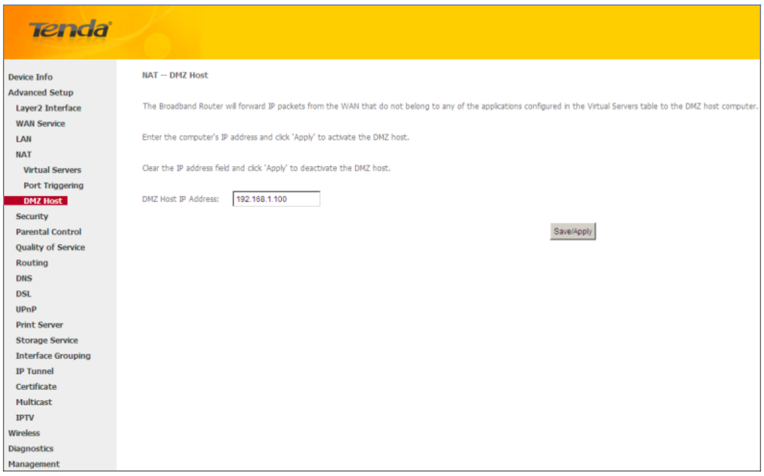


NAT -- DMZ Host

The Broadband Router will forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.

Enter the computer's IP address and click 'Apply' to activate the DMZ host.

Clear the IP address field and click 'Apply' to deactivate the DMZ host.

DMZ Host IP Address: 192.168.1.100

Warning!

DMZ servers pose a security risk. A computer designated as the DMZ server loses much of the protection of the firewall and is exposed to exploits from the Internet.

4.2.5 Security

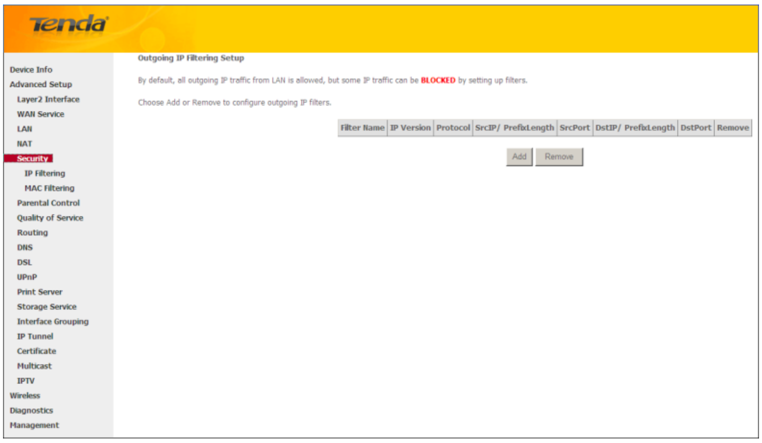
This section explains the following information:

- IP Filtering
- MAC Filtering

IP Filtering

Outgoing IP Filtering Setup

By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be BLOCKED by setting up filters. Choose Add or Remove to configure outgoing IP filters.



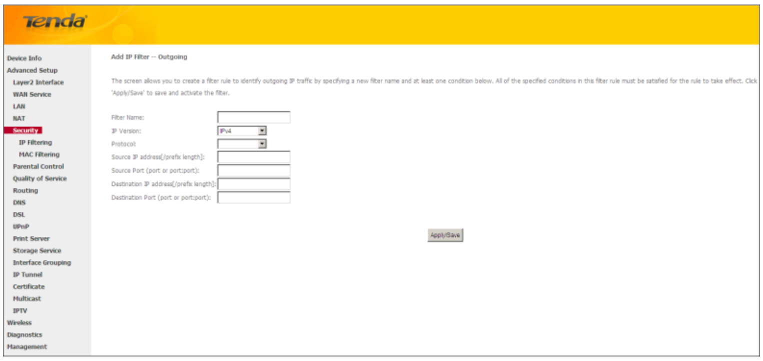
Outgoing IP Filtering Setup

By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be **BLOCKED** by setting up filters.

Choose Add or Remove to configure outgoing IP filters.

Filter Name	IP Version	Protocol	SrcIP/ PrefixLength	SrcPort	DstIP/ PrefixLength	DstPort	Remove

Choose **Add** to enter the following screen:



Add IP Filter -- Outgoing

The screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Apply/Save' to save and activate the filter.

Filter Name:
IP Version: IPv4
Protocol:
Source IP address[/prefix length]:
Source Port (port or port:port):
Destination IP address[/prefix length]:
Destination Port (port or port:port):

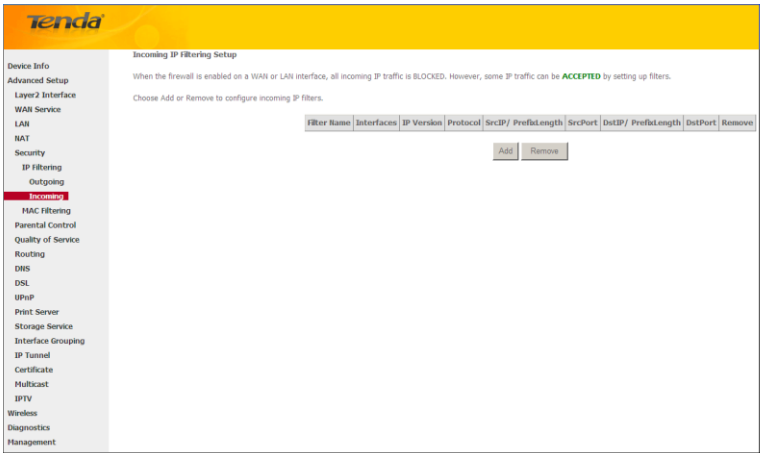
This screen allows you to create a filter rule to identify outgoing IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Apply/Save' to save and activate the filter.

- ✧ **Filter Name:** Enter a descriptive filtering name.
- ✧ **IP Version:** Select either IPv4 or IPv6.
- ✧ **Protocol:** TCP/UDP, TCP, UDP and ICMP are available for your option.
- ✧ **Source IP address [/prefix length]:** Enter the LAN IP address to be filtered.
- ✧ **Source Port (port or port: port):** Specify a port number or a range of ports used by LAN PCs to access Internet. If you are unsure, leave it blank.
- ✧ **Destination IP address [/prefix length]:** Specify the external network IP address to be accessed by specified LAN PCs.
- ✧ **Destination Port** (port or port:port)**:** Specify a port number or a range of ports used by LAN PCs to access external network.

Incoming IP Filtering Setup

When the firewall is enabled on a WAN or LAN interface, all incoming IP traffic is BLOCKED. However, some IP traffic can be **ACCEPTED** by setting up filters.

Choose Add or Remove to configure incoming IP filters.



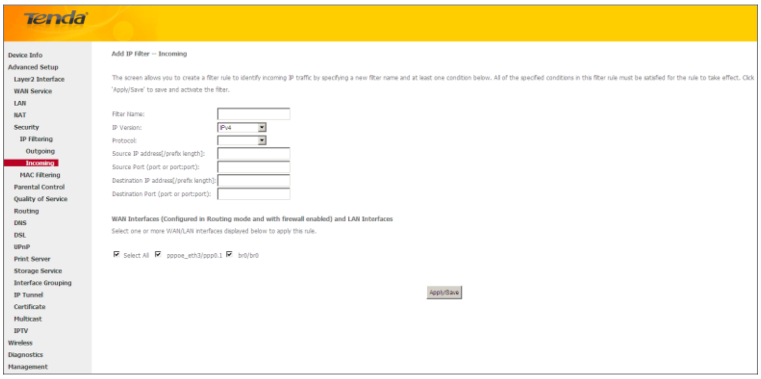
Incoming IP Filtering Setup

When the firewall is enabled on a WAN or LAN interface, all incoming IP traffic is BLOCKED. However, some IP traffic can be ACCEPTED by setting up filters.

Choose Add or Remove to configure incoming IP filters.

Filter Name	Interfaces	IP Version	Protocol	SrcIP/ PrefixLength	SrcPort	DstIP/ PrefixLength	DstPort	Remove

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



Add IP Filter -- Incoming

The screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click 'Apply/Save' to save and activate the filter.

Filter Name:
IP Version: IPv4
Protocol:
Source IP address[/prefix length]:
Source Port (port or port:port):
Destination IP address[/prefix length]:
Destination Port (port or port:port):

WAN Interfaces (Configured in Routing mode and with firewall enabled) and LAN Interfaces

Select one or more WAN/LAN interfaces displayed below to apply this rule.

☑ Select All ☑ pppoe_eth3/ppp0.1 ☑ br0/br0

This screen allows you to create a filter rule to identify incoming IP traffic by specifying a new filter name and at least one condition below. All of the specified conditions in this filter rule must be satisfied for the rule to take effect. Click **Apply/Save** to save and activate the filter.

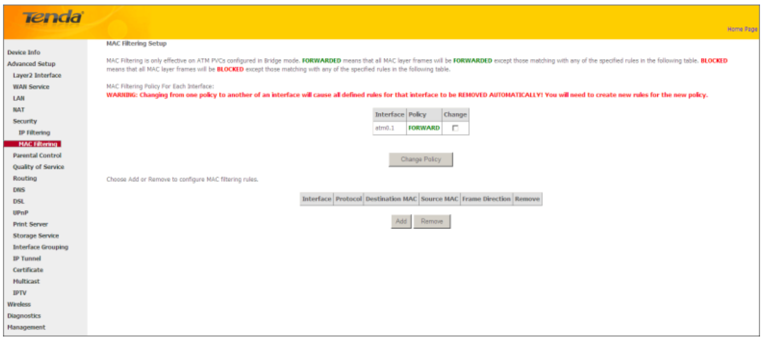
- ✧ **IP Version:** Select either IPv4 or IPv6.
- ✧ **Protocol:** TCP/UDP, TCP, UDP and ICMP are available for your option.
- ✧ **Source IP address [/prefix length]:** Enter the Internal IP address [/prefix length] to be filtered.
- ✧ **Source Port (port or port: port):** Specify a port number or a range of ports used by PCs from external network to access your internal network.
- ✧ **Destination IP address [/prefix length]:** Specify the internal network IP address [/prefix length] to be accessed by the specified PCs from external network.
- ✧ **Destination Port** (port or port:port)**:** Specify a port number or a range of ports used by PCs from external network to access your internal network.

MAC Filtering

A bridge WAN service is needed to configure this service.

MAC Filtering is only effective on ATM PVCs configured in Bridge mode. **FORWARDED** means that all MAC layer frames will be FORWARDED except those matching with any of the specified rules in the following table. **BLOCKED** means that all MAC layer frames will be BLOCKED except those matching with any of the specified rules in the following table.

Choose Add or Remove to configure MAC filtering rules.



MAC Filtering Setup

MAC Filtering is only effective on ATM PVCs configured in Bridge mode. FORWARDED means that all MAC layer frames will be FORWARDED except those matching with any of the specified rules in the following table. BLOCKED means that all MAC layer frames will be BLOCKED except those matching with any of the specified rules in the following table.

MAC Filtering Policy For Each Interface:

WARNING: Changing from one policy to another of an interface will cause all defined rules for that interface to be REMOVED AUTOMATICALLY! You will need to create new rules for the new policy.

Interface	Policy	Change
atm0.1	FORWARD	□

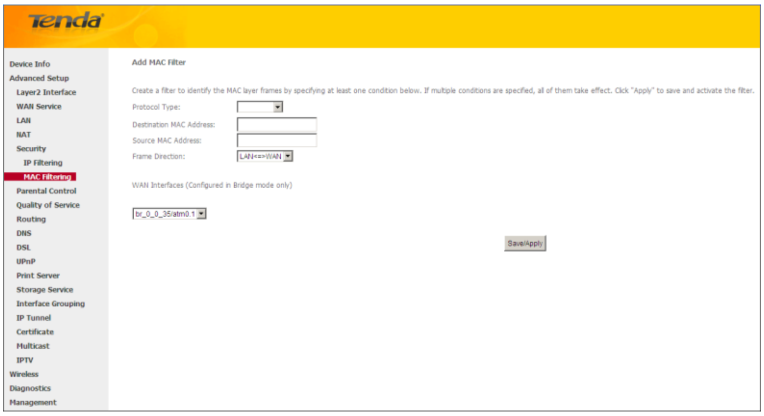
Choose Add or Remove to configure MAC filtering rules.

Interface	Protocol	Destination MAC	Source MAC	Frame Direction	Remove

Warning!

Changing from one policy to another of an interface will cause all defined rules for that interface to be REMOVED AUTOMATICALLY! You will need to create new rules for the new policy.

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



Add MAC Filter

Create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click "Apply" to save and activate the filter.

Protocol Type:

Destination MAC Address:

Source MAC Address:

Frame Direction: LAN<=>WAN

WAN Interfaces (Configured in Bridge mode only)

br_0_0_35/atm0.1

Here you can create a filter to identify the MAC layer frames by specifying at least one condition below. If multiple conditions are specified, all of them take effect. Click **Save/Apply** to save and activate the filter.

Protocol Type: Select a protocol type from the drop-down list.

Destination MAC Address: Enter the destination MAC address apply the MAC filtering rule to which you wish to apply the MAC filtering rule.

Source MAC Address: Enter the source MAC address to which you wish to apply the MAC filtering rule.

Frame Direction: Select a frame direction from the drop-down list.

WAN Interfaces: Select a WAN interface from the drop-down list.

4.2.6 Parental Control

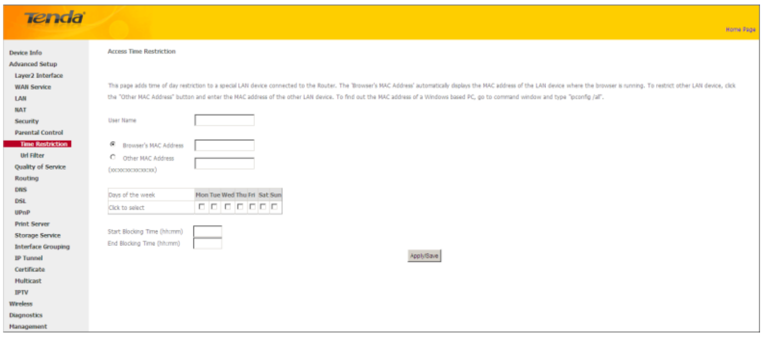
This section explains the following information:

• Time Restriction

• URL Filter

Time Restriction

Click **Parental Control -> Time Restriction -> Add** to enter the following screen.



Access Time Restriction

This page adds time of day restriction to a special LAN device connected to the Router. The 'Browser's MAC Address' automatically displays the MAC address of the LAN device where the browser is running. To restrict other LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows based PC, go to command window and type "ipconfig /all".

User Name

● Browser's MAC Address

○ Other MAC Address (xx:xx:xx:xx:xx:xx)

Days of the week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Click to select	□	□	□	□	□	□	□

Start Blocking Time (hh:mm)

End Blocking Time (hh:mm)

Here you can add time of day restriction that an attached LAN device can access Internet.

The 'Browser's MAC Address' automatically displays the MAC address of the LAN device where the browser is running. To restrict other LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device.

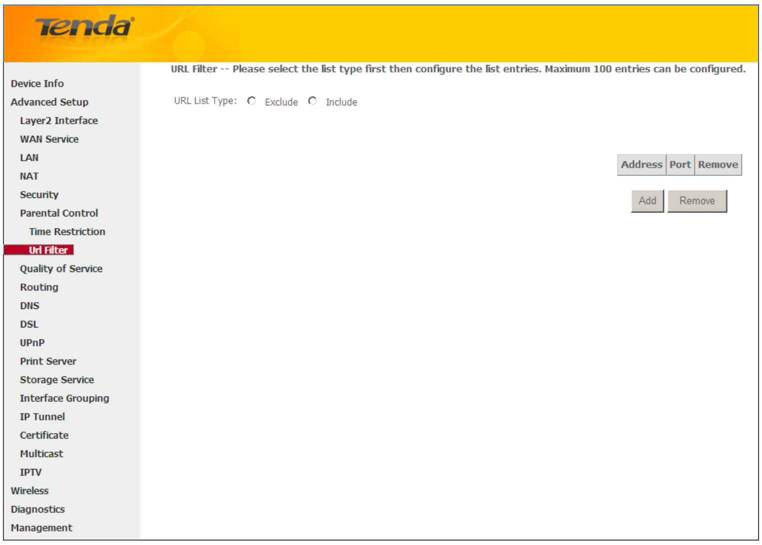
✧ **User Name:** Enter a user name.

✧ **Browser's MAC Address:** Automatically adds the MAC address of the attached LAN device where the browser is running.

- ✧ **Other MAC Address:** Specify the MAC address of the computer that you want to apply Internet access restriction.
- ✧ **Days of the week:** Click to select the days of the week during which you wish to restrict Internet access.
- ✧ **Start Blocking Time/ End Blocking Time:** Specify time of day restriction to an attached LAN device. Within this specified time length of the day, this LAN device will be blocked from Internet.
- ✧ **Apply/Save:** Click to Apply/Save your settings.

URL Filter

Here you can add URL access restriction to specific LAN PCs.

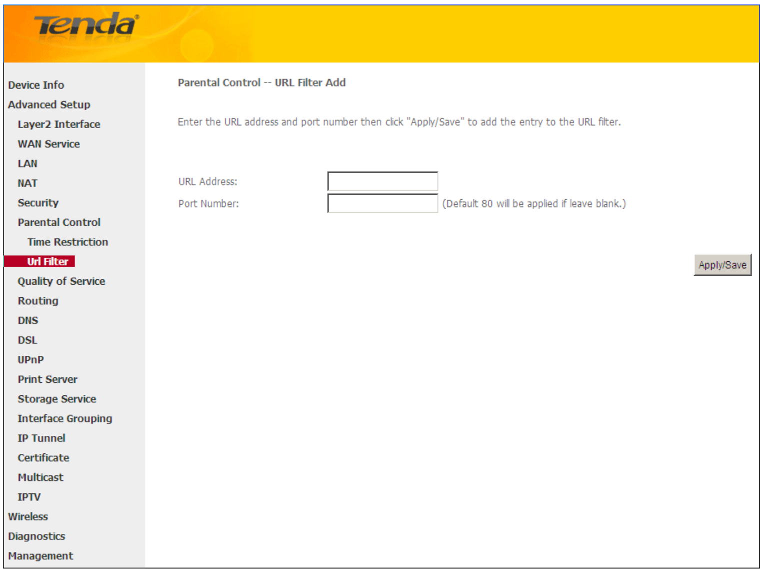


URL Filter -- Please select the list type first then configure the list entries. Maximum 100 entries can be configured.

URL List Type: ○ Exclude ○ Include

Address	Port	Remove

Select the **URL List Type** (Exclude or Include) first and then click **Add** to enter the screen below for configuring the list entries. Maximum 100 entries can be configured.



Parental Control -- URL Filter Add

Enter the URL address and port number then click "Apply/Save" to add the entry to the URL filter.

URL Address:

Port Number: (Default 80 will be applied if leave blank.)

URL Address: Enter the URLs that a specific LAN PC cannot access.

Port Number: Specify the port number used by the web server. The default is 80, which is the standard protocol for web servers.

Enter the URL address and port number then click "Apply/Save" to add the entry to the URL filter.

Note:

If you have accessed the URL before you include it in a URL filter rule, you must reboot the router and erase it from your PC to activate this URL filter rule. To erase the domain name from your PC, click ***Start -> Run****, enter* ***cmd*** *and then type* ***ipconfig /flushdns****.*

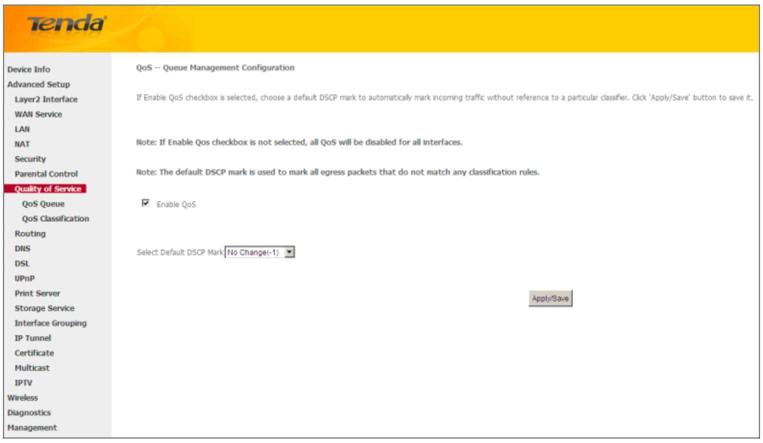
4.2.7 Quality of Service

This section explains the following:

• QoS Queue

• QoS Classification

If **Enable QoS** checkbox is selected, choose a default DSCP mark to automatically mark incoming traffic without reference to a particular classifier. Click **Apply/Save** button to save it.



QoS -- Queue Management Configuration

If Enable QoS checkbox is selected, choose a default DSCP mark to automatically mark incoming traffic without reference to a particular classifier. Click 'Apply/Save' button to save it.

Note: If Enable Qos checkbox is not selected, all QoS will be disabled for all interfaces.

Note: The default DSCP mark is used to mark all egress packets that do not match any classification rules.

☑ Enable QoS

Select Default DSCP Mark No Change(-1)

Enable QoS: Check/uncheck to enable/disable the QoS feature.

Note:

1. If Enable Qos checkbox is not selected, all QoS will be disabled for all interfaces.

2. The default DSCP mark is used to mark all egress packets that do not match any classification rules.

QoS Queue

In ATM mode, maximum 8 queues can be configured.

In PTM mode, maximum 8 queues can be configured.

For each Ethernet interface, maximum 4 queues can be configured.

For each Ethernet WAN interface, maximum 4 queues can be configured.

To add a queue, click the **Add** button.

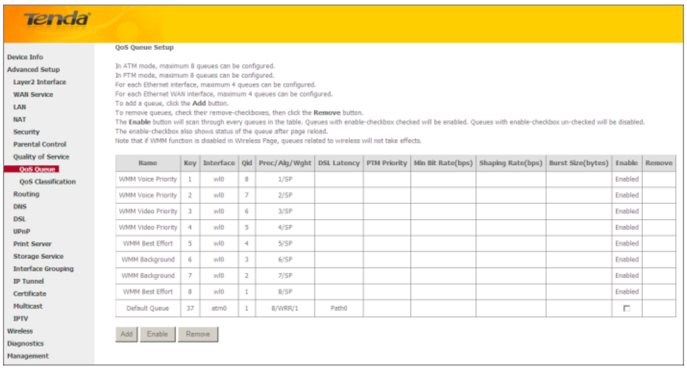
To remove queues, check their remove-checkboxes, then click the **Remove** button.

The **Enable** button will scan through every queues in the table. Queues with enable-checkbox checked will be enabled.

Queues with enable-checkbox un-checked will be disabled.

The enable-checkbox also shows status of the queue after page reload.

Note that if WMM function is disabled in Wireless Page, queues related to wireless will not take effects.

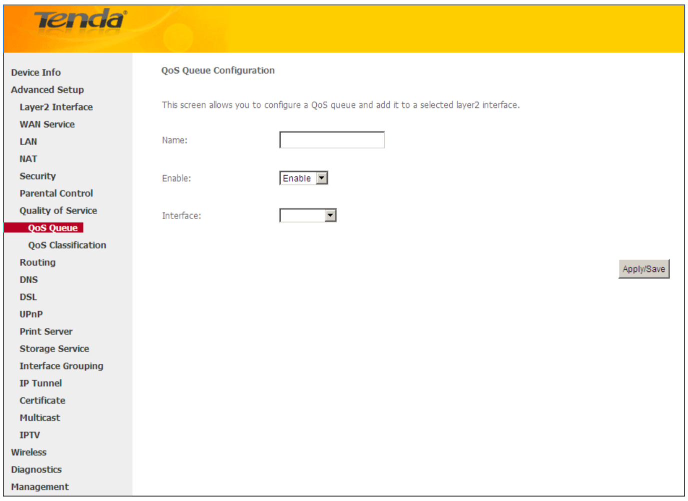


QoS Queue Setup

In ATM mode, maximum 8 queues can be configured.
In PTM mode, maximum 8 queues can be configured.
For each Ethernet interface, maximum 4 queues can be configured.
For each Ethernet WAN interface, maximum 4 queues can be configured.
To add a queue, click the **Add** button.
To remove queues, check their remove-checkboxes, then click the **Remove** button.
The **Enable** button will scan through every queues in the table. Queues with enable-checkbox checked will be enabled. Queues with enable-checkbox un-checked will be disabled.
The enable-checkbox also shows status of the queue after page reload.
Note that if WMM function is disabled in Wireless Page, queues related to wireless will not take effects.

Name	Key	Interface	Qid	Prec/Alg/Wght	DSL Latency	PTM Priority	Min Bit Rate(bps)	Shaping Rate(bps)	Burst Size(bytes)	Enable	Remove
WMM Voice Priority	1	wl0	8	1/SP						Enabled	
WMM Voice Priority	2	wl0	7	2/SP						Enabled	
WMM Video Priority	3	wl0	6	3/SP						Enabled	
WMM Video Priority	4	wl0	5	4/SP						Enabled	
WMM Best Effort	5	wl0	4	5/SP						Enabled	
WMM Background	6	wl0	3	6/SP						Enabled	
WMM Background	7	wl0	2	7/SP						Enabled	
WMM Best Effort	8	wl0	1	8/SP						Enabled	
Default Queue	37	atm0	1	8/WRR/1	Path0					□	

To add a queue, click the **Add** button to enter the following screen.



QoS Queue Configuration

This screen allows you to configure a QoS queue and add it to a selected layer2 interface.

Name:

Enable: Enable

Interface:

Here you can configure a QoS queue and add it to a selected layer2 interface.

QoS Classification

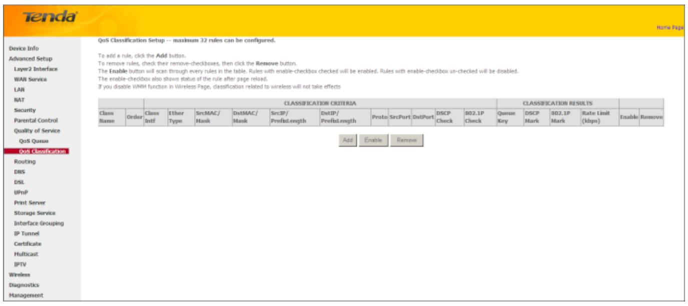
To add a rule, click the **Add** button.

To remove rules, check their remove-checkboxes, then click the **Remove** button.

The **Enable** button will scan through every rules in the table. Rules with enable-checkbox checked will be enabled. Rules with enable-checkbox un-checked will be disabled.

The enable-checkbox also shows status of the rule after page reload.

If you disable WMM function in Wireless Page, classification related to wireless will not take effects.

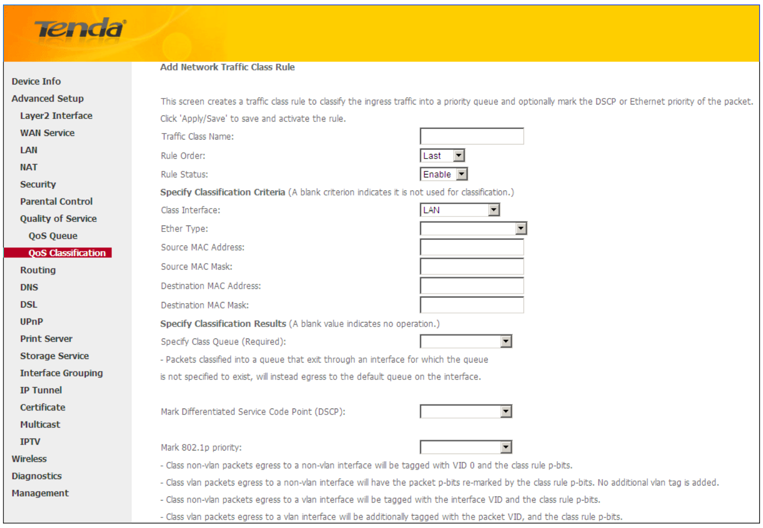


QoS Classification Setup -- maximum 32 rules can be configured.

To add a rule, click the **Add** button.
To remove rules, check their remove-checkboxes, then click the **Remove** button.
The **Enable** button will scan through every rules in the table. Rules with enable-checkbox checked will be enabled. Rules with enable-checkbox un-checked will be disabled.
The enable-checkbox also shows status of the rule after page reload.
If you disable WMM function in Wireless Page, classification related to wireless will not take effects

		CLASSIFICATION CRITERIA											CLASSIFICATION RESULTS					
Class Name	Order	Class Intf	Ether Type	SrcMAC/ Mask	DstMAC/ Mask	SrcIP/ PrefixLength	DstIP/ PrefixLength	Proto	SrcPort	DstPort	DSCP Check	802.1P Check	Queue Key	DSCP Mark	802.1P Mark	Rate Limit (kbps)	Enable	Remove

To add a rule, click the **Add** button to enter the following screen.



Add Network Traffic Class Rule

This screen creates a traffic class rule to classify the ingress traffic into a priority queue and optionally mark the DSCP or Ethernet priority of the packet.

Click 'Apply/Save' to save and activate the rule.

Traffic Class Name:	
Rule Order:	Last
Rule Status:	Enable

Specify Classification Criteria (A blank criterion indicates it is not used for classification.)

Class Interface:	LAN
Ether Type:	
Source MAC Address:	
Source MAC Mask:	
Destination MAC Address:	
Destination MAC Mask:	

Specify Classification Results (A blank value indicates no operation.)

Specify Class Queue (Required):

- Packets classified into a queue that exit through an interface for which the queue is not specified to exist, will instead egress to the default queue on the interface.

Mark Differentiated Service Code Point (DSCP):

Mark 802.1p priority:

- Class non-vlan packets egress to a non-vlan interface will be tagged with VID 0 and the class rule p-bits.
- Class vlan packets egress to a non-vlan interface will have the packet p-bits re-marked by the class rule p-bits. No additional vlan tag is added.
- Class non-vlan packets egress to a vlan interface will be tagged with the interface VID and the class rule p-bits.
- Class vlan packets egress to a vlan interface will be additionally tagged with the packet VID, and the class rule p-bits.

Here you can create a traffic class rule to classify the ingress traffic into a priority queue and optionally mark the DSCP or Ethernet priority of the packet.

Click **Apply/Save** to save and activate the rule.

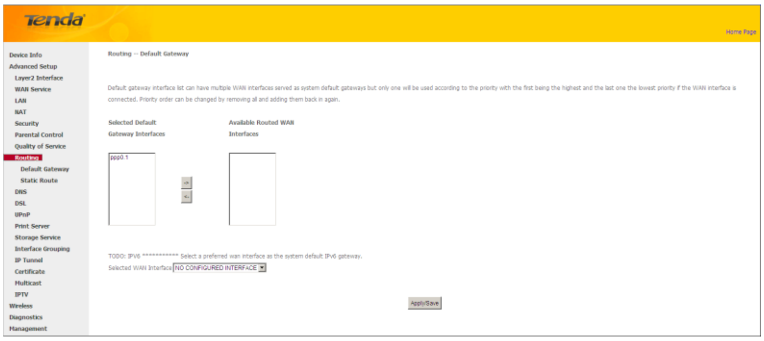
4.2.8 Routing

This section explains the following:

- Default Gateway
- Static Route

Default Gateway

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the highest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.



Routing -- Default Gateway

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority with the first being the highest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

Selected Default Gateway Interfaces	Available Routed WAN Interfaces
ppp0.1	

TODO: IPV6 *********** Select a preferred wan interface as the system default IPv6 gateway.

Selected WAN Interface NO CONFIGURED INTERFACE

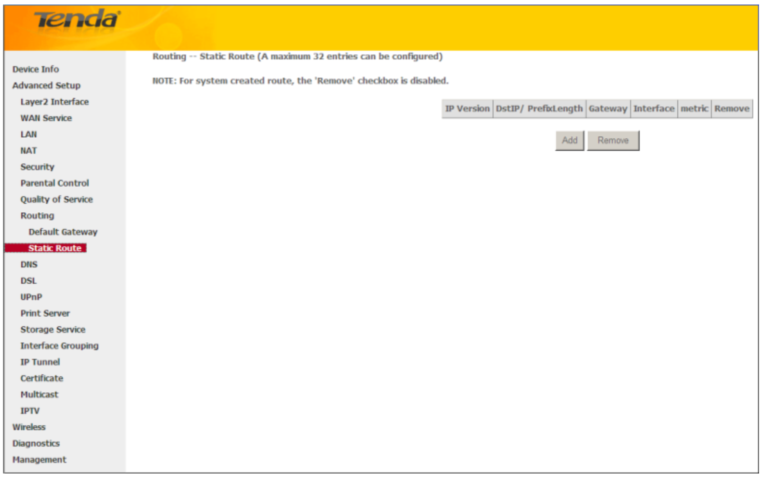
✧ **Selected Default Gateway Interfaces:** Displays the selected dfault gteway iterfaces. Select a WAN interface and click the -> button to move it to the **Available Routed WAN Interfaces** box.

✧ **Available Routed WAN Interfaces:** Displays the available routed WAN interfaces. Select a WAN interface and click the <- button to add it to the **Selected Default Gateway Interfaces** box.

✧ **Apply/Save:** Click to save and activate your settings.

Static Route

Static routes provide additional routing information to your router. Typically, you do not need to add static routes. However, when there are several routers in the network, you may want to set up static routing. Static routing determines the path of the data in your network. You can use this feature to allow users on different IP domains to access the Internet via this device. It is not recommended to use this setting unless you are familiar with static routing. In most cases, dynamic routing is recommended, because this feature allows the router to detect the physical changes of the network layout automatically. If you want to use static routing, make sure the router's DHCP function is disabled.

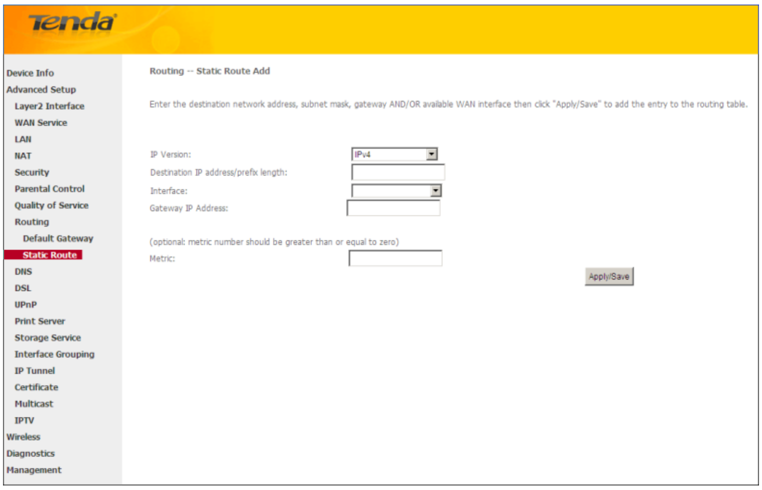


Routing -- Static Route (A maximum 32 entries can be configured)

NOTE: For system created route, the 'Remove' checkbox is disabled.

IP Version	DstIP/ PrefixLength	Gateway	Interface	metric	Remove

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



Routing -- Static Route Add

Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Apply/Save" to add the entry to the routing table.

IP Version: IPv4
Destination IP address/prefix length:
Interface:
Gateway IP Address:

(optional: metric number should be greater than or equal to zero)
Metric:

- ✧ **IP Version:** Select either IPv4 or IPv6.
- ✧ **Destination IP address/prefix length:** Enter the destination IP address and prefix length of the final destination.
- ✧ **Interface:** Select an interface from the drop-down list.
- ✧ **Gateway IP address:** Enter the gateway IP address, which must be a router on the same LAN segment as the router.
- ✧ **Metric:** Enter a number in the Metric field. This stands for the number of routers between your network and the destination.
- ✧ **Apply /Save:** Click to apply and save your settings.

Note:

1. Destination IP address cannot be on the same IP segment as WAN or LAN segment as the router.

2. Only configure additional static routes for unusual cases such as multiple routers or multiple IP subnets located on your network. Wrong static routes may lead to network failure.

3. For system created route, the 'Remove' checkbox is disabled.

4.2.9 DNS

DNS Server (Static DNS)

The DNS server translates domain names to numeric IP addresses. It is used to look up site addresses based on their names.

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system.

Here you can configure the WAN DNS address:

For IPv4:

-Click the **Select DNS Server Interface from available WAN interfaces** option

-OR select the **Use the following Static DNS IP address** option and enter static DNS server IP addresses for the system

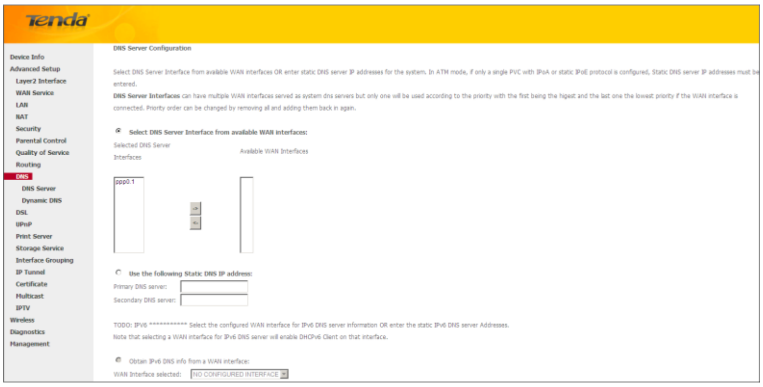
And then click **Apply/Save**.

For IPv6:

-Select **Obtain IPv6 DNS info from a WAN interface** and Select a configured WAN interface for the IPv6 DNS server information.

-Select **Use the following Static IPv6 DNS address** and enter the static IPv6 DNS server Addresses.

And then click **Apply/Save**.



DNS Server Configuration

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.

DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

● **Select DNS Server Interface from available WAN interfaces:**

Selected DNS Server Interfaces: ppp0.1

Available WAN Interfaces:

○ **Use the following Static DNS IP address:**

Primary DNS server:

Secondary DNS server:

TODO: IPV6 *********** Select the configured WAN interface for IPv6 DNS server information OR enter the static IPv6 DNS server Addresses.

Note that selecting a WAN interface for IPv6 DNS server will enable DHCPv6 Client on that interface.

● Obtain IPv6 DNS info from a WAN interface:

WAN Interface selected: NO CONFIGURED INTERFACE

Note:

1. DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the first being the higest and the last one the lowest priority if the WAN interface is connected. Priority order can be changed by removing all and adding them back in again.

2. In ATM mode, if only a single PVC with IPoA or static IPoE protocol is configured, Static DNS server IP addresses must be entered.

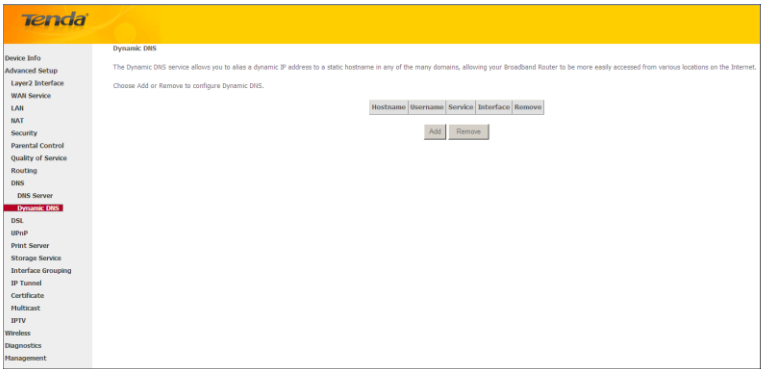
3. If you cannot locate the static DNS server IP information, ask your ISP to provide it.

4. The default settings are recommended if you are unsure about the DNS server addresses. If a wrong DNS server address is configured, webpages may not be open.

Dynamic DNS (DDNS)

If your Internet service provider (ISP) gave you a static (fixed) public IP address, you can register a domain name and have that name associated with your IP address by public Domain Name Servers (DNS). However, if your ISP gave you a dynamic (changing) public IP address, you cannot predict what your IP address will be, and the address can change frequently. In this case, you can use a commercial Dynamic DNS service. It lets you register your domain to their IP address and forwards traffic directed at your domain to your frequently changing IP address.If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), the Dynamic DNS service does not work because private addresses are not routed on the Internet.

Click **Advanced Setup** -> **DNS** -> **Dynamic DNS** to enter the Dynamic DNS screen.



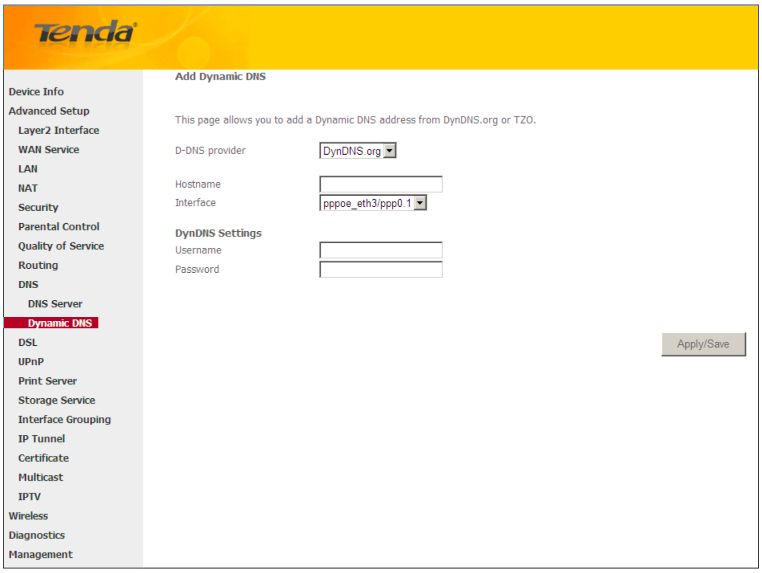
Dynamic DNS

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your Broadband Router to be more easily accessed from various locations on the Internet.

Choose Add or Remove to configure Dynamic DNS.

Hostname	Username	Service	Interface	Remove

Click the **Add** button to configure the DDNS settings.



Add Dynamic DNS

This page allows you to add a Dynamic DNS address from DynDNS.org or TZO.

D-DNS provider: DynDNS.org

Hostname:

Interface: pppoe_eth3/ppp0.1

DynDNS Settings

Username:

Password:

D-DNS Provider: Select your DDNS service provider from the drop-down menu.

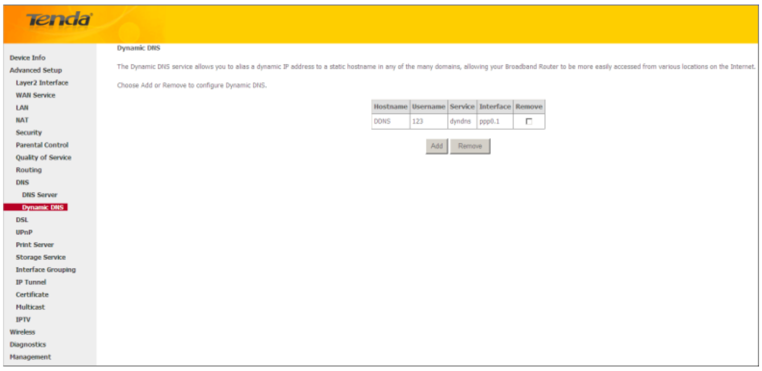
Hostname: Enter the DDNS domain name registered with your DDNS service provider.

Interface: Specify a WAN connection interface.

User Name: Enter the DDNS user name registered with your DDNS service provider.

Password: Enter the DDNS Password registered with your DDNS service provider.

Click **Apply/Save** to save your settings.



Dynamic DNS

The Dynamic DNS service allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your Broadband Router to be more easily accessed from various locations on the Internet.

Choose Add or Remove to configure Dynamic DNS.

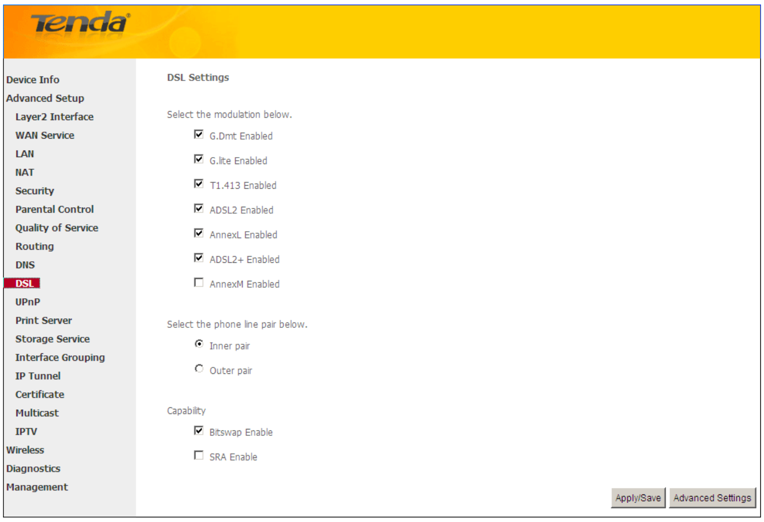
Hostname	Username	Service	Interface	Remove
DDNS	123	dyndns	ppp0.1	□

4.2.10 DSL

This screen provides multiple ASDL modulation modes to meet diversified environments. You can also select phone line pair and Capability.

DSL parameter configurations must be supported by ISP to take effect. Actual parameters (see Statistics-xDSL) resulted from the negotiation between your router and ISP. Wrong configurations may fail your Internet access.

The best DSL configurations are the factory defaults. Only change them if you are instructed by your ISP or our technical staff when your router fails to negotiate with ISP in DSL (ATM) mode. Usually, this failure can be identified and confirmed if the ADSL LED on the device keeps displaying a slow or quick blinking light.



DSL Settings

Select the modulation below.

☑ G.Dmt Enabled
☑ G.lite Enabled
☑ T1.413 Enabled
☑ ADSL2 Enabled
☑ AnnexL Enabled
☑ ADSL2+ Enabled
□ AnnexM Enabled

Select the phone line pair below.

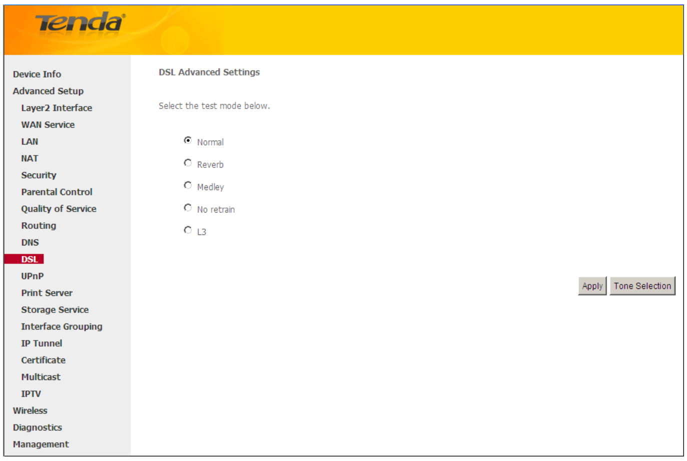
● Inner pair
○ Outer pair

Capability

☑ Bitswap Enable
□ SRA Enable

Check the checkbox next to a modulation to enable it and then click **Apply/Save**.

Advanced Settings: Click to enter the Advanced Settings screen as below.



DSL Advanced Settings

Select the test mode below.

● Normal
○ Reverb
○ Medley
○ No retrain
○ L3

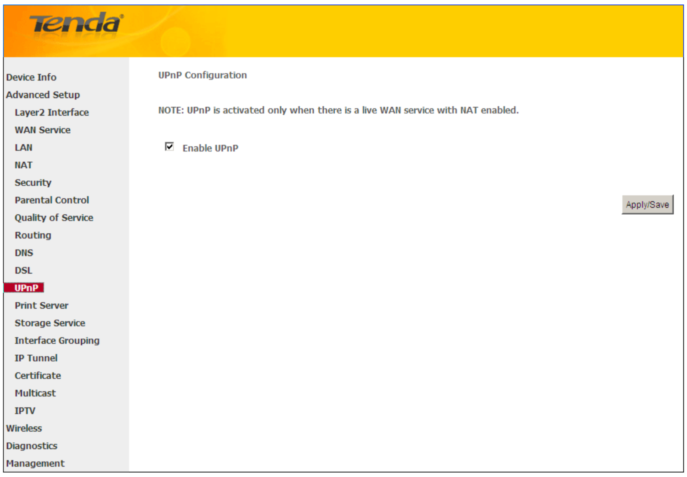
Here you can select the test mode and tone.

Tip:

If you are unsure about the ADSL parameters, please apply the factory default settings.Wrong configurations may fail your Internet access.

4.2.11 UPnP

UPnP (Universal Plug and Play) allows Windows based systems to configure the device for various Internet applications automatically. UPnP devices can automatically discover the services from other registered UPnP devices on the network. If you use applications such as multiplayer gaming, peer-to-peer connections, or real-time communications, such as instant messaging or remote assistance (a feature in Windows XP), you should enable UPnP.



UPnP Configuration

NOTE: UPnP is activated only when there is a live WAN service with NAT enabled.

☑ Enable UPnP

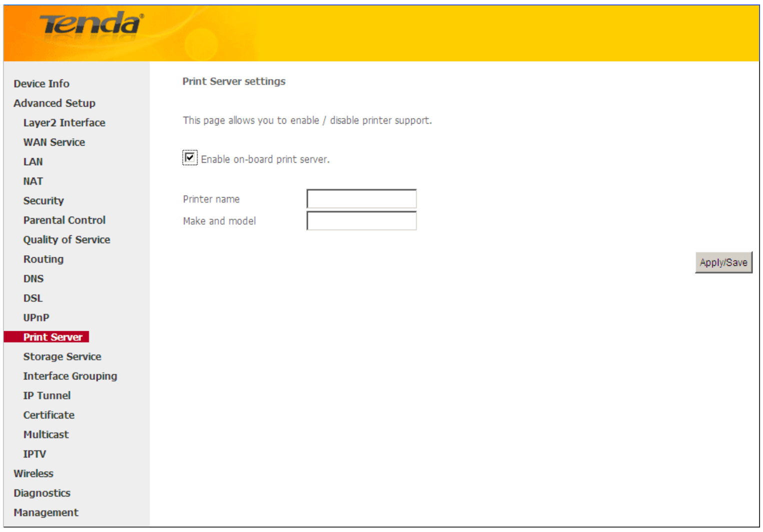
Enable UPnP: Check/uncheck to enable/disable the UPnP feature.

Note:

UPnP is activated only when there is a live WAN service with NAT enabled.

4.2.12 Print Server (Available only in D301)

This page allows you to enable / disable printer support.



Print Server settings

This page allows you to enable / disable printer support.

☑ Enable on-board print server.

Printer name

Make and model

Enable on-board print server: Check/uncheck to enable / disable the printer support.

Printer name: Enter a descriptive name of your printer.

Make and model: Enter the make and model of your printer.

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

4.2.13 Storage Service (Available only in D301)

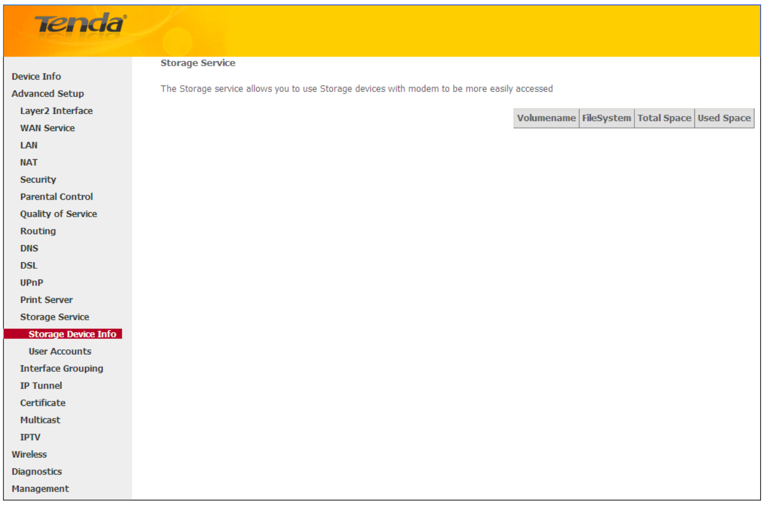
The Storage service allows you to use Storage devices with the modem router to be more easily accessed.

This section explains the following:

- Storage Device Info
- User Account

Storage Device Info

This screen displays the information of the storage device as seen on the screenshot below.



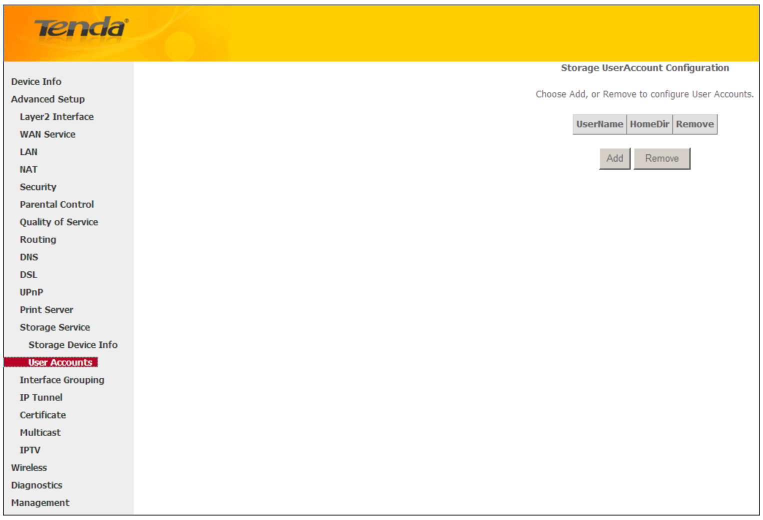
Storage Service

The Storage service allows you to use Storage devices with modem to be more easily accessed

Volumename	FileSystem	Total Space	Used Space

User Account

This section allows you to Add, or Remove User Accounts.



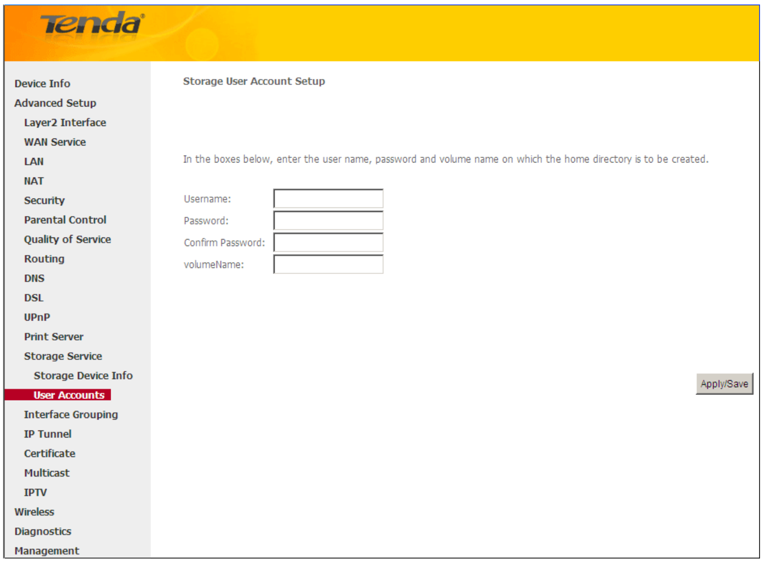
Storage UserAccount Configuration

Choose Add, or Remove to configure User Accounts.

UserName	HomeDir	Remove

To add a user account:

1. Click **Add** to enter the following screen:



Storage User Account Setup

In the boxes below, enter the user name, password and volume name on which the home directory is to be created.

Username:

Password:

Confirm Password:

volumeName:

2. Enter the user name, password and volume name on which the home directory is to be created.
3. Click **Apply/Save** to apply and save your settings.

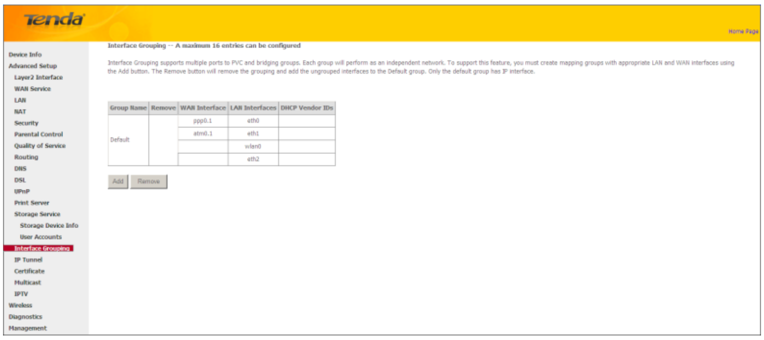
To remove an existing user account:

1. Check **Remove** next to the user account.
2. Click the **Remove** button.

4.1.14 Interface Grouping

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.

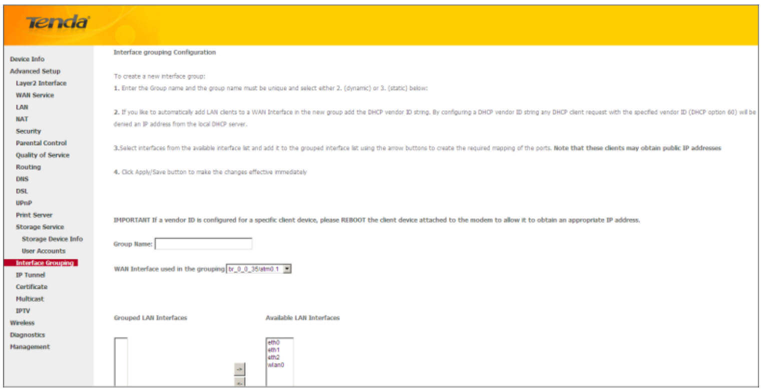


Interface Grouping -- A maximum 16 entries can be configured

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		ppp0.1	eth0	
		atm0.1	eth1	
			wlan0	
			eth2	

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



Interface grouping Configuration

To create a new interface group:

1. Enter the Group name and the group name must be unique and select either 2. (dynamic) or 3. (static) below:

2. If you like to automatically add LAN clients to a WAN Interface in the new group add the DHCP vendor ID string. By configuring a DHCP vendor ID string any DHCP client request with the specified vendor ID (DHCP option 60) will be denied an IP address from the local DHCP server.

3.Select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports. **Note that these clients may obtain public IP addresses**

4. Click Apply/Save button to make the changes effective immediately

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 br_0_0_35/atm0.1

Grouped LAN Interfaces

Available LAN Interfaces

eth0
eth1
eth2
wlan0

✧ **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 and the group name must be unique and select either 2. (dynamic) or 3. (static) below:
2. If you like to automatically add LAN clients to a WAN Interface in the new group add the DHCP vendor ID string. By configuring a DHCP vendor ID string any DHCP client request with the specified vendor ID (DHCP option 60) will be denied an IP address from the local DHCP server.
3. Select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports. Note that these clients may obtain public IP addresses.
4. Click **Apply/Save** button to make the changes effective immediately.

⚠*Note:*

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.

4.1.15 IP Tunnel

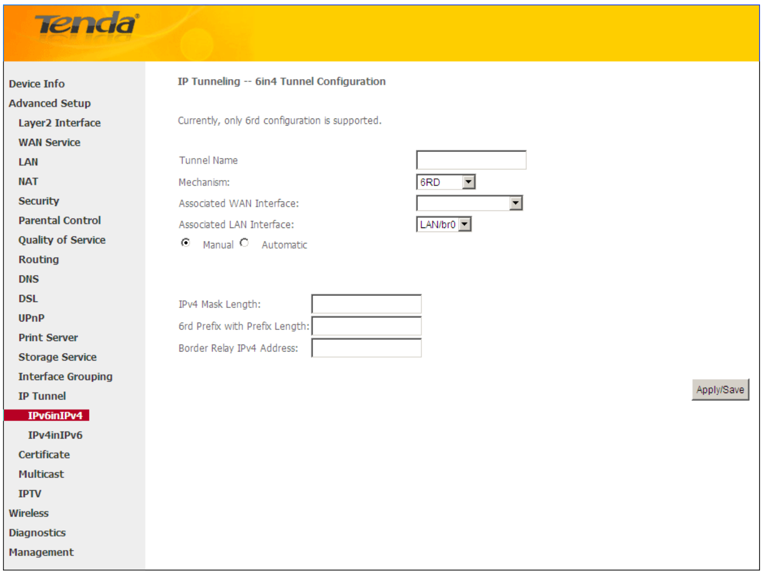
This section explains the following information:

• IPv6inIPv4

• IPv4inIPv6

IPv6inIPv4

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



IP Tunneling -- 6in4 Tunnel Configuration

Currently, only 6rd configuration is supported.

Tunnel Name:

Mechanism: 6RD

Associated WAN Interface:

Associated LAN Interface: LAN/br0

● Manual ○ Automatic

IPv4 Mask Length:

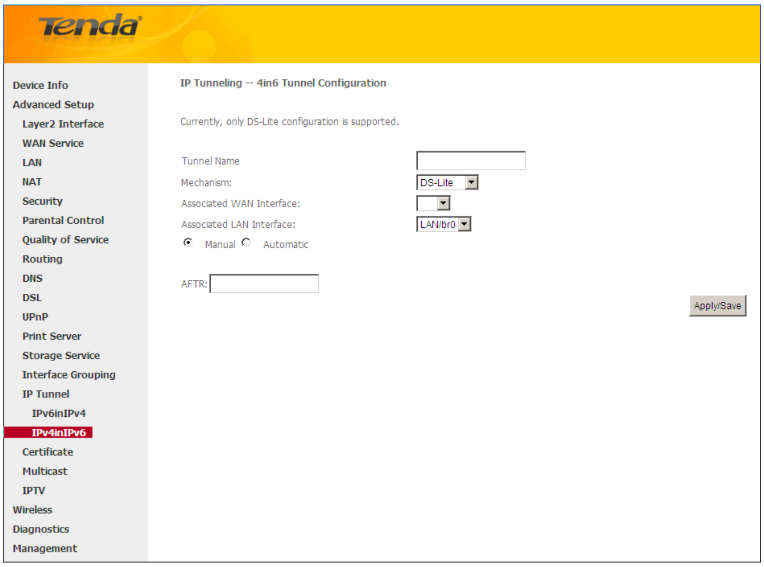
6rd Prefix with Prefix Length:

Border Relay IPv4 Address:

- ✧ **Tunnel Name:** Specify the name of the tunnel.
- ✧ **Mechanism:** Currently, only DS-Lite configuration is supported.
- ✧ **Associated WAN Interface:** Specify the WAN iterface of the tunnel.
- ✧ **Associated LAN Interface:** Specify the LAN iterface 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:



IP Tunneling -- 4in6 Tunnel Configuration

Currently, only DS-Lite configuration is supported.

Tunnel Name:
Mechanism: DS-Lite
Associated WAN Interface:
Associated LAN Interface: LAN/br0
● Manual ○ Automatic

AFTR:

- ✧ **Tunnel Name:** Specify the name of the tunnel.
- ✧ **Mechanism:** Currently, only 6rd configuration is supported.
- ✧ **Associated WAN Interface:** Specify the WAN iterface of the tunnel.
- ✧ **Associated LAN Interface:** Specify the LAN iterface 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.

4.1.16 Certificate

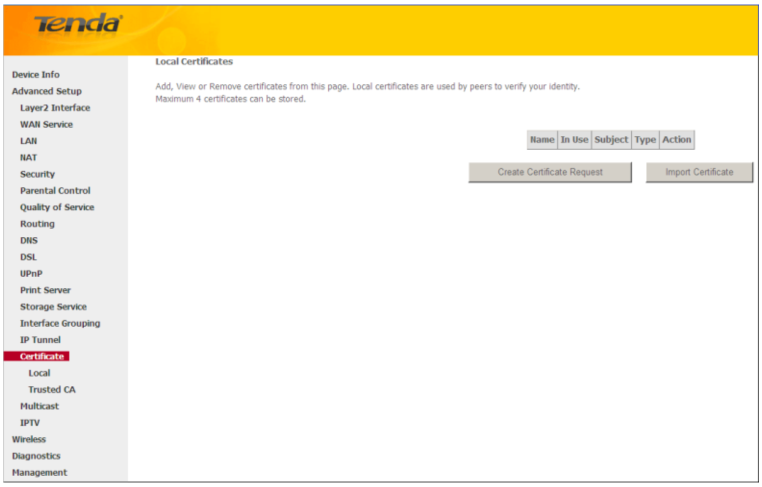
This section explains the following information:

• 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.



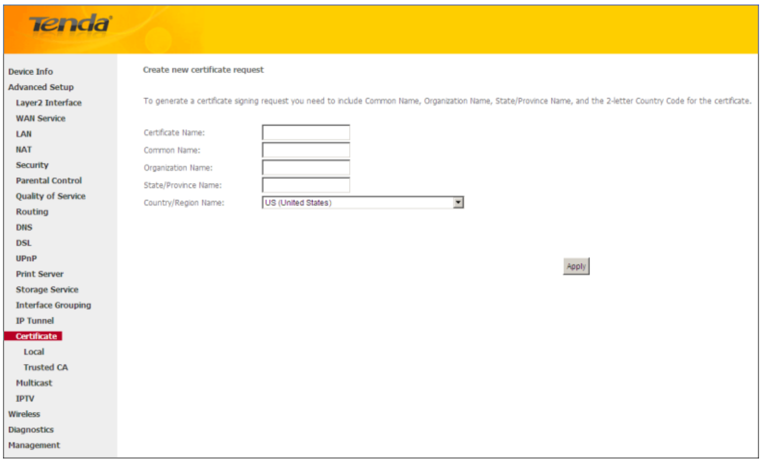
Local Certificates

Add, View or Remove certificates from this page. Local certificates are used by peers to verify your identity. Maximum 4 certificates can be stored.

Name	In Use	Subject	Type	Action

To generate generate a certificate signing request:

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



Create new certificate request

To generate a certificate signing request you need to include Common Name, Organization Name, State/Province Name, and the 2-letter Country Code for the certificate.

Certificate Name:

Common Name:

Organization Name:

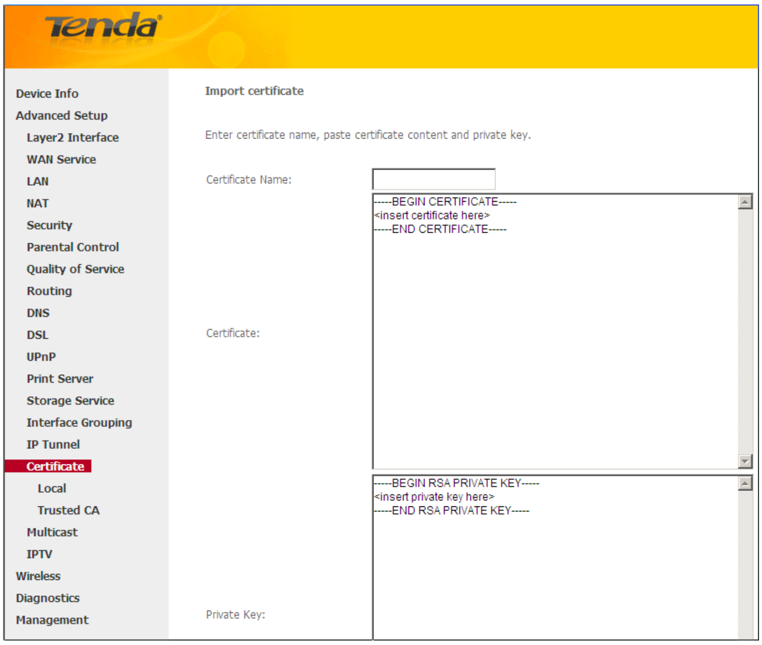
State/Province Name:

Country/Region Name: US (United States)

2. Specify the Common Name, Organization Name and State/Province Name
3. Enter the 2-letter Country Code for the certificate.
4. Click **Apply** to apply your settings.

To Import certificate：

1. 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-----
```

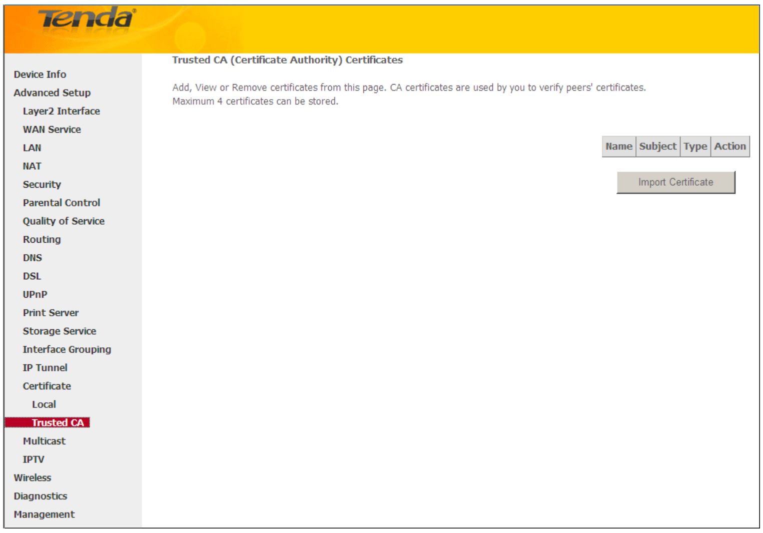
Private Key:

```
-----BEGIN RSA PRIVATE KEY-----
<insert private key here>
-----END RSA PRIVATE KEY-----
```

2. Enter the certificate name.
3. Paste the certificate content and private key.
4. 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.



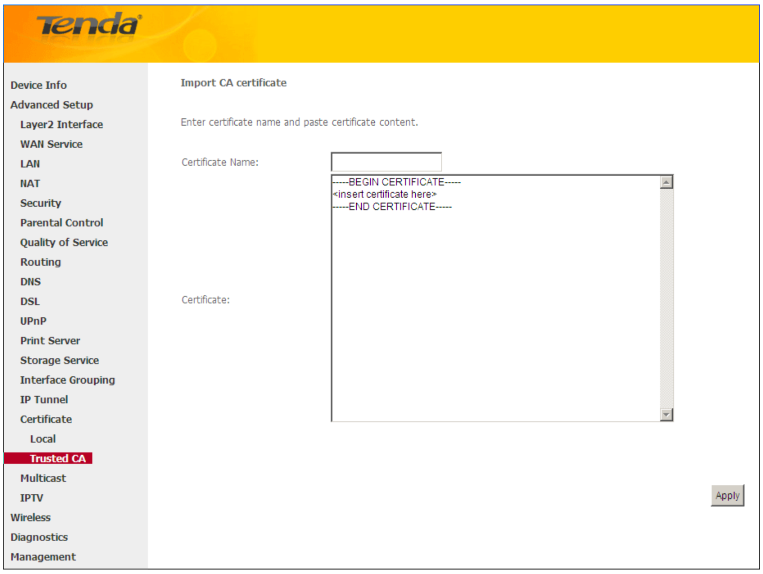
Trusted CA (Certificate Authority) Certificates

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

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-----
```

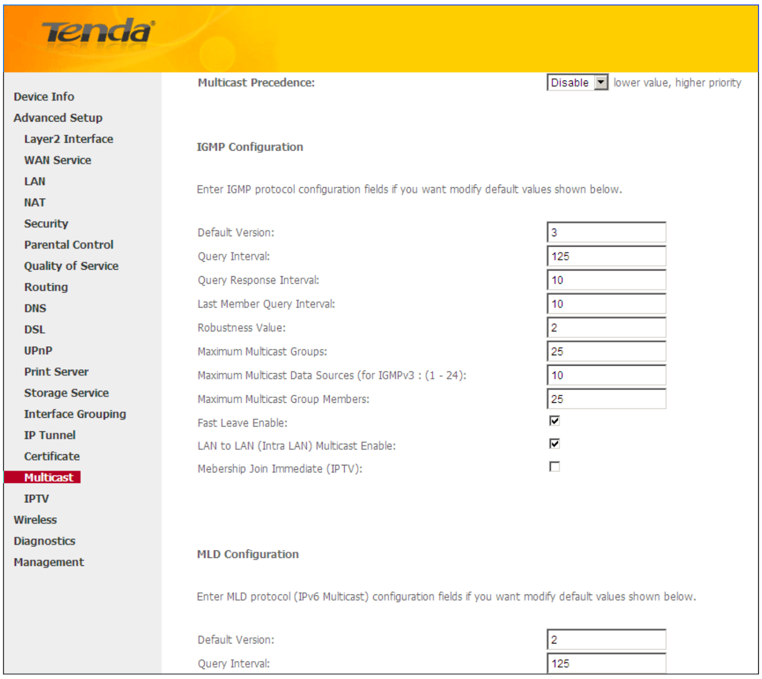
2. Enter the certificate name.
3. Paste the certificate content.
4. Click **Apply** to apply your settings.

4.1.17 Multicast

Here you can configure the multicast feature.

To configure IGMP for IPv4

1. Check the **LAN to LAN (Intra LAN) Multicast Enable** box.
2. Check the **Mebership Join Immediate (IPTV)** box. This is only required for IPTV.
3. Keep other options unchanged from factory defaults if you are not an advanced user. This is strongly recommended.



Multicast Precedence: Disable lower value, higher priority

IGMP Configuration

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

Default Version: 3
Query Interval: 125
Query Response Interval: 10
Last Member Query Interval: 10
Robustness Value: 2
Maximum Multicast Groups: 25
Maximum Multicast Data Sources (for IGMPv3 : (1 - 24): 10
Maximum Multicast Group Members: 25
Fast Leave Enable: ☑
LAN to LAN (Intra LAN) Multicast Enable: ☑
Mebership Join Immediate (IPTV): □

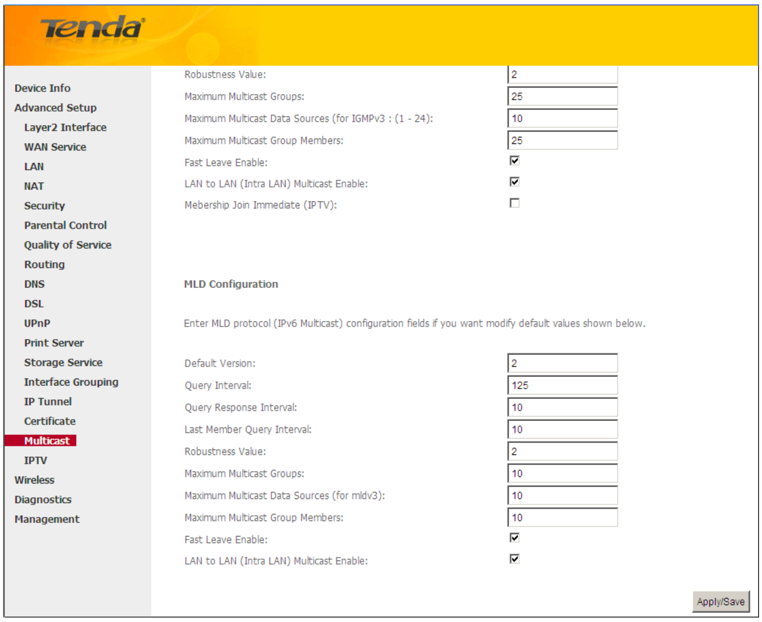
MLD Configuration

Enter MLD protocol (IPv6 Multicast) configuration fields if you want modify default values shown below.

Default Version: 2
Query Interval: 125

To configure IGMP for IPv6

1. Check the **LAN to LAN (Intra LAN) Multicast Enable** box.
2. Keep other options unchanged from factory defaults if you are not an advanced user. This is strongly recommended.



Robustness Value: 2
Maximum Multicast Groups: 25
Maximum Multicast Data Sources (for IGMPv3 : (1 - 24): 10
Maximum Multicast Group Members: 25
Fast Leave Enable: ☑
LAN to LAN (Intra LAN) Multicast Enable: ☑
Mebership Join Immediate (IPTV): □

MLD Configuration

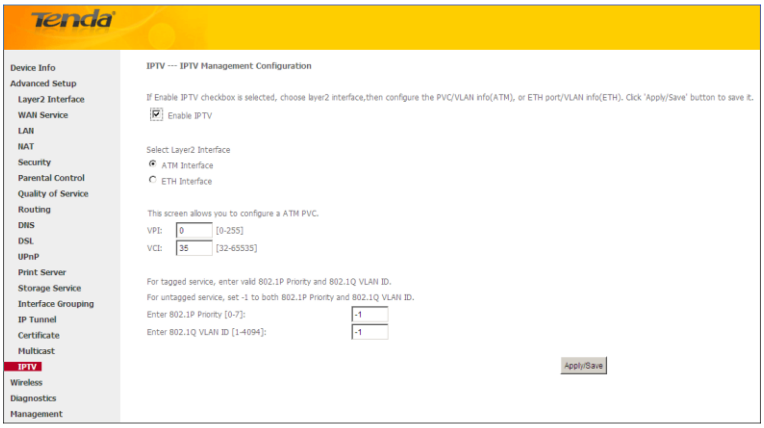
Enter MLD protocol (IPv6 Multicast) configuration fields if you want modify default values shown below.

Default Version: 2
Query Interval: 125
Query Response Interval: 10
Last Member Query Interval: 10
Robustness Value: 2
Maximum Multicast Groups: 10
Maximum Multicast Data Sources (for mldv3): 10
Maximum Multicast Group Members: 10
Fast Leave Enable: ☑
LAN to LAN (Intra LAN) Multicast Enable: ☑

4.1.18 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.



IPTV --- IPTV Management Configuration

If Enable 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.

☑ Enable IPTV

Select Layer2 Interface

● ATM Interface

○ ETH Interface

This screen allows you to configure a ATM PVC.

VPI: 0 [0-255]

VCI: 35 [32-65535]

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.

Enter 802.1P Priority [0-7]: -1

Enter 802.1Q VLAN ID [1-4094]: -1

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

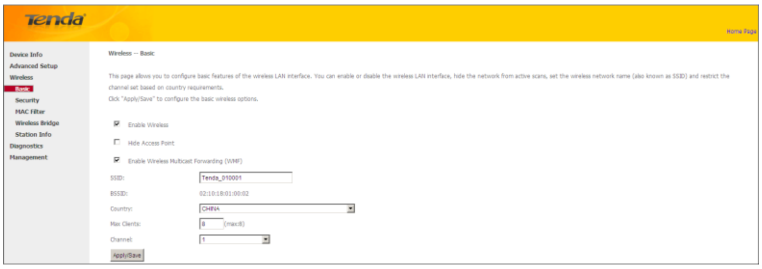
This section explains the following information:

- Basic
- Security
- MAC Filter
- Wireless Bridge
- Station Info

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.

Click **Apply/Save** to configure the basic wireless options.



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: Tenda_010001

BSSID: 02:10:18:01:00:02

Country: CHINA

Max Clients: 8 (max:8)

Channel: 1

Enable Wireless: check/uncheck to enable/disable the wireless feature.

SSID: This is thepublic name of your wireless network.

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

BSSID: Display the BSSID.

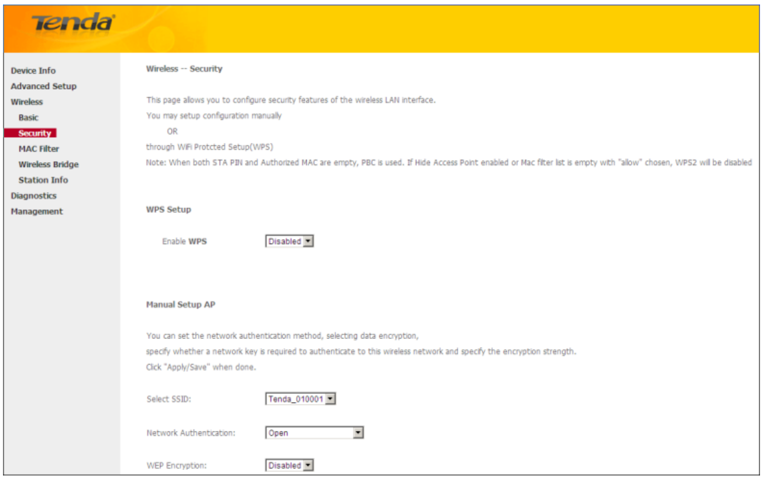
Country: Select your country.

Max Clients: The max wireless clients your wireless network can accept. Up to 8 clients can join your wireless network at a time. The default setting is 8.

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.

4.3.2 Security

This page allows you to configure security features of the wireless LAN interface. You may setup configuration manually OR through WiFi Protcted Setup (WPS).



Wireless -- Security

This page allows you to configure security features of the wireless LAN interface.
You may setup configuration manually
OR
through WiFi Protcted Setup(WPS)
Note: When both STA PIN and Authorized MAC are empty, PBC is used. If Hide Access Point enabled or Mac filter list is empty with "allow" chosen, WPS2 will be disabled

WPS Setup

Enable WPS: Disabled

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: Tenda_010001

Network Authentication: Open

WEP Encryption: Disabled

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 configuring complicated settings. 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 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 displays a solid light, the device has joined your wireless network.

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 enabled 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 enabled or Mac filter list is empty with "allow" chosen, WPS2 will be disabled.*

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.

Network Authentication: Select Open, Shared, 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.

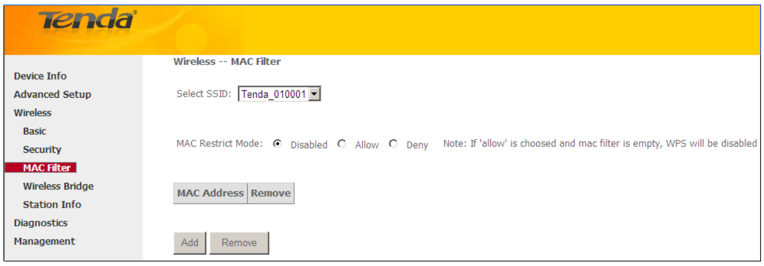
WPA/WAPI passphrase: Enter a WPA/WAPI network key.

WPA Group Rekey Interval: Specify a key update interval.

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

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.



Wireless -- MAC Filter

Select SSID: Tenda_010001

MAC Restrict Mode: ● Disabled ○ Allow ○ Deny Note: If 'allow' is choosed and mac filter is empty, WPS will be disabled

MAC Address	Remove

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.

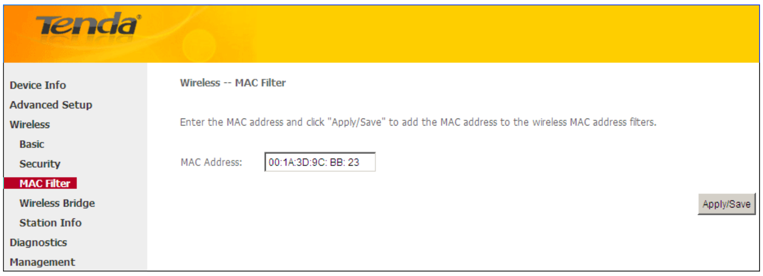
Disable: Disable this feature.

Add: Click to add a MAC address.

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

Example 1: 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 **Add** button.
3. Enter 00:1A:3D:9C:BB:23 in the MAC address box as shown in the figure below:

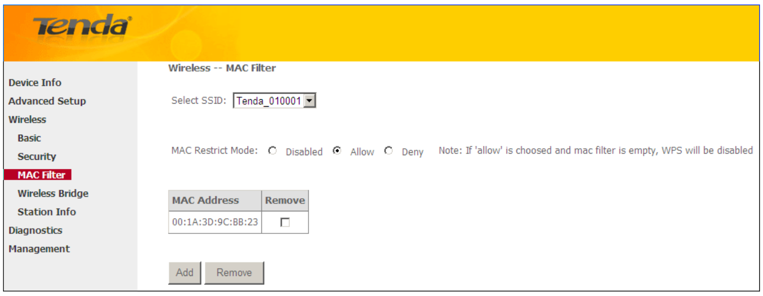


Wireless -- MAC Filter

Enter the MAC address and click "Apply/Save" to add the MAC address to the wireless MAC address filters.

MAC Address: 00:1A:3D:9C: BB: 23

4. Click Apply/Save.



Wireless -- MAC Filter

Select SSID: Tenda_010001

MAC Restrict Mode: ○ Disabled ● Allow ○ Deny Note: If 'allow' is choosed and mac filter is empty, WPS will be disabled

MAC Address	Remove
00:1A:3D:9C:BB:23	□

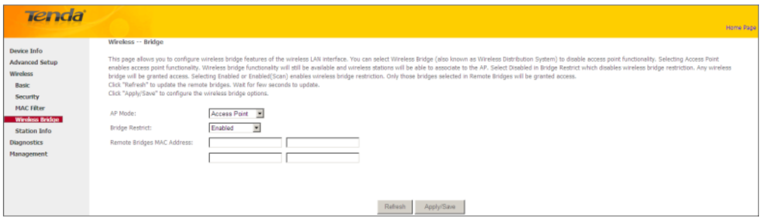
Note:

If "allow" is choosed and mac filter is empty, WPS will be disabled.

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 expanded using multiple access points without the traditional requirement for a wired backbone to link them.



Wireless -- Bridge

This page allows you to configure wireless bridge features of the wireless LAN interface. 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. Select Disabled in Bridge Restrict which disables wireless bridge restriction. Any wireless bridge will be granted access. Selecting Enabled or Enabled(Scan) enables wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access.
Click "Refresh" to update the remote bridges. Wait for few seconds to update.
Click "Apply/Save" to configure the wireless bridge options.

AP Mode: Access Point
Bridge Restrict: Enabled
Remote Bridges MAC Address:

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 Restrict: There are three options available: Enabled, Enabled (Scan) and Disabled. Select Disabled in Bridge Restrict which disables wireless bridge restriction. Any wireless bridge will be granted access. Selecting Enabled or Enabled (Scan) enables wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access. The Enabled (Scan) enables wireless bridge restriction and automatically scans 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 to update the remote bridges. Wait for few seconds to update.

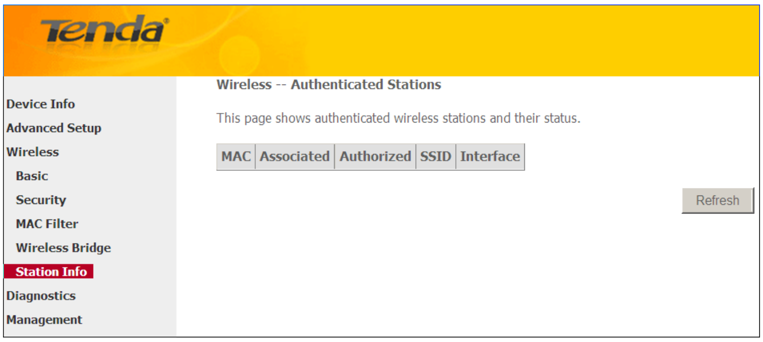
Apply/Save: Click to apply and save the settings.

Note:

The WDS feature (also known as Wireless Bridge) 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.



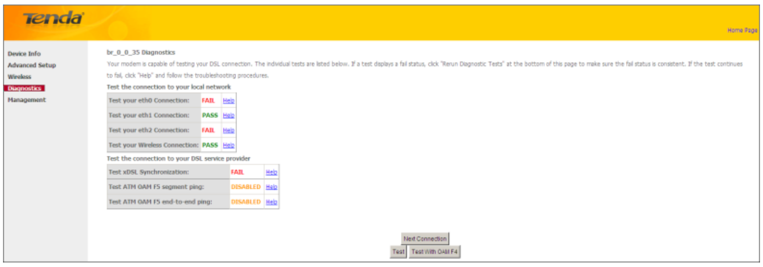
Wireless -- Authenticated Stations

This page shows authenticated wireless stations and their status.

MAC	Associated	Authorized	SSID	Interface

4.4 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 to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.



br_0_0_35 Diagnostics

Your modem is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.

Test the connection to your local network

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

Test the connection to your DSL service provider

Test xDSL Synchronization:	FAIL	Help
Test ATM OAM F5 segment ping:	DISABLED	Help
Test ATM OAM F5 end-to-end ping:	DISABLED	Help

4.5 Management

This section explains the following information:

- Settings
- System Logs
- Security Log
- SNMP Agent
- TR-069 Client
- Internet Time
- Access Control
- Update Software
- Reboot

4.5.1 Settings

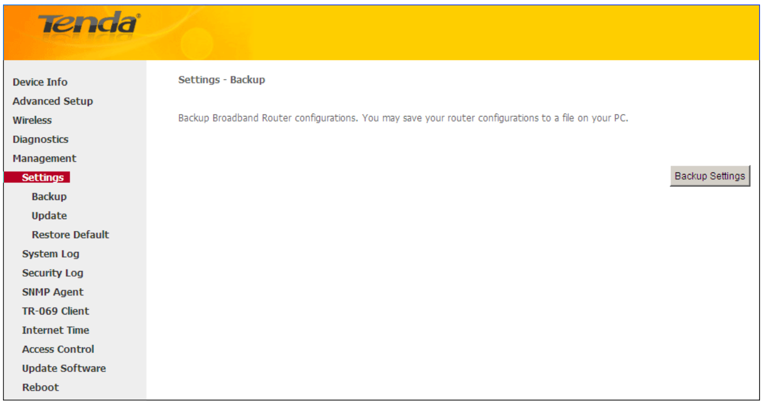
This section explains the following information:

- Backup
- Update

- 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.

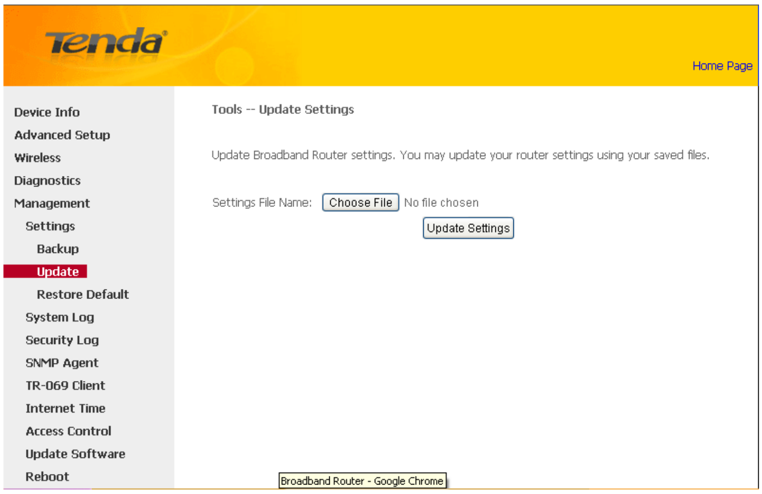


Settings - Backup

Backup Broadband Router configurations. You may save your router configurations to a file on your PC.

Update

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



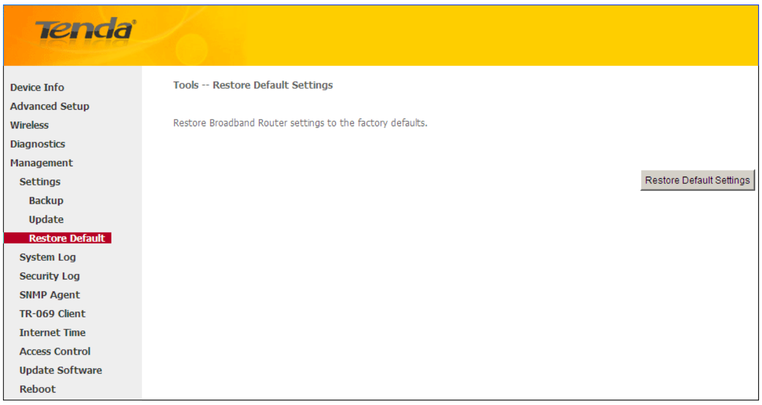
Tools -- Update Settings

Update Broadband Router settings. You may update your router settings using your saved files.

Settings File Name: No file chosen

Restore Default

Under some circumstances (for example, join a different network or unfortunately forgetting the login password), you may need to remove the existing configuration and restore the factory default settings.

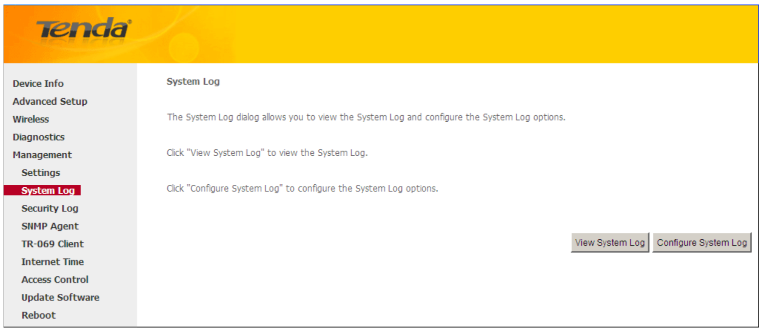


Tools -- Restore Default Settings

Restore Broadband Router settings to the factory defaults.

4.5.2 System Logs

The System Log dialog allows you to view the System Log and configure the System Log options.



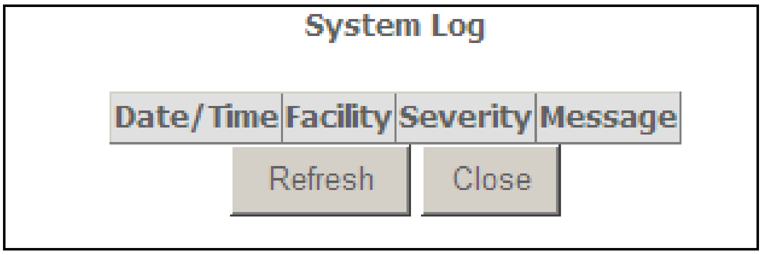
System Log

The System Log dialog allows you to view the System Log and configure the System Log options.

Click "View System Log" to view the System Log.

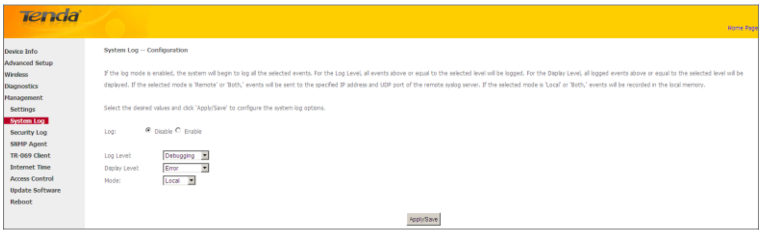
Click "Configure System Log" to configure the System Log options.

To view the System Log, simply click **View System Log**.


System Log

Date/Time	Facility	Severity	Message

To configure the System Log options, click **Configure System Log**.



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: Debugging

Display Level: Error

Mode: Local

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

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

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

Mode: 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.

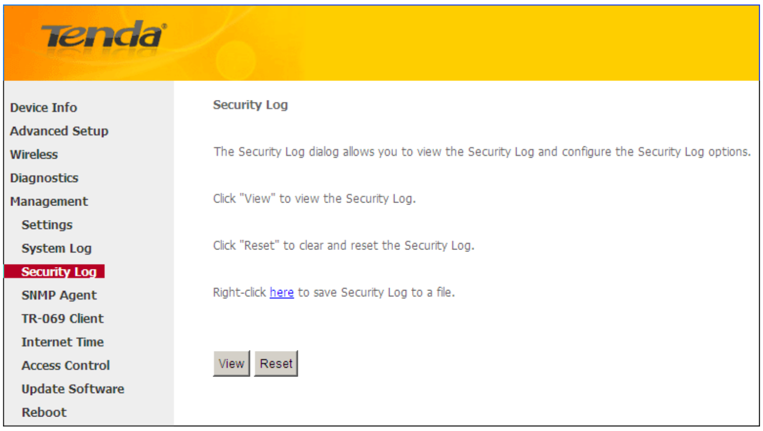
Server IP Address: Specify the IP address of the remote syslog server.

Server UDP Port: Specify the UDP port of the remote syslog server.

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

4.5.3 Security Log

The Security Log page allows you to view the Security Log and configure the Security Log options. You can also save Security Log to a file.



Security Log

The Security Log dialog allows you to view the Security Log and configure the Security Log options.

Click "View" to view the Security Log.

Click "Reset" to clear and reset the Security Log.

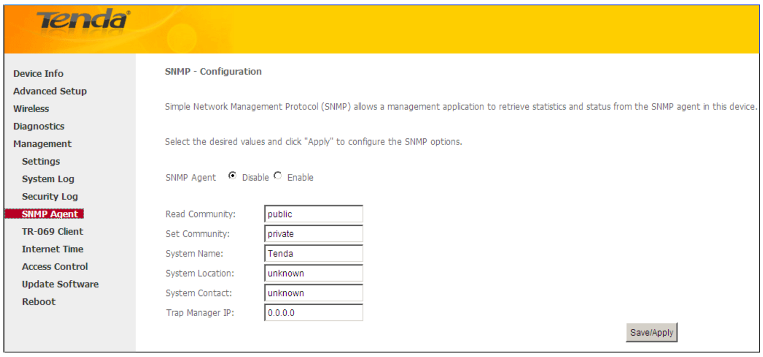
Right-click here to save Security Log to a file.

View: Click to view the Security Log.

Reset: Click to clear and reset the Security Log.

4.5.4 SNMP Agent

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



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" to configure the SNMP options.

SNMP Agent ● Disable ○ Enable

Read Community: public
Set Community: private
System Name: Tenda
System Location: unknown
System Contact: unknown
Trap Manager IP: 0.0.0.0

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.

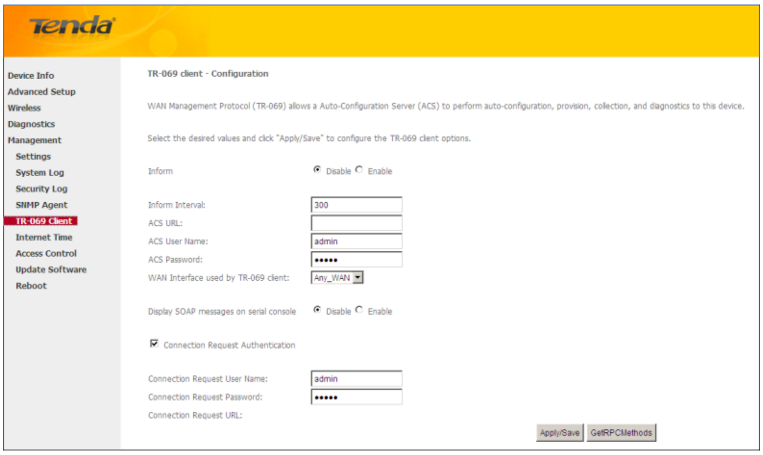
System Contact: Specify a system contact.

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

4.5.5 TR-069 Client

WAN Management Protocol (TR-069) allows a 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:



TR-069 client - Configuration

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

Select the desired values and click "Apply/Save" to configure the TR-069 client options.

Inform ● Disable ○ Enable

Inform Interval: 300
ACS URL:
ACS User Name: admin
ACS Password: •••••
WAN Interface used by TR-069 client: Any_WAN

Display SOAP messages on serial console ● Disable ○ Enable

☑ Connection Request Authentication

Connection Request User Name: admin
Connection Request Password: •••••
Connection Request URL:

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 cnnection request authentication.

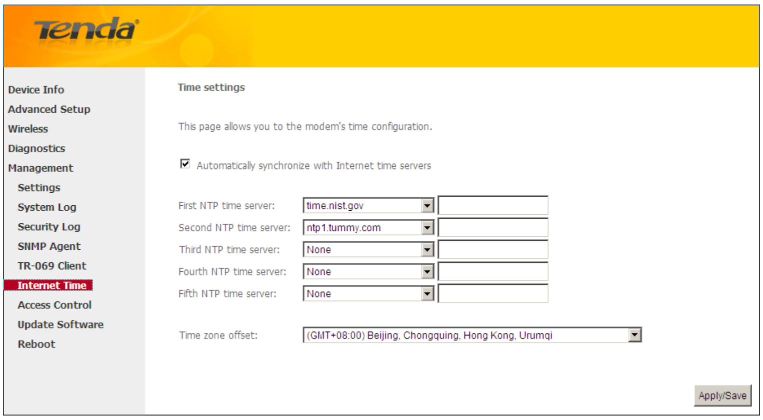
Connection Request User Name: Enter the cnnection request user name.

Connection Request Password: Enter the cnnection request password.

Connection Request URL: Specify the connection request URL.

4.5.6 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.



Time settings

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

☑ Automatically synchronize with Internet time servers

First NTP time server: time.nist.gov
Second NTP time server: ntp1.tummy.com
Third NTP time server: None
Fourth NTP time server: None
Fifth NTP time server: None

Time zone offset: (GMT+08:00) Beijing, Chongquing, Hong Kong, Urumqi

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.

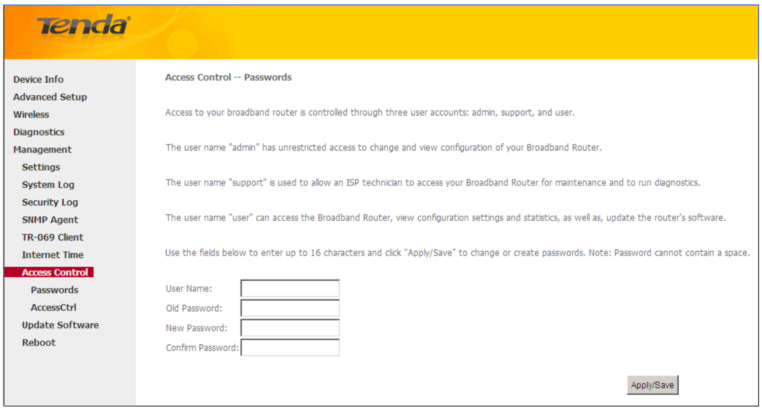
4.5.7 Access Control

This section explains the following information:

- Password
- AccessControl - Service

Password

Access to your broadband router is controlled through three user accounts: admin, support, and user.
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.
The user name "user" can access the Broadband Router, view configuration settings and statistics, as well as, update the router's software.



Access Control -- Passwords

Access to your broadband router is controlled through three user accounts: admin, support, and user.

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.

The user name "user" can access the Broadband Router, view configuration settings and statistics, as well as, update the router's software.

Use the fields below to enter up to 16 characters and click "Apply/Save" to change or create passwords. Note: Password cannot contain a space.

User Name:
Old Password:
New Password:
Confirm Password:

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.

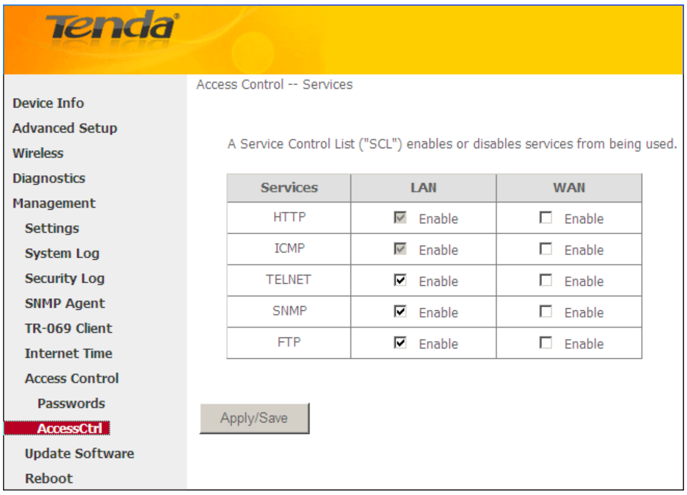
Apply/Save: Click to change or create passwords.

⚠*Note:*

Password cannot contain a space.

AccessControl - Service

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



Access Control -- Services

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

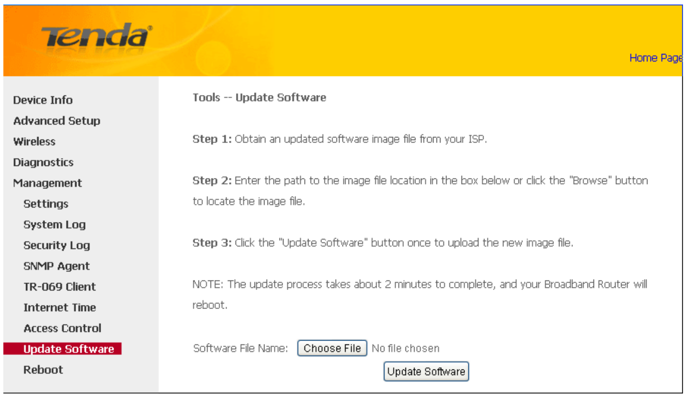
Services	LAN	WAN
HTTP	☑ Enable	□ Enable
ICMP	☑ Enable	□ Enable
TELNET	☑ Enable	□ Enable
SNMP	☑ Enable	□ Enable
FTP	☑ Enable	□ Enable

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" or "user"; to access the device from the WAN side, you must use the WAN IP address and log in as "support".*

4.5.8 Update Software

Firmware upgrade 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.



Tools -- Update Software

Step 1: Obtain an updated software image file from your ISP.

Step 2: Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.

Step 3: Click the "Update Software" button once to upload the new image file.

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

Software File Name: Choose File No file chosen

To update software, do as follows:

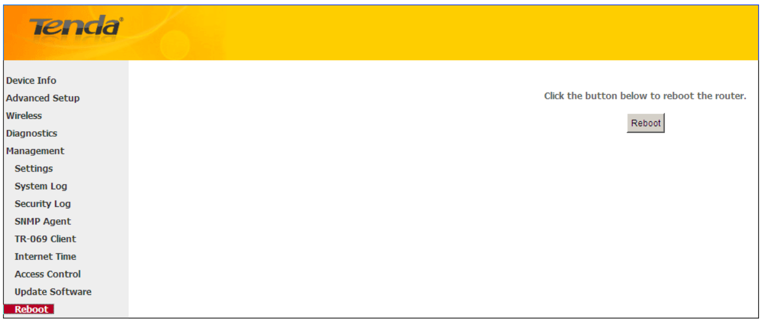
1. Obtain an updated software image file from our website: www.tendacn.com.
2. Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.
3. Click the "Update Software" button once to upload the new image file.

Note:

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

4.5.9 Reboot

Click the Reboot button to reboot the router.



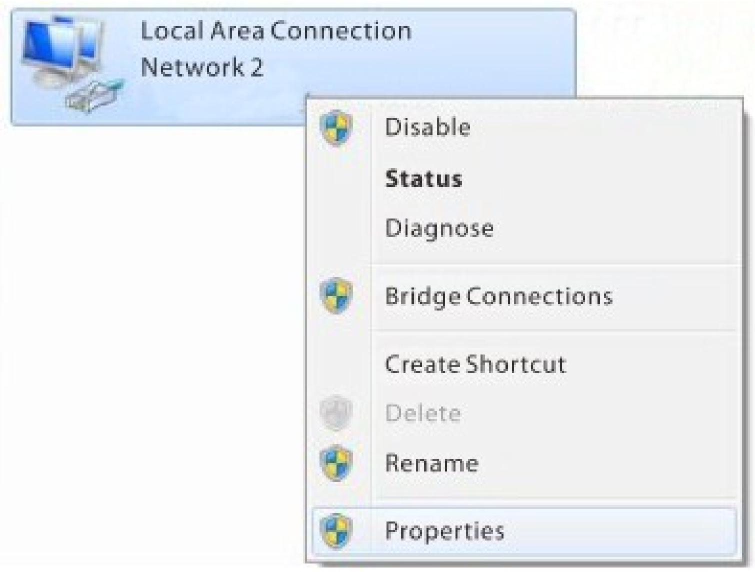
Click the button below to reboot the router.

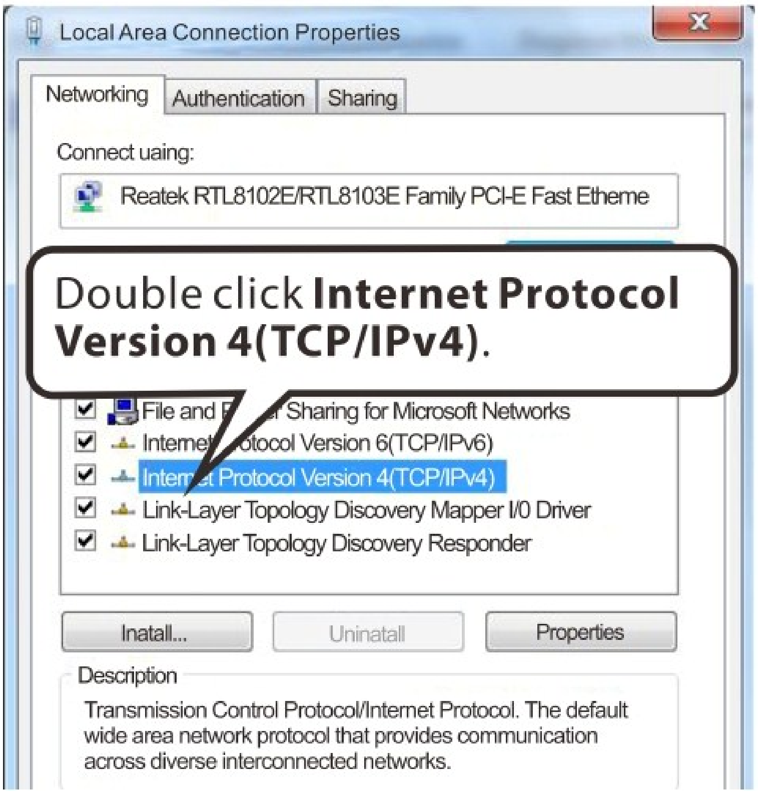
Appendix 1 Configure Your PC

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

Windows 7

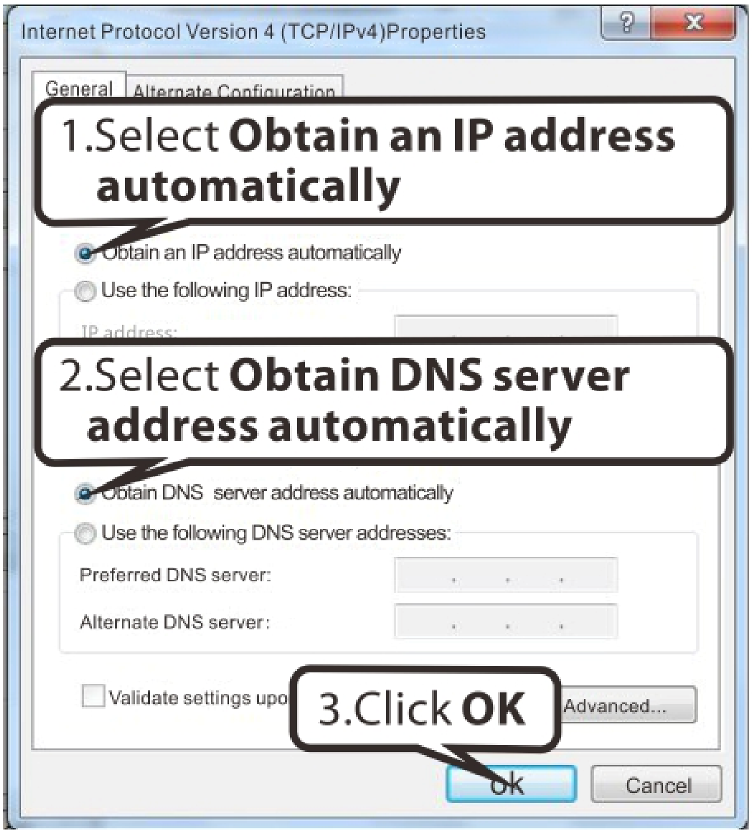
Click **Start-> Control Panel-> Network and Sharing Center-> Change adapter settings**, select a desired **Local Area Connection** and select **Properties.**




Local Area Connection Properties
Networking
Authentication
Sharing
Connect uaing:
Reatek RTL8102E/RTL8103E Family PCI-E Fast Etheme
File and P... Sharing for Microsoft Networks
Internet Protocol Version 6(TCP/IPv6)
Internet Protocol Version 4(TCP/IPv4)
Link-Layer Topology Discovery Mapper I/0 Driver
Link-Layer Topology Discovery Responder
Inatall...
Uninatall
Properties
Description

Double click **Internet Protocol Version 4(TCP/IPv4).**

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.



Internet Protocol Version 4 (TCP/IPv4)Properties

General | Alternate Configuration

1.Select **Obtain an IP address automatically**

● Obtain an IP address automatically

○ Use the following IP address:

IP address:

2.Select **Obtain DNS server address automatically**

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server: . . .

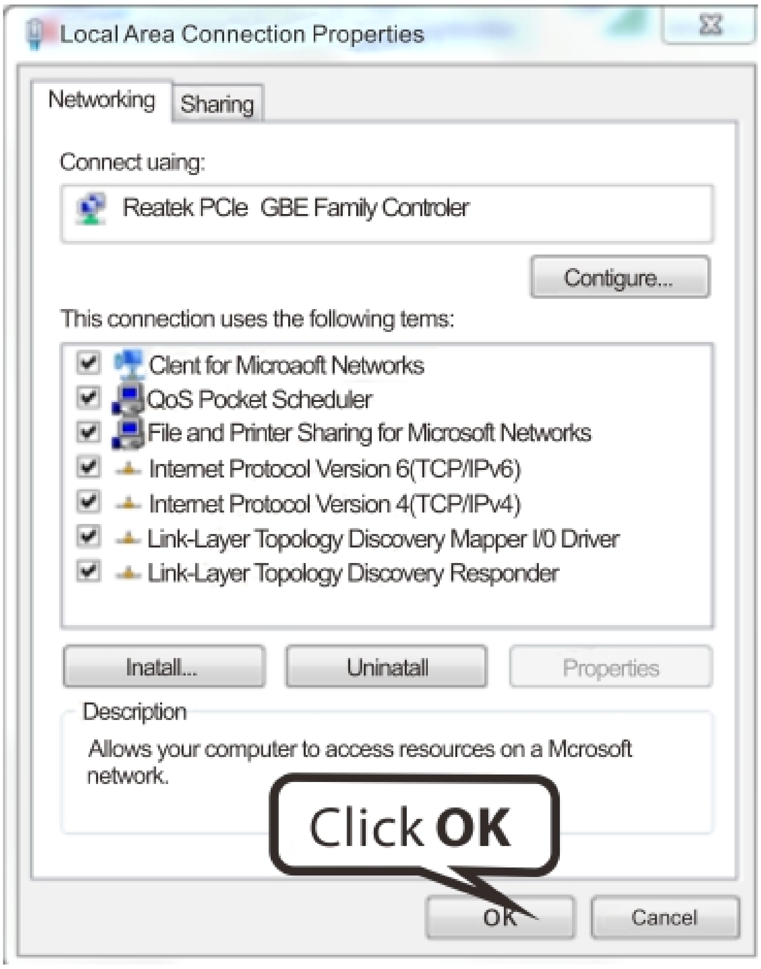
Alternate DNS server: . . .

□ Validate settings upo

3.Click **OK**

Advanced...

OK Cancel



Local Area Connection Properties

Networking | Sharing

Connect uaing:

Reatek PCle GBE Family Controler

Contigure...

This connection uses the following tems:

☑ Clent for Microaoft Networks
☑ QoS Pocket Scheduler
☑ File and Printer Sharing for Microsoft Networks
☑ Internet Protocol Version 6(TCP/IPv6)
☑ Internet Protocol Version 4(TCP/IPv4)
☑ Link-Layer Topology Discovery Mapper I/0 Driver
☑ Link-Layer Topology Discovery Responder

Inatall... Uninatall Properties

Description

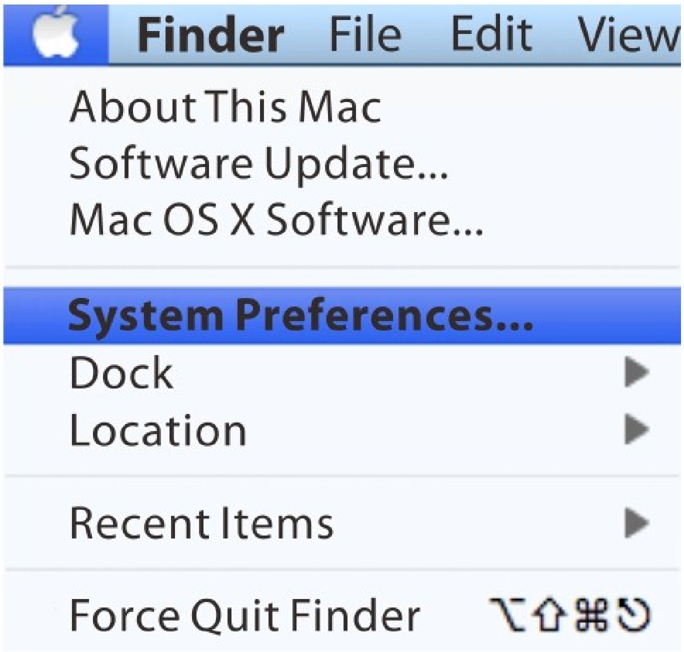
Allows your computer to access resources on a Mcrosoft network.

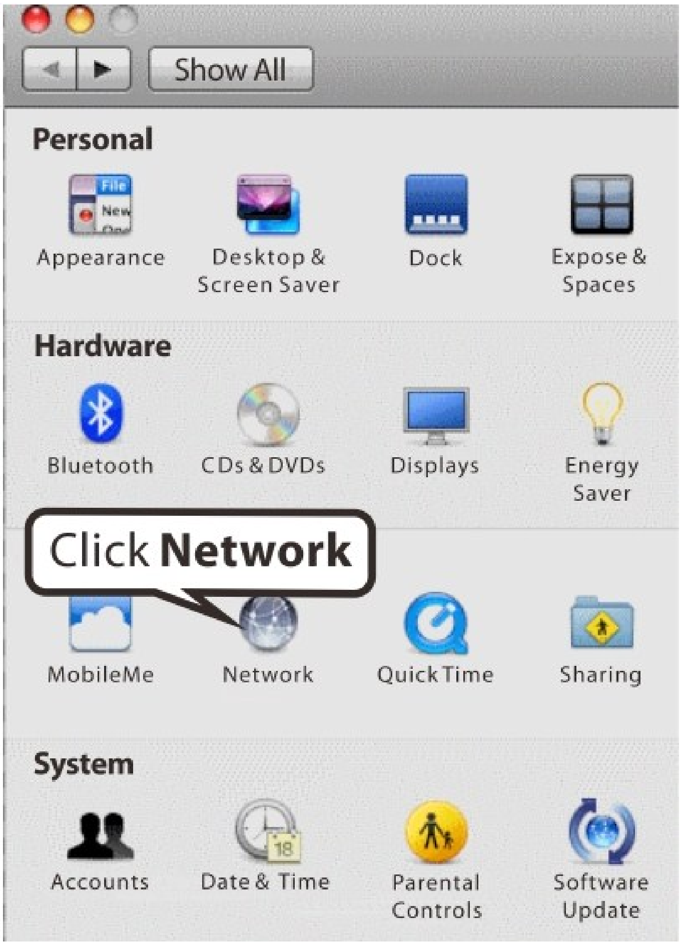
Click **OK**

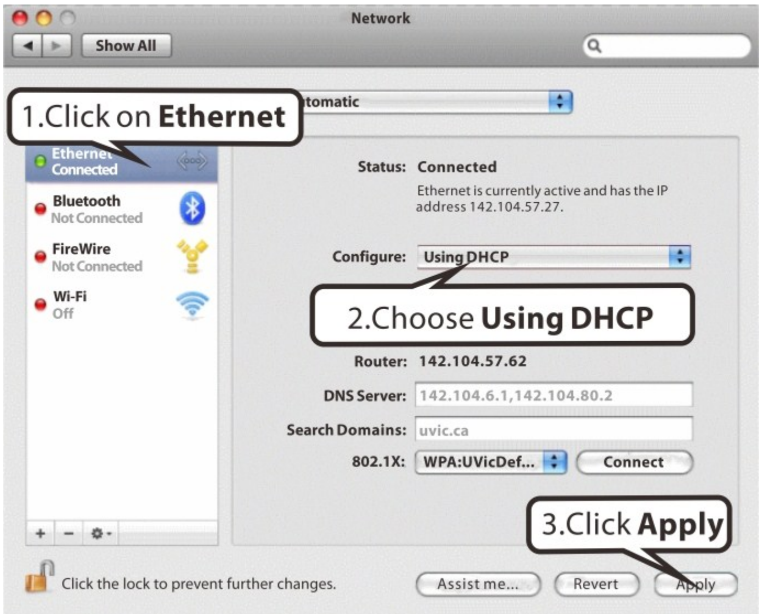
OK Cancel

MAC

Click on the **Apple** icon from the top-left corner and select **System Preferences**.




Click Network



Status: Connected

Ethernet is currently active and has the IP address 142.104.57.27.

Configure: Using DHCP

Router: 142.104.57.62

DNS Server: 142.104.6.1,142.104.80.2

Search Domains: uvic.ca

802.1X: WPA:UVicDef...

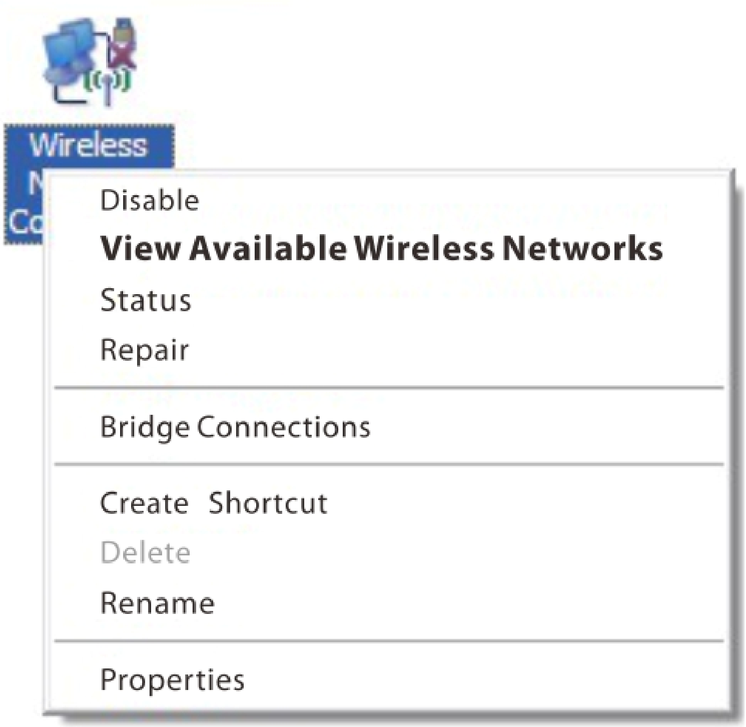
Click the lock to prevent further changes.

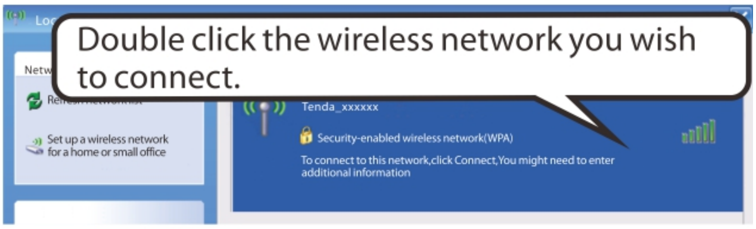
Appendix 2 Join Your Wireless Network

Windows XP

a). Click **Start-> Settings -> Control Panel**;

b). Double click **Network Connections**, select the desired wireless network connection and then click **View Available Wireless Networks**.



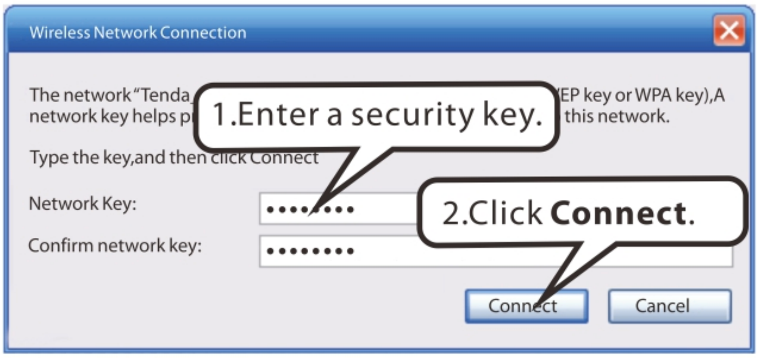

Double click the wireless network you wish to connect.

Tenda_xxxxxx

Security-enabled wireless network(WPA)

To connect to this network,click Connect,You might need to enter additional information

Set up a wireless network for a home or small office


Wireless Network Connection

The network“Tenda … EP key or WPA key),A network key helps p… this network.

Type the key,and then click Connect

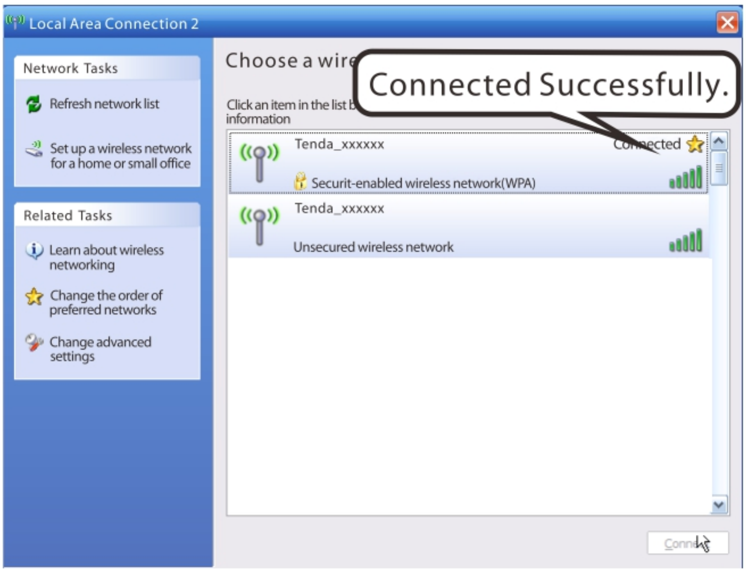
Network Key: ••••••••

Confirm network key: ••••••••

1.Enter a security key.

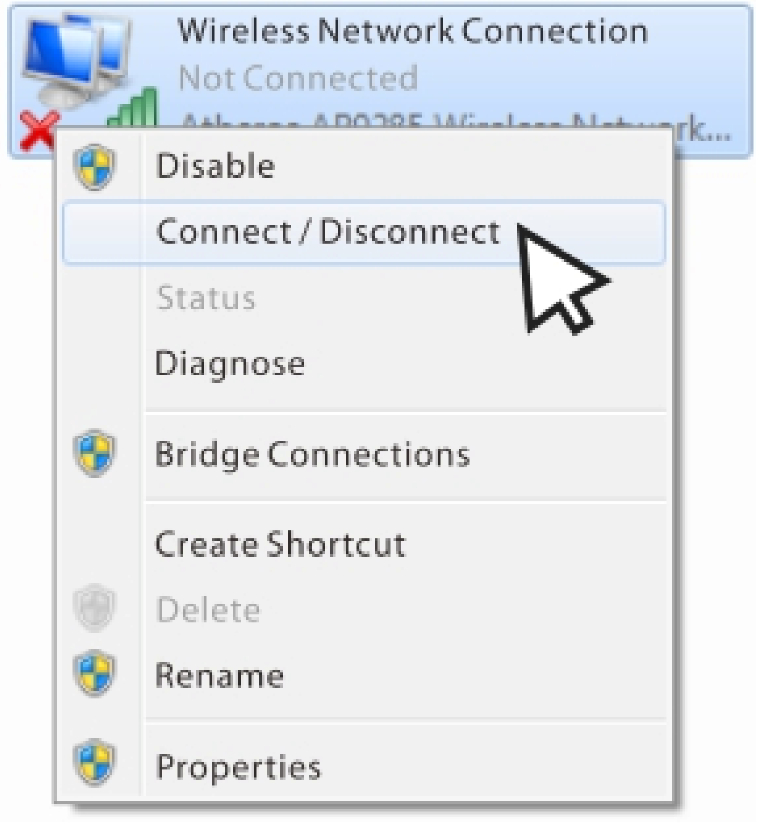
2.Click **Connect**.

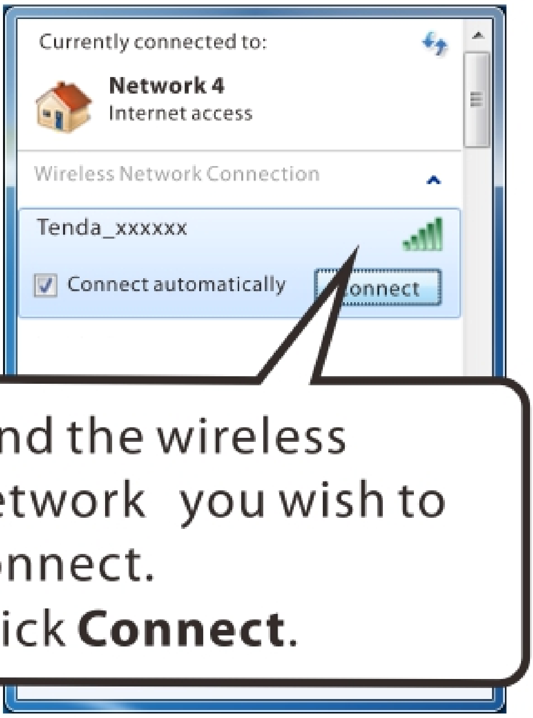
When you see **Connected** displayed next to the wireless network you selected, you have connected to the wireless network successfully.


Local Area Connection 2
Network Tasks
Refresh network list
Set up a wireless network for a home or small office
Related Tasks
Learn about wireless networking
Change the order of preferred networks
Change advanced settings
Choose a wire
Click an item in the list b information
Connected Successfully.
Tenda_xxxxxx
Connected
Securit-enabled wireless network(WPA)
Tenda_xxxxxx
Unsecured wireless network
Conn

Windows 7

Click **Start-> Control Panel-> Network and Sharing Center-> Change adapter settings**, select a desired wireless connection and click **Connect/Disconnect**.




Currently connected to:

Network 4
Internet access

Wireless Network Connection

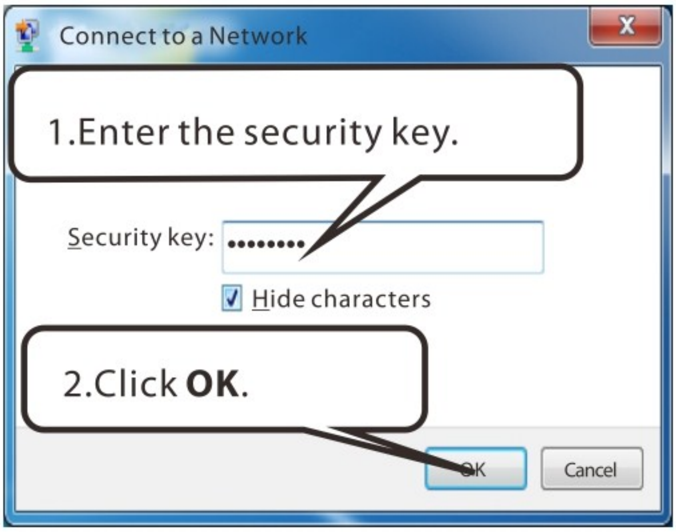
Tenda_xxxxxx

☑ Connect automatically

Connect

1.Find the wireless network you wish to connect.

2.Click **Connect**.


Connect to a Network

1.Enter the security key.

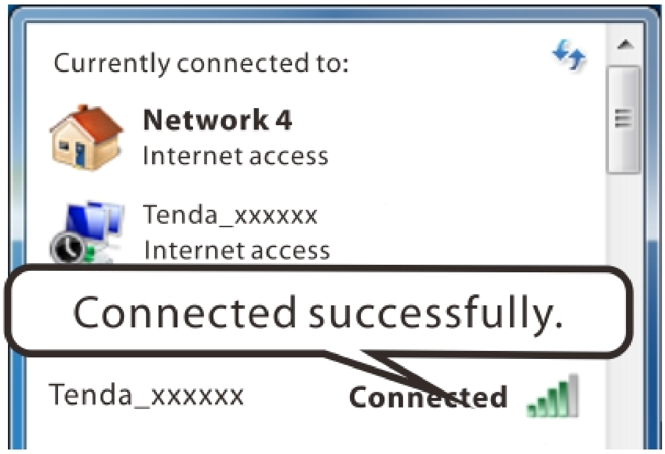
Security key: ••••••••

☑ Hide characters

2.Click **OK**.

OK Cancel

When you see **Connected** displayed next to the wireless network you selected, you have connected to the wireless network successfully.


Currently connected to:

Network 4
Internet access

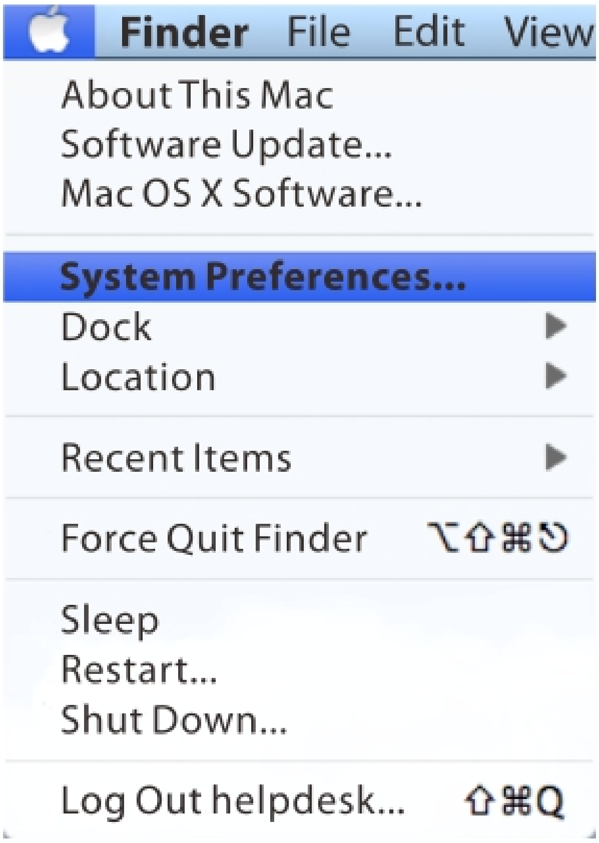
Tenda_xxxxxx
Internet access

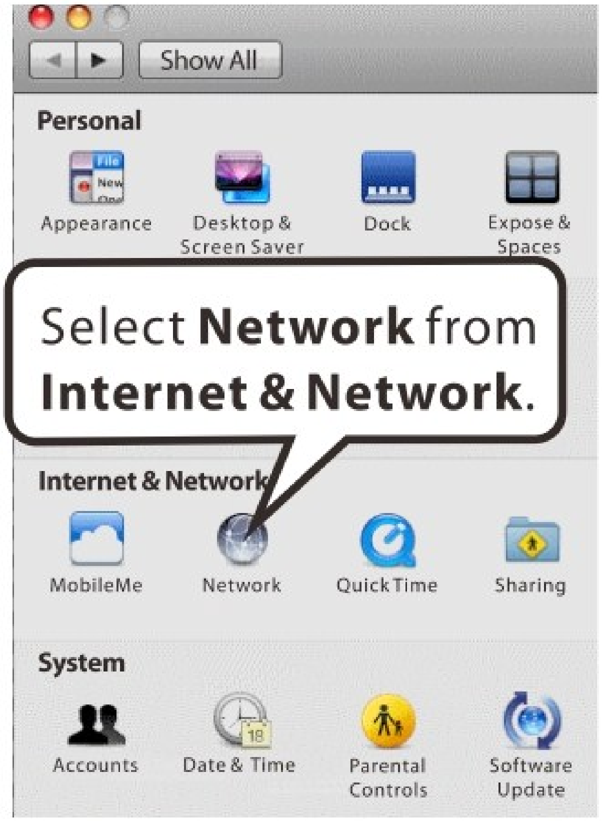
Connected successfully.

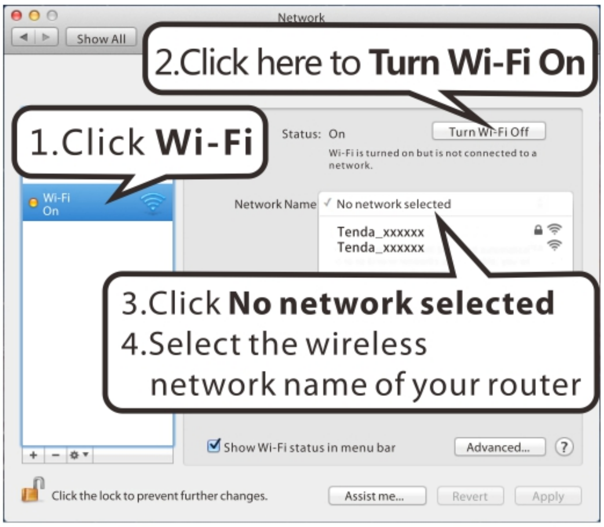
Tenda_xxxxxx Connected

MAC

Click ->**System Preferences.**




Select **Network** from **Internet & Network.**

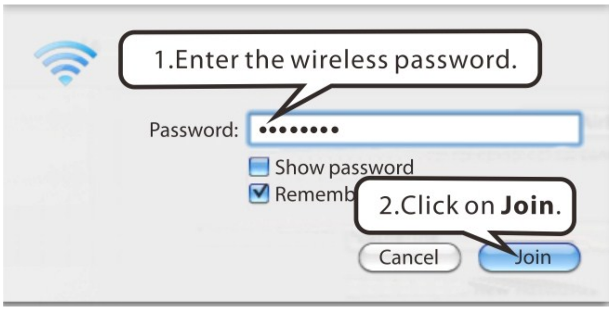


1.Click **Wi-Fi**

2.Click here to **Turn Wi-Fi On**

3.Click **No network selected**

4.Select the wireless network name of your router



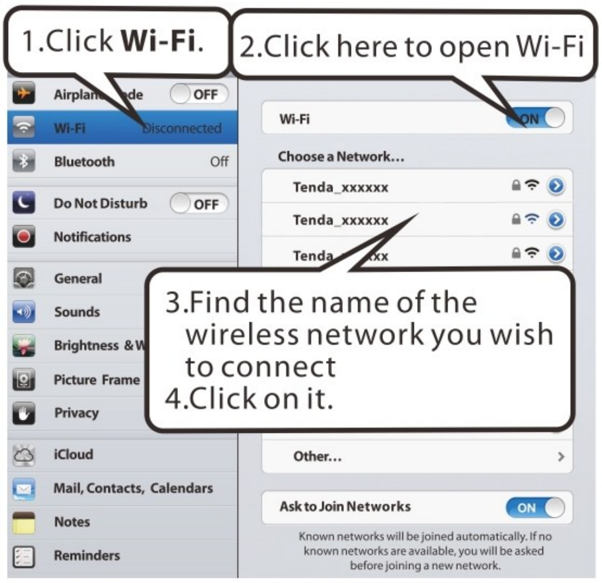
1.Enter the wireless password.

2.Click on **Join**.

iPhone/iPad

1.Scroll screen to find the **Settings** icon.

2.Click the icon.

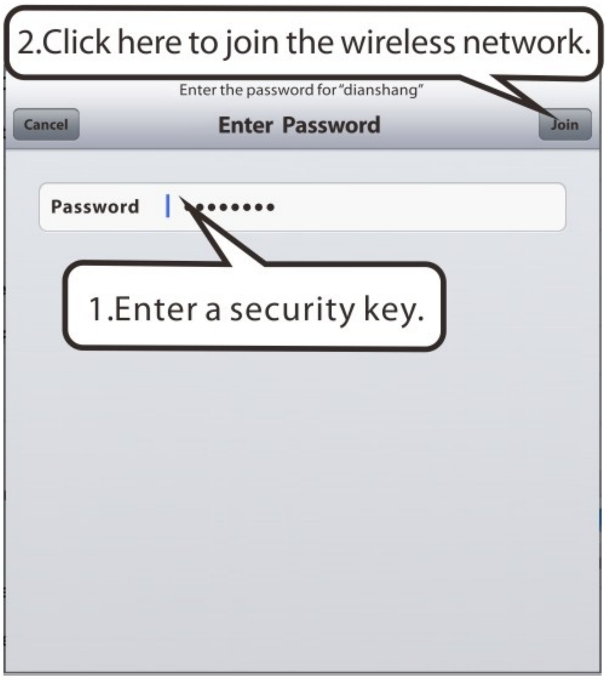


1.Click **Wi-Fi**.

2.Click here to open Wi-Fi

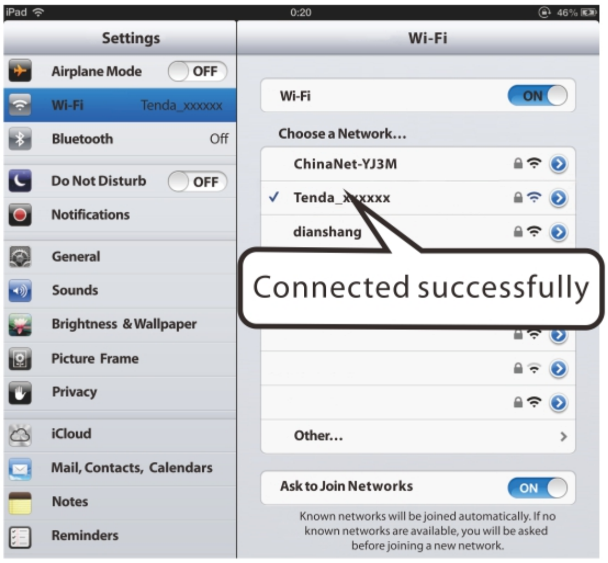
3.Find the name of the wireless network you wish to connect

4.Click on it.



2.Click here to join the wireless network.

1.Enter a security key.



Connected successfully

Appendix 3 FAQs

1. What information should I have to access 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 **Hardware Install** hereof.
2. Double check the TCP/IP settings on your PC. For details, see **Appendix 1.Configure PC** hereof.
3. Press the **Reset** button on the device and then re-access the management interface.
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?)

1. Try the default security key, which can be seen from the label attached to the device bottom.
2. If step 1 that works, access the device web manager and customize a new security key.
3. If step 1 does not work, press the **Reset** button on the device to restore factory default settings. And then log in to the device web manager to customize 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 **Advanced**-> **Wireless**-> **Basic** and change the wireless network name (SSID). Then search again.
3. 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 **Star**t 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 **Advanced**-> **Wireless** and change the wireless network name (SSID). Then connect again.

3. Log in to the device, select **Advanced**-> **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
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
Colombia	EMCALI	0	33	PPPoA VC-MUX
Columbia	ETB	0	33	PPPoE LLC
Costa Rica	ICE	1	50	1483 Routed IP LLC
Denmark	Cybercity, Tiscali	0	35	PPPoA VC-MUX
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
Israel		8	35	PPPoA VC-MUX
Italy		8	35	PPPoA VC-MUX
Iran (1)		0	35	PPPoE LLC
Iran (2)		8	81	PPPoE LLC
Israel(1)		8	48	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		0	33	PPPoA VC-MUX
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
Netherlands	BBNED	0	35	PPPoA VC-MUX
Netherlands	MX Stream	8	48	PPPoA VC-MUX
New Zealand	Xtra	0	35	PPPoA VC-MUX
New Zealand	Slingshot	0	100	PPPoA VC-MUX
Pakistan (cyber net)		8	35	PPPoE LLC
Pakistan (linkDotnet)		0	35	PPPoA LLC
Pakistan(PTCL)		8	81	PPPoE LLc
Portugal		0	35	PPPoE LLC
Puerto Rico	Coqui.net	0	35	PPPoA 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	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	Wanadoo (3)	8	32	1483 Routed IP LLC
Sweden	Telenordia	8	35	PPPoE
Sweden	Telia	8	35	1483 Routed IP LLC
Switzerland		8	35	PPPoE LLC
Trinidad & Tobago	TSTT	0	35	PPPoA VC-MUX
Turkey (1)		8	35	PPPoE LLC

Turkey (2)		8	35	PPPoA 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
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
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
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
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
Russia	Rostel	0	35	PPPoE LLC
Russia	Port telecom	0	35	PPPoE LLC
Russia	VNTC	8	35	PPPoE LLC
Uzbekistan	Sharq Stream	8	35	PPPoE LLC
Uzbekistan	Sarkor	0	33	PPPoE LLC
Uzbekistan	TShTT	0	35	PPPoE LLC
Kazakhstan	Kazakhtelecom «Megaline»	0	40	LLC/SNAP Bridging
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
Telefónica (Argentina)		8	35	1483 Bridged IP LLC-based
Telefónica (Perú)		8	48	1483 Bridged IP VC-MUX
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
France	Free	8	36	LLC
Netherlands	MXSTREAM	8	48	1483 Bridged IP LLC
Netherlands	BBNED	0	35	1483 Bridged IP LLC
Belgium	Turboline	8	35	1483 Bridged IP LLC
Belgium	ADSL Office	8	35	1483 Bridged IP LLC
UK		0	38	1483 Bridged IP LLC
Italy		8	35	1483 Bridged IP LLC
Switzerland		8	35	1483 Bridged IP LLC
SpainWanadoo		8	32	1483 Bridged IP LLC
Czech Republic		8	48	1483 Bridged IP LLC
Dubai		0	50	**1483 Bridged IP LLC**
UAE (Al sahmil)		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**
kuwait unitednetwork		0	33	**1483 Bridged IP LLC**
Pakistan (PALESTINE)		8	35	**1483 Bridged IP LLC**
Dominican Republic		0	33	**1483 Bridged IP LLC**
Orange Nyumbani (Kenya)		0	35	**PPPoE LLC**
Pakistan for PTCL		0	103	**1483 Bridged IP LLC**
Sri Lanka Telecom-(SLT)		8	35	PPPOE LLC
Philippines(1)		0	35	1483 Bridged IP LLC
Philippines(2)		0	100	1483 Bridged IP LLC
RomTelecom Romania:		0	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
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	Dadegostar Asre Novin	0	33	PPPOE LLC
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
morocco	IAM	8	35	PPPOE
Malaysia	Streamyx	0	35	PPPOE LLC
Indonesia Speedy Telkomnet		8	81	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

IC RSS warning

This device complies with Industry Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference,including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes:
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that, the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

(1/2) This radio transmitter (identify the device by certification number, or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal etl'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

IC Radiation Exposure Statement:

This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.