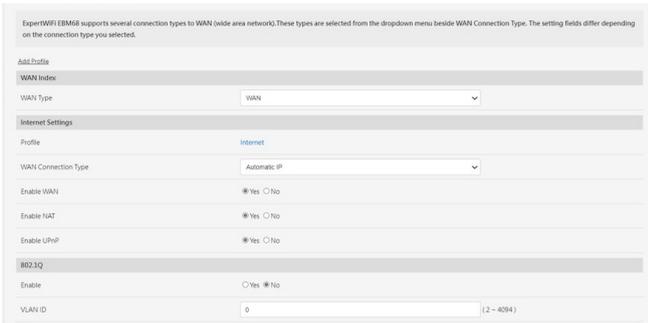
**NOTE:** For more information, please visit <https://www.asus.com/support/FAQ/1048280/>.

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## 3.17 WAN

### 3.17.1 Internet Connection

The Internet Connection screen allows you to configure the settings of various WAN connection types.



#### To configure the WAN connection settings:

1. From the navigation panel, go to **Settings > WAN > Internet Connection**.
2. Configure the following settings below. When done, click **Apply**.
  - **WAN Connection Type:** Choose your Internet Service Provider type. The choices are **Automatic IP**, **PPPoE**, **PPTP**, **L2TP** or **static IP**. Consult your ISP if the router is unable to obtain a valid IP address or if you are unsure the WAN connection type.
  - **Enable WAN:** Select **Yes** to allow the router Internet access. Select **No** to disable Internet access.
  - **Enable NAT:** NAT (Network Address Translation) is a system where one public IP (WAN IP) is used to provide Internet access to network clients with a private IP address in a LAN. The private IP address of each network client is saved in a NAT table and is used to route incoming data packets.

- **Enable UPnP:** UPnP (Universal Plug and Play) allows several devices (such as routers, televisions, stereo systems, game consoles, and cellular phone), to be controlled via an IP-based network with or without a central control through a gateway. UPnP connects PCs of all form factors, providing a seamless network for remote configuration and data transfer. Using UPnP, a new network device is discovered automatically. Once connected to the network, devices can be remotely configured to support P2P applications, interactive gaming, video conferencing, and web or proxy servers. Unlike Port forwarding, which involves manually configuring port settings, UPnP automatically configures the router to accept incoming connections and direct requests to a specific PC on the local network.
- **Connect to DNS Server:** Allows this router to get the DNS IP address from the ISP automatically. A DNS is a host on the Internet that translates Internet names to numeric IP addresses.
- **Authentication:** This item may be specified by some ISPs. Check with your ISP and fill them in if required.
- **Host Name:** This field allows you to provide a host name for your router. It is usually a special requirement from your ISP. If your ISP assigned a host name to your computer, enter the host name here.
- **MAC Address:** MAC (Media Access Control) address is a unique identifier for your networking device. Some ISPs monitor the MAC address of networking devices that connect to their service and reject any unrecognized device that attempt to connect. To avoid connection issues due to an unregistered MAC address, you can:
  - Contact your ISP and update the MAC address associated with your ISP service.
  - Clone or change the MAC address of the ASUS wireless router to match the MAC address of the previous networking device recognized by the ISP.

### 3.17.2 Dual WAN

The Dual WAN allows you to select two ISP connections to your router, a primary WAN and a secondary WAN.

#### To configure Dual WAN:

1. From the navigation panel, go to **Settings > WAN > Dual WAN**.
2. Go to **Enable Dual WAN** field, turn **ON**.
3. Choose your **Primary WAN** and **Secondary WAN**. There are WAN, USB, Ethernet LAN and 2.5G WAN for your options.
4. Choose **Fail Over** or **Load Balance**.

**Fail Over:** Use a secondary WAN for backup network access.

**Load Balance:** Optimize bandwidth, maximize throughput, minimize response time, and prevent data overload for both WAN connections.

5. Click **Apply**.

---

**NOTE:** Detailed explanations are available on the ASUS Support Site FAQ <https://www.asus.com/support/FAQ/1011719>.

---

ExpertWiFi EBM88 provides Dual WAN support. Select Failover mode to use a secondary WAN for backup network access. Select Load Balance mode to optimize bandwidth, maximize throughput, minimize response time, and prevent data overload for both WAN connections. [Dual WAN FAQ](#)

**Basic Config**

Enable Dual WAN

Primary WAN WAN

Secondary WAN USB

Dual WAN Mode Fail Over  Allow fallback

**Auto Network Detection**  
Detailed explanations are available on the [ASUS Support Site FAQ](#) which may help you use this function effectively.

Detect Interval Every 3 seconds

Failover Trigger Condition When the current WAN fails 2 continuous times, failover to Secondary WAN

Fallback Trigger Condition When the Primary WAN is detected to have an active Internet connection using a physical cable for 4 continuous times, fallback to the Primary WAN

Network Monitoring  DNS Query  Ping

**Apply**

### 3.17.3 Port Trigger

Port Trigger allows you to temporarily enable data ports when LAN devices require unrestricted access to the Internet. There are two methods for opening incoming data ports: port forwarding and port trigger.

- Port forwarding enables the specified data ports all the time and devices must use static IP addresses.
- Port trigger only enables the incoming port when a LAN device requests access to the trigger port.

Unlike port forwarding, port trigger does not require static IP addresses for LAN devices. Port forwarding allows multiple devices to share a single open port and port trigger only allows one client at a time to access the open port.

The screenshot shows the 'Port Trigger' configuration page. At the top, there is a descriptive paragraph. Below it, the page is titled 'Port Trigger - LAN'. Under the 'Basic Config' section, there is a checkbox for 'Enable Port Trigger' which is currently checked (Yes). Below this is a 'Well-Known Applications' dropdown menu set to 'Please select'. At the bottom, there is a 'Trigger Port List' table with columns for Description, Trigger Port, Protocol, Incoming Port, Protocol, and Delete. The table is currently empty, showing a 'No data in table' message. An 'Apply' button is located at the bottom of the page.

#### To set up Port Trigger:

1. From the navigation panel, go to **Settings > WAN > Port Trigger**.
2. Configure the following settings below. When done, click **Apply**.
  - **Enable Port Trigger:** Choose **Yes** to enable Port Trigger.
  - **Well-Known Applications:** Select popular games and web services to add to the Port Trigger List.

- **Description:** Enter a short name or description for the service.
- **Trigger Port:** Specify a trigger port to open the incoming port.
- **Protocol:** Select the protocol, TCP, or UDP.
- **Incoming Port:** Specify an incoming port to receive inbound data from the Internet.

---

**NOTES:**

- When connecting to an IRC server, a client PC makes an outgoing connection using the trigger port range 66660-7000. The IRC server responds by verifying the username and creating a new connection to the client PC using an incoming port.
  - If Port Trigger is disabled, the router drops the connection because it is unable to determine which PC is requesting for IRC access. When Port Trigger is enabled, the router assigns an incoming port to receive the inbound data. This incoming port closes once a specific time period has elapsed because the router is unsure when the application has been terminated.
  - Port triggering only allows one client in the network to use a particular service and a specific incoming port at the same time.
  - You cannot use the same application to trigger a port in more than one PC at the same time. The router will only forward the port back to the last computer to send the router a request/trigger.
  - For more information, please visit <https://www.asus.com/support/FAQ/114110>.
-

### 3.17.4 Virtual Server/Port Forwarding

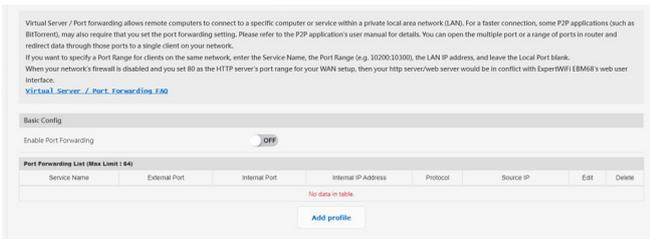
Virtual Server / Port forwarding allows remote computers to connect to a specific computer or service within a private local area network (LAN). For a faster connection, some P2P applications (such as BitTorrent) may also require that you set the port forwarding setting. Please refer to the P2P application's user manual for details. You can enable multiple ports or a range of ports in the router and redirect data through those ports to a single client on your network.

If you want to specify a Port Range for clients on the same network, enter the Service Name, the Port Range (e.g. 10200:10300), the LAN IP address, and leave the Local Port blank.

---

**NOTE:** When port forwarding is enabled, the ASUS router blocks unsolicited inbound traffic from the Internet and only allows replies from outbound requests from the LAN. The network client does not have access to the Internet directly, and vice versa.

---



#### To set up Port Forwarding:

1. From the navigation panel, go to **Settings > WAN > Virtual Server / Port Forwarding**.
2. Slide the bar to **ON** to enable Port Forwarding, then click **Add Profile**. After configuring the following settings, click **OK**.

Quick Select	
Famous Server List	Please select ▼
Famous Game List	Please select ▼
Custom Configuration	
Service Name	<input type="text"/> * Optional
Protocol	TCP ▼
External Port	<input type="text"/>
Internal Port	<input type="text"/> * Optional
Internal IP Address	<input type="text"/> ▼
Source IP	<input type="text"/> * Optional

\* External Port  
The External Port accepts the following formats  
1. Port ranges using a colon ":" between the starting and ending port, such as 300:350.  
2. Single ports using a comma "," between individual ports, such as 566, 789.  
3. A Mix of port ranges and single ports, using colons ":" and commas ",", such as 1015:1024, 3021.

\* Source IP  
If you want to open your port to a specific IP address from the internet, input the IP address you want to specify in the Source IP field.

Cancel

OK

- **Famous Server List:** Determine which type of service you want to access.
- **Famous Game List:** This item lists ports required for popular online games to work correctly.
- **Service Name:** Enter a service name.
- **Protocol:** Select the protocol. If you are unsure, select **BOTH**.
- **External Port:** Accept the following formats:
  - 1) A port range using a colon ":" in the middle to specify the upper and lower limits of the range, such as 300:350;
  - 2) Individual port numbers using a comma "," to separate them, such as 566, 789;
  - 3) A Mix of port ranges and individual ports, using colons ":" and commas ",", such as 1015:1024, 3021.

- **Internal Port:** Enter a specific port to receive forwarded packets. Leave this field blank if you want the incoming packets to be redirected to the specified port range.
- **Internal IP Address:** Key in the client's LAN IP address.
- **Source IP:** If you want to open your port to a specific IP address from the Internet, input the IP address you want to give access to in this field.

---

**NOTE:** Use a static IP address for the local client to make port forwarding work properly. Refer to section **3.9 LAN** for information.

---

### **To check if Port Forwarding has been configured successfully:**

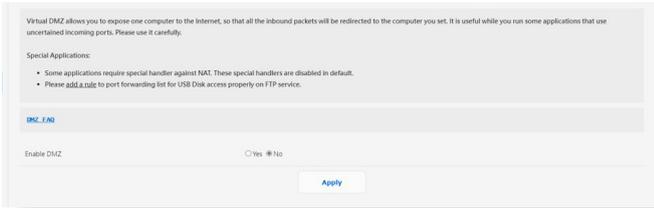
- Ensure that your server or application is set up and running.
- You will need a client outside your LAN but has Internet access (referred to as "Internet client"). This client should not be connected to the ASUS router.
- On the Internet client, use the router's WAN IP to access the server. If port forwarding has been successful, you should be able to access the files or applications.

### **Differences between port trigger and port forwarding:**

- Port triggering will work even without setting up a specific LAN IP address. Unlike port forwarding, which requires a static LAN IP address, port triggering allows dynamic port forwarding using the router. Predetermined port ranges are configured to accept incoming connections for a limited period of time. Port triggering allows multiple computers to run applications that would normally require manually forwarding the same ports to each PC on the network.
- Port triggering is more secure than port forwarding since the incoming ports are not open all the time. They are opened only when an application is making an outgoing connection through the trigger port.

### 3.17.5 DMZ

Virtual DMZ allows you to expose one computer to the Internet, so that all the inbound packets will be redirected to the computer you set. It is useful while you run some applications that use uncertain incoming ports. Please use it with care.



#### To set up DMZ:

1. From the navigation panel, go to **Settings > WAN > DMZ**.
2. Configure the setting below. When done, click **Apply**.
  - **IP address of Exposed Station:** Key in the client's LAN IP address that will provide the DMZ service and be exposed on the Internet. Ensure that the server client has a static IP address.

#### To remove DMZ:

1. Delete the client's LAN IP address from the **IP Address of Exposed Station** text box.
2. When done, click **Apply**.

---

**NOTE:** For more information, please visit <https://www.asus.com/support/FAQ/1011723>.

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### 3.17.6 DDNS

DDNS (Dynamic Domain Name System) is a service that allows network clients to connect to the wireless router, even with a dynamic public IP address, through its registered domain name. The wireless router is embedded with the ASUS DDNS service and other DDNS services.



#### To set up DDNS:

1. From the navigation panel, go to **Settings > WAN > DDNS**.
2. Configure the following settings below. When done, click **Apply**.
  - **Enable the DDNS Client:** Enable DDNS to access the ASUS router via the DNS name rather than WAN IP address.
  - **Server and Host Name:** Choose ASUS DDNS or other DDNS. If you want to use ASUS DDNS, fill in the Host Name in the format of xxx.asuscomm.com (xxx is your host name).
  - If you want to use a different DDNS service, click FREE TRIAL and register online first. Fill in the User Name or E-mail Address and Password or DDNS Key fields.
  - **Enable wildcard:** Enable wildcard if your DDNS service requires one.

---

#### NOTES:

DDNS service will not work under these conditions:

- When the wireless router is using a private WAN IP address (192.168.x.x, 10.x.x.x, or 172.16.x.x), as indicated by a yellow text.
  - The router may be on a network that uses multiple NAT tables.
-

### 3.17.7 NAT Passthrough

Enable NAT Passthrough to allow a Virtual Private Network (VPN) connection to pass through the router to the network clients.

To set up NAT Passthrough, go to **Settings > WAN > NAT Passthrough**. When done, click **Apply**.

Enable NAT Passthrough to allow a Virtual Private Network (VPN) connection to pass through the router to the network clients.

PPTP Passthrough	Enable	▼
L2TP Passthrough	Enable	▼
IPSec Passthrough	Enable	▼
RTSP Passthrough	Enable	▼
H.323 Passthrough	Enable	▼
SIP Passthrough	Enable	▼
PPPoE Relay	Disable	▼
FTP ALG port	2021	

[Apply](#)

## 3.18 Wireless

### 3.18.1 General

The **General** tab allows you to configure the basic wireless settings.

Set up the wireless related information below.	
Enable Smart Connect	<input checked="" type="checkbox"/> <a href="#">Smart Connect Help</a>
Smart Connect	To, Based Smart Connect
Band	2.4 GHz, 5 GHz-1
Network Name (SSID)	ABUS_P0_20000
Hide SSID	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wireless Mode	Auto <input type="checkbox"/> Disable 11n <input type="checkbox"/> Disable 11b
BSS Color / Wi-Fi 6 mode	Enable <small>For compatibility, some routers when enabling BSS Color / Wi-Fi 6 mode, please refer <a href="#">Help</a>.</small>
Wi-Fi Agile Multiband	Disable
Target Wake Time	Disable
Authentication Method	WPA2-PSK(AES)
Wi-Fi Encryption	AES
Wi-Fi Protected Setup	<input type="checkbox"/> <input checked="" type="checkbox"/> <a href="#">Help</a>
Protected Management Frames	Disable
Group Key Rotation Interval	300

#### To configure the basic wireless settings:

1. From the navigation panel, go to **Settings > Wireless > General**.
2. Select 2.4GHz and 5GHz-1; 5GHz-2 as backhaul as the frequency band for your wireless network.
3. Assign a unique name for your SSID (Service Set Identifier) or network name to identify your wireless network. Wi-Fi devices can identify and connect to the wireless network via your assigned SSID. The SSIDs on the information banner are updated once new SSIDs are saved to the settings.

---

**NOTE:** You can assign unique SSIDs for the 2.4 GHz and 5GHz-1 frequency bands.

---

4. In the **Hide SSID** field, select **Yes** to prevent wireless devices from detecting your SSID. When this function is enabled, you would need to enter the SSID manually on the wireless device to access the wireless network.
5. Select any of these wireless mode options to determine the types of wireless devices that can connect to your wireless router:

- **Auto:** Select **Auto** to allow 802.11ac, 802.11n, 802.11g, and 802.11b devices to connect to the wireless router.
6. Select any of these channel bandwidth to accommodate higher transmission speeds:
    - 2.4GHz:** Select between 40MHz and 20MHz for wireless throughput.
    - 5GHz-1:** Select among 160MHz, 80MHz, 40MHz and 20MHz for wireless throughput.
  7. Select the operating channel for your wireless router. Select **Auto** to allow the wireless router to automatically select the channel that has the least amount of interference.
  8. Select any of these authentication methods:
    - **Open System:** This option provides no security.
    - **WPA/WPA2/WPA3-Personal:** This option provides strong security. You can use either WPA (with TKIP) or WPA2 (with AES). If you select this option, you must use TKIP + AES encryption and enter the WPA passphrase (network key).
    - **WPA/WPA2/WPA3-Enterprise:** This option provides very strong security. It is with integrated EAP server or an external RADIUS back-end authentication server.

## 3.18.2 WPS

WPS (Wi-Fi Protected Setup) is a wireless security standard that allows you to easily connect devices to a wireless network. You can configure the WPS function via the PIN code or WPS button.

---

**NOTE:** Ensure that the devices support WPS.

---

WPS (Wi-Fi Protected Setup) provides easy and secure establishment of a wireless network. You can configure WPS here via the PIN code or the WPS button.

Enable WPS

Current Frequency 2.4 GHz

Connection Status Idle

Configured Enabled

AP PIN Code 74058907

Pressing the reset button resets the network name (SSID) and WPA encryption key.

You can easily connect a WPS client to the network in either of these two ways:

- Method1: Click the WPS button on this interface (or press the physical WPS button on the routers), then press the WPS button on the client's WLAN adapter and wait for about three minutes to make the connection.
- Method2: Start the client WPS process and get the client PIN code. Enter the client's PIN code on the Client PIN code field and click Start. Please check the user manual of your wireless client to see if it supports the WPS function. If your wireless client does not support the WPS function, you have to configure the wireless client manually and set the same network Name (SSID), and security settings as this router.

WPS Method:  Push button  Client PIN Code

### To enable WPS on your wireless network:

1. From the navigation panel, go to **Settings > Wireless > WPS**.
2. In the **Enable WPS** field, move the slider to **ON**.
3. WPS uses 2.4GHz by default. If you want to change the frequency to 5GHz, turn **OFF** the WPS function, click **Switch Frequency** in the **Current Frequency** field, and turn WPS **ON** again.

---

**NOTE:** WPS supports authentication using Open System, WPA-Personal, and WPA2-Personal. WPS does not support a wireless network that uses a Shared Key, WPA-Enterprise, WPA2-Enterprise, and RADIUS encryption method.

---

3. In the **WPS Method** field, select **Push button** or **Client PIN Code**. If you select **Push button**, go to step 4. If you select **Client PIN Code**, go to step 5.
4. To set up WPS using the router's WPS button, follow these steps:

- a. Click **Start** or press the WPS button found at the rear of the wireless router.
- b. Press the WPS button on your wireless device. This is normally identified by the WPS logo.

---

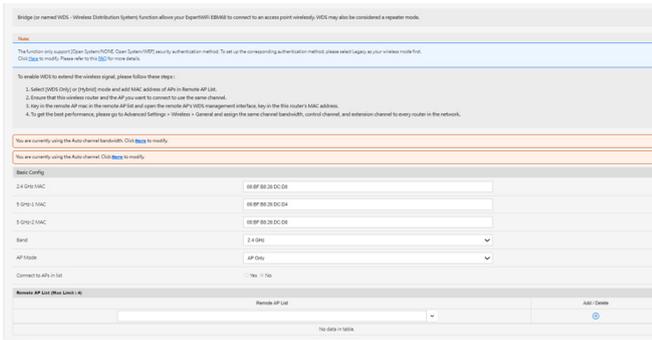
**NOTE:** Check your wireless device or its user manual for the location of the WPS button.

---

- c. The wireless router will scan for any available WPS devices. If the wireless router does not find any WPS devices, it will switch to standby mode.
5. To set up WPS using the client's PIN code, follow these steps:
- a. Locate the WPS PIN code on your wireless device's user manual or on the device itself.
  - b. Key in the Client PIN code on the text box.
  - c. Click **Start** to put your wireless router into WPS survey mode. The router's LED indicators quickly flash three times until the WPS setup is completed.

### 3.18.3 WDS (Bridge)

Bridge or WDS (Wireless Distribution System) allows your ASUS wireless router to connect to another wireless access point exclusively, preventing other wireless devices or stations to access your ASUS wireless router. It can also be considered as a wireless repeater where your ASUS wireless router communicates with another access point and other wireless devices.

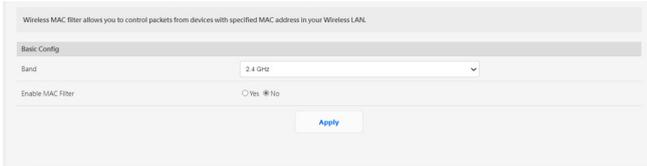


To set up the wireless bridge:

1. From the navigation panel, go to **Settings > Wireless > WDS**.
2. Select **WDS Only** or **Hybrid** mode and add the MAC addresses of APs in **Remote AP List (Max Limit:4)**.
3. Ensure that this wireless router and the AP you want to connect to use the same channel.
4. Key in the remote AP MAC address in the **Remote AP List** field, open the remote AP's WDS management interface, and key in this router's MAC address.
5. To get the best performance, go to **Settings > Wireless > General** and assign the same channel bandwidth, control channel, and extension channel to every router in the network.

### 3.18.4 Wireless MAC Filter

Wireless MAC filter provides control over packets transmitted to a specified MAC (Media Access Control) address on your wireless network.

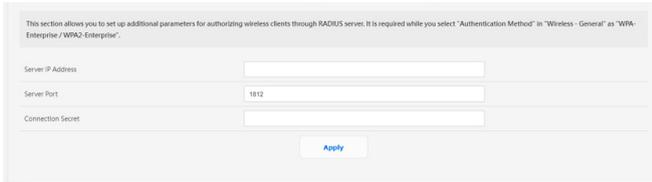


#### To set up the Wireless MAC filter:

1. From the navigation panel, go to **Settings > Wireless > Wireless MAC Filter**.
2. Tick **Yes** in the **Enable Mac Filter** field.
3. In the **MAC Filter Mode** dropdown list, select either **Accept** or **Reject**.
  - Select **Accept** to allow devices in the MAC filter list to access to the wireless network.
  - Select **Reject** to prevent devices in the MAC filter list to access to the wireless network.
4. On the MAC filter list, click **+** and key in the MAC address of the wireless device.
5. Click **Apply**.

### 3.18.5 RADIUS Setting

RADIUS (Remote Authentication Dial In User Service) allows you to set up additional parameters for authorizing wireless clients through RADIUS server. It is required when you select **Authentication Method** in **Wireless - General** as **WPA-Enterprise / WPA2-Enterprise**.



This section allows you to set up additional parameters for authorizing wireless clients through RADIUS server. It is required while you select "Authentication Method" in "Wireless - General" as "WPA-Enterprise / WPA2-Enterprise".

Server IP Address	<input type="text"/>
Server Port	<input type="text" value="1812"/>
Connection Secret	<input type="text"/>

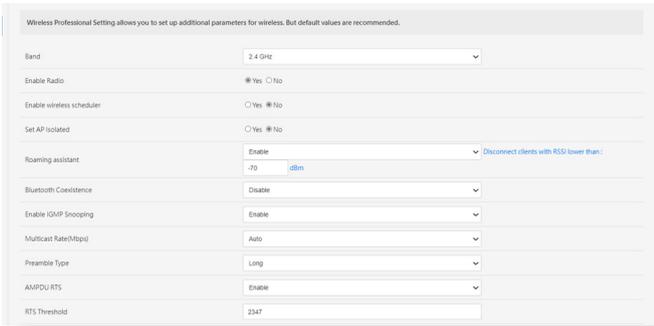
#### To set up wireless RADIUS settings:

1. Ensure that the wireless router's authentication mode is set to WPA-Enterprise, WPA2-Enterprise.
2. From the navigation panel, go to **Settings > Wireless > RADIUS Setting**.
3. Select the frequency band.
4. In the **Server IP Address** field, key in your RADIUS server's IP Address.
5. In the **Connection Secret** field, assign the password to access your RADIUS server.
6. Click **Apply**.

### 3.18.6 Professional

The Professional settings allows you to set up additional parameters for wireless connection.

**NOTE:** We recommend that you use the default values on this page.



Setting	Value
Band	2.4 GHz
Enable Radio	<input checked="" type="radio"/> Yes <input type="radio"/> No
Enable wireless scheduler	<input type="radio"/> Yes <input checked="" type="radio"/> No
Set AP Isolated	<input type="radio"/> Yes <input checked="" type="radio"/> No
Roaming assistant	Enable <input type="button" value="Disconnect clients with RSSI lower than: -70 dBm"/>
Bluetooth Coexistence	Disable
Enable IGMP Snooping	Enable
Multicast Rate(Mbps)	Auto
Preamble Type	Long
AMPDU RTS	Enable
RTS Threshold	2347

In the **Professional** settings screen, you can configure the following:

- **Band:** Select the frequency band that the professional settings will be applied to.
- **Enable Radio:** Select **Yes** to enable wireless networking. Select **No** to disable wireless networking.
- **Enable wireless scheduler:** You can choose clock format as 24-hour or 12-hour. The color in the table indicates Allow or Deny. Click each frame to change the settings of the hour of the weekdays and click **OK** when done.



This feature allows you to turn off the router wireless signal at times when you do not need a wireless connection.

Fri Oct 06 14:50:35 2023

	00:00	04:00	08:00	12:00	16:00	20:00	24:00
SUN							
MON							
TUE							
WED							
THU							
FRI							
SAT							

Offtime Schedule

- **Set AP isolated:** The Set AP isolated item prevents wireless devices on your network from communicating with each other. This feature is useful if many guests frequently join or leave your network. Select **Yes** to enable this feature or select **No** to disable.
- **Roaming assistant:** In network configurations that involve multiple Access Points or wireless repeater, wireless clients sometimes cannot connect automatically to the available AP because they are still connected to the main wireless router. Enable this setting so that the client will disconnect from the main wireless router if the signal strength is under a specific threshold and connect to a stronger signal.
- **Enable IGMP Snooping:** Enable this function allows the IGMP ( Internet Group Management Protocol ) to be monitored among devices and optimizes wireless multicast traffic.
- **Multicast rate (Mbps):** Select the multicast transmission rate or click **Disable** to switch off simultaneous single transmission.
- **Preamble Type:** Preamble Type defines the length of time that the router spent for CRC (Cyclic Redundancy Check). CRC is a method of detecting errors during data transmission. Select **Short** for a busy wireless network with high network traffic. Select **Long** if your wireless network is composed of older or legacy wireless devices.
- **AMPDU RTS:** Enable this function allows to build a group of frames before they are transmitted and use RTS for every AMPDU for communication among 802.11g and 802.11b devices.
- **RTS Threshold:** Select a lower value for RTS (Request to Send) Threshold to improve wireless communication in a busy or noisy wireless network with high network traffic and numerous wireless devices.
- **DTIM Interval:** DTIM (Delivery Traffic Indication Message) Interval or Data Beacon Rate is the time interval before a signal is sent to a wireless device in sleep mode indicating that a data packet is awaiting delivery. The default value is three milliseconds.

- **Beacon Interval:** Beacon Interval is the time between one DTIM and the next. The default value is 100 milliseconds. Lower the Beacon Interval value for an unstable wireless connection or for roaming devices.
- **Enable TX Bursting:** Enable TX Bursting improves transmission speed between the wireless router and 802.11g devices.
- **Enable WMM APSD:** Enable WMM APSD (Wi-Fi Multimedia Automatic Power Save Delivery) to improve power management between wireless devices. Select **Disable** to switch off WMM APSD.

### 3.18.7 Roaming Block List

The feature allows you to add devices to the roaming block list and prevent them from roaming between AiMesh nodes.

You can add devices into roaming deny list, and the devices will not be roamed between AiMesh nodes.

**Basic Config**

Enable roaming deny list  Yes  No

**Roaming Block List (Max Limit : 64)**

Client Name (MAC Address)	Add / Delete
ex. 08:8F:88:26:DC:D0	
No data in table.	

## 4 Utilities

---

### NOTES:

- Download and install the wireless router's utilities from the ASUS website:
    - Device Discovery v1.4.7.1 at <http://dlcdnet.asus.com/pub/ASUS/LiveUpdate/Release/Wireless/Discovery.zip>
    - Firmware Restoration v1.9.0.4 at <http://dlcdnet.asus.com/pub/ASUS/LiveUpdate/Release/Wireless/Rescue.zip>
    - Windows Printer Utility v1.0.5.5 at <http://dlcdnet.asus.com/pub/ASUS/LiveUpdate/Release/Wireless/Printer.zip>
  - The utilities are not supported on MAC OS.
- 

### 4.1 Device Discovery

Device Discovery is an ASUS WLAN utility that detects an ASUS wireless router device, and allows you to configure the wireless networking settings.

#### **To launch the Device Discovery utility:**

- From your computer's desktop, click **Start > All Programs > ASUS Utility > Wireless Router > Device Discovery**.

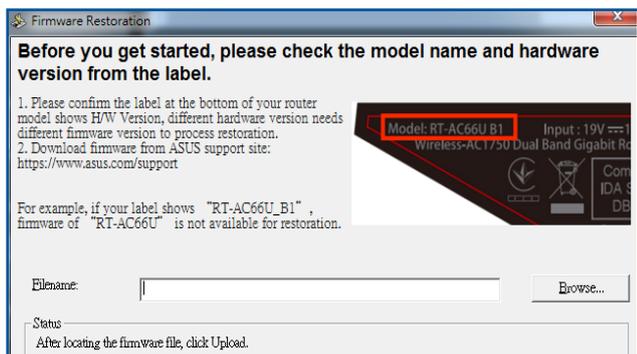
---

**NOTE:** When you set the router to Access Point mode, you need to use Device Discovery to get the router's IP address.

---

## 4.2 Firmware Restoration

Firmware Restoration is used on an ASUS Wireless Router that failed during its firmware upgrading process. It uploads the firmware that you specify. The process takes about three to four minutes.



---

**IMPORTANT!** Launch the rescue mode on the router before using the Firmware Restoration utility.

---

**NOTE:** This feature is not supported on MAC OS.

---

### To launch the rescue mode and use the Firmware Restoration utility:

1. Unplug the wireless router from the power source.
2. Hold the Reset button at the rear panel and simultaneously replug the wireless router into the power source. Release the Reset button when the Power LED at the front panel flashes slowly, which indicates that the wireless router is in the rescue mode.
3. Set a static IP on your computer and use the following to set up your TCP/IP settings:

**IP address:** 192.168.1.x

**Subnet mask:** 255.255.255.0

4. From your computer's desktop, click **Start > All Programs > ASUS Utility > Wireless Router > Firmware Restoration**.
5. Specify a firmware file, then click **Upload**.

---

**NOTE:** This is not a firmware upgrade utility and cannot be used on a working ASUS Wireless Router. Normal firmware upgrades must be done through the web interface. Refer to **Chapter 3: Configuring EBM68** for more details.

---

## 5 Troubleshooting

This chapter provides solutions for issues you may encounter with your router. If you encounter problems that are not mentioned in this chapter, visit the ASUS support site at:

<https://www.asus.com/support/> for more product information and contact details of ASUS Technical Support.

### 5.1 Basic Troubleshooting

If you are having problems with your router, try these basic steps in this section before looking for further solutions.

#### Upgrade Firmware to the latest version.

1. From the navigation panel, go to **Settings > Administration > Firmware Upgrade**. Click **Check** to verify if the latest firmware is available.
2. If the latest firmware is available, visit the ASUS global website to download the latest firmware.
3. From the **Firmware Upgrade** page, click **Browse** to upload the firmware file.
4. Click **Upload** to upgrade the firmware.

#### Restart your network in the following sequence:

1. Turn off the modem.
2. Unplug the modem.
3. Turn off the router and computers.
4. Plug in the modem.
5. Turn on the modem and then wait for 2 minutes.
6. Turn on the router and then wait for 2 minutes.
7. Turn on computers.

### **Check if your Ethernet cables are plugged properly.**

- When the Ethernet cable connecting the router with the modem is plugged in properly, the WAN LED will be on.
- When the Ethernet cable connecting your powered-on computer with the router is plugged in properly, the corresponding LAN LED will be on.

### **Check if the wireless setting on your computer matches that of your router.**

- When you connect your computer to the router wirelessly, ensure that the SSID (wireless network name), encryption method, and password are correct.

### **Check if your network settings are correct.**

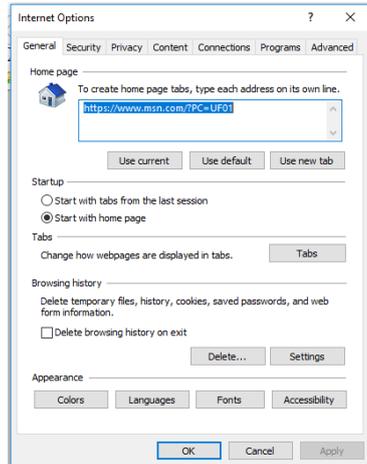
- Each client on the network should have a valid IP address. ASUS recommends that you use the wireless router's DHCP server to assign IP addresses to computers on your network.
- Some cable modem service providers require you to use the MAC address of the computer initially registered on the account. You can view the MAC address in the web GUI, **Dashboard > Clients**.

## 5.2 Frequently Asked Questions (FAQs)

### I cannot access the router GUI using a web browser

- If your computer is wired, check the Ethernet cable connection and LED status as described in the previous section.
- Ensure that you are using the correct login information. Ensure that the Caps Lock key is disabled when you enter the login information.
- Delete the cookies and files in your web browser. For Internet Explorer, follow these steps:

1. Launch Internet Explorer, then click **Tools > Internet Options**.
2. In the **General** tab, under **Browsing history**, click **Delete...**, select **Temporary Internet files and website files** and **Cookies and website data** then click **Delete**.



---

#### NOTES:

- The commands for deleting cookies and files vary with web browsers.
  - Disable proxy server settings, cancel the dial-up connection, and set the TCP/IP settings to obtain IP addresses automatically. For more details, refer to Chapter 1 of this user manual.
  - Ensure that you use CAT5e or CAT6 ethernet cables.
-

# The client cannot establish a wireless connection with the router.

**NOTE:** If you are having issues connecting to 5GHz network, make sure that your wireless device supports 5GHz or features dual band capabilities.

- **Out of Range:**
  - Move the router closer to the wireless client.
- **DHCP server has been disabled:**
  1. Launch the web GUI. Go to **Dashboard > Clients** and search for the device that you want to connect to the router.
  2. If you cannot find the device in the **Dashboard**, go to **Settings > LAN > DHCP Server**.

DHCP (Dynamic Host Configuration Protocol) is a protocol for the automatic configuration used on IP networks. The DHCP server can assign each client an IP address and inform the client of the DNS server IP and default gateway. IP Support (IPv6) is supported up to 255 IP addresses for your local network.

[View DHCP Server Settings](#) [View DHCP Server Settings](#)

### Basic Config

Enable the DHCP Server  Yes  No

Export/Import (DHCP) Domain Name

IP Pool Starting Address

IP Pool Ending Address

Lease Time (seconds)

Default Gateway

### DHCP and DNS Server Setting

DHCP Server 1

DHCP Server 2

Advertise router's IP in addition to user-specified DNS  Yes  No

VLAN Server

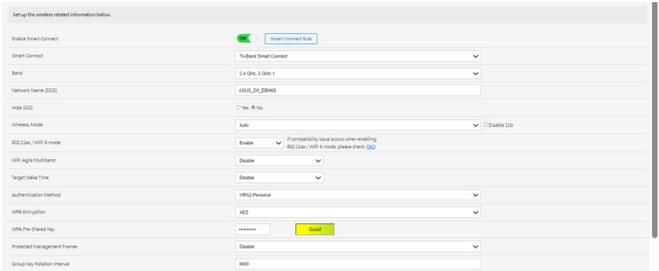
### Manual Assignment

Enable Manual Assignment  Yes  No

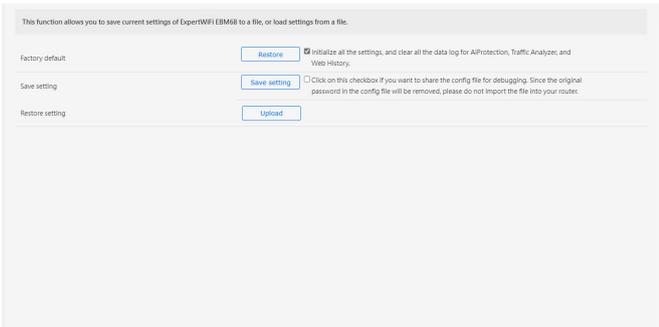
### Recently Assigned IP Address List (Max Limit: 100)

Client Name (Optional)	IP Address	DHCP Server (Optional)	Lease Name (Optional)	Add / Delete
en-102-10-200-00				<a href="#">+</a> <a href="#">-</a>

- SSID has been hidden. If your device can find SSIDs from other routers but cannot find your router's SSID, go to **Settings > Wireless > General**, select **NO** on **Hide SSID**, and select **Auto** on **Control Channel**.



- If you are using a wireless LAN adapter, check if the wireless channel in use conforms to the channels available in your country/area. If not, adjust the channel, channel bandwidth, and wireless mode.
- If you still cannot connect to the router wirelessly, you can reset your router to factory default settings. In the router GUI, click **Settings > Administration > Restore/Save/Upload Setting** and click **Restore**.



## Internet is not accessible.

- Check if your router can connect to your ISP's WAN IP address. To do this, launch the web GUI and go to **Dashboard**, and check the Internet status.
- If your router cannot connect to your ISP's WAN IP address, try restarting your network as described in the section **Restart your network in following sequence** under **Basic Troubleshooting**.
- If there is still no Internet access, try to reboot your computer and verify the network's IP address and gateway address.
- Check the status indicators on the ADSL modem and the wireless router. If the WAN LED on the wireless router is not ON, check if all cables are plugged properly.

## You forgot the SSID (network name) or network password

- Setup a new SSID and encryption key via a wired connection (Ethernet cable). Launch the web GUI, go to **Dashboard**, click the router icon, enter a new SSID and encryption key, and then click **Apply**.
- Reset your router to the default settings. Launch the web GUI, go to **Settings > Administration > Restore/Save/Upload Setting**, and click **Restore**.

## How to restore the system to its default settings?

- Go to **Settings > Administration > Restore/Save/Upload Setting**, and click **Restore**.

The following are the factory default settings:

<b>Enable DHCP:</b>	Yes (if WAN cable is plugged in)
<b>IP address:</b>	192.168.50.1
<b>Domain Name:</b>	(Blank)
<b>Subnet Mask:</b>	255.255.255.0
<b>DNS Server 1:</b>	www.asusrouter.com
<b>DNS Server 2:</b>	(Blank)
<b>SSID:</b>	ASUS_XX

## Firmware upgrade failed.

Launch the rescue mode and run the Firmware Restoration utility. Refer to section **4.2 Firmware Restoration** on how to use the Firmware Restoration utility.

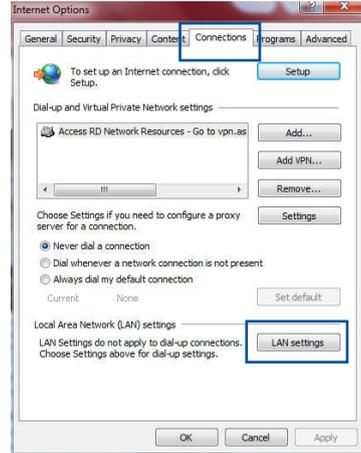
## Cannot access Web GUI

Before configuring your wireless router, do the steps described in this section for your host computer and network clients.

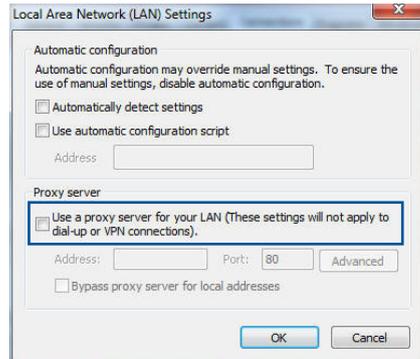
### A. Disable the proxy server, if enabled.

#### Windows®

1. Click **Start > Internet Explorer** to launch the browser.
2. Click **Tools > Internet options > Connections > LAN settings**.

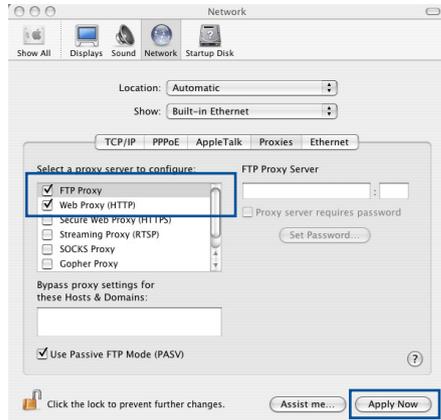


3. From the Local Area Network (LAN) Settings screen, untick **Use a proxy server for your LAN**.
4. Click **OK** when done.



## MAC OS

1. From your Safari browser, click **Safari > Preferences > Advanced > Change Settings...**
2. From the Network screen, deselect **FTP Proxy** and **Web Proxy (HTTP)**.
3. Click **Apply Now** when done.

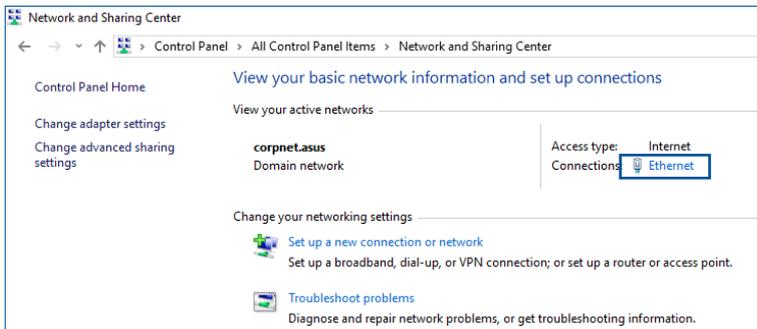


**NOTE:** Refer to your browser's help feature for details on disabling the proxy server.

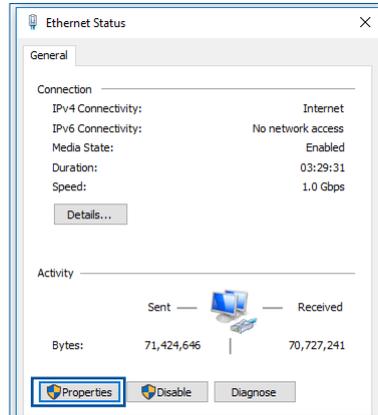
## B. Set the TCP/IP settings to automatically obtain an IP address.

## Windows®

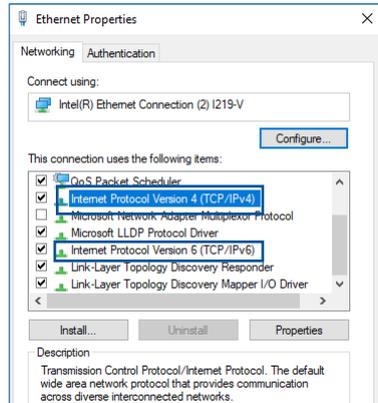
1. Click **Start > Control Panel > Network and Sharing Center**, then click the network connection to display its status window.



2. Click **Properties** to display the Ethernet Properties window.



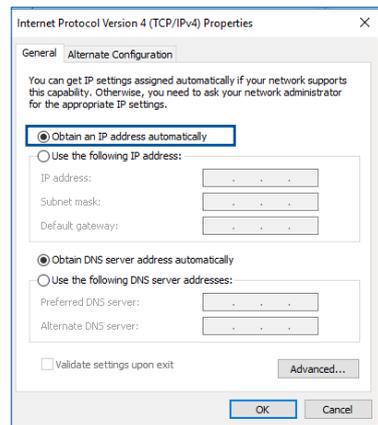
3. Select **Internet Protocol Version 4 (TCP/IPv4)** or **Internet Protocol Version 6 (TCP/IPv6)**, then click **Properties**.



4. To obtain the IPv4 IP settings automatically, tick **Obtain an IP address automatically**.

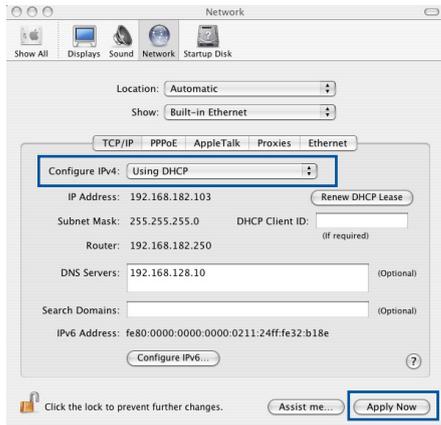
To obtain the IPv6 IP settings automatically, tick **Obtain an IPv6 address automatically**.

5. Click **OK** when done.



## MAC OS

1. Click the Apple icon  located on the top left of your screen.
2. Click **System Preferences > Network > Configure...**
3. From the **TCP/IP** tab, select **Using DHCP** in the **Configure IPv4** dropdown list.
4. Click **Apply Now** when done.

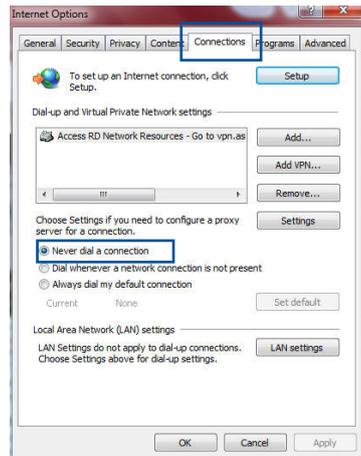


**NOTE:** Refer to your operating system's help and support feature for details on configuring your computer's TCP/IP settings.

## C. Disable the dial-up connection, if enabled.

### Windows®

1. Click **Start > Internet Explorer** to launch the browser.
2. Click **Tools > Internet options > Connections.**
3. Tick **Never dial a connection.**
4. Click **OK** when done.



**NOTE:** Refer to your browser's help feature for details on disabling the dial-up connection.

# Appendices

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Version 2, June 1991

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## Safety Notices

When using this product, always follow the fundamental safety precautions, including, but not limited to the following:

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### **WARNING!**

- The power supply cord(s) must be plugged into socket-outlet(s) that is /are provided with a suitable earth ground. Connect the equipment only to a nearby socket outlet that is easily accessible.
  - If the Adapter is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
  - DO NOT use damaged power cords, accessories, or other peripherals.
  - DO NOT mount this equipment higher than 2 meters.
  - Use this product in environments with ambient temperatures between 0°C (32°F) and 40°C (104°F).
  - Read the operational guidelines and the temperature range provided before using the product.
  - Pay particular attention to the personal safety when using this device in airports, hospitals, gas stations and professional garages.
  - Medical device interference: Maintain a minimum distance of at least 15 cm (6 inches) between implanted medical devices and ASUS products to reduce the risk of interference.
  - Kindly use ASUS products in good reception conditions to minimize the radiation's level.
  - Keep the device away from pregnant women and the lower abdomen of the teenager.
  - DO NOT use this product if visible defects can be observed or it has been wet or damaged or modified. Seek servicing for assistance.
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## **WARNING!**

- DO NOT place on uneven or unstable work surfaces.
  - DO NOT place or drop objects on the top of the product. Avoid exposing the product to mechanical shock such as crushing, bending, puncturing or shredding.
  - DO NOT disassemble, open, microwave, incinerate, paint, or shove any foreign objects into this product.
  - Refer to the rating label on the bottom of your product and ensure your power adapter complies with this rating.
  - Keep the product away from fire and heat sources.
  - DO NOT expose to or use near liquids, rain, or moisture. DO NOT use the product during electrical storms.
  - Connect the PoE output circuits of this product exclusively to PoE networks, without routing to external facilities.
  - To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
  - Only use accessories that have been approved by the device manufacturer to work with this model. The use of other types of accessories may invalidate the warranty or violate local regulations and laws, and may pose safety risks. Contact your local retailer for the availability of authorized accessories.
  - Use of this product in a way not recommended in the provided instructions may result in a risk of fire or personal injury.
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