| 🗿 Wireless > MAC add      | Iress control - Microsoft Internet Explorer   | PX      |
|---------------------------|---|---------|
| File Edit View Favor      | rites Tools Help 🕜 Back 🔻 🌍 🕤 🖹 😰 🏠 🔎 Search 📌 Favorites 🤣 🍰 🗟 🦓  | 1       |
| Address 🕘 http://192.168  | 8.2.1/wireless_mac_ctrl.htm   | Links » |
|                           |   | ~       |
| BELKINGCa                 | ble/DSL Gateway Router Setup Utility  |         |
|                           | Home Help Logout Internet Status:   | d       |
| LAN Setup<br>LAN Settings | Wireless > MAC address control  |         |
| DHCP Client List          | Mac Address Control is the ability to set up a list of clients that you want to allow or deny access to the wireless network. More Info |         |
| Internet WAN              | ○ Allow ○ Deny ④ Disable  |         |
|                           |   |         |
| MAC Address               | MAC Address   |         |
| Wireless                  | << Add  |         |
| Channel and SSID          |   |         |
| Security                  | Clear Changes Apply Changes   |         |
| Use as Access Point       |   |         |
| MAC Address Control       |   |         |
| Firewall                  |   |         |
| Virtual Servers           |   |         |
| Client IP Filters         |   |         |
| DMZ                       |   |         |
| DDNS                      |   |         |
| WAN Ping Blocking         |   |         |
| Security Log              |   |         |
| Utilities                 |   |         |
| Parental Control          |   |         |
| Restart Router            |   |         |
| Restore Factory Default   |   |         |
| Save/Backup Settings      |   |         |
| Restore Previous Settings |   |         |
| Firmware Update           |   |         |
| System Settings           |   |         |
|                           |   |         |
|                           |   | *       |
| 🙆 Done                    | 🔮 Internet  |         |

## Setting up an Allow Access List

- 1. Select the "Allow" radio button (1) to begin setting up a list of computers allowed to connect to the wireless network.
- Next, in the "MAC Address" field that is blank (3), type in the MAC address of the wireless computer you want to be able to access the wireless network, then click "<<Add" (4).</li>
- **3.** Continue to do this until all of the computers you want to add have been entered.
- 4. Click "Apply Changes" (5) to finish.

## Setting up a Deny Access List

The "Deny Access" list lets you specify computers that you DO NOT want to access the network. Any computer in the list will not be allowed access to the wireless network. All others will.

- 1. Select the "Deny" radio button (2) to begin setting up a list of computers to be denied access to the wireless network.
- Next, in the "MAC Address" field that is blank (3), type in the MAC address of the wireless computer you want to deny access to the wireless network, then click "<<Add" (4).</li>

- **3.** Continue to do this until all of the computers you want to deny access to have been entered.
- **4.** Click "Apply Changes" **(5)** to finish.

## Configuring the Firewall

Your Router is equipped with a firewall that will protect your network from a wide array of common hacker attacks including:

- IP Spoofing
- Land Attack Ping of Death (PoD)
- Denial of Service (DoS)
- IP with zero length
- Smurf Attack
- TCP Null Scan
- SYN flood
- UDP flooding
- Tear Drop Attack
- ICMP defect
- RIP defect
- Fragment flooding
- •

The firewall also masks common ports that are frequently used to attack networks. These ports appear to be "stealth" meaning that for all intents and purposes, they do not exist to a would-be hacker. You can turn the firewall function off if needed; however, it is recommended that you leave the firewall enabled. Disabling the firewall protection will not leave your network completely vulnerable to hacker attacks, but it is recommended that you leave the firewall enabled.

| BELKIN  | He/DSI Gataway Poutar Satus Ittility  |
|---|---|
|   | Home Help Logout Internet Status: Constant of the   |
| LAN Setup   | Firewall >  |
| DHCP Client List<br>Internet WAN<br>Connection Type | Your Router is equipped with a firewall that will protect your network from a wide array of common<br>hacker attacks including Ping of Death (PoD) and Denial of Service (DoS) attacks. You can turn the<br>firewall function off if needed. Turning off the firewall protection will not leave your network completely |
| DNS<br>MAC Address                                  | vulnerable to hacker attacks, but it is recommended that you turn the firewall on whenever possible.  |
| Wireless<br>Channel and SSID                        | Firewall Enable / Disable > O Disable 💿 Enable  |
| Security<br>Use as Access Point                     | Clear Changes Innly Changes   |
| MAC Address Control                                 | Cical Changes Apply Changes   |
| Virtual Servers                                     |   |
| Client IP Filters<br>DMZ                            |   |
| DDNS<br>WAN Ping Blocking                           |   |
| Security Log<br>Utilities                           |   |
| Parental Control<br>Restart Router                  |   |
| Restore Factory Default<br>Save/Backup Settings     |   |
| Restore Previous Settings<br>Firmware Update        |   |
| System Settings                                     |   |
|   |   |

## **Configuring Internal Forwarding Settings**

The Virtual Servers function will allow you to route external (Internet) calls for services such as a web server (port 80), FTP server (Port 21), or other applications through your Router to your internal network. Since your internal computers are protected by a firewall, computers outside your network (over the Internet) cannot get to them because they cannot be "seen". A list of common applications has been provided in case you need to configure the Virtual Server function for a specific application. If your application is not listed, you will need to contact the application vendor to find out which port settings you need.

| BELKIN  | rle/DS | L Gateway  | y Router Setup I                           | Itility   |                  |  |                   |                 |
|---|--------|------------|--|---|------------------|--|-------------------|-----------------|
|   |        |            |  |   |                  | H  | ome  Help  Logout | Internet Status |
| LAN Setup<br>LAN Settings                       | Fire   | wall > V   | /irtual servers                            |   |                  |  |                   |                 |
| DHCP Client List                                |        | This funct | ion will allow you t<br>ETP server (Port 2 | o route external (Inte<br>21), or other applicati | ernet) calls for | services such as a web ser<br>wr Router to your internal | ver               |                 |
| Connection Type                                 |        | network. I | More Info                                  |   |                  | <u>//</u>  |                   |                 |
| DNS<br>MAC Address                              |        |            | Cle  | ar Changes  | Apply Ch         | anges  |                   |                 |
| Wireless  |        |            | Add Active Wo                              | rlds  |                  | Add  |                   |                 |
| Channel and SSID<br>Security                    |        |            | Clear entry                                | II 💌  |                  | Clear  |                   |                 |
| Use as Access Point                             |        | Enable     | Description                                | Inbound port                                      | Туре             | Private IP address                                       | Private port      |                 |
| MAC Address Control                             | 1.     |            |  |   |                  | 192.168.2.   |                   |                 |
| Virtual Servers                                 | 2.     |            |  |   | TCP ¥            | 192.168.2.   |                   | 1               |
| DMZ   | 3.     |            |  |   | TCP V            | 102 168 2  |                   | 1               |
| DDNS<br>WAN Pipa Blocking                       |        |            |  |   | TOD              | 192.100.2.   |                   |                 |
| Security Log                                    | 4.     |            |  |   |                  | 192.168.2.   |                   |                 |
| Utilities                                       | 5.     |            |  |   | TCP 🗸            | 192.168.2.   |                   |                 |
| Parental Control<br>Restart Router              | 6.     |            |  | <b></b> -   |                  | 192.168.2.   | · · · · ·         |                 |
| Restore Factory Default<br>Save/Backup Settings | 7.     |            |  | -   |                  | 192.168.2.   | -                 | 1               |
| Restore Previous Settings                       | 8.     |            |  |   | TCP ¥            | 192 168 2  |                   |                 |
| Firmware Update<br>System Settings              |        |            |  |   | TOD              |  |                   |                 |
|   | 9.     |            |  |   |                  | 192.168.2.   |                   |                 |
|   | 10.    |            |  |   | TCP 🗸            | 192.168.2.   | -                 |                 |

## Choosing an Application

Select your application from the drop-down list. Click "Add". The settings will be transferred to the next available space in the screen. Click "Apply Changes" to save the setting for that application. To remove an application, select the number of the row that you want to remove then click "Clear".

#### Manually Entering Settings into the Virtual Server

To manually enter settings, enter the IP address in the space provided for the internal (server) machine, the port(s) required to pass (use a comma between multiple ports), select the port type (TCP or UDP), and click "Apply Changes". You can only pass one port per internal IP address. Opening ports in your firewall can pose a security risk. You can enable and disable settings very quickly. It is recommended that you disable the settings when you are not using a specific application.

## Setting Client IP Filters

The Router can be configured to restrict access to the Internet, e-mail, or other network services at specific days and times. Restriction can be set for a single computer, a range of computers, or multiple computers.

|   |   |  |                          |                     |                | Home  Help                   | Logout I | nternet Status: |
|---|---|--|--------------------------|---------------------|----------------|------------------------------|----------|-----------------|
| l Setup<br>Settings<br>P Client List<br>ernet WAN                         | Firewall > Client IP f<br>The Router can be configur<br>at specific days and times. | ilters<br>ed to restrict access<br>More Info | s to the Inte            | rnet, e-mail or c   | ther network   | services                     |          |                 |
| onnection Type  | IP  | Port   | Туре                     | Block Time          | Day            | Time                         | Enable   |                 |
| AC Address<br>Vireless<br>hannel and SSID                                 | 192.168.2. ~  | ~  | O TCP<br>O UDP<br>O BOTH | ◯ Always<br>⊙ Block | SUN V          | 12:00 A.M. 💌<br>12:00 A.M. 👻 |          |                 |
| ecurity<br>se as Access Point<br>IAC Address Control                      | 192.168.2, ~  | ~  | OTCP<br>OUDP<br>OBOTH    | ○ Always<br>⊙ Block | SUN 🕶<br>SUN 🕶 | 12:00 A.M. 👻<br>12:00 A.M. 👻 |          |                 |
| Firewall<br>Artual Servers<br>Client IP Filters                           | 192.168.2. ~  | ~  | O TCP<br>O UDP<br>O BOTH | ○ Always<br>⊙ Block | SUN V          | 12:00 A.M. 🛩<br>12:00 A.M. 🛩 |          |                 |
| m2<br>DNS<br>/AN Ping Blocking<br>ecurity Log                             | 192.168.2. <mark>~</mark>   | ~  | O TCP<br>O UDP<br>O BOTH | ○ Always<br>⊙ Block | SUN 🗸<br>SUN 🗸 | 12:00 A.M. ¥<br>12:00 A.M. ¥ |          |                 |
| Vilities<br>Varental Control<br>Restart Router                            | 192.168.2,~   | ~  | O TCP<br>O UDP<br>O BOTH | ○ Always<br>⊙ Block | SUN 🗸<br>SUN 🗸 | 12:00 A.M. ¥<br>12:00 A.M. ¥ |          |                 |
| estore Factory Default<br>ave/Backup Settings<br>estore Previous Settings | 192.168.2, ~  | ~  | O TCP<br>O UDP<br>O BOTH | ○ Always<br>⊙ Block | SUN V          | 12:00 A.M. 👻<br>12:00 A.M. 💙 |          |                 |
| mware Update<br>stem Settings   |   |  |                          | Clear Ch            | anges          | Apply Chan                   | ges      |                 |

To restrict Internet access to a single computer for example, enter the IP address of the computer you wish to restrict access to in the IP fields (1). Next, enter "80" in both the port fields (2). Select "Both" (3). Select "Block" (4). You can also select "Always" to block access all of the time. Select the day to start on top (5), the time to start on top (6), the day to end on the bottom (7), and the time to stop (8) on the bottom. Select "Enable" (9). Click "Apply Changes". The computer at the IP address you specified will now be blocked from Internet access at the times you specified. Note: Be sure you have selected the correct time zone under "Utilities> System Settings> Time Zone".

| IP           | Port    | Туре            | Block Time                | Day   | Time         | Enable |
|--------------|---------|-----------------|---------------------------|-------|--------------|--------|
| 22 22        | 00 00   | Отср            | ⊖ Always                  | SUN 🔽 | 12:00 A.M. 💌 |        |
| 192.168.2.22 | 00 ~ 00 | ● UDP<br>● BOTH | <ul> <li>Block</li> </ul> | SUN 🔽 | 12:00 A.M. 💌 |        |

### Enabling the Demilitarized Zone (DMZ)

The DMZ feature allows you to specify one computer on your network to be placed outside of the firewall. This may be necessary if the firewall is causing problems with an application such as a game or video conferencing application. Use this feature on a temporary basis. The computer in the DMZ is **NOT** protected from hacker attacks.

| BELKIN  | ble/DSL Gateway Router Setup Utility  |
|---|---|
|   | Home Help Logout Internet Status: Anno 199  |
| LAN Setup<br>LAN Settings<br>DHCP Client List<br>Internet WAN<br>Connection Type<br>DNS<br>MAC Address<br>Wireless<br>Channel and SSID<br>County                      | Firewall > DMZ         DMZ         The DMZ feature allows you to specify one computer on your network to be placed outside of the NAT firewall. This may be necessary if the NAT freture is causing problems with an application such as a game or video conferencing application. Use this feature on a temporary basis. The computer in the DMZ is not protected from hacker attacks. To put a computer in the DMZ, enter the last digits of its IP address in the field below and select "Enable". Click "Submit" for the change to take effect. More Info         IP Address of Virtual DMZ Host >         Static IP         Enable |
| Security<br>Use as Access Point<br>MAC Address Control<br>FireWill<br>Virtual Servers<br>Client IP Filters<br>DMZ<br>DDNS<br>WAN Ping Blocking<br>Security Log        | I.     69.226.88.206     192.168.2     Image: Clear Changes   |
| Utilities<br>Parental Control<br>Restart Router<br>Restore Factory Default<br>Save/Backup Settings<br>Restore Previous Settings<br>Firmware Update<br>System Settings |   |

To put a computer in the DMZ, enter the last digits of its IP address in the IP field and select "Enable". Click "Apply Changes" for the change to take effect. If you are using multiple static WAN IP addresses, it is possible to select which WAN IP address the DMZ host will be directed to. Type in the WAN IP address you wish the DMZ host to direct to, enter the last two digits of the IP address of the DMZ host computer, select "Enable" and click "Apply Changes".

## Using Dynamic DNS

The Dynamic DNS service allows you to alias a dynamic IP address to a static host name in any of the many domains DynDNS.org offers, allowing your network computers to be more easily accessed from various locations on the Internet. DynDNS.org provides this service, for up to five host names, free to the Internet community. The Dynamic DNS<sup>SM</sup> service is ideal for a home website, file server, or to make it easy to access your home PC and stored files while you're at work. Using the service can ensure that your host name always points to your IP address, no matter how often your ISP changes it. When your IP address changes, your friends and associates can always locate you by visiting yourname.dyndns.org instead!

To register free for your Dynamic DNS host name, please visit <u>http://www.dyndns.org</u>.

## Setting up the Router's Dynamic DNS Update Client

You must register with DynDNS.org's free update service before using this feature. Once you have your registration, follow the directions below.

- 1. Enter your DynDNS.org user name in the "User Name" field (1).
- 2. Enter your DynDNS.org password in the "Password" field (2).
- **3.** Enter the DynDNS.org domain name you set up with DynDNS.org in the "Domain Name" field **(3)**.
- 4. Click "Update Dynamic DNS" to update your IP address.

Whenever your IP address assigned by your ISP changes, the Router will automatically update DynDNS.org's servers with your new IP address. You can also do this manually by clicking the "Update Dynamic DNS" button (4).

| Firewall > DDNS   |   |  |
|---|---|--|
| DDNS  |   |  |
| Dynamic DNS allows you t<br>change), allowing your rou<br>Internet without knowing y<br>(http://www.dyndns.or | to provide Internet u<br>uter and applications<br>your current IP addre<br>rg). You must create | ers with a fixed domain name (instead of an IP address which may periodically<br>set up in your router's virtual servers to be accessed from various locations on the<br>ss. Your Wireless Router supports dynamic DNS through DynDNS.org<br>an account before using this service. More Info |
| User Name >   | username  |  |
| Password >  | •••••   |  |
| Domain Name >   | me@dyndns.org   |  |
|   | Clear Chang   | es Update Dynamic DNS  |

#### Blocking an ICMP Ping

Computer hackers use what is known as "pinging" to find potential victims on the Internet. By pinging a specific IP address and receiving a response from the IP address, a hacker can determine that something of interest might be there. The

Router can be set up so it will not respond to an ICMP ping from the outside. This heightens your Router's security level.

| BELKIN  | He/DSI Gateway Router Setup Utility  |
|---|--|
| DEERINGCO                                       | Home Help Logout Internet Status:  |
| LAN Setup                                       | Firewall > WAN Ping Blocking   |
| DHCP Client List                                | ADVANCED FEATURE! You can configure the Router not to respond to an ICMP Ping (ping to the WAN |
| Connection Type                                 | port, inis offers a neightened level of security, more info                                    |
| DNS<br>MAC Address                              | Block ICMP Ping >  |
| Wireless  |  |
| Security  | Clear Changes Apply Changes  |
| Use as Access Point<br>MAC Address Control      |  |
| Firewall  |  |
| Client IP Filters                               |  |
| DMZ<br>DDNS                                     |  |
| WAN Ping Blocking<br>Security Log               |  |
| Utilities                                       |  |
| Parental Control<br>Restart Router              |  |
| Restore Factory Default<br>Save/Backup Settings |  |
| Restore Previous Settings                       |  |
| Firmware update<br>System Settings              |  |
|   |  |

To turn off the ping response, select "Block ICMP Ping" (1) and click "Apply Changes". The Router will not respond to an ICMP ping.

#### Utilities

The "Utilities" screen lets you manage different parameters of the Router and perform certain administrative functions.

|   | 11-001 Cottome Banks School 11010   | > |
|---|---|---|
| BELKINGC  | Home   Help   Logout Internet Status: Anno 1997   | Ĺ |
| LAN Setup<br>LAN Settings<br>DHCP Client List<br>Internet WAN<br>Connection Type<br>DNS<br>MAC Address<br>Wireless<br>Channel and SSID<br>Security<br>Use as Access Point<br>MAC Address Control          | <ul> <li>Utilities &gt;         This screen lets you manage different parameters of the Router and perform certain administrative functions.         Parental Control             Belkin's Parental Control protects you and your kids from objectionable content on the web.Belkin's Parental Control is the filter you set up.             Now you can surf the net with your kids even when you are not there.         Restart Router             Sometimes it may be necessary to Reset or Reboot the Router if it begins working improperly. Resetting or Rebooting the Router will not             delete any of your configuration settings.         Restore Factory Defaults             Using this option will restore all of the settings in the Router to the factory (default) settings. It is recommended that you backup your     </li> </ul>   |   |
| Firewall Virtual Servers Client IP Filters DMZ DDNS WAN Ping Blocking Security Log Utilities Parental Control Restart Router Restore Factory Default Save/Backup Settings Rirmware Update System Settings | <ul> <li>Save/Backup Current Settings         You consave your current configuration by using this feature. Saving your configuration will allow you to restore it later if your settings are         lost or changed. It is recommended that you backup your current configuration before performing a firmware update.</li> <li>Restore Previous Saved Settings         This option will allow you to restore a previously saved configuration.</li> <li>Firmware Update         From time to time, Belkin may release new versions of the Router's firmware. Firmware updates contain feature improvements and fixes to         problems that may have existed.</li> <li>System Settings         The System Settings page is where you can enter a new administrator password , set the time zone, enable remote management and turn         on and off the NAT function of the Router.</li> </ul> |   |
|   |   | Y |

## Parental Control

See the included Parental Control User Manual for more information on the Parental Control feature.

#### Restarting the Router

Sometimes it may be necessary to restart or reboot the Router if it begins working improperly. Restarting or rebooting the Router will NOT delete any of your configuration settings.



## Restarting the Router to Restore Normal Operation

1. Click the "Restart Router" button.

2. The following message will appear. Click "OK".

| Micro | oft Internet Explorer  | ×            |
|-------|--|--------------|
| ?     | Are you sure you want to restart the Router? Restarting the Router will not affect your configuratio | ) <b>n</b> . |
|       | OK Cancel  |              |

**3.** The following message will appear. Restarting the Router can take up to 60 seconds. It is important not to turn off the power to the Router during the restart.

| Micr | osof | ft Internet Explorer 🛛 🔀   |
|------|------|--|
| 1    | 7    | Allow up to 60 seconds for the Router to restart. Do not power down the Router before reset completes. |
|      |      | ОК   |

4. A 60-second countdown will appear on the screen. When the countdown reaches zero, the Router will be restarted. The Router home page should appear automatically. If not, type in the Router's address (default = 192.168.2.1) into the navigation bar of your browser.

#### **Restoring Factory Default Settings**

Using this option will restore all of the settings in the Router to the factory (default) settings. It is recommended that you back up your settings before you restore all of the defaults.



**1.** Click the "Restore Defaults" button.

2. The following message will appear. Click "OK".



**3.** The following message will appear. Restoring the defaults includes restarting the Router. It can take up to 60 seconds. It is important not to turn the power to the Router off during the restart.

| Micro | osof | ft Internet Explorer 🛛 🔀  |
|-------|------|---|
| 1     | 7    | Restoring the default settings will take up to 60 seconds. Do not turn off power to the Router during this process. |
|       |      | ОК  |

4. A 60-second countdown will appear on the screen. When the countdown reaches zero, the Router's defaults will be restored. The Router home page should appear automatically. If it does not, type in the Router's address (default = 192.168.2.1) into the navigation bar of your browser.

#### Saving a Current Configuration

You can save your current configuration by using this feature. Saving your configuration will allow you to restore it later if your settings are lost or changed. It is recommended that you back up your current configuration before performing a firmware update.



1. <u>Click "Save". A window called "File Download" will open.</u> Click "Save".

| File Dow | rnload 🔀   |
|----------|--|
| Do you   | ı want to save this file?  |
|          | Name: user.conf<br>Type: Unknown File Type<br>From: 192.168.2.1<br>Save Cancel   |
| 1        | While files from the Internet can be useful, some files can potentially<br>harm your computer. If you do not trust the source, do not save this<br>file. <u>What's the risk?</u> |

2. A window will open that allows you to select the location where you want to save the configuration file. Select a location. You can name the file anything you want, or use the default name "Config". Be sure to name the file so you can locate it yourself later. When you have selected the location and name of the file, click "Save".

| Save As                |  |                |   |     |     | ? 🛛    |
|------------------------|--|----------------|---|-----|-----|--------|
| Save in:               | 🞯 Desktop  |                | ~ | G 🕸 | ۳ 💴 |        |
| My Recent<br>Documents | Hy Documents<br>My Computer<br>My Network Place<br>Network Connect | es<br>itions   |   |     |     |        |
| Desktop                |  |                |   |     |     |        |
| My Documents           |  |                |   |     |     |        |
| My Computer            |  |                |   |     |     |        |
|                        | File name:   | user           |   |     | ~   | Save   |
| My Network             | Save as type:  | .conf Document |   |     | *   | Cancel |

3. When the save is complete, you will see the window below. Click "Close".

| Download com      | plete 📃 🗖 🔀                         |
|-------------------|-------------------------------------|
| Dowr              | nload Complete                      |
| Saved:            |                                     |
| user.conf from 1  | 92.168.2.1                          |
| Downloaded:       | 5.99 KB in 1 sec                    |
| Download to:      | C:\Documents and Settings\user.conf |
| Transfer rate:    | 5.99 KB/Sec                         |
| 🗌 Close this dial | og box when download completes      |
|                   |                                     |
|                   | Open Open Folder Close              |
|                   |                                     |

The configuration is now saved.

## Restoring a Previous Configuration

This option will allow you to restore a previously saved configuration.

| Utilities > Restore previous saved settings                             |
|---|
| This option will allow you to restore a previously saved configuration. |
| Browse  |
|   |
| Restore   |

1. Click "Browse". A window will open that allows you to select the location of the configuration file. All configuration files end with a ".bin". Locate the configuration file you want to restore and double-click on it.

| Choose file  |   |  |   |          | ? 🗙    |
|--|---|--|---|----------|--------|
| Look in:   | 🞯 Desktop   |  | • | G 🕸 📂 🛄• |        |
| My Recent<br>Documents<br>Desktop<br>My Documents<br>My Computer | My Document<br>My Computer<br>My Network P<br>Computer<br>User.conf<br>Type:<br>Date I<br>Size: | s<br>laces<br>CONF File<br>Modified: 2/1/2006 3:26 PM<br>5.99 KB |   |          |        |
| My Network   | File name:  | user   |   | •        | Open   |
| Places   | Files of type:  | All Files (*.*)  |   | -        | Cancel |

2. You will be asked if you want to continue. Click "OK".



**3.** A reminder window will appear. It will take up to 60 seconds for the configuration restoration to complete. Click "OK".

| After settings are restored, the Router may not respond<br>to commands for as long as one minute. |
|---|
| This is normal. Do not power down the Router during this time                                     |

A 60-second countdown will appear on the screen. When the countdown reaches zero, the Router's configuration will be restored. The Router's home page should appear automatically. If not, type in the Router's address (default = 192.168.2.1) into the navigation bar of your browser.

#### **Updating the Firmware**

From time to time, Belkin may release new versions of the Router's firmware. Firmware updates contain feature improvements and fixes to problems that may have existed. When Belkin releases new firmware, you can download the firmware from the Belkin update website and update your Router's firmware to the latest version.

| Utilities > Firmware  | update   |  |
|---|--|--|
| From time to time, Belkin<br>contain improvements and<br>is a new firmware update | nay release new versions of the Router's firmware. Firmware updates<br>fixes to problems that may have existed. Click the link below to see if there<br>available for this Router. |  |
| NOTE: Please backup you<br>to go to the Save/Backup                               | current settings before updating to a new version of firmware. Click Here<br>current settings page.  |  |
| Check For New<br>Firmware Version >   | Check Firmware   |  |
| Update Firmware >   | Browse   |  |
|   | Update   |  |

#### **Checking for a New Version of Firmware**

The "Check Firmware" (1) button allows you to instantly check for a new version of firmware. When you click the button, a new browser window will appear informing you that either no new firmware is available or that there is a new version available. If a new version is available, you will have the option to download it.

#### Downloading a New Version of Firmware

If you click the "Check Firmware" button and a new version of firmware is available, you will see a screen similar to the one below:



## [use current image]

1. To download the new version of firmware, click "Download".

2. A window will open that allows you to select the location where you want to save the firmware file. Select a location. You can name the file anything you want, or use the default name. Be sure to locate the file in a place where you can locate it yourself later. When you have selected the location, click "Save".

| Save As                |  |               |   |     |       | ? 🔀    |
|------------------------|--|---------------|---|-----|-------|--------|
| Save in:               | 🞯 Desktop                                      |               | * | 6 🕫 | • 🖽 🥙 |        |
| My Recent<br>Documents | My Documents<br>My Computer<br>My Network Play | :es           |   |     |       |        |
| My Documents           |  |               |   |     |       |        |
| My Computer            |  |               |   |     |       |        |
| <b>S</b>               | File name:                                     | config        |   |     | ~     | Save   |
| My Network             | Save as type:                                  | .bin Document |   |     | *     | Cancel |

3. When the save is complete, you will see the following window. Click "Close".



The download of the firmware is complete. To update the firmware, follow the next steps in "Updating the Router's Firmware".

#### Updating the Router's Firmware

1. In the "Firmware Update" page, click "Browse" (2). A window will open that allows you to select the location of the firmware update file.

| Choose file                                       |  | ? 🔀            |
|---|--|----------------|
| Look in:  | My Documents 💽 🔇 🎓 🖽 -   |                |
| My Recent<br>Documents<br>Desktop<br>My Documents | My Music<br>My Pictures<br>F5D6231_4P_v0.00.012.df<br>Type: DLF File<br>Date Modified: 10/9/2002 4:34 AM<br>Size: 808 KB |                |
| My Computer                                       |  |                |
| My Network<br>Places                              | File name:         F5D6231_4P_v0.00.012           Files of type:         All Files (*.*)                                 | Open<br>Cancel |

- **2.** Browse to the firmware file you downloaded. Select the file by double-clicking on the file name.
- **3.** The "Update Firmware" box will now display the location and name of the firmware file you just selected. Click "Update".

| Utilities > Firmware update  |
|--|
| From time to time, Belkin may release new versions of the Router's firmware. Firmware updates contain improvements and fixes to problems that may have existed. Click the link below to see if there is a new firmware update available for this Router. |
| NOTE: Please backup your current settings before updating to a new version of firmware. Click Here<br>to go to the Save/Backup current settings page.  |
| Check For New<br>Firmware Version >  |
| Update Firmware > C\Documents and Settings\N Browse  |
| Update   |

4. You will be asked if you are sure you want to continue. Click "OK".

| Microsof | ft Internet Explorer 🛛 🔀                          |
|----------|---|
| 2        | Are you sure you want to continue with upgrading? |
|          | OK Cancel   |

**5.** You will see one more message. This message tells you that the Router may not respond for as long as one minute as the firmware is loaded into the Router and the Router is rebooted. Click "OK".

| Microso | ft Internet Explorer 🛛 🔀   |
|---------|--|
| 1       | At the end of the upgrade, the Router may not respond to commands for as long as one minute. This is normal. Do<br>not turn off or reboot the Router during this time.<br>OK |

A 60-second countdown will appear on the screen. When the countdown reaches zero, the Router firmware update will be complete. The Router home page should appear automatically. If not, type in the Router's address (default = 192.168.2.1) into the navigation bar of your browser.

#### Changing System Settings

The "System Settings" page is where you can enter a new administrator password, set the time zone, enable remote management, and turn on and off the NAT function of the Router.

#### Setting or Changing the Administrator Password

The Router ships with NO password entered. If you wish to add a password for greater security, you can set a password here. Write down your password and keep it in a safe place, as you will need it if you need to log into the Router in the future. It is also recommended that you set a password if you plan to use the remote management feature of your Router.

| Administrator Password:   |  |
|---|--|
| The Router ships with NO password er can set a password here. More Info | ntered. If you wish to add a password for more security, you |
| - Type in current Password >  |  |
| - Type in new Password >  |  |
| - Confirm new Password >  |  |
| - Login Timeout >   | 10 (1-99 minutes)  |

## Changing the Login Time-Out Setting

The login time-out option allows you to set the period of time that you can be logged into the Router's advanced setup interface. The timer starts when there has been no activity. For example, imagine you have made some changes in the advanced setup interface, then left your computer alone without clicking "Logout". Assuming the time-out is set to 10 minutes, 10 minutes after you leave, the login session will expire. You will have to log into the Router again to make any more changes. The login time-out option is for security purposes and the default is set to 10 minutes. **Note:** Only one computer can be logged into the Router's advanced setup interface at one time.

#### Setting the Time and Time Zone

The Router keeps time by connecting to a Simple Network Time Protocol (SNTP) server. This allows the Router to synchronize the system clock to the global Internet. The synchronized clock in the Router is used to record the security log and control client filtering. Select the time zone that you reside in. You have the option to select a primary and a backup NTP server to keep your Router's clock synchronized. Select your desired NPT server from the drop-down box, or simply keep it as is.

If you reside in an area that observes daylight saving, then place a check mark in the box next to "Enable Daylight Saving". The system clock may not update immediately. Allow at least 15 minutes for the Router to contact the time servers on the Internet and get a response. You cannot set the clock yourself.

#### Time and Time Zone:

#### February 1, 2006 3:44:56 PM

Please set your time Zone. If you are in an area that observes daylight saving check this box. More Info

| - Time Zone >                              | (GMT-08:00) Pacific Time (US & Canada); Tijuana 🛛 💊 |  |  |
|--|---|--|--|
| - Daylight Savings >                       | Automatically Adjust Daylight Saving                |  |  |
| - Primary NTP Server >                     | 192.43.244.18-North America 💌                       |  |  |
| <ul> <li>Backup NTP Server &gt;</li> </ul> | 132.163.4.102-North America 💌                       |  |  |

#### **Enabling Remote Management**

Before you enable this advanced feature of your Belkin Router, **MAKE SURE YOU HAVE SET THE ADMINISTRATOR PASSWORD**. Remote management allows you to make changes to your Router's settings from anywhere on the Internet. There are two methods of remotely managing the Router. The first is to allow access to the Router from anywhere on the Internet by selecting "Any IP address can remotely manage the Router". By typing in your WAN IP address from any computer on the Internet, you will be presented with a login screen where you need to type in the password of your Router.

The second method is to allow a specific IP address only to remotely manage the Router. This is more secure, but less convenient. To use this method, enter the IP address you know you will be accessing the Router from in the space provided and select "Only this IP address can remotely manage the Router". Before you enable this function, it is STRONGLY RECOMMENDED that you set your administrator password. Leaving the password empty will potentially open your Router to intrusion.

Advanced Feature: The "Remote Access Port" option allows you to configure the desired "Remote Access Port for Remote Management" feature. The default access port is set to port 80.

| Remote Management:  |  |
|---|--|
| ADVANCED FEATURE! Remote manager<br>from anywhere on the Internet. Before yo<br>ADMINISTRATOR PASSWORD. More In | nent allows you to make changes to your Router's settings<br>ou enable this function, <b>MAKE SURE YOU HAVE SET THE</b><br>I <mark>fo</mark> |
| 🗌 Any IP address can remotely ma  | nage the router.   |
| <ul> <li>Only this IP address can remotely<br/>manage the router &gt;</li> </ul>                                | ,,,,,,,  |
| - Remote Access Port >  | 80   |

#### Enabling/Disabling NAT (Network Address Translation)

**Note:** This advanced feature should be employed by advanced users only. Before enabling this function, MAKE SURE YOU HAVE SET THE ADMINISTRATOR PASSWORD. Network Address Translation (NAT) is the method by which the Router shares the single IP address assigned by your ISP with the other computers on your network. This function should only be used if your ISP assigns you multiple IP addresses or you need NAT disabled for an advanced system configuration. If you have a single IP address and you turn NAT off, the computers on your network will not be able to access the Internet. Other problems may also occur. Turning off NAT will not affect your firewall functions.

NAT Enabling:

ADVANCED FEATURE! Allows you to turn the Network Address Translation feature off. In almost every case you would NOT want to turn this feature off. More Info

- NAT Enable / Disable >

● Enable ○ Disable

#### Enabling/Disabling UPnP

UPnP (Universal Plug-and-Play) is yet another advanced feature offered by your Belkin Router. It is a technology that offers seamless operation of voice messaging, video messaging, games, and other applications that are UPnPcompliant. Some applications require the Router's firewall to be configured in a specific way to operate properly. This usually requires opening TCP and UDP ports, and in some instances, setting trigger ports. An application that is UPnPcompliant has the ability to communicate with the Router, basically "telling" the Router which way it needs the firewall configured. The Router ships with the UPnP feature disabled. If you are using any applications that are UPnPcompliant, and wish to take advantage of the UPnP features, you can enable the UPnP feature. Simply select "Enable" in the "UPnP Enabling" section of the "Utilities" page. Click "Apply Changes" to save the change.

#### **UPNP Enabling:**

ADVANCED FEATURE! Allows you to turn the UPNP feature of the Router on or off. If you use applications that support UPnP, enabling UPnP will allow these applications to automatically configure the router. More Info

- UPNP Enable / Disable > O Enable O Disable

#### Enabling/Disabling Auto Firmware Update

This innovation provides the Router with the built-in capability to automatically check for a new version of firmware and alert you that the new firmware is available. When you log into the Router's advanced interface, the Router will

perform a check to see if new firmware is available. If so, you will be notified. You can choose to download the new version or ignore it.



#### Manually Configuring Network Settings

Set up the computer that is connected to the cable or DSL modem FIRST using these steps. You can also use these steps to add computers to your Router after the Router has been set up to connect to the Internet.

#### Manually Configuring Network Settings in Mac OS up to 9.x

- 1. Pull down the Apple menu. Select "Control Panels" and select "TCP/IP".
- 2. You will see the TCP/IP control panel. Select "Ethernet Built-In" or "Ethernet" in the "Connect via:" drop-down menu (1).

|         |               |          | (1)              |   |
|---------|---------------|----------|------------------|---|
| Catura  | Connect via:  | Ethernet | \$               |   |
| - Setup | Configure :   | Manually | \$               |   |
|         |               |          |                  |   |
|         | IP Address:   | I        |                  |   |
|         | Subnet mask:  |          |                  |   |
| Ro      | uter address: |          |                  |   |
|         |               |          | Search domains : |   |
| Name :  | server addr.: |          |                  | 1 |
|         |               |          |                  |   |
|         |               |          |                  |   |
| 0       |               |          |                  |   |

**3.** Next to "Configure" **(2)**, if "Manually" is selected, your Router will need to be set up for a static IP connection type. Write the address information in the table below. You will need to enter this information into the Router.

| IP address:          |  |
|----------------------|--|
| Subnet Mask:         |  |
| Router Address:      |  |
| Name Server Address: |  |

**4.** If not already set, at "Configure:", choose "Using DHCP Server". This will tell the computer to obtain an IP address from the Router.

| - Setup |             |                   |    |
|---------|-------------|-------------------|----|
|         | Configure : | Using DHCP Server | \$ |

5. Close the window. If you made any changes, the following window will appear. Click "Save".

| Save changes to the current configuration? |
|--|
|  |
| Don't Save Cancel Save                     |

Restart the computer. When the computer restarts, your network settings are now configured for use with the Router.

## Manually Configuring Network Settings in Mac OS X

1. <u>Click on the "System Preferences" icon.</u>



2. <u>Select "Network" (1) from the "System Preferences</u>" menu.



3. Select "Built-in Ethernet" (2) next to "Show" in the Network menu.

| v: Built-in Ethernet                     | J                                 |
|--|-----------------------------------|
| TCP/IP PPPoE Ar                          | ppleTalk Proxies                  |
| Configure: Using DHCP                    | *                                 |
|  | Domain Name Servers (Optional)    |
| IP Address:<br>(Provided by DHCP Server) |                                   |
| Subnet Mask: 255.255.255.0               |                                   |
| Router: 10.10.2.1                        | Search Domains (Optional)         |
| DHCP Client ID: (Optional)               |                                   |
| Ethernet Address: 00:03:93:0b:c6:d4      | Example: apple.com, earthlink.net |

- 4. Select the "TCP/IP" tab (3). Next to "Configure" (4), you should see "Manually" or "Using DHCP". If you do not, check the PPPoE tab (5) to make sure that "Connect using PPPoE" is NOT selected. If it is, you will need to configure your Router for a PPPoE connection type using your user name and password.
- 5. If "Manually" is selected, your Router will need to be set up for a static IP connection type. Write the address information in the table below. You will need to enter this information into the Router.

| IP address:          |  |
|----------------------|--|
| Subnet Mask:         |  |
| Router Address:      |  |
| Name Server Address: |  |

6. If not already selected, select "Using DHCP" next to "Configure" (4), then click "Apply Now".

## Your network settings are now configured for use with the Router.

#### Manually Configuring Network Settings in Windows 2000, NT, or XP

- 1. Click "Start", "Settings", then "Control Panel".
- 2. Double-click on the "Network and dial-up connections" icon (Windows 2000) or the "Network" icon (Windows XP).
- **3.** Right-click on the "Local Area Connection" associated with your network adapter and select "Properties" from the drop-down menu.

**4.** In the "Local Area Connection Properties" window, click "Internet Protocol (TCP/IP)" and click the "Properties" button. The following screen will appear:

| ernet Protocol (TCP/IP) Prop   | erties ?  |  |  |
|--|---|--|--|
| eneral   |   |  |  |
| You can get IP settings assigned au<br>this capability. Otherwise, you need t<br>the appropriate IP settings.  | omatically if your network supports<br>o ask your network administrator for |  |  |
| Obtain an IP address automatically   |   |  |  |
| Ose the following IP address: −  |   |  |  |
| IP address:  | 64 . 125 . 22 . 15  |  |  |
| Subnet mask:   | 255.0.0.0   |  |  |
| Default gateway:   | 64 . 125 . 22 . 1   |  |  |
| Obtain DNS server address aut  | omatically  |  |  |
| <ul> <li>Our Sector S</li></ul> | ddresses:   |  |  |
| Preferred DNS server:  | 64 . 25 . 22 . 102  |  |  |
| Alternate DNS server:  | 64 . 25 . 22 . 103  |  |  |
| Advanced   |   |  |  |
|  | OK Cancel   |  |  |

**5.** If "Use the following IP address" **(2)** is selected, your Router will need to be set up for a static IP connection type. Write the address information the table below. You will need to enter this information into the Router.

| IP address:           |  |
|-----------------------|--|
| Subnet Mask:          |  |
| Default gateway:      |  |
| Preferred DNS server: |  |
| Alternate DNS server: |  |

6. If not already selected, select "Obtain an IP address automatically" (1) and "Obtain DNS server address automatically" (3). Click "OK".

## Your network settings are now configured for use with the Router.

## Manually Configuring Network Settings in Windows 98 or Me

- **1.** Right-click on "My Network Neighborhood" and select "Properties" from the drop-down menu.
- 2. Select "TCP/IP -> settings" for your installed network adapter. You will see the following window.

| TCP/IP Properties  |                    | ? ×           |  |  |
|--|--------------------|---------------|--|--|
| Bindings Ac  | Ivanced            | NetBIOS       |  |  |
| DNS Configuration Gateway  | WINS Configuration | on IP Address |  |  |
| An IP address can be automatically assigned to this computer.<br>If your network does not automatically assign IP addresses, ask<br>your network administrator for an address, and then type it in<br>the space below. |                    |               |  |  |
| ⊙ <u>O</u> btain an IP address a   | utomatically       |               |  |  |
|  |                    |               |  |  |
| JP Address:  |                    | ]             |  |  |
| Sybnet Mask:   |                    | ]             |  |  |
|  |                    |               |  |  |
| Detect connection to network media   |                    |               |  |  |
|  |                    |               |  |  |
|  | ОК                 | Cancel        |  |  |

- **3.** If "Specify and IP address" is selected, your Router will need to be set up for a static IP connection type. Write the address information in the table below. You will need to enter this information into the Router.
- 4. Write the IP address and subnet mask from the "IP Address" tab (3).
- 5. Click the "Gateway" tab (2). Write the gateway address down in the chart.
- 6. Click the "DNS Configuration" tab (1). Write the DNS address(es) in the chart.

| IP address:           |  |
|-----------------------|--|
| Subnet Mask:          |  |
| Default gateway:      |  |
| Preferred DNS server: |  |
| Alternate DNS server: |  |

7. If not already selected, select "Obtain IP address automatically" on the IP address tab. Click "OK".

Restart the computer. When the computer restarts, your network settings are now configured for use with the Router.

#### **Recommended Web Browser Settings**

In most cases, you will not need to make any changes to your web browser's settings. If you are having trouble accessing the Internet or the Web-Based Advanced User Interface, then change your browser's settings to the recommended settings in this section.

## Microsoft<sup>®</sup> Internet Explorer 4.0 or Higher

- 1. Start your web browser. Select "Tools" then "Internet Options". IE6\_Internet\_Options.jpg
- In the "Internet Options" screen, there are three selections: "Never dial a connection", "Dial whenever a network connection is not present", and "Always dial my default connection". If you can make a selection, select "Never dial a connection". If you cannot make a selection, go to the next step.



3. Under the "Internet Options" screen, click on "Connections" and select "LAN Settings...".

**4.** Make sure there are no check marks next to any of the displayed options: "Automatically detect settings", "Use automatic configuration script", and "Use a proxy server". Click "OK". Then click "OK" again in the "Internet Options" page.

| Local Area Ne                                   | twork (LAI   | N) Settings  |                             | ? 🗙    |
|---|--|--|-----------------------------|--------|
| Automatic con<br>Automatic con<br>use of manual | figuration<br>figuration ma<br>settings, dis<br>ally detect se | ay override manual se<br>able automatic config<br>ttings | ttings. To ensu<br>uration. | re the |
| Use autom<br>Address                            | atic configura   | ation script   |                             |        |
| Proxy server<br>Use a prox<br>dial-up or V      | y server for<br>PN connection                                  | your LAN (These sett<br>ons).                            | ings will not app           | ly to  |
| Address;  | proxy serve  | Port:  | Advance                     | ed]    |
|   |  |  | <u> </u>                    | ncel   |

## Netscape<sup>®</sup> Navigator<sup>®</sup> 4.0 or Higher

- 1. Start Netscape. Click on "Edit" then "Preferences".
- 2. In the "Preferences" window, click on "Advanced" then select "Proxies". In the "Proxies" window, select "Direct connection to the Internet".

| Category     Proxies       Category     Proxies       Appearance<br>Forts<br>Colves     Configue Provise to Access the Internet       Corriert Packs     Configue Provise to reduce traffic.       Navgator     O Direct connection to the Internet       D Composer     Mail and Newsgroups       D Instant Messenger     Derives and Sociality       D Instant Messenger     EfP Proxy.       Prives and Sociality     Gother Proxy.       Proves     Software Installati       Software Installati     SQEX V5 Host:       Port:     No Proxy for: |  |   |  |
|---|--|---|--|
|   | Category   | Proxies   |  |
| Automatic proxy configuration URL:     Relocal  | <ul> <li>Appearance<br/>Fonts<br/>Colors<br/>Themes<br/>Content Packs<br/>D Navigator<br/>b Mail and Newsgroups<br/>b Instant Messenger<br/>b Mail and Newsgroups<br/>b Instant Messenger<br/>D Provey and Security<br/>Cache<br/>Provies<br/>Software Installati<br/>Mouse Wheel<br/>System<br/>Diffine and Disk Space</li> </ul> | Configure Provies to Access the Internet A network proxy provides additional security betwee Internet Provises can alice increase performance be using ocches to reduce traffic Manual proxy configuration ETP Proxy: | en your computer and the<br>etween multiple networks, by<br>Port 0<br>Port 0 |

## Troubleshooting

### Installation CD does not automatically start.

If the CD-ROM does not start the Easy Install Wizard automatically, it could be that the computer is running other applications that are interfering with the CD drive.

- 1. If the Easy Install Wizard screen does not appear within 15-20 seconds, open up your CD-ROM drive by double-clicking on the "My Computer" icon that is located on your desktop.
- **2.** Next, double-click on the CD-ROM drive that the Easy Installation CD has been placed in to start the installation.
- **3.** The Easy Install Wizard should start within a few seconds. If, instead, a window appears showing the files on the CD, double-click on the icon labeled "EasyInstall.exe".
- **4.** If the Easy Install Wizard still does not start, reference the section titled "Manually Configuring Network Settings" (page xx [confirm page no. ]) of this User Manual for an alternative setup method).

## Easy Install Wizard cannot find my Router.

If the Easy Install Wizard is not able to find the Router during the installation process, please check the following items:

- 1. If the Easy Install Wizard is not able to find the Router during the installation process, there may be third-party firewall software installed on the computer attempting to access the Internet. Examples of third-party firewall software are ZoneAlarm, BlackICE PC Protection, McAfee Personal Firewall, and Norton Personal Firewall. If you do have firewall software installed on your computer, please make sure that you properly configure it. You can determine if the firewall software is preventing Internet access by temporarily turning it off. If, while the firewall is disabled, Internet access works properly, you will need to change the firewall settings to function properly when it is turned on. Please refer to the instructions provided by the publisher of your firewall software for instructions on configuring the firewall to allow Internet access.
- 2. Unplug power to the Router for 10 seconds, and then plug the power back into the Router. Ensure that the Router's Power light is on; it should be solid Blue. If not, check to make sure that the AC adapter is connected to the Router and plugged into a wall outlet.
- **3.** Ensure that you have a cable (use the cable included with the Router) connected between (1) the network (Ethernet) port on the back of the computer and (2) one of the LAN ports, labeled "1" through "4", on the back of the Router.

**Note:** The computer should NOT be connected to the port labeled "Internet/WAN" on the back of the Router.

**4.** Try shutting down and restarting your computer, then rerunning the Easy Install Wizard.

If the Easy Install Wizard is still unable to find the Router, reference the section titled "Manually Configuring Network Settings" for installation steps.

## Easy Install cannot connect my Router to the Internet.

If the Easy Install Wizard is not able to connect the Router to the Internet, please check the following items:

- Use the troubleshooting suggestions within the Easy Install Wizard. If the troubleshooting screen does not open automatically, click on the "Troubleshoot" button in the lower, right-hand corner of the Easy Install Wizard window.
- If your ISP requires a user name and password, make sure that you have typed in your user name and password correctly. Some user names require that the ISP's domain may be at the end of the name. Example: "myname@myisp.com". The "@myisp.com" part of the user name may need to be typed as well as your user name.

If you continue to have no Internet connection, reference the section titled "Manually Configuring Network Settings" (page xx of this User Manual for an alternative setup method).

- The Easy Install Wizard completed installation, but my web browser doesn't work.
- I am unable to connect to the Internet. The "WAN" light on my Router is off, and the "Connected" light is blinking.

If you cannot connect to the Internet, and the "WAN" light is off, and the "Connected" light is blinking, the problem may be that your modem and Router are not connected properly.

 Make sure the network cable between the modem and the Router is connected. We strongly recommend using the cable that was supplied with your cable or DSL modem for this purpose. The cable should be connected at one end to the Router's "Internet/WAN" port, and at the other end to the network port on your modem.

- 2. Unplug the cable or DSL modem from its power source for three minutes. After three minutes, plug the modem back into its power source. This may force the modem to properly recognize the Router.
- **3.** Unplug the power to your Router, wait 10 seconds, and then reconnect the power. This will cause the Router to reattempt communication with the modem. If the "WAN" light on the Router is not lit after completing these steps, please contact Belkin Technical Support.
- 4. Try shutting down and restarting your computer.
- The Easy Install Wizard completed installation, but my web browser doesn't work.
- I am unable to connect to the Internet. The "WAN" light on my Router is on, and the "Connected" light is blinking.
- 1. If you cannot connect to the Internet, the "WAN" light is on, and the "Connected" light is blinking, the problem may be that your connection type may not match the ISP's connection.
- 2. If you have a "static IP address" connection, your ISP must assign you the IP address, subnet mask, and gateway address. Please refer to the section entitled "Alternate Setup Method" for details on changing this setting.
- 3. If you have a "PPPoE" connection, your ISP will assign you a user name and password and sometimes a service name. Make sure the Router's connection type is configured to PPPoE and the settings are entered properly. Please refer to the section entitled "Alternate Setup Method" for details on changing this setting.

**4.** You may need to configure your Router to meet the specific requirements of your ISP. To search our knowledge base for ISP-specific issues, go to: http://web.belkin.com/support and type in "ISP".

If you are still unable to access the Internet after verifying these settings, please contact Belkin Technical Support.

- The Easy Install Wizard completed, but my web browser doesn't work.
- I am unable to connect to the Internet. The "WAN" light on my Router is blinking, and the "Connected" light is solid.
- 1. If the "WAN" light is blinking, and the "Connected" light is solid, but you are unable to access the Internet, there may be third-party firewall software installed on the computer attempting to access the Internet. Examples of third-party firewall software are ZoneAlarm, BlackICE PC Protection, McAfee Personal Firewall, and Norton Personal Firewall.
- 2. If you do have firewall software installed on your computer, please make sure that you properly configure it. You can determine if the firewall software is preventing Internet access by temporarily turning it off. If, while the firewall is disabled, Internet access works properly, you will need to change the firewall settings to function properly when it is turned on.
- Please refer to the instructions provided by the publisher of your firewall software for instructions on configuring the firewall to allow Internet access.
   If you are still unable to access the Internet after disabling any firewall software, please contact Belkin Technical Support.

## I can't connect to the Internet wirelessly.

If you are unable to connect to the Internet from a wireless computer, please check the following items:

- **1.** Look at the lights on your Router. If you're using a Belkin Router, the lights should be as follows:
- The "Power" light should be on.
- The "Connected" light should be on, and not blinking.
- The "WAN Internet" light should be either on or blinking.
- \* The "Wireless" light should be on or blinking

- **2.** Open your wireless utility software by clicking on the icon in the system tray at the bottom, right-hand corner of the screen.
- 3. The exact window that opens will vary depending on the model of wireless card you have; however, any of the utilities should have a list of "Available Networks"—those wireless networks it can connect to.

Does the name of your wireless network appear in the results? Yes, my network name is listed—go to the troubleshooting solution titled "I can't connect to the Internet wirelessly, but my network name is listed". No, my network name is not listed—go to the troubleshooting solution titled "I can't connect to the Internet wirelessly, and my network name is not listed".

## I can't connect to the Internet wirelessly, but my network name is listed.

If the name of your network is listed in the "Available Networks" list, please follow the steps below to connect wirelessly:

- 1. Click on the correct network name in the "Available Networks" list.
- 2. If the network has security (encryption) enabled, you will need to enter the network key. For more information regarding security, see the section entitled "Setting WEP Encryption".
- **3.** Within a few seconds, the tray icon in the lower, left-hand corner of your screen should turn Blue, indication of a successful connection to the network.

## I can't connect to the Internet wirelessly, and my network name is not listed.

If the correct network name is not listed under "Available Networks" in the wireless utility, please attempt the following troubleshooting steps:

- Temporarily move computer, if possible, five to 10 feet from the Router. Close the wireless utility, and reopen it. If the correct network name now appears under "Available Networks", you may have a range or interference problem. Please see the suggestions discussed in the section titled "Placement of your N1 Wireless Router" of this User Manual.
- 2. Using a computer that is connected to the Router via a network cable (as opposed to wirelessly), ensure that "Broadcast SSID" is enabled. This setting is found on the Router's wireless "Channel and SSID" configuration page.

If you are still unable to access the Internet after completing these steps, please contact Belkin Technical Support.

- My wireless network performance is inconsistent.
- Data transfer is sometimes slow.
- Signal strength is poor.
- Difficulty establishing and/or maintaining a Virtual Private Network (VPN) connection.

Wireless technology is radio-based, which means connectivity and the throughput performance between devices decreases when the distance between devices increases. Other factors that will cause signal degradation (metal is generally the worst culprit) are obstructions such as walls and metal appliances. Note also that connection speed may decrease as you move farther away from the Router (or access point).

In order to determine if wireless issues are related to range, we suggest temporarily moving the computer, if possible, five to 10 feet from the Router.

Changing the wireless channel—Depending on local wireless traffic and interference, switching the wireless channel of your network can improve performance and reliability. The default channel the Router is shipped with is channel 11; you may choose from several other channels depending on your region. See the section entitled "Changing the Wireless Channel" for instructions on how to choose other channels.

Limiting the wireless transmit rate—Limiting the wireless transmit rate can help improve the maximum wireless range and connection stability. Most wireless cards have the ability to limit the transmission rate. To change this property, go to the Windows Control Panel, open "Network Connections" and double-click on your wireless card's connection. In the properties dialog, select the "Configure" button on the "General" tab (Windows 98 users will have to select the wireless card in the list box and then click "Properties"), then choose the "Advanced" tab and select the rate property.

Wireless client cards are usually set to automatically adjust the wireless transmit rate for you, but doing so can cause periodic disconnects when the wireless signal is too weak; as a rule, slower transmission rates are more stable. Experiment with different connection rates until you find the best one for your environment. Note that all available transmission rates should be acceptable for browsing the Internet. For more assistance, see your wireless card's user manual.

## I am having difficulty setting up Wired Equivalent Privacy (WEP) security on a Belkin Router (or Belkin Access Point).

1. Log into your Wireless Router or (Access Point).

Open your web browser and type in the IP address of the Wireless Router (or Access Point). (The Router's default is 192.168.2.1, the 802.11g Access Point is 192.168.2.254.) Log into your Router by clicking on the "Login" button in the top right-hand corner of the screen. You will be asked to enter your password. If you never set a password, leave the "Password" field blank and click "Submit".

Click the "Wireless" tab on the left of your screen. Select the "Encryption" or "Security" tab to get to the security settings page.

- 2. Select "128-bit WEP" from the drop-down menu.
- **3.** After selecting your WEP encryption mode, you can type in your hex WEP key manually, or you can type in a passphrase in the "Passphrase" field and click "Generate" to create a WEP key from the passphrase. Click "Apply Changes" to finish. You must now set all of your clients to match these settings. A hex (hexadecimal) key is a mixture of numbers and letters from A-F and 0-9. For 128-bit WEP, you need to enter 26 hex keys. For example:

## C3 03 0F AF 4B B2 C3 D4 4B C3 D4 E7 E4 = 128-bit key

**4.** Click "Apply Changes" to finish. Encryption in the Wireless Router is now set. Each of your computers on your wireless network will now need to be configured with the same security settings.

**WARNING:** If you are configuring the Wireless Router (or Access Point) from a computer with a wireless client, you will need to ensure that security is turned on for this wireless client. If this is not done, you will lose your wireless connection.

**Note to Mac Users:** Original Apple AirPort products support 64-bit encryption only. Apple AirPort 2 products can support 64-bit or 128-bit encryption. Please check your Apple AirPort product to see which version you are using. If you cannot configure your network with 128-bit encryption, try 64-bit encryption.

## I am having difficulty setting up Wired Equivalent Privacy (WEP) security on a Belkin client card.

The client card must use the same key as the Wireless Router (or access point). For instance, if your Wireless Router (or access point) uses the key 00112233445566778899AABBCC, then the client card must be set to the exact same key.

1. Double-click the Signal Indicator icon to bring up the "Wireless Network" screen.

- **2.** The "Advanced" button will allow you to view and configure more options of your card.
- **3.** Once the "Advanced" button is clicked, the Belkin Wireless LAN Utility will appear. This Utility will allow you to manage all the advanced features of the Belkin Wireless Card.
- **4.** Under the "Wireless Network Properties" tab, select a network name from the "Available Networks" list and click the "Properties" button.
- 5. Under "Data Encryption", select "WEP".
- 6. Ensure that the check box "The key is provided for me automatically" at the bottom is unchecked. If you are using this computer to connect to a corporate network, please consult your network administrator if this box needs to be checked.
- **7.** Type your WEP key in the "Network key" box.

**Important:** A WEP key is a mixture of numbers and letters from A-F and 0-9. For 128-bit WEP, you need to enter 26 keys. This network key needs to match the key you assign to your Wireless Router (or access point). For example:

C3 03 0F AF 4B B2 C3 D4 4B C3 D4 E7 E4 = 128-bit key

**8.** Click "OK", and then "Apply" to save the settings.

If you are not using a Belkin wireless client card, please consult the manufacturer's user manual for that wireless client card.

## Do Belkin products support WPA?

**Note:** To use WPA security, all your clients must be upgraded to drivers and software that support it. At the time of this FAQ publication, a security patch download is available, for free, from Microsoft. This patch works only with the Windows XP operating system. Download the patch here: [url]

You also need to download the latest driver for your Belkin 802.11g Wireless Desktop or Notebook Network Card from the Belkin support site. Other operating systems are not supported at this time. Microsoft's patch only supports devices with WPA-enabled drivers such as Belkin 802.11g products.

Download the latest driver at <u>http://web.belkin.com/support</u> for the following products: F5D7000, F5D7001, F5D7010, F5D7230-4, F5D7231-4, F5D7130

## I am having difficulty setting up Wireless Protected Access (WPA) security on a Belkin Wireless Router (or Belkin Access Point) for a home network.

- 1. From the "Security Mode" drop-down menu, select "WPA-PSK (no server)".
- **2.** For "Encryption Technique", select "TKIP" or "AES". This setting will have to be identical on the clients that you set up.
- **3.** Enter your pre-shared key. This can be from eight to 63 characters and can be letters, numbers, symbols, or spaces. This same key must be used on all of the clients that you set up. For example, your PSK might be something like: "Smith family network key".
- **4.** Click "Apply Changes" to finish. You must now set all clients to match these settings.

## I am having difficulty setting up Wireless Protected Access (WPA) security on a Belkin wireless client card for a home network.

Clients must use the same key that the Wireless Router (or access point) uses. For instance, if the key is "Smith Family Network Key" in the Wireless Router (or access point), the clients must also use that same key.

- 1. Double-click the Signal Indicator icon to bring up the "Wireless Network" screen. The "Advanced" button will allow you to view and configure more options of your card.
- 2. Once the "Advanced" button is clicked, the Belkin Wireless Utility will appear. This Utility will allow you to manage all the advanced features of the Belkin Wireless Card.
- **3.** Under the "Wireless Network Properties" tab, select a network name from the "Available Networks" list and click the "Properties" button.
- 4. Under "Network Authentication", select "WPA-PSK (no server).
- 5. Type your WPA key in the "Network key" box.

**Important:** WPA-PSK is a mixture of numbers and letters from A-Z and 0-9. For WPA-PSK you can enter eight to 63 characters. This network key needs to match the key you assign to your Wireless Router (or access point).

**6.** Click "OK, then "Apply" to save the settings.

## I am NOT using a Belkin client card for a home network and I am having difficulty setting up Wireless Protected Access (WPA) security.

If you are not using a Belkin Wireless Desktop or Wireless Notebook Network Card that is not equipped with WPA-enabled software, a file from Microsoft called "Windows XP Support Patch for Wireless Protected Access" is available for free download. Download the patch from Microsoft by searching the knowledge base for Windows XP WPA.

**Note:** The file that Microsoft has made available works only with Windows XP. Other operating systems are not supported at this time. You also need to ensure that the wireless card's manufacturer supports WPA and that you have downloaded and installed the latest driver from their support site.

Supported Operating Systems:

- Windows XP Professional
- Windows XP Home Edition
- 1. Under Windows XP, click "Start > Control Panel > Network Connections".
- 2. Right-clicking on the "Wireless Networks" tab will display the following screen. Ensure the "Use Windows to configure my wireless network settings" check box is checked. [need image]
- **3.** Under the "Wireless Networks" tab, click the "Configure" button and you will see the following screen.
- **4.** For a home or small business user, select "WPA-PSK" under "Network Administration".

**Note:** Select WPA (with radius server) if you are using this computer to connect to a corporate network that supports an authentication server such as a radius server. Please consult your network administrator for further information.

- 5. Select "TKIP" or "AES" under "Date Encryption". This setting will have to be identical to the Wireless Router (or access point) that you set up.
- 6. Type in your encryption key in the "Network key" box.

**Important:** Enter your pre-shared key. This can be from eight to 63 characters and can be letters, numbers, or symbols. This same key must be used on all of the clients that you set up.

**7.** Click "OK" to apply settings.

# Belkin declares that F5D8231-4 (FCC ID: K7SF5D8231-4) is limited in CH1~CH11 for 2.4 GHz by specified firmware controlled in U.S.A.

## **Technical Support**

You can find technical support information at http://www.belkin.com/networking or www.belkin.com through the tech support area. If you want to contact technical support by phone, please call: US: 877-736-5771 or 310-898-1100 ext. 2263 Europe: 00 800 223 55 460 Australia: 1800 235 546 New Zealand: 0800 235 546 Singapore: 800 616 1790

## Information

## **FCC Statement**

DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

We, Belkin Corporation, of 501 West Walnut Street, Compton, CA 90220, declare under our sole responsibility that the product,

F5D8231-4

to which this declaration relates,

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.

Caution: Exposure to Radio Frequency Radiation. The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact normal operation is minimized.

When connecting an external antenna to the device, the antenna shall be placed in such a manner to minimize the potential for human contact during normal operation. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. **Federal Communications Commission Notice** 

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

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

#### Modifications

The FCC requires the user to be notified that any changes or modifications to this device that are not expressly approved by Belkin Corporation may void the user's authority to operate the equipment.

#### Canada-Industry Canada (IC)

The wireless radio of this device complies with RSS 139 & RSS 210 Industry Canada. This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B conforme á la norme NMB-003 du Canada.

Europe-European Union Notice Radio products with the CE 0682 or CE alert marking comply with the R&TTE Directive (1995/5/EC) issued by the Commission of the European Community.

Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 60950 (IEC60950) Product Safety
- EN 300 328 Technical requirement for radio equipment
- ETS 300 826 General EMC requirements for radio equipment.

To determine the type of transmitter, check the identification label on your Belkin product.

Products with the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (72/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 55022 (CISPR 22) Electromagnetic Interference
- EN 55024 (IEC61000-4-2,3,4,5,6,8,11) Electromagnetic Immunity
- EN 61000-3-2 (IEC610000-3-2) Power Line Harmonics
- EN 61000-3-3 (IEC610000) Power Line Flicker
- EN 60950 (IEC60950) Product Safety

Products that contain the radio transmitter are labeled with CE 0682 or CE alert marking and may also carry the CE logo.

## Belkin Corporation Limited Lifetime Product Warranty

#### What this warranty covers.

Belkin Corporation warrants to the original purchaser of this Belkin product that the product shall be free of defects in design, assembly, material, or workmanship.

#### What the period of coverage is.

Belkin Corporation warrants the Belkin product for the lifetime of the product.

#### What will we do to correct problems?

*Product Warranty.* Belkin will repair or replace, at its option, any defective product free of charge (except for shipping charges for the product).

#### What is not covered by this warranty?

All above warranties are null and void if the Belkin product is not provided to Belkin Corporation for inspection upon Belkin's request at the sole expense of the purchaser, or if Belkin Corporation determines that the Belkin product has been improperly installed, altered in any way, or tampered with. The Belkin Product Warranty does not protect against acts of God (other than lightning) such as flood, earthquake, war, vandalism, theft, normal-use wear and tear, erosion, depletion, obsolescence, abuse, damage due to low voltage disturbances (i.e. brownouts or sags), non-authorized program, or system equipment modification or alteration.

#### How to get service.

To get service for your Belkin product you must take the following steps:

- 1. Contact Belkin Corporation at 501 W. Walnut St., Compton CA 90220, Attn: Customer Service, or call (800)-223-5546, within 15 days of the Occurrence. Be prepared to provide the following information:
  - a. The part number of the Belkin product.
  - b. Where you purchased the product.
  - c. When you purchased the product.
  - d. Copy of original receipt.
- 2. Your Belkin Customer Service Representative will then instruct you on how to forward your receipt and Belkin product and how to proceed with your claim.

Belkin Corporation reserves the right to review the damaged Belkin product. All costs of shipping the Belkin product to Belkin Corporation for inspection shall be borne solely by the purchaser. If Belkin determines, in its sole discretion, that it is impractical to ship the damaged equipment to Belkin Corporation, Belkin may designate, in its sole discretion, an equipment repair facility to inspect and estimate the cost to repair such equipment. The cost, if any, of shipping the

equipment to and from such repair facility and of such estimate shall be borne solely by the purchaser. Damaged equipment must remain available for inspection until the claim is finalized. Whenever claims are settled, Belkin Corporation reserves the right to be subrogated under any existing insurance policies the purchaser may have.

#### How state law relates to the warranty.

THIS WARRANTY CONTAINS THE SOLE WARRANTY OF BELKIN CORPORATION, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR, EXCEPT AS REQUIRED BY LAW, IMPLIED, INCLUDING THE IMPLIED WARRANTY OR CONDITION OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SUCH IMPLIED WARRANTIES, IF ANY, ARE LIMITED IN DURATION TO THE TERM OF THIS WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

IN NO EVENT SHALL BELKIN CORPORATION BE LIABLE FOR INCIDENTAL, SPECIAL, DIRECT, INDIRECT, CONSEQUENTIAL OR MULTIPLE DAMAGES SUCH AS, BUT NOT LIMITED TO, LOST BUSINESS OR PROFITS ARISING OUT OF THE SALE OR USE OF ANY BELKIN PRODUCT, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This warranty gives you specific legal rights, and you may also have other rights, which may vary from state to state. Some states do not allow the exclusion or limitation of incidental, consequential, or other damages, so the above limitations may not apply to you.

#### **Belkin Tech Support**

US: 877-736-5771 310-898-1100 ext. 2263 Europe: 00 800 223 55 460 Australia: 1800 235 546 New Zealand: 0800 235 546 Singapore: 800 616 1790

#### **Belkin Corporation**

501 West Walnut Street Los Angeles, CA 90220, USA 310-898-1100 310-898-1111 fax

#### Belkin Ltd.

Express Business Park, Shipton Way Rushden, NN10 6GL, United Kingdom +44 (0) 1933 35 2000 +44 (0) 1933 31 2000 fax

#### Belkin B.V.

Boeing Avenue 333 1119 PH Schiphol-Rijk, The Netherlands +31 (0) 20 654 7300 +31 (0) 20 654 7349 fax

#### Belkin Ltd.

7 Bowen Crescent, West Gosford NSW 2250, Australia +61 (0) 2 4372 8600 +61 (0) 2 4372 8603 fax

© 2006 Belkin Corporation. All rights reserved. All trade names are registered trademarks of respective manufacturers listed. The mark Wi-Fi is a registered mark of the Wi-Fi Alliance. The "Wi-Fi CERTIFIED" logo is a certification mark of the Wi-Fi Alliance. Mac, Mac OS, Apple, and AirPort are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.