User Guide

RT-ACRH17

Wireless-AC1700 Dual Band Gigabit Router



IN SEARCH OF INCREDIBLE

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1 Getting to know your wireless router

1.1 Welcome!

Thank you for purchasing an ASUS RT-ACRH17 Wireless Router!

The ultra-thin and stylish RT-ACRH17 features both 2.4GHz and 5GHz dual bands which delivers super fast gigabit wireless-AC speeds up to 1400 Mbps on the 5 GHz band & 300 Mbps on the 2.4 GHz band concurrently.

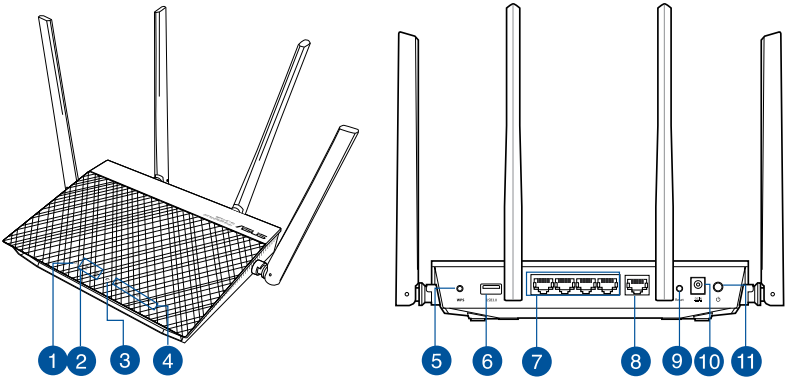
1.2 Package contents

☑ RT-ACRH17 Wireless Router
☑ Network cable (RJ-45)
☑ Power adapter
☑ Quick Start Guide

NOTES:

- If any of the items are damaged or missing, contact ASUS for technical inquiries and support, Refer to the ASUS Support Hotline list 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 **Power LED**

Off: No power.

On: Device is ready.

Flashing slow: Rescue mode

Flashing quick: WPS is processing.

2 **2.4GHz LED / 5GHz LED**

Off: No 2.4 GHz or 5 GHz signal.

On: Wireless system is ready.

Flashing: Transmitting or receiving data via wireless connection.

3 **WAN (Internet) LED**

Off: No power or no physical connection.

On: Has physical connection to a wide area network (WAN).

4 **LAN LED**

Off: No power or no physical connection.

On: Has physical connection to a local area network (LAN).

5 **WPS button**

This button launches the WPS Wizard.

6 **USB 3.0 port**

Insert a USB 3.0 device such as USB hard disks or USB flash drives into this port.

7 **LAN 1 ~ 4 ports**

Connect network cables into these ports to establish LAN connection.

8	**WAN (Internet) port** Connect a network cable into this port to establish WAN connection.
9	**Reset button** This button resets or restores the system to its factory default settings.
10	**Power (DC-IN) port** Insert the bundled AC adapter into this port and connect your router to a power source.
11	**Power button** Press this button to power on or off the system.

NOTES:

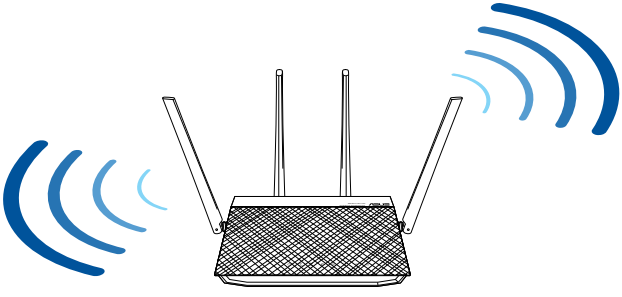
- Use only the adapter that came with your package. Using other adapters may damage the device.
- **Specifications:**

DC Power adapter	DC Output: +12V with max 2A current;		
Operating Temperature	0~40°C	Storage	0~70°C
Operating Humidity	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 802.11b/g 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.
- To ensure the best wireless signal, orient the four antennas as shown in the drawing below.



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/1000Base-TX)
- 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 dual band technology, your wireless router supports 2.4GHz and 5GHz 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.

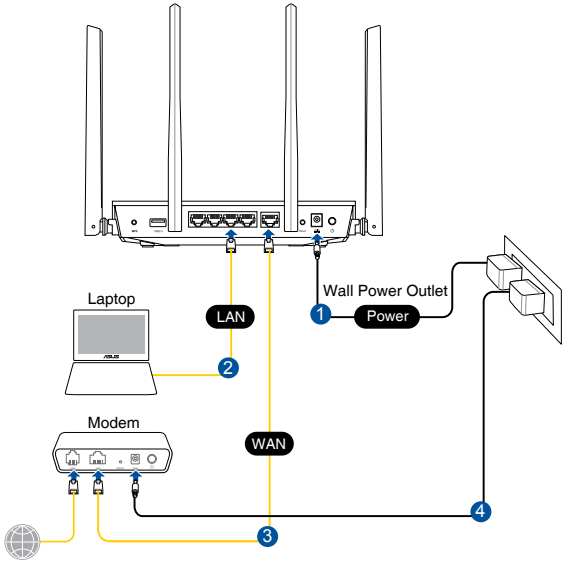
1.6 Router Setup

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).

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:

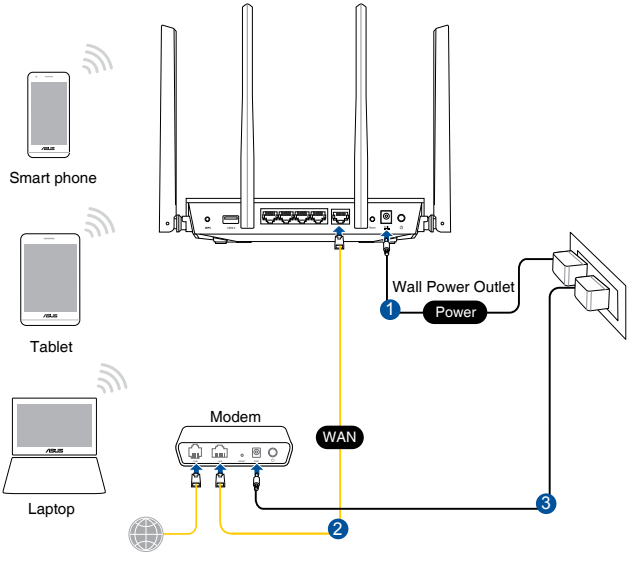
1. Insert your wireless router's AC adapter to the DC-IN port and plug it to a power outlet.
2. Using the bundled network cable, connect your computer to your wireless router's LAN port.

IMPORTANT! Ensure that the LAN LED is blinking.

3 Using another network cable, connect your modem to your wireless router's WAN port.

4. Insert your modem's AC adapter to the DC-IN 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 DC-IN 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 DC-IN port and plug it to a power outlet.

NOTES:

- For details on connecting to a wireless network, refer to the WLAN adapter's user manual.
- To set up the security settings for your network, refer to the section **Setting up the wireless security settings** in Chapter 3 of this 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 Internet Explorer, Firefox, Safari, or Google Chrome.

NOTE: The features may vary with different firmware versions.

To log into the web GUI:

1. On your web browser, enter **http://router.asus.com**
2. On the login page, key in the default user name (**admin**) and password (**admin**).
3. You can now use the Web GUI to configure various settings of your ASUS Wireless Router.



NOTE: If you are logging into the Web GUI for the first time, you will be directed to the Quick Internet Setup (QIS) page automatically.

2.2 Quick Internet Setup (QIS) with Auto-detection

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.

To use QIS with auto-detection:

1. Log into the Web GUI. The QIS page launches automatically.



NOTES:

- By default, the login username and password for your wireless router's Web GUI is **admin**. For details on changing your wireless router's login username and password, refer to section **4.6.2 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. The wireless router automatically detects if your ISP connection type is **Dynamic IP**, **PPPoE**, **PPTP** and **L2TP**. Key in the necessary information for your ISP connection type.

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

for Automatic IP (DHCP)



for PPPoE, PPTP and L2TP



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. Assign the wireless network name (SSID) and security key for your 2.4GHz and 5 GHz wireless connection. Click **Apply** when done.



4. Your Internet and wireless settings are displayed. Click **Next** to continue.
5. Read the wireless network connection tutorial. When done, click **Finish**.



2.3 Connecting to your wireless network

After setting up your wireless router via QIS, you can connect your computer or other smart devices to your wireless network.

To connect to your network:

1. On your computer, click the network icon  in the notification area to display the available wireless networks.
2. Select the wireless network that you want to connect to, then click **Connect**.
3. You may need to key in the network security key for a secured wireless network, 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.

NOTES:

- Refer to the next chapters for more details on configuring your wireless network's settings.
- Refer to your device's user manual for more details on connecting it to your wireless network.

3 Configuring the General settings

3.1 Using the Network Map

Network Map allows you to configure your network's security settings, manage your network clients, and monitor your USB device.



3.1.1 Setting up the wireless security settings

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

To set up the wireless security settings:

1. From the navigation panel, go to **General** > **Network Map**.
2. On the Network Map screen and under **System status**, you can configure the wireless security settings such as SSID, security level, and encryption settings.

NOTE: You can set up different wireless security settings for 2.4GHz and 5GHz bands.

2.4GHz security settings



5GHz security settings



3. On the **Wireless name (SSID)** field, key in a unique name for your wireless network.

4. From the **Security Level** dropdown list, select the encryption method for your wireless network.

IMPORTANT! The IEEE 802.11n/ac standard prohibits using High Throughput with WEP or WPA-TKIP as the unicast cipher. If you use these encryption methods, your data rate will drop to IEEE 802.11g 54Mbps connection.

5. Key in your security passkey.
6. Click **Apply** when done.

3.1.2 Managing your network clients



To manage your network clients:

1. From the navigation panel, go to **General** > **Network Map** tab.
2. On the Network Map screen, select the **Client Status** icon to display your network client's information.
3. To block a client's access to your network, select the client and click **block**.

3.1.3 Monitoring your USB device

The ASUS Wireless Router provides a USB port for connecting USB devices to allow you to share files with clients in your network.



NOTE: To use this feature, you need to plug a USB storage device, such as a USB hard disk or USB flash drive, to the USB port on the rear panel of your wireless router. Ensure that the USB storage device is formatted and partitioned properly. Refer to the Plug-n-Share Disk Support List at **http://event.asus.com/networks/disksupport**

IMPORTANT! You first need to create a share account and its permission /access rights to allow other network clients to access the USB device via an FTP site/third-party FTP client utility, Servers Center, or Samba. For more details, refer to the section **3.5.Using the USB Application** in this user manual.

To monitor your USB device:

1. From the navigation panel, go to **General** > **Network Map**.
2. On the Network Map screen, select the **USB Disk Status** icon to display your USB device's information.
3. On the AiDisk Wizard field, click **GO** to set up an FTP server for Internet file sharing.

NOTES:

- For more details, refer to the section **3.5.2 Using Servers Center** in this user manual.
- The wireless router works with most USB HDDs/Flash disks (up to 2TB size) and supports read-write access for FAT16, FAT32, EXT2, EXT3, and NTFS.

Safely removing the USB disk

IMPORTANT! Incorrect removal of the USB disk may cause data corruption.

To safely remove the USB disk:

1. From the navigation panel, go to **General** > **Network Map**.
2. In the upper right corner, click  > **Eject USB disk**. When the USB disk is ejected successfully, the USB status shows **Unmounted**.



3.2 Creating a Guest Network

The Guest Network provides temporary visitors with Internet connectivity via access to separate SSIDs or networks without providing access to your private network.

NOTE: RT-ACRH17 supports up to six SSIDs (three 2.4GHz and three 5GHz SSIDs).

To create a guest network:

1. From the navigation panel, go to **General** > **Guest Network**.
2. On the Guest Network screen, select 2.4Ghz or 5Ghz frequency band for the guest network that you want to create.
3. Click **Enable**.



4. To configure additional options, click **Modify**.

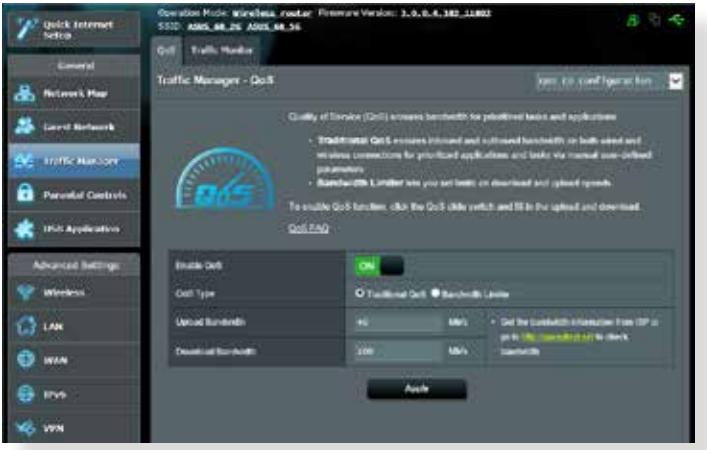


5. Click **Yes** on the **Enable Guest Network** screen.
6. Assign a wireless name for your temporary network on the **Network Name (SSID)** field.
7. Select an **Authentication Method**.
8. Select an **Encryption** method.
9. Specify the **Access time** or choose **Limitless**.
10. Select **Disable** or **Enable** on the **Access Intranet** item.
11. When done, click **Apply**.

3.3 Using the Traffic Manager

3.3.1 Managing QoS (Quality of Service) Bandwidth

Quality of Service (QoS) allows you to set the bandwidth priority and manage network traffic.



To set up bandwidth priority:

1. From the navigation panel, go to **General** > **Traffic Manager** > **QoS** tab.
2. Click **ON** to enable QoS. Fill in the upload and download bandwidth fields.

NOTE: Get the bandwidth information from your ISP.

3. Click **Save**.

NOTE: The User Specify Rule List is for advanced settings. If you want to prioritize specific network applications and network services, select **User-defined QoS rules** or **User-defined Priority** from the drop-down list on the upper-right corner.

4. On the **user-defined QoS rules** page, there are four default online service types – web surf, HTTPs and file transfers. Select your preferred service, fill in the **Source IP or MAC**, **Destination Port**, **Protocol**, **Transferred** and **Priority**, then click **Apply**. The information will be configured in the QoS rules screen.

NOTES:

- To fill in the source IP or MAC, you can:

  a) Enter a specific IP address, such as "192.168.122.1".

  b) Enter IP addresses within one subnet or within the same IP pool, such as "192.168.123.*", or "192.168.*.*"

  c) Enter all IP addresses as "*.*.*.*" or leave the field blank.

  d) The format for the MAC address is six groups of two hexadecimal digits, separated by colons (:), in transmission order (e.g. 12:34:56:aa:bc:ef)

- For source or destination port range, you can either:

  a) Enter a specific port, such as "95".

  b) Enter ports within a range, such as "103:315", ">100", or "<65535".

- The **Transferred** column contains information about the upstream and downstream traffic (outgoing and incoming network traffic) for one section. In this column, you can set the network traffic limit (in KB) for a specific service to generate specific priorities for the service assigned to a specific port. For example, if two network clients, PC 1 and PC 2, are both accessing the Internet (set at port 80), but PC 1 exceeds the network traffic limit due to some downloading tasks, PC 1 will have a lower priority. If you do not want to set the traffic limit, leave it blank.

5. On the **User-defined Priority** page, you can prioritize the network applications or devices into five levels from the **user-defined QoS rules**' dropdown list. Based on priority level, you can use the following methods to send data packets:
   - Change the order of upstream network packets that are sent to the Internet.
   - Under **Upload Bandwidth** table, set **Minimum Reserved Bandwidth** and **Maximum Bandwidth Limit** for multiple network applications with different priority levels. The percentages indicate the upload bandwidth rates that are available for specified network applications.

NOTES:

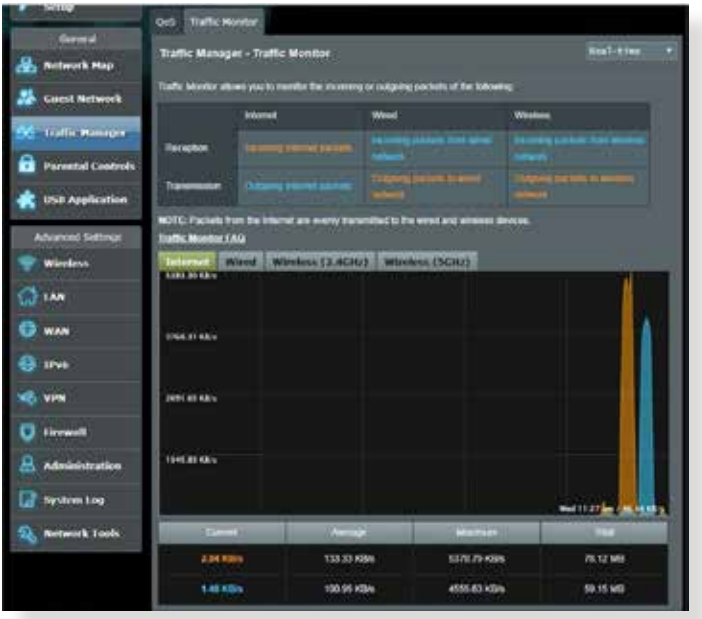
- Low-priority packets are disregarded to ensure the transmission of high-priority packets.
- Under **Download Bandwidth** table, set **Maximum Bandwidth Limit** for multiple network applications in corresponding order. The higher priority upstream packet will cause the higher priority downstream packet.
- If there are no packets being sent from high-priority applications, the full transmission rate of the Internet connection is available for low-priority packets.

6. Set the highest priority packet. To ensure a smooth online gaming experience, you can set ACK, SYN, and ICMP as the highest priority packet.

NOTE: Ensure to enable QoS first and set up the upload and download rate limits.

3.3.2 Monitoring Traffic

The traffic monitor function allows you to access the bandwidth usage and speed of your Internet, wired, and wireless networks. It allows you to monitor network traffic even on a daily basis.



NOTE: Packets from the Internet are evenly transmitted to the wired and wireless devices.

3.4 Setting up Parental Control

Parental Control allows you to control the Internet access time. Users can set the time limit for a client's network usage.



To use the parental control function:

1. From the navigation panel, go to **General** > **Parental control**.
2. Click **ON** to enable Parental Control.
3. Select the client whose network usage you want to control. You may also key in the client's MAC address in the **Client MAC Address** column.

NOTE: Ensure that the client name does not contain special characters or spaces as this may cause the router to function abnormally.

4. Click ⊕ or ⊖ to add or delete the client's profile.
5. Set up the allowed time limit in **Time Management** map. Drag and drop a desired time zone to allow client's network usage.
6. Click **OK**.
7. Click **Apply** to save the settings.

3.5 Using the USB Application

The USB Applications function provides AiDisk, Servers Center, Network Printer Server and Download Master submenus.

IMPORTANT! To use the server functions, you need to insert a USB storage device, such as a USB hard disk or USB flash drive, in the USB 2.0 port on the rear panel of your wireless router. Ensure that the USB storage device is formatted and partitioned properly. Refer to the ASUS website at http://event.asus.com/2009/networks/disksupport/ for the file system support table.

3.5.1 Using AiDisk

AiDisk allows you to share files stored on a connected USB device through the Internet. AiDisk also assists you with setting up ASUS DDNS and an FTP server.

To use AiDisk:

1. From the navigation panel, go to **General** > **USB application**, then click the **AiDisk** icon.
2. From the Welcome to AiDisk wizard screen, click **Go**.



3. Select the access rights that you want to assign to the clients accessing your shared data.



4. Create your domain name via the ASUS DDNS services, read the Terms of Service and then select **I will use the service and accept the Terms of service** and key in your domain name. When done, click **Next**.



You can also select **Skip ASUS DDNS settings** then click **Next** to skip the DDNS setting.

5. Click **Finish** to complete the setting.
6. To access the FTP site that you created, launch a web browser or a third-party FTP client utility and key in the ftp link (**ftp://<domain name>.asuscomm.com**) you have previously created.

3.5.2 Using Servers Center

Servers Center allows you to share the media files from the USB disk via a Media Server directory, Samba share service, or FTP share service. You can also configure other settings for the USB disk in the Servers Center.

Using Media Server

Your wireless router allows UPnP-supported devices to access multimedia files from the USB disk connected to your wireless router.

NOTE: Before using the UPnP Media Server function, connect your device to the RT-ACRH17's network.

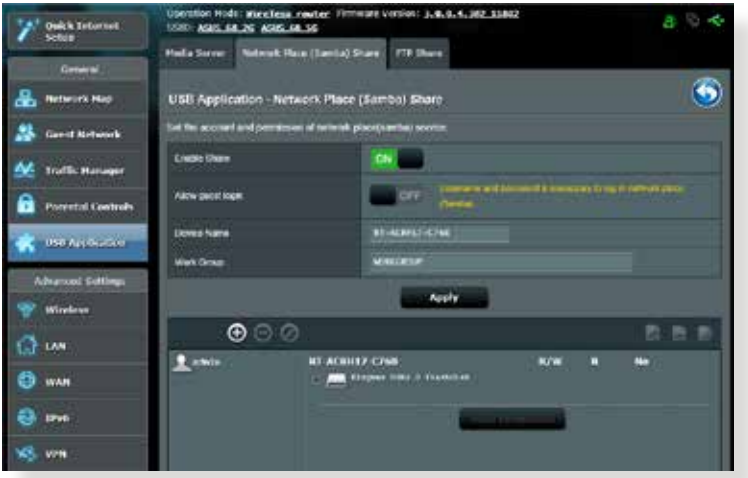


To launch the Media Server setting page, go to **General** > **USB application** > **Servers Center** > **Media Servers** tab. Refer to the following for the descriptions of the fields:

- **Enable UPnP Media Server**: Select ON/OFF to enable/ disable the UPnP Media Server.
- **Media Server Status**: Displays the status of the media server.

Using Network Place (Samba) Share service

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



To use Samba share:

1. From the navigation panel, go to **General** > **USB application** > **Servers Center**.

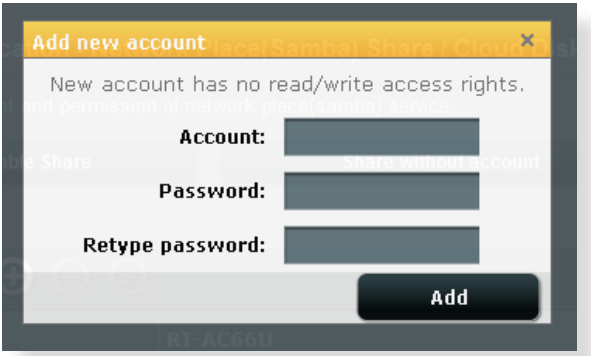
NOTE: Network Place (Samba) Share is enabled by default.

2. Follow the steps below to add, delete, or modify an account.

To create a new account:

a) Click ⊕ to add new account.

b) In the **Account** and **Password** fields, key in the name and password of your network client. Retype the password to confirm. Click **Add** to add the account to the list.

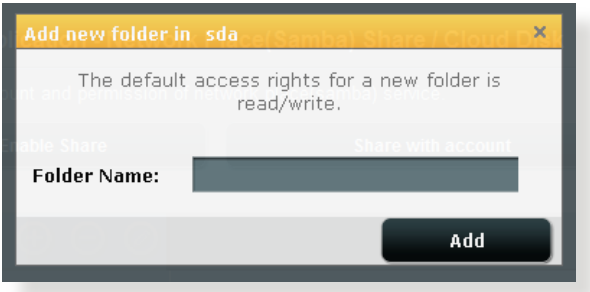


To delete an existing account:

a) Select the account that you want to delete.
b) Click .
c) When prompted, click **Delete** to confirm the account deletion.

To add a folder:

a) Click .
b) Enter the folder name, and click **Add**. The folder that you created will be added to the folder list.



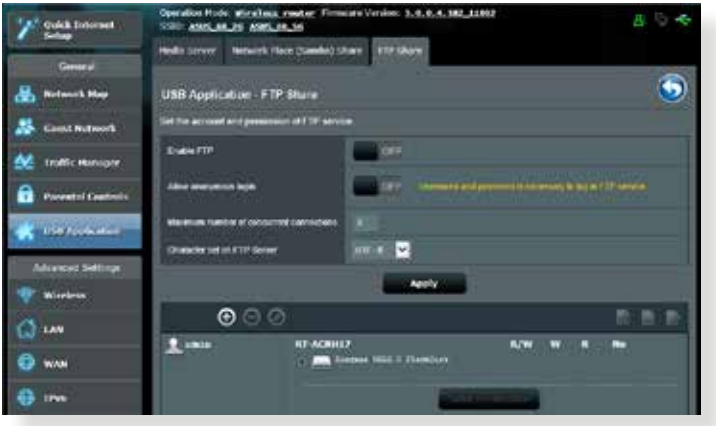
3. From the list of folders, select the type of access permission that you want to assign for specific folders:
   - **R/W:** Select this option to assign read/write access.
   - **R:** Select this option to assign read-only access.
   - **No**: Select this option if you do not want to share a specific file folder.
4. Click **Apply** to apply the changes.

Using the FTP Share service

FTP share enables an FTP server to share files from USB disk to other devices via your local area network or via the Internet.

IMPORTANT!

- Ensure that you safely remove the USB disk. Incorrect removal of the USB disk may cause data corruption.
- To safely remove the USB disk, refer to the section **Safely removing the USB disk** under **3.1.3 Monitoring your USB device**.



To use FTP Share service:

NOTE: Ensure that you have set up your FTP server through AiDisk. For more details, refer to the section **3.5.1 Using AiDisk**.

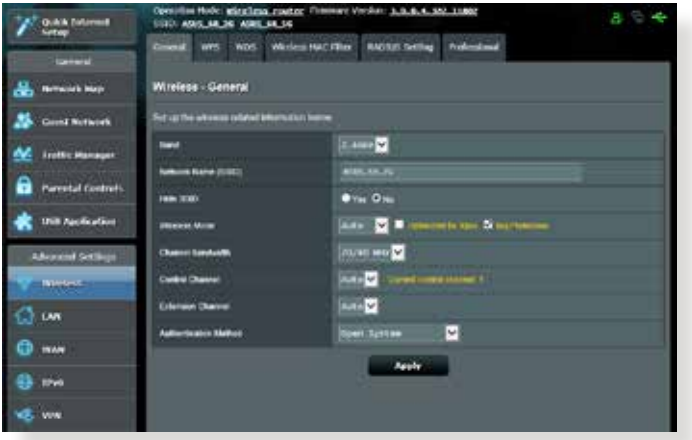
1. From the navigation panel, click **General** > **USB application** > **Servers Center** > **FTP Share** tab.
2. From the list of folders, select the type of access rights that you want to assign for specific folders:
   - **R/W**: Select to assign read/write access for a specific folder.
   - **W**: Select to assign write only access for a specific folder.
   - **R**: Select to assign read only access for a specific folder.
   - **No**: Select this option if you do not want to share a specific folder.
3. Click **Apply** to confirm the changes.
4. To access the FTP server, key in the ftp link **ftp://<hostname>.asuscomm.com** and your user name and password on a web browser or a third-party FTP utility.

4 Configuring the Advanced Settings

4.1 Wireless

4.1.1 General

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



To configure the basic wireless settings:

1. From the navigation panel, go to **Advanced Settings** > **Wireless** > **General** tab.
2. Select 2.4GHz or 5GHz as the frequency band for your wireless network.
3. Assign a unique name containing up to 32 characters 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 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.
   - **Legacy**: Select **Legacy** to allow 802.11b/g/n devices to connect to the wireless router. Hardware that supports 802.11n natively, however, will only run at a maximum speed of 54Mbps.
   - **N only**: Select **N only** to maximize wireless N performance. This setting prevents 802.11g and 802.11b devices from connecting to the wireless router.
6. 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.
7. Select any of these channel bandwidth to accommodate higher transmission speeds:

   40MHz: Select this bandwidth to maximize the wireless throughput.

   20MHz (default): Select this bandwidth if you encounter some issues with your wireless connection.
8. Select any of these authentication methods:
   - **Open System**: This option provides no security.
   - **Shared Key**: You must use WEP encryption and enter at least one shared key.

- **WPA/WPA2 Personal/WPA Auto-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 Enterprise/WPA Auto-Enterprise**: This option provides very strong security. It is with integrated EAP server or an external RADIUS back-end authentication server.
- **Radius with 802.1x**

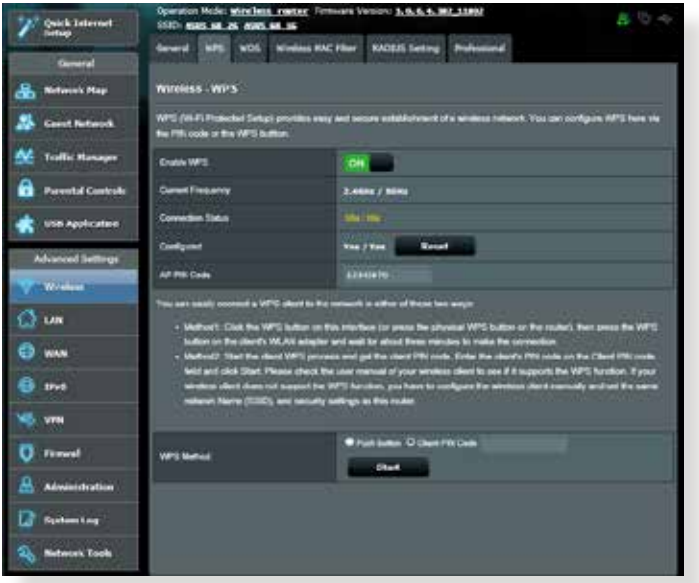
NOTE: Your wireless router supports the maximum transmission rate of 54Mbps when the **Wireless Mode** is set to **Auto** and **encryption method** is **WEP** or **TKIP**.

9. Select any of these WEP (Wired Equivalent Privacy) Encryption options for the data transmitted over your wireless network:
   - **Off**: Disables WEP encryption
   - **64-bit**: Enables weak WEP encryption
   - **128-bit**: Enables improved WEP encryption.
10. When done, click **Apply**.

4.1.2 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.



To enable WPS on your wireless network:

1. From the navigation panel, go to **Advanced Settings** > **Wireless** > **WPS** tab.
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.

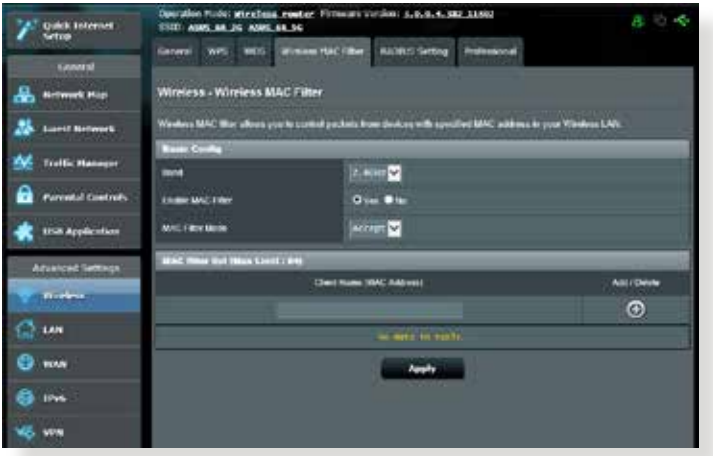
3. In the WPS Method field, select **Push Button** or **Client PIN** code. If you select **Push Button**, go to step 4. If you select **Client PIN** code, go to step 5.
4. To set up WPS using the router's WPS button, follow these steps:
   a. Click **Start** or press the WPS button found at the rear 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.

4.1.3 Wireless MAC Filter

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

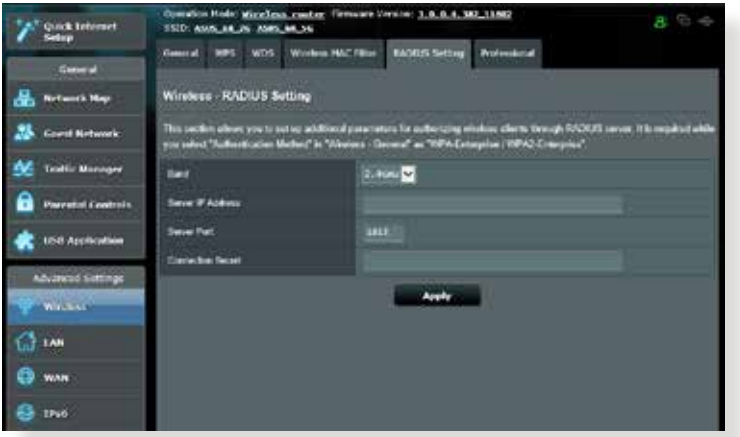


To set up the Wireless MAC filter:

1. From the navigation panel, go to **Advanced Settings** > **Wireless** > **Wireless MAC Filter** tab.
2. In the **Band** field, select the frequency band that you want to use for the Wireless MAC filter.
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 the **Add** button and key in the MAC address of the wireless device.
5. Click **Apply**.

4.1.4 RADIUS Setting

RADIUS (Remote Authentication Dial In User Service) Setting provides an extra layer of security when you choose WPA-Enterprise, WPA2-Enterprise, or Radius with 802.1x as your Authentication Mode.



To set up wireless RADIUS settings:

1. Ensure that the wireless router's authentication mode is set to WPA-Enterprise, WPA2-Enterprise, or Radius with 802.1x.

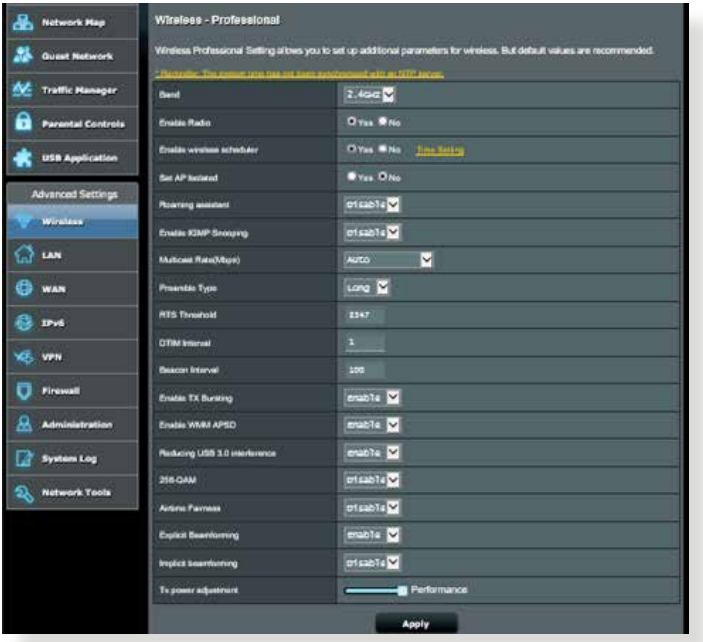
NOTE: Please refer to section **4.1.1 General** section for configuring your wireless router's Authentication Mode.

2. From the navigation panel, go to **Advanced 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**.

4.1.5 Professional

The Professional screen provides advanced configuration options.

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



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.
- **Time setting**: You can specify which days of the week wireless networking is enabled.
  You can specify a time range when wireless networking is enabled during the week.

You can specify which days of the weekend wireless networking is enabled.

You can specify a time range when wireless networking is enabled during the weekend.

- **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.
- **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.
- **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.

- **Wireless multicast forwarding**: Select **Enable** to allow the wireless router to forward multicast traffic to other wireless devices that support multicast. Select **Disable** to prevent the router from forwarding multicast transmissions.
- **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.
- **TX Power adjustment**: TX Power adjustment refers to the milliWatts (mW) needed to power the radio signal output of the wireless router. Enter a value between 0 to 100.

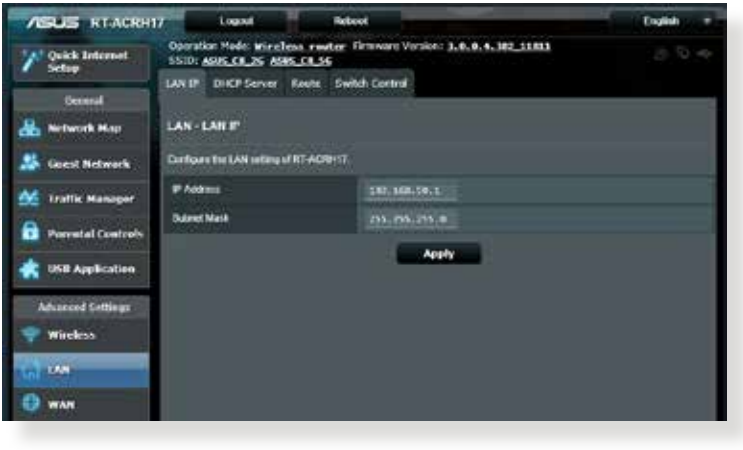
NOTE: Increasing the TX Power adjustment values may affect the stability of the wireless network.

4.2 LAN

4.2.1 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.

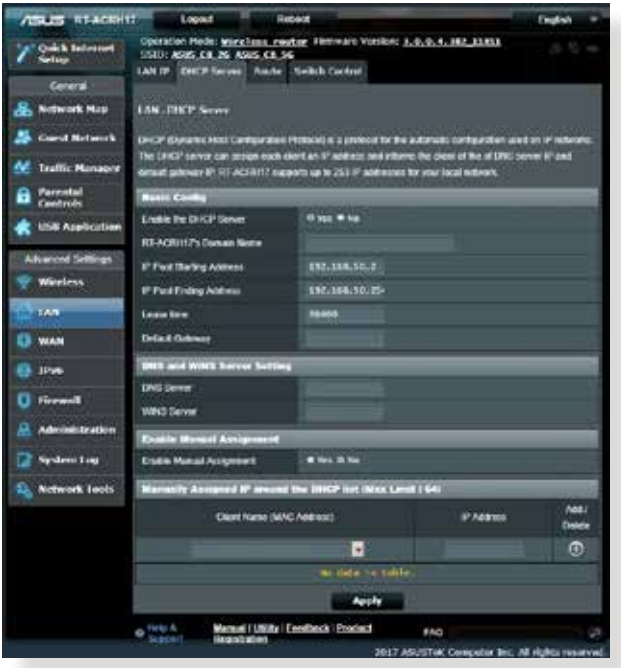


To modify the LAN IP settings:

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

4.2.2 DHCP Server

Your wireless router uses DHCP to assign IP addresses automatically on your network. You can specify the IP address range and lease time for the clients on your network.



To configure the DHCP server:

1. From the navigation panel, go to **Advanced Settings** > **LAN** > **DHCP Server** tab.
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.
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.

4.2.3 Route

If your network makes use of more than one wireless router, you can configure a routing table to share the same Internet service.

NOTE: We recommend that you do not change the default route settings unless you have advanced knowledge of routing tables.



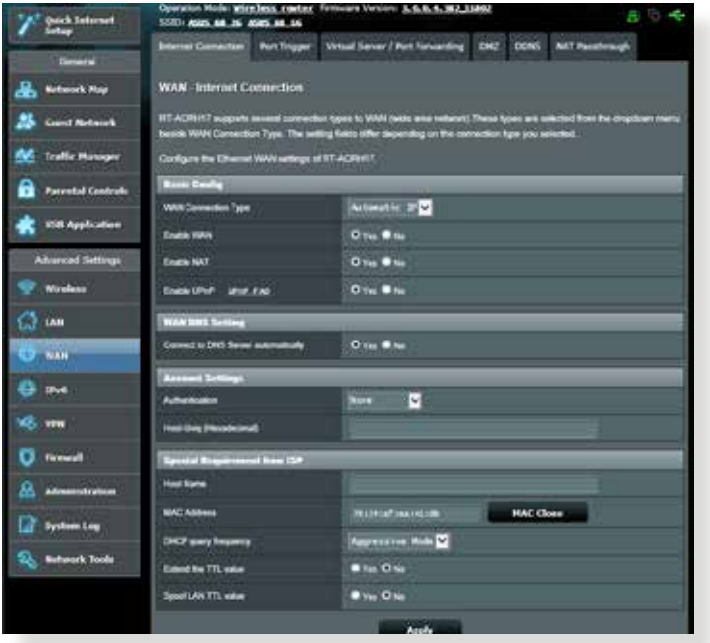
To configure the LAN Routing table:

1. From the navigation panel, go to **Advanced Settings** > **LAN** > **Route** tab.
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 the **Add** ⊕ or **Delete** ⊖ button to add or remove a device on the list.
4. Click **Apply**.

4.3 WAN

4.3.1 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 **Advanced Settings** > **WAN** > **Internet Connection** tab.
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.

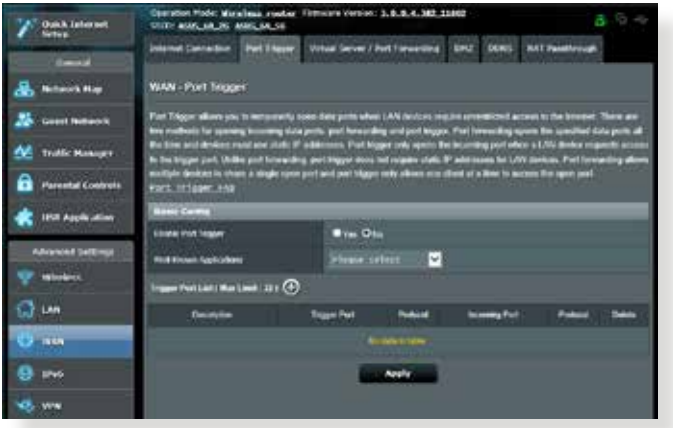
- **Enable WAN**: Select **Yes** to allow the router Internet access. Select **No** to disable Internet access.
- **Enable NAT**: NAT (Network Address Translation) is a system where one public IP (WAN IP) is used to provide Internet access to network clients with a private IP address in a LAN. The private 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.

4.3.2 Port Trigger

Port range triggering opens a predetermined incoming port for a limited period of time whenever a client on the local area network makes an outgoing connection to a specified port. Port triggering is used in the following scenarios:

- More than one local client needs port forwarding for the same application at a different time.
- An application requires specific incoming ports that are different from the outgoing ports.



To set up Port Trigger:

1. From the navigation panel, go to **Advanced Settings** > **WAN** > **Port Trigger** tab.
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.
- **Protocol**: Select the protocol, TCP, or UDP.

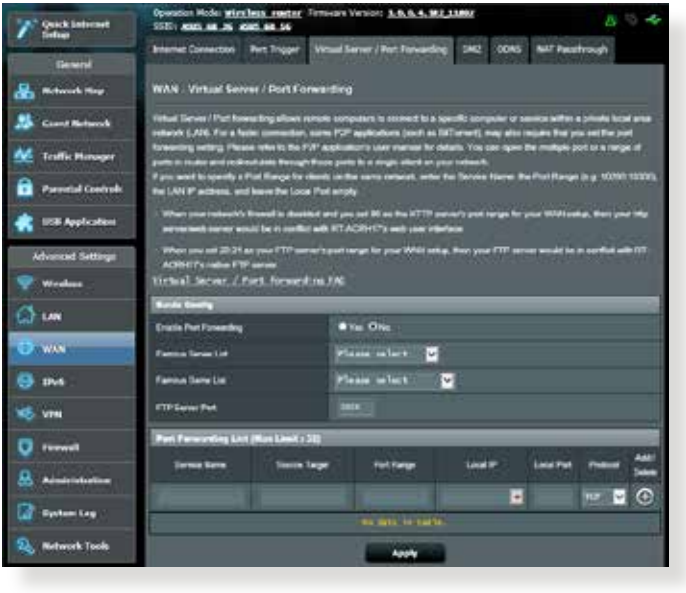
NOTES:

- 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.

4.3.3 Virtual Server/Port Forwarding

Port forwarding is a method to direct network traffic from the Internet to a specific port or a specific range of ports to a device or number of devices on your local network. Setting up Port Forwarding on your router allows PCs outside the network to access specific services provided by a PC in your network.

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 **Advanced Settings** > **WAN** > **Virtual Server / Port Forwarding** tab.

2. Configure the following settings below. When done, click **Apply**.

- **Enable Port Forwarding**: Choose **Yes** to enable Port Forwarding.
- **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.
- **FTP Server Port**: Avoid assigning the port range 20:21 for your FTP server as this would conflict with the router's native FTP server assignment.
- **Service Name**: Enter a service name.
- **Port Range**: 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 empty. Port range accepts various formats such as Port Range (300:350), individual ports (566,789) or Mix (1015:1024,3021).

NOTES:

- When your network's firewall is disabled and you set 80 as the HTTP server's port range for your WAN setup, then your http server/web server would be in conflict with the router's web user interface.
- A network makes use of ports in order to exchange data, with each port assigned a port number and a specific task. For example, port 80 is used for HTTP. A specific port can only be used by one application or service at a time. Hence, two PCs attempting to access data through the same port at the same time would fail. For example, you cannot set up Port Forwarding for port 100 for two PCs at the same time.

- **Local IP**: Key in the client's LAN IP address.

NOTE: Use a static IP address for the local client to make port forwarding work properly. Refer to section **4.2 LAN** for information.

- **Local 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.
- **Protocol**: Select the protocol. If you are unsure, select **BOTH**.

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.

4.3.4 DMZ

Virtual DMZ exposes one client to the Internet, allowing this client to receive all inbound packets directed to your Local Area Network.

Inbound traffic from the Internet is usually discarded and routed to a specific client only if port forwarding or a port trigger has been configured on the network. In a DMZ configuration, one network client receives all inbound packets.

Setting up DMZ on a network is useful when you need incoming ports open or you want to host a domain, web, or e-mail server.

CAUTION: Opening all the ports on a client to the Internet makes the network vulnerable to outside attacks. Please be aware of the security risks involved in using DMZ.

To set up DMZ:

1. From the navigation panel, go to **Advanced Settings** > **WAN** > **DMZ** tab.
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**.

4.3.5 DDNS

Setting up DDNS (Dynamic DNS) allows you to access the router from outside your network through the provided ASUS DDNS Service or another DDNS service.



To set up DDNS:

1. From the navigation panel, go to **Advanced Settings** > **WAN** > **DDNS** tab.
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.

4.3.6 NAT Passthrough

NAT Passthrough allows a Virtual Private Network (VPN) connection to pass through the router to the network clients. PPTP Passthrough, L2TP Passthrough, IPsec Passthrough and RTSP Passthrough are enabled by default.

To enable / disable the NAT Passthrough settings, go to the **Advanced Settings** > **WAN** > **NAT Passthrough** tab. When done, click **Apply**.



4.4 IPv6

This wireless router supports IPv6 addressing, a system that supports more IP addresses. This standard is not yet widely available. Contact your ISP if your Internet service supports IPv6.



To set up IPv6:

1. From the navigation panel, go to **Advanced 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**.

NOTE: Please refer to your ISP regarding specific IPv6 information for your Internet service.

4.5 Firewall

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

NOTE: The Firewall feature is enabled by default.

4.5.1 General

To set up basic Firewall settings:

1. From the navigation panel, go to **Advanced Settings** > **Firewall** > **General** tab.
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**.

4.5.2 URL Filter

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

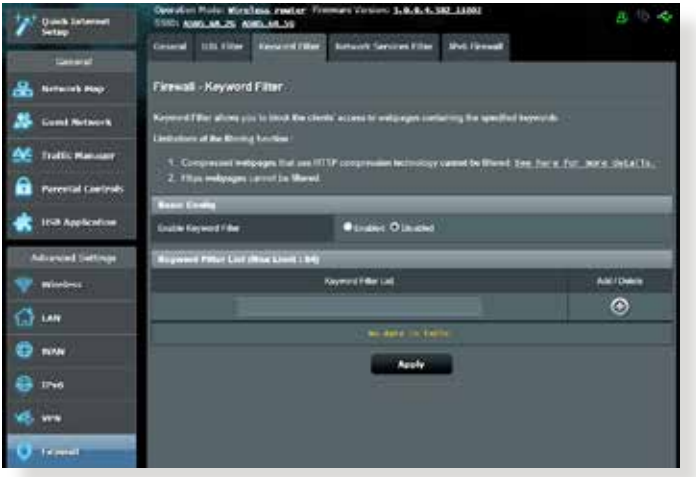
NOTE: The URL Filter is based on a DNS query. If a network client has already accessed a website such as http://www.abcxxx.com, then the website will not be blocked (a DNS cache in the system stores previously visited websites). To resolve this issue, clear the DNS cache before setting up the URL Filter.

To set up a URL filter:

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

4.5.3 Keyword filter

Keyword filter blocks access to webpages containing specified keywords.



To set up a keyword filter:

1. From the navigation panel, go to **Advanced Settings** > **Firewall** > **Keyword Filter** tab.
2. On the Enable Keyword Filter field, select **Enabled**.

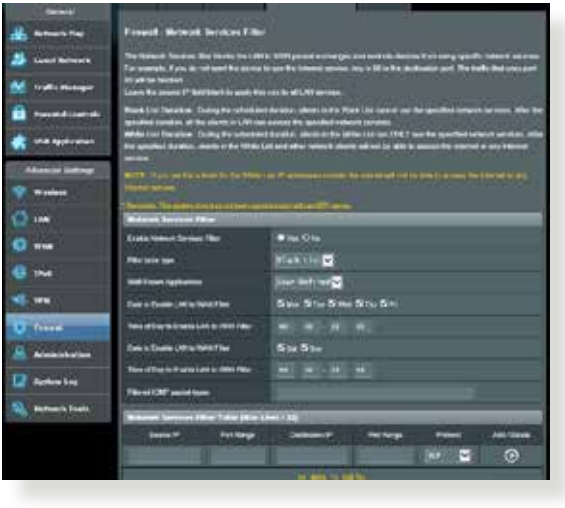
3. Enter a word or phrase and click the **Add** button.
4. Click **Apply**.

NOTES:

- The Keyword Filter is based on a DNS query. If a network client has already accessed a website such as http://www.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 Keyword Filter.
- Web pages compressed using HTTP compression cannot be filtered. HTTPS pages also cannot be blocked using a keyword filter.

4.5.4 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 **Advanced Settings** > **Firewall** > **Network Service Filter** tab.
2. On the Enable Network Services Filter field, select **Yes**.
3. Select the Filter table type. **Black List** blocks the specified network services. **White 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 the  button.
6. Click **Apply**.

4.6 Administration

4.6.1 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 **Advanced Settings** > **Administration** > **Operation Mode** tab.
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.
   - **Access Point mode**: In this mode, the router creates a new wireless network on an existing network.
3. Click **Apply**.

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

4.6.2 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 **Advanced Settings** > **Administration** > **System** tab.
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.
   - **WPS button behavior**: The physical WPS button on the wireless router can be used to activate WPS or switch off wireless networking.
   - **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.
   - **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 Web Access from WAN**: Select **Yes** to allow devices outside the network to access the wireless router GUI settings. Select **No** to prevent access.
   - **Only allow specific IP**: Click **Yes** if you want to specify the IP addresses of devices that are allowed access to the wireless router GUI settings from WAN.
   - **Client List**: Enter the WAN IP addresses of networking devices allowed to access the wireless router settings. This list will be used if you clicked **Yes** in the **Only allow specific IP** item.
3. Click **Apply**.

4.6.3 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 **Advanced Settings** > **Administration** > **Firmware Upgrade** tab.
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 **5.2 Firmware Restoration**.

4.6.4 Restore/Save/Upload Setting

To restore/save/upload wireless router settings:

1. From the navigation panel, go to **Advanced Settings** > **Administration** > **Restore/Save/Upload Setting** tab.
2. Select the tasks that you want to do:
   - To restore to the default factory settings, click **Restore**, and click **OK** in the confirmation message.
   - To save the current system settings, click **Save**, navigate to the folder where you intend to save the file and click **Save**.
   - To restore from a saved system settings file, click **Browse** to locate your file, then click **Upload**.

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

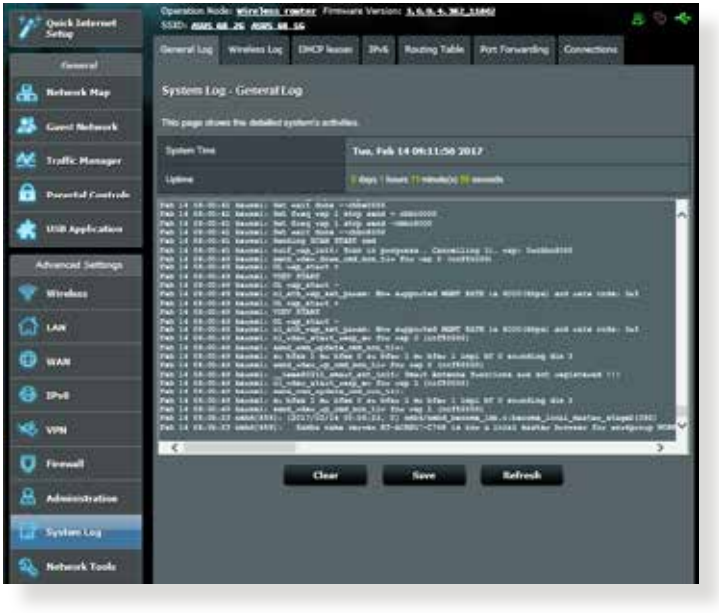
4.7 System Log

System Log contains your recorded network activities.

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

To view your system log:

1. From the navigation panel, go to **Advanced 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



5 Utilities

NOTES:

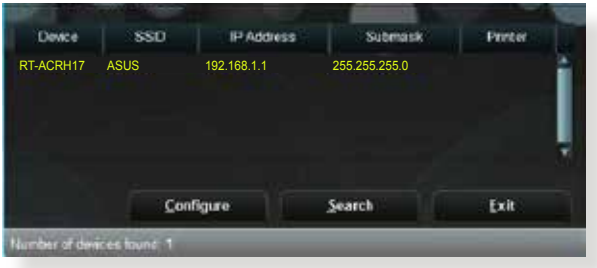
- Download and install the wireless router's utilities from the ASUS website:
  - Device Discovery v2.0.0.0 at http://dlcdnet.asus.com/pub/ASUS/LiveUpdate/Release/Wireless/Discovery.zip
  - Firmware Restoration v1.9.0.4 at http://dlcdnet.asus.com/pub/ASUS/LiveUpdate/Release/Wireless/Rescue.zip
  - Windows 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.

5.1 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.

5.2 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.

6 Troubleshooting

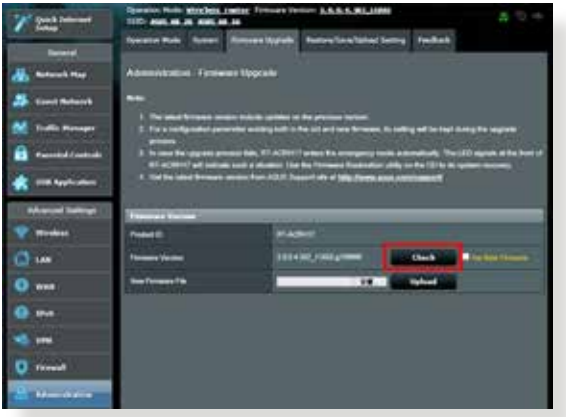
This chapter provides solutions for issues you may encounter with your router. If you encounter problems that are not mentioned in this chapter, visit the ASUS support site at: http://support.asus.com/ for more product information and contact details of ASUS Technical Support.

6.1 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. Launch the Web GUI. Go to **Advanced Settings** > **Administration** > **Firmware Upgrade** tab. Click **Check** to verify if the latest firmware is available.



2. If the latest firmware is available, visit the ASUS global website at http://www.asus.com/Networks/Wireless_Routers/ to download the latest firmware.
3. From the **Firmware Upgrade** page, click **Browse** to locate 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 computer.

- 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, **Network Map** > **Clients** page, and hover the mouse pointer over your device in **Client Status**.

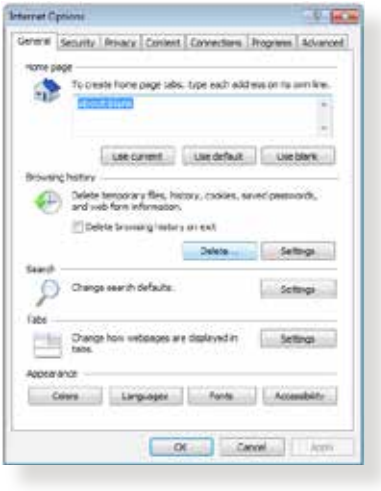


6.2 Frequently Asked Questions (FAQs)

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. The default factory login name and password is "admin/admin". 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 8, follow these steps:

  1. Launch Internet Explorer 8, then click **Tools** > **Internet Options**.
  2. In the **General** tab, under **Browsing history**, click **Delete…**, select **Temporary Internet Files** and **Cookies** then click **Delete**.



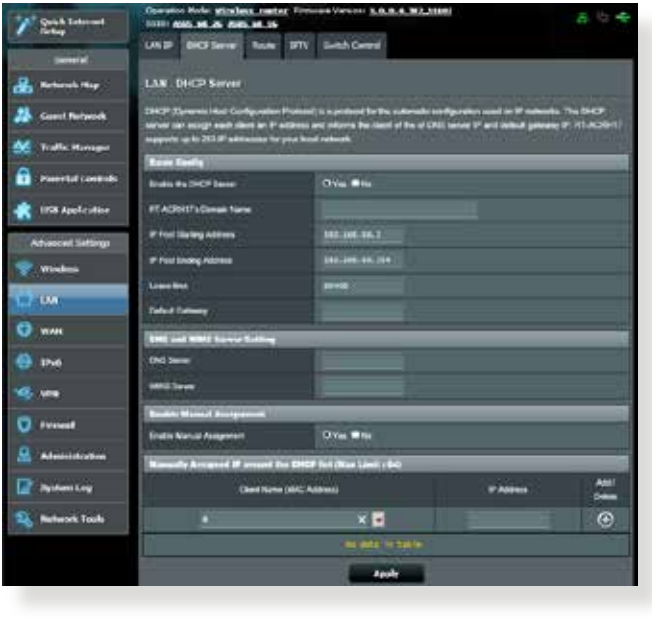
NOTES:

- 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.

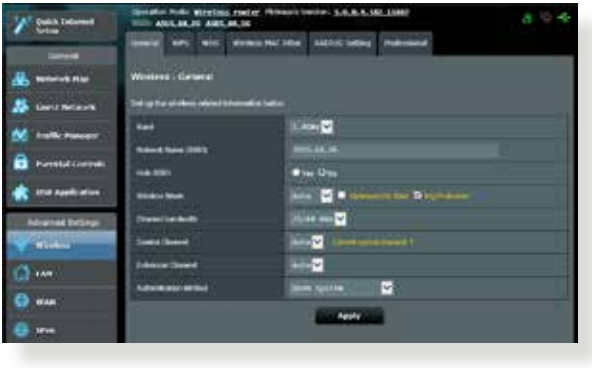
The client cannot establish a wireless connection with the router.

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.
  - Try to adjust antennas of the router to the best direction as described in section **1.4 Positioning your router**.
- **DHCP server has been disabled:**
  1. Launch the web GUI. Go to **General** > **Network Map**> **Clients** and search for the device that you want to connect to the router.
  2. If you cannot find the device in the **Network Map**, go to **Advanced Settings** > **LAN** > **DHCP Server**, **Basic Config** list, select **Yes** on the **Enable the DHCP Server**.



- SSID has been hidden. If your device can find SSIDs from other routers but cannot find your router's SSID, go to **Advanced 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 **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 **General**> **Network Map**, 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**.



- The device has been blocked via the Parental Control function. Go to **General** > **Parental Control** and see if the device is in the list. If the device is listed under **Client Name**, remove the device using the **Delete** button or adjust the Time Management Settings.



- 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 **Network Map**, 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 **Administration** > **Restore/Save/Upload Setting**, and click **Restore**. The default login account and password are both "admin".

How to restore the system to its default settings?

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

  The following are the factory default settings:

User Name:	admin
Password:	admin
IP address:	router.asus.com
SSID (2.4GHz):	Refer to the label at the bottom of the router
SSID (5GHz):	Refer to the label at the bottom of the router

Firmware upgrade failed.

Launch the rescue mode and run the Firmware Restoration utility. Refer to section **5.2 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.

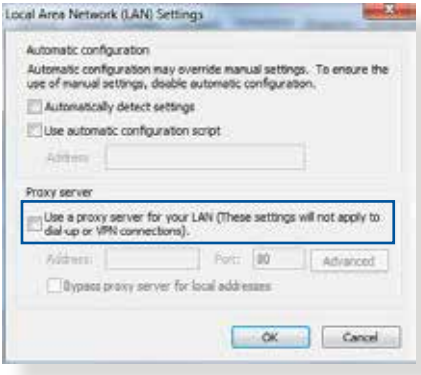
NOTE: The screenshots provided are for Windows® 7 only. The steps and options may be different for Windows® 8 and Windows® 8.1.

Windows® 7/8

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

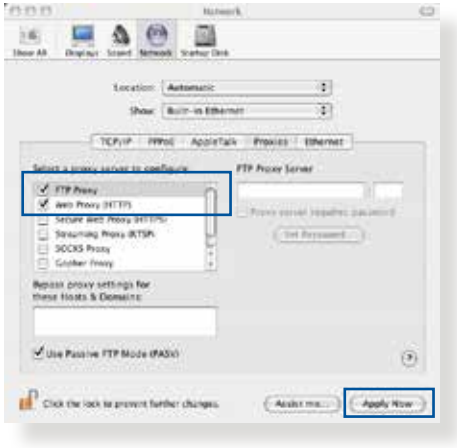


3. From the Local Area Network (LAN) Settings screen, untick **Use a proxy server for your LAN**.
4. Click **OK** when done.



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. Cllick **Apply Now** when done.

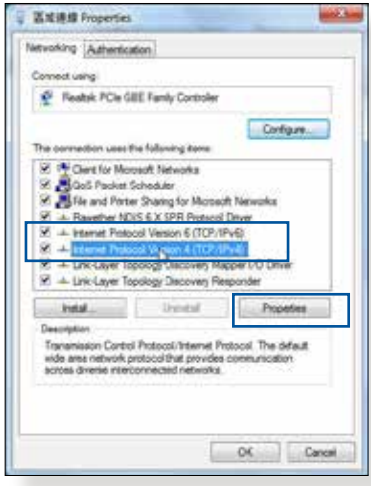


NOTE: Refer to your browser's help feature for details on disabling the proxy server.

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

Windows® 7/8

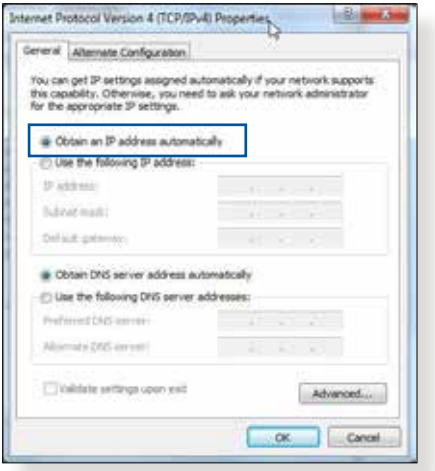
1. Click **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Manage network connections.**
2. Select **Internet Protocol Version 4 (TCP/IPv4)** or **Internet Protocol Version 6 (TCP/IPv6)**, then click **Properties**.



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

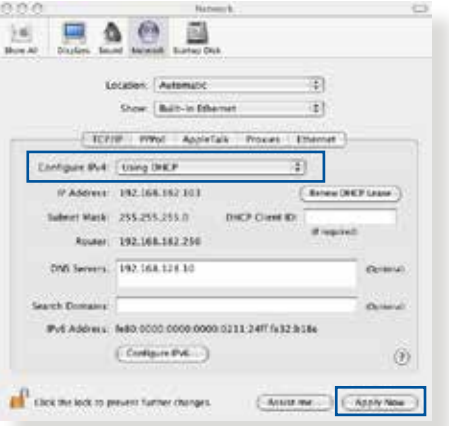
   To obtain the IPv6 IP settings automatically, tick **Obtain an IPv6 address automatically**.

4. 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.

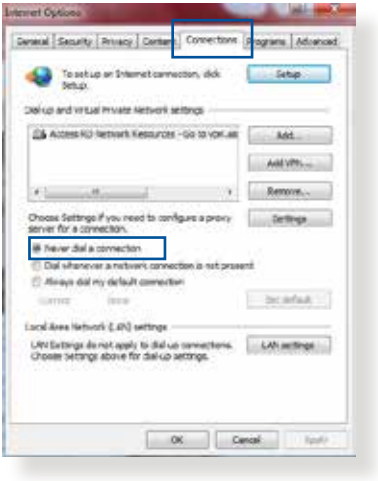


NOTE: Refer to your operating system's help and support feature for details on configuring your computer's TCP/IP settings.

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

Windows® 7/8

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

Notices

ASUS Recycling/Takeback Services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components, as well as the packaging materials. Please go to http://csr.asus.com/english/Takeback.htm for the detailed recycling information in different regions.

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at

http://csr.asus.com/english/index.aspx

Federal Communications Commission Statement

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

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

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency

energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

IMPORTANT! This device within the 5.15 ~ 5.25 GHz is restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations.

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

Prohibition of Co-location

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Safety Information

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna.

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   a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

   b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

   c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

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END OF TERMS AND CONDITIONS

Safety Notices

- Refer to the rating label on the bottom of your product and ensure your power adapter complies with this rating.
- DO NOT place on uneven or unstable work surfaces. Seek servicing if the casing has been damaged.
- DO NOT place or drop objects on top and do not shove any foreign objects into the product.
- DO NOT expose to or use near liquids, rain, or moisture. DO NOT use the modem during electrical storms.
- DO NOT cover the vents on the product to prevent the system from getting overheated.
- DO NOT use damaged power cords, accessories, or other peripherals.
- If the Adapter is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.

For Turkey only

Authorised distributors in Turkey:

BOGAZICI BIL GISAYAR SAN. VE TIC. A.S.

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Technical Support

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Telephone Austria (System/Notebook/Eee/LCD)	+43-820-240513
Support Fax	+49-2102-959911
Online support	support.asus.com

Networks Global Hotline Information

Region	Country	Hotline Number	Service Hours
Europe	Cyprus	800-92491	09:00-13:00 ; 14:00-18:00 Mon-Fri
	France	0033-170949400	09:00-18:00 Mon-Fri
	Germany	0049-1805010920 0049-1805010923 (component support) 0049-2102959911 (Fax)	09:00-18:00 Mon-Fri 10:00-17:00 Mon-Fri
	Hungary	0036-15054561	09:00-17:30 Mon-Fri
	Italy	199-400089	09:00-13:00 ; 14:00-18:00 Mon-Fri
	Greece	00800-44142044	09:00-13:00 ; 14:00-18:00 Mon-Fri
	Austria	0043-820240513	09:00-18:00 Mon-Fri
	Netherlands/ Luxembourg	0031-591570290	09:00-17:00 Mon-Fri
	Belgium	0032-78150231	09:00-17:00 Mon-Fri
	Norway	0047-2316-2682	09:00-18:00 Mon-Fri
	Sweden	0046-858769407	09:00-18:00 Mon-Fri
	Finland	00358-969379690	10:00-19:00 Mon-Fri
	Denmark	0045-38322943	09:00-18:00 Mon-Fri
	Poland	0048-225718040	08:30-17:30 Mon-Fri
	Spain	0034-902889688	09:00-18:00 Mon-Fri
	Portugal	00351-707500310	09:00-18:00 Mon-Fri
	Slovak Republic	00421-232162621	08:00-17:00 Mon-Fri
	Czech Republic	00420-596766888	08:00-17:00 Mon-Fri
	Switzerland-German	0041-848111010	09:00-18:00 Mon-Fri
	Switzerland-French	0041-848111014	09:00-18:00 Mon-Fri
	Switzerland-Italian	0041-848111012	09:00-18:00 Mon-Fri
	United Kingdom	0044-1442265548	09:00-17:00 Mon-Fri
	Ireland	0035-31890719918	09:00-17:00 Mon-Fri
	Russia and CIS	008-800-100-ASUS	09:00-18:00 Mon-Fri
	Ukraine	0038-0445457727	09:00-18:00 Mon-Fri

Networks Global Hotline Information

Region	Country	Hotline Numbers	Service Hours
Asia-Pacific	Australia	1300-278788	09:00-18:00 Mon-Fri
	New Zealand	0800-278788	09:00-18:00 Mon-Fri
	Japan	0800-1232787	09:00-18:00 Mon-Fri 09:00-17:00 Sat-Sun
		0081-570783886 (Non-Toll Free)	09:00-18:00 Mon-Fri 09:00-17:00 Sat-Sun
	Korea	0082-215666868	09:30-17:00 Mon-Fri
	Thailand	0066-24011717 1800-8525201	09:00-18:00 Mon-Fri
	Singapore	0065-64157917 0065-67203835 (Repair Status Only)	11:00-19:00 Mon-Fri 11:00-19:00 Mon-Fri 11:00-13:00 Sat
	Malaysia	1300-88-3495	9:00-18:00 Mon-Fri
	Philippine	1800-18550163	09:00-18:00 Mon-Fri
	India India (WL/NW)	1800-2090365	09:00-18:00 Mon-Sat 09:00-21:00 Mon-Sun
	Indonesia	0062-2129495000 500128 (Local Only)	09:30-17:00 Mon-Fri 9:30 – 12:00 Sat
	Vietnam	1900-555581	08:00-12:00 13:30-17:30 Mon-Sat
	Hong Kong	00852-35824770	10:00-19:00 Mon-Sat
Americas	USA Canada	1-812-282-2787	8:30-12:00 EST Mon-Fri 9:00-18:00 EST Sat-Sun
	Mexico	001-8008367847	08:00-20:00 CST Mon-Fri 08:00-15:00 CST Sat

Networks Global Hotline Information

Region	Country	Hotline Numbers	Service Hours
Middle East + Africa	Egypt	800-2787349	09:00-18:00 Sun-Thu
	Saudi Arabia	800-1212787	09:00-18:00 Sat-Wed
	UAE	00971-42958941	09:00-18:00 Sun-Thu
	Turkey	0090-2165243000	09:00-18:00 Mon-Fri
	South Africa	0861-278772	08:00-17:00 Mon-Fri
	Israel	*6557/00972-39142800	08:00-17:00 Sun-Thu
		*9770/00972-35598555	08:30-17:30 Sun-Thu
Balkan Countries	Romania	0040-213301786	09:00-18:30 Mon-Fri
	Bosnia Herzegovina	00387-33773163	09:00-17:00 Mon-Fri
	Bulgaria	00359-70014411	09:30-18:30 Mon-Fri
		00359-29889170	09:30-18:00 Mon-Fri
	Croatia	00385-16401111	09:00-17:00 Mon-Fri
	Montenegro	00382-20608251	09:00-17:00 Mon-Fri
	Serbia	00381-112070677	09:00-17:00 Mon-Fri
	Slovenia	00368-59045400	08:00-16:00 Mon-Fri
		00368-59045401	
Baltic Countries	Estonia	00372-6671796	09:00-18:00 Mon-Fri
	Latvia	00371-67408838	09:00-18:00 Mon-Fri
	Lithuania-Kaunas	00370-37329000	09:00-18:00 Mon-Fri
	Lithuania-Vilnius	00370-522101160	09:00-18:00 Mon-Fri

NOTES:

- UK support e-mail: **network_support_uk@asus.com**
- For more information, visit the ASUS support site at: **http://support.asus.com**

SUPPORT HOTLINE	
USA/ CANADA Hotline Number: 1-812-282-2787 Language: English Availability: **Mon. to Fri.** 8:30-12:00am EST (5:30am-9:00pm PST) **Sat. to Sun.** 9:00am-6:00pm EST (6:00am-3:00pm PST)	**BRAZIL** Hotline Number: 4003 0988 (Capital) / 0800 880 0988 (demais localidades) Language: Portuguese Availability: **Mon. to Fri.** 9:00am-18:00

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