USER GUIDE

Simultaneous Dual-Band Wireless-N Router

Model: WRT400N
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.linksys.com">www.linksys.com</a></td>
</tr>
<tr>
<td>Linksys International</td>
<td><a href="http://www.linksys.com/international">www.linksys.com/international</a></td>
</tr>
<tr>
<td>Glossary</td>
<td><a href="http://www.linksys.com/glossary">www.linksys.com/glossary</a></td>
</tr>
<tr>
<td>Network Security</td>
<td><a href="http://www.linksys.com/security">www.linksys.com/security</a></td>
</tr>
</tbody>
</table>

Copyright and Trademarks

Linksys, Cisco, and the Cisco Logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Copyright © 2009 Cisco Systems, Inc. All rights reserved. Other brands and product names are trademarks or registered trademarks of their respective holders.
# Table of Contents

## Chapter 1: Product Overview
- Front Panel ................................................. 1
- Back Panel .................................................. 1

## Chapter 2: Wireless Security Checklist
- General Network Security Guidelines .................... 3
- Additional Security Tips .................................. 3

## Chapter 3: Advanced Configuration
- Setup > Basic Setup ...................................... 4
- Setup > MAC Address Clone .............................. 9
- Setup > Advanced Routing ............................... 9
- Wireless > Basic Wireless Settings ..................... 10
- Wireless > Wireless Security ............................ 12
- Wireless > Wireless MAC Filter ....................... 14
- Wireless > Advanced Wireless Settings .............. 15
- Security > Firewall ...................................... 16
- Security > VPN Passthrough ............................ 16
- Access Restrictions > Internet Access ............... 17
- Applications and Gaming > Port Range Forwarding ... 18
- Applications & Gaming > Port Triggering .......... 19
- Applications and Gaming > DMZ .................... 19
- Applications and Gaming > QoS ..................... 20
- Administration > Management ....................... 22
- Administration > Log .................................. 23
- Administration > Diagnostics ....................... 23
- Administration > Factory Defaults .................. 24
- Administration > Firmware Upgrade ............... 24
- Status > Router ........................................ 24
- Status > Local Network ............................... 25
- Status > Wireless Network ......................... 25

## Appendix A: Troubleshooting ......................... 26

## Appendix B: Specifications .......................... 27

## Appendix C: Warranty Information .................. 28
- Limited Warranty .................................... 28
- Exclusions and Limitations .......................... 28
- Obtaining Warranty Service ......................... 28
- Technical Support .................................... 29
# Table of Contents

## Appendix D: Regulatory Information
- FCC Statement .................................................. 30
- FCC Radiation Exposure Statement ...................... 30
- Safety Notices ..................................................... 30
- Industry Canada Statement .................................. 30
- Restrictions in the 5 GHz Band ......................... 30
- Avis d’Industrie Canada ....................................... 31
- Restrictions dans la bande 5 GHz ....................... 31
- Wireless Disclaimer ............................................ 31
- Avis de non-responsabilité concernant les appareils sans fil .......... 31

## Appendix E: Software End User License Agreement
- Cisco Products .................................................. 36
- Software Licenses .............................................. 36
Chapter 1: Product Overview

Thank you for choosing the Linksys by Cisco Simultaneous Dual-Band Wireless-N 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.

For more wireless bandwidth, the Router can create two simultaneous yet separate Wireless-N networks, one using the 5 GHz band and one using the 2.4 GHz band. For example, use the Wireless-N 2.4 GHz network to surf, e-mail, and print while keeping the less crowded, Wireless-N 5 GHz network free for time-sensitive traffic like music, gaming, and high-definition video. For more information, refer to Simultaneous Networks, page 10.

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(s).

To use Wi-Fi Protected Setup, run the Linksys Easy Link Advisor (LELA), or refer to Wi-Fi Protected Setup, page 11.

Wi-Fi Protected Setup (WPS) LED (Blue/Amber) The LED flashes blue for two minutes during the WPS process and lights up blue when the WPS process is successful.

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.

Wireless (Blue) The Wireless LED lights up when the wireless feature is enabled. If the LED is flashing, the Router is actively sending or receiving data over the network.

Internet (Blue) The Internet LED lights up when there is a connection made through the Internet port. A flashing LED indicates network activity over the Internet port. The LED lights up Green when it is connected to 10/100 port and Blue when it is connected to a gigabit port.

Power (Blue) The Power LED lights up and will stay on while the Router is powered on. When the Router goes through its self-diagnostic mode during every boot-up, this LED will flash. When the diagnostic is complete, the LED will be solidly lit.

Back Panel

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

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

Reset There are two ways to reset the Router’s factory defaults. Either press and hold the Reset Button for approximately five seconds, or restore the defaults from Administration > Factory Defaults in the Router’s web-based utility.

Power The Power port is where you will connect the power adapter.
Chapter 1

Simultaneous Dual-Band Wireless-N Router

Product Overview

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>
</tbody>
</table>

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

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.

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

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.linksys.com/security](http://www.linksys.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. If you’d like to change its advanced settings, use the Router’s web-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 web-based utility has these main tabs: Setup, Wireless, Security, Storage, Access Restrictions, Applications & Gaming, Administration, and Status. Additional tabs will be available after you click one of the main tabs.

NOTE: When you first install 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 web-based utility.

How to Access the Web-Based Utility

To access the web-based utility, launch the web browser on your computer, and enter the Router’s default IP address, 192.168.1.1 or http://wrt400n.com in the Address field. Then, press Enter.

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

Setup > Basic Setup

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

Language

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

Click Save Settings to apply your changes, or click Cancel Changes to cancel 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. The available types are:

- Automatic Configuration - DHCP
- Static IP
- PPPoE
- PPTP
- L2TP
- Telstra Cable
Chapter 3
Advanced Configuration

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**

**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 enter 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 Gateway Address, which is the ISP server’s IP address.

**DNS**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**.

**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.

**Internet Connection Type > PPTP**

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:

**Internet 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.

**User Name and Password**Enter the User Name and Password provided by your ISP.
Default Gateway Your ISP will provide you with the Gateway Address, which is the ISP server’s IP address.

DNS Your ISP will provide you with at least one DNS (Domain Name System) Server IP Address.

Server IP Address Your ISP will provide you with the Server IP Address.

User Name and Password Enter the User Name 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.

Server IP Address This is the IP address of the Telstra Cable. Your ISP will provide you with the IP Address you need to specify here.

User Name and Password Enter the User Name and Password provided by your ISP.

Optional Settings
Some of these settings may be required by your ISP. Verify with your ISP before making any changes.

Host Name/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 setting, 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
Network Setup

The Network Setup section changes the settings on the network connected to the Router’s Ethernet ports. Wireless Setup is performed through the Wireless tab.

Router Address

This presents both the Router’s IP Address, Subnet Mask, and URL Address as seen by your network. The default Router IP address is 192.168.1.1, and the default URL address is http://wrt400n.com.

Network Address Server Settings (DHCP)

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 don’t want a DHCP server, then select Disabled (no other DHCP features will be available).

Starting IP Address

Enter a value for the DHCP server to start with when issuing IP addresses. Because the Router’s default IP address is 192.168.1.1, the Starting IP Address must be 192.168.1.2 or greater, but smaller than 192.168.1.253. The default Starting IP Address is 192.168.1.100.

Maximum Number of DHCP Users

Enter the maximum number of computers that you want the DHCP server to assign IP addresses to. This number cannot be greater than 253. The default is 50.

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 is up, the user will be automatically assigned a new dynamic IP address. 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.

DHCP Reservation

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

You will see a list of DHCP clients with the following information: Client Name, Interface, IP Address, and MAC Address. Click the Select checkbox to reserve a client’s IP address. Then click Add Clients.

If you want to manually assign an IP address, enter the client’s name in the Enter Client Name field. Enter the IP address you want it to have in the Assign IP Address field. Make sure the IP address is between the starting DHCP server’s IP address and maximum number of DHCP users range. Enter its MAC Address in the To This MAC Address field. Click Add.

A list of DHCP clients and their fixed local IP addresses will be displayed at the bottom of the screen. If you want to remove a client from this list, click Remove.
When you finish your changes, click **Save Settings** to save your changes. Click **Cancel Changes** to cancel your changes. To view the most up-to-date information, click **Refresh**. To exit this screen, click **Close**.

**Time Setting**

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

![Time Setting](Image)

Click **Save Settings** to apply your changes, or click **Cancel Changes** to cancel 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 or www.TZO.com. If you do not want to use this feature, keep the default setting, **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**

![DynDNS.org](Image)

**User Name** Enter the User Name 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 enable wildcards, select **Enabled**. To disable wildcards (or if you are not sure which setting to select), keep the default, **Disabled**.

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

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

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

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

**TZO.com**

![TZO.com](Image)

**E-mail Address, TZO Password, 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. Because it is dynamic, it will change.

**Status** The status of the DDNS service connection is displayed.
Chapter 3

Advanced Configuration

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

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

**Setup > MAC Address Clone**

Every computer hardware device, including the network adapter of your computer has a unique code called a MAC address. Some Internet Service Providers (ISPs) require you to register this address with them 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 enable MAC Address cloning, select **Enabled**.

**User Defined Entry** Enter the MAC Address registered with your ISP here.

**Clone Your PC’s MAC** Clicking this button will clone the MAC address of the computer you are using.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to cancel 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** If this Router is hosting your network’s connection to the Internet, select **Enabled**. When NAT is disabled, **Dynamic Routing (RIP)** will be available as an option.

**Dynamic Routing (RIP)** 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. This feature is **Disabled** by default.

**Static Routing**

**Select Route Entry number** To set up a static route between the Router and another network, select a number from the drop-down list. (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. (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.

**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.
Chapter 3
Advanced Configuration

Simultaneous Networks

For more wireless bandwidth, the Router can create two simultaneous yet separate Wireless-N networks, one using the Wireless-N 5 GHz band and one using the Wireless-N 2.4 GHz band. You can use Wi-Fi Protected Setup to easily configure and connect to both networks (refer to Wi-Fi Protected Setup, page 11), or you can manually configure the Router.

If you use manual configuration, then set up each network with the following:

- Unique Network Name (SSID)
- Wireless security settings (refer to Wireless Security, page 12)

Decide which computers and other wireless devices should join which network. Wireless-N devices support both the 5 GHz and 2.4 GHz bands, so they can join either the 5 GHz or 2.4 GHz network. Wireless-G and Wireless-B devices support only the 2.4 GHz band, so they should join the 2.4 GHz network. Wireless-A devices support only the 5 GHz band, so they should join the 5 GHz network.

For the 5 GHz network, configure all computers and other wireless devices with the same 5 GHz Network Name (SSID) and wireless security settings. For the 2.4 GHz network, configure all computers and other wireless devices with the same 2.4 GHz Network Name (SSID) and wireless security settings.

NOTE: Make sure each network uses a unique Network Name (SSID).

Configuration View

Configuration View Keep the default selection, Wi-Fi Protected Setup to configure your network using Wi-Fi Protected Setup. Select Manual to set up your wireless network your wireless network manually.

Manual

If you set the Configuration View to Manual, the Basic Wireless Settings screen displays the following fields.

5 GHz or 2.4 GHz Wireless Settings

The same settings are available for the 5 GHz and 2.4 GHz radio bands. The 5 GHz Wireless settings set up a network using the 5 GHz band, and the 2.4 GHz Wireless settings set up a network using the 2.4 GHz band.

Network Mode (5 GHz) From this drop-down menu, you can select the wireless standards running on your network. If you have both Wireless-A and Wireless-N (5GHz) devices in your network, keep the default setting, Mixed. If you have only Wireless-A devices, select Wireless-A Only. If you have only Wireless-N (5GHz) devices, select Wireless-N Only. If you do not have any Wireless-A and Wireless-N (5GHz) devices in your network, select Disabled.

Network Mode (2.4 GHz) From this drop-down menu, you can select the wireless standards running on your network. If you have both Wireless-B, Wireless-G and Wireless-N (2.4GHz) devices in your network, keep the default setting, Mixed. If you have only Wireless-B devices, select Wireless-B Only. If you have only Wireless-G devices, select Wireless-G Only. If you have only Wireless-N (2.4GHz) devices, select Wireless-N Only. If you do not have any Wireless-B, Wireless-G and Wireless-N (2.4GHz) 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 keyboard characters. Make sure this setting is the same for all points in your wireless network. For added security, you should change the default SSID to a unique name.
Chapter 3

Advanced Configuration

**Channel Width (5 GHz)** For best performance in a network using Wireless-A and Wireless-N (5 GHz) devices, keep the default, Auto (20MHz or 40MHz). For a channel width of 40 MHz, select 40MHz only. For a channel width of 20 MHz, select 20MHz only.

**Channel Width (2.4 GHz)** For best performance in a network using Wireless-B, Wireless-G and Wireless-N (2.4 GHz) devices, select Auto (20MHz or 40MHz). For a channel width of 40 MHz, select 40MHz only. For a channel width of 20 MHz, keep the default, 20MHz only.

**Wide Channel (5 GHz)** If you selected 40MHz only or Auto (20MHz or 40MHz) for the Channel Width setting, then this setting will be available for your primary Wireless-N (5GHz) channel. If you are not sure which channel to select, keep the default, Auto.

**Wide Channel (2.4 GHz)** If you selected 40MHz only or Auto (20MHz or 40MHz) for the Channel Width setting, then this setting will be available for your primary Wireless-N (2.4GHz) channel. If you are not sure which channel to select, keep the default, Auto.

**Standard Channel (5 GHz)** Select the channel for Wireless-A and Wireless-N (5GHz) networking. If you selected 40MHz only or Auto (20MHz or 40MHz) for the Channel Width setting, then the Standard Channel will be a secondary channel for Wireless-N (5GHz). If you are not sure which channel to select, keep the default, Auto.

**Standard Channel (2.4 GHz)** Select the channel for Wireless-B, Wireless-G, and Wireless-N (2.4GHz) networking. If you selected 40MHz only or Auto (20MHz or 40MHz) for the Channel Width setting, then the Standard Channel will be a secondary channel for Wireless-N (2.4GHz). If you are not sure which channel to select, keep the default, Auto.

**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 setting, 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 cancel your changes.

---

**Wi-Fi Protected Setup**

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

**NOTE:** Wi-Fi Protected Setup configures one client device at a time. Repeat the instructions for each client device that supports Wi-Fi Protected Setup.

**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 the **OK** button. 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 from the client device in the field on this screen.
2. Click the **Register** button.
3. After the client device has been configured, click the **OK** button. Then refer back to your client device or its documentation for further instructions.
Chapter 3

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 the **OK** button. Then refer back to your client device or its documentation for further instructions.

The Wi-Fi Protected Setup Status, Network Name (SSID), Security, 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 settings configure 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 information on setting up wireless security networks, refer to “Chapter 2: Wireless Security.”

**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 or WPA2, each device in your wireless network MUST use the same WPA or WPA2 method and shared key, or else the network will not function properly.

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

**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 Key Renewal period is **3600** seconds.

**WPA Enterprise**

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

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

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

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

**Shared Key**  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 Key Renewal period is 3600 seconds.

WPA2 Personal

Encryption WPA2 supports two encryption methods with dynamic encryption keys; AES or WPA-TKIP/WPA2-AES. You must select WPA-TKIP or WPA2-AES to connect to the Router.

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 Key Renewal period is 3600 seconds.

WPA2 Enterprise

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

Encryption WPA2 supports two encryption methods with dynamic encryption keys; AES or WPA-TKIP/WPA2-AES.

You must select WPA-TKIP or WPA2-AES to connect to the Router.

RADIUS Server Enter the IP Address of the RADIUS server.

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

Shared Key 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 Key Renewal time out period is 3600 seconds.

RADIUS

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

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

RADIUS Server Enter the IP Address of the RADIUS server.

RADIUS Port Enter the port number of the RADIUS server. The default value is 1812.
Chapter 3

Advanced Configuration

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

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

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

**Key 1-4** If you did not enter a Passphrase, enter the WEP key(s) manually.

**Tx Key** Select a key from the drop-down menu.

**WEP**

WEP is a basic encryption method that is not as secure as WPA.

---

**Wireless > Wireless MAC Filter**

**Access Restriction**

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

**Prevent PCs listed below from accessing the wireless network** Select this to block wireless access by MAC Address. This option is selected by default.

**Permit PCs listed below to the wireless network** Select this to allow wireless access by MAC Address. This option is not selected by default.

**MAC Address Filter List**

Click the **Wireless Client List** button to display the Wireless Client List. It shows computers and other devices on the wireless network. Click the **Save to MAC Address Filter List** checkbox for any device you want to add to the MAC Address Filter List. Then click the **Add** button. To retrieve the most up-to-date information, click the **Refresh** button. To exit this screen and return to the **Wireless MAC Filter** screen, click the **Close** button.

---

**Wireless > Wireless MAC Filter**

Wireless access can be filtered by using the MAC addresses of the wireless devices transmitting within your network’s radius.
Chapter 3

Advanced Configuration

MAC XX Enter the MAC addresses of the devices whose wireless access you want to control.

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

Wireless > Advanced Wireless Settings

This Wireless > 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.

5 GHz or 2.4 GHz Advanced Wireless

The same settings are available for the 5 GHz and 2.4 GHz radio bands. The 5 GHz Advanced Wireless settings configure the 5 GHz network you set up on the Basic Wireless Settings screen, and the 2.4 GHz Advanced Wireless settings configure the 2.4 GHz network you set up on the Basic Wireless Settings screen.

AP Isolation This 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 function, select Enabled. AP Isolation is disabled by default.

Authentication Type 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.

Basic Rate The Basic Rate setting is not one, 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 Default, when the Router can transmit at all standard wireless rates.

Transmission Rate The rate of data transmission should be set depending on the speed of your wireless network. You can select from a range of transmission speeds, or you can select 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. The default value is Auto.

CTS Protection Mode CTS (Clear-To-Send) Protection Mode should remain disabled unless you are having severe problems with your wireless products not being able to transmit to the Router in an environment with heavy latency wireless traffic. This function boosts the Router’s ability to catch all wireless transmissions but will severely decrease performance. The default value is Auto.

Beacon Interval A beacon is a packet broadcast by the Router to synchronize the wireless network. Enter a value between 20 and 1000 milliseconds. The Beacon Interval value indicates the frequency interval of the beacon. The default value is 100.

DTIM Interval This value, between 3 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 3.

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 cancel your changes.

### Security > Firewall

The **Security > 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 Filters**

**Filter Anonymous Internet Requests**  This feature makes it more difficult for outside users to work their way into your network. This feature is selected by default. Deselect the feature 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. It is selected by default. Deselect this feature to disable it.

**Filter Internet NAT Redirection**  This feature is used to prevent a local computer from using a URL or Internet address to access the local server. Select **Filter Internet NAT Redirection** to filter Internet NAT redirection. It is not selected by default.

**Filter IDENT (Port 113)**  This feature keeps port 113 from being scanned by devices outside of your local network. It is selected by default. Deselect this feature to disable it.

### Web Filters

**Filters**  Select to filter Proxy, Java, ActiveX, and Cookies.

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

### Security > VPN Passthrough

The **Security > 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 cancel your changes.
Access Restrictions > Internet Access

The Access Restrictions > Internet Access screen allows you to deny or allow specific kinds of Internet usage and traffic, such as Internet access, designated services, and websites during specific days and times.

4. Click Edit List of PCs to select which computers will be affected by the policy. The List of PCs 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 Cancel Changes to cancel 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 List of PCs 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. Enter a URL address or Keyword for Website Blocking or select any Blocked Applications you wish to use. Using these features can slow down your Internet speed.

8. Click Save Settings to save the policy’s settings, or click Cancel Changes to cancel the policy’s settings.

Blocked Applications

You can filter access to various services accessed over the Internet, such as FTP or telnet, by selecting applications from the Applications List.

To add an application, 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 an application, select it from the Application List. Change the application name, port range, or protocol setting. Then click Modify.

To delete an application, select it from the Application List. Then click Delete.

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

Internet Access Policy

Internet Access Policy 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. To view all the policies, click Summary.

Deny or Allow

If you select Deny, the computer on the Edit List will be denied Internet Access by the dates and times selected. Computers not on the list will still have Internet access. If you select Allow, the computers on the Edit List will have Internet access by the dates and times selected. The computers not on the Edit List will be denied Internet access. If there is a conflict with a policy, the lower numbered policy will have priority over a higher numbered policy.

To create an Internet Access Policy:

1. Select a number from the Internet Access Policy drop-down menu.
2. Enter a Policy Name in the field.
3. To enable this policy, select Enabled.
Applications and Gaming > Single Port Forwarding

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

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.

![Single Port Forwarding](image1)

**Single Port Forwarding**

To forward a port, enter the information on each line for the criteria required.

- **Application** Select a pre-configured application, or enter the name you wish to give the application. Each name can have up to 12 characters.

- **External and Internal Port** Enter the external and internal port numbers.

- **Protocol** Select the protocol used for this application, either **TCP** or **UDP**.

- **IP Address** For each application, enter the IP Address of the computer that should receive the requests.

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

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

Applications and Gaming > Port Range Forwarding

The Applications & Gaming > 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.)

![Port Range Forwarding](image2)

**Port Range Forwarding**

To forward a port, enter the information on each line for the criteria required.

- **Application** In this field, enter the name you wish to give the application. Each name can be up to 12 characters.

- **Start/End** This is the port range. Enter the number that starts the port range in the Start column and the number that ends the range in the End column.

- **Protocol** Select the protocol used for this application, either **TCP** or **UDP**, or **Both**.

- **IP Address** For each application, enter the IP Address of the computer running the specific application.

- **Enabled** Select **Enabled** to enable port forwarding for the relevant application.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to cancel your changes.
Applications & Gaming > Port Triggering

The Applications & Gaming > Port 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 Triggering**

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

**Triggered Range**

For each application, list the triggered port number range. Check with the Internet application documentation for the port number(s) needed.

**Start Port**  Enter the starting port number of the Triggered Range.

**End Port**  Enter the ending port number of the Triggered Range.

**Forwarded Range**

For each application, list the forwarded port number range. Check with the Internet application documentation for the port number(s) needed.

**Start Port**  Enter the starting port number of the Forwarded Range.

**End Port**  Enter the ending port number of the Forwarded Range.

**Enabled**  Select Enabled to enable port triggering for the applicable application.

Click **Save Settings** to apply your changes, or click **Cancel Changes** to cancel 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 Forward 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 should have its DHCP client function disabled and have a new static IP address assigned to it because its IP address may change when using the DHCP function.

**Enabled/Disabled**  To allow computers on the Internet to access a local computer, select Enabled. This feature is disabled by default.

**Source IP Address**  Select Any IP Address or the manual option. For the manual option, enter a specific source IP address of the computer you want to allow access from the Internet.

**Destination**  Select IP Address or MAC Address. Then enter the IP address of MAC address of the local computer you want to expose.

**DHCP Client Table**  Click DHCP Client Table to view the DHCP Client Table. It lists computers and other devices that have been assigned IP addresses by the Router. To copy the MAC address of a computer to the DMZ screen, click Select.

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

Wireless WMM (Wi-Fi Multimedia) WMM is a wireless Quality of Service feature that improves quality for audio, video, and voice applications by prioritizing wireless traffic. To use this feature, your wireless client devices in your network must support Wireless WMM. If you would like to disable this feature, select Disabled. Otherwise, keep the default, Enabled.

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

Category

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

Applications

Applications Select the appropriate application. If you select Add a New Application, follow the instructions in the “Add a New Application” section.

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

Click Apply to save your changes. Your new entry will appear in the Summary list.

Add a New Application

Enter a Name Enter a name for this application.

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, Normal, or Low.

Click Apply to save your changes. Your new entry will appear in the Summary list.
Online Games

Games
- **Games**: Select the appropriate game. If you select **Add a New Game**, follow the instructions in the “Add a New Game section”.
- **Priority**: Select the appropriate priority: **High**, **Medium**, **Normal**, or **Low**.

Click **Apply** to save your changes. Your new entry will appear 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 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**, **Normal**, or **Low**.

Click **Apply** to save your changes. Your new entry will appear in the Summary list.

MAC Address

- **Enter a Name**: Enter a name for your device.
- **MAC Address**: Enter the MAC address of your device.
- **Priority**: Select the appropriate priority: **High**, **Medium**, **Normal**, or **Low**.

Click **Apply** to save your changes. Your new entry will appear in the Summary list.

Ethernet Port

- **Enter a Name**: Enter a name for your device.
- **Priority**: Select the appropriate priority: **High**, **Medium**, **Normal**, or **Low**.

Click **Apply** to save your changes. Your new entry will appear in the Summary list.
Click **Apply** to save your changes. Your new entry will appear in the **Summary** list.

**Voice Device**

**Enter a Name**  Enter a name for your voice device.

**MAC Address.**  Enter the MAC address of your voice device.

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

Click **Apply** to save your changes. Your new entry will appear in the **Summary** list.

**Summary**

This lists the QoS entries you have created for your applications and devices.

**Priority**  This displays the bandwidth priority of High, Medium, Normal, or Low.

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

**Information**  This 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.

When you finish making changes to this screen, click **Save Settings** to save the changes, or click **Cancel Changes** to undo your changes. For more information, click **Help**.

---

**Administration > Management**

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

**Router Password**

**Router Access**

**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 the **HTTP** or **HTTPS** check box. The default selection is **HTTP**.

**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 web-based utility. You will only be able to access the web-based utility via a wired connection if you disable the setting. Keep the default, **Enabled**, to enable wireless access to the Router’s web-based utility, or select **Disabled** to disable wireless access to the utility.

**Remote Management Access**

**Remote Management**  To access the Router remotely from the Internet, select **Enabled**.

**Access via**  Select **HTTP** or **HTTPS** communications protocols for remote access from the Internet.

**Remote Upgrade**  Select **Enabled** to be able to upgrade the firmware remotely from the Internet.
**Advanced Configuration**

**Chapter 3**

**Allowed Remote IP Address** Select Any IP Address or manually enter an Internet IP address to allow remote access to the web-based utility from the Internet.

**Remote Management Port** Enter the port number that will provide outside access to the Router’s web-based utility. You will need to enter the Router’s password when accessing the Router this way, as usual.

**UPnP**

UPnP Keep the default, Enabled, to enable the UPnP feature; otherwise, select Disabled.

**Allow Users to Configure** To use the Allow Users to Configure UPnP options from the Windows operating system, select Enabled.

**Allow Users to Disabled Internet Access** To use the Allow Users to Disabled Internet Access options from the Windows operating system, click Disabled.

**Backup and Restore**

**Backup Configurations** To back up the Router’s configuration file, click this button. Then, follow the on-screen instructions.

**Restore Configurations** To restore the Router’s configuration file, click this button. Then, follow the on-screen instructions.

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

**Administration > Log**

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

Log

Log To disable the Log function, keep the default setting, Disabled. To monitor traffic between the network and the Internet, select Enabled.

Logviewer IP Address If your computer uses Logviewer software you can enter the fixed IP address of the computer running the software in the Logviewer IP Address fields. The Router will now send updated logs to that computer.

When you wish to view the logs, click View Log.

Click Save the Log to save your log, click Refresh to refresh the screen, or click Clear to clear the screen.

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

**Administration > Diagnostics**

The diagnostic tests (Ping and Traceroute) allow you to check the connections of your Internet network.

**Ping Test**

Ping The Ping test checks the status of a connection. Enter the address of the computer whose connection you wish to test and how many times you wish to test it. Then, click Start to Ping. The Ping Test screen will show if the test was successful. Click Close to return to the Diagnostics screen.
Traceroute Test

**Traceroute** To test the performance of a connection, click **Start to Traceroute** to open the **Traceroute Test** screen. Enter the address of the computer whose connection you wish to test and click **Traceroute**. The **Traceroute Test** screen will show if the test was successful. Click **Close** to return to the **Diagnostics** screen.

![Traceroute Test](image1.png)

**Administration > Factory Defaults**

The **Administration > Factory Defaults** screen allows you to restore the Router's configuration to its factory default settings.

**Factory Defaults**

**Restore Factory Defaults** To reset the Router's settings to the default values, select **Restore Factory Defaults**. Any settings you have saved will be lost when the default settings are restored.

![Administration > Factory Defaults](image2.png)

**Administration > Firmware Upgrade**

The **Administration > 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.

![Administration > Firmware Upgrade](image3.png)

**Status > Router**

The **Status > Router** screen displays the Router's current status.

**Router Information**

**Firmware Version** This is the Router's current firmware.

**Firmware Verification** This is a unique identifier that verifies that you have valid firmware.

**Current Time** This shows the time, as you set on the **Setup** tab.
**Internet MAC Address**  This is the Router’s MAC Address, as seen by your ISP.

**Server Name**  This is the specific name that will be used for the network storage FTP and Media Server. You entered this name on the *Storage > Administration* tab.

**Host Name**  If required by your ISP, this would have been entered on the *Setup* tab.

**Domain Name**  If required by your ISP, this would have been entered on the *Setup* tab.

### Internet Configuration

#### Connection Type

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 *Status > Local Network* screen displays information about the local network.

#### Local Network

**Local MAC Address**  The MAC Address of the Router’s local interface is displayed.

**Router IP Address**  This shows the Router’s IP address, as it appears on your local network.

**Subnet Mask**  The Router’s Subnet Mask is displayed.

**DHCP Server**  The status of the Router’s DHCP server function is displayed.

**Start IP Address**  For the range of IP addresses used by devices on your local network, the beginning IP address is displayed.

End IP Address  For the range of IP addresses used by devices on your local network, the ending IP address is displayed.

**DHCP Client Table**  Click *DHCP Client Table* to view the DHCP Client Table. It lists computers and other devices that have been assigned IP addresses by the Router.

For more information, click *Help*.

### Status > Wireless Network

The *Status > Wireless Network* screen displays the status information of your 5 GHz and/or 2.4 GHz wireless networks.

#### 5GHz/2.4GHz Wireless Network

**MAC Address**  The MAC Address of the Router’s wireless interface is displayed.

**Mode**  The wireless mode (Mixed, Wireless-N Only, Wireless-G Only, Wireless-B Only, Wireless-A Only or Disabled) used by the network is displayed.

**Network Name (SSID)**  The name of the wireless network or SSID is displayed.

**Channel Width**  The Channel Width setting selected on the *Basic Wireless Settings* screen is displayed.

**Wide Channel**  The Wide Channel setting selected on the *Basic Wireless Settings* screen is displayed.

**Standard Channel**  The Standard Channel setting selected on the *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.

For more information, click *Help*. 
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 green 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.linksys.com
## Appendix B: Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>WRT400N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards</td>
<td>Draft 802.11n, 802.11a, 802.11g, 802.11b, 802.3, 802.3u</td>
</tr>
<tr>
<td>Ports</td>
<td>Power, Ethernet, Internet</td>
</tr>
<tr>
<td>Button</td>
<td>Reset, Wi-Fi Protected Setup</td>
</tr>
<tr>
<td>LEDs</td>
<td>Power, Internet, Wireless, Wi-Fi Protected Setup, Ethernet (1-4)</td>
</tr>
<tr>
<td>Number of Antennas</td>
<td>4 Total, 2 Internal Antennas per Each 2.4 GHz &amp; 5 GHz Radio Band</td>
</tr>
<tr>
<td>Modulations</td>
<td>802.11b: CCK, QPSK, BPSK 802.11g: OFDM 802.11a: OFDM Wireless-N: BPSK, QPSK, 16-QAM, 64-QAM</td>
</tr>
<tr>
<td>Streams</td>
<td>Two Spatial Streams for Transmitting and Receiving in 2.4 GHz Radio Band Two Spatial Streams for Transmitting and Receiving in 5 GHz Radio Band</td>
</tr>
<tr>
<td>Receive Sensitivity</td>
<td>2.4 GHz 11 Mbps: -88 dBm @ Typical 54 Mbps: -72 dBm @ Typical MCS15 (20MHz): -68 dBm @ Typical MCS15 (40MHz): -65 dBm @ Typical 5 GHz 54 Mbps: -72 dBm @ Typical MCS15 (20MHz): -68 dBm @ Typical MCS15 (40MHz): -65 dBm @ Typical</td>
</tr>
<tr>
<td>Antenna Gain in dBi</td>
<td>2.4 GHz RIFA 1 &lt;= 1.3 dBi (Typical) RIFA 2 &lt;= 3.5 dBi (Typical) 5 GHz RIFA 1 &lt;= 3.85 dBi (Typical) RIFA 2 &lt;= 3.04 dBi (Typical)</td>
</tr>
<tr>
<td>UPnP</td>
<td>Supported</td>
</tr>
<tr>
<td>Security Features</td>
<td>WEP, WPA, WPA2</td>
</tr>
<tr>
<td>WEP Key Bits</td>
<td>Up to 128-Bit Encryption</td>
</tr>
</tbody>
</table>

### Environmental

| Dimensions              | 8.07” x 1.38” x 6.30” (205 x 35 x 160 mm) |
| Unit Weight             | 1.01 lb (460 g) |
| Power                   | 12V, 1.5A |
| Certifications          | FCC, IC, Wi-Fi a/b/g/draft-n |
| Operating Temp.         | 0 to 40°C (32 to 104°F) |
| Storage Temp.           | -20 to 70°C (-4 to 158°F) |
| Operating Humidity      | 10 to 85%, Noncondensing |
| Storage Humidity        | 5 to 90% Noncondensing |

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

This limited warranty is non-transferable and extends only to the original end-user purchaser. 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.

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, testing or demonstration purposes for which Linksys does not charge a purchase price or license fee.

ALL SOFTWARE PROVIDED BY LINKSYS WITH THE PRODUCT, WHETHER FACTORY LOADED ON THE PRODUCT OR CONTAINED ON MEDIA ACCOMPANYING THE PRODUCT, IS PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND. Without limiting the foregoing, Linksys does not warrant that the operation of the product or software will be uninterrupted or error free. Also, due to the continual development of new techniques for intruding upon and attacking networks, Linksys does not warrant that the product, software or any equipment, system or network on which the product or software is used will be free of vulnerability to intrusion or attack. The product may include or be bundled with third party software or service offerings. This limited warranty shall not apply to such third party software or service offerings. This limited warranty does not guarantee any continued availability of a third party’s service for which this product’s use or operation may require.

TO THE EXTENT NOT PROHIBITED BY LAW, ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE WARRANTY Period. ALL OTHER EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF NONINFRINGEMENT, 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 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 (INCLUDING ANY SOFTWARE), EVEN IF LINKSYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. 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.linksys.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.linksys.com. Have your product serial number and proof of purchase on hand when calling. A 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.linksys.com/support](http://www.linksys.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, except the built-in collocated transmitters. The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

The device for the band 5150-5250 MHz is only for indoor usage to reduce the potential for harmful interference to co-channel mobile satellite systems; the maximum antenna gain of 3 dBi permitted (for devices in the band 5725-5825 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate, as stated in section A9.2(3).

Safety Notices
- Caution: To reduce the risk of fire, use only No.26 AWG or larger telecommunication line cord.
- Do not use this product near water, for example, in a wet basement or near a swimming pool.
- 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.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the EIRP is not more than required for successful communication.

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, except the built-in collocated transmitters.

Restrictions in the 5 GHz Band
The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.
Appendix D

Regulatory Information

**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.

**Avis d’Industrie Canada concernant l'exposition aux radiofréquences**

Ce matériel est conforme aux limites établies par IC en matière d'exposition aux radiofréquences dans un environnement non contrôlé. Ce matériel doit être installé et utilisé à une distance d’au moins 20 cm entre l'antenne et le corps de l’utilisateur.

Cet émetteur ne doit pas être utilisé avec d’autres types d’antennes que celles conçues spécifiquement pour lui.

**Restrictions dans la bande 5 GHz**

L'appareil pour la bande de 5 150 à 5 250 MHz est conçu pour usage à l'intérieur seulement afin de réduire le potentiel d'interférences pour les systèmes mobiles par satellite qui utilisent le même canal.

**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.

---

**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.
User Information for Consumer Products

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 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.

Dansk (Danish) - Miljøinformation for kunder i EU


Deutsch (German) - Umweltinformation für Kunden innerhalb der Europäischen Union


Čeština (Czech) - Informace o ochraně životního prostředí pro zákazníky v zemích Evropské unie

Evropská směrnice 2002/96/ES zakazuje, aby zařízení označené tímto symbolem 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, podniku zabývajícího se likvidací komunálních odpadů nebo obchodu, kde jste produkt zakoupili.

Български (Bulgarian) - Информация относно опазването на околната среда за потребители в Европейския съюз

Европейска директива 2002/96/EC изисква уредите, носещи този символ върху изделието и/или опаковката му, да не се изхвърлят с несортирани битови отпадъци. Символът обозначава, че изделието трябва да се изхвърля отделно от смесените битови отпадъци. Вашата е отговорността този специфичен отпадък да се изхвърля отделно. Неверно изхвърляне може да доведе до потенциални негативни последици за околната среда и здравето на населението. За по-подробна информация относно изхвърлянето на вашите стари уреди се обърнете към местните власти, службите за смесените битови отпадъци или магазина, от който сте закупили уреда.
Appendix D

Regulatory Information

Eesti (Estonian) - Keskkonnaalane informatsiioon
Euroopa Liidus asuvatele klientidele


Español (Spanish) - Información medioambiental para clientes de la Unión Europea

La Directiva 2002/96/CE de la UE exige que los equipos que llevan este símbolo en el propio aparato y/o en su embalaje no deben eliminarse junto con otros residuos urbanos no seleccionados. El símbolo indica que el producto en cuestión debe separarse de los residuos domésticos convencionales con vistas a su eliminación. Es responsabilidad suya desechar este y cualesquiera otros aparatos eléctricos y electrónicos a través de los puntos de recogida que ponen a su disposición el gobierno y las autoridades locales. Al desechar y reciclar correctamente estos aparatos estará contribuyendo a evitar posibles consecuencias negativas para el medio ambiente y la salud de las personas. Si desea obtener información más detallada sobre la eliminación segura de su aparato usado, consulte a las autoridades locales, al servicio de recogida y eliminación de residuos de su zona o pregunte en la tienda donde adquirió el producto.

Ελληνικά (Greek) - Στοιχεία περιβαλλοντικής προστασίας για πελάτες εντός της Ευρωπαϊκής Ένωσης

Σύμφωνα με την Κοινοτική Οδηγία 2002/96/ΕΟ, ο εξοπλισμός που φέρει αυτό το σύμβολο στο προϊόν ή/και τη συσκευασία του δεν πρέπει να απορρίπτεται μαζί με τα μη διαχωρισμένα αστικά απορρίμματα. Το σύμβολο υποδεικνύει ότι αυτό το προϊόν θα πρέπει να απορρίπτεται ξεχωριστά από τα συνήθη οικιακά απορρίμματα. Εάν υπευθύνεση για την απόρριψη του παρόντος και άλλου ηλεκτρικού και ηλεκτρονικού εξοπλισμού μέσω των καθορισμένων εγκαταστάσεων συγκέντρωσης απορριμμάτων, οι οποίες προέρχονται από το κράτος ή τις αρμόδιες τοπικές αρχές. Η σωστή απόρριψη και ανακύκλωση συμβάλλει στην πρόληψη ενδεχόμενων αρνητικών επιπτώσεων στο περιβάλλον και στην υγεία. Για περισσότερες πληροφορίες σχετικά με την απόρριψη του παλαιού σας εξοπλισμού, επικοινωνήστε με τις τοπικές αρχές, τις υπηρεσίες αποκομιδής απορριμμάτων ή το κατάστημα από του παλαιού εξοπλισμού, επικοινωνήστε με τις τοπικές αρχές, τις υπηρεσίες αποκομιδής απορριμμάτων ή το κατάστημα από του παλαιού εξοπλισμού, επικοινωνήστε με τις τοπικές αρχές, τις υπηρεσίες αποκομιδής απορριμμάτων ή το κατάστημα από του παλαιού εξοπλισμού.

Français (French) - Informations environnementales pour les clients de l’Union européenne

La directive européenne 2002/96/CE exige que l’équipement sur lequel est apposé ce symbole sur le produit et/ou son emballage ne soit pas jeté avec les autres ordures ménagères. Ce symbole indique que le produit doit être éliminé dans un circuit distinct de celui pour les déchets des ménages. Il est de votre responsabilité de jeter ce matériel ainsi que tout autre matériel électrique ou électronique par les moyens de collecte indiqués par le gouvernement et les pouvoirs publics des collectivités territoriales. L’élimination et le recyclage en bonne et due forme ont pour but de lutter contre l’impact négatif potentiel de ce type de produits sur l’environnement et la santé publique. Pour plus d’informations sur le mode d’élimination de votre ancien équipement, veuillez prendre contact avec les pouvoirs publics locaux, le service de traitement des déchets, ou l’endroit où vous avez acheté le produit.

Italiano (Italian) - Informazioni relative all’ambiente per i clienti residenti nell’Unione Europea

La direttiva europea 2002/96/EC richiede che le apparecchiature contrassegnate con questo simbolo sul prodotto e/o sull’imballaggio non siano smaltite insieme ai rifiuti urbani non differenziati. Il simbolo indica che questo prodotto non deve essere smaltito insieme ai normali rifiuti domestici. È responsabilità del proprietario smaltire sia questi prodotti sia le altre apparecchiature elettriche ed elettroniche mediante le specifiche strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento ed il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l’ambiente e per la salute dell’essere umano. Per ricevere informazioni più dettagliate circa lo smaltimento delle vecchie apparecchiature in Vostro possesso, Vi invitiamo a contattare gli enti pubblici di competenza, il servizio di smaltimento rifiuti o il negozio nel quale avete acquistato il prodotto.

Latviešu valoda (Latvian) - Ekoloģiska informācija klientiem Eiropas Savienības jurisdikcijā


Simultaneous Dual-Band Wireless-N Router
Português (Portuguese) - Informação ambiental para clientes da União Europeia

A Directiva Europeia 2002/96/CE exige que o equipamento que exibe este símbolo \[\square\] 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 residuos 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 correctas 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) - Informații de mediu pentru clienții din Uniunea Europeană


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

Podľa európskej smernice 2002/96/ES zariadenie s týmto symbolem \[\square\] – na izdelku a/alebo jeho balení – nemôžu byť likvidované spolu s netriedeným komunálnym odpadom. Symbol znázorňuje, že produkt by sa mal likvidovať oddelene od bežného odpadu z domácnosti. Je vašou povinnosťou lišťať a likvidovať toto i ostatné elektrické a elektronické zariadenia prostredníctvom špeciálne vymedzených zbieracích zariadení určených všetkých občianskej miestnej orgánu. Správná likvidácia a recyklácia pomôže zabrániť potenciálne negatívne dopady na životné prostredie a zdravie. Ak máte záujem o podrobnejšie informácie o likvidácii starého zariadenia, obráťte sa na miestne orgány, organizácie zaobľúбавé alebo miestne orgány, organizácie zaobľúбавé. WEB: For additional information, please visit www.linksys.com

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

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

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


Svenska (Swedish) - Miljöinformation för kunder i Europeiska unionen

Appendix E: Software End User License Agreement

Cisco Products

This product from Cisco Systems, Inc. or its subsidiary licensing the Software instead of Cisco Systems, Inc. ("Cisco") contains software (including firmware) originating from Cisco and its suppliers and may also contain software from the open source community.

Any software originating from Cisco and its suppliers is licensed under the Cisco Software License Agreement contained at Schedule 1 below. You may also be prompted to review and accept the Cisco Software License Agreement upon installation of the software. Separate terms and features of Network Magic, a Cisco Software product, are set forth in Schedule 2 below.

Any software from the open source community is licensed under the specific license terms applicable to that software made available by Cisco at www.linksysbycisco.com/gpl or as provided for in Schedule 3 below. By using the Software, you acknowledge that you have reviewed such license terms and that you agree to be bound by the terms of such licenses. Where such specific license terms entitle you to the source code of such software, that source code is available upon request at cost from Cisco for at least three years from the purchase date of this product and may also be available for download from www.linksysbycisco.com/gpl. For detailed license terms and additional information on open source software in Cisco products please look at the Cisco public web site at: www.linksysbycisco.com/gpl/ or Schedule 3 below as applicable. If you would like a copy of the GPL or certain other open source code in this Software on a CD, Cisco will mail to you a CD with such code for $9.99 plus the cost of shipping, upon request.

THIS SOFTWARE END USER LICENSE AGREEMENT IS A LEGAL AGREEMENT BETWEEN YOU AND CISCO. READ IT CAREFULLY BEFORE INSTALLING AND USING THE SOFTWARE. IT PROVIDES A LICENSE TO USE THE SOFTWARE AND CONTAINS WARRANTY INFORMATION AND LIABILITY DISCLAIMERS. BY CHECKING THE "I ACCEPT" BOX, DOWNLOADING, INSTALLING OR USING THE SOFTWARE, OR USING THE PRODUCT CONTAINING THE SOFTWARE, YOU ARE CONFIRMING YOUR ACCEPTANCE OF THE SOFTWARE AND CONSENTING TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL OF THESE TERMS, THEN DO NOT CLICK ON THE "I ACCEPT" BUTTON AND DO NOT DOWNLOAD, INSTALL OR USE THE SOFTWARE. YOU MAY RETURN UNUSED SOFTWARE (OR, IF THE SOFTWARE IS SUPPLIED AS PART OF ANOTHER PRODUCT, THE UNUSED PRODUCT) FOR A FULL REFUND UP TO 30 DAYS AFTER ORIGINAL PURCHASE, SUBJECT TO THE RETURN PROCESS AND POLICIES OF THE PARTY FROM WHICH YOU PURCHASED SUCH PRODUCT OR SOFTWARE.

IN THE EVENT THAT YOU HAVE ELECTED TO OBTAIN A SUBSCRIPTION LICENSE, AS INDICATED IN YOUR ORDER, YOU ADDITIONALLY AGREE TO BE BOUND BY THE "TERMS OF SERVICE" SET FORTH IN SCHEDULE 2 IF APPLICABLE.

Software Licenses

The software licenses applicable to software from Cisco are made available at the Cisco public web site at: www.linksysbycisco.com and www.linksysbycisco.com/gpl/ respectively. For your convenience of reference, a copy of the Cisco Software License Agreement and the main open source code licenses used by Cisco in its products are contained in the Schedules below.

Schedule 1

Cisco Software License Agreement

License. Subject to the terms and conditions of this Agreement, Cisco grants the original end user purchaser of the Software a nonexclusive license to (i) use the Software solely as embedded in, as a stand-alone application or (where authorized in the applicable documentation) for communication with such product, each solely at Cisco’s discretion; (ii) if the Software is purchased separately from any Cisco Product, install the Software on personal computers within a single household or business location according to the maximum number of licenses you have purchased; and (iii) make one copy of the Software in machine-readable form and one copy of the Documentation, solely for backup purposes. This license may not be sublicensed, and is not transferable except to a person or entity to which you transfer ownership of the complete Cisco product containing the Software or complete Software product, provided you permanently transfer all rights under this Agreement and do not retain any full or partial copies of the Software, and the recipient agrees to the terms of this Agreement.

“Software” includes, and this Agreement will apply to (a) the software of Cisco or its suppliers purchased separately or provided in or with the applicable Cisco product, and (b) any upgrades, updates, bug fixes or modified versions (“Upgrades”) or backup copies of the Software supplied to you by Cisco or an authorized reseller (whether or not for a fee), provided you already hold a valid license to the original software and have paid any applicable fee for the Upgrade.

“Documentation” means all documentation and other related materials supplied by Cisco to you pursuant to this Agreement.

License Restrictions. Other than as set forth in this Agreement, you may not (i) make or distribute copies
of the Software or its related Documentation, or electronically transfer the Software or Documentation from one computer to another or over a network; (ii) alter, merge, modify, adapt, decrypt or translate the Software or related Documentation, or decompile, reverse engineer, disassemble, or otherwise reduce the Software to a human-perceivable form (except to the extent expressly permitted by law notwithstanding this provision); (iii) share, sell, rent, lease, or sublicense the Software or related Documentation; (iv) modify the Software or create derivative works based upon the Software; (v) if you make a backup copy of the Software and Documentation, you must reproduce all copyright notices and any other proprietary legends found on the original Software and Documentation; (vi) use the Software for management of a business network with more than 8 computers; (vii) use the Software under any circumstances for competitive evaluation, including developing competing software; (ix) to the extent permitted under applicable law, assign, sublicense or otherwise transfer the Software unless the prospective assignee, sublicensee or transferee expressly agrees to all the terms and conditions under this Agreement.

The Software and Documentation contain trade secrets and/or copyrighted materials of Cisco or its suppliers. You will not disclose or make available such trade secrets or copyrighted material in any form to any third party.

In the event that you fail to comply with this Agreement, the license granted to you will automatically terminate, at which time you must immediately (i) stop using the Cisco Product in which the Software is embedded, or (ii) uninstall the Software and destroy all copies of the Software and Documentation where the Software is purchased separately. All other rights of both parties and all other provisions of this Agreement will survive this termination.

Ownership. The Software and Documentation are licensed and not sold to you by Cisco and the relevant third parties set forth in Schedule 3. Cisco and its licensors retain all right, title and interest, including all copyright and intellectual property rights, in and to, the Software and Documentation and all copies and portions thereof. All rights not specifically granted to you in this Agreement are reserved by Cisco and its licensors. Your use of any software product from an entity other than Cisco that may have been recommended by Cisco is governed by such software product’s end user license agreement.

Links and Advertising. Cisco may provide from within the Software links to websites or third party software products that are beyond our control. Cisco makes no representations as to the quality, suitability, functionality, or legality of any sites or products to which links may be provided, and you hereby waive any claim you might have against Cisco with respect to such sites or third party software products. Your correspondence or business dealings with, or participation in promotions of advertisers found through the Software and any other terms, conditions, warranties, or representations associated with such dealings, are solely between you and such advertiser. You agree that Cisco is not responsible or liable for any loss or damage of any sort incurred as the result of any such dealings or as the result of the presence of such advertisers in the Cisco Software.

Collection and Processing of Information. You agree that Cisco and/or its affiliates may, from time to time, collect and process information about your Cisco product and/or the Software and/or your use of either in order (i) to enable Cisco to offer you Upgrades; (ii) to provide support and assistance with your product and/or the Software; (iii) to ensure that your Cisco product and/or the Software is being used in accordance with the terms of this Agreement; (iv) to provide improvements to the way Cisco delivers technology to you and to other Cisco customers; (v) to provide reports regarding the status and health of the network, including network traffic and application usage; (vi) to enable Cisco to comply with the terms of any agreements it has with any third parties regarding your Cisco product and/or Software; and/or (vii) to enable Cisco to comply with all applicable laws and/or regulations, or the requirements of any regulatory authority or government agency. Cisco and/or its affiliates may collect and process this information provided that it does not identify you personally.

The reports feature of certain Software allows you to monitor the activity of computers running the Software in your home or small office. You must activate this feature in order to receive reports. If you activate the reports feature, you agree to the following: (a) the Software tracks and monitors the following components and activities in your home or office: network traffic (e.g. megabytes per hour), application usage (the foreground window is tracked and the time each application is in the foreground during active usage of the computer) and internet history. (b) For all computers on which reports feature is enabled, the above information is transmitted to servers at Cisco and/or a third party at periodic intervals while the computer is online. This information is associated and stored with the email address supplied by you when you activated the reports feature. This information is summarized into a formal report and is emailed to the identified email address. (c) Any computer on the network running the Software can enable any other computer (on the same primary network) to generate reports. When a computer is enabled, that computer shows a notification that it is being monitored. As long as that computer is enabled, each time the Software is started the user of that particular computer will see a notification that it is being monitored by the reports feature. Any computer on the network with the Software installed can enable or disable any other computer from the reports feature.
In addition, Cisco may collect and store detailed information regarding your network configuration and usage for the purpose of providing you technical networking support. The information is associated with you only when you provide a unique ID number to the support representative while you are receiving help. The unique ID is generated randomly on your computer upon installation and is completely under your control.

Your use of your Cisco product and/or the Software constitutes consent by you to Cisco's and/or its affiliates' collection and use of such information and, for European Economic Area (EEA) customers, to the transfer of such information to a location outside the EEA. Any information collected by your Cisco product and/or the Software is done and utilized in accordance with our Privacy Policy available at Privacy Statement. Your election to use the Cisco product and/or Software indicates your acceptance of the terms of the Cisco Privacy Policy, so please review the policy carefully and check the Web site above to review updates to it.

**Software Upgrades etc.** If the Software enables you to receive Upgrades, you may elect at any time to receive these Upgrades either automatically or manually. If you elect to receive Upgrades manually or you otherwise elect not to receive or be notified of any Upgrades, you may expose your Cisco product and/or the Software to serious security threats and/or some features within your Cisco product and/or Software may become inaccessible. There may be circumstances where we apply an Upgrade automatically in order to comply with changes in legislation, legal, security or regulatory requirements or as a result of requirements to comply with the terms of any agreements Cisco has with any third parties regarding your Cisco product and/or the Software. You will always be notified of any Upgrades being delivered to you. The terms of this license will apply to any such Upgrade unless the Upgrade in question is accompanied by a separate license, in which event the terms of that license will apply.

**Term and Termination.** You may terminate this License at any time by destroying all copies of the Software and documentation. Your rights under this License will terminate immediately without notice from Cisco if you fail to comply with any provision of this Agreement.

**Limited Warranty.** Cisco 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 Cisco's entire liability under this limited warranty will be for Cisco, at its option, to (a) replace the Software media, or (b) refund the purchase price of the Software media.

EXCEPT FOR THE LIMITED WARRANTY ON MEDIA SET FORTH ABOVE AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, ALL SOFTWARE PROVIDED BY CISCO IS PROVIDED “AS IS” WITH ALL FAULTS AND WITHOUT WARRANTY OF ANY KIND. Without limiting the foregoing, Cisco does not warrant that the operation of the product or software will be uninterrupted or error free. Also, due to the continual development of new techniques for intruding upon and attacking networks, Cisco does not warrant that the product, software or any equipment, system or network on which the product or software is used will be free of vulnerability to intrusion or attack. The product may include or be bundled with third party software or service offerings. This limited warranty shall not apply to such third party software or service offerings. This limited warranty does not guarantee any continued availability of a third party's service 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 LIMITED TO THE DURATION OF THE WARRANTY PERIOD. ALL OTHER EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES 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.

**Disclaimer of Liabilities.** TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, IN NO EVENT WILL CISCO 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 CISCO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, IN NO EVENT WILL CISCO’S 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.

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

**Export.** Software, including technical data, may be subject to U.S. export control laws and regulations and/or export or import regulations in other countries. You agree to comply strictly with all such laws and regulations.

**U.S. Government Users.** The Software and Documentation qualify as “commercial items” as defined at 48 C.F.R. 2.101 and 48 C.F.R. 12.212. All Government users acquire the Software and Documentation with only those rights herein that apply to non-governmental customers. Use of
either the Software or Documentation or both constitutes agreement by the Government that the Software and Documentation are "commercial computer software" and "commercial computer software documentation," and constitutes acceptance of the rights and restrictions herein.

**General Terms.** This Agreement will be governed by and construed in accordance with the laws of the State of California, without reference to conflict of laws principles. The United Nations Convention on Contracts for the International Sale of Goods will not apply. If any portion of this Agreement is found to be void or unenforceable, the remaining provisions will remain in full force and effect. This Agreement constitutes the entire agreement between the parties with respect to the Software and supersedes any conflicting or additional terms contained in any purchase order or elsewhere.

Linksys, Cisco and the Cisco Logo and other trademarks contained in the Software and Documentation are trademarks or registered trademarks of Linksys, Cisco, its licensors and third parties, as the case may be. You may not remove or alter any trademark, trade names, product names, logo, copyright or other proprietary notices, legends, symbols or labels in the Software and Documentation. This Agreement does not authorize you to use Cisco’s or its licensors’ names or respective trademarks.

**END OF SCHEDULE 1**

**Schedule 2**

**Network Magic Features**

**Network Magic License Restrictions.** Other than as set forth in this Agreement, you may not install or execute the Network Magic Software on any non-personal computer product, including, but not limited to, a Web appliance, set top box, handheld device, phone, Web pad device, or any device running the Microsoft Windows CE operating system.

**Terms of Service for Subscription Licenses.** These Terms of Service only apply if you have obtained a subscription license to Network Magic as specified in your order.

1. **Network Magic Cancellation.** You may cancel the Services at any time. If you cancel the Services, Cisco will not be obligated to provide you any Network Magic product Upgrades. To the extent not prohibited by applicable law, you understand and agree that cancellation of your Services is your sole remedy with respect to any dispute with Cisco.

2. **Modifications.** Cisco may modify or cancel the terms of this Agreement or the price, content, or nature of the Services (including discontinuing the Services program), upon notice to you. If Cisco modifies any of these terms, you may cancel the Service by providing written notice to Cisco via [www.networkmagic.com/support](http://www.networkmagic.com/support) of such cancellation and uninstalling the Software and discontinuing your use of the Service. Cisco may provide notice by e-mail, via Network Magic, or by publishing the changes on its Web site.

3. **Email Notification.** Cisco may send you email from time to time to let you know about new products and services that are available to you. You will be able to opt-out of receiving these emails using the link provided within the email. Cisco reserves the right, however, to send you Service related email messages as long as you are a subscriber to the Service. If you wish to opt-out of receiving Service related email messages, you may cancel the Service by providing written notice via [www.networkmagic.com/support](http://www.networkmagic.com/support) to Cisco of such cancellation and uninstalling the Software and discontinuing your use of the Service.

4. **WARRANTY DISCLAIMER FOR SERVICES.** TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW THE SERVICES ARE PROVIDED ON AN "AS-IS" BASIS, AND CISCO AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES AND REPRESENTATIONS REGARDING THE SERVICES, WHETHER EXPRESS, IMPLIED, OR OTHERWISE, INCLUDING THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, TITLE, QUIET ENJOYMENT, QUALITY, AND ACCURACY. CISCO DOES NOT WARRANT THAT THE SERVICE IS ERROR-FREE OR THAT THE SERVICE WILL OPERATE WITHOUT INTERRUPTION.

**END OF SCHEDULE 2**

**Schedule 3**

**Open Source and Third Party Licenses**

**Schedule 3-A**

If this Cisco product contains open source software licensed under Version 2 of the “GNU General Public License” then the license terms below in this Schedule 3-A will apply to that open source software. The license terms below in this Schedule 3-A are from the public web site at [http://www.gnu.org/copyleft/gpl.html](http://www.gnu.org/copyleft/gpl.html)

**GNU GENERAL PUBLIC LICENSE**

Version 2, June 1991

Copyright © 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

**Preamble**

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your
freedom to share and change free software—to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation’s software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author’s protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors’ reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone’s free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

**TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION**

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The “Program”, below, refers to any such program or work, and a “work based on the Program” means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term “modification”.) Each licensee is addressed as “you”.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program’s source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a. You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b. You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
c. If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
   a. Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
   b. Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
   c. Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients’ exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to let their software be affected by the application of that system.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

END OF SCHEDULE 3-A

Schedule 3-B

If this Cisco product contains open source software licensed under Version 2.1 of the “GNU Lesser General Public License” then the license terms below in this Schedule 3-B will apply to that open source software. The license terms below in this Schedule 3-B are from the public web site at http://www.gnu.org/licenses/old-licenses/lgpl-2.1.html.
GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages—typically libraries—of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to use, copies of free software—so that you need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you of if you distribute copies of the library.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the
freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a “work based on the library” and a “work that uses the library”. The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called “this License”). Each licensee is addressed as “you”.

A “library” means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The “Library”, below, refers to any such software library or work which has been distributed under these terms. A “work based on the Library” means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term “modification”.)

“Source code” for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library’s complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.
Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a “work that uses the Library”. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a “work that uses the Library” with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a “work that uses the library”. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a “work that uses the Library” uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a “work that uses the Library” with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable “work that uses the Library”, as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user’s computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the “work that uses the Library” must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients’ exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of
software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and “any later version”, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

END OF SCHEDULE 3-B

Schedule 3-C

OPENSSL LICENSE

If this Cisco product contains open source software licensed under the OpenSSL license:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. ([http://www.openssl.org/](http://www.openssl.org/)).

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

In addition, if this Cisco product contains open source software licensed under the OpenSSL license then the license terms below in this Schedule 3-C will apply to that open source software. The license terms below in this Schedule 3-C are from the public website at [http://www.openssl.org/source/license.html](http://www.openssl.org/source/license.html).
The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

Copyright © 1998-2007 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: “This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)”
4. The names “OpenSSL Toolkit” and “OpenSSL Project” must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called “OpenSSL” nor may “OpenSSL” appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: “This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)”

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT “AS IS” AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Original SSLeay License

Copyright © 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscape’s SSL.

This library is free for commercial and non-commercial use as long as the following conditions are adhered to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, Ihash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young’s, and as such any Copyright notices in the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement:
   “This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)”

   The word ‘cryptographic’ can be left out if the routines from the library being used are not cryptographic related.
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: “This product includes software written by Tim Hudson (tjh@cryptsoft.com)”

   THIS SOFTWARE IS PROVIDED BY ERIC YOUNG “AS IS” AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING,
BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The license and distribution terms for any publicly available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution license [including the GNU Public License.]

END OF SCHEDULE 3-C