



TRENDNET®



User's Guide

TEW-637AP
H/W: V2

Federal Communication Commission Interference Statement

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

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

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

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

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

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

European Union Notice:

Radio products with the CE marking comply with the R&TTE Directive (1999/5/EC), the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN 60950 Product Safety
- EN 300 328 Technical requirement for radio equipment
- EN 301 489-1/-17 General EMC requirements for radio equipment

Trademark recognition

All product names used in this manual are the properties of their respective owners and are acknowledged.

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Package Contents

- TEW-637AP 11n (Draft) AP
- CAT-5 Ethernet Cable (the TEW-637AP's Ethernet ports is Auto-MDIX)
- Power Adapter (12.0V, 0.5A)
- CD-ROM with Manual & Wizard
- Quick Installation Guide



Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.

Minimum System Requirements

- Computers with Windows, Macintosh, or Linux-based operating systems with an installed Ethernet adapter and CD-ROM.
- Internet Explorer Version 6.0 or Netscape Navigator Version 7.0 and Above

Introduction

The TEW-637AP is an 802.11n (draft 2.0) high-performance, wireless AP that supports high-speed wireless networking at home, at work or in public places.

Unlike most Access Points, the TEW-637AP provides data transfers at up to 300 Mbps when used with other 11n products. This AP is backwards compatible with 802.11b/g products. This means that you do not need to change your entire network to maintain connectivity. You may sacrifice some of 802.11g's speed when you mix 802.11n (draft2.0) and 802.11g devices, but you will not lose the ability to communicate when you incorporate the 802.11n (draft 2.0) into your 802.11g network. You may choose to slowly change your network by gradually replacing the 802.11g devices with 802.11n (draft 2.0) devices.

Features

- Supports IEEE 802.11n (draft 2.0) & 11b/g 2.4GHz wireless Local Area Network (WLAN) application
- 2.412 to 2.484GHz frequency band operation
- Compliant with IEEE 802.3 & 3u standards
- Support OFDM and CCK modulation
- Data rates of 1,2,5,6,9,12,18,24,36,48,54Mbps and 802.11n (draft 2.0) offering up to 300Mbps.
- Support one LAN port
- Support WEP & WPA security
- Support two external antennas

Hardware Overview



Auto MDI/MDIX 10/100Mbps LAN Ports

This port automatically senses the cable type when connecting to Router.

Reset Button

Pressing the reset button restores the AP to its original factory default settings.

DC-IN

The DC power input connector is a single jack socket to supply power to the TEW-637AP. Please use the Power Adapter provided on the TEW-637AP package.

Rear Panel

WLAN LED

A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.

WPS LED

This LED blinks during WPS function is enabled.

LAN LED

A solid light indicates a connection to a Router on the LAN port. This LED blinks during data transmission.

POWER LED

A solid light indicates a proper connection to the power supply.

WPS Button

Press the button to enable WPS function.



Front Panel

Installation Considerations

The TEW-637AP AP lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- 1 Keep the number of walls and ceilings between the TEW-637AP and other network devices to a minimum - each wall or ceiling can reduce your wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.
- 2 Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.
- 3 Building Materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
- 4 Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

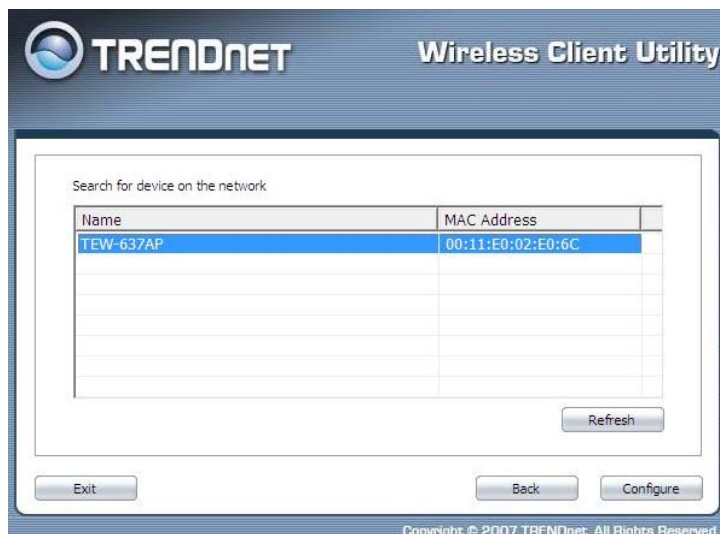
Getting Started

For a typical wireless setup at home, please do the following:

- 1 Connect one end of the provided network cable into your computer's network port, and connect the other end of the provided network cable into the TEW-637AP's Ethernet port.
- 2 Plug the power adapter to outlay, and connect the power jack to the TEW-637AP.
- 3 Verify that the Power & Ethernet LEDs are lit.
- 4 Insert Setup Wizard CD into your CD-ROM drive.
- 5 The Welcome screen appears on your monitor. Click **Start** button.
- 6



- 7 Read the License Agreement and click **Next** to continue the installation.
- 8 Your computer will detect TEW-637AP and the Device List screen appears on your monitor. Click **Configure** button to continue (default TEW-637AP IP Address is 192.168.10.100).



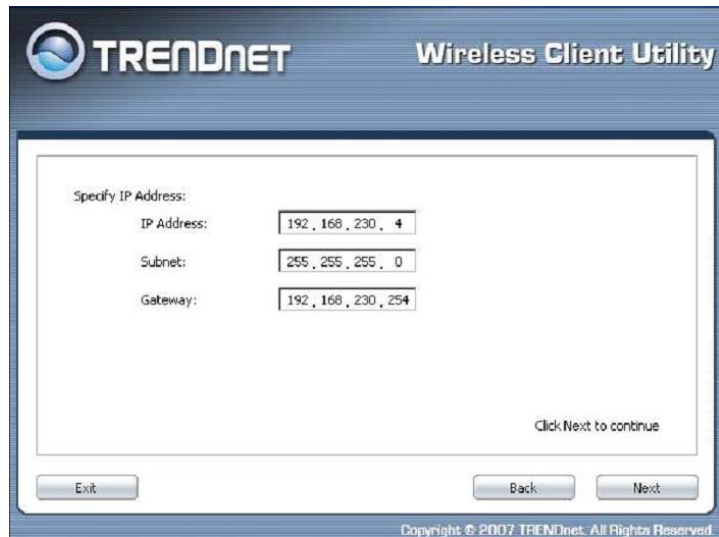
- 9 Enter password for the Access Point. The default password is “**admin**”. Click **Login** button to continue.



- 10 To change IP address, you can select “**IP address setting**” and click **Next** button to continue.



10. The default IP address is 192.168.10.100, you can choose to obtain network setting automatically, or set the IP address manually. After setting, click **Next** to complete it.

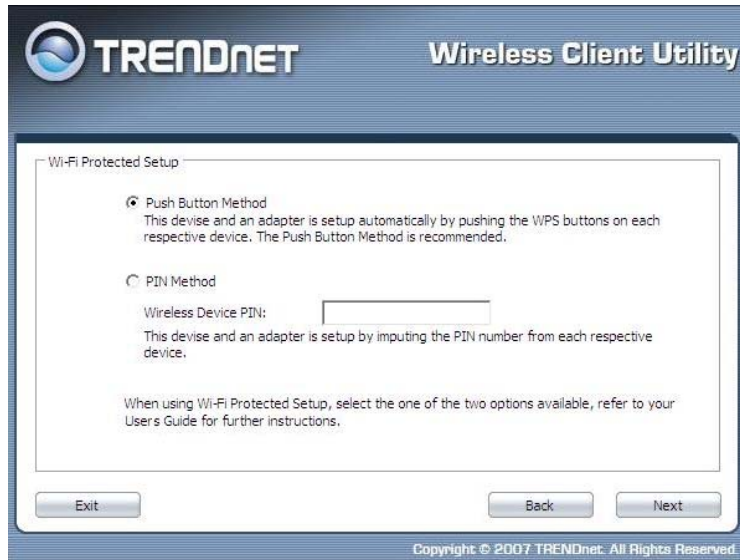


11. To setup TEW-637AP or add/connect your wireless client to this AP, please select “**Wireless wizard**” and click **Next** to continue.

12. Select **WPS** to connect your wireless client device to this AP, and click **Next** button.



13. Select one of the Wi-Fi Protected Setup methods to connect your wireless client device to this AP. Use **Push Button**, click **Next** button to continue. You also need to enable WPS function of the wireless client device to make connection.



14. Use **PIN** and enter your wireless client PIN number on **Wireless Device PIN**, and then click **Next** button to make wireless connection.

15. To set TEW-637AP security, select **Manual setup** and click **Next** button

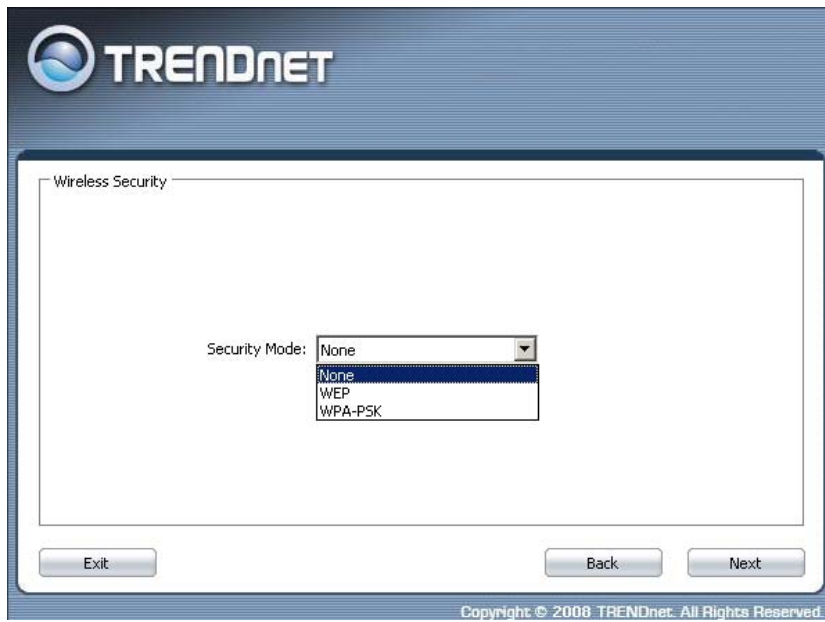


17. Enter **SSID** of TEW-637AP, click **Next** button.

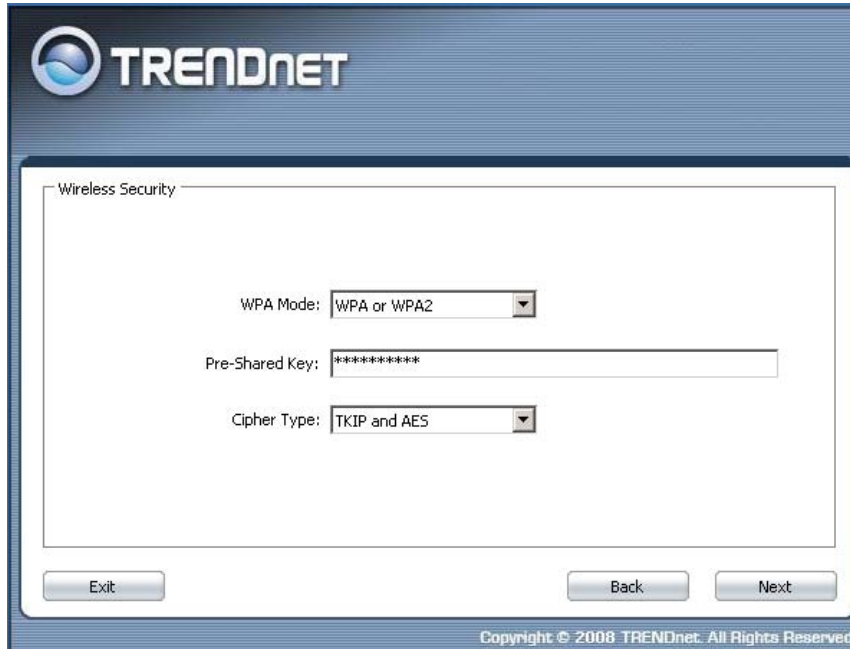


18. To disable **Security Mode**, select **None** and click **Next** button.

19.



19. To use WEP security, select **WEP** and click **Next** button. Select **64-bit** or **128-bit** WEP key length, and enter your WEP key. For 64-bit encryption, enter 10 hexadecimal characters, For 128-bit encryption, enter 26 hexadecimal characters. Click **Next** to continue the setting. To use WPA-PSK security, select **WPA-PSK** and click **Next** button. Select **WPA Mode: WPA Only, WPA2 Only, WPA or WPA2**, and set **Pre-Shared Key** by entering 8 ~ 63 characters. Click **Next** to continue the setting.



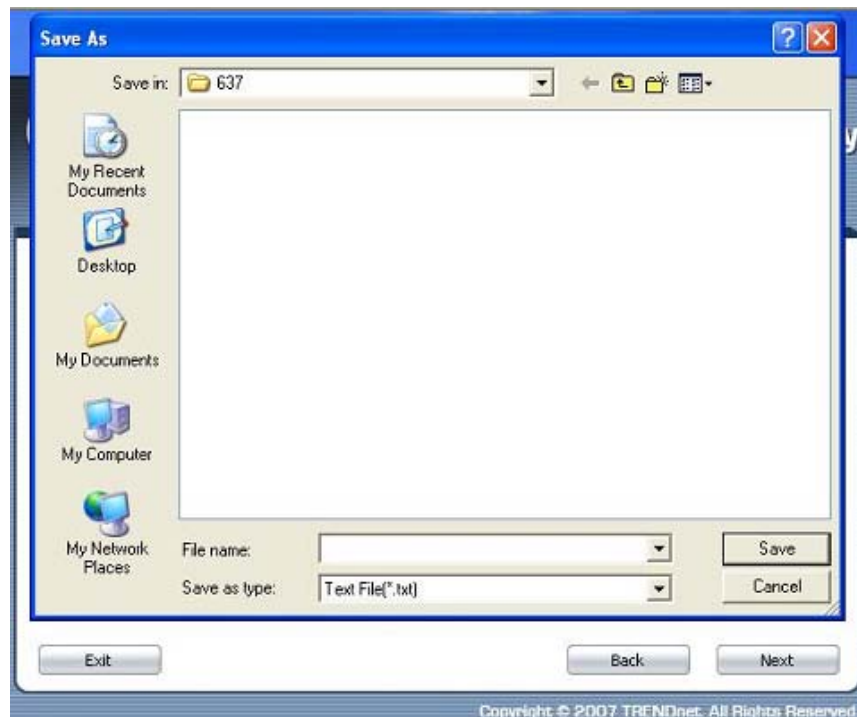
The screenshot shows the 'Wireless Security' configuration window in the TRENDnet interface. It features three main input fields: 'WPA Mode' with a dropdown menu currently showing 'WPA or WPA2', 'Pre-Shared Key' with a text box containing ten asterisks, and 'Cipher Type' with a dropdown menu showing 'TKIP and AES'. At the bottom, there are three buttons: 'Exit', 'Back', and 'Next'. The copyright notice at the bottom right reads 'Copyright © 2008 TRENDnet. All Rights Reserved.'

20. Confirm your new settings. It is recommended that you save or print your wireless settings with the **Save** or **Print** buttons. Once finished, click **Next** to continue.



The screenshot shows the 'Confirm New Settings' window in the TRENDnet Wireless Client Utility. It displays a summary of the configured settings under two sections: 'Network Settings' and 'Wireless Settings'. The 'Network Settings' section lists IP Address (192.168.230.4), Subnet (255.255.255.0), and Gateway (192.168.230.254). The 'Wireless Settings' section lists SSID (TRENDnet_Easy-N-Upgrader), Security Mode (WPA-PSK), WPA Mode (WPA or WPA2), Cipher Type (AES), and Key (123456789). Below the settings, there is a prompt: 'Save or print your configuration settings (recommended)'. At the bottom, there are four buttons: 'Exit', 'Save', 'Print', and 'Next'. The copyright notice at the bottom right reads 'Copyright © 2007 TRENDnet. All Rights Reserved.'

21. Save you setting to a text file in a desired location.



22. Congratulations you have configured you TEW-637AP.



Using the Configuration Menu

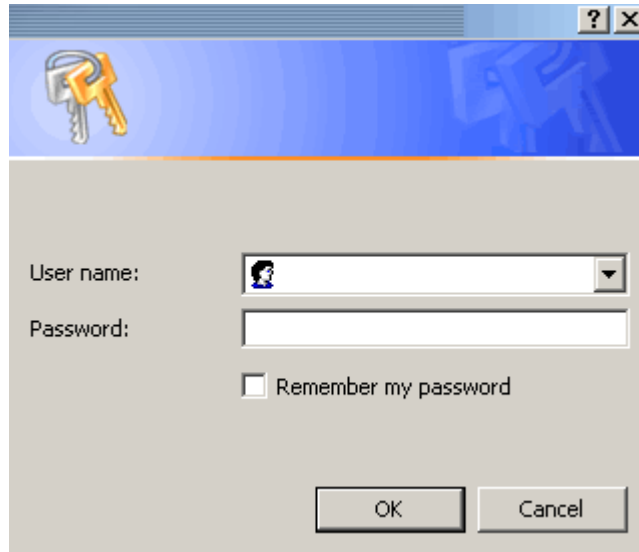
Whenever you want to configure your TEW-637AP, you can access the Configuration Menu by opening the Web-browser and typing in the IP Address of the TEW-637AP.

- Open the Web browser.
- Type in the current **IP Address** of the AP (i.e. <http://192.168.10.100>).



If you have changed the default IP Address assigned to the TEW-637AP, make sure to enter the correct IP Address.

- Type **admin** in the **User Name** field.
- type the Password **admin**.
- Click **Login In**.



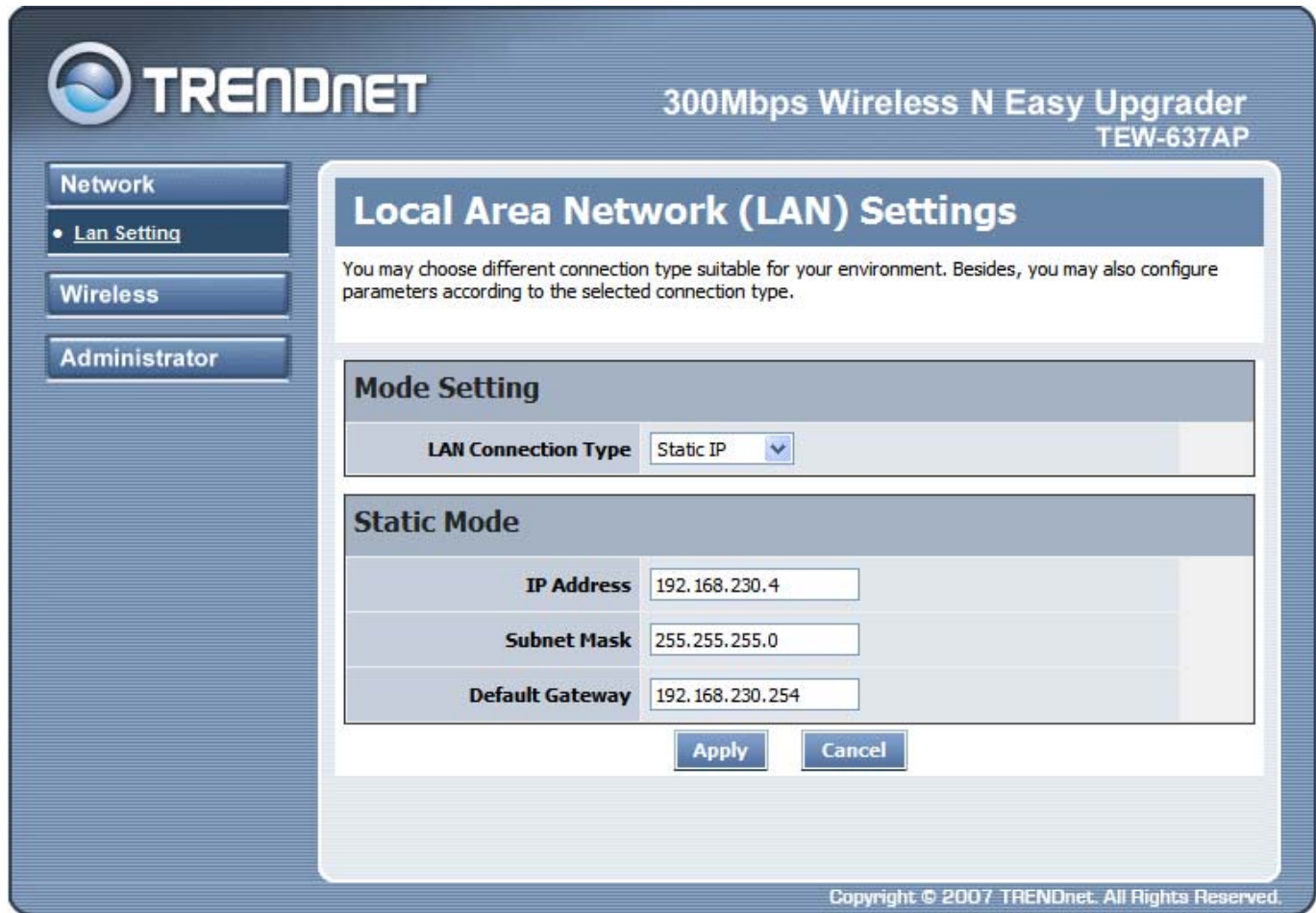
The screenshot shows a login dialog box with a blue header bar containing a key icon. The main area is light gray and contains the following fields and controls:

- User name:** A text input field with a dropdown arrow on the right.
- Password:** A text input field.
- Remember my password
- OK** and **Cancel** buttons at the bottom.

Network

The Network tab provides the following configuration options: LAN Setting.

Network LAN Setting



These are the settings of the LAN (Local Area Network) interface for the Access Point. The Access Point's local network (LAN) settings are configured based on the IP Address and Subnet Mask assigned in this section. The IP address is also used to access this Web-based management interface.

LAN Connection Type

Choose "**Static IP (fixed IP)**" if your router does not support DHCP or if for any other reason you need to assign a fixed address to the AP. In this case, you must also configure the following fields.

IP Address

The IP address of the AP on the local area network. Assign any unused IP address in the range of IP addresses available for the LAN. For example, 192.168.10.100.

Subnet Mask

The subnet mask of the local area network.

Default Gateway

The IP address of the router on the local area network.

Choose "**DHCP (Auto Config)**" if your router supports DHCP and you want the router to assign an IP address to the AP.

Wireless

The wireless section is used to configure the wireless settings for your Access Point. Note that changes made in this section may also need to be duplicated on wireless clients that you want to connect to your wireless network.

To protect your privacy, use the wireless security mode to configure the wireless security features.

The Wireless tab provides the following configuration options: Basic, Advanced, MAC Filter, Security, WPS and Station List.

Wireless Basic

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Basic Wireless Settings

You could configure the minimum number of Wireless settings for communication, such as Network Name (SSID) and Channel. The Access Point can be set simply with only the minimum setting items.

Wireless Network

Radio On/Off	<input type="button" value="RADIO OFF"/>
Wireless Mode	802.11 b/g/n mixed mode
Wireless Name(SSID)	TRENDNET
Multiple SSID1	
Multiple SSID2	
Multiple SSID3	
Broadcast Network Name (SSID)	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
BSSID	00:11:E0:02:E0:6C
Frequency (Channel)	AutoSelect

Wireless Distribution System(WDS)

WDS Mode	Disable
----------	---------

HT Physical Mode

Operating Mode	<input type="radio"/> Mixed Mode <input checked="" type="radio"/> Green Field
Channel BandWidth	<input type="radio"/> 20 <input checked="" type="radio"/> 20/40
Guard Interval	<input type="radio"/> long <input checked="" type="radio"/> Auto
MCS	Auto
Extension Channel	Auto Select
Aggregation MSDU(A-MSDU)	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

Radio On/Off

Press this button to toggle radio On/off.

Network Mode

If all of the wireless devices you want to connect with this Access Point can connect in the same transmission mode, you can improve performance slightly by choosing the appropriate "Only" mode. If you have some devices that use a different transmission mode, choose the appropriate "Mixed" mode.

Network Name (SSID)

When you are browsing for available wireless networks, this is the name that will appear in the list (unless Broadcast Network Name is set to Disable, see below). This name is also referred to as the SSID. For security purposes, it is highly recommended to change from the pre-configured network name.

Multiple SSID

This Access Point support multiple SSID function, you can assign three more SSID for this device.

Broadcast Network Name (SSID)

This option allows you to hide your wireless network. When this option is set to enable, your wireless network name is broadcast to anyone within the range of your signal. If you're not using encryption then they could connect to your network. When this mode is disabled, you must enter the Wireless Network Name (SSID) on the client manually to connect to the network.

Frequency (Channel)

A wireless network uses specific channels in the wireless spectrum to handle communication between clients. Some channels in your area may have interference from other electronic devices. Choose the clearest channel to help optimize the performance and coverage of your wireless network.

WDS Mode

When WDS is enabled, this access point functions as a wireless repeater and is able to wirelessly communicate with other APs via WDS links. Note that WDS is incompatible with WPA -- both features cannot be used at the same time. A WDS link is bidirectional; so this AP must know the MAC Address (creates the WDS link) of the other AP, and the other AP must have a WDS link back to this AP. Make sure the APs are configured with same channel number.

Operating Mode

If you have both 11g and 11n client devices included on your wireless network at the same time, you should choose **Mixed Mode**. And if you only have 11n client devices on your wireless network, you can choose **Green Field** to enjoy high throughput.

Channel Bandwidth

The "20/40" MHz option is usually best. The other option is available for special circumstances.

Guard Interval

Using "Auto" option can increase throughput. However, it can also increase error rate in some installations, due to increased sensitivity to radio-frequency reflections. Select the option that works best for your installation.

MCS

This parameter represents transmission rate. By default (Auto) the fastest possible transmission rate will be selected. You have the option of selecting the speed if necessary.

Reserve Direction Grant (RDG)

Disable or enable reserve direction grant. Default is enabled.

Extension Channel

When 20/40 channel bandwidth has been chosen, you should select extension channel to get higher throughput.

Aggregation MSDU (A-MSDU)

Disable or enable aggregation MSDU. Default is disabled.

Auto Block ACK

Disable or enable auto block ACK. Default is enabled.

Decline BA Request

Disable or enable decline BA request. Default is disabled.

Wireless Advanced

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Advanced Wireless Settings

Use the Advanced Setup page to make detailed settings for the Wireless. Advanced Setup includes items that are not available from the Basic Setup page, such as Beacon Interval, Control Tx Rates and Basic Data Rates.

Advanced Wireless	
Beacon Interval	<input type="text" value="100"/> ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	<input type="text" value="1"/> ms (range 1 - 255, default 1)
Fragment Threshold	<input type="text" value="2346"/> (range 256 - 2346, default 2346)
RTS Threshold	<input type="text" value="2347"/> (range 1 - 2347, default 2347)
TX Power	<input type="text" value="100"/> (range 1 - 100, default 100)
Short Preamble	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Short Slot	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Tx Burst	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Pkt_Aggregate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

Wi-Fi Multimedia	
WMM Capable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
APSD Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

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Beacon Interval

Beacons are packets sent by a wireless Access Point to synchronize wireless devices. Specify a Beacon Period value between 20 and 1000. The default value is set to 100 milliseconds.

Data Beacon Rate (DTIM)

A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages. When the wireless Access Point has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Wireless clients detect the beacons and awaken to receive the broadcast and multicast messages. The default value is 1. Valid settings are between 1 and 255.

Fragment Threshold

This setting should remain at its default value of 2346. Setting the Fragmentation value too low may result in poor performance.

RTS Threshold

This setting should remain at its default value of 2347. If you encounter inconsistent data flow, only minor modifications to the value are recommended.

TX Power

Normally the wireless transmitter operates at 100% power. In some circumstances, however, there might be a need to isolate specific frequencies to a smaller area. By reducing the power of the radio, you can prevent transmissions from reaching beyond your corporate/home office or designated wireless area.

Short Preamble

Use to synchronize communication timing between devices on a network. Disable by default.

Short Slot

Enable or disable short slot. Default is enabled.

Tx Burst

Enable or disable Tx burst. Default is enabled.

Pkt_Aggregate

Enable or disable Pkt aggregate. Default is enabled.

WMM Capable

Enabling WMM can help control latency and jitter when transmitting multimedia content over a wireless connection.

APSD Capable

Enable or disable APSD capable. Default is enabled.

Wireless MAC Filter

The MAC address filter section can be used to filter network access by machines based on the unique MAC addresses of their network adapter(s). It is most useful to prevent unauthorized wireless devices from connecting to your network. A MAC address is a unique ID assigned by the manufacturer of the network adapter.

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MAC Filtering Settings
You may setup MAC based firewall rules to protect your network from invalid access.

Wireless MAC Filter Policy

Policy:

Add MAC Address

MAC Address:
(Ex: 00:11:22:33:44:55)

Comment:

Allow MAC Address to connection in system

No.	MAC Address	Comment
<input type="button" value="Delete Selected"/> <input type="button" value="Cancel"/>		

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Policy

Three policies can be selected - Disable, Allow All & Reject All.

Wireless Security

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Wireless Security Setting
Setting wireless security

Select SSID
SSID choice: [v]

Security Policy
Security Mode: [v]
Encrypt Type: WEP [v]

Wire Equivalence Protection (WEP)
Default Key: Key 1 [v]
WEP Key 1: [] ASCII [v]
WEP Key 2: [] ASCII [v]
WEP Key 3: [] ASCII [v]
WEP Key 4: [] ASCII [v]

WPA
WPA Algorithms: TKIP AES TKIP/AES
Pass Phrase: []
Key Renewal Interval: [] seconds
PMK Cache Period: [] minute
Pre-Authentication: Disable Enable

802.1x WEP
WEP: Disable Enable

SSID choice

Choose the SSID which need to implement security.

Security Mode

You can disable security mode, or you can choose following modes to enable security – Open, Shared, WEPauto, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA-PSK/WPA2-PSK

Wireless WPS

You can setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup.

The screenshot shows the web interface for a TRENDnet 300Mbps Wireless N Easy Upgrader (TEW-637AP). The page is titled "Wi-Fi Protected Setup" and includes a navigation menu on the left with options like Network, Wireless, and Administrator. The main content area is divided into several sections: "WPS Config" with a dropdown menu set to "Enable" and an "Apply" button; "WPS Summary" with a table of configuration details and a "Reset OOB" button; "WPS Progress" with radio buttons for "PIN" (selected) and "PBC", a "Client PIN" input field, and an "Apply" button; and "WPS Status" with a progress indicator. The footer of the interface contains the copyright notice: "Copyright © 2007 TRENDnet. All Rights Reserved."

WPS Summary	
WPS Current Status	
WPS Configured	
WPS SSID	
WPS Auth Mode	
WPS Encryp Type	
WPS Default Key Index	
AP PIN	1885248

WPS mode

Two WPS modes can be selected – PIN & PBC. If PIN is selected, you should enter PIN code of your wireless client device to get wireless connection with this AP.

Wireless Station List

You can monitor stations which associated to this AP.



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Station List

You could monitor stations which associated to this AP here.

Client	
MAC Address	PSM

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Administrator

This Administrator section is used to set password for access to the Web-based management, also provide function of firmware upgrade.

The Administrator tab provides the following configuration options: Management, Upload Firmware, Settings Management & Status.

System Management

At this page, you can configure administrator account and password.

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System Management

You may configure administrator account and password.

Adminstrator Settings

Account	<input type="text" value="admin"/>
Password	<input type="password" value="•••••"/>

Device Name Settings

Device Name	<input type="text" value="TEW-637AP"/>
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Administrator Upload Firmware

By assigning firmware location, you can upload firmware at this page.

The screenshot shows the web interface for the Trendnet 300Mbps Wireless N Easy Upgrader (TEW-637AP). The interface is in a blue-themed layout. At the top left is the Trendnet logo. To the right of the logo, the text reads "300Mbps Wireless N Easy Upgrader" and "TEW-637AP". On the left side, there is a navigation menu with three main sections: "Network", "Wireless", and "Administrator". The "Administrator" section is expanded, showing a list of options: "Management", "Upload Firmware", "Settings Management", and "Status". The "Upload Firmware" option is selected. The main content area is titled "Upgrade Firmware" and contains a warning message: "Upgrade the firmware to obtain new functionality. It takes about 1 minute to upload & upgrade flash and be patient please. Caution! A corrupted image will hang up the system." Below the warning is a section titled "Upload Firmware" which includes a "Location:" label, a text input field, and a "Browse..." button. At the bottom of this section are two buttons: "Apply" and "Reset". At the very bottom of the page, there is a copyright notice: "Copyright © 2007 TRENDnet. All Rights Reserved."

Administrator Settings Management

You can save system settings by exporting them to a configuration file, restore them by importing the file, or reset them to factory default.

The screenshot shows the web interface for the Trendnet 300Mbps Wireless N Easy Upgrader TEW-637AP. The page is titled "Settings Management" and contains several sections for managing system settings. On the left, there is a navigation menu with categories: Network, Wireless, and Administrator. Under Administrator, there are links for Management, Upload Firmware, Settings Management (which is currently selected), and Status. The main content area is divided into four sections: Export Settings, Import Settings, Load Factory Defaults, and System Reboot. Each section has a label and a corresponding button. The Export Settings section has an "Export" button. The Import Settings section has a text input field for "Settings file location" with a "Browse..." button, and "Import" and "Cancel" buttons. The Load Factory Defaults section has a "Load Default" button. The System Reboot section has a "Reboot" button. At the bottom right of the page, there is a copyright notice: "Copyright © 2007 TRENDnet. All Rights Reserved."

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Settings Management

You might save system settings by exporting them to a configuration file, restore them by importing the file, or reset them to factory default.

Export Settings

Export

Import Settings

Settings file location

Load Factory Defaults

Load Default

System Reboot

System Reboot

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Administrator Status

You can check system information and network configurations on this page.

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Network

Wireless

Administrator

- Management
- Upload Firmware
- Settings Management
- Status

Status

The device status.

System Info

Firmware Version	0.2.3.24, 11-Jan-2008
System Up Time	1 hour, 27 mins, 46 secs

Network Configurations

Connected Type	Static IP
LAN IP Address	192.168.230.4
Subnet Mask	255.255.255.0
Default Gateway	192.168.230.254

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Glossary

A

Access Control List

ACL. This is a database of network devices that are allowed to access resources on the network.

Access Point

AP. Device that allows wireless clients to connect to it and access the network

Ad-hoc network

Peer-to-Peer network between wireless clients

Address Resolution Protocol

ARP. Used to map MAC addresses to IP addresses so that conversions can be made in both directions.

Advanced Encryption Standard

AES. Government encryption standard

Alphanumeric

Characters A-Z and 0-9

Antenna

Used to transmit and receive RF signals.

ASCII

American Standard Code for Information Interchange. This system of characters is most commonly used for text files

Attenuation

The loss in strength of digital and analog signals. The loss is greater when the signal is being transmitted over long distances.

Authentication

To provide credentials, like a Password, in order to verify that the person or device is really who they are claiming to be

Automatic Private IP Addressing

APIPA. An IP address that that a Windows computer will assign itself when it is configured to obtain an IP address automatically but no DHCP server is available on the network

B

Backward Compatible

The ability for new devices to communicate and interact with older legacy devices to guarantee interoperability

Bandwidth

The maximum amount of bytes or bits per second that can be transmitted to and from a network device

Beacon

A data frame by which one of the stations in a Wi-Fi network periodically broadcasts network control data to other wireless stations.

Bit rate

The amount of bits that pass in given amount of time

Bit/sec

Bits per second

BOOTP

Bootstrap Protocol. Allows for computers to be booted up and given an IP address with no user intervention

Broadcast

Transmitting data in all directions at once

Browser

A program that allows you to access resources on the web and provides them to you graphically

C**CAT 5**

Category 5. Used for 10/100 Mbps or 1Gbps Ethernet connections

Client

A program or user that requests data from a server

Collision

When do two devices on the same Ethernet network try and transmit data at the exact same time.

Cookie

Information that is stored on the hard drive of your computer that holds your preferences to the site that gave your computer the cookie

D**Data**

Information that has been translated into binary so that it can be processed or moved to another device

Data-Link layer

The second layer of the OSI model. Controls the movement of data on the physical link of a network

dBd

Decibels related to dipole antenna

dBi

Decibels relative to isotropic radiator

dBm

Decibels relative to one milliwatt

Decrypt

To unscramble an encrypted message back into plain text

Default

A predetermined value or setting that is used by a program when no user input has been entered for this value or setting

DHCP

Dynamic Host Configuration Protocol: Used to automatically assign IP addresses from a predefined pool of addresses to computers or devices that request them

Digital certificate:

An electronic method of providing credentials to a server in order to have access to it or a network

Direct Sequence Spread Spectrum

DSSS: Modulation technique used by 802.11b wireless devices

DNS

Domain Name System: Translates Domain Names to IP addresses

Domain name

A name that is associated with an IP address

Download

To send a request from one computer to another and have the file transmitted back to the requesting computer

Duplex

Sending and Receiving data transmissions at the same time

Dynamic IP address

IP address that is assigned by a DHCP server and that may change. Cable Internet providers usually use this method to assign IP addresses to their customers.

E**EAP**

Extensible Authentication Protocol

Encryption

Converting data into cyphertext so that it cannot be easily read

Ethernet

The most widely used technology for Local Area Networks.

F

File server

A computer on a network that stores data so that the other computers on the network can all access it

File sharing

Allowing data from computers on a network to be accessed by other computers on the network with different levels of access rights

Firewall

A device that protects resources of the Local Area Network from unauthorized users outside of the local network

Firmware

Programming that is inserted into a hardware device that tells it how to function

Fragmentation

Breaking up data into smaller pieces to make it easier to store

FTP

File Transfer Protocol. Easiest way to transfer files between computers on the Internet

Full-duplex

Sending and Receiving data at the same time

G

Gain

The amount an amplifier boosts the wireless signal

Gateway

A device that connects your network to another, like the internet

Gbps

Gigabits per second

Gigabit Ethernet

Transmission technology that provides a data rate of 1 billion bits per second

GUI

Graphical user interface

H

Half-duplex

Data cannot be transmitted and received at the same time

Hashing

Transforming a string of characters into a shorter string with a predefined length

Hexadecimal

Characters 0-9 and A-F

Hop

The action of data packets being transmitted from one AP to another

Host

Computer on a network

HTTP

Hypertext Transfer Protocol is used to transfer files from HTTP servers (web servers) to HTTP clients (web browsers)

HTTPS

HTTP over SSL is used to encrypt and decrypt HTTP transmissions

Hub

A networking device that connects multiple devices together

I

ICMP

Internet Control Message Protocol

IEEE

Institute of Electrical and Electronics Engineers

IGMP

Internet Group Management Protocol is used to make sure that computers can report their multicast group membership to adjacent APs

IIS

Internet Information Server is a WEB server and FTP server provided by Microsoft

Infrastructure

In terms of a wireless network, this is when wireless clients use an Access Point to gain access to the network

Internet

A system of worldwide networks which use TCP/IP to allow for resources to be accessed from computers around the world

Internet Explorer

A World Wide Web browser created and provided by Microsoft

Internet Protocol

The method of transferring data from one computer to another on the Internet

Internet Protocol Security

IPsec provides security at the packet processing layer of network communication

Internet Service Provider

An ISP provides access to the Internet to individuals or companies

Intranet

A private network

Intrusion Detection

A type of security that scans a network to detect attacks coming from inside and outside of the network

IP

Internet Protocol

IP address

A 32-bit number, when talking about Internet Protocol Version 4, that identifies each computer that transmits data on the Internet or on an Intranet

IPsec

Internet Protocol Security

IPX

Internetwork Packet Exchange is a networking protocol developed by Novell to enable their Netware clients and servers to communicate

ISP

Internet Service Provider

J

Java

A programming language used to create programs and applets for web pages

K

Kbps

Kilobits per second

Kbyte

Kilobyte

L

LAN

Local Area Network

Latency

The amount of time that it takes a packet to get from the one point to another on a network. Also referred to as delay

LED

Light Emitting Diode

Legacy

Older devices or technology

Local Area Network

A group of computers in a building that usually access files from a server

LPR/LPD

"Line Printer Requestor"/"Line Printer Daemon". A TCP/IP protocol for transmitting streams of printer data.

L2TP

Layer 2 Tunneling Protocol

M

MAC address

A unique hardware ID assigned to every Ethernet adapter by the manufacturer.

Mbps

Megabits per second

MDI

Medium Dependent Interface is an Ethernet port for a connection to a straight-through cable

MDIX

Medium Dependent Interface Crossover, is an Ethernet port for a connection to a crossover cable

MIB

Management Information Base is a set of objects that can be managed by using SNMP

Modem

A device that Modulates digital signals from a computer to an analog signal in order to transmit the signal over phone lines. It also Demodulates the analog signals coming from the phone lines to digital signals for your computer

MPPE

Microsoft Point-to-Point Encryption is used to secure data transmissions over PPTP connections

MTU

Maximum Transmission Unit is the largest packet that can be transmitted on a packet-based network like the Internet

Multicast

Sending data from one device to many devices on a network

N

NAT

Network Address Translation allows many private IP addresses to connect to the Internet, or another network, through one IP address

NetBEUI

NetBIOS Extended User Interface is a Local Area Network communication protocol. This is an updated version of NetBIOS

NetBIOS

Network Basic Input/Output System

Netmask

Determines what portion of an IP address designates the Network and which part designates the Host

Network Interface Card

A card installed in a computer or built onto the motherboard that allows the computer to connect to a network

Network Layer

The third layer of the OSI model which handles the routing of traffic on a network

Network Time Protocol

Used to synchronize the time of all the computers in a network

NIC

Network Interface Card

NTP

O

OFDM

Orthogonal Frequency-Division Multiplexing is the modulation technique for both 802.11a and 802.11g

OSI

Open Systems Interconnection is the reference model for how data should travel between two devices on a network

OSPF

Open Shortest Path First is a routing protocol that is used more than RIP in larger scale networks because only changes to the routing table are sent to all the other APs in the network as opposed to sending the entire routing table at a regular interval, which is how RIP functions

P

Password

A sequence of characters that is used to authenticate requests to resources on a network

Personal Area Network

The interconnection of networking devices within a range of 10 meters

Physical layer

The first layer of the OSI model. Provides the hardware means of transmitting electrical signals on a data carrier

Ping

A utility program that verifies that a given Internet address exists and can receive messages. The utility sends a control packet to the given address and waits for a response.

PoE

Power over Ethernet is the means of transmitting electricity over the unused pairs in a category 5 Ethernet cable

Port

A logical channel endpoint in a network. A computer might have only one physical channel (its Ethernet channel) but can have multiple ports (logical channels) each identified by a number.

PPP

Point-to-Point Protocol is used for two computers to communicate with each other over a serial interface, like a phone line

PPPoE

Point-to-Point Protocol over Ethernet is used to connect multiple computers to a remote server over Ethernet

PPTP

Point-to-Point Tunneling Protocol is used for creating VPN tunnels over the Internet between two networks

Preamble

Used to synchronize communication timing between devices on a network

Q

QoS

Quality of Service

R

RADIUS

Remote Authentication Dial-In User Service allows for remote users to dial into a central server and be authenticated in order to access resources on a network

Reboot

To restart a computer and reload it's operating software or firmware from nonvolatile storage.

Rendezvous

Apple's version of UPnP, which allows for devices on a network to discover each other and be connected without the need to configure any settings

Repeater

Retransmits the signal of an Access Point in order to extend it's coverage

RIP

Routing Information Protocol is used to synchronize the routing table of all the APs on a network

RJ-11

The most commonly used connection method for telephones

RJ-45

The most commonly used connection method for Ethernet

RS-232C

The interface for serial communication between computers and other related devices

RSA

Algorithm used for encryption and authentication

S

Server

A computer on a network that provides services and resources to other computers on the network

Session key

An encryption and decryption key that is generated for every communication session between two computers

Session layer

The fifth layer of the OSI model which coordinates the connection and communication between applications on both ends

Simple Mail Transfer Protocol

Used for sending and receiving email

Simple Network Management Protocol

Governs the management and monitoring of network devices

SIP

Session Initiation Protocol. A standard protocol for initiating a user session that involves multimedia content, such as voice or chat.

SMTP

Simple Mail Transfer Protocol

SNMP

Simple Network Management Protocol

SOHO

Small Office/Home Office

SPI

Stateful Packet Inspection

SSH

Secure Shell is a command line interface that allows for secure connections to remote computers

SSID

Service Set Identifier is a name for a wireless network

Stateful inspection

A feature of a firewall that monitors outgoing and incoming traffic to make sure that only valid responses to outgoing requests are allowed to pass through the firewall

Subnet mask

Determines what portion of an IP address designates the Network and which part designates the Host

Syslog

System Logger -- a distributed logging interface for collecting in one place the logs from different sources. Originally written for UNIX, it is now available for other operating systems, including Windows.

T

TCP

Transmission Control Protocol

TCP/IP

Transmission Control Protocol/Internet Protocol

TCP Raw

A TCP/IP protocol for transmitting streams of printer data.

TFTP

Trivial File Transfer Protocol is a utility used for transferring files that is simpler to use than FTP but with less features

Throughput

The amount of data that can be transferred in a given time period

Traceroute

A utility displays the routes between you computer and specific destination

U

UDP

User Datagram Protocol

Unicast

Communication between a single sender and receiver

Universal Plug and Play

A standard that allows network devices to discover each other and configure themselves to be a part of the network

Upgrade

To install a more recent version of a software or firmware product

Upload

To send a request from one computer to another and have a file transmitted from the requesting computer to the other

UPnP

Universal Plug and Play

URL

Uniform Resource Locator is a unique address for files accessible on the Internet

USB

Universal Serial Bus

UTP

Unshielded Twisted Pair

V

Virtual Private Network

VPN: A secure tunnel over the Internet to connect remote offices or users to their company's network

VLAN

Virtual LAN

Voice over IP

Sending voice information over the Internet as opposed to the PSTN

VoIP

Voice over IP

W

Wake on LAN

Allows you to power up a computer through its Network Interface Card

WAN

Wide Area Network

WCN

Windows Connect Now. A Microsoft method for configuring and bootstrapping wireless networking hardware (access points) and wireless clients, including PCs and other devices.

WDS

Wireless Distribution System. A system that enables the interconnection of access points wirelessly.

Web browser

A utility that allows you to view content and interact with all of the information on the World Wide Web

WEP

Wired Equivalent Privacy is security for wireless networks that is supposed to be comparable to that of a wired network

Wi-Fi

Wireless Fidelity

Wi-Fi Protected Access

An updated version of security for wireless networks that provides authentication as well as encryption

Wide Area Network

The larger network that your LAN is connected to, which may be the Internet itself, or a regional or corporate network

Wireless ISP

A company that provides a broadband Internet connection over a wireless connection

Wireless LAN

Connecting to a Local Area Network over one of the 802.11 wireless standards

WISP

Wireless Internet Service Provider

WLAN

Wireless Local Area Network

WPA

Wi-Fi Protected Access. A Wi-Fi security enhancement that provides improved data encryption, relative to WEP.

X

xDSL

A generic term for the family of digital subscriber line (DSL) technologies, such as ADSL, HDSL, RADSL, and SDSL.

Y

Yagi antenna

A directional antenna used to concentrate wireless signals on a specific location

Z

#

1

802.11

A family of specifications for wireless local area networks (WLANs) developed by a working group of the Institute of Electrical and Electronics Engineers (IEEE).

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