

Problem:

The Easy Install Wizard cannot find my Router.

Solution:

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 green. If not, check to make sure that the AC adapter is correctly 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.

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.

Troubleshooting

Problem:

The Easy Install Wizard cannot connect my Router to the Internet.

Solution:

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

1. 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.
2. 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 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 90 of this User Manual) for an alternate setup method.

Problem:

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

Solution:

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

1. 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.

Problem:

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

Solution:

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.

- 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.
- 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 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.
- 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”.

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Troubleshooting

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

Problem:

- 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.

Solution:

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.

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 and 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.

Problem:

I can't connect to the Internet wirelessly.

Solution:

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

1. Look at the lights on your Router. Your Belkin Router's lights should be as follows:
 - The "Power" light should be on.
 - The "Connected" light should be on and not blinking.
 - The "WAN" light should be either on or blinking.

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2. Open your wireless utility software by clicking on the icon in the system tray at the bottom, right-hand corner of the screen. If you are also using a Belkin Wireless Card or Adapter with this Router, the tray icon should look like this (the icon may be red or green):



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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”.

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Troubleshooting

Problem:

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

Solution:

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 "Securing your Wi-Fi Network" in this User Manual.
3. Within a few seconds, the tray icon in the lower, left-hand corner of your screen should turn green, indicating a successful connection to the network.

Problem:

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

Solution:

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

1. Temporarily move your computer, if possible, five to 10 feet away from the Router. Close the wireless configuration 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 Router for Optimal Performance" in this User Manual.
2. Using a computer that is connected to the Router through 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.

Problem:

My wireless network performance is inconsistent.

Data transfer is sometimes slow.

Signal strength is poor.

I am having difficulty establishing and/or maintaining a Virtual Private Network (VPN) connection.

Solution:

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. As a result, the typical indoor range of your wireless devices will be between 100 to 200 feet. 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 away 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 titled "Changing the Wireless Channel" on page 48 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.

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Troubleshooting

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.

Problem:

How do I extend the range of my wireless network?

Solution:

Belkin recommends using one of the following products to extend wireless network coverage throughout large homes or offices:

- **Wireless Access Point:** A wireless access point can effectively double the coverage area of your wireless network. An access point is typically placed in the area not currently covered by your Wireless G Router, and is connected to the Router using either an Ethernet cable or through your home's power lines using two Powerline Ethernet Adapters.
- For 802.11g (54g) wireless networks, Belkin offers a Wireless G Range Extender/Access Point that can be connected wirelessly to a Belkin Wireless G Router, without requiring an Ethernet cable or Powerline Ethernet Adapters.

These Belkin products are available at your local retailer, or can be ordered from Belkin directly.

For network/range extension information, please visit: www.belkin.com/networking to find out more about:

Wireless G Range Extender/Access Point (F5D7130)

Powerline Ethernet Adapter (F5D4070)

Powerline USB Adapter (F5D4050)

Problem:

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

Solution:

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 Access Point's default 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 combination 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.

Problem:

I am having difficulty setting up Wired Equivalent Privacy (WEP) security on a Belkin client card (Wireless Network Card or Adapter).

Solution:

The client card must use the same key as the Wireless G 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 Utility” screen. The “Advanced” button will allow you to view and configure more options of your client card.
2. 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 client card.
3. Under the “Wireless Network Properties” tab, select a network name from the “Available Networks” list and click the “Properties” button.
4. Under “Data Encryption”, select “WEP”.
5. Ensure the 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 combination 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 G 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.

Problem:

Do Belkin products support WPA?

Solution:

Note: To use WPA security, all your clients must be upgraded to drivers and software that support it. At the time of this 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:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=009d8425-ce2b-47a4-abec-274845dc9e91&displaylang=en>

You also need to download the latest driver for your Belkin Wireless G 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 <http://web.belkin.com/support> for the following products:

F5D7000, F5D7001, F5D7010, F5D7011, F5D7230-4, F5D7231-4, F5D7130

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Problem:

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

Solution:

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.

Problem:

I am having difficulty setting up Wi-Fi Protected Access (WPA) security on a Belkin client card (Wireless Network Card or Adapter) for a home network.

Solution:

Clients must use the same key that the Wireless G Router or access point uses. For instance, if the key is “Smith Family Network Key” in the Wireless G 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 Utility” screen. The “Advanced” button will allow you to view and configure more options of your client card. The “Advanced” button will allow you to view and configure more options of your client card.
2. 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 client 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 combination 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 G Router or access point.

6. Click “OK”, then “Apply” to save the settings.

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Problem:

I am having difficulty setting up Wi-Fi Protected Access (WPA) security on a Belkin client card (Wireless Network Card or Adapter) for a business.

Solution:

1. Double-click the “Signal Indicator” icon to bring up the “Wireless Network Utility” screen. The “Advanced” button will allow you to view and configure more options of your client card. The “Advanced” button will allow you to view and configure more options of your client card.
2. 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 client 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”.
5. In the “Authentication” tab, select the settings that are indicated by your network administrator.
6. Click “OK”, then “Apply” to save the settings.

Problem:

I am having difficulty setting up Wi-Fi Protected Access (WPA) security, and I am NOT using a Belkin client card for a home network.

Solution:

If you are NOT using a Belkin WPA Wireless Desktop or Wireless Notebook Network Card and it 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:

<http://www.microsoft.com/downloads/search.aspx?displaylang=en>

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 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

Enabling WPA-PSK (no server)

1. In systems running Windows XP, click “Start > Control Panel > Network Connections”.
2. Right-click on the “Wireless Networks” tab. The “Wireless Network Connection Properties” screen appears. Ensure the “Use Windows to configure my wireless network settings” box is checked.
3. Under the “Wireless Networks” tab, click the “Configure” button, and you will see the client card properties screen.
4. For a home or small business user, select “WPA-PSK” under “Network Administration”.
5. Select “TKIP” or “AES” under “Data Encryption”. This setting will have to be identical to the Wireless G 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.

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What is the difference between 802.11b, 802.11g, 802.11a, and Pre-N?

Currently there are four levels of wireless networking standards, which transmit data at very different maximum speeds. Each is based on the designation 802.11(x), so named by the IEEE, the board that is responsible for certifying networking standards. The most common wireless networking standard, 802.11b, transmits information at 11Mbps; 802.11a and 802.11g work at 54Mbps; and Pre-N works at 108Mbps. Pre-N, the precursor to the upcoming 802.11n release, promises speeds that exceed 802.11g, and up to twice the wireless coverage area. See the chart on the next page for more detailed information.

Wireless Comparison Chart

Wireless Technology	802.11b	802.11g	802.11a	Belkin Pre-N
Speed	11Mbps	54Mbps	54Mbps	600% faster than standard 802.11g*
Frequency	Common household devices such as cordless phones and microwave ovens may interfere with the unlicensed band 2.4GHz	Common household devices such as cordless phones and microwave ovens may interfere with the unlicensed band 2.4GHz	5GHz—uncrowded band	Common household devices such as cordless phones and microwave ovens may interfere with the unlicensed band 2.4GHz
Compatibility	Compatible with 802.11g	Compatible with 802.11b	Incompatible with 802.11b or 802.11g	Compatible 802.11b or 802.11g
Coverage*	Depends on interference—typically 100–200 ft. indoors	Depends on interference—typically 100–200 ft. indoors	Interference range is typically 50–100 ft.	Up to 800% wider coverage than standard 802.11g*
Advantage	Mature—legacy technology	Common—widespread use for Internet sharing	Less interference—great for multimedia application	Leading edge—best coverage and throughput

*Distance and connection speeds will vary depending on your networking environment

Troubleshooting

Technical Support

You can find technical support information at 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
800-223-5546 ext. 2263
310-898-1100 ext. 2263

UK: 0845 607 77 87

Australia: 1800 235 546

New Zealand: 0800 235 546

Singapore: 65 64857620

Europe: www.belkin.com/support

FCC Statement

DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

We, Belkin International, Inc., of 501 West Walnut Street, Compton, CA 90220, declare under our sole responsibility that this device,

F5D7230-4

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

Caution: Exposure to Radio Frequency Radiation.

The device shall be used in such a manner that the potential for human contact during 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. 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, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try 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.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

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

2.4GHz operation of this product in the USA is firmware-limited to channels 1 through 11.

Modifications

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

Canada-Industry Canada (IC)The wireless radio of this device complies with RSS 210 Industry Canada. This Class B digital apparatus complies with Canadian ICES-003.

Operation is subject to the following two conditions:

- 1) this device may not cause interference, and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with Canada radiation exposure limits set forth for uncontrolled environments. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

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

Cet appareil numérique de la classe B conforme à la norme NMB-003 du Canada.