To remotely manage the Router, enter **http://xxx.xxx.xxx.xxx:8080** (the x's represent the Router's Internet IP address, and 8080 represents the specified port) in your web browser's *Address* field. You will be asked for the Router's password. After successfully entering the password, you will be able to access the Router's web-based utility.

**Note:** If the Remote Management feature is enabled, anyone who knows the Router's Internet IP address and password will be able to alter the Router's settings.

**MTU** MTU is the Maximum Transmission Unit. It specifies the largest packet size permitted for Internet transmission. Keep the default setting, **Auto**, to have the Router select the best MTU for your Internet connection. To specify a MTU size, select **Manual**, and enter the value desired (default is **1400**). You should leave this value in the 1200 to 1500 range.

**Log** The Router can keep logs of all traffic for your Internet connection. To disable the Log function, keep the default setting, **Disable**. To monitor traffic between the network and the Internet, select **Enable**.

**Send Log To** Enter the IP Address of the PC where you would like the Logs sent.

Temporary logs can be accessed by clicking either the **Incoming Access Log** or **Outgoing Access Log** button.

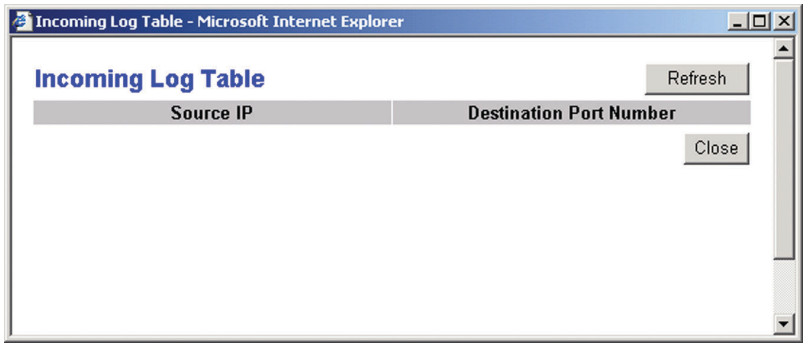


**Figure 6-14**





The Incoming Access Log gives you a log of all the incoming Internet traffic, displaying the Source IP address and Destination Port Number of the Router for each activity (see Figure 6-14). Click the **Refresh** button to update the logs. Click the **Close** button to return to the *System* screen.

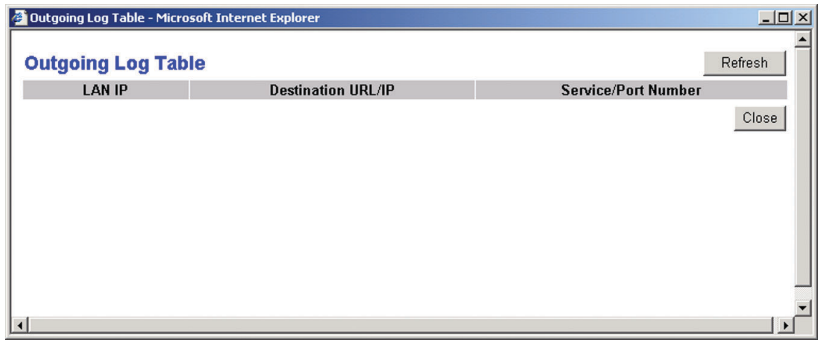


**Figure 6-15**

The Outgoing Access Log gives you a log of all outgoing Internet traffic. For each activity, it displays the LAN IP address, the Destination URL or IP address of the Internet site accessed, as well as the Service/Port Number used (see Figure 6-15). Click the **Refresh** button to update the logs. Click the **Close** button to return to the *System* screen.

To save your changes on this page, click the **Apply** button. To cancel any unsaved changes on this page, click the **Cancel** button. To get more information about the features, click the **Help** button.

## DHCP

The *DHCP* screen, shown in Figure 6-16, allows you to configure the settings for 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.

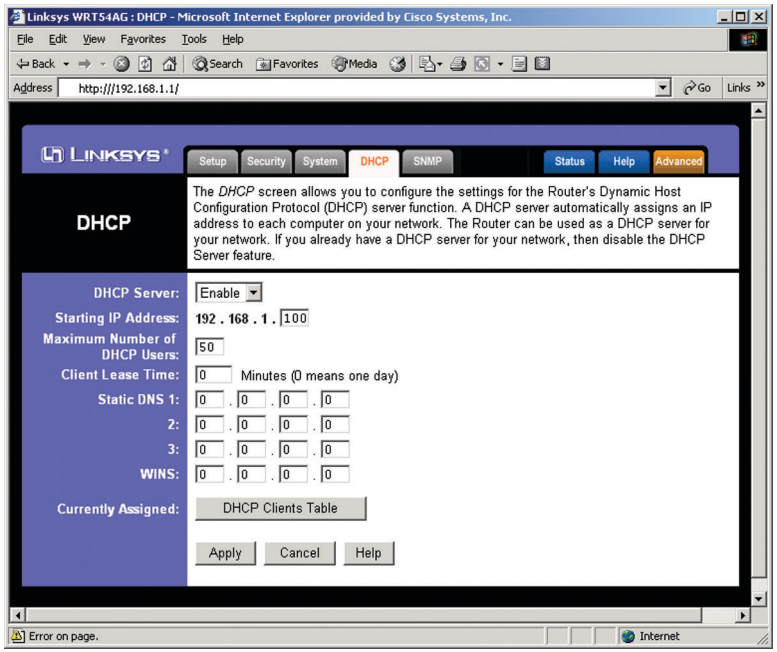


**Figure 6-16**

If you choose to enable the Router's DHCP server option, you must configure all of your network PCs to connect to a DHCP server (the Router), and 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 click the **Disable** radio button (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** (Optional) Enter the maximum number of PCs 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, type that IP Address in one of these fields. You can type 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 PC's interaction with the Internet. If you use a WINS server, enter that server's IP Address here. Otherwise, leave this blank.

**Currently Assigned: DHCP Clients Table** Click the **DHCP Clients Table** button to view the list of PCs that are given IP addresses by the Router (see Figure 6-17). For each PC, the list shows the Client Hostname, IP Address, MAC Address, and and the amount of DHCP client lease time left. Click the **Refresh** button to display the most current information.

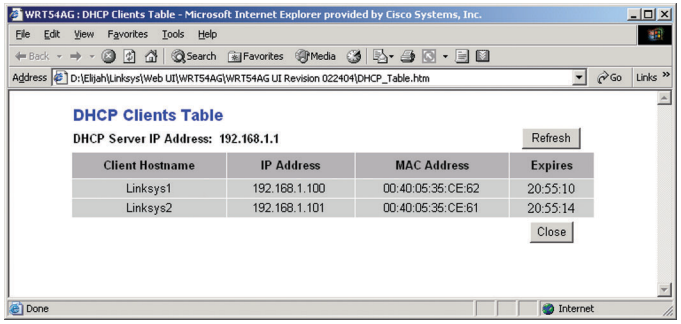


**Figure 6-17**

To save your changes on this page, click the **Apply** button. To cancel any unsaved changes on this page, click the **Cancel** button. To get more information about the features, click the **Help** button.

## SNMP

The *SNMP* tab, shown in Figure 6-18, allows you to customize the Simple Network Management Protocol (SNMP) settings. SNMP is a popular network monitoring and management protocol.

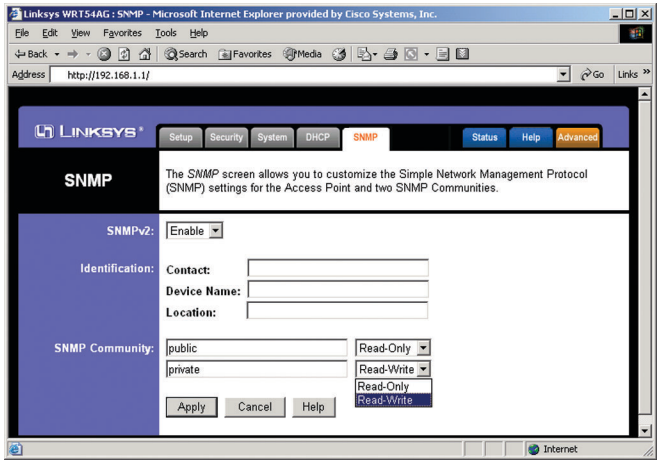


**Figure 6-18**

The Identification settings let you designate the Contact, Device Name, and Location information for the Router. The SNMP Community settings allow names to be assigned to any SNMP communities that have been set up in the network. You can define two different SNMP communities, with the default names being Public and Private.

**SNMPv2.** To enable the SNMP support feature, select **Enable**.

**Identification.** In the *Contact* field, enter contact information for the Router. In the *Device Name* field, enter the name of the Router. In the *Location* field, specify the area or location where the Router resides.

**SNMP Community.** You may change the name from its default, Public. Enter a new name in the *Public* field. Then configure the community's access as either Read-Only or Read-Write.You may change the name from its default, Private. Enter a new name in the *Private* field. Then configure the community's access as either Read-Only or Read-Write.

When you've completed making any changes on this tab, click the **Apply** button to save those changes or **Cancel** to cancel your changes. For more information on this tab, you can click the **Help** button.





## Status

The *Status* screen, shown in Figure 6-19, displays the Router's current status and configuration. All information is read-only.

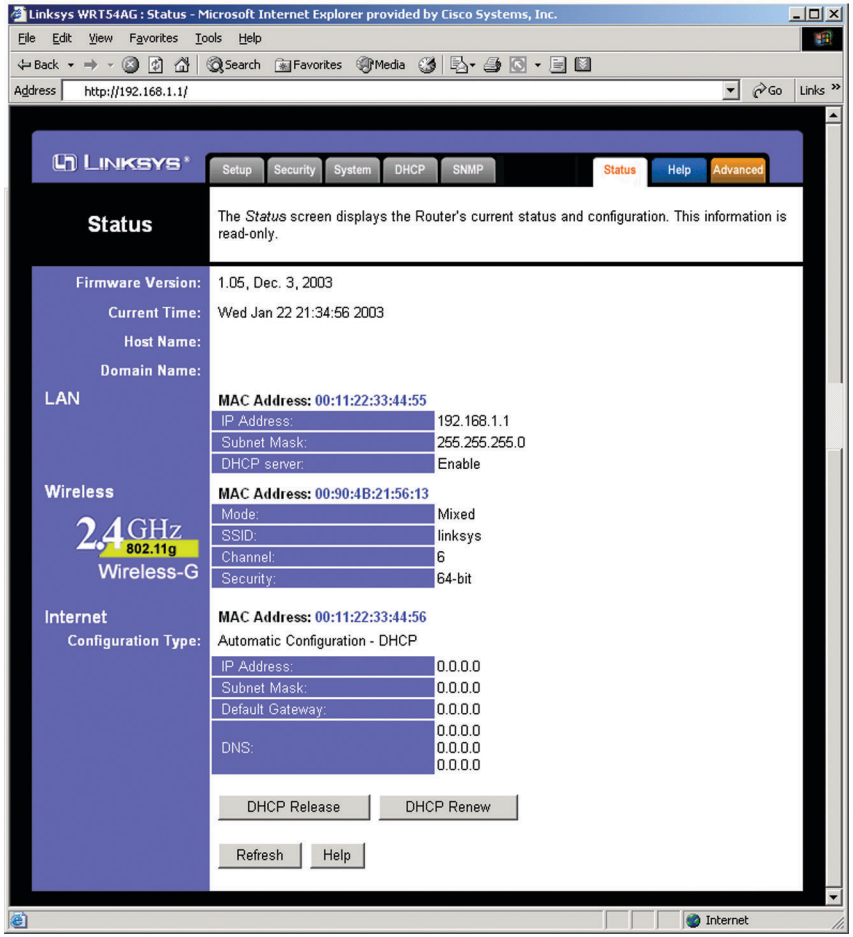


**Figure 6-19**

**Note:** The information provided and buttons available may vary depending on the Router's settings.

**Firmware Version** The version number of the firmware currently installed is displayed here.

**Current Time** The current date and time are displayed here.

**Host Name** The Host Name is the name of the Router. This entry is necessary for some ISPs.

**Domain Name** The Domain Name is the name of the Router's domain. This entry is necessary for some ISPs.

## LAN

**MAC Address** The MAC Address of the LAN interface is displayed here.

**IP Address and Subnet Mask** The current IP Address and Subnet Mask of the Router, as seen by users on your local area network (LAN), are displayed here.

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

## Wireless 2.4GHz, 54g, Wireless-G

**MAC Address** The MAC Address of the wireless interface is displayed here.

**Mode** The Mode of the wireless network is displayed here.

**SSID** The SSID of the wireless network is displayed here.

**Channel** The Channel of the wireless network is displayed here.

**Security** The status of the WEP encryption is displayed here.

## Internet

**MAC Address** The MAC Address of the Internet interface is displayed here.

**Configuration Type** The type of Internet connection is displayed here.





**IP Address, Subnet Mask, and Default Gateway** The Router's IP Address, Subnet Mask, and Default Gateway Address, as seen by external users on the Internet, are displayed here.

**DNS** The DNS (Domain Name System) IP Addresses currently used by the Router are shown here. Multiple DNS IP settings are common. In most cases, the first available DNS entry is used.

**DHCP Release** Click the **DHCP Release** button to delete the Router's current Internet IP address.

**DHCP Renew** Click the **DHCP Renew** button to get a new Internet IP address for the Router.

To update the Router's status information, click the **Refresh** button. To get more information about the features, click the **Help** button.

## Help

The *Help* screen, shown in Figure 6-20, offers links to all of the Router's technical support resources and the application that upgrades the Router's firmware. For additional information about each screen of the web-based utility, click the appropriate link on the lefthand side of the *Help* screen.

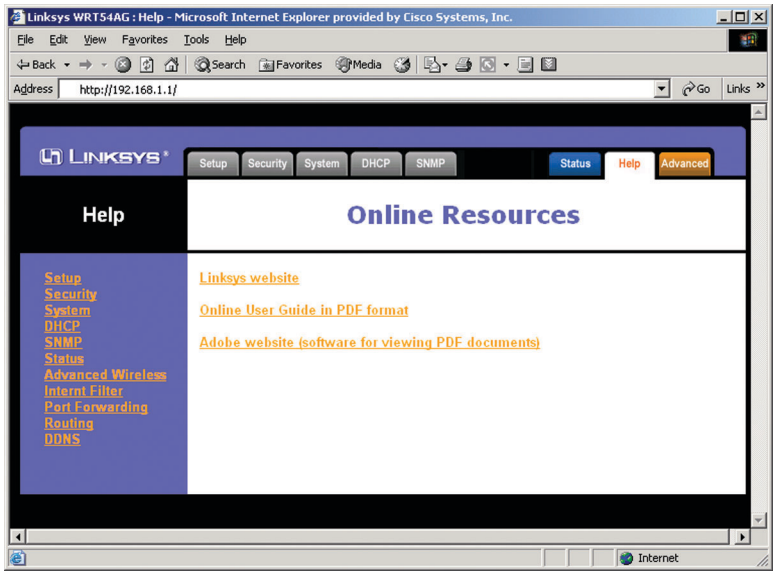


**Figure 6-20**

**Linksys Website** Clicking this link will take you to Linksys's website, *www.linksys.com*, provided you are connected to the Internet.

**Online User Guide in PDF Format and Adobe Website** Clicking the **Online User Guide in PDF format** link opens the Router's User Guide. The User Guide is in Adobe Acrobat Portable Document File (.pdf) format, so you need the Adobe Acrobat Reader to view it. If you do not have the Acrobat Reader, click the **Adobe website** link to download it.





## Advanced Tabs

The following instructions are for advanced users or users whose setup needs require special configuration. When you click the **Advanced** tab, you will be able to set up these features. There are five additional tabs available.

**Advanced Wireless** - Allows you to customize data transmission settings for your wireless network.

**Internet Filter** - Enables you to set up filters that block or allow specific kinds of Internet usage.

**Port Forwarding** - Lets you set up public services on your network, such as an ftp server, mail server, or web server.

**Routing** - Enables you to configure the routing mode and settings of the Router.

If you need to access the basic configuration tabs, click the **Setup** tab.

## Advanced Wireless

The *Advanced Wireless* screen, shown in Figure 6-21, allows you to customize data transmission settings. In most cases, the advanced wireless settings on this screen should remain at their default values.

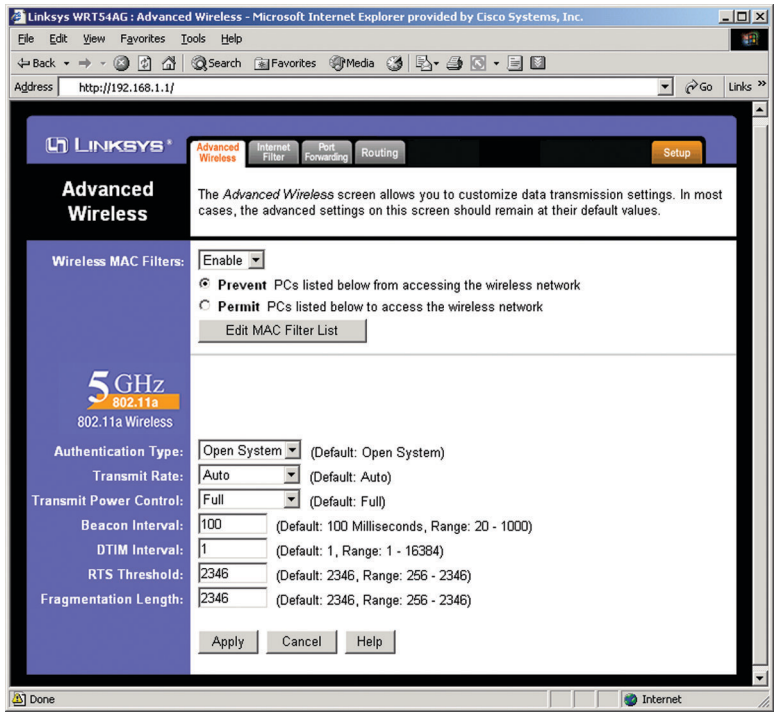


**Figure 6-21**

**Wireless MAC Filters** Wireless access can be filtered by using the MAC addresses of the wireless devices transmitting within your network's radius. Select Enable from the drop-down menu and choose if you wish to Prevent wireless access by MAC address or Permit by MAC Address. Then, click the Edit MAC Filter List button to access a secondary screen, where you can enter the MAC Addresses of the devices you wish to filter.

**Authentication Type** The default is set to **Auto**, which allows either Open System or Shared Key authentication to be used. For Open System authentication, the sender and the recipient do NOT use a WEP key for authentication. For Shared Key authentication, the sender and recipient use a WEP key for authentication. If you want to use only Shared Key authentication, then select **Shared Key**.





**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 (**6**, **9**, **12**, **18**, **24**, **36**, **48**, or **54**Mbps), 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**.

**Transmit Power Control** (Wireless-G ONLY) The greater the transmit power used, the larger the area a wireless network covers. To minimize the likelihood of eavesdropping by unauthorized wireless users, do not use more transmit power than necessary to cover the range needed for your wireless network. Try using the Router at different levels of transmit power, and determine how much transmit power is needed to reach the wireless client, such as a PC, or access point that is farthest from the Router. Then select the appropriate level of transmit power (**Full**, **Half**, **Quarter**, **Eighth**, or **Min**) from the drop-down menu. The default value is **Full**.

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

**DTIM Interval** This value, between 1 and 16384, indicates the interval of the Delivery Traffic Indication Message (DTIM). A DTIM field is a countdown field informing clients of the next window for listening to broadcast and multicast messages. When the Router has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. Its clients hear the beacons and awaken to receive the broadcast and multicast messages. The default value is **1**.

**RTS Threshold** Should you encounter inconsistent data flow, only minor reduction of the default value, 2346, 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 **2346**.

**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**.

## Internet Filter

The Internet Filter tab, shown in Figure 6-22, allows you to block or allow specific kinds of Internet usage. You can set up Internet access policies for specific PCs and set up filters by using network port numbers.

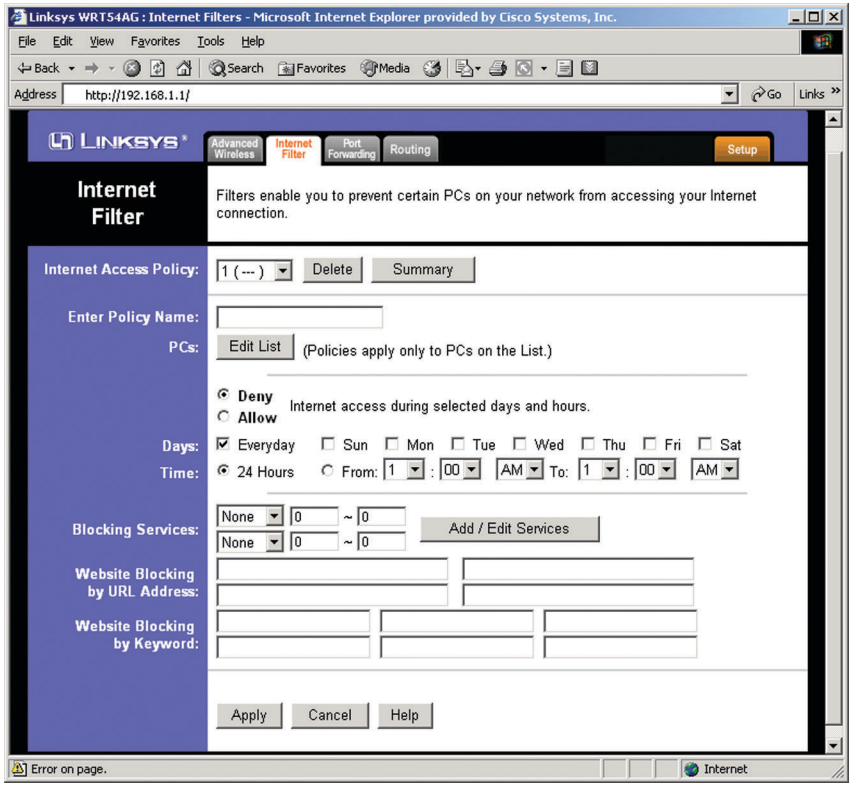


**Figure 6-22**

**Internet Access Policy** Multiple Filters can be saved as Internet Access Policies. When you wish to edit one, select the number of the Policy from the drop-down menu. The tab will change to reflect the settings of this Policy. If you wish to delete this Policy, click the **Delete** button.

To see a summary of all Policies, click the **Summary** button.





The summaries are listed on this screen, shown in Figure 6-23, with their name and settings. To delete any summary from this screen, check the empty box beneath **Delete** and then click the **Delete** button. To return to the Filters tab, click the **Close** button.

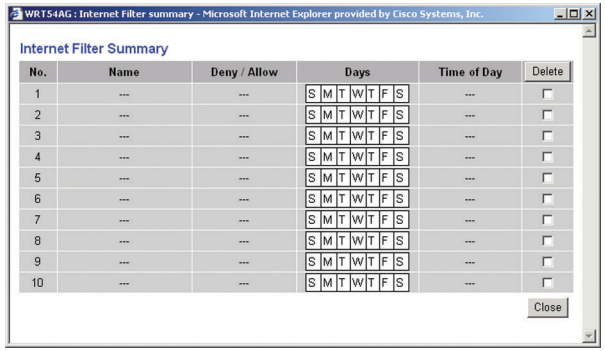


**Figure 6-23**

**Enter Policy Name** Policies are created from the fields presented here. To create a policy:

1. Enter a Policy Name in the field provided.

2. Click the **Edit List of PCs** button. This will open the *List of PCs* screen, shown in Figure 6-24. From this screen, you can enter the IP address or MAC address of any PC to which this policy will apply. You can even enter ranges of PCs by IP address. Click the **Apply** button to save your settings, the **Cancel** button to undo any changes, and the **Close** button to return to the Filters tab.

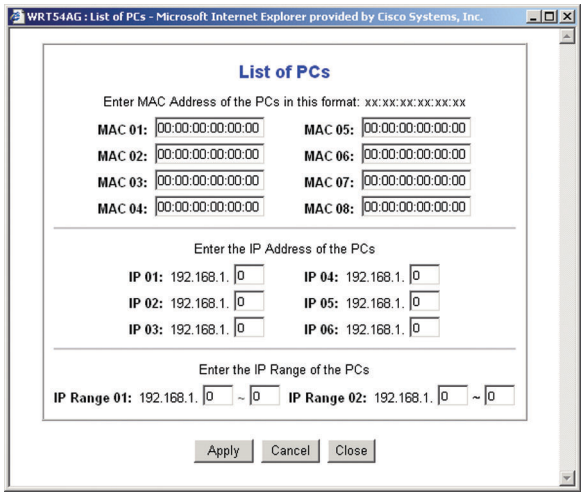


**Figure 6-24**

3. Select if you wish to Disable or Enable Internet access for those PCs you listed on the List of PCs screen by clicking the radio button beside either option.

4. You can filter access to various services accessed over the Internet, such as FTP or Telnet, by selecting a service from the pull-down menus next to **Services**. If a service isn't listed, you can click the Add Service button to open the *Service* screen, shown in Figure 6-25, and add a service to the list. You will need to enter a Service name, as well as the Protocol and Port Range used by the service.

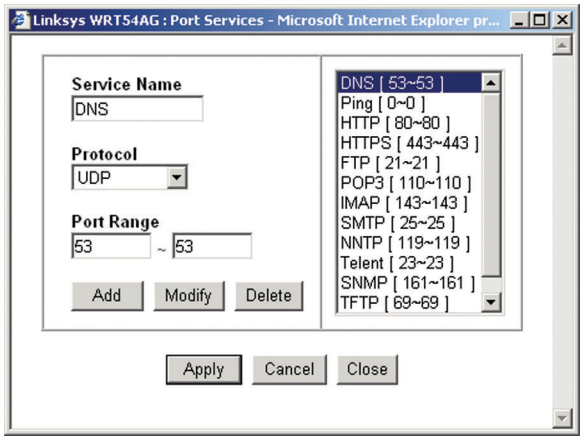


**Figure 6-25**

5. By selecting the appropriate setting next to Days and Time, choose when Internet access will be filtered.

6. Lastly, click the **Apply** button to save and activate this policy.

Internet Access can also be filtered by URL Address, the address entered to access Internet sites, by entering the address in one of the **Website Blocking by URL Address** fields. If you do not know the URL Address, filtering can be done by Keyword by entering a keyword in one of the **Website Blocking by Keyword** fields.

To apply any of the settings you change on this page, click the **Apply** button. To cancel any changes you've entered on this page, click the **Cancel** button. To get more information about the features, click the **Help** button.





## Port Forwarding

The *Port Forwarding* screen (Figure 6-26) sets 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.)

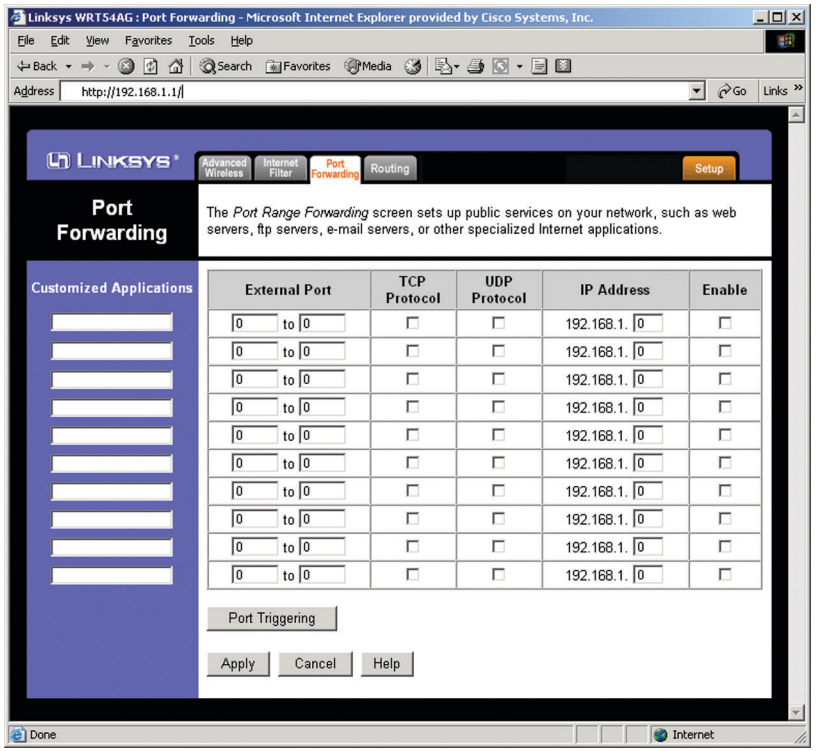


**Figure 6-26**

When users send this type of request to your network via the Internet, the Router will forward those requests to the appropriate PC. Any PC whose port is being forwarded must have its DHCP client function disabled and must have a new static IP address assigned to it because its IP address may change when using the DHCP function.

The following table shows the typical port forwarding settings for common Internet applications.

| Application | External Port | TCP | UDP |
|---|---|---|---|
| FTP | 21 | • | |
| Telnet | 23 | • | |
| SMTP | 25 | • | |
| DNS | 53 | | • |
| TFTP | 69 | | • |
| Finger | 79 | • | |
| HTTP | 80 | • | |
| POP3 | 110 | • | |
| NNTP | 119 | • | |
| SNMP | 116 | | • |

**Customized Applications** In the field provided, enter the name you wish to give each application.

**External Port** For each application, enter the number of the External Ports (the port numbers seen by users on the Internet) in the appropriate fields. (To find out the port range, check your application's documentation.) If there is only one External Port, enter its number in both External Port fields.

**TCP Protocol** Click this checkbox if you want to forward the data transmissions that use the TCP protocol.

**UDP Protocol** Click this checkbox if you want to forward the data transmissions that use the UDP protocol.

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

**Enable** Click the Enable checkbox to enable port forwarding for the relevant application.





**Port Triggering** Port Triggering is used for special Internet applications whose outgoing ports differ from the incoming ports. For this feature, the Router will watch outgoing data for specific port numbers. The Router will remember the IP address of the computer that sends a transmission requesting data, 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. Click the **Port Triggering** button to set up triggered ports, and follow these instructions:

1. Enter the Application Name of the trigger (see Figure 6-27).

2. Enter the Outgoing Port Range used by the application. Check with the Internet application for the port number(s) needed.

3. Enter the Incoming Port Range used by the application. Check with the Internet application for the port number(s) needed.

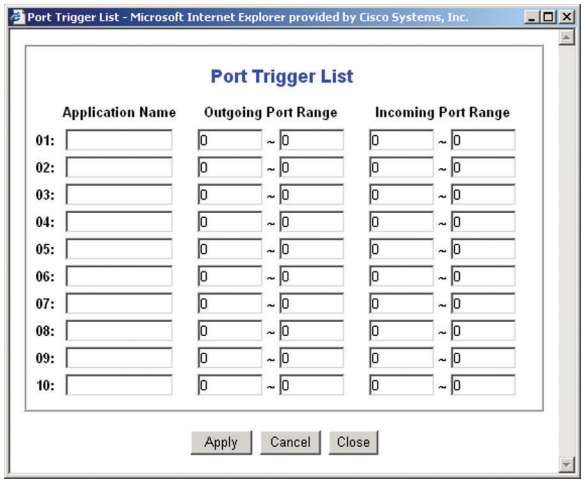


**Figure 6-27**

4. Click the **Apply** button to save your changes. Click the **Cancel** button to cancel your unsaved changes. Click the **Close** button to return to the *Port Forwarding* screen.

To save your changes on this page, click the **Apply** button. To cancel any unsaved changes on this page, click the **Cancel** button. To get more information about the features, click the **Help** button.

## Routing

On the *Routing* screen, shown in Figure 6-28, you can set the routing mode of the Router. *Gateway* mode is recommended for most users.

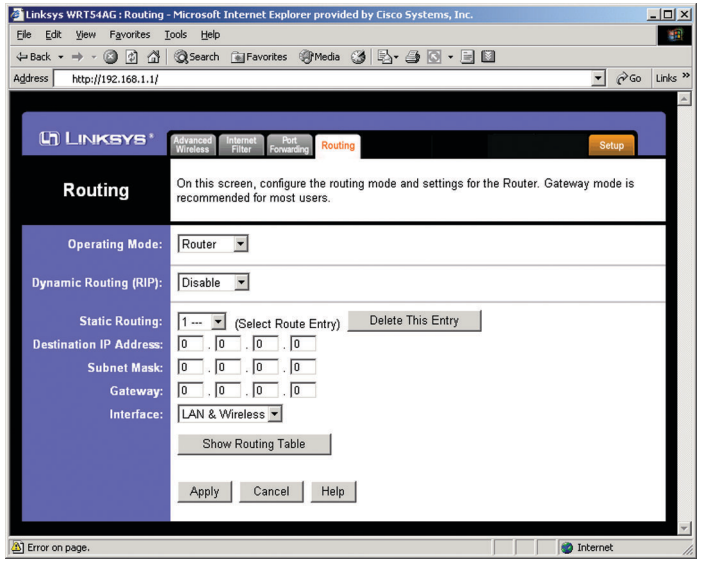


**Figure 6-28**

**Note:** The *Routing* screen and available features will vary depending on which mode you select.

To set up routing:

1. Choose the correct working mode. Select **Gateway** if the Router is hosting your network's connection to the Internet (recommended for most users). Select **Router** if the Router exists on a network with other routers.

**Note:** If you have more than one router on your network, you should select **Router** for the working mode.

2. If you selected the *Gateway* mode, click the **Apply** button. If you selected the *Router* mode, proceed to step 3.

3. For *Dynamic Routing*, the default is **Disable**. The Dynamic Routing 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. Select **Enable** to enable the Dynamic Routing feature for data transmissions.





4. To set up a static route between the Router and another network, select a number from the *Static Routing* drop-down list. (A static route is a predetermined pathway that network information must travel to reach a specific host or network.)

5. Enter the following data:

   - **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** (internal wired and wireless networks), the **WAN** (Internet), or **Loopback** (a dummy network in which one PC acts like a network-necessary for certain software programs).

6. To cancel your changes, click the **Cancel** button. To save your changes, click the **Apply** button. To get more information about the features, click the **Help** button.

To delete a static route entry:

1. From the *Static Routing* drop-down list, select the entry number of the static route.

2. Click the **Delete This Entry** button.

3. To cancel a deletion, click the **Cancel** button. To save a deletion, click the **Apply** button. To get more information about the features, click the **Help** button.