About This Guide

Icon Descriptions

While reading through the User Guide you may see various icons that call attention to specific items. Below is a description of these icons:

**NOTE:** This check mark indicates that there is a note of interest and is something that you should pay special attention to while using the product.

**WARNING:** This exclamation point indicates that there is a caution or warning and it is something that could damage your property or product.

**WEB:** This globe icon indicates a noteworthy website address or e-mail address.

Online Resources

Website addresses in this document are listed without http:// in front of the address because most current web browsers do not require it. If you use an older web browser, you may have to add http:// in front of the web address.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linksys</td>
<td><a href="http://www.linksysbycisco.com">www.linksysbycisco.com</a></td>
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<tr>
<td>Linksys International</td>
<td><a href="http://www.linksysbycisco.com/international">www.linksysbycisco.com/international</a></td>
</tr>
<tr>
<td>Glossary</td>
<td><a href="http://www.linksysbycisco.com/glossary">www.linksysbycisco.com/glossary</a></td>
</tr>
</tbody>
</table>

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Chapter 1:
Product Overview

Thank you for choosing the Linksys by Cisco Wireless-N Home Router. The Router lets you access the Internet via a wireless connection or through one of its four switched ports. You can also use the Router to share resources such as computers, printers and files. A variety of security features help to protect your data and your privacy while you are online. Security features include WPA2 security, a Stateful Packet Inspection (SPI) firewall, and NAT technology. Configuring the Router is easy using the provided browser–based utility.

Front Panel

1, 2, 3, 4 (Blue) These numbered LEDs, corresponding with the numbered ports on the Router’s back panel, serve two purposes. If the LED is continuously lit, the Router is successfully connected to a device through that port. A flashing LED indicates network activity over that port.

Wi-Fi Protected Setup Button If you have client devices, such as wireless adapters, that support Wi-Fi Protected Setup, then you can use Wi-Fi Protected Setup to automatically configure wireless security for your wireless network.

To use Wi-Fi Protected Setup, run the Setup Wizard, or refer to Wi-Fi Protected Setup, page 11.

Wi-Fi Protected Setup LED (Blue/Amber) The LED lights up blue when wireless security is enabled. It flashes blue for two minutes during Wi-Fi Protected Setup.

The LED lights up amber if there is an error during the Wi-Fi Protected Setup process. Make sure the client device supports Wi-Fi Protected Setup. Wait until the LED is off, and then try again.

The LED flashes when a Wi-Fi Protected Setup session is active. The Router supports one session at a time. Wait until the LED is solidly lit, or off before starting the next Wi-Fi Protected Setup session.

Back Panel

Internet The Internet port is where you will connect your cable or DSL Internet connection.

4, 3, 2, 1 These Ethernet ports (4, 3, 2, 1) connect the Router to computers on your wired network and other Ethernet network devices.

Reset The Reset button is located on the right side of the product label. There are two ways to reset the Router to its factory defaults. Either press and hold the Reset button for approximately five seconds, or restore the defaults from the Administration > Factory Defaults screen of the Router’s browser-based utility.

Power The Power port connects to the included power adapter.

Horizontal Placement

The Router has four rubber feet on its bottom panel. Place the Router on a level surface near an electrical outlet.
Wall-Mounting Placement

The Router has two wall-mount slots on its bottom panel. The distance between the slots is 152 mm (6 inches).

Two screws are needed to mount the Router.

<table>
<thead>
<tr>
<th>Suggested Mounting Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-5 mm</td>
</tr>
<tr>
<td>1-1.5 mm</td>
</tr>
<tr>
<td>2.5-3.0 mm</td>
</tr>
</tbody>
</table>

†Note: Mounting hardware illustrations are not true to scale.

**NOTE:** Linksys is not responsible for damages incurred by insecure wall-mounting hardware.

Follow these instructions:

1. Determine where you want to mount the Router. Make sure that the wall you use is smooth, flat, dry, and sturdy. Also make sure the location is within reach of an electrical outlet.
2. Drill two holes into the wall. Make sure the holes are 152 mm (6 inches) apart.
3. Insert a screw into each hole and leave 3 mm (0.12 inches) of its head exposed.
4. Maneuver the Router so the wall-mount slots line up with the two screws.
5. Place the wall-mount slots over the screws and slide the Router down until the screws fit snugly into the wall-mount slots.

Print this page at 100% size.
Cut along the dotted line, and place on the wall to drill precise spacing.

Wall-Mounting Template
Chapter 2: Wireless Security Checklist

Wireless networks are convenient and easy to install, so homes with high-speed Internet access are adopting them at a rapid pace. Because wireless networking operates by sending information over radio waves, it can be more vulnerable to intruders than a traditional wired network. Like signals from your cellular or cordless phones, signals from your wireless network can also be intercepted. Since you cannot physically prevent someone from connecting to your wireless network, you need to take some additional steps to keep your network secure.

1. Change the default wireless network name or SSID

Wireless devices have a default wireless network name or Service Set Identifier (SSID) set by the factory. This is the name of your wireless network, and can be up to 32 characters in length. Linksys wireless products use linksys as the default wireless network name. You should change the wireless network name to something unique to distinguish your wireless network from other wireless networks that may exist around you, but do not use personal information (such as your Social Security number) because this information may be available for anyone to see when browsing for wireless networks.

2. Change the default password

For wireless products such as access points and routers, you will be asked for a password when you want to change their settings. These devices have a default password set by the factory. The Linksys default password is admin. Hackers know these defaults and may try to use them to access your wireless device and change your network settings. To thwart any unauthorized changes, customize the device's password so it will be hard to guess.

3. Enable MAC address filtering

Linksys routers give you the ability to enable Media Access Control (MAC) address filtering. The MAC address is a unique series of numbers and letters assigned to every networking device. With MAC address filtering enabled, wireless network access is provided solely for wireless devices with specific MAC addresses. For example, you can specify the MAC address of each computer in your home so that only those computers can access your wireless network.

4. Enable encryption

Encryption protects data transmitted over a wireless network. Wi-Fi Protected Access (WPA/WPA2) and Wired Equivalent Privacy (WEP) offer different levels of security for wireless communication.

A network encrypted with WPA/WPA2 is more secure than a network encrypted with WEP, because WPA/WPA2 uses dynamic key encryption. To protect the information as it passes over the airwaves, you should enable the highest level of encryption supported by your network equipment.

WEP is an older encryption standard and may be the only option available on some older devices that do not support WPA.

General Network Security Guidelines

Wireless network security is useless if the underlying network is not secure.

- Password protect all computers on the network and individually password protect sensitive files.
- Change passwords on a regular basis.
- Install anti-virus software and personal firewall software.
- Disable file sharing (peer-to-peer). Some applications may open file sharing without your consent and/or knowledge.

Additional Security Tips

- Keep wireless routers, access points, or gateways away from exterior walls and windows.
- Turn wireless routers, access points, or gateways off when they are not being used (at night, during vacations).
- Use strong passphrases that are at least eight characters in length. Combine letters and numbers to avoid using standard words that can be found in the dictionary.

WEB: For more information on wireless security, visit [www.linksysbycisco.com/security](http://www.linksysbycisco.com/security)
Chapter 3: Advanced Configuration

After setting up the Router with the Setup Wizard (located on the CD-ROM), the Router will be ready for use. However, if you want to change its advanced settings, use the Router’s browser-based utility. This chapter describes each web page of the utility and each page's key functions. You can access the utility via a web browser on a computer connected to the Router.

The browser-based utility has these main tabs: Setup, Wireless, Security, Access Restrictions, Applications & Gaming, Administration, and Status. Additional tabs will be available after you click one of the main tabs.

**NOTE:** When first installing the Router, you should use the Setup Wizard on the Setup CD-ROM. If you want to configure advanced settings, use this chapter to learn about the browser-based utility.

**Access the Browser-Based Utility**

To access the browser-based utility, launch the web browser on your computer, and enter the Router’s default IP address, **192.168.1.1**, in the **Address** field. Then press **Enter**.

A login screen will appear. (Non-Windows XP users will see a similar screen.) Leave the **User name** field blank. The first time you open the browser-based utility, use the default password **admin**. (You can set a new password from the **Administration > Management** screen.) Click **OK** to continue.

![Login Screen](image)

**Setup > Basic Setup**

The first screen that appears is the **Basic Setup** screen. This allows you to change the Router’s general settings.

**Language**

**Select your language** To use a different language, select one from the drop-down menu. The language of the browser-based utility will change five seconds after you select another language.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Internet Setup**

The Internet Setup section configures the Router to your Internet connection. Most of this information can be obtained through your Internet Service Provider (ISP).

**Internet Connection Type**

Select the type of Internet connection your ISP provides from the drop-down menu. These are the available types:

- Automatic Configuration - DHCP
- Static IP
- PPPoE
- PPTP
- L2TP
- Telstra Cable
Automatic Configuration - DHCP

By default, the Router’s Internet Connection Type is set to Automatic configuration - DHCP, which should be kept only if your ISP supports DHCP or you are connecting through a dynamic IP address. (This option usually applies to cable connections.)

Internet Connection Type > Automatic Configuration - DHCP

Static IP

If you are required to use a permanent IP address to connect to the Internet, select Static IP.

Internet Connection Type > Static IP

Internet IP Address  This is the Router’s IP address, when seen from the Internet. Your ISP will provide you with the IP Address you need to specify here.

Subnet Mask  This is the Router’s Subnet Mask, as seen by users on the Internet (including your ISP). Your ISP will provide you with the Subnet Mask.

Default Gateway  Your ISP will provide you with the IP address of the ISP server.

DNS 1-3  Your ISP will provide you with at least one DNS (Domain Name System) server IP address.

PPPoE

Some DSL-based ISPs use PPPoE (Point-to-Point Protocol over Ethernet) to establish Internet connections. If you are connected to the Internet through a DSL line, check with your ISP to see if they use PPPoE. If they do, you will have to enable PPPoE.

Internet Connection Type > PPPoE

Username and Password  Enter the Username and Password provided by your ISP.

Service Name (Optional)  If provided by your ISP, enter the Service Name.

Connect on Demand: Max Idle Time  You can configure the Router to cut the Internet connection after it has been inactive for a specified period of time (Max Idle Time). If your Internet connection has been terminated due to inactivity, Connect on Demand enables the Router to automatically re-establish your connection as soon as you attempt to access the Internet again. To use this option, select Connect on Demand. In the Max Idle Time field, enter the number of minutes you want to have elapsed before your Internet connection terminates. The default Max Idle Time is 5 minutes.

Keep Alive: Redial Period  If you select this option, the Router will periodically check your Internet connection. If you are disconnected, then the Router will automatically re-establish your connection. To use this option, select Keep Alive. In the Redial Period field, you specify how often you want the Router to check the Internet connection. The default Redial Period is 30 seconds.

PPTP

Point-to-Point Tunneling Protocol (PPTP) is a service that applies to connections in Europe only.

If your ISP supports DHCP or you are connecting through a dynamic IP address, then select Obtain an IP Address Automatically. If you are required to use a permanent IP address to connect to the Internet, then select Specify an IP Address. Then configure the following:

- Specify an IP Address  This is the Router’s IP address, as seen from the Internet. Your ISP will provide you with the IP Address you need to specify here.

- Subnet Mask  This is the Router’s Subnet Mask, as seen by users on the Internet (including your ISP). Your ISP will provide you with the Subnet Mask.

- Default Gateway  Your ISP will provide you with the IP address of the ISP server.
Chapter 3

Advanced Configuration

• **DNS 1-3** Your ISP will provide you with at least one DNS (Domain Name System) server IP address.

**PPPT Server IP Address** Your ISP will provide you with the IP address of the PPTP server.

**Username and Password** Enter the Username and Password provided by your ISP.

**Connect on Demand: Max Idle Time** You can configure the Router to cut the Internet connection after it has been inactive for a specified period of time (Max Idle Time). If your Internet connection has been terminated due to inactivity, Connect on Demand enables the Router to automatically re-establish your connection as soon as you attempt to access the Internet again. To use this option, select **Connect on Demand**. In the **Max Idle Time** field, enter the number of minutes you want to have elapsed before your Internet connection terminates. The default Max Idle Time is 5 minutes.

**Keep Alive: Redial Period** If you select this option, the Router will periodically check your Internet connection. If you are disconnected, then the Router will automatically re-establish your connection. To use this option, select **Keep Alive**. In the **Redial Period** field, you specify how often you want the Router to check the Internet connection. The default Redial Period is 30 seconds.

**Telstra Cable**

Telstra Cable is a service that applies to connections in Australia only.

**Optional Settings**

Some of these settings may be required by your ISP. Verify with your ISP before making any changes.
Host Name and Domain Name These fields allow you to supply a host and domain name for the Router. Some ISPs, usually cable ISPs, require these names as identification. You may have to check with your ISP to see if your broadband Internet service has been configured with a host and domain name. In most cases, leaving these fields blank will work.

MTU MTU is the Maximum Transmission Unit. It specifies the largest packet size permitted for Internet transmission. Select Manual if you want to manually enter the largest packet size that is transmitted. To have the Router select the best MTU for your Internet connection, keep the default, Auto.

Size When Manual is selected in the MTU field, this option is enabled. Leave this value in the 1200 to 1500 range. The default size depends on the Internet Connection Type:

- DHCP, Static IP, or Telstra: 1500
- PPoE: 1492
- PPTP or L2TP: 1460

Network Setup The Network Setup section changes the settings of the local network. Wireless setup is performed through the Wireless tab.

Router IP This presents both the Router’s Local IP Address and Subnet Mask as seen by your network.

DHCP Server Setting The settings allow you to configure the Router’s Dynamic Host Configuration Protocol (DHCP) server function. The Router can be used as a DHCP server for your network. A DHCP server automatically assigns an IP address to each computer on your network. If you choose to enable the Router’s DHCP server option, make sure there is no other DHCP server on your network.

DHCP Server DHCP is enabled by factory default. If you already have a DHCP server on your network, or you do not want a DHCP server, then select Disabled (no other DHCP features will be available).

DHCP Reservation Click this button if you want to assign a fixed local IP address to a MAC address.

DHCP Reservation

You will see a list of DHCP clients with the following information: Client Name, Interface, IP Address, and MAC Address.
addresses to. This number cannot be greater than 253. The default is 50.

**IP Address Range** Displayed here is the range of available IP addresses.

**Client Lease Time** The Client Lease Time is the amount of time a network user will be allowed connection to the Router with their current dynamic IP address. Enter the amount of time, in minutes, that the user will be “leased” this dynamic IP address. After the time has expired, the user will be automatically assigned a new dynamic IP address, or the lease will be renewed. The default is 0 minutes, which means one day.

**Static DNS 1-3** The Domain Name System (DNS) is how the Internet translates domain or website names into Internet addresses or URLs. Your ISP will provide you with at least one DNS Server IP Address. If you wish to use another, enter that IP Address in one of these fields. You can enter up to three DNS Server IP Addresses here. The Router will use these for quicker access to functioning DNS servers.

**WINS** The Windows Internet Naming Service (WINS) manages each computer’s interaction with the Internet. If you use a WINS server, enter that server’s IP Address here. Otherwise, leave this blank.

**Time Settings**

**Time Zone** Select the time zone in which your network functions from this drop-down menu. (You can even automatically adjust for daylight saving time.)

Click *Save Settings* to apply your changes, or click *Cancel Changes* to clear your changes.

**Setup > DDNS**

The Router offers a Dynamic Domain Name System (DDNS) feature. DDNS lets you assign a fixed host and domain name to a dynamic Internet IP address. It is useful when you are hosting your own website, FTP server, or other server behind the Router.

Before you can use this feature, you need to sign up for DDNS service with a DDNS service provider, [www.dyndns.org](http://www.dyndns.org) or [www.TZO.com](http://www.TZO.com). If you do not want to use this feature, keep the default, *Disabled*.

**DDNS**

**DDNS Service**

If your DDNS service is provided by DynDNS.org, then select *DynDNS.org* from the drop-down menu. If your DDNS service is provided by TZO, then select *TZO.com*.

The features available on the *DDNS* screen will vary, depending on which DDNS service provider you use.

**DynDNS.org**

![Setup > DDNS > DynDNS](image)

**Username** Enter the Username for your DDNS account.

**Password** Enter the Password for your DDNS account.

**Host Name** The is the DDNS URL assigned by the DDNS service.

**System** Select the DynDNS service you use: *Dynamic*, *Static*, or *Custom*. The default selection is *Dynamic*.

**Mail Exchange (Optional)** Enter the address of your mail exchange server, so e-mails to your DynDNS address go to your mail server.

**Backup MX** This feature allows the mail exchange server to be a backup. To disable this feature, keep the default, *Disabled*. To enable the feature, select *Enabled*. If you are not sure which setting to select, keep the default, *Disabled*.

**Wildcard** This setting enables or disables wildcards for your host. For example, if your DDNS address is *myplace.dyndns.org* and you enable wildcards, then *x.myplace.dyndns.org* will work as well (x is the wildcard). To disable wildcards, keep the default, *Disabled*. To enable wildcards, select *Enabled*. If you are not sure which setting to select, keep the default, *Disabled*.

**Internet IP Address** The Router’s Internet IP address is displayed here. Because it is dynamic, it will change.

**Status** The status of the DDNS service connection is displayed here.

**Update** To manually trigger an update, click this button.

Click *Save Settings* to apply your changes, or click *Cancel Changes* to clear your changes.
Chapter 3

Advanced Configuration

TZ0.com

Setup > DDNS > TZO

E-mail Address, TZ0 Key, and Domain Name  Enter the
settings of the account you set up with TZO.

Internet IP Address  The Router’s Internet IP address is
displayed here. Because it is dynamic, it will change.

Status  The status of the DDNS service connection is
displayed here.

Update  To manually trigger an update, click this button.
Click Save Settings to apply your changes, or click Cancel
Changes to clear your changes.

Setup > MAC Address Clone

A MAC address is a 12-digit code assigned to a unique
piece of hardware for identification. Some ISPs will require
you to register a MAC address in order to access the
Internet. If you do not wish to re-register the MAC address
with your ISP, you may assign the MAC address you have
currently registered with your ISP to the Router with the
MAC Address Clone feature.

MAC Address Clone

Enabled/Disabled  To have the MAC Address cloned,
select Enabled.

MAC Address  Enter the MAC Address registered with
your ISP here.

Clone My PC’s MAC  Click this button to clone the MAC
address of the computer you are using.

Click Save Settings to apply your changes, or click Cancel
Changes to clear your changes.

Setup > Advanced Routing

This screen is used to set up the Router’s advanced
functions. Operating Mode allows you to select the
type(s) of advanced functions you use. Dynamic Routing
automatically adjusts how packets travel on your network.
Static Routing sets up a fixed route to another network
destination.

Advanced Routing

NAT

Enabled/Disabled  If this Router is hosting your network’s
connection to the Internet, keep the default, Enabled. If
another router exists on your network, select Disabled.
When the NAT setting is disabled, dynamic routing will be
enabled.

Dynamic Routing (RIP)

Enabled/Disabled  This feature enables the Router to
automatically adjust to physical changes in the network’s
layout and exchange routing tables with the other router(s).
The Router determines the network packets’ route based
on the fewest number of hops between the source and
the destination. When the NAT setting is enabled, the
Dynamic Routing feature is automatically disabled. When
the NAT setting is disabled, this feature is available. Select
Enabled to use the Dynamic Routing feature.

Static Routing

A static route is a pre-determined pathway that network
information must travel to reach a specific host or network.
Enter the information described below to set up a new
static route.
**Route Entries**  To set up a static route between the Router and another network, select a number from the drop-down list. Click **Delete This Entry** to delete a static route.

**Enter Route Name**  Enter a name for the Route here, using a maximum of 25 alphanumeric characters.

**Destination LAN IP**  The Destination LAN IP is the address of the remote network or host to which you want to assign a static route.

**Subnet Mask**  The Subnet Mask determines which portion of a Destination LAN IP address is the network portion, and which portion is the host portion.

**Default Gateway**  This is the IP address of the gateway device that allows for contact between the Router and the remote network or host.

**Interface**  This interface tells you whether the Destination IP Address is on the **LAN & Wireless** (Ethernet and wireless networks) or the **WAN** (Internet).

Click **Show Routing Table** to view the static routes you have already set up.

### Advanced Routing > Routing Table

**Routing Table**

For each route, the Destination LAN IP address, Subnet Mask, Gateway, and Interface are displayed. To update the information, click **Refresh**. To exit this screen and return to the **Advanced Routing** screen, click **Close**.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Wireless > Basic Wireless Settings**

The basic settings for wireless networking are set on this screen.

There are two ways to configure the Router’s wireless network(s), manual and Wi-Fi Protected Setup. Wi-Fi Protected Setup is a feature that makes it easy to set up your wireless network. If you have client devices, such as wireless adapters, that support Wi-Fi Protected Setup, then you can use Wi-Fi Protected Setup.

**Configuration View**  To manually configure your wireless network, select **Manual**. Proceed to **Basic Wireless Settings (Manual)**, page 10. To use Wi-Fi Protected Setup, select **Wi-Fi Protected Setup**. Proceed to **Wi-Fi Protected Setup**, page 11.

**Basic Wireless Settings (Manual)**

**Network Mode**  From this drop-down menu, you can select the wireless standards running on your network. If you have Wireless-N, Wireless-G, and Wireless-B devices in your network, keep the default, **Mixed**. If you have only Wireless-G and Wireless-B devices in your network, select **BG-Mixed**. If you have only Wireless-N devices, select **Wireless-N Only**. If you have only Wireless-G devices, select **Wireless-G Only**. If you have only Wireless-B devices, select **Wireless-B Only**. If you do not have any wireless devices in your network, select **Disabled**.

**Network Name (SSID)**  The SSID is the network name shared among all points in a wireless network. The SSID must be identical for all devices in the wireless network. It is case-sensitive and must not exceed 32 characters (use any of the characters on the keyboard). Make sure this setting is the same for all points in your wireless network. For added security, you should change the default SSID (**linksys**) to a unique name.

**Channel Width**  For best performance in a Wireless-N network, select **40MHz only**. For Wireless-G and Wireless-B networking only, keep the default, **20MHz only**. If you are not sure which option to use, select **Auto (20MHz or 40MHz)**.

**NOTE:** If you select 40MHz only for the Channel Width setting, then Wireless-N can use two channels: a primary one (Wide Channel) and a secondary one (Standard Channel). This will enhance Wireless-N performance.

**Wide Channel**  If 40MHz only is the Channel Width setting, then this setting will be available for your primary...
Wireless-N channel. Select any channel from the drop-down menu. If you are not sure which channel to select, keep the default, Auto.

**Standard Channel** If 20MHz only is the Channel Width setting, then select the appropriate channel for your wireless network. If you are not sure which channel to select, then keep the default, Auto.

If 40MHz only is the Channel Width setting, then the Standard Channel will be a secondary channel for Wireless-N (2.4 GHz). If you selected a specific channel for the Wide Channel setting, then the Standard Channel options will be available. Select the appropriate channel for your wireless network.

**SSID Broadcast** When wireless clients survey the local area for wireless networks to associate with, they will detect the SSID broadcast by the Router. To broadcast the Router’s SSID, keep the default, Enabled. If you do not want to broadcast the Router’s SSID, then select Disabled.

Click Save Settings to apply your changes, or click Cancel Changes to clear your changes.

**Wi-Fi Protected Setup**

There are three methods available. Use the method that applies to the client device you are configuring.

**Method #1**

Use this method if your client device has a Wi-Fi Protected Setup button.

1. Click or press the Wi-Fi Protected Setup button on the client device.
2. Click the Wi-Fi Protected Setup button on this screen.
3. After the client device has been configured, click OK. Then refer back to your client device or its documentation for further instructions.

**Method #2**

Use this method if your client device has a Wi-Fi Protected Setup PIN number.

1. Enter the PIN number in the field on this screen.
2. Click Register.
3. After the client device has been configured, click OK. Then refer back to your client device or its documentation for further instructions.
Method #3

Use this method if your client device asks for the Router’s PIN number.

1. Enter the PIN number listed on this screen. (It is also listed on the label on the bottom of the Router.)
2. After the client device has been configured, click **OK**. Then refer back to your client device or its documentation for further instructions.

The Wi-Fi Protected Setup Status, Network Name (SSID), Security, Encryption, and Passphrase are displayed at the bottom of the screen.

**NOTE:** If you have client devices that do not support Wi-Fi Protected Setup, note the wireless settings, and then manually configure those client devices.

Wireless > Wireless Security

The Wireless Security screen configures the security of your wireless network. There are six wireless security mode options supported by the Router: WPA Personal, WPA Enterprise, WPA2 Personal, WPA2 Enterprise, RADIUS, and WEP. (WPA stands for Wi-Fi Protected Access, which is a security standard stronger than WEP encryption. WEP stands for Wired Equivalent Privacy, while RADIUS stands for Remote Authentication Dial-In User Service.) These six are briefly discussed here. For detailed instructions on configuring wireless security for the Router, refer to Chapter 2: Wireless Security Checklist, page 3.

**Wireless Security**

**Security Mode**

Select the security method for your wireless network. If you do not want to use wireless security, keep the default, **Disabled**.

**WPA Personal**

**NOTE:** If you are using WPA, then each device in your wireless network MUST use the same WPA method and shared key, or else the network will not function properly.

**Passphrase** Enter a Passphrase of 8-63 characters.

**Key Renewal** Enter a Key Renewal period, which instructs the Router how often it should change the encryption keys. The default is 3600 seconds.

**WPA2 Personal**

**Encryption** WPA2 supports two encryption methods, TKIP and AES, with dynamic encryption keys. Select the type of algorithm, **AES** or **TKIP or AES**. The default is **TKIP or AES**.

**Passphrase** Enter a Passphrase of 8-63 characters.

**Key Renewal** Enter a Key Renewal period, which instructs the Router how often it should change the encryption keys. The default is 3600 seconds.
WPA Enterprise

This option features WPA used with a RADIUS server. (This should only be used when a RADIUS server is connected to the Router.)

**RADIUS Server**  Enter the IP address of the server.

**RADIUS Port**  Enter the port number of the server. The default is **1812**.

**Shared Secret**  Enter the key shared between the Router and the server.

**Key Renewal**  Enter a Key Renewal period, which instructs the Router how often it should change the encryption keys. The default is **3600** seconds.

WPA2 Enterprise

This option features WPA2 used with a RADIUS server. (This should only be used when a RADIUS server is connected to the Router.)

**Encryption**  WPA2 supports two encryption methods, TKIP and AES, with dynamic encryption keys. Select the type of algorithm, **AES** or **TKIP or AES**. The default is **TKIP or AES**.

**RADIUS Server**  Enter the IP address of the server.

**RADIUS Port**  Enter the port number of the server. The default is **1812**.

**Shared Secret**  Enter the key shared between the Router and the server.

**Key Renewal**  Enter a Key Renewal period, which instructs the Router how often it should change the encryption keys. The default is **3600** seconds.

**RADIUS**

This option features WEP used with a RADIUS server. (This should only be used when a RADIUS server is connected to the Router.)

**IMPORTANT:** If you are using WEP, then each device in your wireless network MUST use the same WEP encryption method and key, or else the network will not function properly.

**Encryption**  Select a level of WEP encryption, **40/64 bits (10 hex digits)** or **104/128 bits (26 hex digits)**. The default is **40/64 bits (10 hex digits)**.

**Passphrase**  Enter a Passphrase to automatically generate WEP keys. Then click **Generate**.

**Key 1**  If you did not enter a Passphrase, enter the WEP key manually.

**TX Key**  TX (Transmit) Key 1 is used.
WEP

WEP is a basic encryption method, which is not as secure as WPA.

**IMPORTANT:** If you are using WEP encryption, then each device in your wireless network MUST use the same WEP encryption method and key, or else the network will not function properly.

**Encryption** Select a level of WEP encryption, 40/64 bits (10 hex digits) or 104/128 bits (26 hex digits). The default is 40/64 bits (10 hex digits).

**Passphrase** Enter a Passphrase to automatically generate WEP keys. Then click Generate.

**Key 1** If you did not enter a Passphrase, enter the WEP key manually.

**TX Key** TX (Transmit) Key 1 is used.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

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**Wireless > Wireless MAC Filter**

Wireless access can be filtered by using the MAC addresses of the wireless devices transmitting within your network’s radius.

**Wireless MAC Filter**

**Enabled/Disabled** To filter wireless users by MAC Address, either permitting or blocking access, select Enabled. If you do not wish to filter users by MAC Address, keep the default, Disabled.

**Access Restriction**

**Prevent** Select this option to block wireless access by MAC Address. This button is selected by default.

**Permit** Select this option to allow wireless access by MAC Address. This button is not selected by default.

**MAC Address Filter List**

**Wireless Client List** Click this button to open the Wireless Client List screen.
Chapter 3

Advanced Configuration

Wireless Client List

This screen shows computers and other devices on the wireless network. The list can be sorted by Client Name, IP Address, MAC Address, and Status.

Select **Save to MAC Address Filter List** for any device you want to add to the MAC Address Filter List. Then click **Add**.

To update the on-screen information, click **Refresh**. To exit this screen and return to the **Wireless MAC Filter** screen, click **Close**.

**MAC 01-32** Enter the MAC addresses of the devices whose wireless access you want to block or allow.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Wireless > Advanced Wireless Settings**

This **Advanced Wireless Settings** screen is used to set up the Router’s advanced wireless functions. These settings should only be adjusted by an expert administrator as incorrect settings can reduce wireless performance.

**Advanced Wireless**

**AP Isolation** This option isolates all wireless clients and wireless devices on your network from each other. Wireless devices will be able to communicate with the Router but not with each other. To use this option, select **Enable**. AP Isolation is disabled by default.

**Frame Burst** This option should provide your network with greater performance, depending on the manufacturer of your wireless products. To use this option, keep the default, **Enable**. To disable this option, select **Disable**.

**Authentication Type** The Authentication Type setting is available if the Security Mode is RADIUS or WEP. The default is set to **Auto**, which allows either Open System or Shared Key authentication to be used. With Open System authentication, the sender and the recipient do NOT use a WEP key for authentication. With Shared Key authentication, the sender and recipient use a WEP key for authentication. Select **Shared Key** to only use Shared Key authentication.

**Basic Rate** The Basic Rate setting is not actually one rate of transmission but a series of rates at which the Router can transmit. (The Basic Rate is not the actual rate of data transmission. If you want to specify the Router’s rate of data transmission, configure the Transmission Rate setting.) The Router will advertise its Basic Rate to the other wireless devices in your network, so they know which rates will be used. The Router will also advertise that it will automatically select the best rate for transmission. The default setting is **Auto**, when the Router can transmit at all standard wireless rates (1-2 Mbps, 5.5 Mbps, 11 Mbps, 18 Mbps, and 24Mbps). Select **1-2Mbps** for use with older wireless technology. Select **All**, when the Router can transmit at all wireless rates.

**Transmission Rate** The Transmission setting is available if the Network Mode is BG-Mixed, Wireless-G Only, or Wireless-B Only. The rate of data transmission should be set depending on the speed of your wireless network. Select from a range of transmission speeds, or keep the default, **Auto**, to have the Router automatically use the fastest possible data rate and enable the Auto-Fallback feature. Auto-Fallback will negotiate the best possible connection speed between the Router and a wireless client.

**N Transmission Rate** The N Transmission setting is available if the Network Mode is Mixed or Wireless-N Only. The rate of data transmission should be set depending on the speed of your Wireless-N networking. Select from a range of transmission speeds, or keep the default, **Auto**, to have the Router automatically use the fastest possible data rate and enable the Auto-Fallback feature. Auto-Fallback will negotiate the best possible connection speed between the Router and a wireless client.

**CTS Protection Mode** The Router automatically uses CTS (Clear-To-Send) Protection Mode when your Wireless-N and
Wireless-G devices are experiencing severe problems and are not able to transmit to the Router in an environment with heavy 802.11b traffic. This option boosts the Router’s ability to catch all Wireless-N and Wireless-G transmissions but severely decreases performance. To use this option, keep the default, Auto. To disable this option, select Disabled.

**Beacon Interval** Enter a value between 1 and 65,535 milliseconds. The Beacon Interval value indicates the frequency interval of the beacon. A beacon is a packet broadcast by the Router to synchronize the wireless network. The default is 100 milliseconds.

**DTIM Interval** This value, between 1 and 255, indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the Router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Its clients hear the beacons and awaken to receive the broadcast and multicast messages. The default value is 1.

**Fragmentation Threshold** This value specifies the maximum size for a packet before data is fragmented into multiple packets. If you experience a high packet error rate, you may slightly increase the Fragmentation Threshold. Setting the Fragmentation Threshold too low may result in poor network performance. Only minor reduction of the default value is recommended. In most cases, it should remain at its default value of 2346.

**RTS Threshold** Should you encounter inconsistent data flow, only minor reduction of the default value, 2347, is recommended. If a network packet is smaller than the preset RTS threshold size, the RTS/CTS mechanism will not be enabled. The Router sends Request to Send (RTS) frames to a particular receiving station and negotiates the sending of a data frame. After receiving an RTS, the wireless station responds with a Clear to Send (CTS) frame to acknowledge the right to begin transmission. The RTS Threshold value should remain at its default value of 2347.

Click Save Settings to apply your changes, or click Cancel Changes to clear your changes.

**Security > Firewall**

The Firewall screen is used to configure a firewall that can filter out various types of unwanted traffic on the Router’s local network.

**Firewall**

**SPI Firewall Protection** To use firewall protection, keep the default selection, Enabled. To turn off firewall protection, select Disabled.

**Internet Filter**

For the following options, select the option to enable it, or deselect the option to disable it.

- **Filter Anonymous Internet Requests** This feature makes it more difficult for outside users to work their way into your network. This feature is enabled by default. Deselect this option to allow anonymous Internet requests.
- **Filter Multicast** Multicasting allows for multiple transmissions to specific recipients at the same time. If multicasting is permitted, then the Router will allow IP multicast packets to be forwarded to the appropriate computers. Select this option to filter multicasting. This option is disabled by default.
- **Filter Internet NAT Redirection** This feature uses port forwarding to block access to local servers from local networked computers. Select this option to filter Internet NAT redirection. This option is disabled by default.
- **Filter IDENT (Port 113)** This feature keeps port 113 from being scanned by devices outside of your local network. This feature is enabled by default. Deselect this option to disable it.

**Web Filter**

For the following options, select the option to enable it, or deselect the option to disable it.

- **Proxy** Use of WAN proxy servers may compromise the Gateway’s security. Denying Proxy will disable access to any WAN proxy servers. Select this option to enable proxy filtering. This option is disabled by default.
- **Java** Java is a programming language for websites. If you deny Java, you run the risk of not having access to Internet sites created using this programming language. Select
this option to enable Java filtering. This option is disabled by default.

**ActiveX**  
ActiveX is a programming language for websites. If you deny ActiveX, you run the risk of not having access to Internet sites created using this programming language. Select this option to enable ActiveX filtering. This option is disabled by default.

**Cookies**  
A cookie is data stored on your computer and used by Internet sites when you interact with them. Select this option to filter cookies. This option is disabled by default.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Security > VPN Passthrough**

The **VPN Passthrough** screen allows you to enable VPN tunnels using IPSec, PPTP, or L2TP protocols to pass through the Router’s firewall.

**VPN Passthrough**

**IPSec Passthrough**  
Internet Protocol Security (IPSec) is a suite of protocols used to implement secure exchange of packets at the IP layer. To allow IPSec tunnels to pass through the Router, keep the default, **Enabled**.

**PPTP Passthrough**  
Point-to-Point Tunneling Protocol (PPTP) allows the Point-to-Point Protocol (PPP) to be tunneled through an IP network. To allow PPTP tunnels to pass through the Router, keep the default, **Enabled**.

**L2TP Passthrough**  
Layer 2 Tunneling Protocol is the method used to enable Point-to-Point sessions via the Internet on the Layer 2 level. To allow L2TP tunnels to pass through the Router, keep the default, **Enabled**.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Internet Access Policy**

**Access Policy**  
Access can be managed by a policy. Use the settings on this screen to establish an access policy (after **Save Settings** is clicked). Selecting a policy from the drop-down menu will display that policy’s settings. To delete a policy, select that policy’s number and click **Delete This Entry**. To view all the policies, click **Summary**.

**Summary**

The policies are listed with the following information: No., Policy Name, Days, and Time of Day. To delete a policy, select the policy’s **Delete** option, and then click **Delete**. To return to the **Internet Access Policy** screen, click **Close**.
### Status
Policies are disabled by default. To enable a policy, select the policy number from the drop-down menu, and select Enabled.

To create a policy, follow steps 1-11. Repeat these steps to create additional policies, one at a time.

1. Select a number from the Access Policy drop-down menu.
2. Enter a Policy Name in the field provided.
3. To enable this policy, select Enabled.
4. Click Edit List to select which computers will be affected by the policy. The Internet Access PC List screen appears. You can select a computer by MAC address or IP address. You can also enter a range of IP addresses if you want this policy to affect a group of computers. After making your changes, click Save Settings to apply your changes, or click Cancel Changes to clear your changes. Then click Close.
5. Select the appropriate option, Deny or Allow, depending on whether you want to block or allow Internet access for the computers you listed on the Internet Access PC List screen.
6. Decide which days and what times you want this policy to be enforced. Select the individual days during which the policy will be in effect, or select Everyday. Then enter a range of hours and minutes during which the policy will be in effect, or select 24 Hours.
7. You can block websites with specific URL addresses. Enter each URL in a separate Website Blocking by URL Address field.
8. You can also block websites using specific keywords. Enter each keyword in a separate Website Blocking by Keyword field.
9. You can filter access to various services accessed over the Internet, such as FTP or telnet. (You can block up to three applications per policy.)

From the Applications list, select the application you want to block. Then click the >> button to move it to the Blocked List. To remove an application from the Blocked List, select it and click the << button.

10. If the application you want to block is not listed or you want to edit a service’s settings, enter the application’s name in the Application Name field. Enter its range in the Port Range fields. Select its protocol from the Protocol drop-down menu. Then click Add.

To modify a service, select it from the Application list. Change its name, port range, and/or protocol setting. Then click Modify.
To delete a service, select it from the Application list. Then click **Delete**.

11. Click **Save Settings** to save the policy’s settings, or click **Cancel Changes** to clear the changes.

**Applications and Gaming > Single Port Forwarding**

The **Single Port Forwarding** screen allows you to customize port services for common applications on this screen.

When users send these types of requests to your network via the Internet, the Router will forward those requests to the appropriate servers (computers). Before using forwarding, you should assign static IP addresses to the designated servers (use the DHCP Reservation feature on the **Basic Setup** screen; refer to **DHCP Reservation**, page 7).

For additional applications, complete the following fields:

**Application Name** Enter the name you wish to give the application. Each name can be up to 12 characters.

**External Port** Enter the external port number used by the server or Internet application. Check with the Internet application documentation for more information.

**Internal Port** Enter the internal port number used by the server or Internet application. Check with the Internet application documentation for more information.

**Protocol** Select the protocol(s) used for this application, **TCP**, **UDP**, or **Both**.

**To IP Address** For each application, enter the IP address of the computer that should receive the requests. If you assigned a static IP address to the computer, then you can look up its IP address; click **DHCP Reservation** on the **Basic Setup** screen (refer to **DHCP Reservation**, page 7).

**Enabled** For each application, select **Enabled** to enable port forwarding.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Applications and Gaming > Port Range Forwarding**

The **Port Range Forwarding** screen allows you to set up public services on your network, such as web servers, ftp servers, e-mail servers, or other specialized Internet applications. (Specialized Internet applications are any applications that use Internet access to perform functions such as videoconferencing or online gaming. Some Internet applications may not require any forwarding.)

When users send these types of requests to your network via the Internet, the Router will forward those requests to the appropriate servers (computers). Before using forwarding, you should assign static IP addresses to the designated servers (use the DHCP Reservation feature on the **Basic Setup** screen; refer to **DHCP Reservation**, page 7).

If you need to forward all ports to one computer, click the **DMZ** tab.
**Start-End Port** Enter the number or range of port(s) used by the server or Internet applications. Check with the Internet application documentation for more information.

**Protocol** Select the protocol(s) used for this application, TCP, UDP, or Both.

**To IP Address** For each application, enter the IP address of the computer that should receive the requests. If you assigned a static IP address to the computer, then you can look up its IP address; click DHCP Reservation on the Basic Setup screen (refer to DHCP Reservation, page 7).

**Enabled** Select Enabled to enable port forwarding for the applications you have defined.

Click Save Settings to apply your changes, or click Cancel Changes to clear your changes.

### Applications & Gaming > Port Range Triggering

The Port Range Triggering screen allows the Router to watch outgoing data for specific port numbers. The IP address of the computer that sends the matching data is remembered by the Router, so that when the requested data returns through the Router, the data is pulled back to the proper computer by way of IP address and port mapping rules.

**Port Range Triggering**

**Application Name** Enter the application name of the trigger.

**Triggered Range** For each application, enter the starting and ending port numbers of the triggered port number range. Check with the Internet application documentation for the port number(s) needed.

**Forwarded Range** For each application, enter the starting and ending port numbers of the forwarded port number range. Check with the Internet application documentation for the port number(s) needed.

**Enabled** Select Enabled to enable port triggering for the applications you have defined.

Click Save Settings to apply your changes, or click Cancel Changes to clear your changes.

### Applications and Gaming > DMZ

The DMZ feature allows one network computer to be exposed to the Internet for use of a special-purpose service such as Internet gaming or videoconferencing. DMZ hosting forwards all the ports at the same time to one computer. The Port Range Forwarding feature is more secure because it only opens the ports you want to have opened, while DMZ hosting opens all the ports of one computer, exposing the computer to the Internet.

**DMZ**

Any computer whose port is being forwarded must have its DHCP client function disabled and should have a new static IP address assigned to it because its IP address may change when using the DHCP function.

**Enabled/Disabled** To disable DMZ hosting, select Disabled. To expose one computer, select Enabled. Then configure the following settings:

**Source IP Address** If you want any IP address to be the source, select Any IP Address. If you want to specify an IP address or range of IP addresses as the designated source, select and complete the IP address range fields.

**Destination** If you want to specify the DMZ host by IP address, select IP Address and enter the IP address in the field provided. If you want to specify the DMZ host
by MAC address, select **MAC Address** and enter the MAC address in the field provided. To retrieve this information, click **DHCP Client Table**.

**DHCP Client Table**

The DHCP Client Table lists computers and other devices that have been assigned IP addresses by the Router. The list can be sorted by Client Name, Interface, IP Address, MAC Address, and Expires time (how much time is left for the current IP address). To select a DHCP client, click **Select**. To update the on-screen information, click **Refresh**. To exit this screen and return to the **DMZ** screen, click **Close**.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

## Applications and Gaming > QoS

Quality of Service (QoS) ensures better service to high-priority types of network traffic, which may involve demanding, real-time applications, such as videoconferencing.

**QoS (Quality of Service)**

### Wireless

You can configure the support and No Acknowledgement settings in this section.

**WMM Support** If you have other devices that support Wi-Fi Multimedia (WMM) on your network, keep the default, **Enabled**. Otherwise, select **Disabled**.

**No Acknowledgement** If you want to disable the Router’s Acknowledgement feature, so the Router will not re-send data if an error occurs, then select **Enabled**. Otherwise, keep the default, **Disabled**.

**Internet Access Priority**

In this section, you can set the bandwidth priority for a variety of applications and devices. There are four levels priority: **High**, **Medium**, **Normal**, or **Low**. When you set priority, do not set all applications to **High**, because this will defeat the purpose of allocating the available bandwidth. If you want to select below normal bandwidth, select **Low**. Depending on the application, a few attempts may be needed to set the appropriate bandwidth priority.

**Enabled/Disabled** To use the QoS policies you have set, keep the default, **Enabled**. Otherwise, select **Disabled**.

**Category**

Select one of the following categories: **Applications**, **Online Games**, **MAC Address**, **Ethernet Port**, or **Voice Device**. Proceed to the instructions for your selection.

**Summary**

This lists the QoS entries you have created for your applications and devices. Refer to **Summary, page 22** for more information.

**Applications**

Select the appropriate application. If you select **Add a New Application**, follow the **Add a New Application** instructions.

**Priority** Select the appropriate priority: **High**, **Medium** (Recommend), **Normal**, or **Low**.

Click **Add** to save your changes. Your new entry appears in the Summary list.

**Add a New Application**

**Enter a Name** Enter any name to indicate the name of the entry.
Port Range  Enter the port range that the application will be using. For example, if you want to allocate bandwidth for FTP, you can enter 21-21. If you need services for an application that uses from 1000 to 1250, you enter 1000-1250 as your settings. You can have up to three ranges to define for this bandwidth allocation. Port numbers can range from 1 to 65535. Check your application’s documentation for details on the service ports used.

Select the protocol TCP or UDP, or select Both.

Priority  Select the appropriate priority: High, Medium (Recommend), Normal, or Low.

Click Add to save your changes. Your new entry appears in the Summary list.

Online Games

Game  Select the appropriate game. If you select Add a New Game, follow the Add a New Game instructions.

Priority  Select the appropriate priority: High, Medium (Recommend), Normal, or Low.

Click Add to save your changes. Your new entry appears in the Summary list.

Add a New Game

Enter a Name  Enter any name to indicate the name of the entry.

Port Range  Enter the port range that the game will be using. You can have up to three ranges to define for this bandwidth allocation. Port numbers can range from 1 to 65535. Check your application’s documentation for details on the service ports used.

Select the protocol TCP or UDP, or select Both.

Priority  Select the appropriate priority: High, Medium (Recommend), Normal, or Low.

Click Add to save your changes. Your new entry appears in the Summary list.

Summary

This lists the QoS entries you have created for your applications and devices.
**Priority** This column displays the bandwidth priority of High, Medium, Normal, or Low.

**Name** This column displays the application, device, or port name.

**Information** This column displays the port range or MAC address entered for your entry. If a pre-configured application or game was selected, there will be no valid entry shown in this section.

**Remove** Click this button to remove an entry.

**Edit** Click this button to make changes.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

### Administration > Management

The Administration > Management screen allows the network’s administrator to manage specific Router functions for access and security.

![Administration > Management](image)

### Management

**Router Access**

To ensure the Router’s security, you will be asked for your password when you access the Router’s browser-based utility. The default is **admin**.

**Router Password** Enter a new password for the Router.

**Re-enter to confirm** Enter the password again to confirm.

### Local Management Access

**Access via** HTTP (HyperText Transport Protocol) is the communications protocol used to connect to servers on the World Wide Web. HTTPS uses SSL (Secured Socket Layer) to encrypt data transmitted for higher security. Select **HTTP** or **HTTPS**. **HTTP** is the default.

**Access via Wireless** If you are using the Router in a public domain where you are giving wireless access to your guests, you can disable wireless access to the Router’s browser-based utility. You will only be able to access the utility via a wired connection if you disable the setting. Keep the default, **Enabled**, to allow wireless access to the utility, or select **Disabled** to block wireless access to the utility.

### Remote Management Access

**Remote Management** To permit remote access of the Router, from outside the local network, select **Enabled**. Otherwise, keep the default, **Disabled**.

**Access via** HTTP (HyperText Transport Protocol) is the communications protocol used to connect to servers on the World Wide Web. HTTPS uses SSL (Secured Socket Layer) to encrypt data transmitted for higher security. Select **HTTP** or **HTTPS**. **HTTP** is the default.

**Remote Upgrade** If you want to be able to upgrade the Router remotely, from outside the local network, select **Enabled**. (You must have the Remote Management feature enabled as well.) Otherwise, keep the default, **Disabled**.

**Allowed Remote IP Address** If you want to be able to access the Router from any external IP address, select **Any IP Address**. If you want to specify an external IP address or range of IP addresses, then select the second option and complete the fields provided.

**Remote Management Port** Enter the port number that will be open to outside access.

**NOTE:** When you are in a remote location and wish to manage the Router, enter **http://xxx.xxx.xxx.xxx:yyyy** or **https://xxx.xxx.xxx.xxx:yyyy**, depending on whether you use HTTP or HTTPS. Enter the Router’s specific Internet IP address in place of xxx.xxx.xxx.xxx, and enter the Remote Management Port number in place of yyyy.

### UPnP

Universal Plug and Play (UPnP) allows the appropriate Windows operating system to automatically configure the Router for various Internet applications, such as gaming and videoconferencing.
**Advanced Configuration**

**Chapter 3**

**UPnP** To use UPnP, keep the default, **Enabled**. Otherwise, select **Disabled**.

**Allow Users to Configure** Keep the default, **Enabled**, if you want to be able to make manual changes to the Router while using the UPnP feature. Otherwise, select **Disabled**.

**Allow Users to Disable Internet Access** Select **Enabled** if you want to be able to prohibit any and all Internet connections. Otherwise, keep the default, **Disabled**.

**Backup and Restore**

**Backup Configuration** To back up the Router’s configuration settings, click this button and follow the on-screen instructions.

**Restore Configuration** To restore the Router’s configuration settings, click this button and follow the on-screen instructions. (You must have previously backed up the Router’s configuration settings.)

**System Reboot**

**Start to Reboot** If you need to restart the Router, click this button.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to clear your changes.

**Administration > Log**

The Router can keep logs of all traffic for your Internet connection.

**Log**

**Enabled/Disabled** To disable the Log function, select **Disabled**. To monitor traffic between the network and the Internet, keep the default, **Enabled**. With logging enabled, you can choose to view temporary logs.

**View Log** To view the logs, click **View Log**.

**Administration > Diagnostics**

The diagnostic tests (Ping and Traceroute) allow you to check the connections of your network devices, including connection to the Internet.
Diagnostics

Ping Test
Ping checks the status of a connection.
**IP or URL Address** Enter the address of the computer whose connection you wish to test.
**Packet Size** Enter the packet size you want to use. The default is 32 bytes.
**Number to Ping** Enter the number of times you wish to test the connection. The default is 5.
**Start to Ping** To run the test, click this button. The Ping screen shows if the test is successful. Click Close to return to the Diagnostics screen.

Traceroute Test
Traceroute checks the performance of a connection.
**IP or URL Address** Enter the address of the computer whose connection you wish to test.
**Start to Traceroute** To run the test, click this button. The Traceroute screen shows if the test is successful. Click Close to return to the Diagnostics screen.

Administration > Factory Defaults

Restore the Router to its factory default settings.

**NOTE:** Do not restore the factory defaults unless you are having difficulties with the Router and have exhausted all other troubleshooting measures. Once the Router is reset, you will have to re-enter all of your configuration settings.

Factory Defaults

**Restore All Settings** To reset the Router’s settings to the defaults, click this button and then follow the on-screen instructions. Any custom settings you have saved will be lost when the default settings are restored.

Administration > Firmware Upgrade

The Firmware Upgrade screen allows you to upgrade the Router’s firmware. Do not upgrade the firmware unless you are experiencing problems with the Router or the new firmware has a feature you want to use.

**NOTE:** The Router may lose the settings you have customized. Before you upgrade its firmware, write down all of your custom settings. After you upgrade its firmware, you may have to re-enter all of your configuration settings.
Firmware Upgrade
Before upgrading the firmware, download the Router’s firmware upgrade file from the Linksys website, www.linksysbycisco.com.

Please select a file to upgrade To select the firmware upgrade file, click Browse and follow the on-screen instructions.

Start to Upgrade After you have selected the appropriate file, click this button, and follow the on-screen instructions.

WARNING: The firmware upgrade must not be interrupted; do not reboot or power off the Router during the firmware upgrade.

Status > Router
The Router screen displays information about the Router and its current settings.

Router Information
Firmware Version The version number of the Router’s current firmware is displayed.
Boot Code Version The version number of the Router’s boot code is displayed.
Firmware Verification The unique identifier of the firmware is displayed.
Current Time The time set on the Router is displayed.
Internet MAC Address The Router’s MAC Address, as seen by your ISP, is displayed.
Host Name The Host Name of the Router is displayed (if it was entered on the Setup > Basic Setup screen).

Domain Name The Domain Name of the Router is displayed (if it was entered on the Setup > Basic Setup screen).

Internet Connection
This section shows the current network information stored in the Router. The information varies depending on the Internet connection type selected on the Setup > Basic Setup screen.

Select Release IP Address or Renew IP Address as appropriate to release or renew a DHCP lease.

Click Refresh to update the on-screen information.

Status > Local Network
The Local Network screen displays information about the local, wired network.

Local Network
Local MAC Address The MAC address of the Router’s local, wired interface is displayed.
Router IP Address The Router’s IP address, as it appears on your local network, is displayed.
Subnet Mask The Subnet Mask of the Router is displayed.

DHCP Server
DHCP Server The status of the Router’s DHCP server function is displayed.
Start IP Address For the range of IP addresses that can be used by devices on your local network, the starting IP address is displayed.
End IP Address For the range of IP addresses that can be used by devices on your local network, the ending IP address is displayed.

DHCP Clients Table Click this button to view a list of computers or other devices that are using the Router as a DHCP server.
DHCP Client Table

The DHCP Client Table lists computers and other devices that have been assigned IP addresses by the Router. The list can be sorted by IP Address, MAC Address, Interface, and Client Name. To remove a DHCP client, click Delete. To update the on-screen information, click Refresh. To exit this screen and return to the Local Network screen, click Close.

Status > Wireless Network

The Wireless Network screen displays information about your wireless network.

Wireless Network

MAC Address The MAC address of the Router’s local, wireless interface is displayed.

Mode The wireless mode used by the network is displayed.

Network Name (SSID) The name of the wireless network, which is also called the SSID, is displayed.

Channel Width The Channel Width setting (selected on the Wireless > Basic Wireless Settings screen) is displayed.

Wide Channel The Wide Channel setting (selected on the Wireless > Basic Wireless Settings screen) is displayed.

Standard Channel The Standard Channel setting (selected on the Wireless > Basic Wireless Settings screen) is displayed.

Security The wireless security method used by the Router is displayed.

SSID Broadcast The status of the SSID Broadcast feature is displayed.
Appendix A: Troubleshooting

Your computer cannot connect to the Internet.

Follow these instructions until your computer can connect to the Internet:

- Make sure that the Router is powered on. The Power LED should be lit and not flashing.
- If the Power LED is flashing, then power off all of your network devices, including the modem, Router, and computers. Then power on each device in the following order:
  1. Cable or DSL modem
  2. Router
  3. Computer
- Check the cable connections. The computer should be connected to one of the ports numbered 1-4 on the Router, and the modem must be connected to the Internet port on the Router.

The modem does not have an Ethernet port.

The modem is a dial-up modem for traditional dial-up service. To use the Router, you need a cable/DSL modem and high-speed Internet connection.

You cannot use the DSL service to connect manually to the Internet.

After you have installed the Router, it will automatically connect to your Internet Service Provider (ISP), so you no longer need to connect manually.

The DSL telephone line does not fit into the Router's Internet port.

The Router does not replace your modem. You still need your DSL modem in order to use the Router. Connect the telephone line to the DSL modem, and then insert the setup CD into your computer. Click Setup and follow the on-screen instructions.

When you double-click the web browser, you are prompted for a username and password. If you want to get rid of the prompt, follow these instructions.

Launch the web browser and perform the following steps (these steps are specific to Internet Explorer but are similar for other browsers):

1. Select Tools > Internet Options.
2. Click the Connections tab.
3. Select Never dial a connection.

4. Click OK.

The Router does not have a coaxial port for the cable connection.

The Router does not replace your modem. You still need your cable modem in order to use the Router. Connect your cable connection to the cable modem, and then insert the setup CD into your computer. Click Setup and follow the on-screen instructions.

The computer cannot connect wirelessly to the network.

Make sure the wireless network name or SSID is the same on both the computer and the Router. If you have enabled wireless security, then make sure the same security method and key are used by both the computer and the Router.

You need to modify the settings on the Router.

Open the web browser (for example, Internet Explorer or Firefox), and enter the Router’s IP address in the address field (the default IP address is 192.168.1.1). When prompted, enter the password to the Router (the default is admin). Click the appropriate tab to change the settings.

WEB: If your questions are not addressed here, refer to the Linksys website, www.linksysbycisco.com
# Appendix B: Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>WRT120N</td>
</tr>
<tr>
<td>Standards</td>
<td>IEEE 802.3u, 802.11g, 802.11b, Draft 802.11n</td>
</tr>
<tr>
<td>LEDs</td>
<td>Power, Internet, Wireless, Wi-Fi Protected Setup™, Ethernet (1-4)</td>
</tr>
<tr>
<td>Ports</td>
<td>Internet, Ethernet (1-4), Power</td>
</tr>
<tr>
<td>Buttons</td>
<td>Reset, Wi-Fi Protected Setup™</td>
</tr>
<tr>
<td>Cabling Type</td>
<td>Cat 5</td>
</tr>
<tr>
<td># of Antennas</td>
<td>2 (internal)</td>
</tr>
<tr>
<td>Detachable (y/n)</td>
<td>No</td>
</tr>
<tr>
<td>Modulations</td>
<td>802.11b: CCK/QPSK, BPSK</td>
</tr>
<tr>
<td></td>
<td>802.11g: OFDM/BPSK, QPSK, 16-QAM, 64-QAM</td>
</tr>
<tr>
<td></td>
<td>802.11n: OFDM/BPSK, QPSK, 16-QAM, 64-QAM</td>
</tr>
<tr>
<td>Transmitted Power in dBm</td>
<td>802.11b: 16.5 ± 1.5 dBm (typical)</td>
</tr>
<tr>
<td></td>
<td>802.11g: 13.5 ± 1.5 dBm (typical)</td>
</tr>
<tr>
<td></td>
<td>802.11n: 13.5 ± 1.5 dBm (typical)</td>
</tr>
<tr>
<td>Receive Sensitivity in dBm</td>
<td>-94 dBm (typical) @ 1 Mbps</td>
</tr>
<tr>
<td></td>
<td>-90 dBm (typical) @ 11 Mbps</td>
</tr>
<tr>
<td></td>
<td>-75 dBm (typical) @ 54 Mbps</td>
</tr>
<tr>
<td></td>
<td>-66 dBm (typical) @ 270 Mbps</td>
</tr>
<tr>
<td>Antenna Gain in dBi</td>
<td>2.0 (max)</td>
</tr>
<tr>
<td>UPnP able/cert</td>
<td>Able</td>
</tr>
<tr>
<td>Wireless Security</td>
<td>Wi-Fi Protected Access™ 2 (WPA2), WEP, Wireless MAC Filtering</td>
</tr>
<tr>
<td>Security Key Bits</td>
<td>Up to 128-Bit Encryption</td>
</tr>
<tr>
<td>OS Requirements</td>
<td>Windows XP, Vista, or Vista 64-Bit Edition with Latest Updates (for</td>
</tr>
<tr>
<td></td>
<td>Network Magic and Setup Wizard)</td>
</tr>
<tr>
<td></td>
<td>Mac OS X 10.4 or higher (for Setup Wizard)</td>
</tr>
<tr>
<td>Environmental</td>
<td></td>
</tr>
</tbody>
</table>
| Dimensions                    | 7.99” x 1.38” x 6.30”  
                           | (203 x 35 x 160 mm)                                                  |
| Unit Weight                   | 8.4 oz (238 g)                                                      |
| Power                         | 12V, 1A                                                             |
| Certifications                | FCC, UL/cUL, ICES-003, RSS210, CE, Wi-Fi (IEEE 802.11b/g), WPA2™,  |
|                               | WMM®, Wi-Fi Protected Setup™                                        |
| Operating Temp.               | 0 to 40°C (32 to 104°F)                                             |
| Storage Temp.                 | -20 to 60°C (-4 to 140°F)                                            |

Specifications are subject to change without notice.
Appendix C: Warranty Information

Limited Warranty

Linksys warrants this Linksys hardware product against defects in materials and workmanship under normal use for the Warranty Period, which begins on the date of purchase by the original end-user purchaser and lasts for the period specified below:

- One (1) year for new product
- Ninety (90) days for refurbished product

Your exclusive remedy and Linksys' entire liability under this limited warranty will be for Linksys, at its option, to (a) repair the product with new or refurbished parts, (b) replace the product with a reasonably available equivalent new or refurbished Linksys product, or (c) refund the purchase price of the product less any rebates. Any repaired or replacement products will be warranted for the remainder of the original Warranty Period or thirty (30) days, whichever is longer. All products and parts that are replaced become the property of Linksys.

Linksys additionally warrants that any media on which the software may be provided will be free from defects in materials and workmanship under normal use for a period of ninety (90) days from the date of original purchase. Your exclusive remedy and Linksys' entire liability under this limited warranty will be for Linksys, at its option, to (a) replace the software media, or (b) refund the purchase price of the software media.

Exclusions and Limitations

This limited warranty does not apply if: (a) the product assembly seal has been removed or damaged, (b) the product has been altered or modified, except by Linksys, (c) the product damage was caused by use with non-Linksys products, (d) the product has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Linksys, (e) the product has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident, (f) the serial number on the Product has been altered, defaced, or removed, or (g) the product is supplied or licensed for beta, evaluation, or testing or demonstration purposes for which this product's use or operation may require.

TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY OR FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This limited warranty gives you specific legal rights, and you may also have other rights which vary by jurisdiction.

TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, IN NO EVENT WILL LINKSYS BE LIABLE FOR ANY LOST DATA, REVENUE OR PROFIT, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING NEGLIGENCE), ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT, SOFTWARE OR ANY SERVICES PROVIDED IN RESPECT OF SUCH PRODUCT OR SOFTWARE, EVEN IF LINKSYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, IN NO EVENT WILL LINKSYS' LIABILITY EXCEED THE AMOUNT PAID BY YOU FOR THE PRODUCT. The foregoing limitations will apply even if any warranty or remedy provided under this limited warranty fails of its essential purpose. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Obtaining Warranty Service

If you have a question about your product or experience a problem with it, please go to www.linksysbycisco.com/support where you will find a variety of online support tools and information to assist you with your product. If the product proves defective during the Warranty Period, contact Linksys Technical Support for instructions on how to obtain warranty service. The telephone number for Linksys Technical Support in your area can be found in the product User Guide and at www.linksysbycisco.com. Have your product serial number and proof of purchase on hand when calling.
DATED PROOF OF ORIGINAL PURCHASE IS REQUIRED TO PROCESS WARRANTY CLAIMS. If you are requested to return your product, you will be given a Return Materials Authorization (RMA) number. You are responsible for properly packaging and shipping your product to Linksys at your cost and risk. You must include the RMA number and a copy of your dated proof of original purchase when returning your product. Products received without a RMA number and dated proof of original purchase will be rejected. Do not include any other items with the product you are returning to Linksys. Defective product covered by this limited warranty will be repaired or replaced and returned to you without charge. Customers outside of the United States of America and Canada are responsible for all shipping and handling charges, custom duties, VAT and other associated taxes and charges. Repairs or replacements not covered under this limited warranty will be subject to charge at Linksys’ then-current rates.

Technical Support

This limited warranty is neither a service nor a support contract. Information about Linksys’ current technical support offerings and policies (including any fees for support services) can be found at www.linksysbycisco.com/support.

This limited warranty is governed by the laws of the jurisdiction in which the Product was purchased by you.

Please direct all inquiries to: Linksys, P.O. Box 18558, Irvine, CA 92623.
Appendix D: Regulatory Information

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 product has been tested and complies with the specifications 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 according to 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 is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver’s
- Consult a dealer or an experienced radio/TV technician for assistance

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.

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 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. IEEE 802.11b or 802.11g operation of this product in the USA is firmware-limited to channels 1 through 11.

Safety Notices

**WARNING:** Do not use this product near water, for example, in a wet basement or near a swimming pool.

**WARNING:** Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

**WARNING:** This product contains lead, known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling.

Industry Canada Statement

This Class B digital apparatus complies with Canadian ICES-003 and RSS210.

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. This device has been designed to operate with an antenna having a maximum gain of 2.0 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Industry Canada Radiation Exposure Statement:

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
**Avis d’Industrie Canada**

Cet appareil numérique de la classe B est conforme aux normes NMB-003 et RSS210 du Canada.

L’utilisation de ce dispositif est autorisée seulement aux conditions suivantes :

1. il ne doit pas produire de brouillage et
2. il doit accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif. Le dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximum de 2,0 dBi. Les règlements d’Industrie Canada interdisent strictement l’utilisation d’antennes dont le gain est supérieur à cette limite. L’impédance requise de l’antenne est de 50 ohms.

**Avis de non-responsabilité concernant les appareils sans fil**

Les performances maximales pour les réseaux sans fil sont tirées des spécifications de la norme IEEE 802.11. Les performances réelles peuvent varier, notamment en fonction de la capacité du réseau sans fil, du débit de la transmission de données, de la portée et de la couverture. Les performances dépendent de facteurs, conditions et variables multiples, en particulier de la distance par rapport au point d’accès, du volume du trafic réseau, des matériaux utilisés dans le bâtiment et du type de construction, du système d’exploitation et de la combinaison de produits sans fil utilisés, des interférences et de toute autre condition défavorable.

**Wireless Disclaimer**

The maximum performance for wireless is derived from IEEE Standard 802.11 specifications. Actual performance can vary, including lower wireless network capacity, data throughput rate, range and coverage. Performance depends on many factors, conditions and variables, including distance from the access point, volume of network traffic, building materials and construction, operating system used, mix of wireless products used, interference and other adverse conditions.
User Information for Consumer Products
Covered by EU Directive 2002/96/EC on
Waste Electric and Electronic Equipment
(WEEE)

This document contains important information for users with regards to the proper disposal and recycling of Linksys products. Consumers are required to comply with this notice for all electronic products bearing the following symbol:

English - Environmental Information for Customers in the European Union
European Directive 2002/96/EC requires that the equipment bearing this symbol \[\notin\] on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

Bulgarian (Bulgarian) - Информация относно опазването на околната среда за потребители в Европейския съюз
Европейска директива 2002/96/EC изисква уредите, носещи този символ \[\notin\] върху изделието и/или опаковката му, да не се изхвърлят с несортирани битови отпадъци. Символът обозначава, че изделието трябва да се изхвърля отделно от сместосъбирането на обикновените битови отпадъци. Вашата е грижливо отношение към тези и другите електрически и електронни уреди да се изхвърлят в предварително определени от държавите или общински органи специализиране пунктове за събиране. Правилното изхвърляне и рециклиране ще ви помогнат да се предотвратят евентуални вреди за околната среда и здравето на населението последствия. За по-подробна информация относно изхвърлянето на вашите стари уреди се обрънете към местните власти, службите за сместосъбиране или магазина, от който сте закупили уреда.

Čeština (Czech) - Informace o ochraně životního prostředí pro zákazníky v zemích Evropské unie
Evropská směrnice 2002/96/ES zakazuje, aby zařízení označené tímto symbolem \[\notin\] na produktu anebo na obalu bylo likvidováno s netříděným komunálním odpadem. Tento symbol udává, že daný produkt musí být likvidován odděleně od běžného komunálního odpadu. Odpovídáte za likvidaci tohoto produktu a dalších elektrických a elektronických zařízení prostřednictvím určených sběrných míst stanovených vládou nebo místními úřady. Správná likvidace a recyklace pomáhá předcházet potenciálním negativním dopadům na životní prostředí a lidské zdraví. Podrobnější informace o likvidaci starého vybavení si laskavě vyžádejte od místních úřadů nebo obchodu, kde jste produkt zakoupili.

Dansk (Danish) - Miljøinformation for kunder i EU

Deutsch (German) - Umweltinformation für Kunden innerhalb der Europäischen Union
Appendix D
Regulatory Information

Wireless-N Home Router
**Regulatory Information**

**Lietuviškai (Lithuanian) - Aplinkosaugos informacija, skirta Europos Sąjungos vartotojams**

Europos direktyva 2002/96/EC numato, kad įrankio, kuris ir jėgų pakuočio yra pažymėta šiuo simboliu, negalima šalinti kartu su nerūšiutomis komunalinėmis atliekomis. Šis simbolis rodo, kad gaminio reikia atskirai nuo bendro buitinio atliekų srauto. Jūs privalote užtikrinti, kad šį įrankį elktelė ar elektroninė įranga būtų šalinama per tam tikras nacionalinės ar vietinės valdžios nustatytas atliekų rinkimo sistemas. Tinkamai šalinant ir perdirbant atliekas, bus išvengta galimos žalo aplinkai ir žmonių sveikatai. Daugiau informacijos apie jūsų senosios įrankio šalinimą gali pateikti vietinės valdžios institucijos, atliekų šalinimo tarnybos arba paroduotuvės, kuriose įsitikinote tą gaminį.

**Malti (Maltese) - Informazzjoni Ambjentali għal Klijenti fl-Unjoni Ewropea**


**Magyar (Hungarian) - Környezetvédelmi információ az európai uniós vásárlók számára**

A 2002/96/EC számú európai uniós irányelv megkívánja, hogy azokat a termékeket, amelyeken, és/vagy amelyek csomagolásán az alábbi címke űszzenek a terméket vásárolta. A címke azt jelöli, hogy az adott termék kidobása korlátozásai a szórványos háztartási hulladékkészleti rendszerektől elkülönített eljárást kell alkalmazni. Az Ön felelőssége, hogy ezt, és más elektromos és elektronikus berendezéseit a kormányzati vagy a helyi hatóságok által kijelölt gyűjtőrendszerek keresztül számlálja fel. A megfelelő hulladékfeldolgozás segít a környezetre és az emberi egészségre potenciálisan ártalmas negatív hatások megelőzésében. Ha elavult berendezéseinek felszámolásához további részletes információra van szüksége, kéreljük, lépjen kapcsolatba a helyi hatóságokkal, a hulladékfeldolgozási szolgálattal, vagy azonnal üzlettel, ahol a termék vásárolta.

**Nederlands (Dutch) - Milieu-informatie voor klanten in de Europese Unie**

De Europese Richtlijn 2002/96/EC schrijft voor dat apparatuur die is voorzien van dit symbool voort aan het product of de verpakking, niet mag worden ingezameld met niet-gescheiden huishoudelijk afval. Dit symbool geeft aan dat het product apart moet worden ingezameld. U bent zelf verantwoordelijk voor de vernietiging van deze en andere elektrische en elektronische apparatuur via de daarvoor door de landelijke of plaatselijke overheid aangewezen inzamelingssystemen. De juiste vernietiging en recycling van deze apparatuur voorkomt mogelijke negatieve gevolgen voor het milieu en de gezondheid. Voor meer informatie over het vernietigen van uw oude apparatuur neemt u contact op met de plaatselijke autoriteiten of afvalverwerkingsdienst, of met de winkel waar u het product hebt aangeschaft.

**Norsk (Norwegian) - Miljøinformasjon for kunder i EU**


**Polski (Polish) - Informacja dla klientów w Unii Europejskiej o przepisach dotyczących ochrony środowiska**

Dyrektwa Europejska 2002/96/EC wymaga, aby sprzęt oznaczyły symbolem źródł文档纠错 woes i/lub jego opakowaniu nie był wyrzucany razem z innymi niesortowanymi odpadami komunalnymi. Symbol ten wskazuje, że produkt nie powinien być usuwany razem ze zwykłymi odpadami domowymi. Na Państwu spoczywa obowiązek wyrzucania tego i innych urządzeń elektronicznych oraz elektronicznych w punktach odbioru wyznaczonych przez władze krajowe lub lokalne. Pozbywanie się sprzętu we właściwy sposób i jego recykling pomogą zapobiec potencjalnie negatywnym konsekwencjom dla środowiska i zdrowia ludzkiego. W celu uzyskania szczegółowych informacji o usuwaniu starego sprzętu, prosimy o skontaktowanie się z lokalnymi władzami, służb oczyszczania miasta lub sklepu, w którym produkt został nabyty.
Appendix D

Regulatory Information

Português (Portuguese) - Informação ambiental para clientes da União Europeia

A Directiva Europeia 2002/96/CE exige que o equipamento que exibe este símbolo \( \notin \) no produto e/ou na sua embalagem não seja eliminado junto com os resíduos municipais não separados. O símbolo indica que este produto deve ser eliminado separadamente dos resíduos domésticos regulares. É da sua responsabilidade eliminar este e qualquer outro equipamento eletrónico e elétrico através das instalações de recolha designadas pelas autoridades governamentais ou locais. A eliminação e reciclagem corretas ajudarão a prevenir as consequências negativas para o ambiente e para a saúde humana. Para obter informações mais detalhadas sobre a forma de eliminar o seu equipamento antigo, contacte as autoridades locais, os serviços de eliminação de resíduos ou o estabelecimento comercial onde adquiriu o produto.

Română (Romanian) - Informaţii de mediu pentru clienţii din Uniunea Europeană


Slovenčina (Slovak) - Informácie o ochrane životného prostredia pre zákazníkov v Európskej unii

Podľa európskej smernice 2002/96/ES zariadenie s týmto symbolom \( \notin \) na izdelku a/alebo jeho balení nesmie byť likvidované spolu s netriedeným komunálnym odpadom. Symbol znamená, že produkt by sa mal likvidovať oddelene od bežného odpadu z domácností. Je vašou povinnosťou likvidovať toto i ostatné elektrické a elektronické zariadenia prostredníctvom specializovaných zbieriek zariadení určených vládou alebo miestnymi orgánmi. Správna likvidácia a recyklácia pomôže zabrániť pripadným negatívnym dopadom na životné prostredie a zdravie lúd. Ak máte záujem o podrobnejšie informácie o likvidácii starého zariadenia, obráťte sa, prosím, na miestne orgány, organizácie zaobierajúce sa likvidáciou odpadov alebo obchod, v ktorm ste si produkt zakúpili.

Slovenščina (Slovene) - Okoljske informacije za stranke v Evropski uniji

Evropska direktiva 2002/96/ES prepoveduje odlaganje opreme s tem simbolom \( \notin \) – na izdelku in/ali na embalaži z nesortiranimi komunalnimi odpadki. Ta simbol opozarja, da je treba izdelek zavreči ločeno od preostalih gospodinjskih odpadkov. Vaša odgovornost je, da to in preostalo električno in elektronsko opremo oddate na posebna zbiralnišča, ki jih določijo državne upravne ustanove ali lokalne oblasti. S pravilnim odlaganjem in recikliranjem boste preprečili morebitne morebitne škodljive vplive na okolje in zdravje ljudi. Če želite izvedeti več o odlaganju stare opreme, se obrnite na lokalne oblasti, odlagališča odpadkov ali trgovino, kjer ste izdelek kupili.

Suomi (Finnish) - Ympäristöä koskevia tietoja EU-alueen asiakkaille

EU-direktiivi 2002/96/EY edellyttää, että jos laitteistossa on tämä symboli \( \notin \) itse tuotteessa ja/tai sen pakkauksessa, laitteisto on saa hävittää lajittelemattomana yhdyskuntajätteen mukana. Symboli merkitsee sitä, että tämä tuote on hävitettävä erillään tavallisesta kotitalousjätteestä. Sinun vastuullasi on hävittää tämä elektronikkatuote ja muut vastaavat elektronikkatuotteet viemällä tuote tai tuotteet viranomaisen määramään keräyspisteeseen. Laitteiston oikea hävittäminen estää mahdolliset kielteiset vaikutukset ympäristöön ja ihmisten terveyteen. Lisätietoja vanhan laitteiston oikeasta tuotteen hävitystä saat paikallisilta viranomaisilta tai viimeistelykeskuksilta siitä, mitä on tehtävä oikein. Jotta laitteisto pysyy turvallisen ja tärkeän tuotteen, on kiitos! WEB: For additional information, please visit www.linksysbycisco.com

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Wireless-N Home Router

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