User's Guide

TRENDnet®

300Mbps Wireless N Home Router with USB Port

TEW-652BRU

Version 1.01

Contents

Product Overview

TEW-652BRU

Package Contents

In addition to your router, the package includes:

- Muti-Language Quick Installation Guide
- CD-ROM (Utility & User's Guide)
- Network cable (1.5m / 5ft)
- Power adapter (5V DC, 2A)

If any package contents are missing or damaged, please contact the retail store, online retailer, or reseller/distributor that the item was purchased.

Features

The 300Mbps Wireless N Home Router with USB Port (model TEW-652BRU) delivers high performance wireless n speed, coverage, and security.

Share data across your network by connecting USB flash drives, hard drives, or printers directly to the USB share port on the front of the router. Network wired devices to the four Fast Ethernet ports on the back of the router.

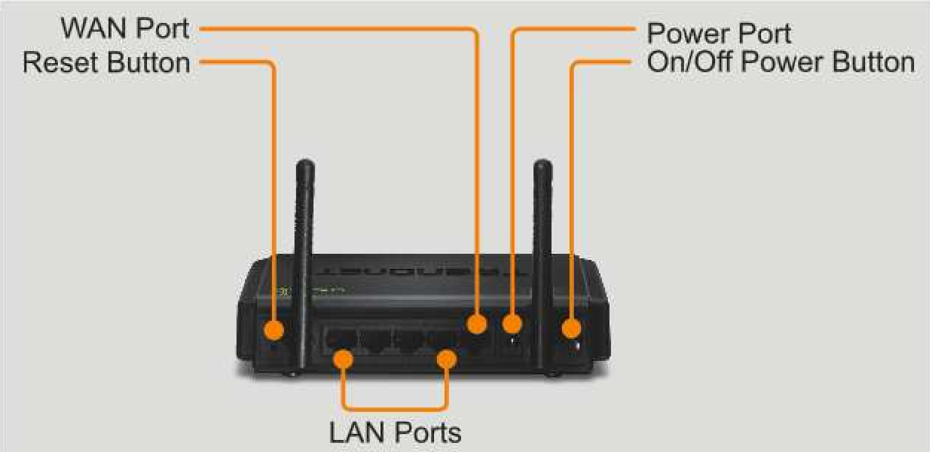
GREENnet technology reduces power consumption by up to 50%. Advanced Multiple Input Multiple Output (MIMO) antenna technology reduces wireless dead spots. Wi-Fi Protected Setup (WPS) connects other WPS supported wireless adapters at the touch of a button. The latest in wireless encryption and a secure firewall protect your digital network. WMM® Quality of Service (QoS) technology prioritizes gaming, Internet calls, and video streams. LEDs on the front of the router convey device status.

- Wi-Fi compliant with IEEE 802.11n and IEEE 802.11b/g standards
- 4 x 10/100Mbps Auto-MDIX LAN port and 1 x 10/100Mbps WAN port (Internet)
- 1 x USB 2.0 port for file & printer sharing*
- Supports Cable/DSL modems with Dynamic IP, Static IP, PPPoE, PPTP, & L2TP connection types
- High-speed data rates up to 300Mbps using an IEEE 802.11n connection
- 2 fixed external antennas support high speed performance and great coverage with MIMO technology
- Network Address Translation (NAT) firewall
- Wi-Fi Protected Setup (WPS) button for simple network connectivity
- Universal Plug and Play (UPnP) and Application Level Gateway support for Internet applications such as email, FTP, gaming, remote desktop, Net Meeting, telnet and more
- Provides additional security with Internet Access Control (MAC Address, Domain, and IP Filtering)
- Easy remote management via Web browser
- Wireless security support for WEP, WPA & WPA2
- Indoor coverage up to 100 meters (330ft.)* *
- Outdoor coverage up to 300 meters (980ft.)**

*Requires included software utility. **Maximum wireless signal rates are referenced from IEEE 802.11 theoretical specifications. Actual data throughput and coverage will vary depending on interference, network traffic, building materials and other conditions.

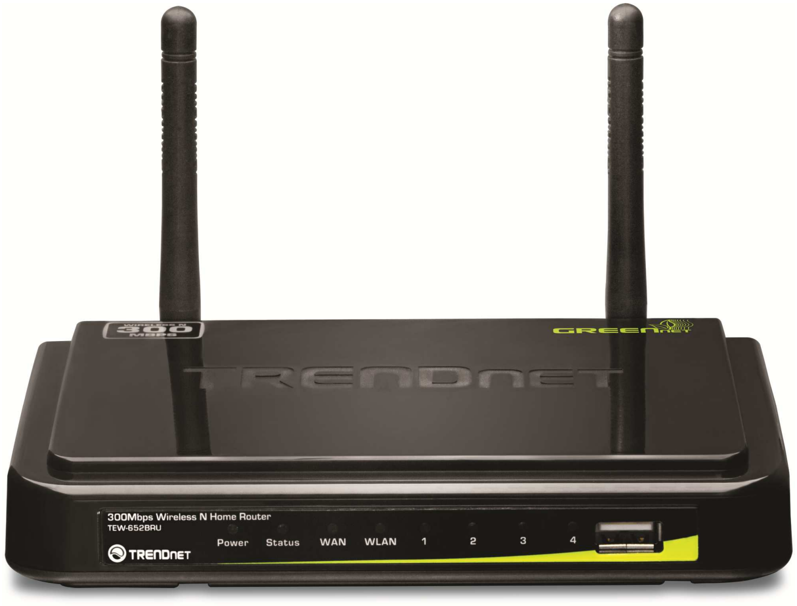
Product Hardware Features

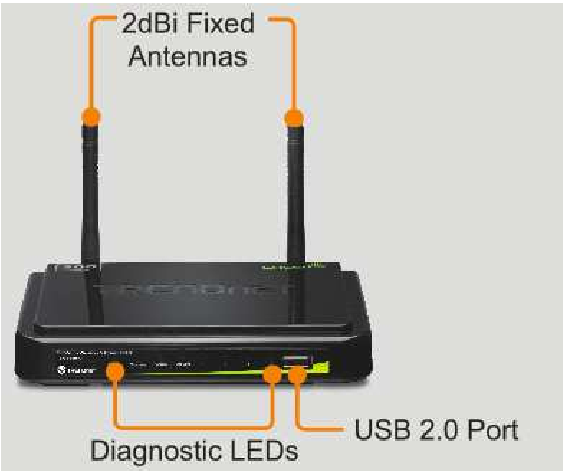
Rear Panel View



- **Reset Button** – Use an item such as a paperclip to push and hold this button for 15 seconds and release to reset your router to its factory defaults.
- **LAN Ports** – Connect Ethernet cables (also called network cables) from your router LAN ports and to your wired network devices.
- **WAN Port** - Connect an Ethernet cable (also called network cable) from your router WAN port and to your xDSL/Cable modem.
- **Power Port** – Connect the included power adapter from your router power port and to an available power outlet.
  Note: *Use only the adapter that came with your router.*
- **On/Off Power Switch** – Push your router On/Off push button power switch to turn your router "On" (Inner position) or "Off" (Outer position).
- **Antennas** – The antennas broadcasts wireless signals to allow your wireless clients and wireless network devices to connect to your router.

Front Panel View





- **Power** - This LED indicator is solid green when your router is powered on. Otherwise if this LED indicator is off, there is no power to your router.

- **Status** - This LED indicator is blinking green when your router is ready and working successfully. If this LED indicator is solid green on or off, your router is not receiving power or not working properly.

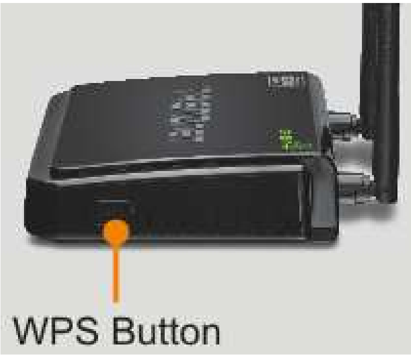
- **WAN (Link/Activity)** – This LED indicator is solid green when your router WAN port is physically connected to the xDSL/Cable modem Ethernet port (also called network port) successfully with an Ethernet cable (also called network cable). The LED indicator will be blinking green while data is transmitted or received through the WAN port of your router.

- **WLAN (Link/Activity)** – This LED indicator is blinking green when the wireless is "On" and functioning properly on your router. This LED indicator will be blinking green rapidly while data is transmitted or received by your wireless clients or wireless network devices connected to your router.

- **LAN 1-4 (Link/Activity)** – These LED indicators are solid green when the LAN ports are physically connected to your wired network devices successfully with an Ethernet cable (also called network cable). These LED indicators will be blinking green while data is transmitted or received through your router LAN ports.

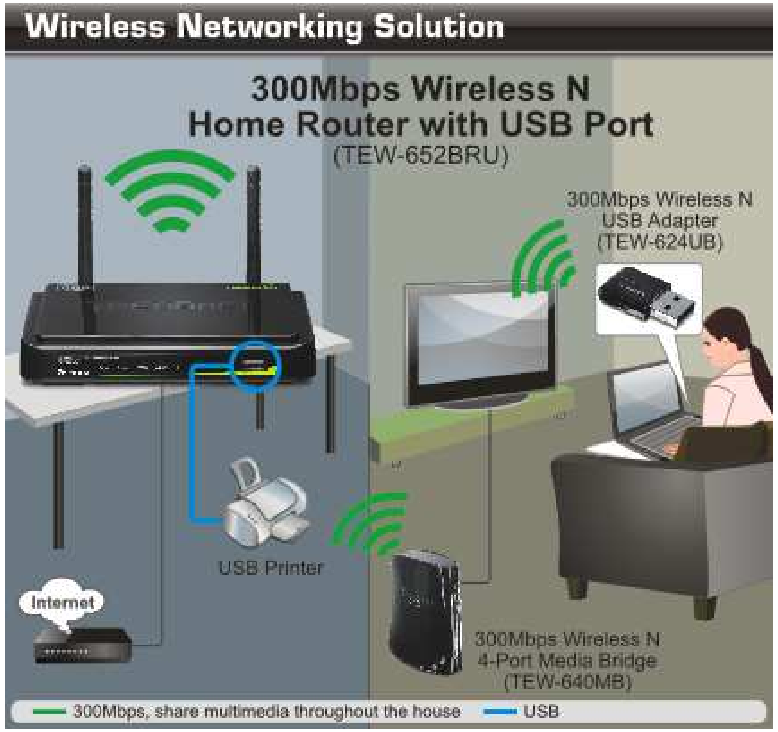
- **USB Port 2.0 Port –** The USB 2.0 port allows you to connect USB printers and storage devices to your network and share access to these devices to computers on your network through the use of the included USB software utility.

Side Panel View



- **WPS (Wi-Fi Protected Setup)** – Push and hold this button for 3 seconds to activate WPS. The button LED is blinking blue when WPS is activated.

Application Diagram



The router is installed in the room where the xDSL/Cable modem (typically supplied by your ISP "Internet Service Provider") is located in order to physically connect an Ethernet cable (also called network cable) from the router WAN port to the modem network port which connects to the Internet. Wireless signals from the router are broadcasted to allow wireless clients such as laptops with wireless capability to discover and connect to the router providing wireless access to the local network and the Internet. In addition, a USB printer is connected to the USB 2.0 port located on the front of the router, allowing any wired or wireless computer connected to the this network centralized access to the printer through the use of the included software utility.

Basic Router Setup

Creating a Home Network

What is a network?

A network is a group of computers or devices that can communicate with each other. A home network of more than one computer or device also typically includes Internet access, which requires a router.

A typical home network may include multiple computers, a media player/server, a printer, a modem, and a router. A large home network may also have a switch, additional routers, access points, and many Internet-capable media devices such as TVs, game consoles, and web cameras.

- **Modem** – Connects a computer or router to the Internet or ISP (Internet Service Provider).
- **Router** – Connects your wireless and wired network devices to each other and to the modem.
- **Switch** – Allows you to connect several wired network devices to your home network. Your router has a built-in network switch (the LAN port 1-4). If you have more wired network devices than available Ethernet ports on your router, you will need an additional switch to add more wired connections.

How to set up a home network

1. For a network that includes Internet access, you'll need:

- Computers/devices with an Ethernet port (also called network port) or wireless networking capabilities
- A modem and Internet service to your home, provided by your ISP (modem typically supplied by your ISP)
- A router to connect your computers and devices and also connects to the modem.

2. Make sure that your modem is working. Your ISP can help you set up your modem and verify that it's working correctly.

3. Set up your router. See "How to setup your router" below.

4. To connect additional wired computers or wired network devices to your network, see "Connect additional wired devices to your network" on page 11.

5. To set up wireless networking on your router, see "Wireless Networking and Security" on page 12.

How to setup your router

The easiest way and fastest way to follow the included Quick Installation Guide or continue to the next section "Router Installation" on page 6, and complete the remaining sections of "Router Installation".

Where to find more help

In addition to this User's Guide, you can find help below:

- http://www.trendnet.com/support
  (documentation, downloads, FAQs, how to contact technical support)
- Internet service to your home, provided by an ISP (Internet Service Provider)
- Autorun CD (Quick Installation Guide)

Router Installation

Before you Install

It is recommended, that you verify your Internet connection type with your ISP (Internet Service Provider) and ensure you have all the information for one of the following connection types below before proceeding with the router installation.

1. Obtain IP Address Automatically (DHCP)
Host Name (Optional)
Clone Mac Address (Optional)

2. Fixed IP address
WAN IP Address: _____. _____._____._____
(e.g. 215.24.24.129)
WAN Subnet Mask: _____. _____._____._____
WAN Gateway IP Address: _____. _____._____._____
DNS Server Address 1: _____. _____._____._____
DNS Server Address 2: _____. _____._____._____

3. PPPoE to obtain IP automatically
User Name: _________
Password: ________________
Verify Password: ________________

4. PPPoE with a fixed IP address
User Name: _________
Password: ________________
Verify Password: ________________
IP Address: ____. _____._____._____ (e.g. 215.24.24.129)

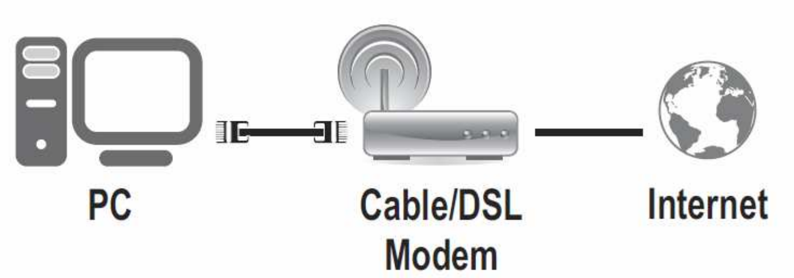
5. PPTP or Russian PPTP
Type (Dynamic IP or Static IP)
My IP Address: _____. _____._____._____
(e.g. 215.24.24.129)
Subnet Mask:_____. _____._____._____
Gateway:_____. _____._____._____
Server IP: _____. _____._____._____
PPTP Account: ________________
PPTP Password: ________________
Retype Password: ________________

6. L2TP or Russia L2TP
Type (Dynamic IP or Static IP)
My IP Address: _____. _____._____._____
(e.g. 215.24.24.129)
Subnet Mask:_____. _____._____._____
Gateway:_____. _____._____._____
Server IP: _____. _____._____._____
L2TP Account: ________________
L2TP Password: ________________
Retype Password: ________________

7. Russia PPPoE
Type (Dynamic IP or Static IP)
User Name: _________
Password: ________________
Verify Password: ________________
IP Address: ____. _____._____._____ (e.g. 215.24.24.129)

Hardware Installation

1. Verify that you have an Internet connection when connecting your computer directly to the xDSL/Cable modem.



2. Turn off your xDSL/Cable modem.

3. Disconnect the Ethernet cable (also called network cable) from your xDSL/Cable modem and your computer.

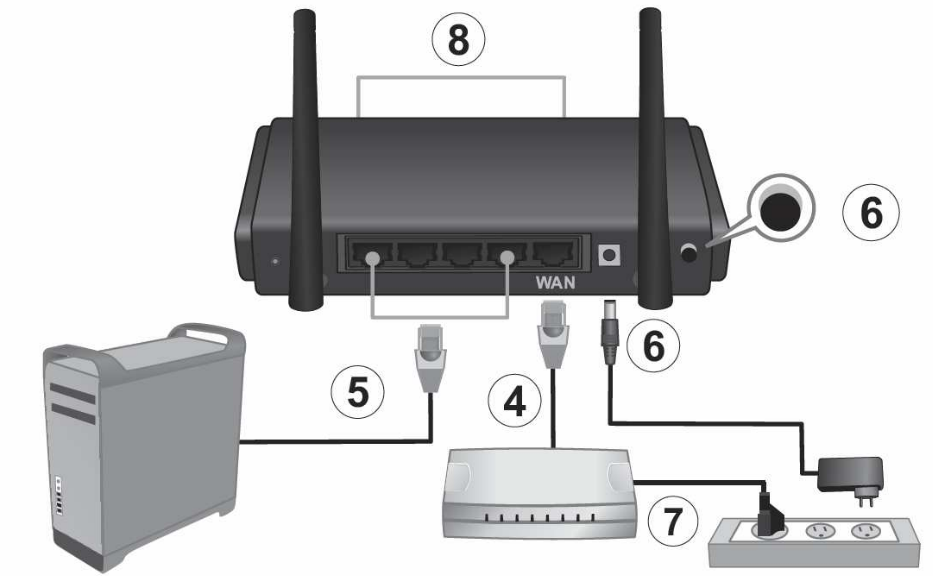
4. Connect one end of a network cable to your router WAN port. Connect the other end of the network cable to your xDSL/Cable modem network port.

5. Connect one end of a network cable to one of your router LAN ports (1-4). Connect the other end of the network cable to the computer Ethernet port (also called network port).

6. Connect the included power adapter to your router Power Port and then to an available power outlet. Push the On/Off Power Switch on your router to the "On" (inner) position.

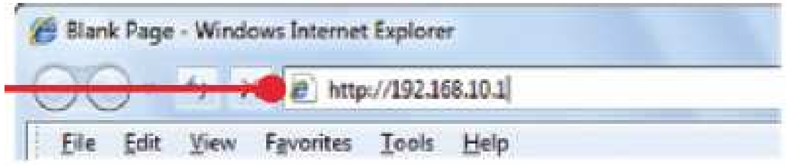
7. Turn on your xDSL/Cable modem.

8. Verify that the following front panel LED indicators on your router (**Power** is solid green, **Status** is blinking green, **WAN** and **WLAN** (Wireless) are solid green, and the **LAN** port for which your computer is connected is sold green.



Setup Wizard

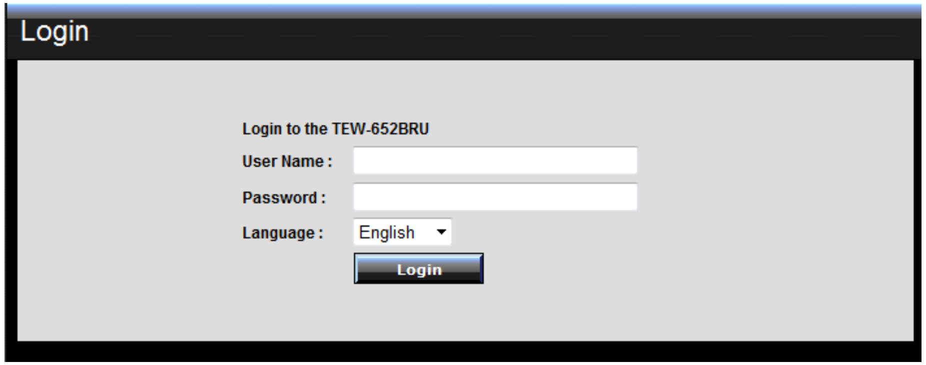
1. Open your web browser (e.g. Internet Explorer, Firefox, Safari, Chrome, or Opera) and go to http://192.168.10.1. Your router will prompt you for a user name and password.


Blank Page - Windows Internet Explorer
http://192.168.10.1
File Edit View Favorites Tools Help

2. Next to Language, click the drop-down list to select your preferred language. Enter the default user name and password and then click Login.

Default User Name: **admin**

Default Password: **admin**



Login

Login to the TEW-652BRU

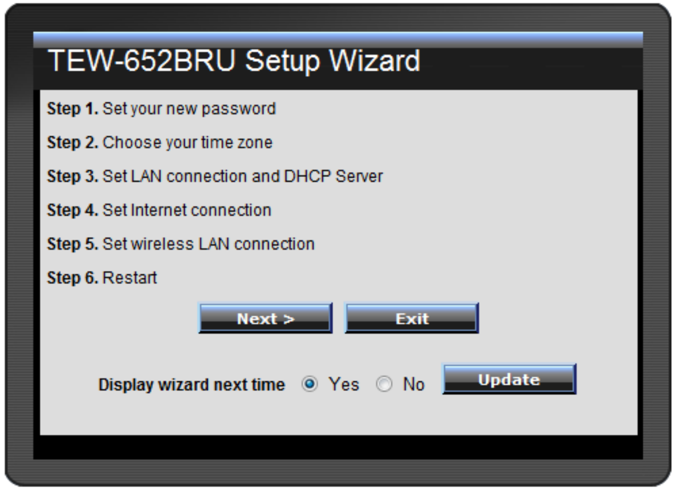
User Name :

Password :

Language : English

3. The Setup Wizard will automatically appear. Click Next.

Note: *If the Setup Wizard does not automatically appear, click Wizard.*



TEW-652BRU Setup Wizard

Step 1. Set your new password

Step 2. Choose your time zone

Step 3. Set LAN connection and DHCP Server

Step 4. Set Internet connection

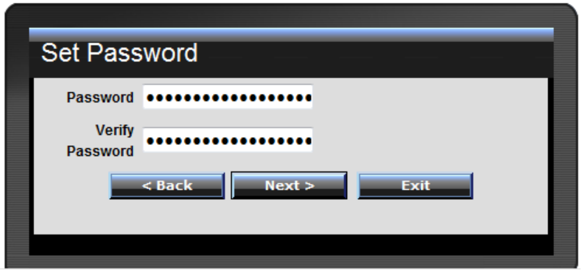
Step 5. Set wireless LAN connection

Step 6. Restart

Display wizard next time ● Yes ○ No

4. Enter a new login password for your router and enter it again next to "Verify Password" to confirm. This will change the password required to log into your router. Click Next.

Note: *Once you change the login password, it will be required every time you log into your router.*

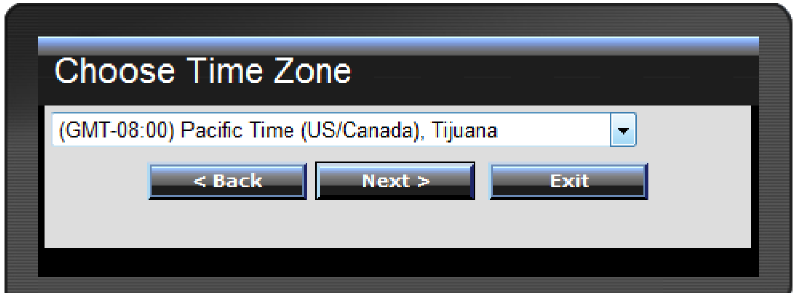


Set Password

Password ••••••••••••••••••

Verify Password ••••••••••••••••••

5. Select the Time Zone for your router and click **Next.**

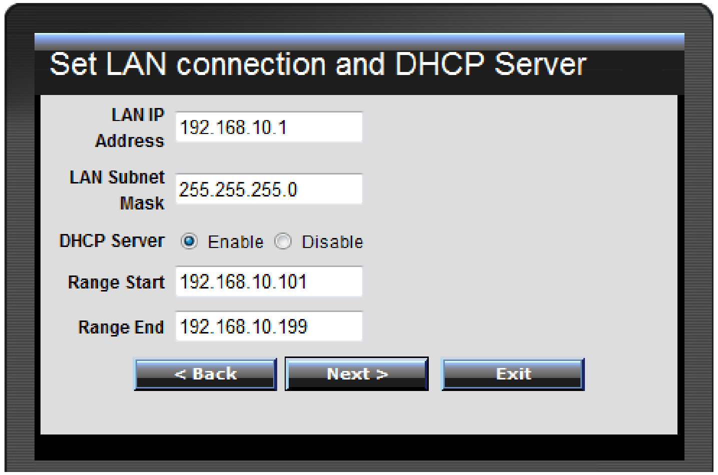


Choose Time Zone

(GMT-08:00) Pacific Time (US/Canada), Tijuana

6. Click **Next** at the Set LAN connection and DHCP Server window.

Note: *If you are an advanced user, you can make LAN IP address interface and DHCP IP address range changes here.*

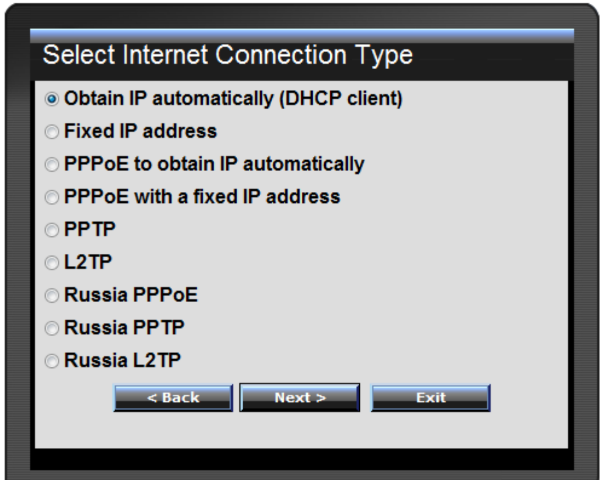


Set LAN connection and DHCP Server

LAN IP Address	192.168.10.1
LAN Subnet Mask	255.255.255.0
DHCP Server	● Enable ○ Disable
Range Start	192.168.10.101
Range End	192.168.10.199

7. Configure the settings based on information provided by your ISP (Internet Service Provider). Follow the Wizard instructions to complete your configuration.

Note: *Each Internet connection type may have different options.*



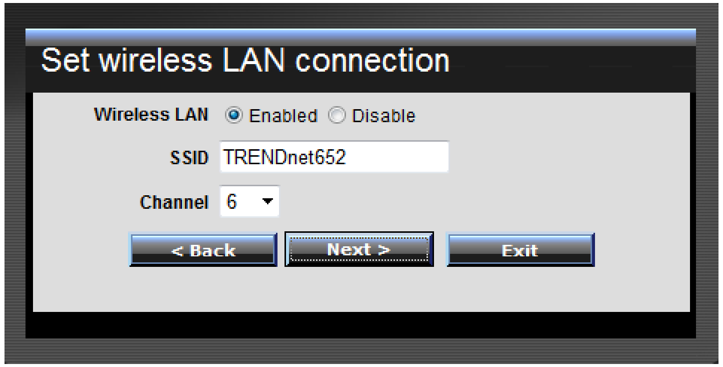
Select Internet Connection Type

● Obtain IP automatically (DHCP client)
○ Fixed IP address
○ PPPoE to obtain IP automatically
○ PPPoE with a fixed IP address
○ PPTP
○ L2TP
○ Russia PPPoE
○ Russia PPTP
○ Russia L2TP

8. **Wireless LAN:** Select Enable for Wireless LAN.

Note: *Selecting Disable will disable the wireless functionality of the router and will not allow wireless clients to connect.*

9. **SSID:** Enter a unique SSID (Wireless Network Name). Choose something that you would easily identify when searching for available wireless networks (using laptops, smart phones, etc.) Click **Next**.



Set wireless LAN connection

Wireless LAN ● Enabled ○ Disable

SSID TRENDnet652

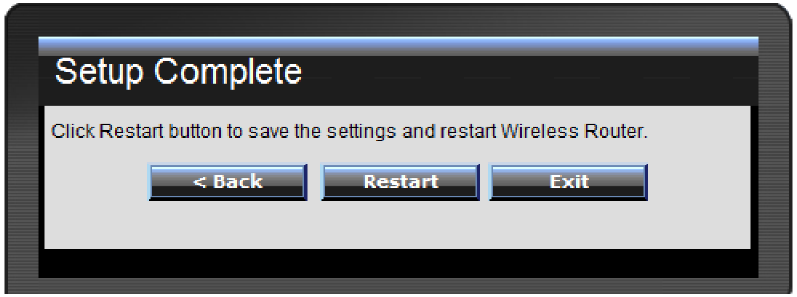
Channel 6

Note:

1. To protect your network from unauthorized access, it is recommended to enable wireless encryption. See "Secure your wireless network" on page 13) for information on configuring wireless security.

2. Once wireless security is enabled on your router, each wireless device connecting to your router must be configured with the same wireless security type and key.

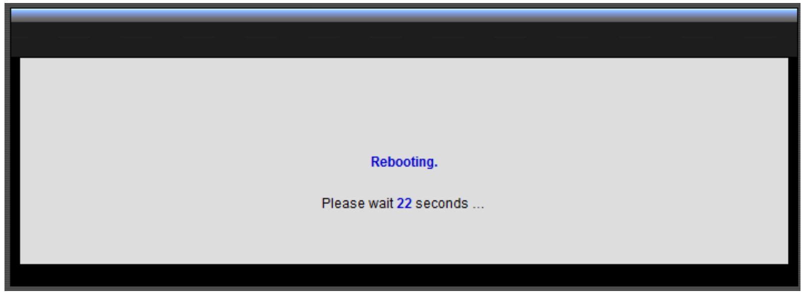
10. Click **Restart** and wait for your router to reboot.



Setup Complete

Click Restart button to save the settings and restart Wireless Router.

11. Wait for your router to reboot.



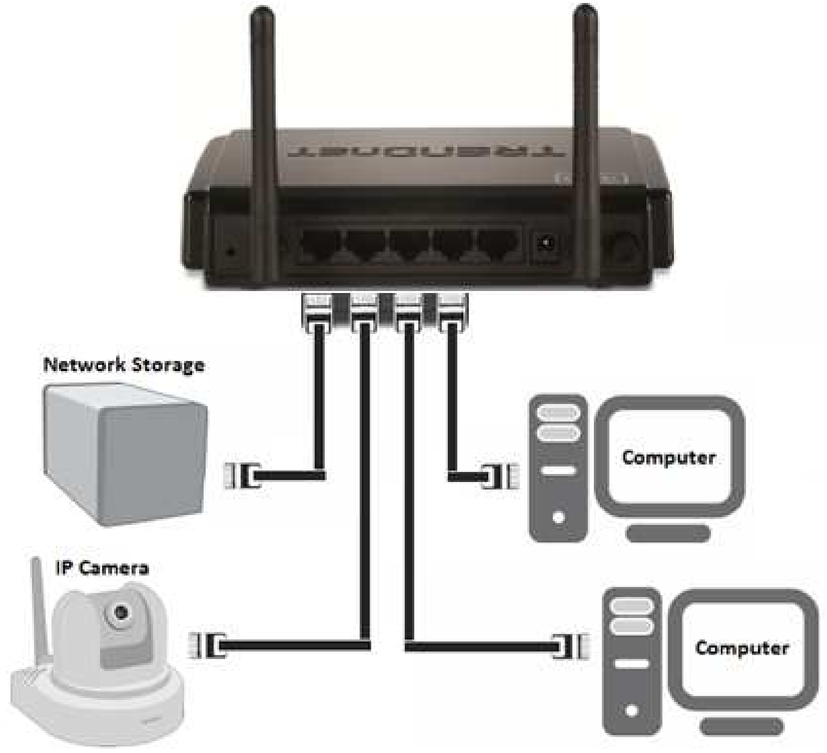
Rebooting.

Please wait 22 seconds ...

Connect additional wired devices to your network

You can connect an additional computer or device to your network by connecting one end of an Ethernet cable (also called network cable) from your computer or device Ethernet port (also called network port) to one of the available LAN ports labeled 1,2,3,4 on your router. Check the status of the LED indicators (1, 2, 3, or 4) on the front panel of your router to ensure the physical cable connection from your computer or device.

***Note:** If you encounter issues connecting to your network, there may be a problem with your computer or device network settings. Please ensure that your computer or device network settings (also called TCP/IP settings) are configured to obtain IP address settings automatically (also called dynamic IP address or DHCP) and to Obtain DNS Server address settings automatically.*



Wireless Networking and Security

How to choose the type of security for your wireless network

There are a few different wireless security types supported in wireless networking each having its own characteristics which may be more suitable for your wireless network taking into consideration compatibility, performance, as well as the security strength along with using older wireless networking hardware (also called legacy hardware).

It is strongly recommended to enable wireless security to prevent unwanted users from accessing your network and network resources (personal documents, media, etc.).

In general, it is recommended that you choose the security type with the highest strength and performance supported by the wireless computers and devices in your network. Please review the security types to determine which one you should use for your network.

- **WEP:** Legacy encryption method supported by most 802.11b/g hardware. Older hardware may only support up to WEP encryption.
- **WPA:** Legacy encryption method supported in most 802.11g hardware.
- **WPA2:** Currently the most secure method of wireless security and required for 802.11n performance.

Note: *Check the specifications of your wireless network adapters and wireless appliances to verify the highest level of encryption supported.*

Below is brief comparison chart of the wireless security types and the recommended configuration depending on which type you choose for your wireless network.

Security Comparison	**WEP**	**WPA**	**WPA2**
Wireless Standard	IEEE 802.11a/b/g	IEEE 802.11a/b/g	IEEE 802.11a/b/g/n
Performance	Up to 54Mbps	Up to 54Mbps	Up to 450Mbps*
Strength	Low	Medium	High
Additional Options	Open System or Shared Key, HEX or ASCII, Different key sizes	TKIP or AES, Preshared Key or RADIUS	TKIP or AES, Preshared Key or RADIUS
Recommended Configuration	Open System ASCII 13 characters	TKIP Preshared Key 8-63 characters	AES Preshared Key 8-63 characters

*Dependent on the maximum 802.11n data rate supported by the device (150Mbps, 300Mbps, or 450Mbps)

Secure your wireless network

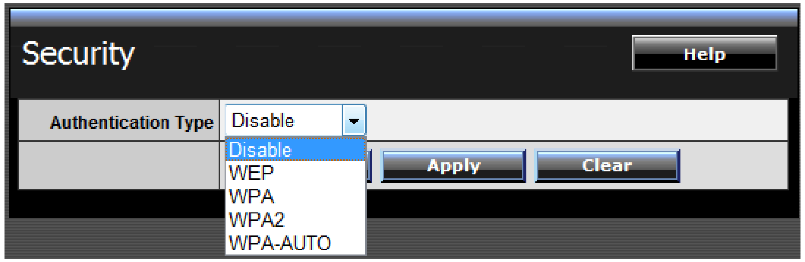
Wireless > Security

After you have determined which security type to use for your wireless network (see "How to choose the security type for your wireless network" on page 12), you can set up wireless security.

1. Log into your router management page (see "Access your router management page" on page 26).

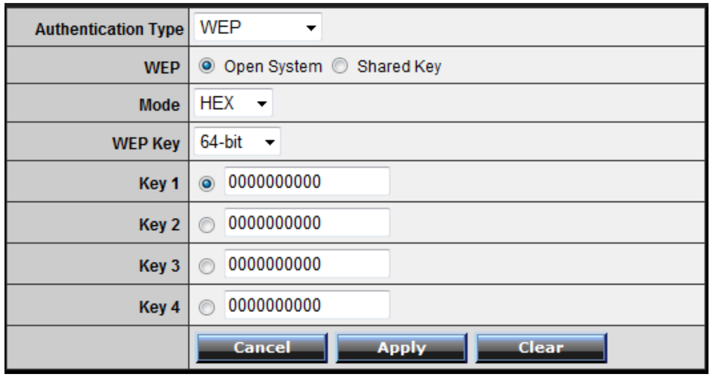
2. Click on **Wireless**, and click on **Security**.

3. Click on the **Authentication Type** drop-down list to select your wireless security type.



Authentication Type: Disable

If selecting **WEP** (Wired Equivalent Privacy), please review the WEP settings to configure and click **Apply** to save the changes.



Authentication Type	WEP
WEP	● Open System ○ Shared Key
Mode	HEX
WEP Key	64-bit
Key 1	● 0000000000
Key 2	○ 0000000000
Key 3	○ 0000000000
Key 4	○ 0000000000

- **WEP**– Choose **Open System** or **Shared Key**.

Note: *It is recommended to use Open System because it is known to be more secure than Shared Key.*

- **Mode** – Choose **HEX** or **ASCII**.

Note: *It is recommended to use ASCII because of the much larger character set that can be used to create the key.*

- **WEP Key** – Choose the key length **64-bit** or **128-bit**.

Note: *It is recommended to use 128-bit because it is more secure to use a key that consists of more characters.*

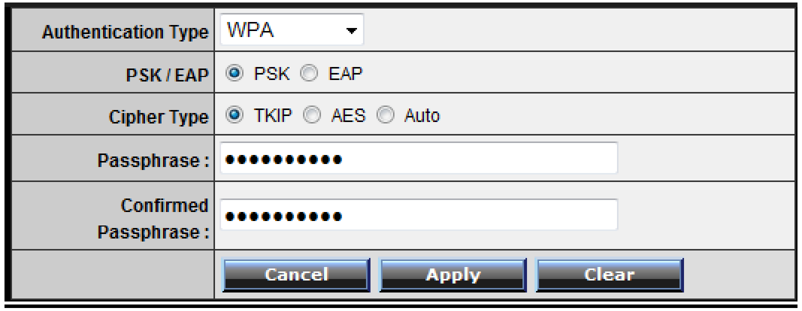
WEP Key Format	HEX	ASCII
Character set	0-9 & A-F, a-f only	alphanumeric (a,b,C,?,*, /,1,2, etc.)
64-bit key length	10 characters	5 characters
128-bit key length	26 characters	13 characters

- **Key 1-4** – Choose a key index 1,2,3, or 4 and enter the key.

Note: *The Key Index # must also match when configuring wireless devices to connect to your wireless network.*

If selecting **WPA** or **WPA2** (Wi-Fi Protected Access) **PSK** (Preshared Key), please review the **WPA** or **WPA2 PSK** settings to configure and click **Apply** to save the changes.

Note: *It is recommended to choose the specific security type **WPA** or **WPA2**, instead of choosing **WPA-AUTO**.*



Authentication Type	WPA
PSK / EAP	● PSK ○ EAP
Cipher Type	● TKIP ○ AES ○ Auto
Passphrase :	••••••••••
Confirmed Passphrase :	••••••••

- **PSK/EAP**– Choose **PSK** (Preshared Key) or **EAP** (Extensive Authentication Protocol, also called RADIUS) Remote Authentication Dial-In User Service).

Note: *It is recommended to use PSK because it is easier to setup and simply requires you to create a passphrase compared to EAP which requires you to connect an external RADIUS server and requires more configuration.*

- **Cipher Type** – Choose **TKIP, AES, or Auto**.

Note: *For best the wireless performance and compatibility with wireless devices:*

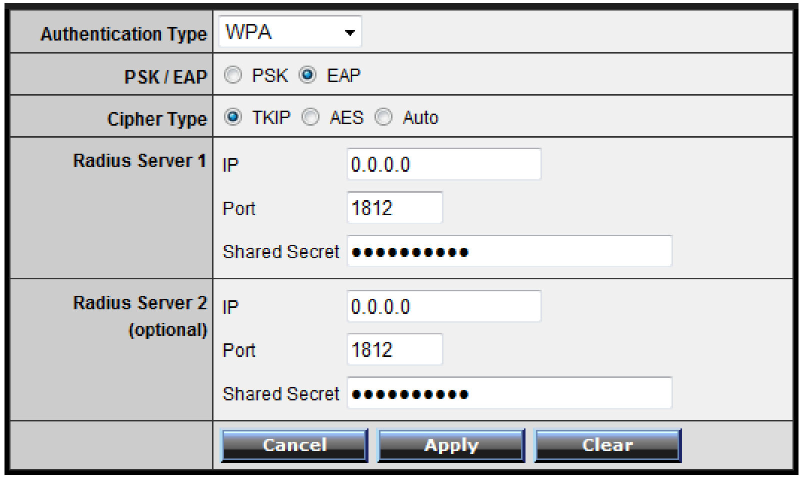
  - When selecting **WPA** security, it is recommended to use **TKIP.**
  - When selecting **WPA2** security, it is recommended to use **AES**.
  - It is recommended to configure the specific cipher type instead of choosing **Auto**.

- **Passphrase** – Enter the passphrase.

- **Confirmed Passphrase** – Re-enter the passphrase.

Note: *8-63 alphanumeric characters (a,b,C,?,*, /,1,2, etc.)*

For advanced users, if selecting **WPA** or **WPA2** (Wi-Fi Protected Access) **EAP** (Extensible Authentication Protocol, also called RADIUS, Remote Authentication Dial-In User Service), please review the WPA or WPA2 EAP settings to configure and click **Apply** to save the changes.



Authentication Type	WPA	
PSK / EAP	○ PSK ● EAP	
Cipher Type	● TKIP ○ AES ○ Auto	
Radius Server 1	IP	0.0.0.0
	Port	1812
	Shared Secret	••••••••••
Radius Server 2 (optional)	IP	0.0.0.0
	Port	1812
	Shared Secret	••••••••••

- **RADIUS Server 1/2** - Configure the RADIUS server settings.

Note: *RADIUS Server 2 is optional and can be configured as a backup if there are any issues with RADIUS Server 1.*

  - **IP** – Enter the IP address of the RADIUS server. (e.g. *192.168.10.250)*
  - **Port** – Enter the port your RADIUS server is configured to use for RADIUS authentication.

    Note: *It is recommended to use port 1812.*
  - **Shared Secret** – Enter the shared secret used to authorize your router with your RADIUS server.

Connect wireless devices to your router

There is a variety of wireless network devices that can connect to your wireless network such as:

- Gaming Consoles
- Internet enabled TVs
- Network media players
- Smart Phones
- Wireless Laptop computers

Each device may have its own software utility for searching and connecting to available wireless networks, therefore, you must refer to the User's Manual/Guide of your wireless capable laptop/computer or wireless adapter to determine how to search and connect to available wireless networks.

See the "Appendix" on page 52 for general information on connecting to a wireless network.

Connect wireless devices using WPS

WPS (Wi-Fi Protected Setup) is a feature that makes it easy to connect devices to your wireless network. If your wireless devices support WPS, you can use this feature to easily add wireless devices to your network.

Note: *You will not be able to use WPS if you set the SSID Broadcast setting to Disabled.*

There are two methods the WPS feature can easily connect your wireless devices to your network.

- PBC (Push Button Configuration) Method
  - Hardware Push Button - located physically on your router
  - WPS Software/Virtual Push Button - located in router management page
- PIN (Personal Identification Number) Method - located in router management page

Note: *Refer to your wireless device documentation for details on the operation of WPS.*

PBC (Hardware Push Button)

To add a wireless device to your network, simply push the WPS button on the wireless device you are connecting, then push and hold the WPS button located on your router for 3 seconds and release it. A blue LED on your router WPS button will flash indicating that the WPS setup process has been activated on your router. (See "Product Hardware Features" on page 2)

For connecting additional WPS supported devices, repeat this process for each additional device.

PBC (Software/Virtual Push Button)

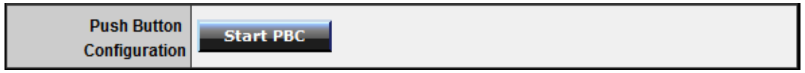
Wireless > WiFi Protected Setup

In addition to the hardware push button located physically on your router, the router management page also has push button which is a software or virtual push button you can click to activate WPS on your router.

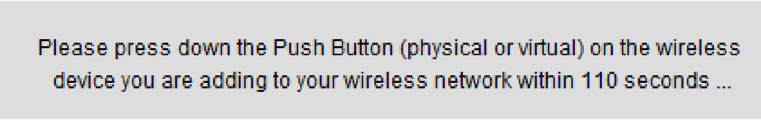
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Wireless**, and click on **WPS**.

3. To add a wireless device to your network, simply the push the WPS button on the wireless device you are connecting, then, in your router management page next to **Push Button Configuration**, click **Start PBC**.

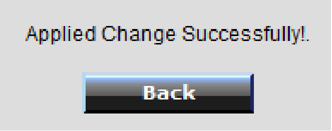


4. You will receive a message counting down indicating the WPS process is activated on your router.



Please press down the Push Button (physical or virtual) on the wireless device you are adding to your wireless network within 110 seconds ...

5. You will receive a success message indicate that the wireless device successfully connected using WPS.



Applied Change Successfully!.

PIN (Personal Identification Number)

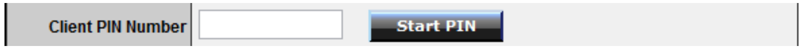
Wireless > WiFi Protected Setup

If your wireless device has WPS PIN (typically an 8-digit code printed on the wireless device product label or located in the wireless device wireless software utility), you can use this method.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Wireless**, and click on **WPS**.

3. Next to **Client PIN Number**, enter the WPS PIN of the wireless device you are connecting and click **Start PIN**.



Note: *You may need to initiate the WPS PIN on your wireless device first when using this method. Refer to your wireless device documentation for details on the operation of WPS.*

Basic wireless settings

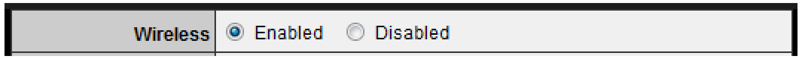
Wireless > Basic

You can change the basic wireless network settings on your router such as the SSID (also called wireless network name), 802.11 mode, channel, and channel width.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Wireless**, and click on **Basic**.

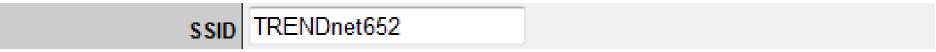
3. Please review the additional wireless settings to configure and click **Apply** to save the changes.



Wireless	● Enabled ○ Disabled

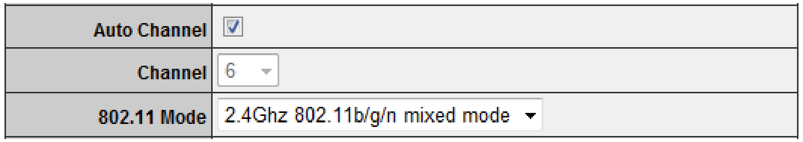
- **Wireless** –**Enabled** turns on the wireless networking on your router and **Disabled** turns off wireless networking on your router.

__Note:__ It is recommended to leave the wireless setting to __Enabled__ unless you do not plan on connecting any wireless computers or devices to your network.



SSID	TRENDnet652

- **SSID** – The name of your wireless network. Identifies your wireless network when connecting with wireless devices. Enter the wireless network name.



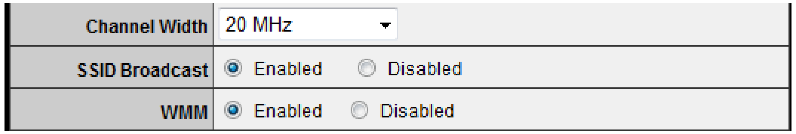
Auto Channel	☑
Channel	6
802.11 Mode	2.4Ghz 802.11b/g/n mixed mode

- **Auto Channel** – Check the option to allow your router to automatically select the best channel for wireless communication.
- **Channel** – To manually set the channel, uncheck **Auto Channel,** then click the drop-down list and select the channel for wireless communication.
- **802.11 Mode** - Select the appropriate mode for your network.
  - **2.4GHz 802.11b/g/n mixed mode** – Select this mode for the best compatibility. This mode allows 802.11b, 11g, and 11n wireless devices to connect your wireless network.
  - **2.4GHz 802.11b/g mixed mode** – This mode allows wireless devices to connect to your wireless network at only 802.11b and 802.11g.
  - **2.4GHz 802.11n only mode** – This mode allows wireless devices to connect to your wireless network at only 802.11n.
  - **2.4GHz 802.11g only mode** – This mode allows wireless to connect to your wireless network at only 802.11g.
  - **2.4GHz 802.11b only mode** – This mode allows wireless devices to connect your wireless network only at 802.11b.

***Note:** Please check the specifications on your wireless devices for the highest wireless capability supported first before applying these settings. If you are unsure, it is recommended that you keep the default setting for the best compatibility.*

When applying the 802.11 mode setting, please keep in mind the following:

- Wireless devices that support 802.11n are backwards compatible and can connect wirelessly at 802.11g or 802.11b.
- Connecting at 802.11b or 802.11g will limit the capability of your 802.11n supported wireless devices from obtaining higher performance and data rates.
- Allowing 802.11b or 802.11g devices to connect to an 802.11n capable wireless network may degrade the wireless network performance below the higher performance and data rates of 802.11n.
- Wireless devices that only support 802.11b or 802.11g will not be able to connect to a wireless network that is set to 802.11n only mode.
- Wireless devices that only support 802.11b will not be able to connect to a wireless network that is set to 802.11g only mode.



Channel Width	20 MHz
SSID Broadcast	● Enabled ○ Disabled
WMM	● Enabled ○ Disabled

- **Channel Width** – This setting only applies to wireless devices connecting at 802.11n. Select the appropriate channel width for your wireless network.
  - **20 MHz** – This mode operates using a single 20MHz channel for wireless devices connecting at 802.11n. This setting may provide more stability than Auto 20/40 MHz for connectivity in busy wireless environments where there are several wireless networks in the area.
  - **Auto 20/40 MHz** – This mode can automatically switch between using a single 20MHz channel or 40MHz (two 20MHz channels). When 40MHz is active, this mode is capable of providing higher performance only if the wireless devices support the 40MHz channel width and if there is no adjacent wireless interference.

- **SSID Broadcast** – **Enabled** allows wireless devices to search and discover your wireless network name (also called SSID) broadcasted by your router. **Disabled** turns off the ability for wireless devices to find your network. It is still possible for wireless devices to be configured to connect to your wireless network.

***Note**: Setting this option to **Disabled**, will disable WPS.*

- **WMM** – Wi-Fi Multimedia is QoS feature that improves quality of audio, video, and voice applications by prioritizing wireless traffic. This feature requires the wireless device to also support WMM. Click **Enabled** or **Disabled** to turn this feature on or off on your router.

Steps to improve wireless connectivity

There are a number of factors that can impact the range of wireless devices. Follow these tips to help improve your wireless connectivity:

1. Adjust your wireless devices so that the signal is traveling in a straight path, rather than at an angle. The more material the signal has to pass through the more signal you will lose.

2. Keep the number of obstructions to a minimum. Each obstruction can reduce the range of a wireless device. Position the wireless devices in a manner that will minimize the amount of obstructions between them.

3. Building materials can have a large impact on your wireless signal. In an indoor environment, try to position the wireless devices so that the signal passes through less dense material such as dry wall. Dense materials like metal, solid wood, glass or even furniture may block or degrade the signal.

4. Antenna orientation can also have a large impact on your wireless signal. Use the wireless adapter's site survey tool to determine the best antenna orientation for your wireless devices.

5. Interference from devices that produce RF (radio frequency) noise can also impact your signal. Position your wireless devices away from anything that generates RF noise, such as microwaves, radios and baby monitors.

6. Any device operating on the 2.4GHz frequency will cause interference. Devices such as 2.4GHz cordless phones or other wireless remotes operating on the 2.4GHz frequency can potentially drop the wireless signal.

7. Although the phone may not be in use, the base can still transmit wireless signal. Move the phone's base station as far away as possible from your wireless devices.

8. Make sure that your router is in a good location.

   a. For the widest coverage area, install your router near the center of your home, and near the ceiling, if possible.

   b. Avoid placing the router on or near metal objects (such as file cabinets and metal furniture), reflective surfaces (such as glass or mirrors), and masonry walls.

   c. Any obstruction can weaken the wireless signal (even non-metallic objects), so the fewer obstructions between the router and the wireless device, the better.

   d. Place the router in a location away from other electronics, motors, and fluorescent lighting.

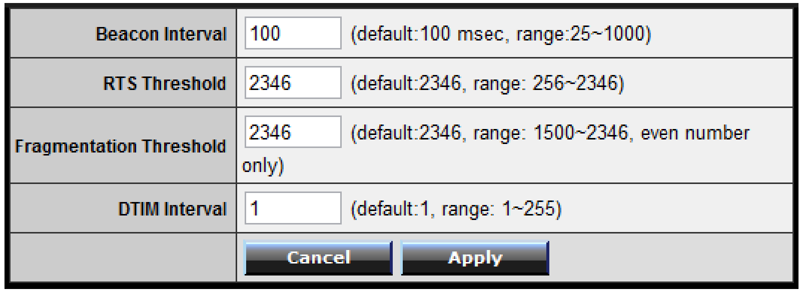
   e. Many environmental variables can affect the router's performance, so if your wireless signal is weak, place the router in several locations and test the signal strength to determine the ideal position.

If possible, upgrade wireless network interfaces (such as wireless cards in computers) from older wireless standards to 802.11n. If a wirelessly networked device uses an older standard, the performance of the entire wireless network may be slower. If you are still experiencing low or no signal consider repositioning the wireless devices or installing additional access points.

Advanced wireless settings

Wireless > Advanced

These settings are advanced options that can be configured to change the advanced wireless functionality mechanisms of your router. It is recommended that these settings remain set to their default values unless you are knowledgeable about the effects of changing these values. It is possible to have undesirable wireless functionality from your router if these settings are improperly modified. The general information regarding these options is listed for reference only.



Beacon Interval	100 (default:100 msec, range:25~1000)
RTS Threshold	2346 (default:2346, range: 256~2346)
Fragmentation Threshold	2346 (default:2346, range: 1500~2346, even number only)
DTIM Interval	1 (default:1, range: 1~255)
	Cancel Apply

- **Beacon Interval** – A beacon is a management frame used in wireless networks that transmitted periodically to announce the presence and provide information about a specific wireless network. The interval is the amount time between each beacon transmission.
  Default Value: 100 milliseconds (range: 25-1000)

- **RTS Threshold** – In the RTS/CTS function in wireless networks, a wireless device that needs to send data will need to send out a RTS (Request To Send) frame first, and the destination wireless device will need to send a response called a CTS (Clear to Send) frame. The RTS/CTS function is used to prevent wireless data traffic collisions. The RTS Threshold defines the smallest data packet size allowed to initiate the RTS/CTS function.
  Default Value: 2346 (range: 256-2346)

- **Fragmentation Threshold** – Fragmentation in wireless networks is the process breaking down of data communication into smaller data packets in order to improve data efficiency when transferring or receiving data between wireless devices. The fragmentation threshold defines the maximum size of the data packets that are broken down.
  Default Value: 2346 (range: 1500~2346, even numbers only)

- **DTIM Interval** – A DTIM (Delivery Traffic Indication Message) is an informational message that is sent as part of a beacon by an access point (your wireless router) to a wireless client (wireless device or connecting station) in sleep mode to provide an alert that data is awaiting delivery. The DTIM Interval (also called Data Beacon Rate) is the amount of time between DTIM transmission included in part of a beacon.
  Default Value: 1 (range: 1-255)

Access Control Filters

Access control basics

Access > Filter

MAC address filters

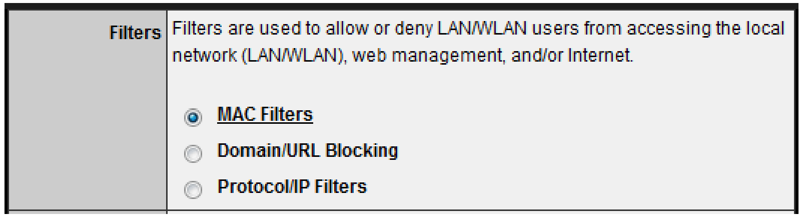
Access > Filter > MAC Filters

Every network device has a unique, 12-digit MAC (Media Access Control) address. Using MAC filters, you can allow only known MAC addresses to connect your network and deny all other unknown MAC addresses from connecting to your network.

Note: *Denied MAC addresses will not be able to communicate to your wired or wireless devices, connect to your router management page, or access the Internet.*

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Access**, click on **Filter**, and click on **MAC Filters**.



Filters

Filters are used to allow or deny LAN/WLAN users from accessing the local network (LAN/WLAN), web management, and/or Internet.

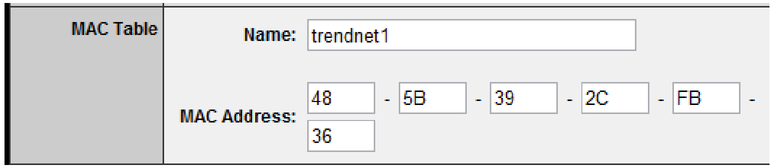
● MAC Filters
○ Domain/URL Blocking
○ Protocol/IP Filters

3. Add the MAC addresses to the MAC Table first before applying the MAC filter function.

Note: MAC filter can be configured to allow access to the listed MAC address and deny all others unlisted or vice versa. The recommended function is to choose to only allow access to the MAC addresses listed and deny all others unlisted because it is easier to determine the MAC addresses of devices in your network then to determine which MAC addresses you do not want to allow access.

- **Name** – Enter a name for the MAC address entry.
- **MAC Address** – Enter the 12-digit MAC address. (e.g. *00-11-22-AA-BB-CC)*

Note: *You can check the Dynamic DHCP List for the MAC addresses of the devices on your network, see "Set up the DHCP server on your router" on page 29 or refer to your computer or device documentation to find the MAC address.*

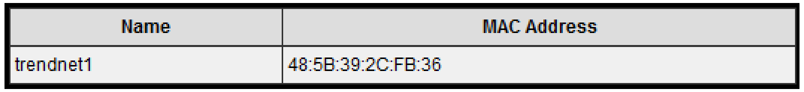


MAC Table

Name: trendnet1

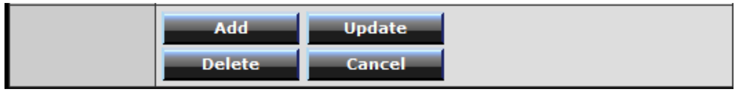
MAC Address: 48 - 5B - 39 - 2C - FB - 36

Click **Add** to save the new MAC address entry to the MAC Table. After clicking **Add**, the MAC address entry will appear in the list below. Repeat for each device.

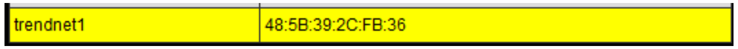


Name	MAC Address
trendnet1	48:5B:39:2C:FB:36

- **Add** – Saves a new MAC address entry.



To modify an existing MAC address entry, click on the entry in the MAC Table. When selected, the entry will be highlighted.



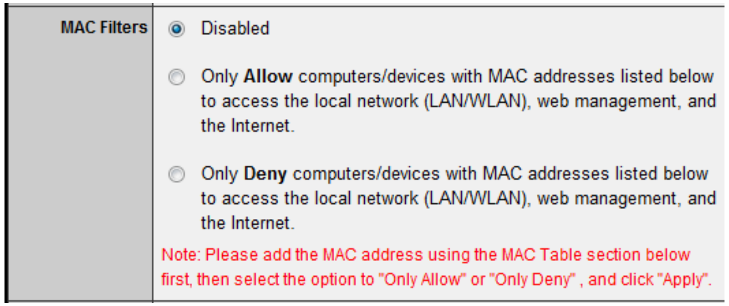
trendnet1	48:5B:39:2C:FB:36

- **Delete** – Removes an existing MAC address entry.
- **Update** – Modifies an existing MAC address entry.
- **Cancel** – Discard changes to an existing MAC address entry.

4. Review the MAC Filter options.

- **Disabled** – disables MAC address filter.
- Only **Allow** computers/devices with MAC addresses listed below to access the local network (LAN/WLAN), web management, and the Internet.
- Only **Deny** computers/devices with MAC addresses listed below to access the local network (LAN/WLAN), web management, and the Internet

Note: *Do not configure this setting until you have added the MAC addresses to the MAC Table first. The recommended option is to only* ***Allow*** *access to the MAC addresses listed and deny all others unlisted.*



MAC Filters
● Disabled
○ Only **Allow** computers/devices with MAC addresses listed below to access the local network (LAN/WLAN), web management, and the Internet.
○ Only **Deny** computers/devices with MAC addresses listed below to access the local network (LAN/WLAN), web management, and the Internet.

Note: Please add the MAC address using the MAC Table section below first, then select the option to "Only Allow" or "Only Deny" , and click "Apply".

Click **Apply** to save the changes.

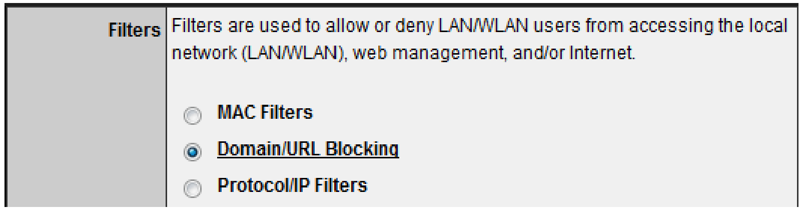
Domain/URL Filters

Access > Filter > Domain/URL Blocking

You may want to allow or block computers or devices on your network access to specific websites (e.g. *www.trendnet.com, etc.)*, also called domains or URLs (Uniform Resource Locators). You may also enter a keyword (e.g instead of complete URL to generally allow or block computers or devices access to websites that may contain the keyword in the URL or on the web page.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Access**, click on **Filter**, and click on **Domain/URL Blocking**.



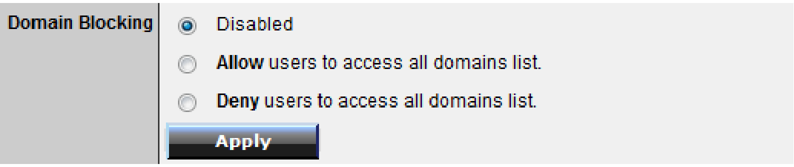
Filters
Filters are used to allow or deny LAN/WLAN users from accessing the local network (LAN/WLAN), web management, and/or Internet.

○ MAC Filters
● Domain/URL Blocking
○ Protocol/IP Filters

3. Review the Domain/URL blocking options.

- **Disabled** – disables domain/URL blocking
- **Allow** users to access all domains listed.
  (*Deny access to all other unlisted websites*)
- **Deny** users to access all domains listed.
  (*Allow access to all other unlisted websites)*

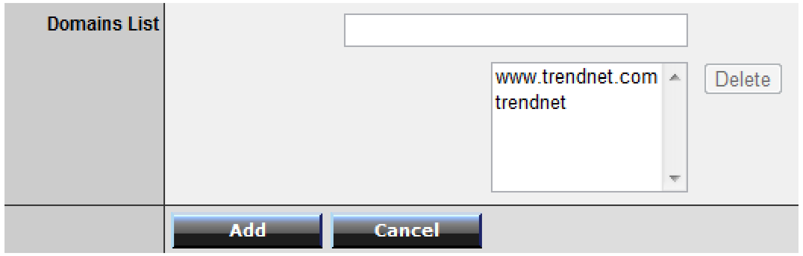
Click **Apply** to save the changes.



Domain Blocking

● Disabled
○ **Allow** users to access all domains list.
○ **Deny** users to access all domains list.

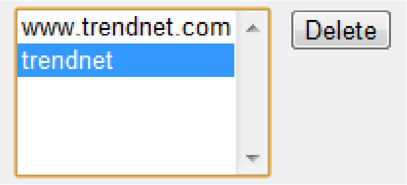
4. Next to **Domains List**, enter the website/URL/domain (e.g.*www.trendnet.com)* or keyword (e.g. *trendnet*) to allow or block access and click **Add** to add this to the domains list. The entry will be listed below. Repeat for each additional website or keyword added.



Domains List

www.trendnet.com
trendnet

- **Cancel** - Discard changes to the domains list.
- **Delete** - Delete an existing website/URL/domain or keyword entry, click on the entry in the Domains List. When selected, the entry will be highlighted. Click **Delete** to remove it from the list.



www.trendnet.com
trendnet

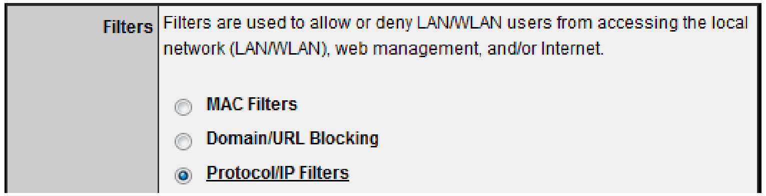
Protocol/IP filters

Access > Filter > Protocol/IP Filters

You may want to block computers or devices on your network access to specific ports (used or required by a specific application) to the Internet.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Access**, click on **Filter**, and click on **Protocol/IP Filters**.

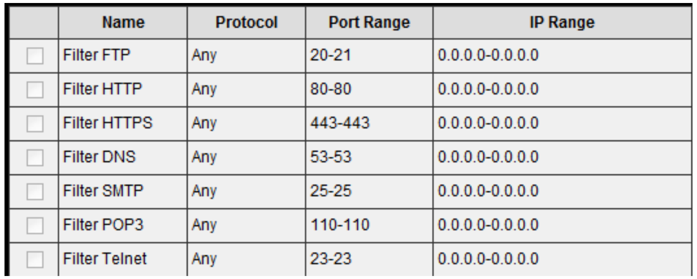


Filters

Filters are used to allow or deny LAN/WLAN users from accessing the local network (LAN/WLAN), web management, and/or Internet.

○ MAC Filters
○ Domain/URL Blocking
● Protocol/IP Filters

To simplify configuration, there is a list of commonly used pre-defined protocol/IP filters to modify otherwise, you can choose to manually add a new protocol/IP filter.



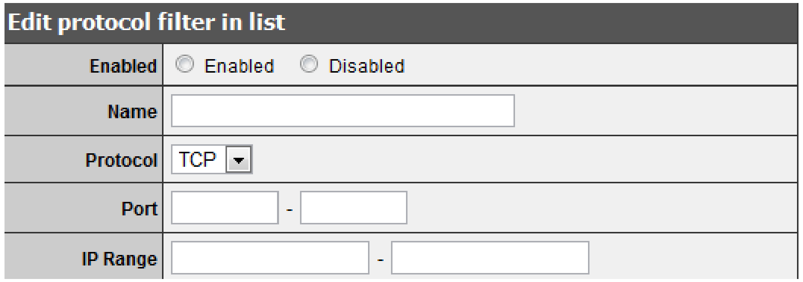
	Name	Protocol	Port Range	IP Range
□	Filter FTP	Any	20-21	0.0.0.0-0.0.0.0
□	Filter HTTP	Any	80-80	0.0.0.0-0.0.0.0
□	Filter HTTPS	Any	443-443	0.0.0.0-0.0.0.0
□	Filter DNS	Any	53-53	0.0.0.0-0.0.0.0
□	Filter SMTP	Any	25-25	0.0.0.0-0.0.0.0
□	Filter POP3	Any	110-110	0.0.0.0-0.0.0.0
□	Filter Telnet	Any	23-23	0.0.0.0-0.0.0.0

3. Review the protocol/IP filter settings.

- **Enabled** – Selecting **Enabled** turns on the protocol/IP filter and selecting **Disabled** turns it off.
- **Name** – Enter a name for the protocol/IP filter.

- **Protocol** – Select the protocol type to filter. **TCP, UDP**, or you can select * to choose all protocol types**.**
- **Port** – Enter the port number or port range numbers to block. (e.g. *80-80* or *20-21*).
- **IP Range** – Enter the IP address or IP address range to apply the protocol/IP filter. (e.g. *192.168.10.20-192.168.10.20* or *192.168.10.20-192.168.10.30)*.

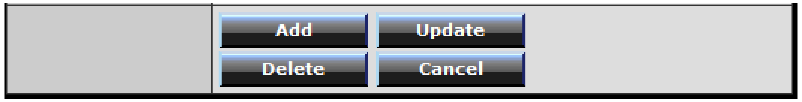
  Note: *The filter will not be applied to IP addresses outside of the range specified.*



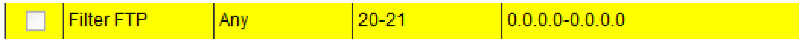
Edit protocol filter in list

Enabled	○ Enabled ○ Disabled
Name	
Protocol	TCP
Port	-
IP Range	-

- **Add** – Saves a new protocol/IP filter.



To modify an existing protocol/IP filter, click on the entry in the protocol/IP filter list. When selected, the entry will be highlighted.



□	Filter FTP	Any	20-21	0.0.0.0-0.0.0.0

- **Delete** – Removes an existing protocol/IP filter.
- **Update** – Modifies an existing protocol/IP filter.
- **Cancel** – Discard changes to an existing protocol/IP filter.

Firewall rules

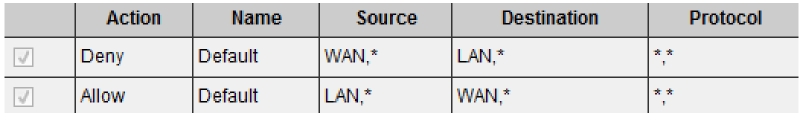
Access > Filter > Firewall Rule

You may want specify inbound or outbound access control to allow/deny sources (or Internet IP addresses) to your network from the Internet or from computers or devices on your network to the Internet. Firewall rules may allow for more granular control of specific inbound and outbound access between your network and the Internet. It is recommended that these settings remain set to default unless you are knowledgeable about the effects of changing the firewall rule configuration. It is possible to have undesirable functionality from your router if these settings are improperly modified.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Access**, click on **Filter**, and click on **Firewall Rule**.

3. In the list, there are two default rules specific which cannot be modified. One rule to deny all access from the Internet to your network for security and the other to allow all access from your network to the Internet. Any additional rules will take precedence over the default rules.



	Action	Name	Source	Destination	Protocol
☑	Deny	Default	WAN,*	LAN,*	*,*
☑	Allow	Default	LAN,*	WAN,*	*,*

3. Review the firewall rule settings.

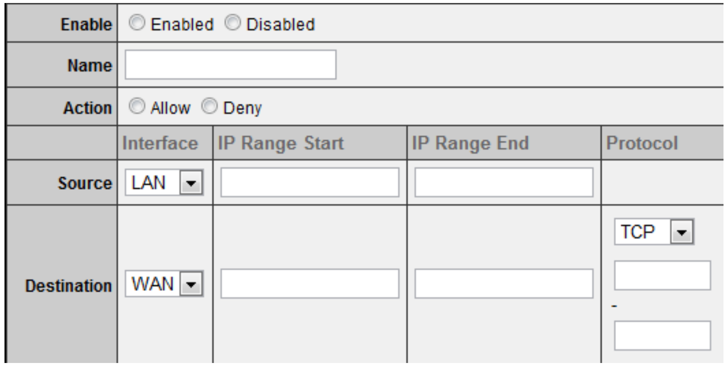
- **Enabled** – Selecting **Enabled** turns on the firewall ruler and selecting **Disabled** turns it off.
- **Name** – Enter a name for the firewall rule.
- **Action** – Select **Allow** will allow access and selecting **Deny** will block or deny access.
- **Source** – Configure the source information for the firewall rule.
  - **Interface** - Click the drop-down list and select **LAN** (your network) or **WAN** (Internet) depending on where the traffic will be coming from.
  - **IP Range Start** – Changes the starting address for the firewall rule to apply (e.g. *192.168.1.20)*
  - **IP Range End** – Changes the last address for the firewall rule to apply (e.g. *192.168.1.30*)

    Note: *The IP Range Start and End specify the range of IP addresses that the firewall rule will apply. Both fields need to be completed so use the same value to specify a single IP address.*

- **Destination** – Configure the destination information for the firewall rule.
  - **Interface** - Click the drop-down list and select **LAN** (your network) or **WAN** (Internet) depending on where the traffic will be coming from.
  - **IP Range Start** – Changes the starting address for the firewall rule to apply (e.g. *192.168.10.20)*
  - **IP Range End** – Changes the last address for the firewall rule to apply (e.g. *192.168.10.30*)

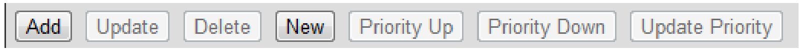
  Note: *The IP Range Start and End specify the range of IP addresses that the firewall rule will apply. Both fields need to be completed so use the same value to specify a single IP address.*

  - **Protocol** – Select the protocol type to filter. **TCP, UDP**, **ICMP**, or you can select ***** to choose all protocol types**.** Below, enter the port number or range of port numbers to apply the firewall rule. (e.g. *80-80* or *20-21*). For all ports, use the port range *1 - 65534.*



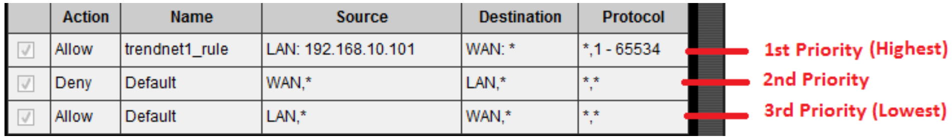
Enable	○ Enabled ○ Disabled			
Name				
Action	○ Allow ○ Deny			
	Interface	IP Range Start	IP Range End	Protocol
Source	LAN			
Destination	WAN			TCP -

- **Add** – Saves a new firewall rule.
- **Update** – Modifies an existing firewall rule.
- **Delete** – Removes an existing firewall rule.
- **New** - Saves a new firewall rule.
- **Cancel** – Discard changes to an existing firewall rule.



- **Priority Up** – Moves an existing firewall rule one step higher in priority.
- **Priority Down** – Moves an existing firewall rule one step below in priority.
- **Update Priority** – Save updated changes to priority.

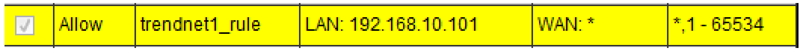
  Note: *Top position in the list is the highest priority, bottom position in the list is the lowest priority.*



	Action	Name	Source	Destination	Protocol
☑	Allow	trendnet1_rule	LAN: 192.168.10.101	WAN: *	*,1 - 65534
☑	Deny	Default	WAN,*	LAN,*	*,*
☑	Allow	Default	LAN,*	WAN,*	*,*

1st Priority (Highest)
2nd Priority
3rd Priority (Lowest)

To modify an existing firewall rule, click on the rule in the firewall rules list. When selected, the entry will be highlighted.



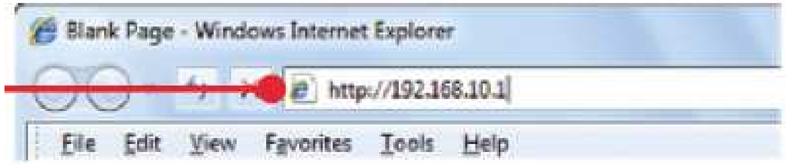
☑	Allow	trendnet1_rule	LAN: 192.168.10.101	WAN: *	*,1 - 65534

Advanced Router Setup

Access your router management page

***Note:** Your router management page http://192.168.10.1 is accessed through the use of your Internet web browser (e.g. Internet Explorer, Firefox, Chrome, Safari, Opera) and will be referenced frequently in this User's Guide.*

1. Open your web browser (e.g. Internet Explorer, Firefox, Safari, Chrome, or Opera) and go to http://192.168.10.1. Your router will prompt you for a user name and password.

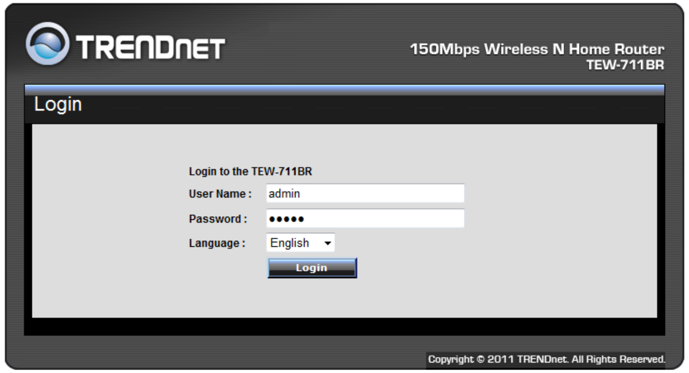


http://192.168.10.1

2. Next to Language, click the drop-down list to select your preferred language. Enter the default user name and password and then click **Login**.

Default User Name: **admin**

Default Password: **admin**



Login to the TEW-711BR

User Name : admin

Password : •••••

Language : English

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Change your router login password

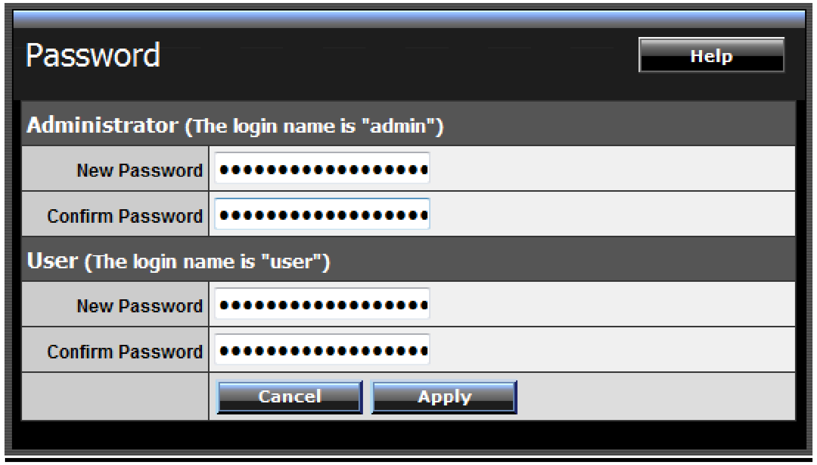
Main > Password

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **Password**.

3. Under the **Administrator** section, in the **New Password** field, enter the new password, and in the **Confirm Password** field, retype the new password again to confirm.

4. To save changes, click **Apply**.



Administrator (The login name is "admin")

New Password ••••••••••••••••••

Confirm Password ••••••••••••••••••

User (The login name is "user")

New Password ••••••••••••••••••

Confirm Password ••••••••••••••••••

***Note:** If you change the router login password, you will need to access the router management page using the User Name "admin" and the new password instead of the default password "admin".*

User (Optional): The User account is an additional account used for viewing the settings on the router management page only. Accessing the router management page using the User account will restrict access to viewing only and will not allow any settings to be changed.

Default User Name: user

Default Password: user

Set your router date and time

Main > Time

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **Time**.

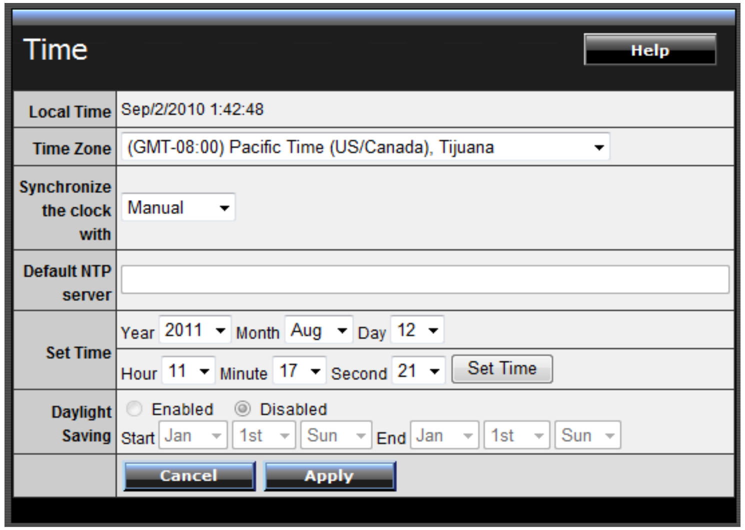
3. Next to **Time Zone**, click the drop-down list to select your **Time Zone**.

4. Next to **Synchronize the clock with**, you can choose one of the following options:

- **Manual** – Set your router date and time manually in the **Set Time** section. To save changes, click **Apply**.
  Note: *Time is specified in 24-hour format.*
  OR
- **Automatic** – Set your router date and time to synchronize with an NTP (Network Time Protocol) server address (e.g. pool.ntp.org). Enter the NTP server address next to **Default NTP** server, (e.g. pool.ntp.org). Next to **Daylight Saving**, set the annual range when daylight saving is activated. To save changes, click **Apply**.

Note: *NTP servers are used for computers and other network devices to synchronize time across network.*

5. You can verify the time/date settings next to **Local Time** at the top of the page. **Local Time** displays the current date and time set on your router.



Time

Local Time	Sep/2/2010 1:42:48
Time Zone	(GMT-08:00) Pacific Time (US/Canada), Tijuana
Synchronize the clock with	Manual
Default NTP server	
Set Time	Year 2011 Month Aug Day 12 Hour 11 Minute 17 Second 21 Set Time
Daylight Saving	○ Enabled ● Disabled Start Jan 1st Sun End Jan 1st Sun

Manually configure your Internet connection

Main > WAN

1. Log into your router management page (see "Access your router management page" on page 26).

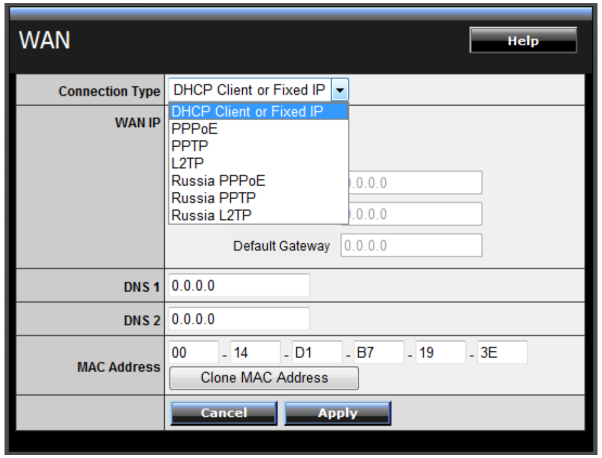
2. Click on **Main**, and click on **WAN**.

3. In the **Connection Type** drop-down list, click the type of Internet connection provided by your ISP (Internet Service Provider).

4. Complete the fields required by your ISP.

5. Complete the optional settings only if required by your ISP.

6. To save changes, click **Apply**.



DNS 1: 0.0.0.0
DNS 2: 0.0.0.0
MAC Address: 00 - 14 - D1 - B7 - 19 - 3E

Note: *If you are unsure which Internet connection type you are using, please contact your ISP (Internet Service Provider).**Note:** If your ISP requires a host name to be specified, you can specify it under Main > LAN & DHCP Server, in the **Host Name** field. To save changes, click **Apply** at bottom of the page.*

Clone a MAC address

Main > WAN

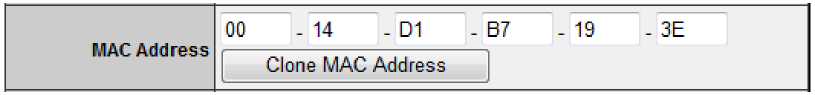
On any home network, each network device has a unique MAC (Media Access Control) address. Some ISPs (Internet Service Providers) register the MAC address of the device (usually a router or a computer) connected directly to the modem. If your computer MAC address is already registered with your ISP and to prevent the re-provisioning and registration process of a new MAC address with your ISP, then you can clone the address (assign the registered MAC address of your previous device to your new router). If you want to use the MAC address from the previous device (computer or old router that directly connected to the modem, you should first determine the MAC address of the device or computer and manually enter it into your router using the clone MAC address feature.

Note: *For many ISPs that provide dynamic IP addresses automatically, typically, the stored MAC address in the modem is reset each time you restart the modem. If you are installing this router for the first time, turn your modem before connecting the router to your modem. To clear your modem stored MAC address, typically the procedure is to disconnect power from the modem for approximately one minute, then reconnect the power. For more details on this procedure, refer to your modem's User Guide/Manual or contact your ISP.*

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **WAN**.

3. Under your Internet connection settings, find the **MAC Address** section shown below.



MAC Address: 00 - 14 - D1 - B7 - 19 - 3E

4. Click either **Clone MAC Address** to clone the MAC address of the computer you are currently using or manually enter the 12-digit MAC address of your old router.

5. To save changes, click **Apply**.

Change your router IP address

Main > LAN & DHCP Server

In most cases, you do not need to change your router IP address settings. Typically, the router IP address settings only needs to be changed, if you plan to use another router in your network with the same IP address settings, if you are connecting your router to an existing network that is already using the IP address settings your router is using, or if you are experiencing problems establishing VPN connections to your office network through your router.

Note: *If you are not encountering any issues or are not faced with one of the cases described above or similar, it is recommended to keep your router IP address settings as default.*

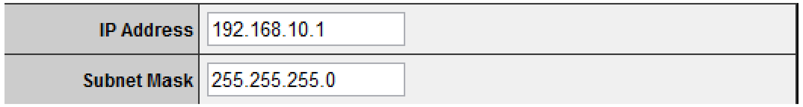
Default Router IP Address: 192.168.10.1

Default Router Network: 192.168.10.0 / 255.255.255.0

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **LAN & DHCP Server**.

3. Enter the router IP address settings.



IP Address	192.168.10.1
Subnet Mask	255.255.255.0

- **IP Address** – Enter the new router IP address. (e.g. *192.168.200.1*)
- **Subnet Mask** – Enter the new router subnet mask. (e.g. *255.255.255.0*)

Note: *The DHCP address range will change automatically to your new router IP address settings so you do not have to change the DHCP address range manually to match your new router IP address settings.*

4. To save changes, click **Apply**.

Note: *You will need to access your router management page using your new router IP address to access the router management page. (e.g Instead of using the default http://192.168.10.1 using your new router IP address will use the following format using your new router IP address http://(new.router.ipaddress.here) to access your router management page.*

Set up the DHCP server on your router

Main > LAN & DHCP Server

Your router can be used as a DHCP (Dynamic Host Configuration Protocol) server to automatically assign an IP address to each computer or device on your network. The DHCP server is enabled by default on your router. If you already have a DHCP server on your network, or if you do not want to use your router as a DHCP server, you can disable this setting. It is recommended to leave this setting enabled.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **LAN & DHCP Server**.

3. Review the DHCP Server settings.

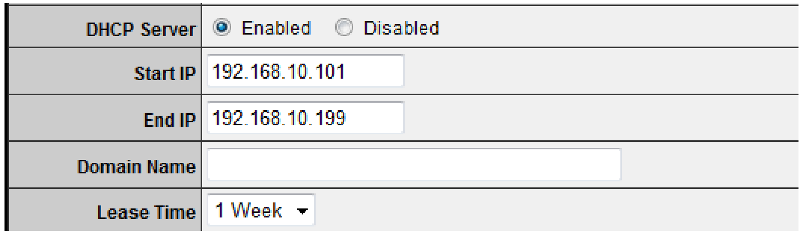
- **DHCP Server** – Enable or Disable the DHCP server.
- **Start IP** – Changes the starting address for the DHCP server range. (e.g. *192.168.10.20)*
- **End IP** – Changes the last address for the DHCP server range. (e.g. *192.168.10.30)*

Note: *The Start IP and End IP specify the range of IP addresses to automatically assign to computers or devices on your network.*

- **Domain Name (Optional)** – Specifies a domain name to assign to computers or devices. (e.g. *trendnet.com*)
- **Lease Time** – Click the drop-down list to select the lease time.

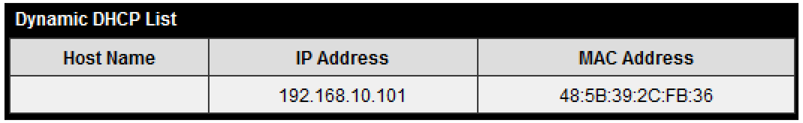
Note: *The DHCP lease time is the amount of time a computer or device can keep an IP address assigned by the DHCP server. When the lease time expires, the computer or device will renew the IP address lease with the DHCP server, otherwise, if there is no attempt to renew the lease, the DHCP server will reallocate the IP address to be assigned to another computer or device.*

4. To save changes, click **Apply**.



DHCP Server	● Enabled ○ Disabled
Start IP	192.168.10.101
End IP	192.168.10.199
Domain Name	
Lease Time	1 Week

Dynamic DHCP List – You can view the list of active lease entries for computers or devices that have been assigned IP addresses automatically from the DHCP server on your router.



Dynamic DHCP List

Host Name	IP Address	MAC Address
	192.168.10.101	48:5B:39:2C:FB:36

Set up DHCP reservation

Main > LAN & DHCP Server

DHCP (Dynamic Host Configuration Protocol) reservation (also called Static DHCP) allows your router to assign a fixed IP address from the DHCP server IP address range to a specific device on your network. Assigning a fixed IP address can allow you to easily keep track of the IP addresses used on your network by your computers or devices for future reference or configuration such as virtual server (also called port forwarding, see "Virtual Server" on page 34) or special applications (also called port triggering, see "Special Applications" on page 35).

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **LAN & DHCP Server**.

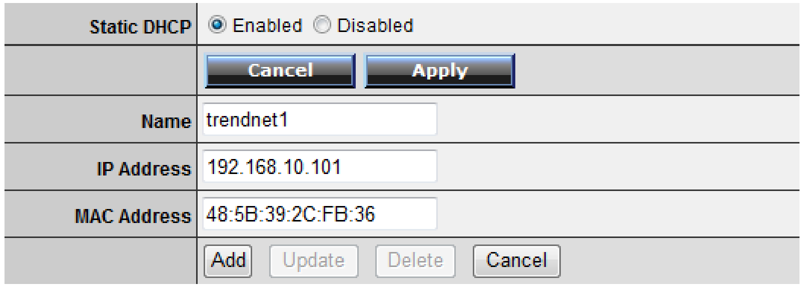
3. Review the DHCP reservation settings.

- **Static DHCP**– Enable or Disable the DHCP reservation feature.
- **Name** – Enter a name for the reservation.
- **IP Address** – Enter the IP address to assign to the reservation. (e.g. 192.168.10.101)

Note: *You cannot assign IP addresses outside of the DHCP range. The IP address is required to be within the DHCP IP address range (Start IP & End IP).*

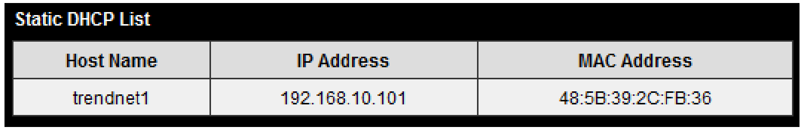
- **MAC Address** – Enter the MAC (Media Access Control) address of the computer or network device to assign to the reservation. (e.g. *00:11:22:AA:BB:CC)*

- **Add** - Saves the reservation.



Static DHCP	● Enabled ○ Disabled
	Cancel Apply
Name	trendnet1
IP Address	192.168.10.101
MAC Address	48:5B:39:2C:FB:36
	Add Update Delete Cancel

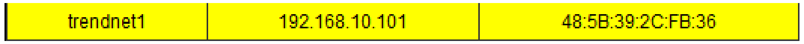
Static DHCP List – You can view the list of reservations for computers or devices that have been created in this list.



Static DHCP List

Host Name	IP Address	MAC Address
trendnet1	192.168.10.101	48:5B:39:2C:FB:36

To modify an existing reservation, click on the entry in the Static DHCP list. When selected, the entry will be highlighted.



trendnet1	192.168.10.101	48:5B:39:2C:FB:36

- **Update** – Saves changes to an existing reservation.
- **Delete** – Removes an existing reservation.
- **Cancel** – Discards changes to existing reservation.

Enable/disable UPnP on your router

Management > Remote Management

UPnP (Universal Plug and Play) allows devices connected to a network to discover each other and automatically open the connections or services for specific applications (e.g. instant messenger, online gaming applications, etc.) UPnP is enabled on your router by default to allow specific applications required by your computers or devices to allow connections through your router as they are needed.

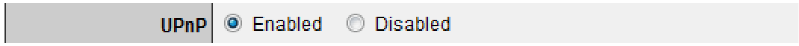
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Management**, and click on **Remote Management**.

3. Next to **UPnP**, click **Enabled** or **Disabled** to turn the feature on or off on your router.

Note: *It is recommended to leave this setting enabled, otherwise, you may encounter issues with applications that utilize UPnP in order allow the required communication between your computers or devices and the Internet.*

4. To save changes, click **Apply**.



UPnP ● Enabled ○ Disabled

Allow/deny VPN connections through your router

Management > Remote Management

VPN (Virtual Private) Network) is a network that uses a public network, such as the Internet, to provide secure communications between a remote computer or network and another network. Some offices often provide VPN access to their networks to enable employees to work their remote office/home office, or while traveling.

If your office or place of work has allowed and authorized access for you to access their network through VPN, the default VPN settings in your router have been configured to pass through the most common types of VPN protocols, which typically does not require any additional configuration changes.

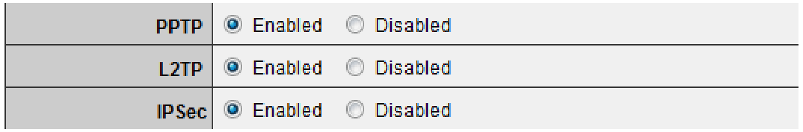
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Management**, and click on **Remote Management**.

3. Next to **PPTP, L2TP, or IPsec** (depending the VPN protocol your corporation requires) click **Enabled** or **Disabled** to turn the VPN pass through feature on or off on your router.

Note: *It is recommended to leave these settings enabled.*

4. To save changes, click **Apply**.



PPTP	● Enabled ○ Disabled
L2TP	● Enabled ○ Disabled
IPSec	● Enabled ○ Disabled

Allow/deny multicast streaming

Management > Remote Management

In some cases, applications require multicast communication (also called IP multicast which is the delivery of information to a specific group of computers or devices in a single transmission) typically used in media streaming applications. Multicast streaming is enabled by default on your router to allow applications that require multicast communication through your router which typically does not require and additional configuration changes.

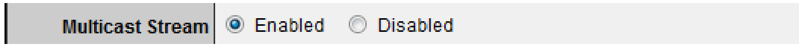
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Management**, and click on **Remote Management**.

3. Next to **Multicast Stream**, click **Enabled** or **Disabled** to turn the feature on or off on your router.

Note: *It is recommended to leave this setting enabled.*

4. To save changes, click **Apply**.



Multicast Stream	● Enabled ○ Disabled

Identify your network on the Internet

Main > Dynamic DNS

If you want to remotely access computers or devices on your network attached to your router, you will need to be able to identify your network on the Internet. The DDNS (Dynamic DNS) feature allows you to identify your network on the Internet even if your Internet IP address changes as the DDNS service providers allow you to create a domain name you can use to easily identify your network on the Internet.

Note: *First, you will need to sign up for one of the DDNS service providers listed in the* ***Server Address*** *drop-down list.*

1. Sign up for one of the DDNS available service providers list under **Server Address**. (e.g. *dyndns.com, no-ip.com*, etc.)

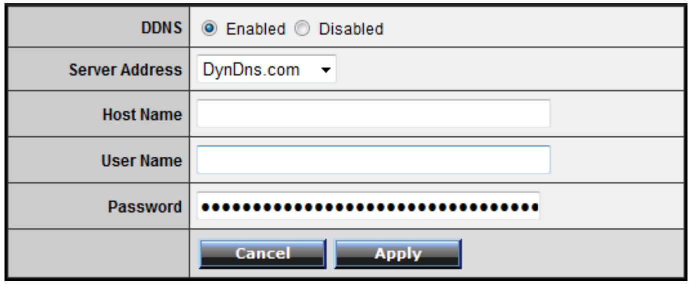
2. Log into your router management page (see "Access your router management page" on page 26).

3. Click on **Main** and click on **Dynamic DNS**.

4. Next to DDNS, click **Enabled.**

5. In the **Server Address** drop-down list, select the provider you selected, and enter your information in the fields.

6. To save changes, click **Apply**.



DDNS	● Enabled ○ Disabled
Server Address	DynDns.com
Host Name	
User Name	
Password	••••••••••••••••••••••••••••••••

Allow remote access to your router management page

Management > Remote Management

You may want to make changes to your router from a remote location such at your office or another location while away from your home.

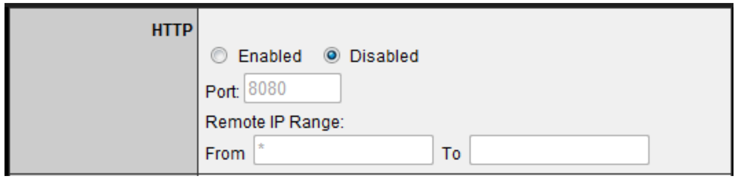
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Management**, and click on **Remote Management**.

3. Under the **HTTP** section, click **Enabled**.

- **Port**– It is recommended to leave this setting as 8080.
  Note: *If you have configured port 8080 for another configuration section such as virtual server or special application, please change the port to use. (Recommended port range 1024-65534)*

- **Remote IP Range** – It is recommended to leave this setting as *, to allow remote access from anywhere on the Internet.
  Note*: You can enter a specific range of Internet IP addresses that are allowed to access your router management page, all others will be denied.*



HTTP ○ Enabled ● Disabled

Port: 8080

Remote IP Range:

From * To

4. To save changes, click **Apply**.

Open a device on your network to the Internet

DMZ

Access > DMZ

You may want to expose a specific computer or device on your network to the Internet to allow anyone to access it. Your router includes the DMZ (demilitarized zone) feature that makes all the ports and services available on the WAN/Internet side of the router and forwards them to a single IP address (computer or network device) on your network. The DMZ feature is an easy way of allowing access from the Internet however, it is also very **insecure** method.

It is strongly recommended to use **virtual server** (also called port forwarding, see "Virtual Server" on page 34) instead, to allow access to your computers or network devices from the Internet.

1. Make sure to configure your computer or network device to use a static IP address or you can use the DHCP reservation feature (see "Set up DHCP reservation" on page 30).

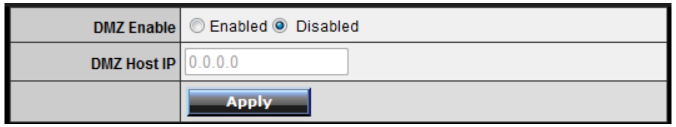
2. Log into your router management page (see "Access your router management page" on page 26).

3. Click on **Access**, and click on **DMZ**.

4. Next to **DMZ Enable**, click **Enabled**.

5. Next to **DMZ Host IP**, enter the IP address you assigned to the computer or network device to expose to the Internet.

6. To save changes, click **Apply**.



DMZ Enable ○ Enabled ● Disabled

DMZ Host IP 0.0.0.0

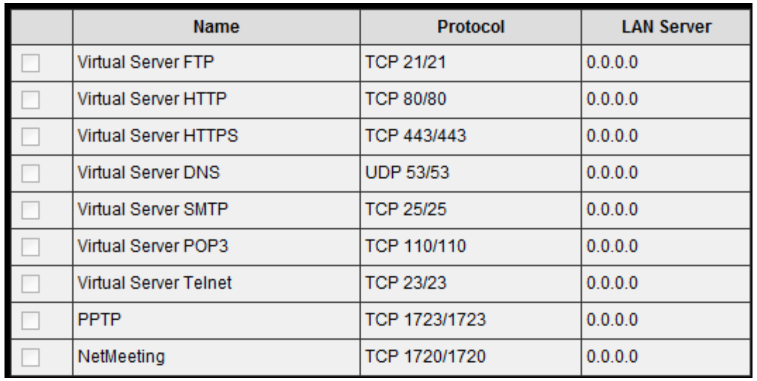
Virtual Server

Access > Virtual Server

Virtual Server (also called port forwarding) allows you to define specific ports (used or required by a specific application) and forward them to a single IP address (a computer or device) on your network. Using this feature is more secure compared to using DMZ (see "DMZ" on page 33) in which DMZ forwards all ports instead of only specific ports used by an application. An example would be forwarding a port to an network/IP camera (typically on TRENDnet IP cameras use HTTP TCP port 80 for remote access web requests) on your network for to allow remote access to it.

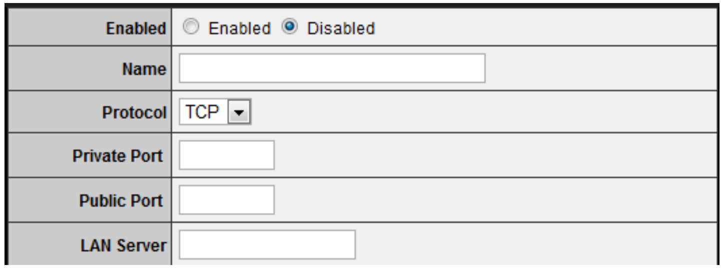
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Access**, and click on **Virtual Server**.



	Name	Protocol	LAN Server
□	Virtual Server FTP	TCP 21/21	0.0.0.0
□	Virtual Server HTTP	TCP 80/80	0.0.0.0
□	Virtual Server HTTPS	TCP 443/443	0.0.0.0
□	Virtual Server DNS	UDP 53/53	0.0.0.0
□	Virtual Server SMTP	TCP 25/25	0.0.0.0
□	Virtual Server POP3	TCP 110/110	0.0.0.0
□	Virtual Server Telnet	TCP 23/23	0.0.0.0
□	PPTP	TCP 1723/1723	0.0.0.0
□	NetMeeting	TCP 1720/1720	0.0.0.0

To simplify configuration, there is a list of commonly used pre-defined virtual server entries to modify, otherwise, you can choose to manually add a new virtual server.



Enabled	○ Enabled ● Disabled
Name	
Protocol	TCP ▾
Private Port	
Public Port	
LAN Server	

3. Review the virtual server settings.

- **Enabled** – Selecting **Enabled** turns on the virtual server and selecting **Disabled** turns off the virtual server.
- **Name** – Enter a name for the virtual server.
- **Protocol** – Select the protocol required for your device. **TCP**, **UDP**, or you can select **Both** to choose both TCP & UDP.

  Note: *Please refer to the device documentation to determine which ports and protocols are required.*

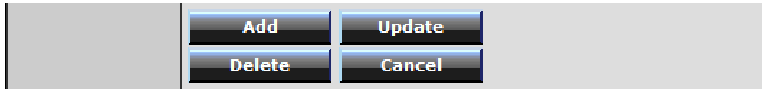
- **Private Port** – Enter the port number required by your device.
- **Public Port** – Enter the port number used to access the device from the Internet.

Note: *The* ***Public Port*** *can be assigned a different port number than the* ***Private Port*** *(also known as port redirection), however it is recommended to use the same port number for both settings. Please refer to the device documentation to determine which ports and protocols are required.*

- **LAN Server** – Enter the IP address of the device to forward the port. (e.g. *192.168.10.101).*

Note: *You should assign a static IP address to the device or use DHCP reservation to ensure the IP address of the device does not change.*

- **Add** – Saves a new virtual server entry.
- **Delete** – Removes an existing virtual server.
- **Update** – Modifies an existing virtual server.
- **Cancel** – Discard changes to an existing virtual server.



Example: To forward TCP port 80 to your network/IP camera

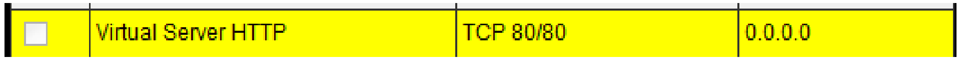
1. Make sure to configure your network/IP camera to use a static IP address or you can use the DHCP reservation feature (see "Set up DHCP reservation" on page 30).

Note: *You may need to reference your camera documentation on configuring a static IP address.*

2. Log into your router management page (see "Access your router management page" on page 26).

3. Click on **Access**, and click on **Virtual Server**.

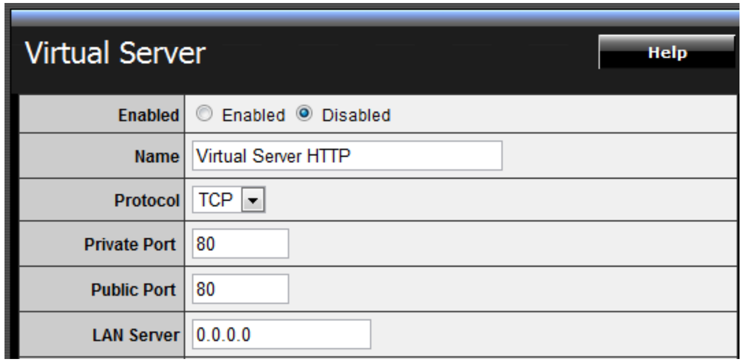
4. In the list below, click the pre-defined virtual server entry named **Virtual Server HTTP**.



□	Virtual Server HTTP	TCP 80/80	0.0.0.0

Note: *The selected item will be highlighted in yellow when selected.*

5. The fields will be populated with the selected pre-defined virtual server entry.



Enabled	○ Enabled ● Disabled
Name	Virtual Server HTTP
Protocol	TCP
Private Port	80
Public Port	80
LAN Server	0.0.0.0

6. Click **Enabled** to turn on this virtual server.

7. Next to **Name**, you can enter another name for the virtual server, otherwise, leave the default name.

8. Next to **Protocol**, make sure **TCP** is selected in the drop-down list.

9. The **Private Port** and **Public Port**, make sure port number **80** is configured for both settings.

10. Next to **LAN Server**, enter the IP address assigned to the camera. (e.g. *192.168.10.101*)

11. To save the changes, click **Update.**

Special Applications

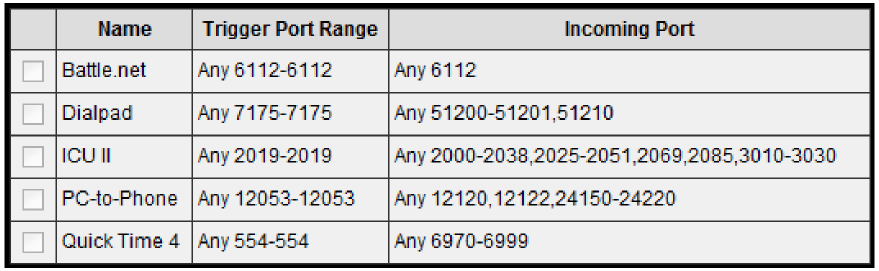
Access > Special AP

Special applications (also called port triggering) is typically used for online gaming applications or communication applications that require a range of ports or several ports to be dynamically opened on request to a device on your network. The router will wait for a request on a specific port or range of ports (or trigger port/port range) from a device on your network and once a request is detected by your router, the router will forward a single port or multiple ports (or incoming port/port range) to the device on your network. This feature is not typically used as most devices and routers currently use UPnP (Universal Plug and Play) to automatically configure your router to allow access for applications. See "Enable/disable UPnP on your router" on page 31.

Note: Please refer to the device documentation to determine if your device supports UPnP first, before configuring this feature.

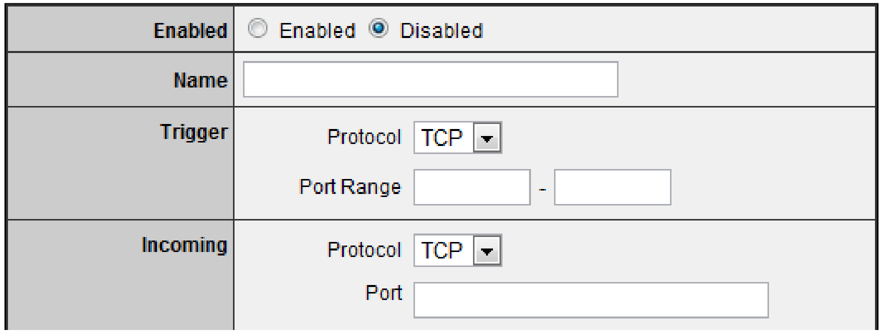
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Access**, and click on **Special AP**.



	Name	Trigger Port Range	Incoming Port
□	Battle.net	Any 6112-6112	Any 6112
□	Dialpad	Any 7175-7175	Any 51200-51201,51210
□	ICU II	Any 2019-2019	Any 2000-2038,2025-2051,2069,2085,3010-3030
□	PC-to-Phone	Any 12053-12053	Any 12120,12122,24150-24220
□	Quick Time 4	Any 554-554	Any 6970-6999

To simplify configuration, there is a list of commonly used pre-defined special application entries to modify, otherwise, you can choose to manually add a new special application.



Enabled ○ Enabled ● Disabled

Name

Trigger Protocol TCP Port Range -

Incoming Protocol TCP Port

3. Review the special application settings.

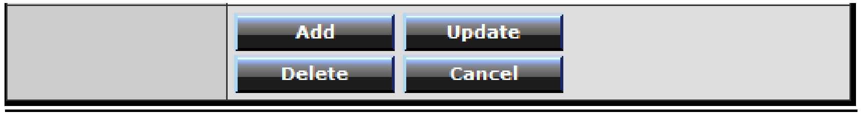
- **Enabled** – Selecting **Enabled** turns on the special application and selecting **Disabled** turns it off.
- **Name** – Enter a name for the special application.
- **Trigger** – Port or port range requested by the device.
    - **Protocol** – Select the protocol requested by the device. **TCP, UDP**, or you can select **Both** to choose both TCP and **UDP.**
    - **Port Range** – Enter the ports or port range requested by the device. (e.g. *554-554 or 6112-6112).*

***Note:** Please refer to the device documentation to determine which ports and protocols are required.*

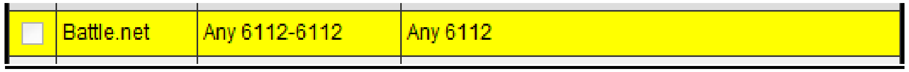
- **Incoming** – Port(s) forwarded to the device.
    - **Protocol** – Select the protocol to be forwarded to the device. **TCP, UDP**, or you can select **Both** to choose both TCP and **UDP.**
    - **Port Range** – Enter the ports or port range to be forwarded to the device. (e.g. *2000-2038,2069,2081,2200-2210).*

***Note:** Please refer to the device documentation to determine which ports and protocols are required.*

- **Add** – Saves a new special application.
-



To modify an existing application, click on the entry in the special applications list. When selected, the entry will be highlighted.



□	Battle.net	Any 6112-6112	Any 6112

- **Delete** – Removes an existing special application.
- **Update** – Modifies an existing special application.
- **Cancel** – Discard changes to an existing special application.

Change your router IP address

Main > LAN & DHCP Server

In most cases, you do not need to change your router IP address settings. Typically, the router IP address settings only needs to be changed, if you plan to use another router in your network with the same IP address settings, if you are connecting your router to an existing network that is already using the IP address settings your router is using, or if you are experiencing problems establishing VPN connections to your office network through your router.

Note: *If you are not encountering any issues or are not faced with one of the cases described above or similar, it is recommended to keep your router IP address settings as default.*

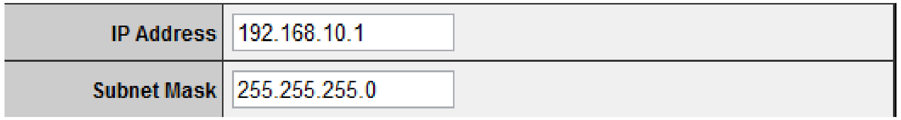
Default Router IP Address: 192.168.10.1

Default Router Network: 192.168.10.0 / 255.255.255.0

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Main**, and click on **LAN & DHCP Server**.

3. Enter the router IP address settings.



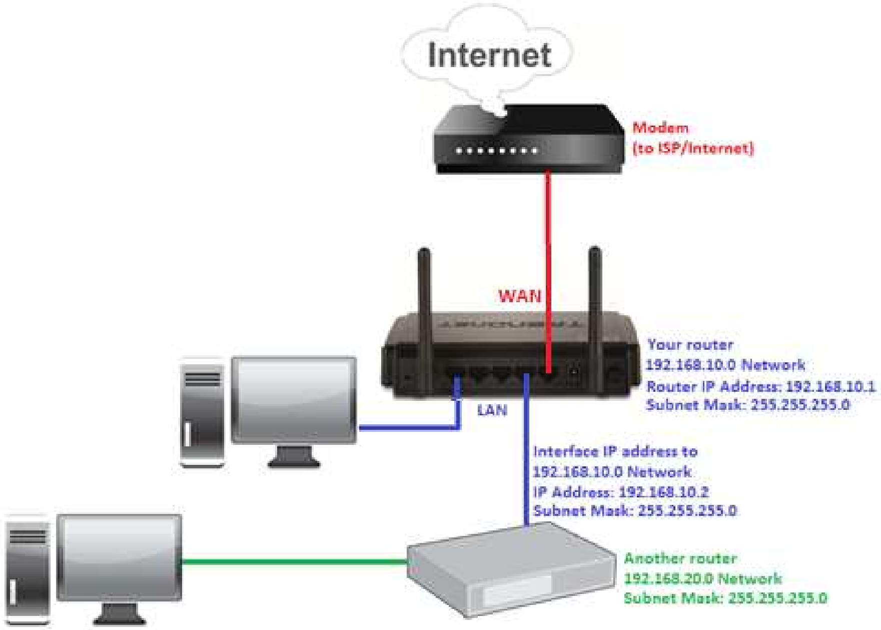
IP Address	192.168.10.1
Subnet Mask	255.255.255.0

Add static routes to your router

Routing > Static

You may want set up your router to route computers or devices on your network to other local networks through other routers. Generally, different networks can be determined by the IP addressing assigned to those networks. Generally speaking and for the case of an example, your network may have 192.168.10.x IP addressing and another network may have 192.168.20.x IP addressing and because the IP addressing of these two networks are different, they are separate networks. In order to communicate between the two separate networks, routing needs to be configured. Below is an example diagram where routing is needed for devices and computers on your network to access the other network.

Note: *Configuring this feature assumes that you have some general networking knowledge.*

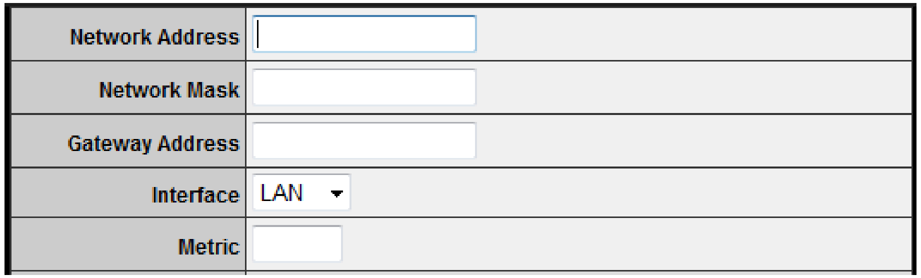


1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Routing**, and click on **Static**.

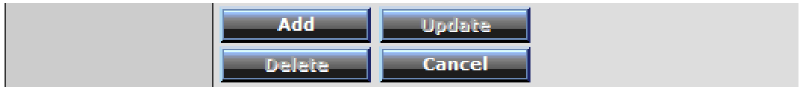
3. Review the static route settings.

- **Network Address** – Enter the IP network address of the destination network for the route.
  (e.g. *192.168.20.0*)
- **Network Mask** – Enter the subnet mask of the destination network for the route.
  (e.g. *255.255.255.0*)
- **Gateway Address** – Enter the gateway to the destination network for the route.
  (e.g. *192.168.10.2*)
- **Interface** – Click the drop-down list and select the Interface on your router where the route is active.
  (e.g. *LAN*)
- **Metric** – Enter the metric or priority of the route. The metric range is *1-15*, the lowest number *1* being the highest priority. (e.g. *1*)

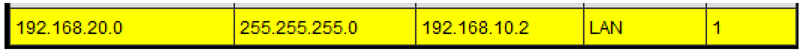


Network Address	
Network Mask	
Gateway Address	
Interface	LAN
Metric	

- **Add** – Saves the static route.



To modify an existing reservation, click on the entry in the static route list. When selected, the entry will be highlighted.



192.168.20.0	255.255.255.0	192.168.10.2	LAN	1

- **Update** – Saves changes to an existing static route.
- **Delete** – Removes an existing static route.
- **Cancel** – Discards changes to existing static route.

Enable dynamic routing on your router

Routing > Dynamic

You may want set up your router to route computers or devices on your network to other local networks through other routers. If other routers support dynamic routing such as RIP (Routing Information Protocol), you can enable this feature on your router to automatically learn the required routes to reach those networks. It is required that the same dynamic routing protocol and version is also enabled on the other routers in order your router and the other routers to exchange information about the network.

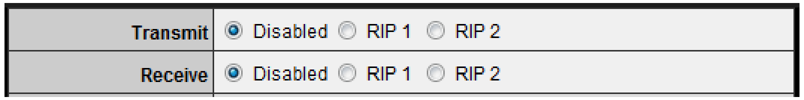
Note: *Configuring this feature assumes that you have some general networking knowledge.*

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Routing**, and click on **Dynamic**.

3. Select the appropriate dynamic routing protocol and version communicate with other routers.

- **Transmit** – Allows your router to send out network information to other routers so other routers can dynamically build routes to your network.
  - **Disabled** – Disable sending routing information from your router to other routers.
  - **RIP 1** - Sends out routing information to other routers using the RIP version 1 protocol.
  - **RIP 2** – Sends out routing information to other routers using the RIP version 2 protocol.
- **Receive** - Allows your router to receive network information from other router so your router can build routes to other networks.
  - **Disabled** – Disable receiving routing information from other routers to your router.
  - **RIP 1** - Receive routing information from other routers using the RIP version 1 protocol.
  - **RIP 2** – Receive routing information from other routers using the RIP version 2 protocol.



Transmit	● Disabled ○ RIP 1 ○ RIP 2
Receive	● Disabled ○ RIP 1 ○ RIP 2

4. Click **Apply** to save the changes or click **Cancel** to discard the changes.

Router Maintenance & Monitoring

Reset your router to factory defaults

Tools > Settings

You may want to reset your router to factory defaults if you are encountering difficulties with your router and have attempted all other troubleshooting. Before you reset your router to defaults, if possible, you should backup your router configuration first, see "Backup and restore your router configuration settings" on page 41.

There are two methods that can be used to reset your router to factory defaults.

- **Reset Button** – Located on the rear panel of your router, see "Product Hardware Features" on page 2 . Use this method if you are encountering difficulties with accessing your router management page.

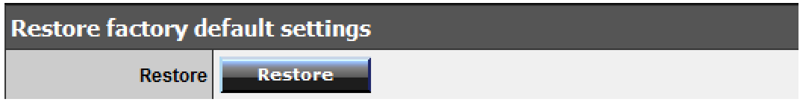
OR

- **Router Management Page**

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Tools** and click on **Settings**.

3. Under **Restore factory default settings**, and next to **Restore**, click **Restore**. If prompted, click **Yes** or **OK**.



Restore factory default settings

Router Default Settings

Administrator User Name	admin
Administrator Password	admin
Router IP Address	192.168.10.1
Router Subnet Mask	255.255.255.0
DHCP Server IP Range	192.168.10.101-192.168.199
Wireless	Enabled
SSID (wireless network name)	TRENDnet652
Wireless Security	Disabled
802.11 Mode	2.4GHz 802.11b/g/n mixed mode
Channel	Auto Channel

Backup and restore your router configuration settings

Tools > Settings

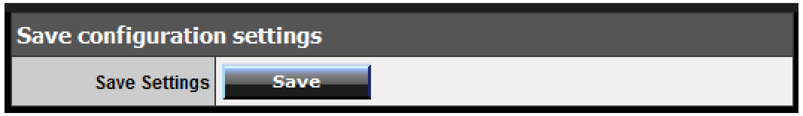
You may have added many customized settings to your router and in the case that you need to reset your router to default, all your customized settings would be lost and would require you to manually reconfigure all of your router settings instead of simply restoring from a backed up router configuration file.

To backup your router configuration:

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Tools** and click on **Settings**.

3. Under **Save Configuration Settings** and next to **Save Settings**, click **Save**.



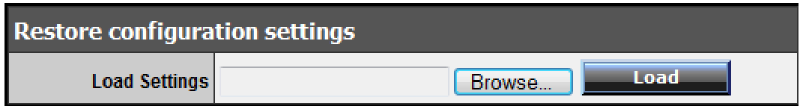
4. Depending on your web browser settings, you may be prompted to save a file (specify the location) or the file may be downloaded automatically to the web browser settings default download folder. (Default Filename: *cfg.bin)*

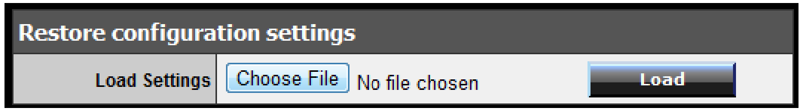
To restore your router configuration:

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Tools** and click on **Settings**.

3. Under **Restore Configuration Settings**, next to **Load Settings**, depending on your web browser, click on **Browse** or **Choose File**.





A separate file navigation window should open.

4. Navigate to the router configuration file to restore (Default Filename: *cfg.bin*).

5. Select the router configuration file to restore and click **Load**. (Default Filename: *cfg.bin*). If prompted, click **Yes** or **OK**.

6. Wait for the router to restore settings.

Upgrade your router firmware

Tools > Firmware

TRENDnet may periodically release firmware upgrades that may add features or fix problems associated with your TRENDnet router model and version. To check if there is a firmware upgrade available for your device, please check your TRENDnet model and version using the link below. http://www.trendnet.com/downloads/

In addition, it is also important for you to check the firmware version and compare it to the version your router is currently running. If there is a newer version available, also review the release notes to check if there were any new features you may want or if any problems were fixed that may have been experiencing.

1. If a firmware upgrade is available, download the firmware to your computer.

2. Unzip the file to a folder on your computer.

Please note the following:

- Do not interrupt the firmware upgrade process. Do not turn off the device or press the Reset button during the upgrade.
- If you are upgrade the firmware using a laptop computer, ensure that the laptop is connected to a power source or ensure that the battery is fully charged.
- Disable sleep mode on your computer as this may interrupt the firmware upgrade process.
- Do not upgrade the firmware using a wireless connection, only using a wired network connection.
- Any interruptions during the firmware upgrade process may permanently damage your router.

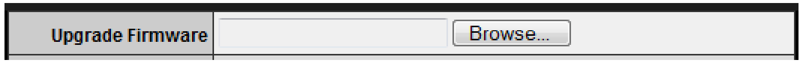
1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Status** and click on **Device Information** to check your router's current firmware version at the top of the page.

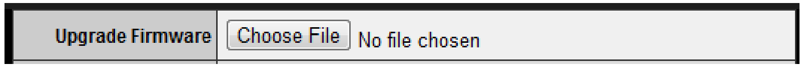
Firmware Version:

3. Click on **Tools** and click on **Firmware**.

4. Depending on your web browser, next to **Upgrade Firmware**, click **Browse** or **Choose File**.



Upgrade Firmware



Upgrade Firmware

5. Navigate to the folder on your computer where the unzipped firmware file (*.bin*) is located and select it.

6. Click **Upgrade**. If prompted, click **Yes** or **OK**.

Restart your router

Tools > Restart

You may want to restart your router if you are encountering difficulties with your router and have attempted all other troubleshooting.

There are two methods that can be used to restart your router.

- **Disconnect the power adapter** – Located on the rear panel of your router, see "Product Hardware Features" on page 2 .

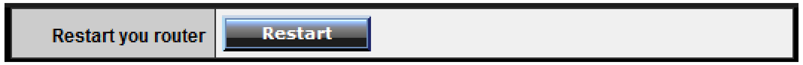
  Use this method if you are encountering difficulties with accessing your router management page. This is also known as a hard reboot or power cycle.

  Disconnect the power adapter from the power port of your router for 10 seconds, then, plug the power adapter back into the power of your router. Wait for your router Status light to begin flashing.

  OR
- **Router Management Page** – This is also known as a soft reboot or restart.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Tools** and click on **Restart**. If prompted, click **Yes** or **OK**.



Check connectivity using the router management page

Tools > Ping Test

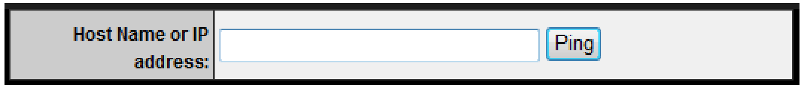
For troubleshooting purposes, you may want to check your router connectivity using the ping (also known as a network connectivity test) test tool on your router management page.

1. Log into your router management page (see "Access your router management page" on page 26).

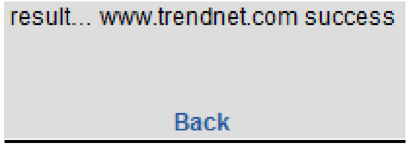
2. Click on **Tools** and click on **Ping Test**.

3. Enter in the IP address (e.g. *192.168.10.101*) or host name (e.g. www.*trendnet.com*) to test.

4. Click **Ping**.



5. You will receive a *success* or *fail* result message of the address you entered providing a basic indicating of the router's connectivity to the Internet or devices that are connected to your network. Click **Back** to bring you back to the **Ping Test** page.



result... www.trendnet.com success

Check the router system information

Status > Device Information

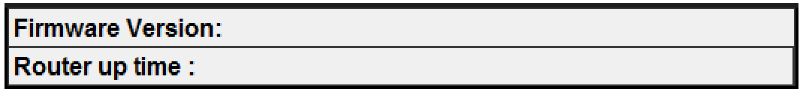
You may want to check the system information of your router such as WAN (Internet) connectivity, wireless and wired network settings, router MAC address, and firmware version.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Status** and click on **Device Information**.

3. Review the device information.

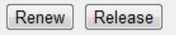
- **Firmware Version** – The current firmware version your router is running.
- **Router Up Time** – The duration your router has been running continuously without a restart/power cycle (hard or soft reboot) or reset.



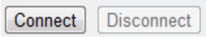
Firmware Version:	
Router up time :	

WAN (Internet) Information

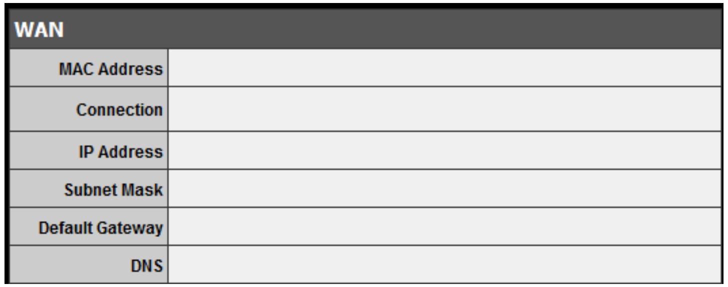
- **MAC Address** – The current MAC address used by your router's WAN port or interface configuration.
- **Connection** – Displays the current WAN (Internet) connection status. When using DHCP Client (or Dynamic IP address) Internet connection type, you will provide the option to Release and Renew your IP address settings.



Other Internet connection types such as PPPoE will and the mode set will provide the option to Connect and Disconnect.



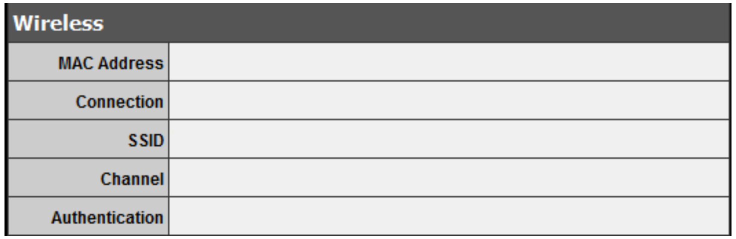
- **IP Address** – The current IP address assigned to your router WAN port or interface configuration.
- **Subnet Mask** - The current subnet mask assigned to your router WAN port or interface configuration.
- **Default Gateway** – The current gateway assigned to your router WAN port or interface configuration.
- **DNS (Domain Name System)** – The current DNS address(es) assigned to your router port or interface configuration.



WAN	
MAC Address	
Connection	
IP Address	
Subnet Mask	
Default Gateway	
DNS	

Wireless Information

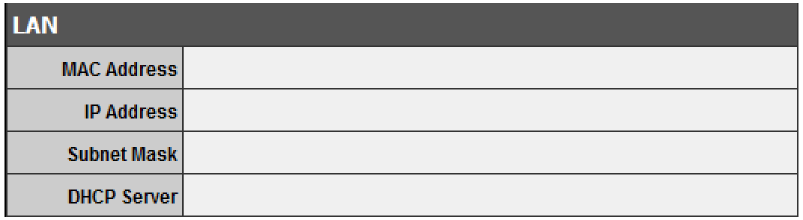
- **MAC Address** – The current MAC address of your router's wireless or interface configuration.
- **Connection** – Displays the status if your wireless functionality on your router is enabled or disabled.
- **SSID** – Displays the current wireless network name assigned to your router.
- **Channel** – Displays the current wireless channel your router is operating.
- **Authentication** – Displays the current wireless security configured on your router.



Wireless	
MAC Address	
Connection	
SSID	
Channel	
Authentication	

Wired LAN Information

- **MAC Address** – The current MAC address of your router's wired LAN or interface configuration.
- **IP Address** - Displays your router's current IP address.
- **Subnet Mask** – Displays your router's current subnet mask.
- **DHCP Server** - Display your router's DHCP server status, enabled or disabled, and provides a link to the DHCP client listing. DHCP Table



LAN	
MAC Address	
IP Address	
Subnet Mask	
DHCP Server	

View your router log

Status > Log

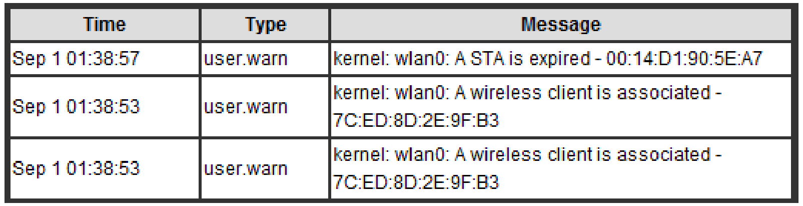
Your router log can be used to obtain activity information on the functionality of your router or for troubleshooting purposes.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Status** and click on **Log**.

3. Review the device log information.

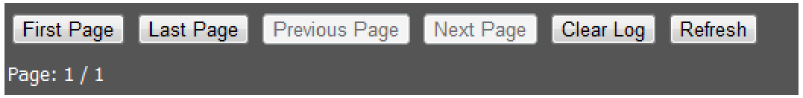
- **Time** – Displays the time of the log entry. If the time is inaccurate, make sure to set the router date and time correctly. (See "Set your router date and time" on page 27)
- **Type** – Displays a notification regarding the type of log.
- **Message** – Displays the log message.



Time	Type	Message
Sep 1 01:38:57	user.warn	kernel: wlan0: A STA is expired - 00:14:D1:90:5E:A7
Sep 1 01:38:53	user.warn	kernel: wlan0: A wireless client is associated - 7C:ED:8D:2E:9F:B3
Sep 1 01:38:53	user.warn	kernel: wlan0: A wireless client is associated - 7C:ED:8D:2E:9F:B3

Router Log Navigation

- **First Page** – Displays the first page of the log.
- **Last Page** – Displays the last page of the log.
- **Previous Page** – Display the log page previous to the current. The **Page: 1/1** will display the current page.
- **Next Page** – Displays the log page next to the current.
- **Clear Log** - Clears all logging
- **Refresh** - The **Page: 1/1** will display the current page.



Configure your router log

Status > Log Setting

You may want send your router log to your e-mail address or to an external log server (also known as Syslog server) so you can check it periodically while away from home. You may also want to only see specific categories of logging.

Send router logs to your e-mail address

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Status** and click on **Log Setting**.

3. Review the e-mail log settings.

- **SMTP Authentication** – Set this option to **Enabled** if your e-mail service requires authentication. If not, leave this setting to **Disabled**.

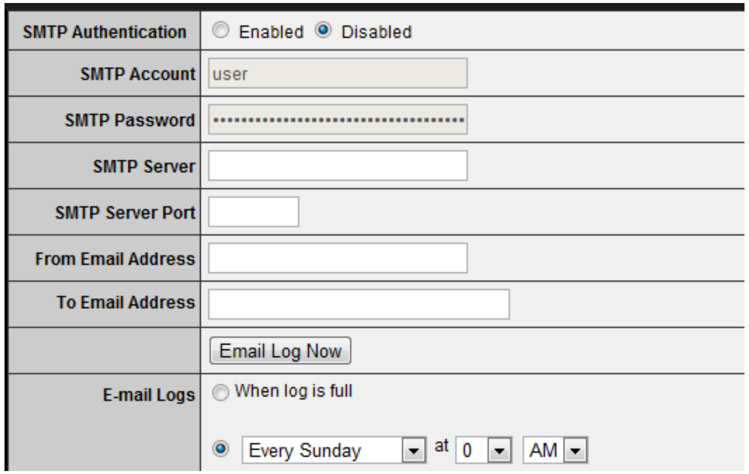
  Note: If you unsure of this setting check with your e-mail service provider if authentication is required.
- **SMTP Account** – Enter your account user name for your e-mail service.
- **SMTP Password** – Enter your password for your e-mail service.
- **SMTP Server** – Enter the IP address (e.g. *10.10.10.10*) or domain name (e.g. *mail.trendnet.com*) of your e-mail server.
- **SMTP Server Port** – Enter the port used by your e-mail service. (e.g. *Default SMTP Server Port: 25*)
- **From Email Address** – Enter a sender e-mail address. (e.g. *router@trendnet.com)*

  ***Note:** This does not need to be real e-mail address, only used for identification purposes when checking your e-mail.*

- **To Email Address** – Enter your e-mail address.

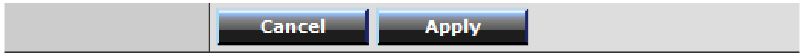
- **Email Log Now** – Click this option to send an e-mail with the current router log using your email settings.

- **Email Logs** – Select when you want the router log to be e-mailed.
  - **When log is full** – The router log will be e-mailed to your e-mail address when router internal log is full.
  - Click the drop-down list and configure to e-mail logs according to a set schedule. Once on a specific day of the week or once every day.



SMTP Authentication	○ Enabled ● Disabled
SMTP Account	user
SMTP Password	••••••••••••••••••••••••••••••••
SMTP Server	
SMTP Server Port	
From Email Address	
To Email Address	
	Email Log Now
E-mail Logs	○ When log is full ● Every Sunday at 0 AM

4. To save changes, click **Apply**.

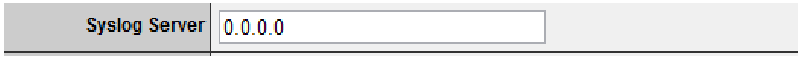


Send router logs to an external log server

1. Log into your router management page (see "Access your router management page" on page 26).

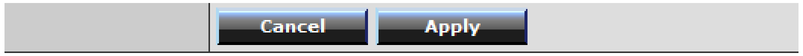
2. Click on **Status** and click on **Log Setting**.

3. Next to **Syslog Server**, enter the IP address of the external log server to send router logging.



Syslog Server	0.0.0.0

4. To save changes, click **Apply**.

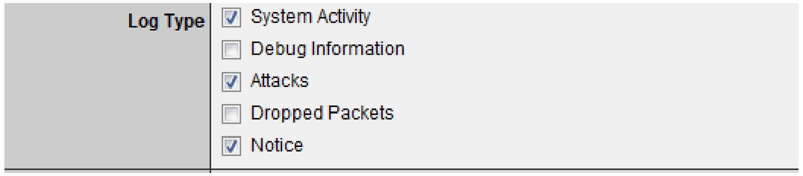


Set the types or categories to include in logging

1. Log into your router management page (see "Access your router management page" on page 26).

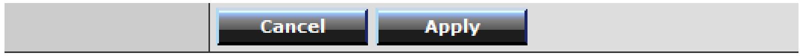
2. Click on **Status** and click on **Log Setting**.

3. Next to **Log Type**, check the types or categories to include in logging.



Log Type
☑ System Activity
□ Debug Information
☑ Attacks
□ Dropped Packets
☑ Notice

4. To save changes, click **Apply**.



View your router packet statistics

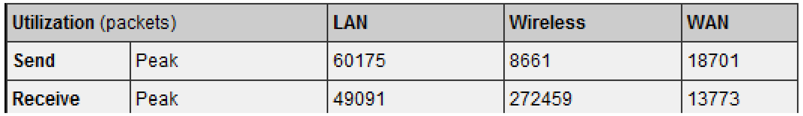
Status > Statistics

You may want to check your router packet statistics for informational purposes only.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Status** and click on **Statistic**.

3. The table displays the amount of packets sent and received on your router's wired LAN, wireless, and WAN (Internet).



Utilization (packets)		**LAN**	**Wireless**	**WAN**
Send	Peak	60175	8661	18701
Receive	Peak	49091	272459	13773

View wireless devices connected to your router

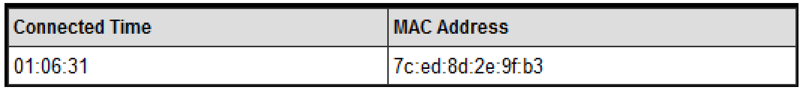
Status > Wireless

You may want to check the wireless devices connected to your router.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Status** and click on **Wireless**.

3. The table displays the amount time each wireless device has been connected and the MAC address of each wireless device.



Connected Time	MAC Address
01:06:31	7c:ed:8d:2e:9f:b3

Capture packets using the router management page

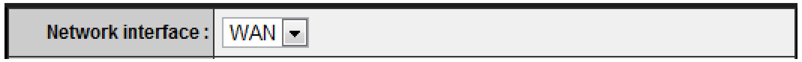
Management > Capture Packets

You may want to use the router management page to capture data packets for further troubleshooting and analysis. Packet captures allow you to see what type of data and information is inside each packet. You will need a packet capture software application to be able to open and view the packet capture files downloaded from the router.

1. Log into your router management page (see "Access your router management page" on page 26).

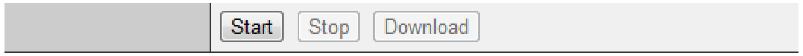
2. Click on **Management** and click on **Capture Packets**.

3. Click on the **Network Interface** drop-down list and select which interface you would like to capture data packets, **LAN** or **WAN**.



Network interface : WAN

4. Review the options for capturing packets.



- **Start** – Starts the packet capture.
- **Stop** - Stops the packet capture
- **Download** – Download the packet capture file. (*.pcap file)*

Enable SNMP on your router

Management > SNMP

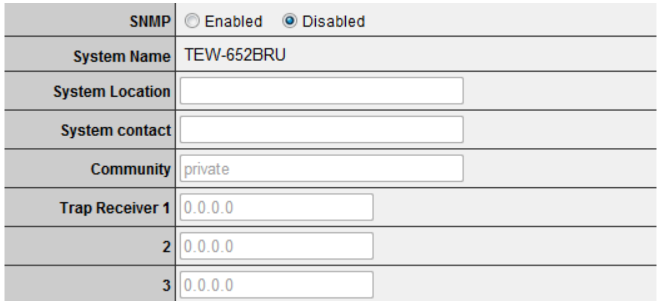
SNMP (Simple Network Management Protocol) is a network management protocol used to monitor (read) and/or manage (write) multiple network devices on a network. This preconfigured external SNMP server.

1. Log into your router management page (see "Access your router management page" on page 26).

2. Click on **Management** and click on **SNMP**.

3. Review the options for SNMP.

- **SNMP** – Select **Enabled** to enable SNMP.
- **System Location** – Enter the location. (optional)
- **System Contact** – Enter the contact. (optional)
- **Community** – Enter the community to match the settings with the external SNMP server.
- **Trap Receiver 1-3** – Enter the IP address of the external SNMP trap receiver. You can enter up to three receivers. (e.g. *192.168.10.250*)



SNMP	○ Enabled ● Disabled
System Name	TEW-652BRU
System Location	
System contact	
Community	private
Trap Receiver 1	0.0.0.0
2	0.0.0.0
3	0.0.0.0

4. To save changes, click **Apply**.

USB Storage and Printer Sharing

The USB Control Center Utility is used to connect your computer to USB devices that are connected to your network through your router. The software utility allows you to use USB devices over your network as if they were connected directly to your computer.

Note: *The USB Control Center Utility is required to be installed on every computer that will be accessing the USB devices connected to your network. The utility will only allow one computer to connect to a USB device at any given time.*

Two computers cannot connect to the same USB device at the same time, one computer must disconnect from the USB device using the utility in order to make it available for another computer to connect to it.

USB Port Software Utility Requirements

Supported Operating Systems	CPU	Memory
Windows 7 (32/64-bit)	1GHz or above	1GB RAM or above
Windows Vista (32/64-bit)	800MHz or above	512MB RAM or above
Windows XP (32/64-bit)	300MHz or above	256MB RAM or above
Mac OS X (10.7)	1.8GHz or above	2GB RAM or above
Mac OS X (10.6)	1.06GHz or above	1GB RAM or above
Mac OS X (10.5)	867MHz or above	512MB RAM or above
Mac OS X (10.4)	333MHz or above	256MB RAM or above

Software Installation

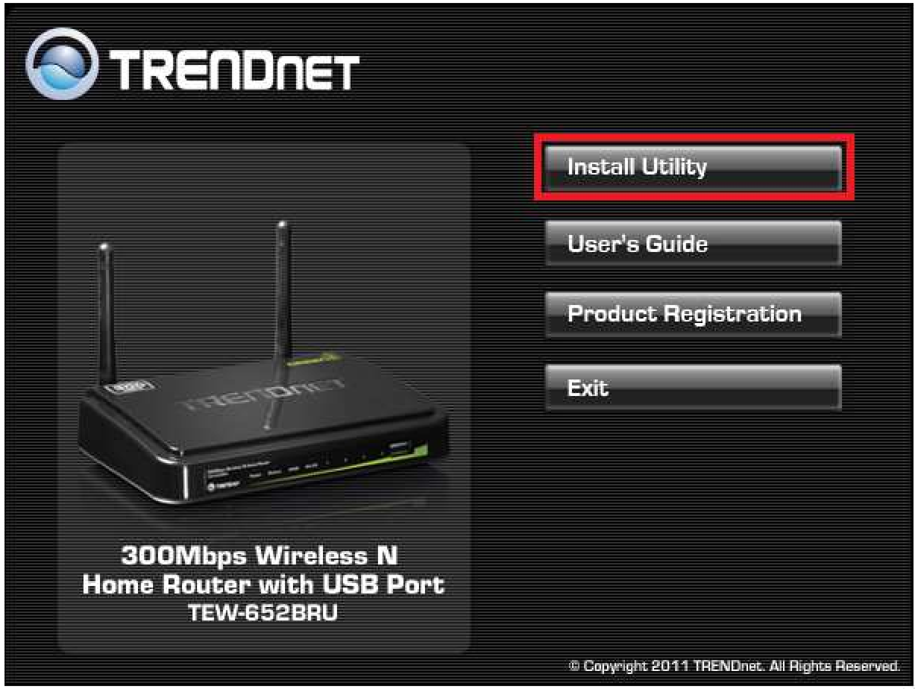
Windows OS

1. Insert the included CD-ROM into your computer's CD-ROM drive.

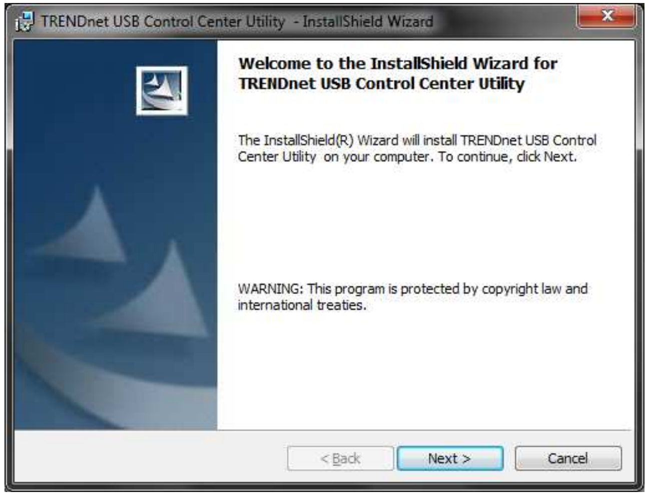
2. At the CD Autorun Prompt window, click *Run Autorun.exe*

Note: *If the Autorun prompt does not appear automatically, open the CD contents and double-click Autorun.exe.*

3. At the CD-ROM menu window, click **Install Utility**.



4. At the Installation Wizard window, click **Next.**



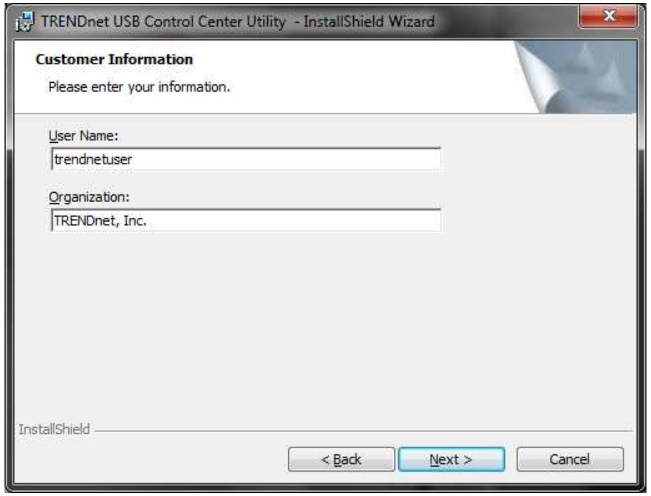
TRENDnet USB Control Center Utility - InstallShield Wizard

Welcome to the InstallShield Wizard for TRENDnet USB Control Center Utility

The InstallShield(R) Wizard will install TRENDnet USB Control Center Utility on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

5. At the Customer Information window, enter your information and click **Next**.



TRENDnet USB Control Center Utility - InstallShield Wizard

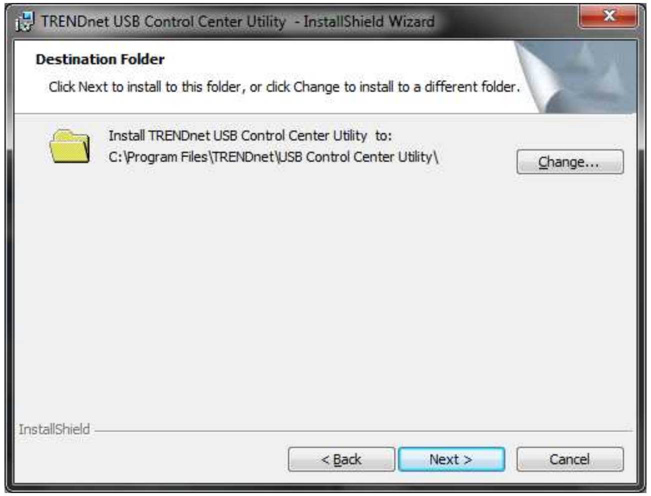
Customer Information

Please enter your information.

User Name: trendnetuser

Organization: TRENDnet, Inc.

6. At the prompt, you can choose another destination folder to install the program or to install in the default location, click **Next.**



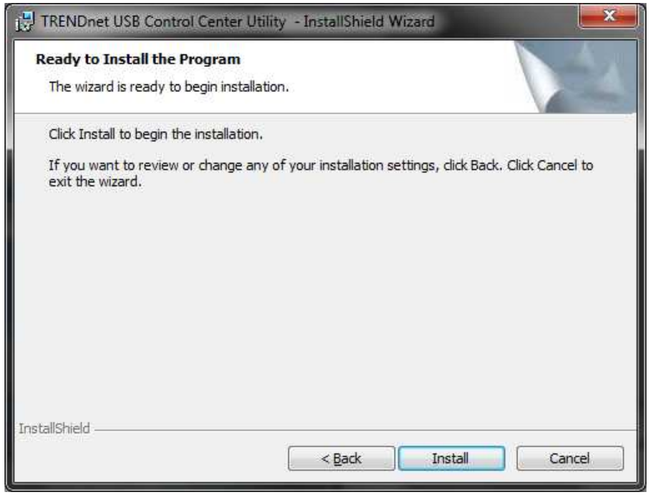
TRENDnet USB Control Center Utility - InstallShield Wizard

Destination Folder

Click Next to install to this folder, or click Change to install to a different folder.

Install TRENDnet USB Control Center Utility to:
C:\Program Files\TRENDnet\USB Control Center Utility\

7. Click **Install** to start the software installation.



TRENDnet USB Control Center Utility - InstallShield Wizard

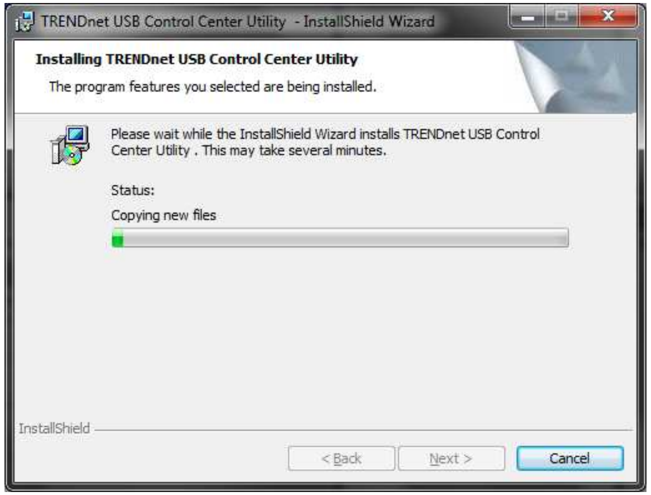
Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

8. Wait for the installation status to complete.



TRENDnet USB Control Center Utility - InstallShield Wizard

Installing TRENDnet USB Control Center Utility

The program features you selected are being installed.

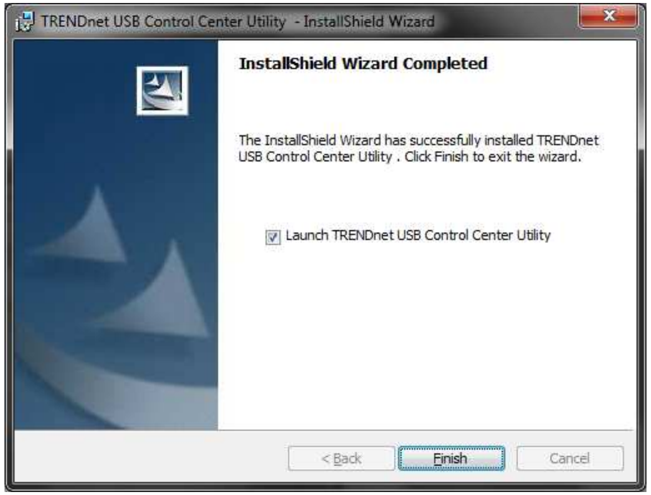
Please wait while the InstallShield Wizard installs TRENDnet USB Control Center Utility . This may take several minutes.

Status:

Copying new files

9. At the completion window, click **Finish**.

Note: *If you leave the "Launch TRENDnet USB Control Center Utility" option checked, this will automatically start the utility after you click "Finish". If the option is unchecked, it will not start automatically and you will need to manually start the utility.*



TRENDnet USB Control Center Utility - InstallShield Wizard

InstallShield Wizard Completed

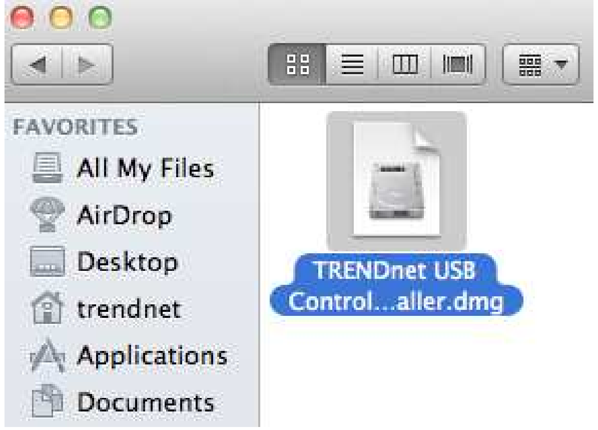
The InstallShield Wizard has successfully installed TRENDnet USB Control Center Utility . Click Finish to exit the wizard.

☑ Launch TRENDnet USB Control Center Utility

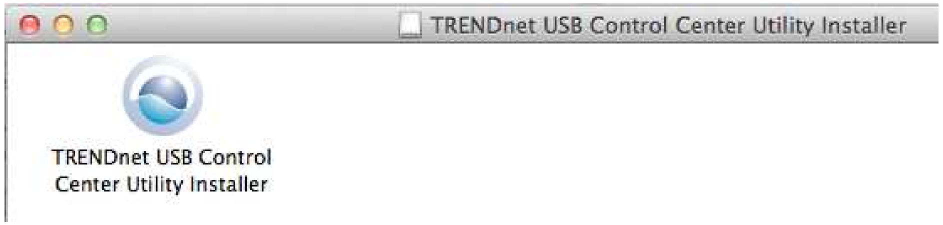
MAC OS X

1. Insert the included CD-ROM into your computer's CD-ROM drive.

2. Open the CD contents and locate the "TRENDnet USB Control Center Utility Installer" (.dmg) file. Double-click the file.

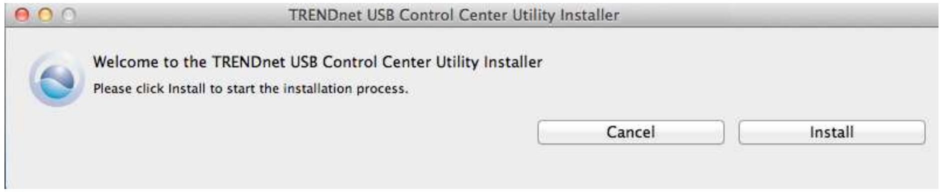


3. Double-click the file in the window.



TRENDnet USB Control Center Utility Installer
TRENDnet USB Control Center Utility Installer

4. You will be prompted to install the utility. Click **Install** to start the installation.

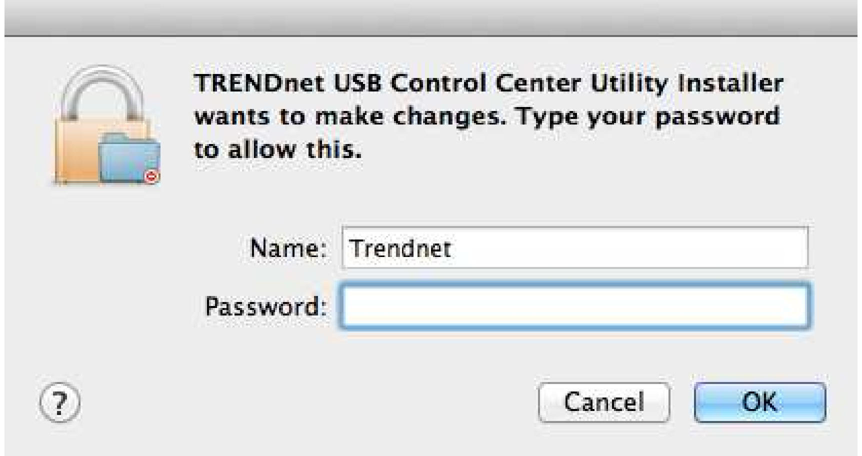


TRENDnet USB Control Center Utility Installer

Welcome to the TRENDnet USB Control Center Utility Installer

Please click Install to start the installation process.

5. You will be prompted for your password to allow the installation. Enter your password and click **OK**.

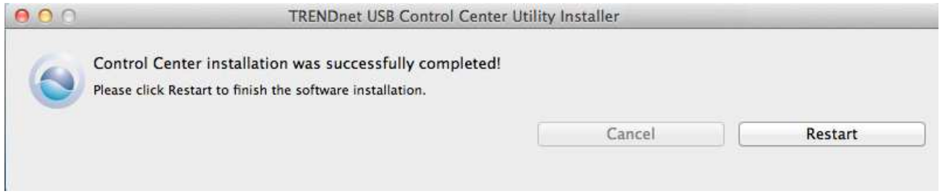


TRENDnet USB Control Center Utility Installer wants to make changes. Type your password to allow this.

Name: Trendnet

Password:

6. Once the installation is completed. Click **Restart** to restart your computer.



TRENDnet USB Control Center Utility Installer

Control Center installation was successfully completed!

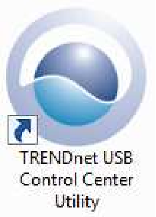
Please click Restart to finish the software installation.

Using the Utility

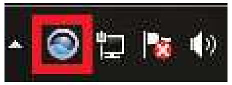
Windows OS – Launching the Utility

Upon completing the software installation, a desktop shortcut is automatically created.

You double click the icon to start the utility or open the utility if it is already running.



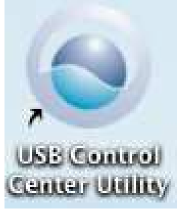
If the utility is already running and you attempt to close the window, it will continue to run in the background and you will find the icon in your notification area if the utility is still running. To close and exit the utility and exit the application, you can right-click the notification icon and select **Exit** or click **System > Exit** in the utility main window, however, it is recommended to keep this utility running in the background.



MAC OS X – Launching the Utility

Upon completing the software installation, a desktop shortcut is automatically created.

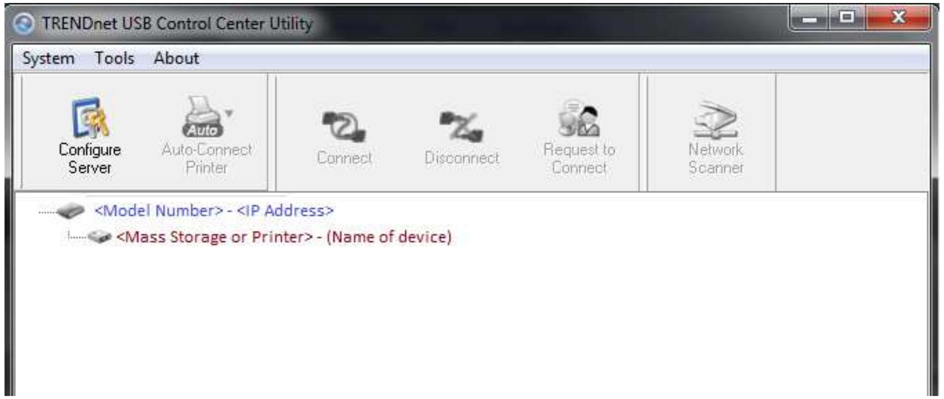
Double-click the icon to start the utility. Closing the utility will exit the application.



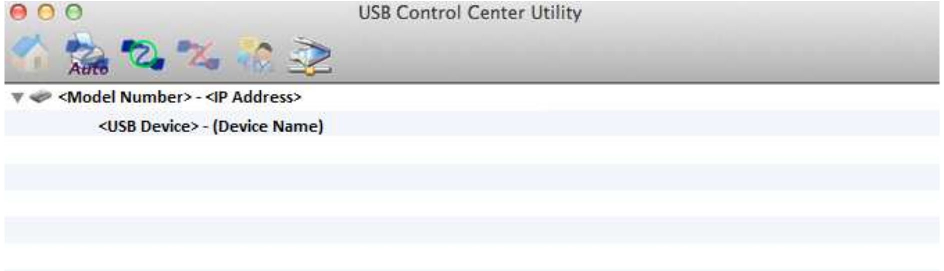
In the utility window, you will see the model name and IP address of your router listed. Once the USB devices are connected to the router USB port, they will be listed under the model name and IP address of your router.

Note: *Please refer to "Product Hardware Features" on page 2 for location of USB port.*

Windows OS - Utility Main Window

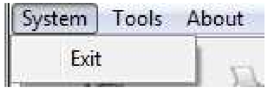

TRENDnet USB Control Center Utility
System
Tools
About
Configure Server
Auto-Connect Printer
Connect
Disconnect
Request to Connect
Network Scanner
<Model Number> - <IP Address>
<Mass Storage or Printer> - (Name of device)

MAC OS X – Utility Main Window

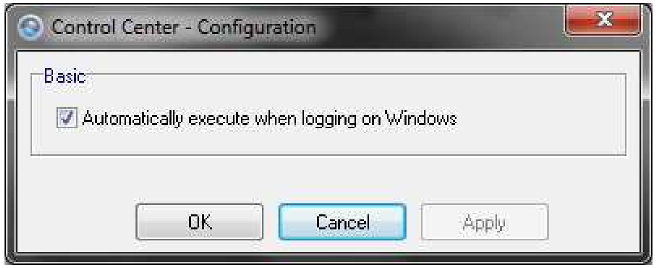

USB Control Center Utility
Auto
<Model Number> - <IP Address>
<USB Device> - (Device Name)

Menu Items *(Windows Only)*

- **System** - Clicking **Exit** will close the utility and exit the application.

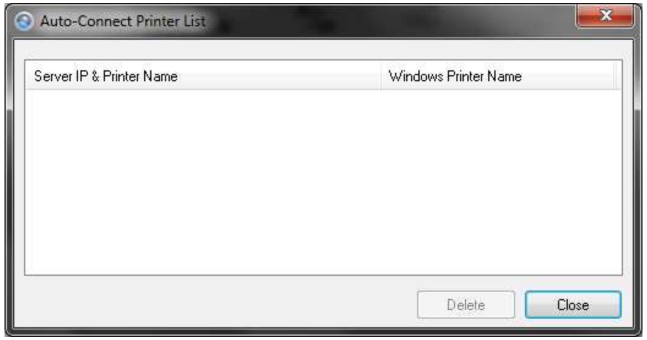


- **Tools *(Windows Only)***
  - **Configuration** – Checking the option **Automatically execute when logging on Windows** will automatically start the utility when you log on. Unchecking the option will disable the utility from automatically starting when logging on.



☑ Automatically execute when logging on Windows

  - **Auto-Connect Printer List** – Provides a list of printers installed on your computer. Select the printer you would like to assign to the Auto-Connect printer list. If you would like to delete printers from this listing, select the printer in the list and click **Delete**. Click **Close** to close the window.



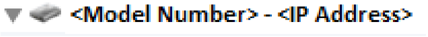
- **About *(Windows Only)***
  - **About –** Displays the software/driver version and support contact information.

By selecting this entry in the list,

Windows OS

<Model Number> - <IP Address>

MAC OS X



<Model Number> - <IP Address>

Clicking the **Configure Server** button will open your router management page in your web browser.

Windows OS **MAC OS X**

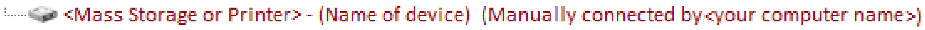
To connect your computer to a USB device, select the USB device in the list, then click the **Connect** button to connect your computer to the USB device.

Note: *The utility will only allow one computer to connect to one USB device at any given time, therefore, a computer must disconnect from the USB device first before another computer can connect to it.*

Windows OS **MAC OS X**

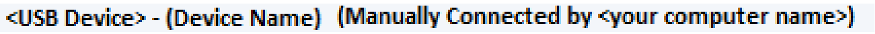
To verify if you are connected to the USB device, a message will appear next to the USB device displaying a message that the USB device is "Manually connected by <your computer name>".

Windows OS



<Mass Storage or Printer> - (Name of device) (Manually connected by<your computer name>)

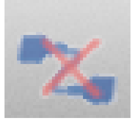
MAC OS X



<USB Device> - (Device Name) (Manually Connected by <your computer name>)

To disconnect your computer from a USB device, select the USB device in the list, then click the **Disconnect** button to disconnect your computer to the USB storage device or printer.

Note: *The utility will only allow one computer to connect to one USB device at any given time, therefore, a computer must disconnect from the USB device first before another computer can connect to it.*



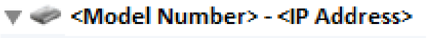
Windows OS **MAC OS X**

To verify if you disconnected from the USB device, the status message next to the message will not show any status message.

Windows OS

<Mass Storage or Printer> - (Name of device)

MAC OS X

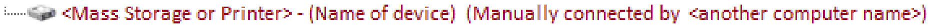


<Model Number> - <IP Address>

If another computer is currently connected to the USB device you are trying to connect your computer to, you will not be able to connect to it. You can send a request to connect to the computer that is currently connected that is currently connected to the USB device.

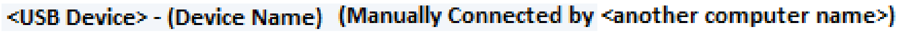
To verify if another computer is connected to the device, a message will appear next to the USB device displaying a message that the USB device is "Manually connected by <another computer name>".

Windows OS



<Mass Storage or Printer> - (Name of device) (Manually connected by <another computer name>)

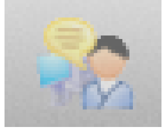
MAC OS X



<USB Device> - (Device Name) (Manually Connected by <another computer name>)

If a USB device is currently being used by another computer, click the **Request to Connect** button to send a request to the computer that is currently connected to the USB device. The computer that is currently connected to USB device will be prompted to "Accept" or "Reject" your connection request.

Windows OS



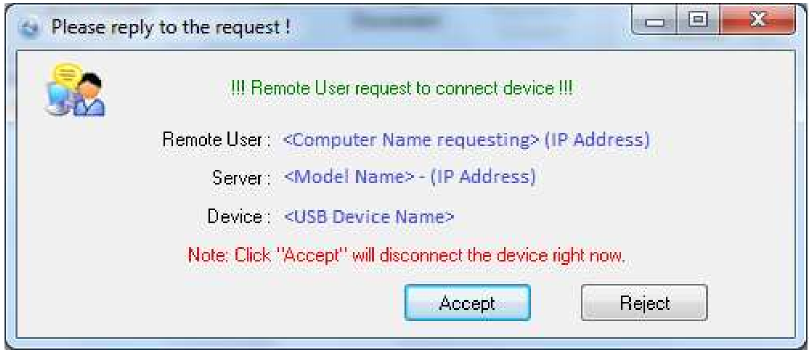
MAC OS X

Sending a Request to Connect

Windows OS

To send t a request to connect to a USB device, click the **Request to Connect** button.

The remote computer will receive the request message below.



Please reply to the request !

!!! Remote User request to connect device !!!

Remote User : <Computer Name requesting> (IP Address)

Server : <Model Name> - (IP Address)

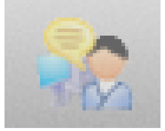
Device : <USB Device Name>

Note: Click "Accept" will disconnect the device right now.

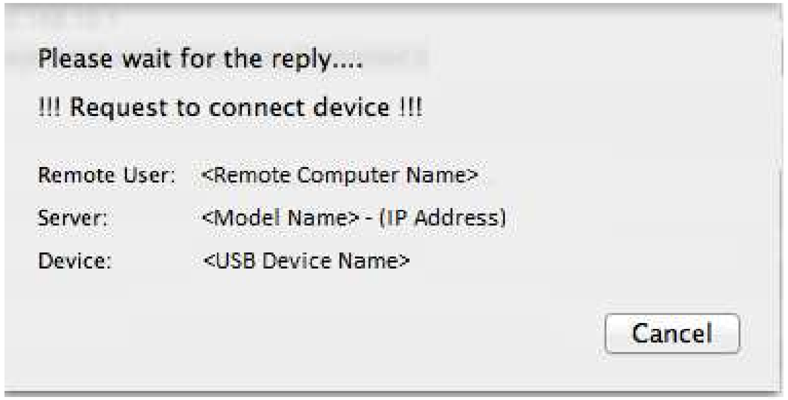
- **Accept –** Clicking this option will disconnect your computer from the device and allow the requesting computer to connect to the USB device.
- **Reject** – Clicking this option will disregard the request and your computer will not be able to connect to the USB

MAC OS X

To send t a request to connect to a USB device, click the **Request to Connect** button.



The local computer sending the request will show the status message below.



Please wait for the reply....

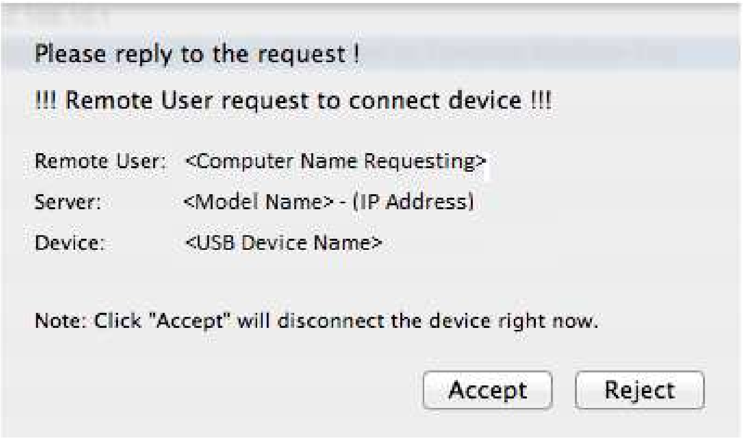
!!! Request to connect device !!!

Remote User: <Remote Computer Name>

Server: <Model Name> - (IP Address)

Device: <USB Device Name>

The remote computer will receive the request message below.



Please reply to the request !

!!! Remote User request to connect device !!!

Remote User: <Computer Name Requesting>

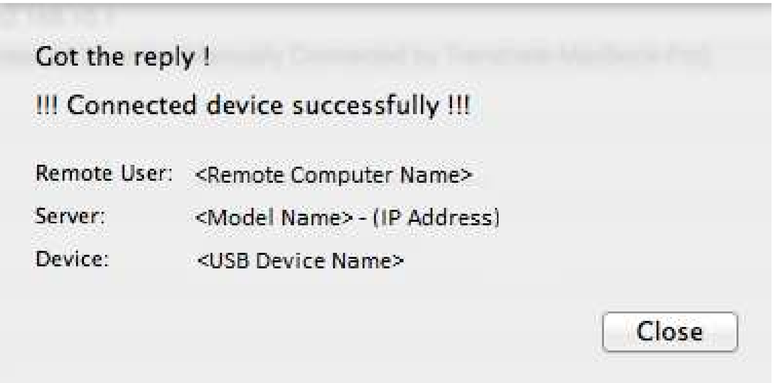
Server: <Model Name> - (IP Address)

Device: <USB Device Name>

Note: Click "Accept" will disconnect the device right now.

- **Accept –** Clicking this option will disconnect your computer from the device and allow the requesting computer to connect to the device.

If the remote computer accepts the request, the local computer will display the message below. Click **Close** to close the message.



Got the reply !

!!! Connected device successfully !!!

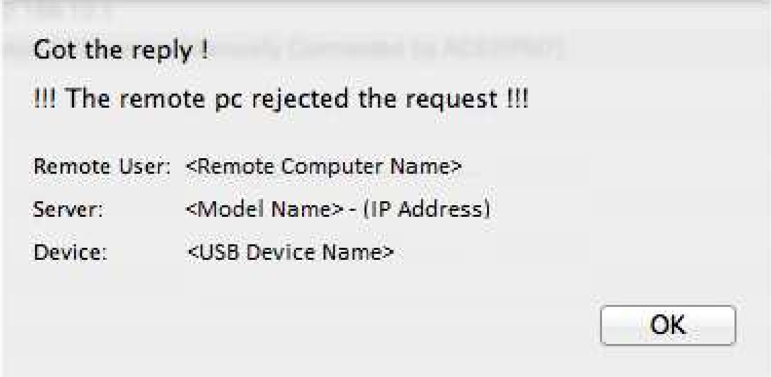
Remote User: <Remote Computer Name>

Server: <Model Name> - (IP Address)

Device: <USB Device Name>

- **Reject** – Clicking this option will disregard the request.

If the remote computer rejects the request, the local computer will display the message below. Click **OK** to close the message.



Got the reply !

!!! The remote pc rejected the request !!!

Remote User: <Remote Computer Name>

Server: <Model Name> - (IP Address)

Device: <USB Device Name>

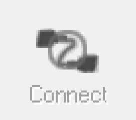
Connect to a Printer

Note: *This function applies to stand-alone USB printers or USB multi-function printers. It is required that the printer drivers are installed before your computer is able to print. Please ensure the printer drivers are installed. If the printer drivers are not installed, please refer to your printer manufacturer website or documentation on where to download and how to install the printer drivers. Before installing the printer drivers, connect your computer to the printer using the USB utility first. Some printers may require that the printer is directly connected to the computer in order to complete the driver installation.*

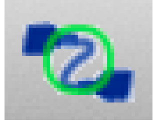
Once the printer drivers are installed properly on your computer,

1. Connect the USB cable from the printer to the USB 2.0 port on the router. Select the printer listed in the utility.

2. Click **Connect** to connect your computer to the printer.



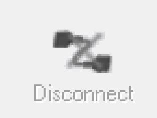
Windows OS



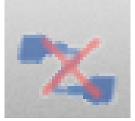
MAC OS X

3. Once your computer is connected, you can send print jobs to the printer.

4. After you have finished printing, click **Disconnect**, to make the printer available to other computers on your network that use the printer, or, you can use the Auto-Connect Printer Feature.



Windows OS



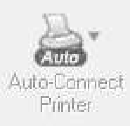
MAC OS X

Auto-Connect Printer Feature

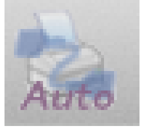
When a USB printer is connected and selected in the main window, clicking this option allows you to enable/disable the auto connect feature to a selected printer in the Auto-Connect printer list. When your computer attempts to print, the Auto-Connect feature will automatically connect your computer to the set Auto-Connect printer assigned in the utility. Once the print job from your computer is completed, it will automatically disconnect to make the printer available to other computers on your network.

Note: *It is recommended to enable this feature on all computers that will need to connect to the USB printer. Enabling the Auto-Connect Printer feature will avoid the complexity of having to manually connect and disconnect from the printer for each computer when multiple computers are sending print jobs to the USB printer.*

1. Click **Auto-Connect Printer**.



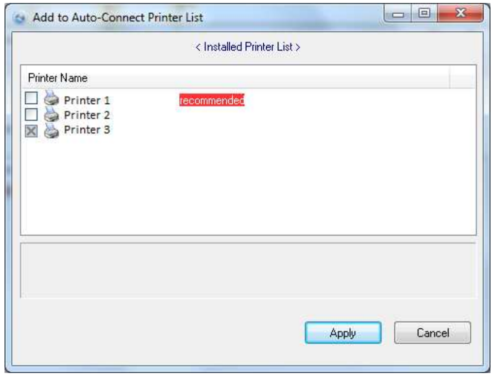
Windows OS



MAC OS X

2. Select the assigned printer to use as the auto connect printer by checking the box.

3. When you are finished, click **Apply**.



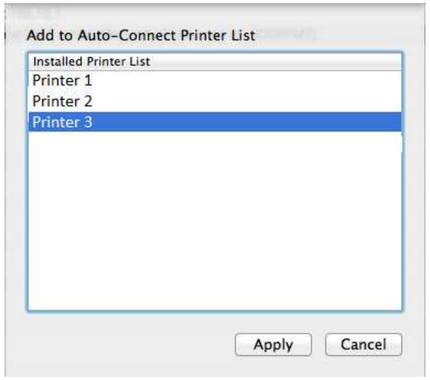
Add to Auto-Connect Printer List

< Installed Printer List >

Printer Name

☐ Printer 1 recommended
☐ Printer 2
☒ Printer 3

Windows OS



Add to Auto-Connect Printer List

Installed Printer List

Printer 1
Printer 2
Printer 3

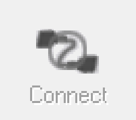
MAC OS X

Connect to a Scanner

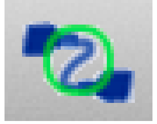
Note: *This function applies to stand-alone USB scanners or USB scanners included with multi-function printers. It is required that the scanner drivers are installed before your computer is able to scan. Please ensure the scanner drivers are installed. If the scanner drivers are not installed, please refer to your printer manufacturer website or documentation on where to download and how to install the scanner drivers. Before installing the scanner drivers, connect your computer to the printer using the USB utility first. Some scanners may require that the scanner is directly connected to the computer in order to complete the driver installation.*

1. Connect the USB cable from the scanner or multi-function printer with scanning capability to the USB 2.0 port on the router and select the scanner or multi-function printer with scanning capability listed in the utility.

2. Click **Connect** to connect your computer to the scanner or printer with multi-function printer with scanning capability.

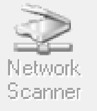


Windows OS

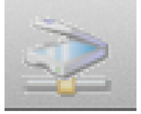


MAC OS X

3. Once your computer is connected, you can receive scanned files from the scanner. Click **Network Scanner**, to open your computer's default scanning application.

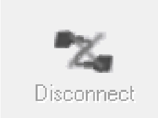


Windows OS

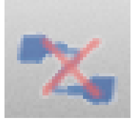


MAC OS X

4. After you have finished printing, click **Disconnect**, to make the scanner available to other computers on your network that use the scanner.



Windows OS

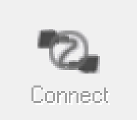


MAC OS X

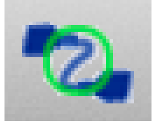
Connect to a Storage Device

1. Connect the USB cable from storage device to the USB 2.0 port on the router and select the storage device listed in the utility.

2. Click **Connect** to connect your computer to the scanner or printer with multi-function printer with scanning capability.



Windows OS



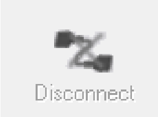
MAC OS X

3. Once connected,

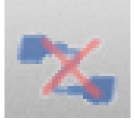
- To access the USB storage device in *Windows OS,* the USB storage device can be located under "Computer" or "My Computer".
- To access the USB storage device in *MAC OS X*, the USB storage device can be located on your desktop.

You will now be able to read and write files to the USB storage device as if it was connected directly to your computer.

4. After you have finished printing, click **Disconnect**, to make the storage device available to other computers on your network that use the storage device..



Windows OS



MAC OS X

Router Management Page Structure

Main

- LAN & DHCP Server
    - Static DHCP Reservation
- WAN
    - Clone MAC Address
- Password
- Time
- Dynamic DNS

Wireless

- Basic
- Security
- Advanced
- Wi-Fi Protected Setup

Status

- Device Information
- Log
- Log Setting
    - Email Log
    - Syslog
    - Log Type
- Statistic
- Wireless

Routing

- Static
- Dynamic
- Routing Table

Access

- Filter
    - MAC Filters
    - Domain/URL Blocking
    - Protocol/IP Filters
- Virtual Server
- Special AP
- DMZ
- Firewall Rule

Management

- SNMP
- Remote Management
- Capture Packets

Routing

- Static
- Dynamic
- Routing Table

Tools

- Restart
- Settings
    - Save Configuration Settings
    - Restore Configuration Settings
    - Reset to Factory Default
- Firmware
- Upgrade Firmware
- Ping Test

Wizard

- Setup Wizard

Technical Specifications

Hardware	
Standards	IEEE 802.3 (10BASE-T), IEEE 802.3u (100BASE-TX), IEEE 802.11b/g/n, IEEE 802.3az
WAN	1 x 10/100Mbps Auto-MDIX WAN port (Internet)
LAN	4 x 10/100Mbps Auto-MDIX LAN port
USB	1 x USB 2.0 port for file and printer sharing*
WPS Button	Enables Wi-Fi Protected Setup (WPS) function
Utility OS Compatibility	Windows 7 (32/64-bit), Vista (32/64-bit), XP(32/64-bit), MAC OS X 10.4, 10.5, 10.6, 10.7
Connection Type	Dynamic IP, Static (Fixed) IP, PPPoE, PPTP, L2TP
DMZ	DMZ host & Virtual Servers
DNS	Static or WAN assigned DNS servers; 3 verified services for DDNS
SNMP	Up to 3 external trap receivers
Internet Access Control	MAC Address Filter, Domain/URL Filter, Protocol/IP Filter
Logging	5 types of event logging; email report
LED Indicator	Power, LAN1~LAN4, WAN, WLAN, Status
Power Switch	On/Off power switch
Power Adapter	5V DC, 2A external power adapter
Power Consumption	6 watts (max)
Dimension (L x W x H)	158 x 109 x 34mm (6.2 x 4.3 x 1.3in)
Weight	215g (7.6oz)
Temperature	Operation: 0°~ 40°C (32°F~ 104°F); Storage: -10°~ 70°C (14°F~158 °F)
Humidity	Max. 95% (non-condensing)
Certifications	CE, FCC
Wireless	
Modulation	DSSS, DBPSK, DQPSK, CCK, OFDM with BPSK, QPSK, 16QAM, and 64QAM
Frequency	2.412~2.484GHz
Antenna	2 x 2dBi fixed dipole antennas
Media Access Protocol	CSMA/CA with ACK
Data Rate	802.11b: Up to 11Mbps 802.11g: Up to 54Mbps 802.11n: Up to 300Mbps
Security	WEP(HEX/ASCII): 64/128-bit WPA(AES/TKIP): WPA/WPA2-RADIUS, WPA-PSK/WPA2-PSK
Output Power	27.8dBm
Receiving Sensitivity	802.11b: -85dBm (typical) @ 11Mbps 802.11g: -68dBm (typical) @ 54Mbps 802.11n: -62dBm (typical) @ 300Mbps
Channels	1~ 11 (FCC), 1~13 (ETSI)

*Requires included software utility.

**Maximum wireless signal rates are referenced from IEEE 802.11 theoretical specifications. Actual data throughput and coverage will vary depending on interference, network traffic, building materials and other conditions.

Troubleshooting

Q: I typed http://192.168.10.1 in my Internet Browser Address Bar, but an error message says "The page cannot be displayed." How can I access the router management page?
Answer:
1. Check your hardware settings again. See "Router Installation" on page 2.
2. Make sure the LAN and WLAN lights are lit.
3. Make sure your network adapter TCP/IP settings are set to *Obtain an IP address automatically* or *DHCP* (see the steps below).
4. Press on the factory reset button for 15 seconds, the release.

Windows 7

a. Go into the **Control Panel**, click **Network and Sharing Center**.

b. Click **Change Adapter Settings**, right-click the **Local Area Connection** icon.

c. Then click **Properties** and click **Internet Protocol Version 4 (TCP/IPv4)**.

d. Then click **Obtain an IP address automatically** and click **OK**.

Windows Vista
a. Go into the **Control Panel**, click **Network and Internet**.
b. Click **Manage Network Connections,** right-click the **Local Area Connection** icon and click **Properties**.
c. Click **Internet Protocol Version (TCP/IPv4)** and then click **Properties**.
d. Then click **Obtain an IP address automatically** and click **OK**.

Windows XP/2000
a. Go into the **Control Panel**, double-click the **Network Connections** icon
b. Right-click the **Local Area Connection** icon and the click **Properties**.
c. Click **Internet Protocol (TCP/IP)** and click **Properties**.
d. Then click **Obtain an IP address automatically** and click **OK**.

Note: *If you are experiencing difficulties, please contact your computer or operating system manufacturer for assistance.*

Q: I am not sure what type of Internet Account Type I have for my Cable/DSL connection. How do I find out?
Answer:
Contact your Internet Service Provider (ISP) for the correct information.

Q: The Wizard does not appear. What should I do?
Answer:
1. Click on Wizard on the left hand side.
2. Near the top of the browser, "Pop-up blocked" message may appear. Right click on the message and select Always Allow Pop-ups from This Site.
3. Disable your browser's pop up blocker.

Q: I went through the Wizard, but I cannot get onto the Internet. What should I do?
Answer:
1. Verify that you can get onto the Internet with a direct connection into your modem.
2. Contact your ISP and verify all the information that you have in regards to your Internet connection settings is correct.
3. Power cycle your modem and router. Unplug the power to the modem and router. Wait 30 seconds, and then reconnect the power to the modem. Wait for the modem to fully boot up, and then reconnect the power to the router.

Q: I cannot connect wirelessly to the router. What should I do?
Answer:
1. Double check that the WLAN light on the router is lit.
2. Power cycle the router. Unplug the power to the router. Wait 15 seconds, then plug the power back in to the router.
3. Contact the manufacturer of your wireless network adapter and make sure the wireless network adapter is configured with the proper SSID. The preset SSID is TRENDnet(*model_number)*.
4. To verify whether or not wireless is enabled, login to the router management page, click on *Wireless*.
5. Please see "Steps to improve wireless connectivity" on page 19 if you continue to have wireless connectivity problems.

Appendix

How to find your IP address?

Note: *Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for configuring network settings.*

Command Prompt Method

Windows 2000/XP/Vista/7

1. On your keyboard, press **Windows Logo+R** keys simultaneously to bring up the Run dialog box.

2. In the dialog box, type ***cmd*** to bring up the command prompt.

3. In the command prompt, type ***ipconfig /all*** to display your IP address settings.

MAC OS X

1. Navigate to your **Applications** folder and open **Utilities**.

2. Double-click on **Terminal** to launch the command prompt.

3. In the command prompt, type ***ipconfig getifaddr <en0 or en1>*** to display the wired or wireless IP address settings.

Note: en0 *is typically the wired Ethernet and* ***en1*** *is typically the wireless Airport interface.*

Graphical Method

MAC OS 10.6/10.5

1. From the Apple menu, select **System Preferences**.
2. In System Preferences, from the **View** menu, select **Network**.
3. In the Network preference window, click a network port (e.g., Ethernet, AirPort, modem). If you are connected, you'll see your IP address settings under "Status:"

MAC OS 10.4

1. From the Apple menu, select **Location**, and then **Network Preferences**.
2. In the Network Preference window, next to "Show:", select **Network Status**. You'll see your network status and your IP address settings displayed.

Note: *If you are experiencing difficulties, please contact your computer or operating system manufacturer for assistance.*

How to configure your network settings to obtain an IP address automatically or use DHCP?

Note: *Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for configuring network settings.*

Windows 7

a. Go into the **Control Panel**, click **Network and Sharing Center**.

b. Click **Change Adapter Settings**, right-click the **Local Area Connection** icon.

c. Then click **Properties** and click **Internet Protocol Version 4 (TCP/IPv4)**.

d. Then click **Obtain an IP address automatically** and click **OK**.

Windows Vista

a. Go into the **Control Panel**, click **Network and Internet**.
b. Click **Manage Network Connections,** right-click the **Local Area Connection** icon and click **Properties**.
c. Click **Internet Protocol Version (TCP/IPv4)** and then click **Properties**.
d. Then click **Obtain an IP address automatically** and click **OK**.

Windows XP/2000

a. Go into the **Control Panel**, double-click the **Network Connections** icon
b. Right-click the **Local Area Connection** icon and the click **Properties**.
c. Click **Internet Protocol (TCP/IP)** and click **Properties**.

d. Then click **Obtain an IP address automatically** and click **OK**.

MAC OS 10.4/10.5/10.6

a. From the **Apple**, drop-down list, select **System Preferences**.
b. Click the **Network** icon.
c. From the **Location** drop-down list, select **Automatic**.
d. Select and view your Ethernet connection.

In MAC OS 10.4, from the **Show** drop-down list, select **Built-in Ethernet** and select the **TCP/IP** tab.

In MAC OS 10.5/10.6, in the left column, select **Ethernet**.

e. Configure TCP/IP to use DHCP.

In MAC 10.4, from the **Configure IPv4**, drop-down list, select **Using DHCP** and click the **Apply Now** button.
In MAC 10.5, from the **Configure** drop-down list, select **Using DHCP** and click the **Apply** button.
In MAC 10.6, from the **Configure** drop-down list, select **Using DHCP** and click the **Apply** button.

f. Restart your computer.

Note: *If you are experiencing difficulties, please contact your computer or operating system manufacturer for assistance.*

How to find your MAC address?

In Windows 2000/XP/Vista/7,

Your computer MAC addresses are also displayed in this window, however, you can type ***getmac –v*** to display the MAC addresses only.

In MAC OS 10.4,

1. **Apple Menu > System Preferences > Network**

2. From the **Show** menu, select **Built-in Ethernet**.

3. On the **Ethernet** tab, the **Ethernet ID** is your MAC Address.

In MAC OS 10.5/10.6,

1. **Apple Menu > System Preferences > Network**

2. Select **Ethernet** from the list on the left.

3. Click the **Advanced** button.

3. On the **Ethernet** tab, the **Ethernet ID** is your MAC Address.

How to connect to a wireless network using the built-in Windows utility?

Note: *Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for connecting to a wireless network using the built-in utility.*

Windows 7

1. Open Connect to a Network by clicking the network icon (📶 or 🖧) in the notification area.

2. In the list of available wireless networks, click the wireless network you would like to connect to, then click **Connect.**

4. You may be prompted to enter a security key in order to connect to the network.

5. Enter in the security key corresponding to the wireless network, and click **OK**.

Windows Vista

1. Open Connect to a Network by clicking the **Start Button**. ⊞ and then click **Connect To.**

2. In the **Show** list, click **Wireless**.

3. In the list of available wireless networks, click the wireless network you would like to connect to, then click **Connect.**

4. You may be prompted to enter a security key in order to connect to the network.

5. Enter in the security key corresponding to the wireless network, and click **OK**.

Windows XP

1. Right-click the network icon in the notification area, then click **View Available Wireless Networks**.

2. In **Connect to a Network**, under **Available Networks**, click the wireless network you would like to connect to.

3. You may be prompted to enter a security key in order to connect to the network.

4. Enter in the security key corresponding to the wireless network, and click **Connect**.

Federal Communication Commission Interference Statement

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN60950-1: 2006 + A11 : 2009 + A1 : 2010

Safety of Information Technology Equipment

EN 50385: 2002

Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public

EN 300 328 V1.7.1 (2006-10)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

EN 301 489-1 V1.8.1 (2008-04)

Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-17 V2.1.1 (2009-05)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

cs Česky [Czech]	TRENDnet tímto prohlašuje, že tento TEW-652BRU je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede TRENDnet erklærer herved, at følgende udstyr TEW-652BRU overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt TRENDnet, dass sich das Gerät TEW-652BRU in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab TRENDnet seadme TEW-652BRU vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, TRENDnet, declares that this TEW-652BRU is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente TRENDnet declara que el TEW-652BRU cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ TRENDnet ΔΗΛΩΝΕΙ ΟΤΙ TEW-652BRU ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente TRENDnet déclare que l'appareil TEW-652BRU est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente TRENDnet dichiara che questo TEW-652BRU è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo TRENDnet deklarē, ka TEW-652BRU atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo TRENDnet deklaruoja, kad šis TEW-652BRU atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart TRENDnet dat het toestel TEW-652BRU in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, TRENDnet, jiddikjara li dan TEW-652BRU jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, TRENDnet nyilatkozom, hogy a TEW-652BRU megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym TRENDnet oświadcza, że TEW-652BRU jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	TRENDnet declara que este TEW-652BRU está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	TRENDnet izjavlja, da je ta TEW-652BRU v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	TRENDnet týmto vyhlasuje, že TEW-652BRU spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	TRENDnet vakuuttaa täten että TEW-652BRU tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar TRENDnet att denna TEW-652BRU står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Limited Warranty

TRENDnet warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

TEW-652BRU – 3 Years Warranty

AC/DC Power Adapter, Cooling Fan, and Power Supply carry 1 year warranty.

If a product does not operate as warranted during the applicable warranty period, TRENDnet shall reserve the right, at its expense, to repair or replace the defective product or part and deliver an equivalent product or part to the customer. The repair/replacement unit's warranty continues from the original date of purchase. All products that are replaced become the property of TRENDnet. Replacement products may be new or reconditioned. TRENDnet does not issue refunds or credit. Please contact the point-of-purchase for their return policies.

TRENDnet shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to TRENDnet pursuant to any warranty.

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Product Warranty Registration

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