

4.2.13 Storage Service

This section helps you to use USB Storage devices in your modem router, including the following parts:

- **User Account:** You can control the LAN users' accessing to the USB storage device information, namely, some of them can access the USB device info but others cannot.
- **Storage Device Info:** When you plug the USB storage device into the USB interface of your modem router, the router can recognize that's the USB storage device and then read the storage device's information.

1) User Account

Before you share your USB storage on the internet, you need to add a storage user account. And only the users on the user account list can visit the USB storage device plugged in the modem router. Thus, before you access the USB storage device, you need to set the user account information.



To add a new account:

- ① Click **Add** to enter the user account configuration page.

- ② Name your USB storage account.
- ③ Specify a password to secure your USB storage account.
- ④ Enter your password again for a confirmation.
- ⑤ Enter the volume name of the USB storage, which is displayed in the Storage Device Info page.
- ⑥ Click **Apply/Save** to save your configurations.

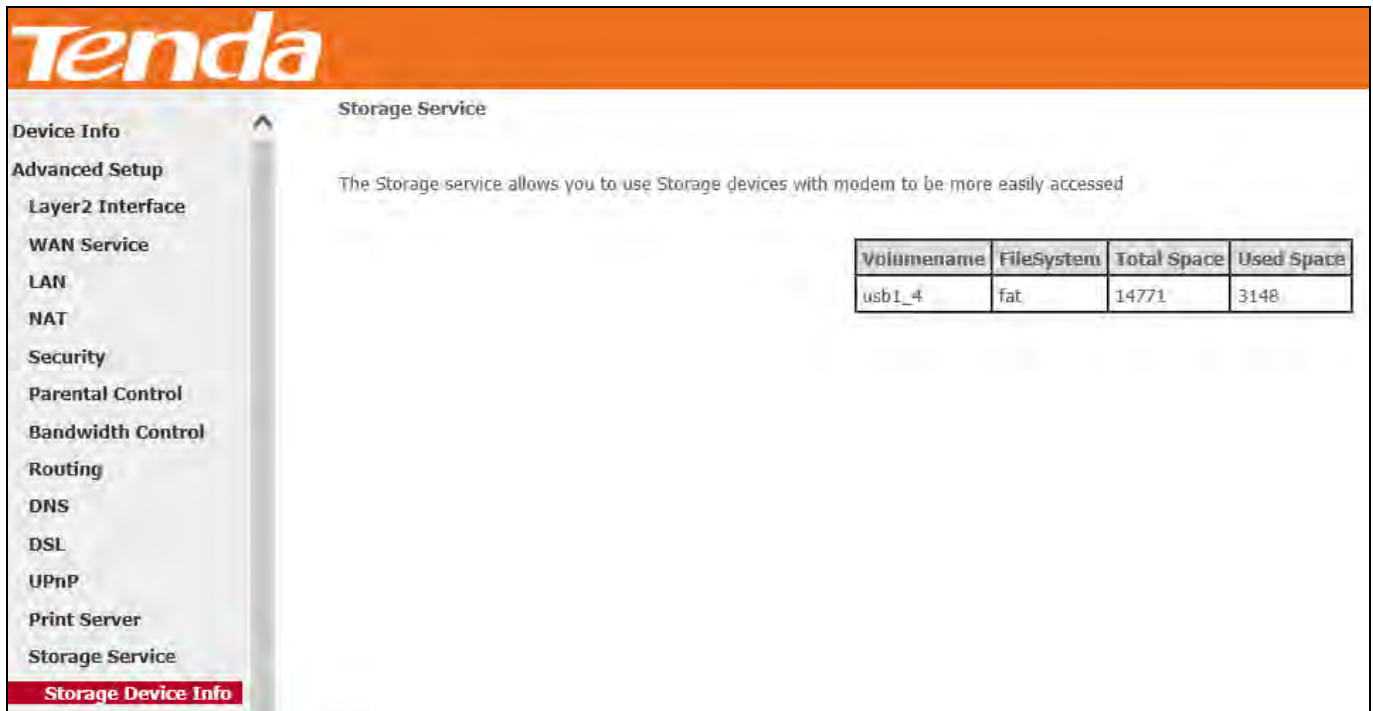
Storage UserAccount Configuration

Choose Add, or Remove to configure User Accounts.

UserName	HomeDir	Remove
USB STORAGE	usb1_4/USB STORAGE	<input type="checkbox"/>

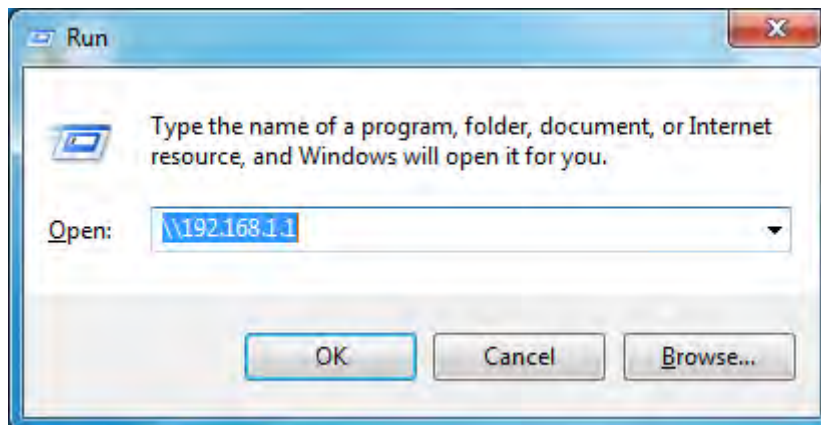
1) Storage Device Info

Your modem router can automatically recognize the USB storage device and the **Storage Device Info** screen will show the information such as the volumename, file system, total space, and used space.

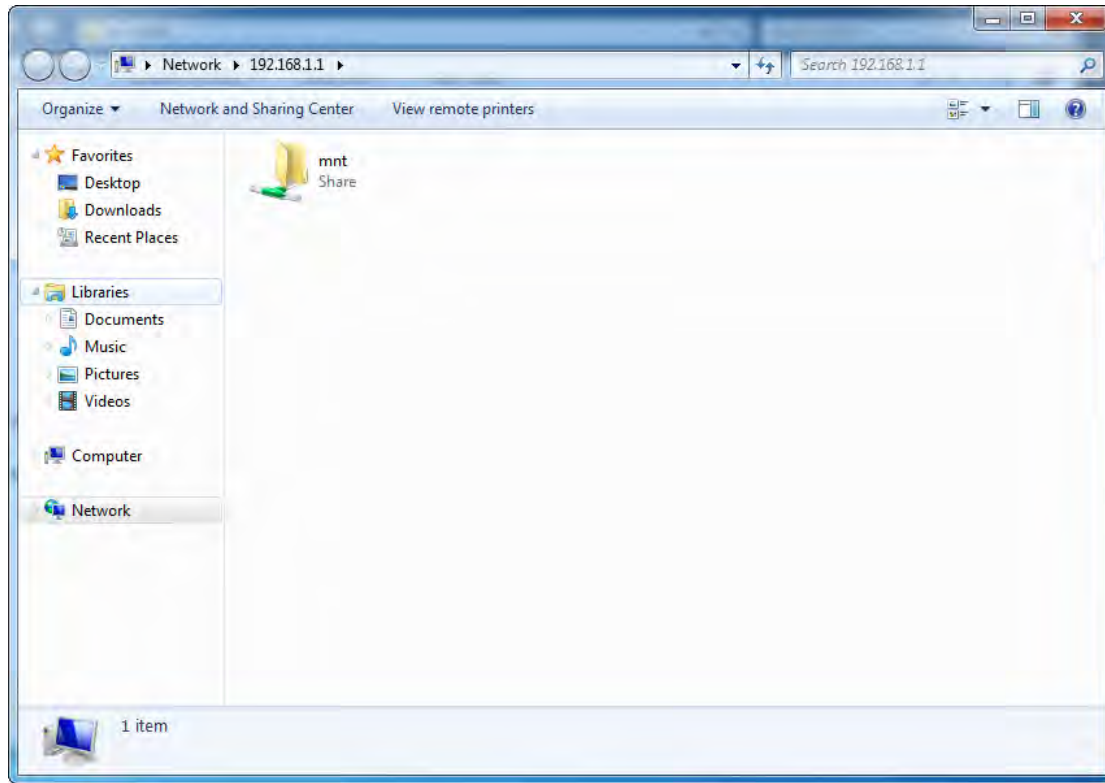


After your modem router recognizes the USB storage device, follow guidelines below for visiting the storage info via the computer on the LAN. Here takes **Windows 7** as an example to explain the guidelines which are similar in other operation systems.

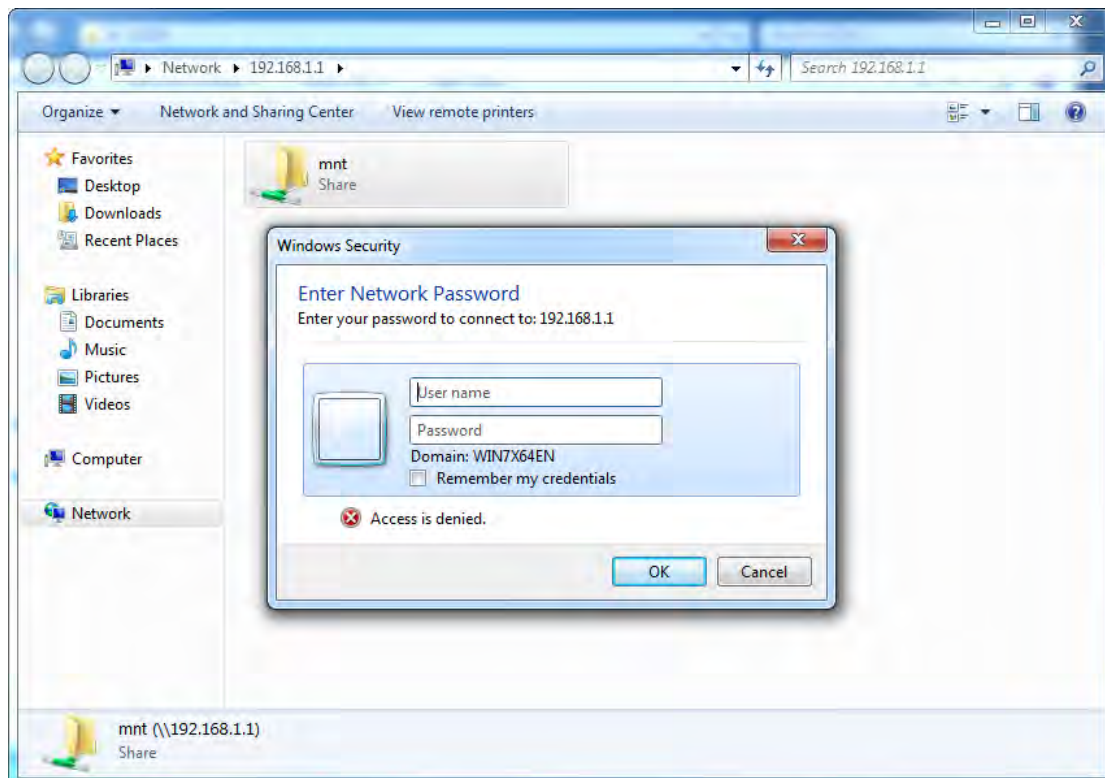
- ① Press **Win+R** keys. On the **Run** window, input \\192.168.1.1 (\\+ **LAN IP address of the router**), and then click **OK**.



- ② Double click the USB storage device icon (“mnt”).



- ③ Account authentication: Enter your user account name and password which were configured in **User Account** part in the corresponding box, and click **OK**.



4.2.14 Interface Grouping

Interface Grouping supports multiple ports to PVC and bridging groups. Each group will perform as an independent

network. Only the default group has IP interface.

Click **Advanced Setup > Interface Grouping** to enter the following figure.

Interface Grouping -- A maximum 16 entries can be configured

Interface Grouping supports multiple ports to PVC and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the Add button. The Remove button will remove the grouping and add the ungrouped interfaces to the Default group. Only the default group has IP interface.

Group Name	Remove	WAN Interface	LAN Interfaces	DHCP Vendor IDs
Default		eth0.1	eth1	
			eth2	
			eth3	
			wlan0	

Add Remove



Click **Add** to enter the screen below.

IMPORTANT If a vendor ID is configured for a specific client device, please REBOOT the client device attached to the modem to allow it to obtain an appropriate IP address.

Group Name:

WAN Interface used in the grouping: ipoe_eth3/eth0.1

Grouped LAN Interfaces:

Available LAN Interfaces: eth1, eth2, eth3, wlan0

Automatically Add Clients With the following DHCP Vendor IDs:

Apply/Save

Group Name: The name of a configured rule.

WAN Interface used in the grouping: WAN connection to which the interface grouping rules apply.

Available LAN Interfaces: LAN interfaces that can be used for interface grouping.

Grouped LAN Interfaces: LAN interfaces that use specified WAN interface.

To create a new interface group:

- 1 Enter the Group name which should be unique.
- 2 Select the WAN interface that's shared by the LAN interfaces in the interface group.
- 3 Select interfaces that will be connected to the specified WAN you will use. Note that these clients may obtain public IP addresses.
- 4 Click **Apply/Save** button to make the changes effective immediately.

If you want to bypass NAT via the router's interface and obtain the public IP address automatically, you need to add the DHCP vendor ID in the **Automatically Add Clients with the following DHCP Vendor IDs** section. After the ID takes effect, your router will automatically detect the DHCP request from computers on the LAN, and it will forward the DHCP vendor ID and the corresponding DHCP request to the WAN interface used in the interface rules.

Application:

You have established two WAN service ports: IPoE and Bridge port. Ipoe_eth0/eth1 is used for home users access; br_eth0/eth0.2 used for guests to access the Internet. You hope that eth1 and eth2 (Interface2 and 3 on the modem router) can be used for guests to visit the Internet, and meanwhile data of the guest won't be forwarded to other interfaces. Configurations are as below in the figure.

The screenshot displays the Tenda router's web interface for configuring interface grouping. The sidebar on the left contains various configuration categories, with 'Interface Grouping' highlighted in red. The main content area features a navigation pane on the left and a central configuration area. The central area includes instructions for selecting interfaces and a form for 'Group Name' (set to 'for guests') and 'WAN Interface used in the grouping' (set to 'ipoe_eth0/eth0.1'). Below this, there are two columns: 'Grouped LAN Interfaces' and 'Available LAN Interfaces'. The 'Available LAN Interfaces' column lists 'eth1', 'eth2', 'eth3', and 'wan0'. A red box highlights the 'WAN Interface used in the grouping' dropdown menu.



Interface Grouping – A maximum 16 entries can be configured

Interface Grouping supports multiple ports to PVC and bridging groups. Each group will perform as an independent network. To support this feature, you must create mapping groups with appropriate LAN and WAN interfaces using the Add button. The Remove button will remove the grouping and add the ungrouped interfaces to the Default group. Only the default group has IP interface.

Group Name	Remove	WAN Interface	LAN Interfaces	DHCP Vendor IDs
Default	<input type="checkbox"/>	eth0.2	eth3 wlan0	
for guests	<input type="checkbox"/>	eth0.1	eth1 eth2	

Add Remove

Attention: After successful interface grouping, clients connecting to interface 2 and 3 will obtain IP address different from 192.168.1.X, but same segment with 192.168.2.1. So clients access the device via 192.168.2.1.



Note

1. After the settings above, you need to reboot the modem router to take the settings into effect.
2. After the settings above, the LAN IP address used by the Default group member is 192.168.1.1, the LAN IP of the second group member is 192.168.2.1. LAN IPs of the following groups follows the same rule.
3. After you set the IPTV function, the modem router will automatically add one interface group named IPTV, which should be saved. If it's deleted, the IPTV function takes no effect.

4.2.15 IP Tunnel

This section explains the following information:

- [IPv6inIPv4](#)
- [IPv4inIPv6](#)

IPv6inIPv4

Click **IPv6inIPv4** and **Add** to enter the following screen:

Tunnel Name: Specify the name of the tunnel.

Mechanism: Currently, only 6RD configuration is supported.

Associated WAN Interface: Specify the WAN interface of the tunnel.

Associated LAN Interface: Specify the LAN interface of the tunnel.

Manual: If you select **Manual**, configure the following settings also:

- ◆ **IPv4 Mask Length:** Specify the IPv4 Mask Length.
- ◆ **6rd Prefix with Prefix Length:** Specify the 6rd Prefix with Prefix Length.
- ◆ **Border Relay IPv4 Address:** Specify the Border Relay IPv4 Address.

Automatic: If **Automatic** is selected, no configurations are required.

Apply/Save: Click to apply and save your settings.

IPv4inIPv6

Click **IPv4inIPv6** and **Add** to enter the following screen:

Tenda

IP Tunneling -- 4in6 Tunnel Configuration

Currently, only DS-Lite configuration is supported.

Tunnel Name:

Mechanism:

Associated WAN Interface:

Associated LAN Interface:

Manual Automatic

AFTR:

Tunnel Name: Specify the name of the tunnel.

Mechanism: Currently, only DS-Lite configuration is supported.

Associated WAN Interface: Specify the WAN interface of the tunnel.

Associated LAN Interface: Specify the LAN interface of the tunnel.

Manual: If you select **Manual**, enter the AFTR information also.

Automatic: If **Automatic** is selected, no configurations are required.

Apply/Save: Click to apply and save your settings.

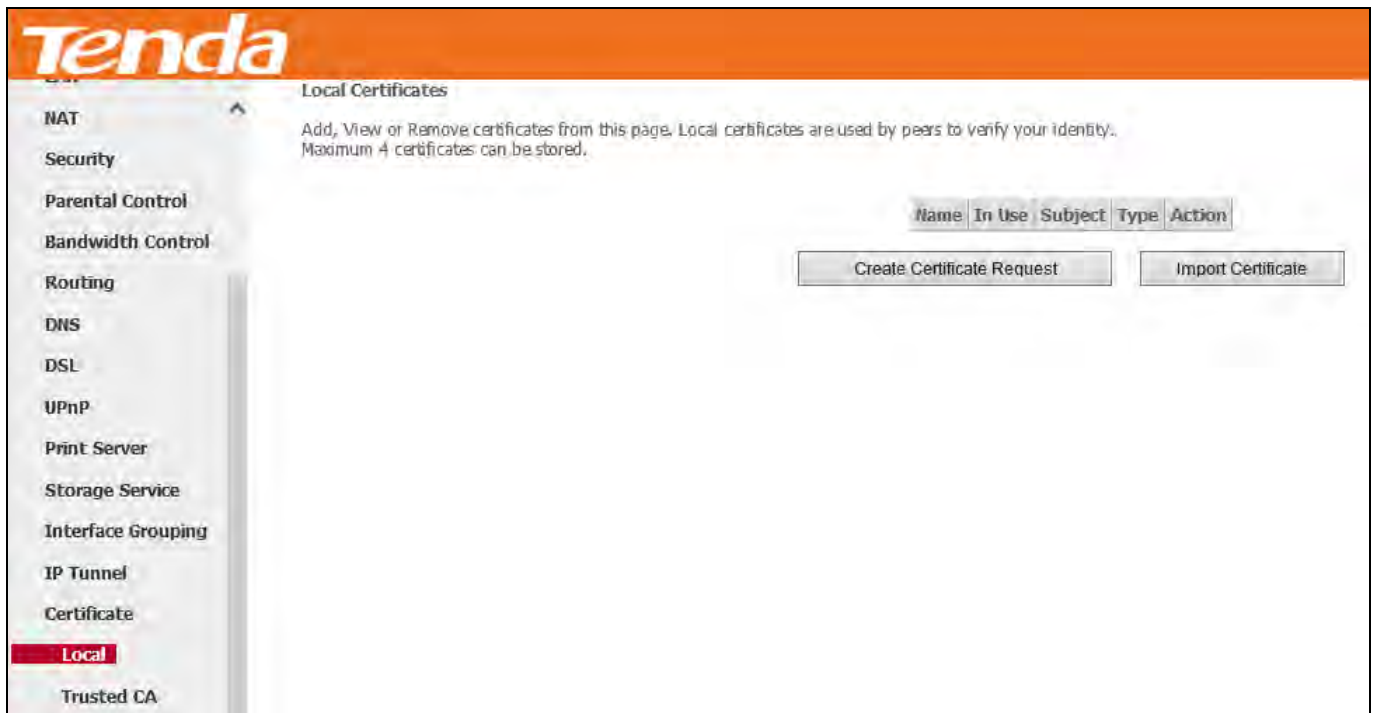
4.2.16 Certificate

This section explains the following information:

- [Local Certificates](#)
- [Trusted CA \(Certificate Authority\) Certificates](#)

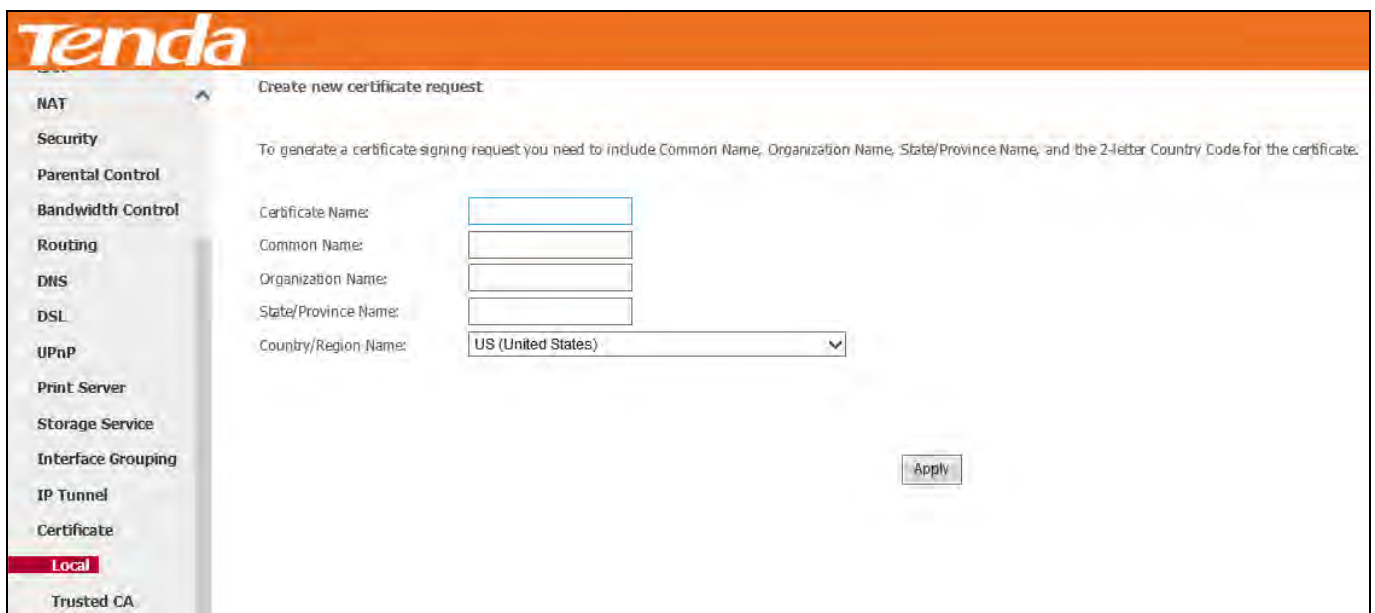
Local Certificates

Here you can add, view or remove certificates. Local certificates are used by peers to verify your identity. Maximum 4 certificates can be stored.



To generate a certificate signing request:

- 1) Click the **Create Certificate Request** button to enter the page below.



- 2) Specify the Common Name, Organization Name and State/Province Name
- 3) Select your country or region.
- 4) Click **Apply** to apply your settings.

To Import certificate:

Click the **Import Certificate** button on the local certificates page to enter the page below.

Import certificate

Enter certificate name, paste certificate content and private key.

Certificate Name:

Certificate:
---BEGIN CERTIFICATE---
<insert certificate here>
---END CERTIFICATE---

Private Key:
---BEGIN RSA PRIVATE KEY---
<insert private key here>
---END RSA PRIVATE KEY---

- 1) Enter the certificate name.
- 2) Paste the certificate content and private key.
- 3) Click **Apply** to apply your settings.

Trusted CA (Certificate Authority) Certificates

Here you can add, view or remove CA certificates. CA certificates are used by you to verify peers' certificates. Maximum 4 certificates can be stored.

Trusted CA (Certificate Authority) Certificates

Add, View or Remove certificates from this page. CA certificates are used by you to verify peers' certificates. Maximum 4 certificates can be stored.

Name	Subject	Type	Action
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Trusted CA

To Import certificate:

- 1) Click the **Import Certificate** button to enter the page below.

Import CA certificate

Enter certificate name and paste certificate content.

Certificate Name:

Certificate:

```
-----BEGIN CERTIFICATE-----
<insert certificate here>
-----END CERTIFICATE-----
```

Trusted CA

- 2) Enter the certificate name.

- 3) Paste the certificate content.
- 4) Click **Apply** to apply your settings.

4.2.17 Multicast

Here you can configure the multicast feature.

To configure IGMP for IPv4

Check the LAN to LAN (Intra LAN) Multicast Enable box.

Check the **Membership Join Immediate (IPTV)** box. This is only required for IPTV.

Keep other options unchanged from factory defaults if you are not an advanced user. This is strongly recommended.

Tenda

Device Info

Advanced Setup

Layer2 Interface

WAN Service

LAN

NAT

Security

Parental Control

Bandwidth Control

Routing

DNS

DSL

UPnP

Print Server

Storage Service

Interface Grouping

IP Tunnel

Certificate

Multicast

Multicast Precedence: lower value, higher priority

IGMP Configuration

Enter IGMP protocol configurabon fields if you want modify default values shown below.

Default Version:

Query Interval:

Query Response Interval:

Last Member Query Interval:

Robustness Value:

Maximum Multicast Groups:

Maximum Multicast Data Sources (for IGMPv3 : (1 - 24)):

Maximum Multicast Group Members:

Fast Leave Enable:

LAN to LAN (Intra LAN) Multicast Enable:

Mebership Join Immediate (IPTV):

To configure IGMP for IPv6

Check the LAN to LAN (Intra LAN) Multicast Enable box.

Keep other options unchanged from factory defaults if you are not an advanced user. This is strongly recommended.

<ul style="list-style-type: none"> NAT Security Parental Control Bandwidth Control Routing DNS DSL UPnP Print Server Storage Service Interface Grouping IP Tunnel Certificate <li style="background-color: #f00; color: white; padding: 2px;">Multicast IPTV 	<h3>MLD Configuration</h3> <p>Enter MLD protocol (IPv6 Multicast) configuration fields if you want modify default values shown below.</p> <p>Default Version: <input type="text" value="2"/></p> <p>Query Interval: <input type="text" value="125"/></p> <p>Query Response Interval: <input type="text" value="10"/></p> <p>Last Member Query Interval: <input type="text" value="10"/></p> <p>Robustness Value: <input type="text" value="2"/></p> <p>Maximum Multicast Groups: <input type="text" value="10"/></p> <p>Maximum Multicast Data Sources (for mldv3): <input type="text" value="10"/></p> <p>Maximum Multicast Group Members: <input type="text" value="10"/></p> <p>Fast Leave Enable: <input checked="" type="checkbox"/></p> <p>LAN to LAN (Intra LAN) Multicast Enable: <input checked="" type="checkbox"/></p> <p style="text-align: right;"><input type="button" value="Apply/Save"/></p>
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4.2.18 IPTV

If you check the **Enable IPTV** checkbox, you must choose a layer2 interface, and then configure the PVC/VLAN info (ATM), or ETH port/VLAN info (ETH). Click **Apply/Save** button to save it.

Enable IPTV: Check/uncheck to enable/disable the IPTV service.

<ul style="list-style-type: none"> WAN Service LAN NAT Security Parental Control Bandwidth Control Routing DNS DSL UPnP Print Server Storage Service Interface Grouping IP Tunnel Certificate Multicast <li style="background-color: #f00; color: white; padding: 2px;">IPTV 	<h3>IPTV — IPTV Management Configuration</h3> <p>If IPTV checkbox is selected, choose layer2 interface, then configure the PVC/VLAN info(ATM), or ETH port/VLAN info(ETH). Click 'Apply/Save' button to save it.</p> <p><input checked="" type="checkbox"/> Enable IPTV</p> <p>Select Layer2 Interface</p> <p><input checked="" type="radio"/> ATM Interface</p> <p><input type="radio"/> ETH Interface</p> <p>This screen allows you to configure a ATM PVC.</p> <p>VPI: <input type="text" value="0"/> [0-255]</p> <p>VCI: <input type="text" value="35"/> [32-65535]</p> <p>For tagged service, enter valid 802.1P Priority and 802.1Q VLAN ID.</p> <p>For untagged service, set -1 to both 802.1P Priority and 802.1Q VLAN ID.</p> <p>Enter 802.1P Priority [0-7]: <input type="text" value="-1"/></p> <p>Enter 802.1Q VLAN ID [1-4094]: <input type="text" value="-1"/></p> <p style="text-align: right;"><input type="button" value="Apply/Save"/></p>
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IPTV configuration for Phone Cable Access user:

- 1) Enable **IPTV**.
- 2) Select Layer2 interface: **ATM Interface**.

- 3) Configure an available VPI/VCI value which should be provided by your ISP.
- 4) Click **Apply/Save**.

IPTV configuration for Ethernet Cable Access user:

- 1) Enable **IPTV**.
- 2) Select Layer2 Interface: **ETH Interface**.
- 3) Click **Apply/Save**.

After successful IPTV configuration, Port 4 on the back panel of the device can only be an IPTV port.



Tip

For tagged service, enter valid 802.1P Priority and 802.1Q VLAN ID.

For untagged service, set -1 to both 802.1P Priority and 802.1Q VLAN ID.

4.3 Wireless

There are five submenus under the Wireless menu: **Basic**, **Security**, **MAC Filter**, **Wireless Bridge** and **Station Info**.

Click any of them, and you will be able to configure the corresponding functions.

4.3.1 Basic

This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the

channel set based on country requirements.

Wireless -- Basic

This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on country requirements. Click "Apply/Save" to configure the basic wireless options.

Enable Wireless

Hide Access Point

Enable Wireless Multicast Forwarding (WMF)

SSID:

BSSID:

Country:

Channel:

Bandwidth:

RF Power: Low Medium High

Enable Wireless: Check/uncheck to enable/disable the wireless network.

Hide Access Point: This option allows you to have your wireless network names (SSID) publicly broadcast or if you choose to enable it, the SSID will be hidden.

SSID: Service Set Identifier. This is the name of your wireless network.

Country: Select your country.

Channel: Select a channel or select **Auto** to let system automatically select one for your wireless network to operate on if you are unsure. The best selection is a channel that is the least used by neighboring networks.

Bandwidth: Select the bandwidth from the drop-down list. The default setting is 40MHz.

Apply/Save: Click it to apply your current configurations.

4.3.2 Security

This page allows you to configure security of your wireless network. You may setup configuration manually or through WiFi Protected Setup (WPS).

WPS Setup

Wi-Fi Protected Setup makes it easy for home users who know little of wireless security to establish a home network, as well as to add new devices to an existing network without entering long passphrases or complicate configurations. Simply enter a PIN code on the device web interface or press hardware WPS button (on the back panel of the device) and a secure wireless connection is established.

WPS (hardware button): Press the hardware WPS button on the device for 1 second and the WPS LED will keep blinking for about 2 minutes. Within the 2 minutes, press the WPS button on your wireless computer or other device. When the WPS LED displays a solid light, the device has joined your wireless network.

Device PIN: To use this option, you must know the PIN code from the wireless client and enter it in the corresponding field on your device while using the same PIN code on client side for such connection.

Enable WPS: Check/uncheck to enable/disable the WPS function. It is disabled by default.

Note

1. To use the WPS security, the wireless client must be also WPS-capable.
2. When both STA PIN and Authorized MAC are empty, PBC is used. If Hide Access Point is enabled or Mac filter list is empty with "allow" chosen, WPS2 will be disabled.
3. WPS only supports WPA2, which means only when you select "WPA2" encryption or "Open", you can change WPS status.

Manual Setup AP

Manual Setup AP

You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength. Click "Apply/Save" when done.

Select SSID:	<input type="text" value="Tenda_AADDC0"/>
Network Authentication:	<input type="text" value="Open"/>
WEP Encryption:	<input type="text" value="Disabled"/>
<input type="button" value="Apply/Save"/>	

You can set the network authentication method, select data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.

Click "Apply/Save" when done.

Network Authentication: Select Open, Shared, 802.1X, WPA-PSK, WPA2-PSK or Mixed WPA/WPA2-PSK from the drop-down list to encrypt your wireless network. Depending on the type of network authentication you select, you will be prompted to enter corresponding settings.

WEP Encryption: Select Enabled or Disabled.

Encryption Strength: Select 128-bit or 64-bit.

Current Network Key: Select a network key to be active.

Network Key 1/2/3/4: Enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys; enter 5 ASCII characters or 10 hexadecimal digits for 64-bit encryption keys.

WPA/WAPI passphrase: Enter a WPA/WAPI network key.

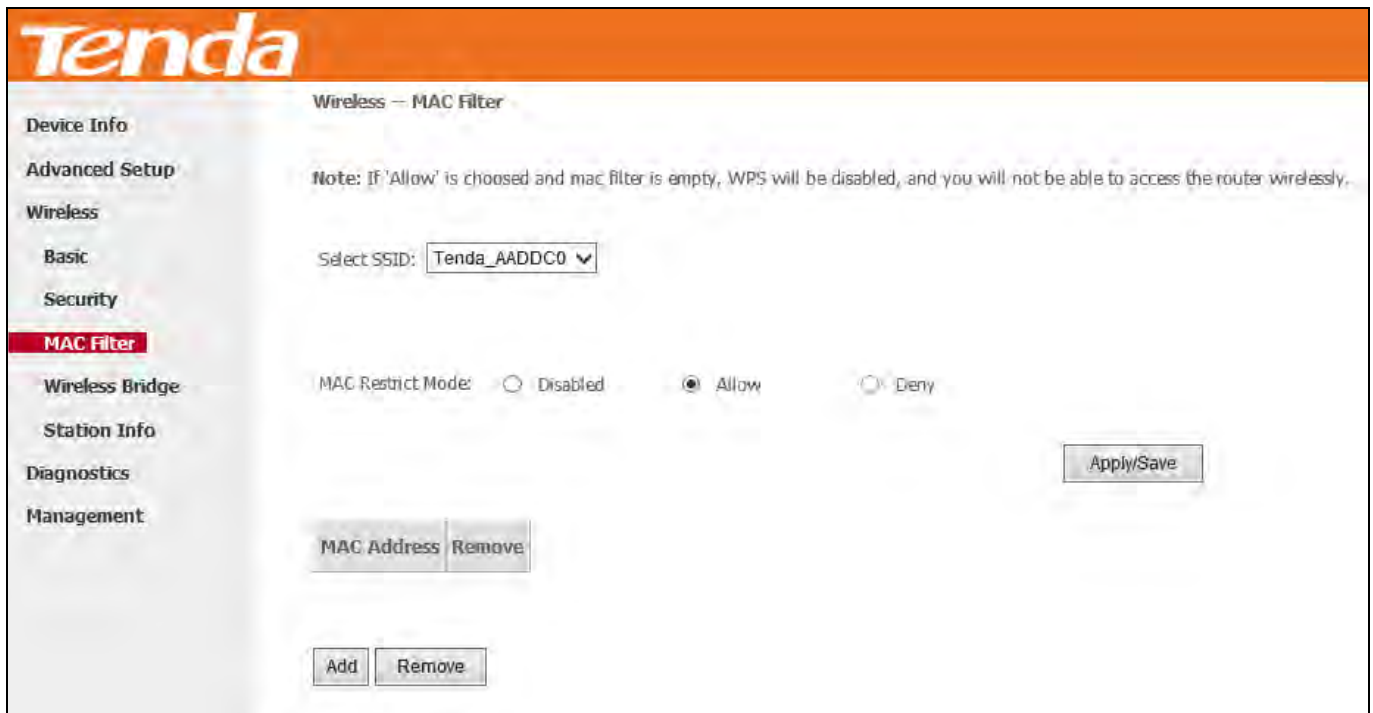
WPA Group Rekey Interval: Specify a key update interval.

WPA/WAPI Encryption: Select AES or TKIP+AES.

Apply/Save: Click it to apply the current configurations.

4.3.3 MAC Filter

The MAC-based Wireless Access Control feature can be used to allow or disallow clients to connect to your wireless network.



MAC Restrict Mode: Disabled, Allow and Deny

- **Allow:** Only allow PCs at specified MAC addresses (in the list) to connect to your wireless network.
- **Deny:** Block only PCs at specified MAC addresses from connecting to your wireless network.
- **Disabled:** Disable MAC filter feature.

Add: Click to add a MAC address.

Remove: To delete an existing MAC address, first check the **Remove** box next to the MAC address in list and then click this button.

Example: To allow only the PC at the MAC address of 00:1A:3D:9C:BB:23 to connect to your wireless network, do as follows:

1. Select **Allow**.
2. Click the **Apply/Save** button.
3. Enter 00:1A:3D:9C:BB:23 in the MAC address box as shown in the figure below and click **Apply/Save**.





Note

- 1) If you select “Allow” MAC restrict mode and directly click **Apply/Save** instead of adding any MAC address to be filtered, WPS will be disabled (You can go to **Wireless > Security** to check WPS status).
- 2) If you want to change the MAC filter mode above from “Allow” to “Deny”, *just select **Deny** and click **Apply/Save**.*

4.3.4 Wireless Bridge

This page allows you to configure wireless bridge (also known as Wireless Distribution System) features of the wireless LAN interface.

Wireless distribution system (WDS) is a system enabling the wireless interconnection of access points in an IEEE 802.11 network. It allows a wireless network to be extended using multiple access points without the traditional requirement for a wired backbone to link them.

AP Mode: You can select Wireless Bridge (also known as Wireless Distribution System) to disable access point functionality. Selecting Access Point enables access point functionality. Wireless bridge functionality will still be available and wireless stations will be able to associate to the AP.

Bridge Action: There are three options available: **Enabled**, **Enabled (Scan)** and **Disabled**. **Disabled** in Bridge Action means disabling wireless bridge restriction. Any wireless bridge will be granted access. **Enabled** or **Enabled (Scan)** means enabling wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access. The Enabled (Scan) affords auto scanning the remote bridges.

Remote Bridges MAC Address: Specify the MAC address of the remote bridge. If you select the **Enabled (Scan)** option in Bridge Restrict, system automatically scans the remote bridges and you only need to select those bridges and their MAC addresses will be added to automatically.

Refresh: Click it to update the remote bridges. Wait for seconds to update.

Apply/Save: Click it to apply and save the settings.



Note

The WDS feature can only be implemented between 2 WDS-capable wireless devices. Plus, SSID, channel, security settings and security key must be exactly the same on both such devices.

4.3.5 Station Info

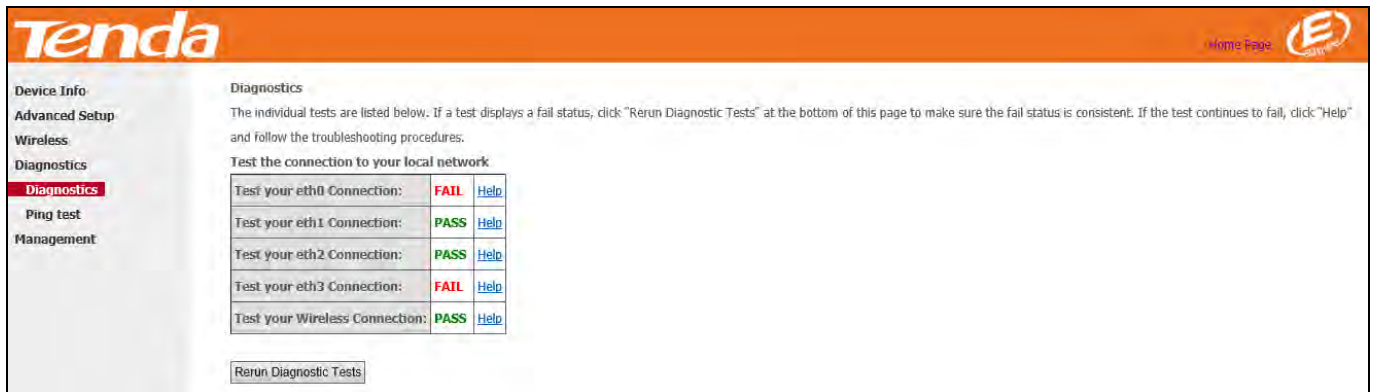
This page shows authenticated wireless stations and their status.

The screenshot shows the Tenda router's web interface. The top navigation bar is orange with the 'Tenda' logo. The left sidebar contains a menu with the following items: Device Info, Advanced Setup, Wireless, Basic, Security, MAC Filter, Wireless Bridge, **Station Info** (highlighted in red), Diagnostics, and Management. The main content area is titled 'Wireless -- Authenticated Stations' and contains the text: 'This page shows authenticated wireless stations and their status.' Below this text is a table with the following columns: MAC, Associated, Authorized, SSID, and Interface. A 'Refresh' button is located on the right side of the page.

4.4 Diagnostics

4.4.1 Diagnostics

The modem router is capable of testing the connection to your DSL service provider, the connection to your Internet service provider and the connection to your local network. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page several times to verify the connection status. If the test continues to fail, click "Help" and follow the troubleshooting procedures.



The screenshot shows the Tenda router's web interface. The left sidebar contains navigation options: Device Info, Advanced Setup, Wireless, Diagnostics (highlighted), Ping test, and Management. The main content area is titled 'Diagnostics' and includes instructions on how to interpret test results. Below the instructions is a table titled 'Test the connection to your local network' with the following data:

Test your eth0 Connection:	FAIL	Help
Test your eth1 Connection:	PASS	Help
Test your eth2 Connection:	PASS	Help
Test your eth3 Connection:	FAIL	Help
Test your Wireless Connection:	PASS	Help

At the bottom of the table is a button labeled 'Rerun Diagnostic Tests'.

Pass: Indicates that the Ethernet interface from your computer is connected to the LAN port of your Broadband Router.

Fail: Indicates that the Broadband Router does not detect the Ethernet interface on your computer.

4.4.2 Ping test

Ping utility can help test whether the device has built a proper connection with your host.

Type in the IP address of your host in the Ping IP Address field, and click **Ping**. If you get a similar screen shown as below, it indicates the connection between the Ping object (Here is 192.168.1.2) and the device has been established.

Tenda

Device Info
Advanced Setup
Wireless
Diagnostics
Diagnostics
Ping test
Management

System Tools -- Ping tool

Ping IP Address: Ping

```
PING 192.168.1.2 (192.168.1.2): 56 data bytes
64 bytes from 192.168.1.2: seq=0 ttl=64 time=1.000 ms
64 bytes from 192.168.1.2: seq=1 ttl=64 time=0.767 ms
64 bytes from 192.168.1.2: seq=2 ttl=64 time=0.770 ms
64 bytes from 192.168.1.2: seq=3 ttl=64 time=0.752 ms

--- 192.168.1.2 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max = 0.752/0.822/1.000 ms
```

4.5 Management

This section explains the following information:

- [Settings](#)
- [System Log](#)
- [SNMP Agent](#)
- [TR-069 Client](#)
- [Internet Time](#)
- [Access Control](#)
- [Update Firmware](#)
- [Reboot](#)

4.5.1 Settings

This section explains the following information:

- [Backup](#)
- [Restore Backup](#)
- [Restore Default](#)

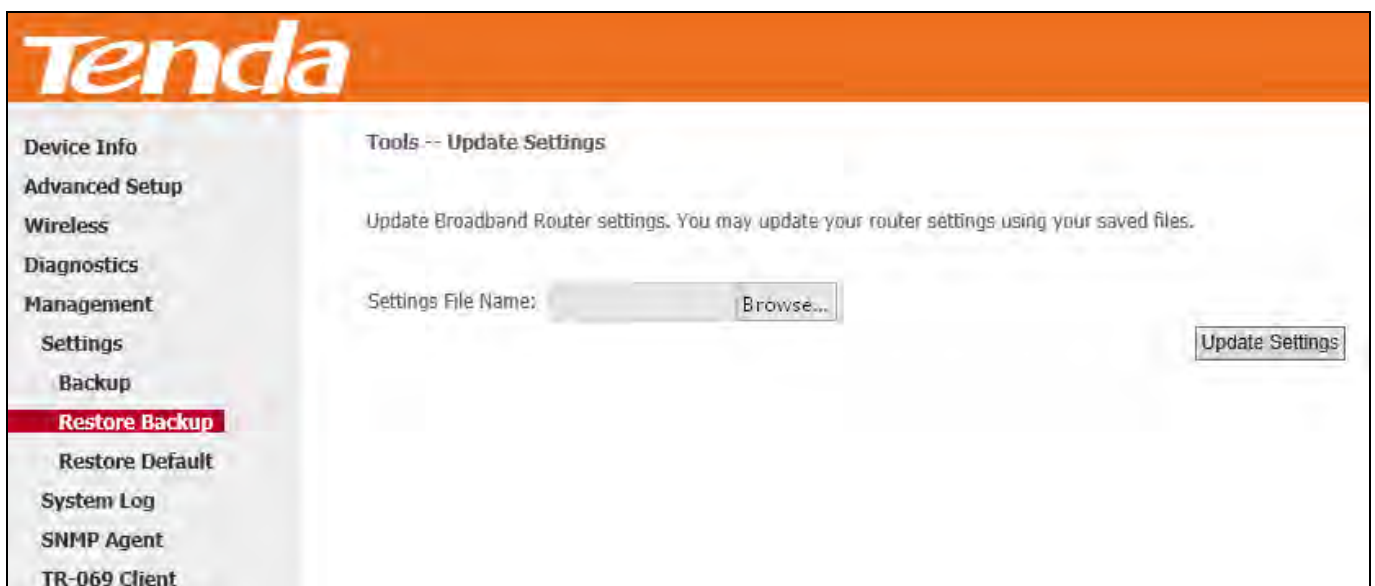
Backup

Here you can save a copy of your device's configurations to your computer. Once you have configured the device, you can save these settings to a configuration file on your local hard drive. The configuration file can later be imported to your device in case the device is reset to factory default settings.



Restore Backup

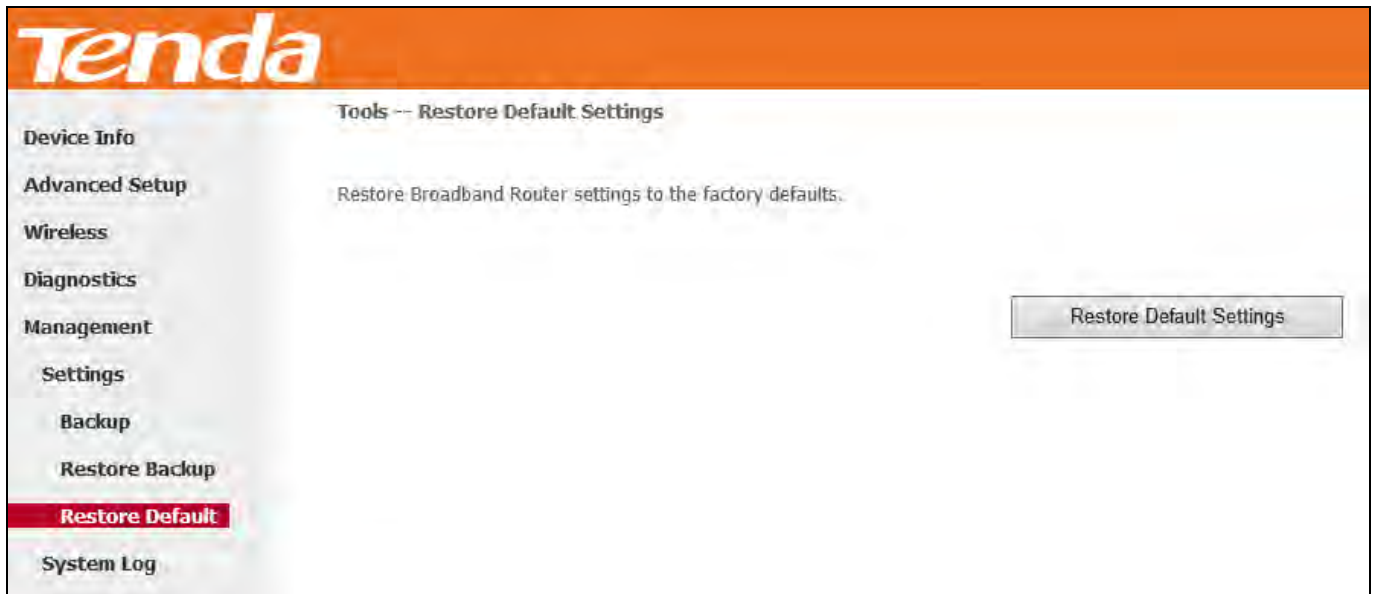
Here you can restore the configuration from a backup file saved on your PC.



Restore Default

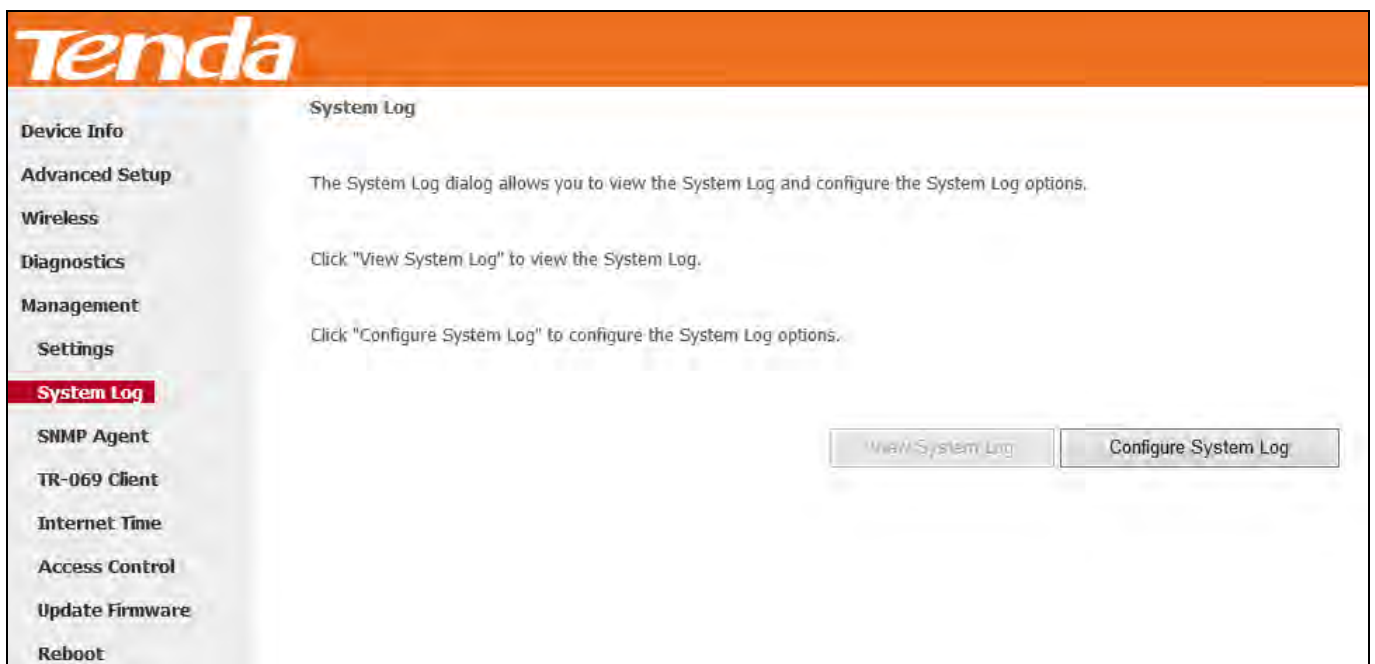
Under some circumstances (for example, unfortunately forgetting the login password or cannot locate network fault),

you may need to remove the existing configuration and restore the factory default settings.

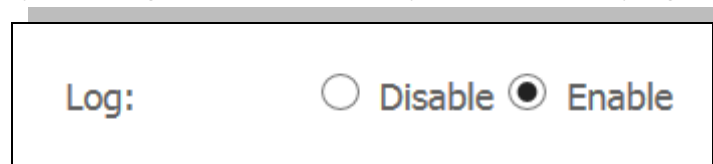


4.5.2 System Log

Here you can view and configure the system log.



To view the System Log, firstly ensure log is enabled, otherwise you cannot read any log.



System Log			
Date/Time	Facility	Severity	Message
Jan 1 00:08:28	daemon	crit	kernel: eth0 Link UP 100 mbps full duplex
Jan 1 00:08:28	daemon	crit	kernel: eth2 Link UP 100 mbps full duplex
Jan 1 00:08:28	daemon	crit	kernel: eth0 Link DOWN.
Jan 1 00:08:28	daemon	crit	kernel: eth2 Link DOWN.
Jan 1 00:08:28	daemon	crit	kernel: eth0 Link UP 100 mbps full duplex
Jan 1 00:08:28	daemon	crit	kernel: eth2 Link UP 100 mbps full duplex
Jan 1 00:08:28	daemon	crit	kernel: eth2 Link DOWN.
Jan 1 00:08:28	daemon	crit	kernel: eth2 Link UP 100 mbps full duplex
Jan 1 00:08:28	daemon	crit	kernel: eth0 Link DOWN.
Jan 1 00:08:28	daemon	crit	kernel: eth0 Link UP 100 mbps full duplex

To configure the system log, click **Configure System Log**.

Tenda Home Page

System Log -- Configuration

If the log mode is enabled, the system will begin to log all the selected events. For the Log Level, all events above or equal to the selected level will be logged. For the Display Level, all logged events above or equal to the selected level will be displayed. If the selected mode is 'Remote' or 'Both,' events will be sent to the specified IP address and UDP port of the remote syslog server. If the selected mode is 'Local' or 'Both,' events will be recorded in the local memory.

Select the desired values and click 'Apply/Save' to configure the system log options.

Log: Disable Enable

Log Level:

Display Level:

Log: If Enable is selected, the system will begin to log all the selected events.

Log Level: Set the log level. All events above or equal to the selected level will be logged.

Display Level: Set the log display level. All logged events above or equal to the selected level will be displayed.

Apply/Save: click to apply and save the system log settings.

4.5.3 SNMP Agent

Simple Network Management Protocol (SNMP) allows a management application to retrieve statistics and status from the SNMP agent in this device.

Tenda

SNMP - Configuration

Simple Network Management Protocol (SNMP) allows a management application to retrieve statistics and status from the SNMP agent in this device.

Select the desired values and click "Apply/Save" to configure the SNMP options.

SNMP Agent: Disable Enable

Read Community:

Set Community:

System Name:

System Location:

System Contact:

Trap Manager IP:

SNMP Agent: Select "Enable" to activate the SNMP Agent feature or "Disable" to deactivate it.

Read Community: Specify a Read Community string. The default is public.

Set Community: Specify a Set Community string. The default is private.

System Name: Specify a descriptive system name.

System Location: Specify a system location.

System Contact: Specify a system contact.

Trap Manager IP: Specify the IP address of the Trap Manager.

4.5.4 TR-069 Client

WAN Management Protocol (TR-069) allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

Click the **TR-069 Client** tab to enter the TR-069 Client configuration screen as seen below:

Inform: Select **Enable/Disable** to enable/disable the **TR-069 Client** function. By default, it is disabled.

Inform Interval: Specify the inform interval.

ACS URL: Enter the ACS (Auto-Configuration Server) URL address.

ACS User Name: Enter the ACS (Auto-Configuration Server) user name.

ACS Password: Enter the ACS (Auto-Configuration Server) password.

WAN Interface used by TR-069 client: Select the WAN interface used by the TR-069 client from the drop-down list.

Display SOAP messages on serial console: If **Enable** is selected, SOAP messages will be displayed on serial console; if **Disable** is selected, SOAP messages will not be displayed on serial console.

Connection Request Authentication: Check/uncheck to enable/disable the connection request authentication.

Connection Request User Name: Enter the connection request user name.

Connection Request Password: Enter the connection request password.

Connection Request URL: Specify the connection request URL.

4.5.5 Internet Time

This page is used to set the router's system time. If **Automatically synchronize with Internet time servers** is checked, the system will automatically connect to NTP server to synchronize the time.

Tenda

Time settings

This page allows you to the modem's time configuration.

Automatically synchronize with Internet time servers

First NTP time server:

Second NTP time server:

Third NTP time server:

Fourth NTP time server:

Fifth NTP time server:

Time zone offset:

First/Second/Third/Fourth/Fifth NTP time server: Select a NTP time server from the drop-down list. If the NTP time server you are looking for is not included in the list, select “Other” and then enter it manually in the box.

Time zone offset: Select your time zone from the drop-down list.

4.5.6 Access Control

This section explains the following information:

- [Password](#)
- [Access Control - Service](#)

Password

Access to your broadband router is controlled through two user accounts: “admin” and “support”.

The user name "admin" has unrestricted access to change and view configuration of your Broadband Router.

The user name "support" is used to allow an ISP technician to access your Broadband Router for maintenance and to run diagnostics.

Note: User Name and Password can only include letters, numbers or underscore.

User Name:

Old Password:

New Password:

Confirm Password:

Apply/Save

User Name: Enter the user name of up to 16 characters.

Old Password: Enter the old password of up to 16 characters.

New Password: Enter a new password of up to 16 characters.

Confirm Password: Re-enter to confirm the new password.

Apply/Save: Click to change or create passwords.



Note

1. Password cannot contain a space.
2. The password of "support" account cannot be changed. It only can be "support".

Access Control - Service

Here you can manage the device either from LAN or WAN side using HTTP, ICMP, TELNET, and SNMP.

Tenda

Access Control -- Services

A Service Control List ("SCL") enables or disables services from being used.

Note: When enabling WAN Access Control with HTTP, TELNET or SNMP service, you must use the mapped port number if the default port number is used by the NAT feature.

Services	LAN	WAN
HTTP	<input checked="" type="checkbox"/> Enable	<input checked="" type="checkbox"/> Enable
ICMP	<input checked="" type="checkbox"/> Enable	<input checked="" type="checkbox"/> Enable
TELNET	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable
SNMP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

Apply/Save

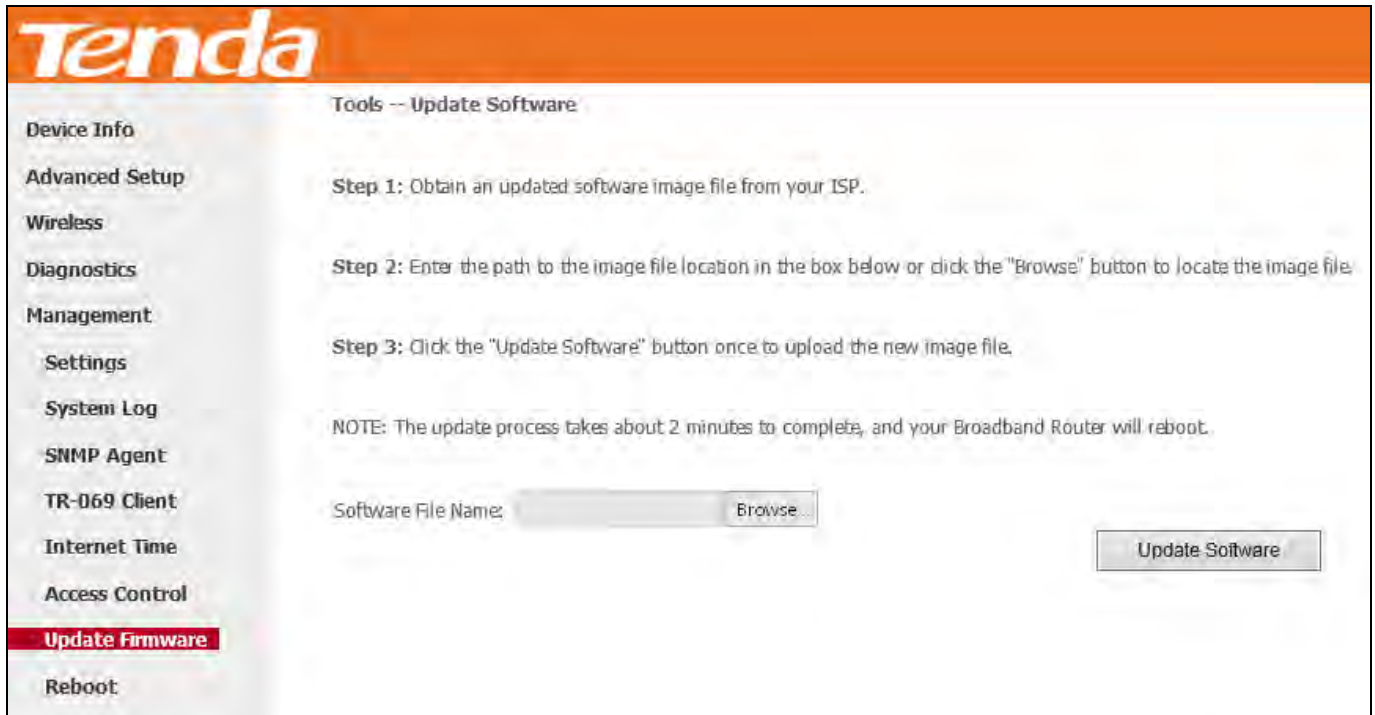


Note

1. If you are not an advanced user, we suggest you keep the default settings.
2. To access the device from the LAN side, you must use the LAN IP address and log in as "admin"; to access the device from the WAN side, you must use the WAN IP address and log in as "support".

4.5.7 Update Firmware

New firmware is released periodically to improve the functionality of your device and add any new features. If you run into a problem with a specific feature of the device, you could log in to our website (www.tendacn.com) to download the latest firmware to update your device.



To update software, do as follows:

- 1) Download an upgrading firmware file from our website: www.tendacn.com and save it in your local hard drive.
- 2) Click the "Browse" button to locate and select the upgrading file.
- 3) Click the "Update Software" button to upload the upgrading file and update the software.



Note

The update process takes about 2 minutes to complete, and your Broadband Router will reboot.

4.5.8 Reboot


Click the **Reboot** button to reboot the router.

The screenshot displays the Tenda web management interface. At the top, there is an orange header with the Tenda logo. Below the header, a left sidebar contains a list of navigation options: Device Info, Advanced Setup, Wireless, Diagnostics, Management, Settings, System Log, SNMP Agent, TR-069 Client, Internet Time, Access Control, and Update Firmware. The 'Reboot' option is highlighted in red at the bottom of this list. The main content area on the right features the text 'Click the button below to reboot the router.' and a 'Reboot' button.

Appendix 1 Configure Your PC

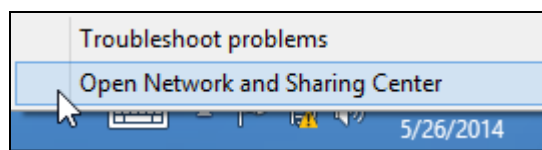
Screens to configure TCP/IP properties in other Operating Systems are similar to those below.

Windows 8

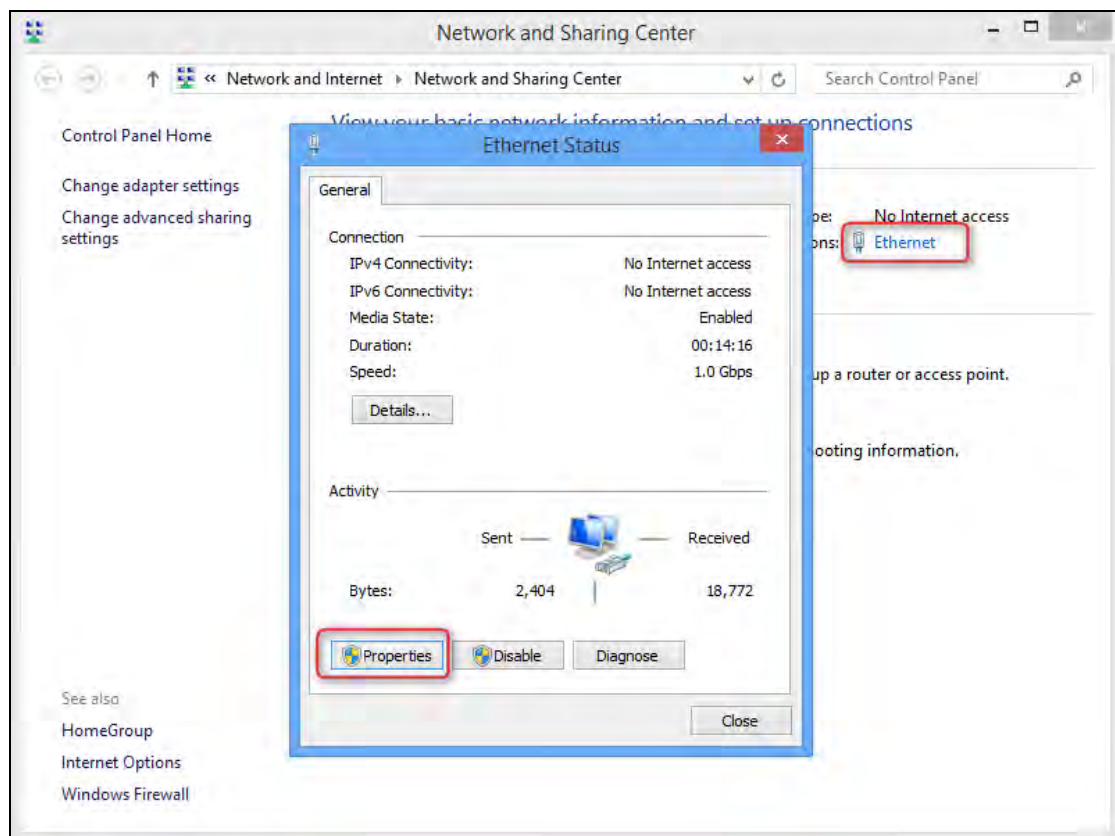
Step 1: Right click the icon  on the bottom right corner of your desktop.



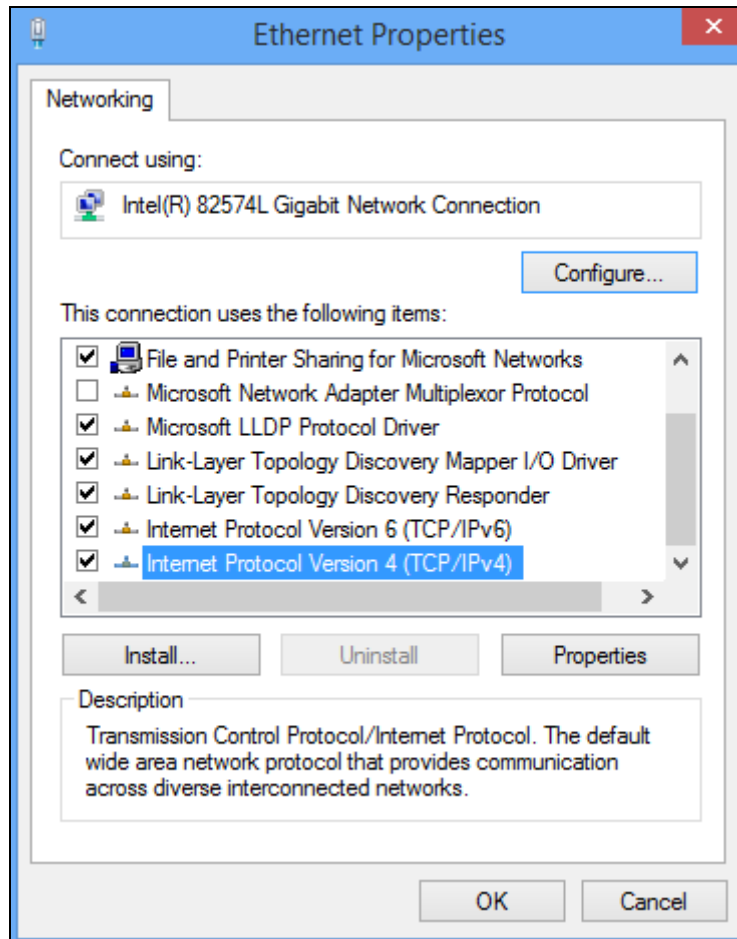
Step 2: Click **Open Network and Sharing Center**.



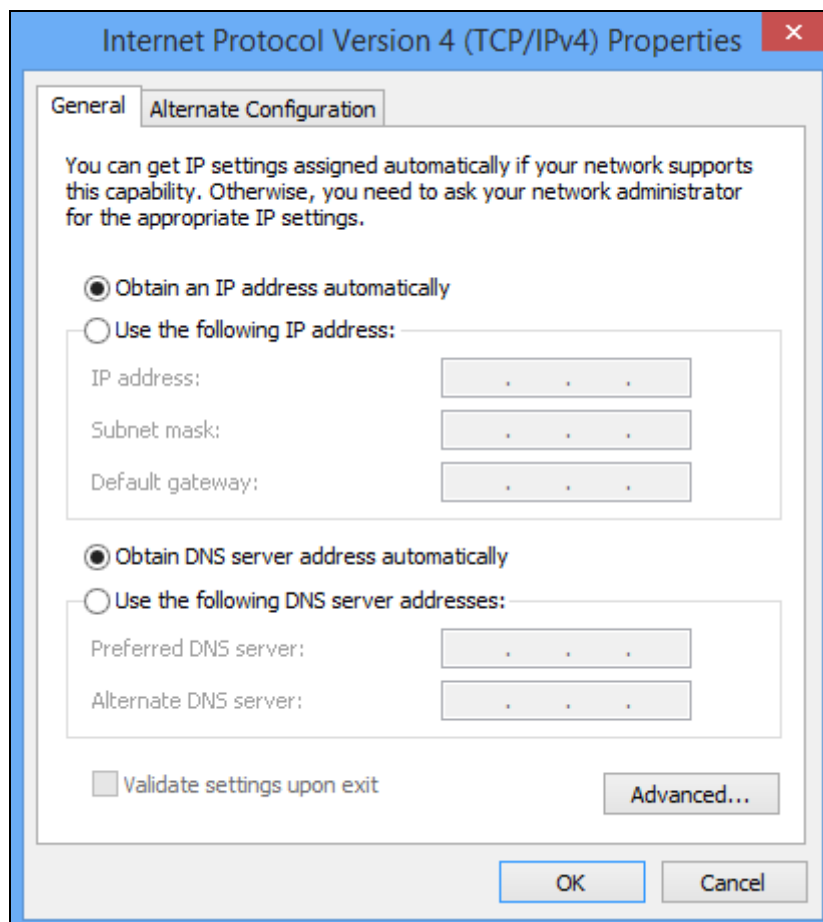
Step 3: Click **Ethernet -> Properties**.



Step 4: Find and double click **Internet Protocol Version 4(TCP/IPv4)**.




Step 5: Select **Obtain an IP address automatically** and **Obtain DNS server address automatically** and click **OK**.

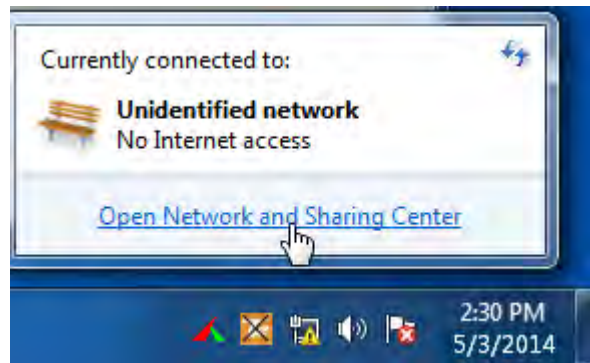


Step 6: Click **OK** on the **Ethernet Properties** window (see **Step 4** for the screenshot).


Windows 7

Step 1: Click the icon  on the bottom right corner of your desktop.

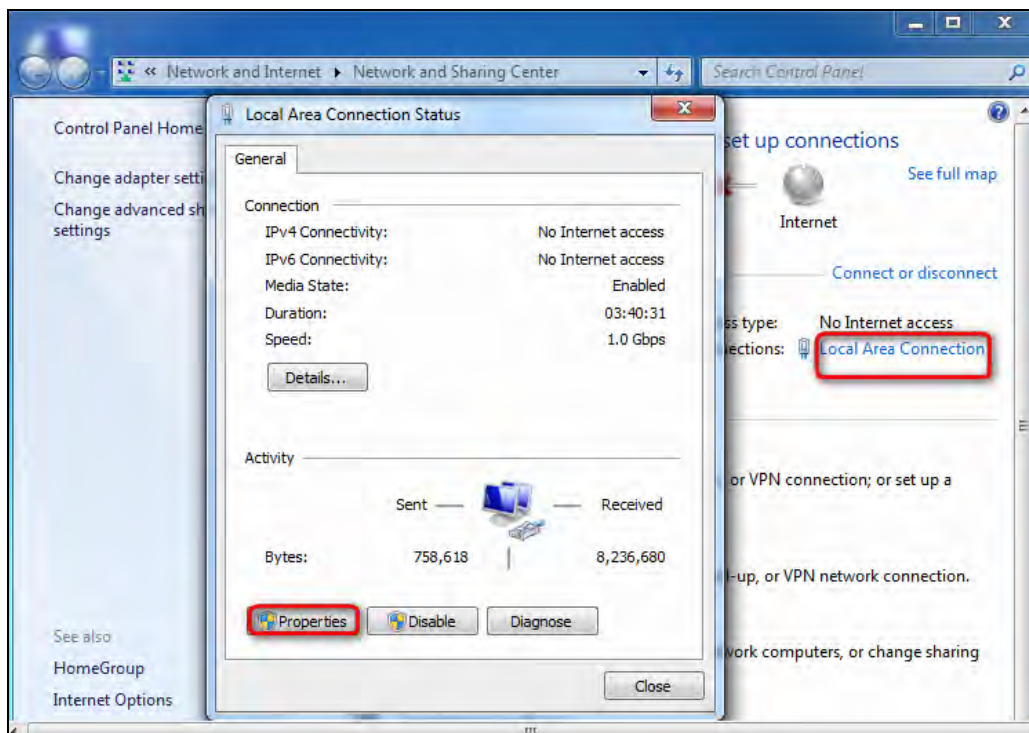
Step 2: Click **Open Network and Sharing Center**.



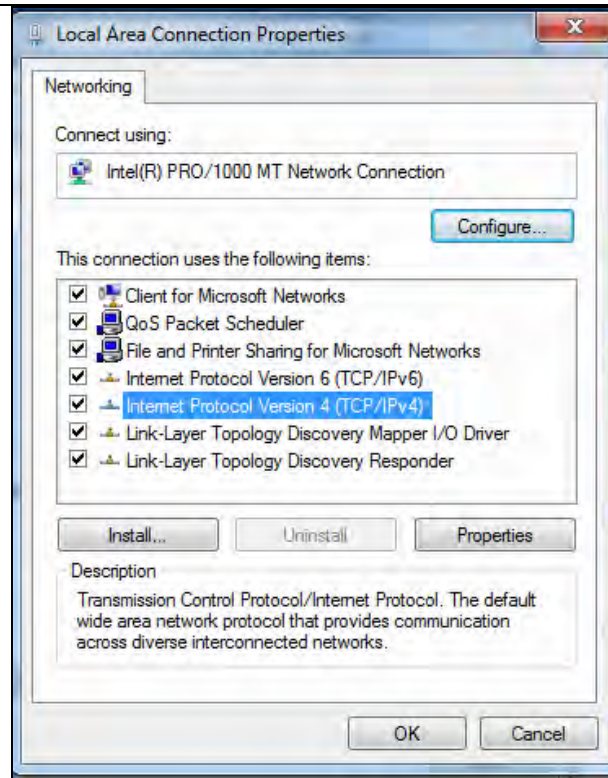
 **Tip:**

If you cannot find the icon  on the bottom right corner of your desktop, follow steps below: Click **Start -> Control Panel -> Network and Internet -> Network and Sharing Center**.

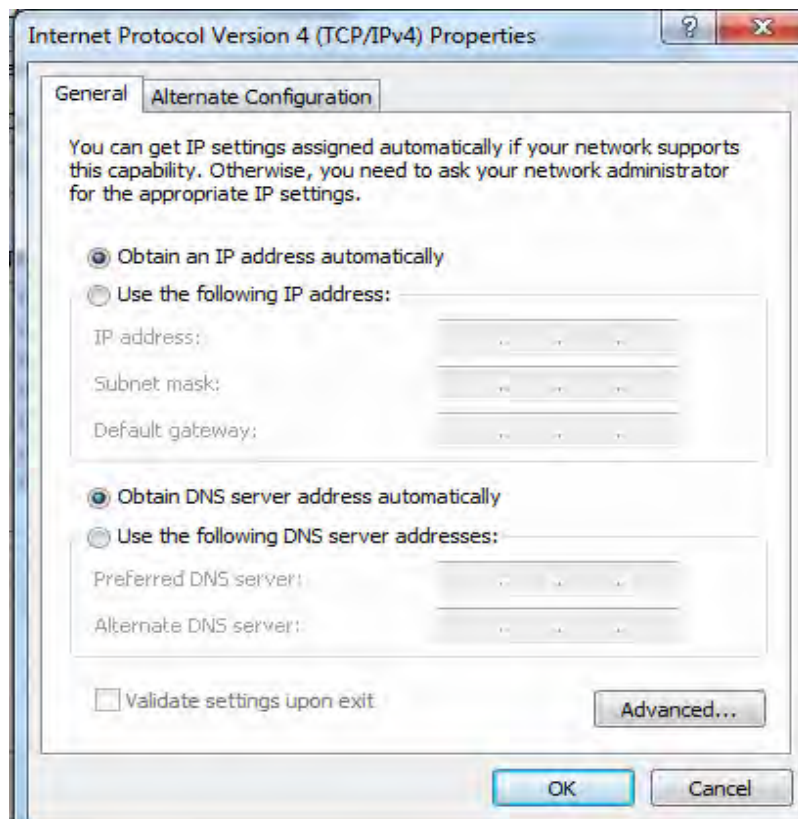
Step 3: Click **Local Area Connection -> Properties**.



Step 4: Find and double click **Internet Protocol Version 4(TCP/IPv4)**.



Step 5: Select **Obtain an IP address automatically** and **Obtain DNS server address automatically** and click **OK**.



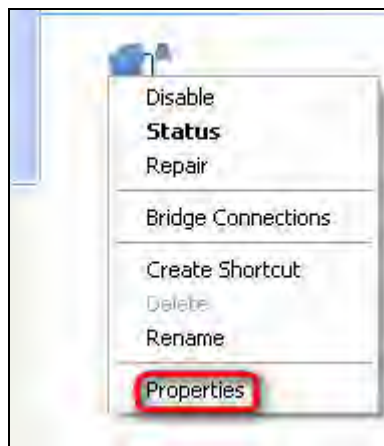
Step 6: Click **OK** on the **Local Area Connection Properties** window (see **Step 4** for the screenshot).

Windows XP

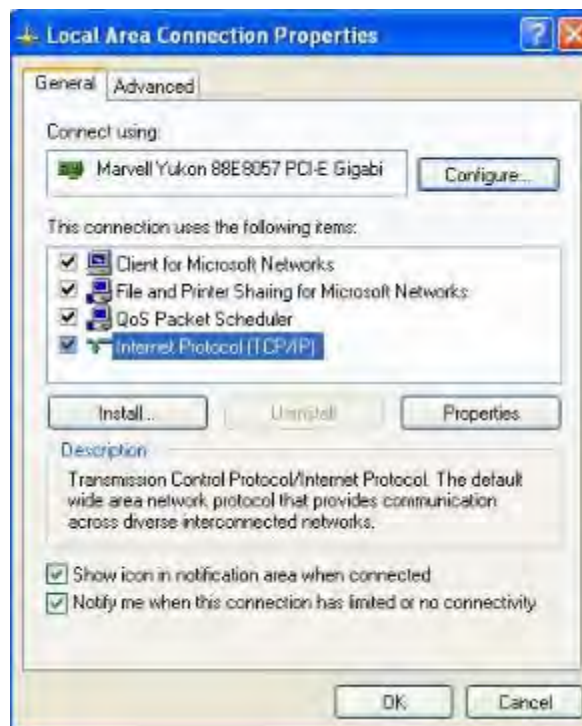
Step 1: Right click **My Network Places** on your desktop and select **Properties**.



Step 2: Right click **Local Area Connection** and select **Properties**.



Step 3: Scroll down to find and double click **Internet Protocol (TCP/IP)**.



Step 4: Select **Obtain an IP address automatically** and **Obtain DNS server address automatically** and click **OK**.



Step 5: Click **OK** on the **Local Area Connection Properties** window (see **Step 3** for the screenshot).

MAC

Step 1: Click on the **Apple** icon from the top left corner and select **System Preferences**.



Step 2: click **Network** from **Internet & Network**.



Step 3: Click on **Ethernet**, choosing **Using DHCP** from configure, and click **Apply** to save.




Appendix 2 Join Your Wireless Network



Tip:

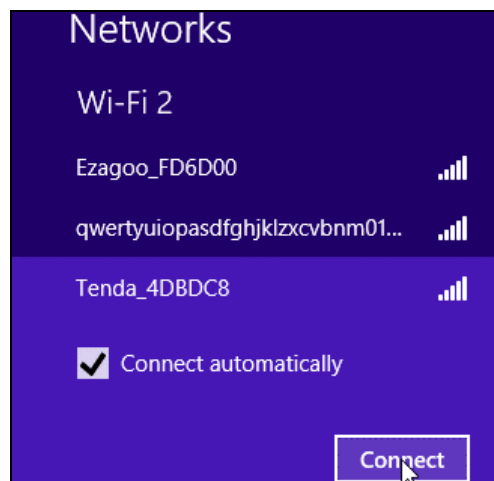
1. The PC you use must have installed a wireless network adapter.
2. The device's SSID is "Tenda_XXXXXX" by default (where "XXXXXX" is the last six characters of its MAC address). You can find the MAC address and/or SSID on the label attached to the device's bottom).

Windows 8


Step 1: Click the icon  on the bottom right corner of your desktop.



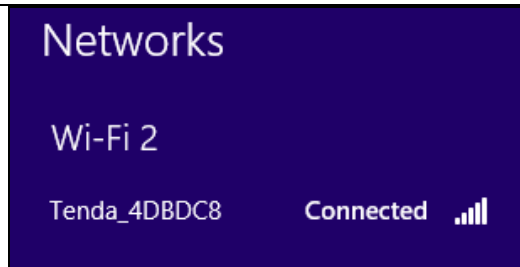
Step 2: Select your wireless network from the list, click **Connect** and then follow onscreen instructions.




Tip:

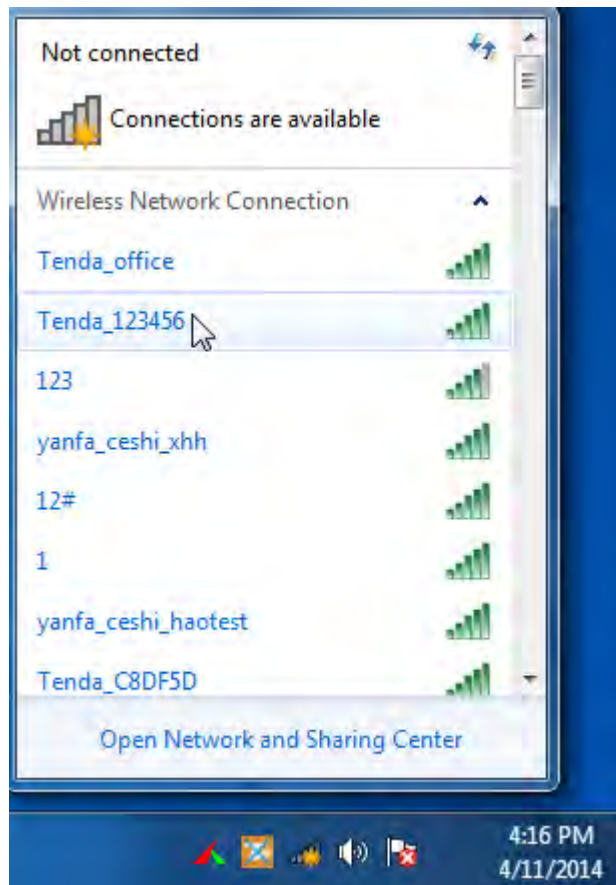
1. If you cannot find the icon , please move your mouse to the top right corner of your desktop, select **Settings** -> **Control Panel** -> **Network and Internet** -> **Network and Sharing Center** -> **Change adapter settings**, right click **Wi-Fi** and select **Connect/Disconnect**.
2. If you cannot find your wireless network from the list, ensure the Airplane Mode is not enabled on your PC.

Step 3: When your wireless network is connected successfully, the following screen will appear.



Windows 7

1. Click the icon  on the bottom right corner of your desktop.
2. Double click your SSID (wireless network name) and then follow onscreen instructions.

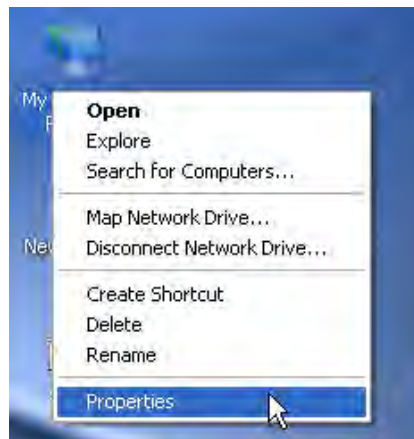


3. When your SSID (wireless network name) displays **Connected** as shown below, you've connected to it for Internet access successfully.

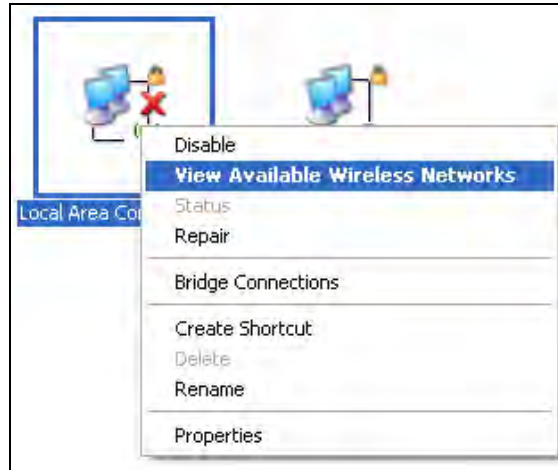


Windows XP

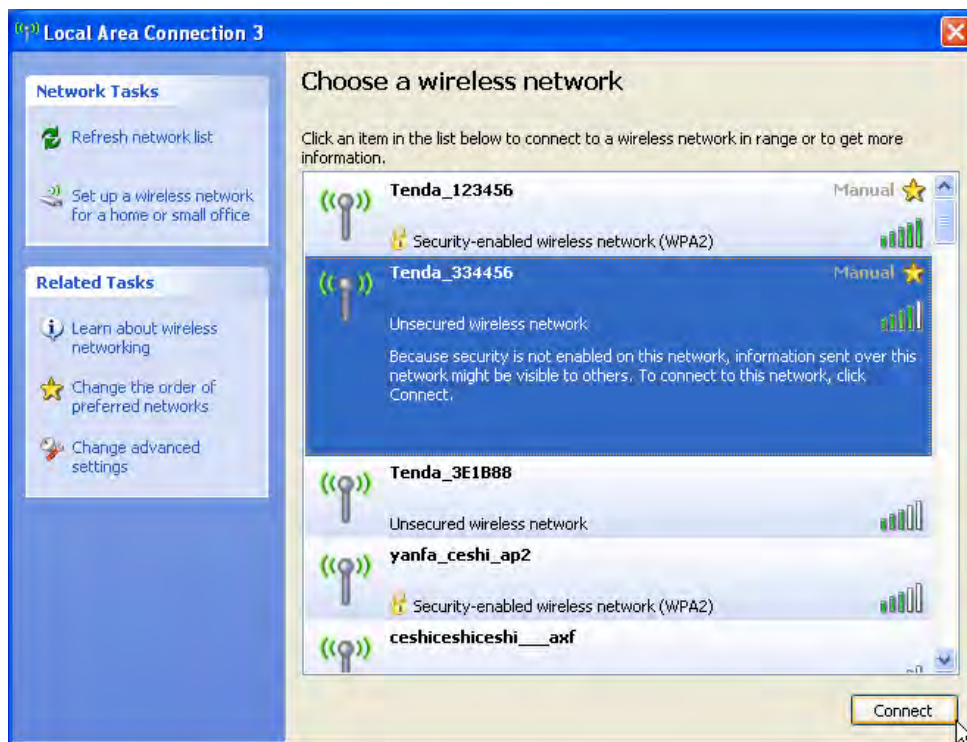
1. Right click **My Network Places**, and select **Properties**.



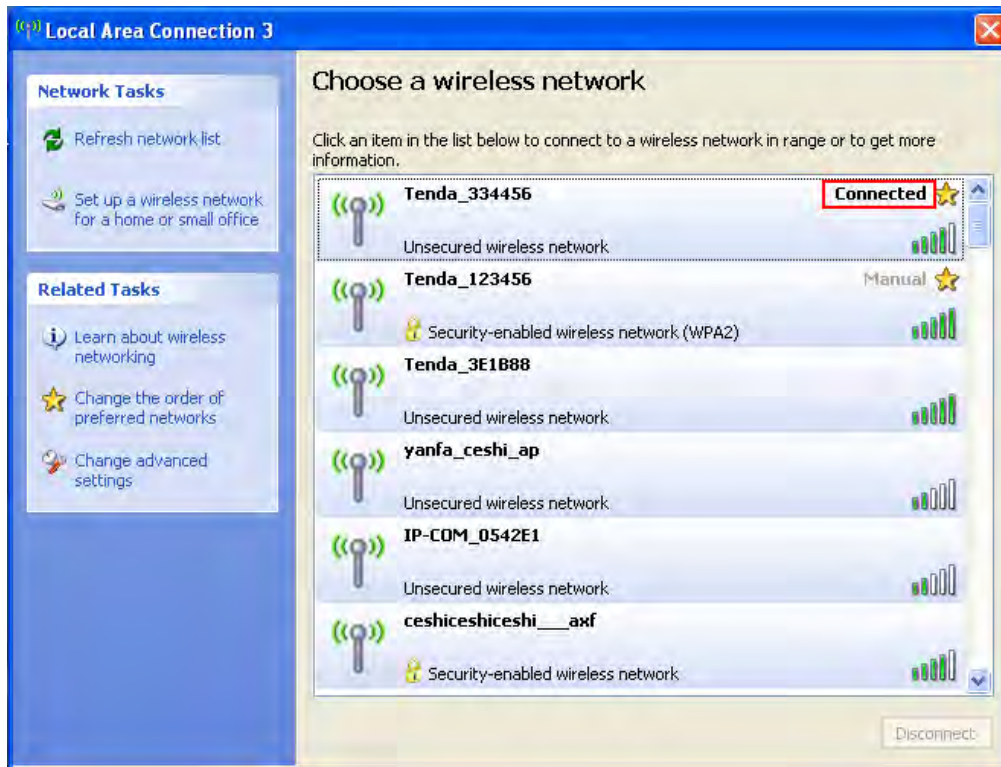
2. Right click **Local Area Connection**, and select **View Available Wireless Networks** from the pop-up submenu.



3. Select your wireless network from the list and then follow onscreen instructions.



4. When your SSID (wireless network name) displays **Connected** as shown below, you've connected to it for Internet access successfully.



MAC

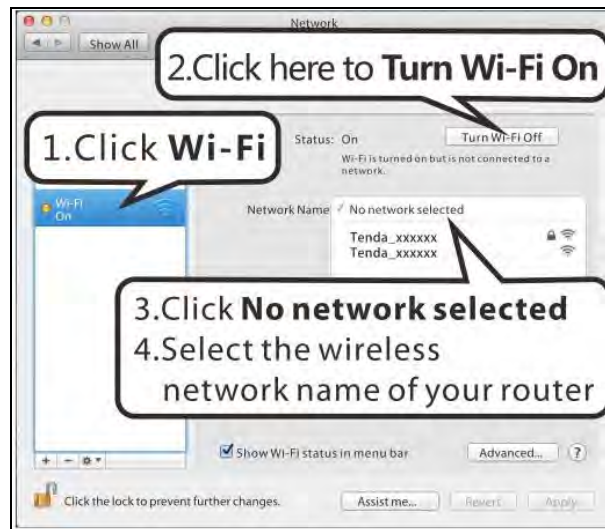
Step 1: Click  > System Preferences.



Step 2: Select **Network** from **Internet & Network**.



Step 3:



Step 4: Enter the wireless password, and click **Join** to connect the selected SSID.



iPhone/iPad

Step 1:



Step 2:



Step 3: Enter the password and click **Join** to connect the selected SSID.





Appendix 3 FAQs

1. What information should I have to access the Internet via the ADSL uplink?

If you have DSL broadband service, you might need the following information to set up your modem router.

- Active Internet service provided by an ADSL account
- The ISP configuration information for your DSL account
 - ISP login name and password
 - Fixed or static IP address

Depending on how your ISP set up your Internet account, you could need to know the Virtual path identifier (VPI) and virtual channel identifier (VCI) parameters for a manual setup.

2. I cannot access the device's management interface. What should I do?



- 1) Verify the physical connection (namely, the Ethernet cable) between your PC and the device. For details, see [Chapter 2 Hardware Install](#) hereof.
- 2) Double check the TCP/IP settings on your PC. For details, see [Appendix 1 Configure Your PC](#) hereof.
- 3) Press the **RST/WPS** button on the device for about 10 seconds to reset the device and then re-access the management interface with the default username and password.
- 4) Change the Ethernet cable that connects your PC and the device.
- 5) Try accessing device management interface from other PCs, smart phones or iPads.
- 6) Connect your PC alone to one of the LAN ports on the device.

3. I forget the wireless security key. What should I do? (How do I configure or change the security key?)

Try the default security key, which can be seen from the label attached to the device bottom.

- If step 1 works, access the device web manager and customize a new security key.
- If step 1 does not work, press the **RST/WPS** button on the device for about 10 seconds to restore factory default settings. And then log in to the device web manager to set a new security key.

4. My notebook is unable to search wireless networks, what should I do?

- 1) Verify that wireless service is enabled on your notebook by checking the wireless hardware or software button on your notebook. The hardware button is usually located on the side of your notebook. Note that some notebooks may not have such hardware button. Software button can be implemented by pressing Fn+. **Fn** is situated on the bottom left corner of your keyboard,  may be any key between **F1-F12** depending on what type of keyboard you are using.
- 2) Log in to the device, select **Wireless > Basic** and change the wireless network name (SSID). Then search again.

Follow below steps to verify that wireless service is enabled on your notebook (for Windows XP OS only).

From the desktop, right click on the **My Computer** icon and select **Manage**. Select **Services and Applications**, double click **Services** and view the status of **Wireless Zero Configuration**. If **Status** dose not display **Started**, right click the **Wireless Zero Configuration** and select **Start**; if **Startup Type** displays **Disabled**, right click the **Wireless Zero Configuration**, select **Properties**; from the **Startup Type** drop-down list box, select **Automatic** and then click **Start** in **Service Status**.

5. Why cannot I connect to the searched wireless network?

- 1) Verify that you entered a correct security key.
- 2) Log in to the device, select **Wireless > Basic** and change the wireless network name (SSID). Then connect again.
- 3) Log in to the device, select **Wireless > Security** and change the security settings. Then connect again.

6. Where should I place the wireless device for optimum performance?

- 1) Place it in the center to extend wireless coverage as far as possible.
- 2) Never place the device near to metal objects or in direct sunshine.
- 3) Keep it far away from devices that use the 2.4 GHz radio wave frequency to transmit and receive data, such as 802.11g/n wireless network devices, electronic devices such as cell phones, radio transmitters, blue tooth, cordless phones, fax machine, refrigerator and microwaves to avoid electronic interference.

Appendix 4 VPI/VCI List

The following table lists common ISPs and their VPI and VCI numbers. If you cannot locate your ISP and their VPI and VCI information here, ask your ISP to provide it.

Country	ISP	VPI	VCI	Encapsulation
Australia	Telstra	8	35	PPPoA LLC
Australia	GoldenIT	8	35	_PPPOA_VCMUX
Australia	Telstra Bigpond	8	35	PPPOE_LLC
Australia	OptusNET	8	35	PPPOE_VCMUX
Australia	AAPT	8	35	PPPOE_VCMUX
Australia	ADSL Direct	8	35	PPPOE_LLC
Australia	Ausie Broadband	8	35	PPPOE_LLC
Australia	Australia On Line	8	35	PPPOA_VCMUX
Australia	Connexus	8	35	PPPOE_LLC
Australia	Dodo	8	35	PPPOE_LLC
Australia	Gotalk	8	35	PPPOE_VCMUX
Australia	Internode	8	35	PPPOE_VCMUX
Australia	iPrimus	8	35	PPPOA_VCMUX
Australia	Netspace	8	35	PPPOE_VCMUX
Australia	Southern Cross Telco	8	35	PPPOE_LLC
Australia	TPG Internet	8	35	PPPOE_LLC
Argentina	Telecom	0	33	PPPoE LLC
Argentina	Telefonica	8	35	PPPoE LLC
Argentina		1	33	PPPoA VC-MUX
Belgium	ADSL Office	8	35	1483 Routed IP LLC
Belgium	Turboline	8	35	PPPoA LLC
Belgium	Turboline	8	35	1483 Bridged IP LLC
Belgium	ADSL Office	8	35	1483 Bridged IP LLC
Bolivia		0	34	1483 Routed IP LLC
Brazil	Brasil Telcom	0	35	PPPoE LLC
Brazil	Telefonica	8	35	PPPoE LLC

Brazil	Telmar	0	33	PPPoE LLC
Brazil	South Region	1	32	PPPoE LLC
Canada	Primus Canada	0	35	PPPoE LLC
Canada	Rogers Canada (1)	0	35	PPPoE LLC
Canada	Rogers Canada (2)	8	35	1483 Bridged IP LLC
Canada	Rogers Canada (3)	0	35	1484 Bridged IP LLC
Canada	BellSouth(1) Canada	8	35	PPPoE LLC
Canada	BellSouth(2) Canada	0	35	PPPoE LLC
Canada	Sprint (1) Canada	0	35	PPPoA LLC
Canada	Sprint (2) Canada	8	35	PPPoE LLC
Canada	Verizon (1) Canada	0	35	PPPoE LLC
Canada	Verizon (2) Canada	0	35	1483 Bridged IP LLC
Colombia	EMCALI	0	33	PPPoA VC-MUX
Columbia	ETB	0	33	PPPoE LLC
Costa Rica	ICE	1	50	1483 Routed IP LLC
Czech Republic		8	48	1483 Bridged IP LLC
Denmark	Cybercity, Tiscali	0	35	PPPoA VC-MUX
Dominican Republic		0	33	1483 Bridged IP LLC
Dubai		0	50	1483 Bridged IP LLC
Egypt:	TE-data	0	35	1483 Bridged IP LLC
Egypt:	Linkdsl	0	35	1483 Bridged IP LLC
Egypt:	Vodafone	8	35	1483 Bridged IP LLC
Finland	Saunalahti	0	100	1483 Bridged IP LLC
Finland	Elisa	0	100	1483 Bridged IP LLC
Finland	DNA	0	100	1483 Bridged IP LLC
Finland	Sonera	0	35	1483 Bridged IP LLC
France	Free	8	36	LLC
France (1)	Orange	8	35	PPPoE LLC
France (2)		8	67	PPPoE LLC
France (3)	SFR	8	35	PPPoA VC-MUX
Germany		1	32	PPPoE LLC

Hungary	Sci-Network	0	35	PPPoE LLC
Iceland	Islandssimi	0	35	PPPoA VC-MUX
Iceland	Siminn	8	48	PPPoA VC-MUX
India	Airtel	1	32	1483 Bridged IP LLC
India	BSNL	0	35	1483 Bridged IP LLC
India	MTNL	0	35	1483 Bridged IP LLC
India	RELIANCE COMMUNICATION	0	35	PPPOE LLC
India	TATA INDICOM	0	32	PPPOE LLC
India	CONNECT	1	32	PPPOE LLC
Indonesia Telkomnet	Speedy	8	81	PPPoE LLC
Iran	[Shatel] Aria-Rasaneh-Tadbir	0	35	PPPOE LLC
Iran	Asia-Tech	0	35	PPPOE LLC
Iran	Pars-Online (Tehran)	0	35	PPPOE LLC
Iran	Pars-Online (Provinces)	0	59	PPPOE LLC
Iran	[Saba-Net] Neda-Gostar-Saba	0	35	PPPOE LLC
Iran	Pishgaman-Tose	0	35	PPPOE LLC
Iran	Fan-Ava	8	35	PPPOE LLC
Iran	Datak	0	35	PPPOE LLC
Iran	Laser (General)	0	35	PPPOE LLC
Iran	Laser (Privates)	0	32	PPPOE LLC
Iran	Asr-Enteghal-Dadeha	8	35	PPPOE LLC
Iran	Kara-Amin-Ertebat	0	33	PPPOE LLC
Iran	ITC	0	35	PPPOE LLC
Iran (1)		0	35	PPPoE LLC
Iran (2)		8	81	PPPoE LLC
Iran	Dadegostar Asre Novin	0	33	PPPOE LLC
Israel		8	35	PPPoA VC-MUX
Israel(1)		8	48	PPPoA VC-MUX

Italy		8	35	1483 Bridged IP LLC
Italy		8	35	PPPoA VC-MUX
Jamaica (1)		8	35	PPPoA VC-MUX
Jamaica (2)		0	35	PPPoA VC-MUX
Jamaica (3)		8	35	1483 Bridged IP LLC SNAP
Jamaica (4)		0	35	1483 Bridged IP LLC SNAP
Kazakhstan	Kazakhtelecom «Megaline»	0	40	LLC/SNAP Bridging
Kazakhstan		0	33	PPPoA VC-MUX
kuwait unitednetwork		0	33	1483 Bridged IP LLC
Malaysia	Streamyx	0	35	PPPOE LLC
Malaysia		0	35	PPPoE LLC
Mexico	Telmex (1)	8	81	PPPoE LLC
Mexico	Telmex (2)	8	35	PPPoE LLC
Mexico	Telmex (3)	0	81	PPPoE LLC
Mexico	Telmex (4)	0	35	PPPoE LLC
morocco	IAM	8	35	PPPOE
Netherlands	BBNED	0	35	PPPoA VC-MUX
Netherlands	MXSTREAM	8	48	1483 Bridged IP LLC
Netherlands	BBNED	0	35	1483 Bridged IP LLC
Netherlands	MX Stream	8	48	PPPoA VC-MUX
New Zealand	Xtra	0	35	PPPoA VC-MUX
New Zealand	Slingshot	0	100	PPPoA VC-MUX
Orange (Kenya)	Nyumbani	0	35	PPPoE LLC
Pakistan (PALESTINE)		8	35	1483 Bridged IP LLC
Pakistan for PTCL		0	103	1483 Bridged IP LLC
Pakistan (cyber net)		8	35	PPPoE LLC
Pakistan (linkDotnet)		0	35	PPPoA LLC
Pakistan(PTCL)		8	81	PPPoE LLc
Philippines(1)		0	35	1483 Bridged IP LLC
Philippines(2)		0	100	1483 Bridged IP LLC

Portugal		0	35	PPPoE LLC
Puerto Rico	Coqui.net	0	35	PPPoA LLC
RomTelecom Romania:		0	35	1483 Bridged IP LLC
Russia	Rostel	0	35	PPPoE LLC
Russia	Port telecom	0	35	PPPoE LLC
Russia	VNTC	8	35	PPPoE LLC
Saudi Arabia (1)		0	33	PPPoE LLC
Saudi Arabia (2)		0	35	PPPoE LLC
Saudi Arabia (3)		0	33	1483 Bridged IP LLC
Saudi Arabia (4)		0	33	1483 Routed IP LLC
Saudi Arabia (5)		0	35	1483 Bridged IP LLC
Saudi Arabia (6)		0	35	1483 Routed IP LLC
Spain	Arrakis	0	35	1483 Bridged IP VC-MUX
Spain	Auna	8	35	1483 Bridged IP VC-MUX
Spain	Comunitel	0	33	1483 Bridged IP VC-MUX
Spain	Eresmas	8	35	1483 Bridged IP VC-MUX
Spain	Jazztel	8	35	IPOE VC-MUX
Spain	Jazztel ADSL2+/ Desagregado	8	35	1483 Bridged IP LLC-BRIDGING
Spain	OpenforYou	8	32	1483 Bridged IP VC-MUX
Spain	Tele2	8	35	1483 Bridged IP VC-MUX
Spain	Telefónica (España)	8	32	1483 Bridged IP LLC/SNAP
Spain	Albura, Tiscali	1	32	PPPoA VC-MUX
Spain	Colt Telecom, Ola Internet	0	35	PPPoA VC-MUX
Spain	EresMas, Retevision	8	35	PPPoA VC-MUX
Spain	Telefonica (1)	8	32	PPPoE LLC
Spain	Telefonica (2), Terra	8	32	1483 Routed IP LLC
Spain	Wanadoo (1)	8	35	PPPoA VC-MUX
Spain	Wanadoo (2)	8	32	PPPoE LLC
Spain	Terra	8	32	1483 Bridged IP LLC/SNAP
Spain	Terra	8	32	1483 Bridged IP LLC/SNAP

Spain	Uni2	1	33	1483 Bridged IP VC-MUX
Spain	Orange	8	35	1483 Bridged IP VC-MUX
Spain	Orange 20 Megas	8	35	LLC-BRIDGING
Spain	Orange	8	32	1483 Bridged IP LLC/SNAP
Spain	Ya.com	8	32	1483 Bridged IP VC - MUX
Spain	Ya.com	8	32	1483 Bridged IP LLC/SNAP
Spain	Wanadoo (3)	8	32	1483 Routed IP LLC
SpainWanadoo		8	32	1483 Bridged IP LLC
Sri Lanka Telecom-(SLT)		8	35	PPPOE LLC
Sweden	Telenordia	8	35	PPPoE
Sweden	Telia	8	35	1483 Routed IP LLC
Switzerland		8	35	1483 Bridged IP LLC
Switzerland		8	35	PPPoE LLC
Telefónica (Argentina)		8	35	1483 Bridged IP LLC-based
Telefónica (Perú)		8	48	1483 Bridged IP VC-MUX
Thailand	TRUE	0	100	PPPoE LLC
Thailand	TOT	1	32	PPPoE LLC
Thailand	3BB	0	33	PPPoE LLC
Thailand	Cat Telecom	0	35	PPPoE LLC
Thailand	BuddyBB	0	35	PPPoE LLC
Trinidad & Tobago	TSTT	0	35	PPPoA VC-MUX
Turkey (1)		8	35	PPPoE LLC
Turkey (2)		8	35	PPPoA VC-MUX
UAE (Al sahmil)		0	50	1483 Bridged IP LLC
United States	4DV.Net	0	32	PPPoA VC-MUX
United States	All Tel (1)	0	35	PPPoE LLC
United States	All Tel (2)	0	35	1483 Bridged IP LLC
United States	Ameritech	8	35	PPPoA LLC
United States	AT&T (1)	0	35	PPPoE LLC
United States	AT&T (2)	8	35	1483 Bridged IP LLC
United States	AT&T (3)	0	35	1483 Bridged IP LLC

United States	August.net (1)	0	35	1483 Bridged IP LLC
United States	August.net (2)	8	35	1483 Bridged IP LLC
United States	BellSouth	8	35	PPPoE LLC
United States	Casstle.Net	0	96	1483 Bridged IP LLC
United States	CenturyTel (1)	8	35	PPPoE LLC
United States	CenturyTel (2)	8	35	1483 Bridged IP LLC
United States	Coqui.net	0	35	PPPoA LLC
United States	Covad	0	35	PPPoE LLC
United States	Earthlink (1)	0	35	PPPoE LLC
United States	Earthlink (2)	8	35	PPPoE LLC
United States	Earthlink (3)	8	35	PPPoE VC-MUX
United States	Earthlink (4)	0	32	PPPoA LLC
United States	Eastex	0	100	PPPoA LLC
United States	Embarq	8	35	1483 Bridged IP LLC
United States	Frontier	0	35	PPPoE LLC
United States	Grande ommunications	1	34	PPPoE LLC
United States	GWI	0	35	1483 Bridged IP LLC
United States	Hotwire	0	35	1483 Bridged IP LLC
United States	Internet Junction	0	35	1484 Bridged IP LLC
United States	PVT	0	35	1485 Bridged IP LLC
United States	QWest (1)	0	32	PPPoALLC
United States	QWest (2)	0	32	PPPoA VC-MUX
United States	QWest (3)	0	32	1483 Bridged IP LLC
United States	QWest (4)	0	32	PPPoE LLC
United States	SBC (1)	0	35	PPPoE LLC
United States	SBC (2)	0	35	1483 Bridged IP LLC
United States	SBC (3)	8	35	1483 Bridged IP LLC
United States	Sonic	0	35	1484 Bridged IP LLC
United States	SouthWestern Bell	0	35	1483 Bridged IP LLC
United States	Sprint (1)	0	35	PPPoALLC
United States	Sprint (2)	8	35	PPPoE LLC

United States	Sprint Territory	0	35	PPPoE LLC
United States	SureWest Communications(1)	0	34	1483 Bridged LLC Snap
United States	SureWest Communications(2)	0	32	PPPoE LLC
United States	SureWest Communications(3)	0	32	PPPoA LLC
United States	Toast.Net	0	35	PPPoE LLC
United States	Uniserv	0	33	1483 Bridged IP LLC
United States	US West	0	32	PPPoA VC-MUX
United States	Verizon (1)	0	35	PPPoE LLC
United States	Verizon (2)	0	35	1483 Bridged IP LLC
United States	Windstream	0	35	PPPoE LLC
United States	Verizon (2)	0	35	1483 Bridged IP LLC
United Kingdom (1)		0	38	PPPoA VC-MUX
United Kingdom (2)		0	38	PPPoE LLC
United Kingdom	AOL	0	38	PPPoE VC-MUX
United Kingdom	Karoo	1	50	PPPoA LLC
UK		0	38	1483 Bridged IP LLC
Uzbekistan	Sharq Stream	8	35	PPPoE LLC
Uzbekistan	Sarkor	0	33	PPPoE LLC
Uzbekistan	TShTT	0	35	PPPoE LLC
Venezuela	CANTV	0	33	1483 Routed IP LLC
Vietnam		0	35	PPPoE LLC
Vietnam	VDC	8	35	PPPoE LLC
Vietnam	Viettel	8	35	PPPoE LLC
Vietnam	FPT	0	33	PPPoE LLC

Appendix 5 Regulatory Compliance Information



CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures. This device complies with EU 1999/5/EC.

NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. (2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.



FCC Statement

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.

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

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.

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.

NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. (2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.