Wireless Cable/DSL Gateway Router F5D6231-4

Quick Installation Guide

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Wireless Cable/DSL Gateway – F5D6231-4

10/100 Mbps Wireless Gateway

with 4 10/100 Mbps (RJ-45) Ethernet LAN Ports, 1 Uplink Port, and 1 10/100 Mbps (RJ-45) WAN Port

F5D6231-4
E112002-R01

Compliances

FCC - Class B

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 instructions, may cause harmful and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the 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 to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into 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: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 STATEMENT:
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 20 cm (8 in) between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

In order to maintain compliance with the limits for a Class B digital device, it requires that you use a quality interface cable when connecting to this device. Changes or modifications not expressly approved could void the user's authority to operate this equipment.

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Introduction

Congratulations on your purchase of the Belkin Wireless Gateway.

This Wireless Gateway, F5D6231-4, is a broadband router designed to share Internet access, provide security, and to network multiple devices with and without wires. This gateway's simple installation setup can be used by the least experienced of users, while providing networking professionals with easy to configure advanced features. Please read the User Guide for advanced features of this product.

Thank you for purchasing a Belkin product. We know you will enjoy the many features of the Belkin's F5D6231-4 Wireless Gateway.

Package Contents

- One F5D6231-4 Wireless Gateway
- One Power Adapter (9 V, 1000 mA)
- This Quick Installation Guide
- One Installation CD
- One Category 5 Fast Ethernet Cable

Confirm That You Meet Installation Requirements

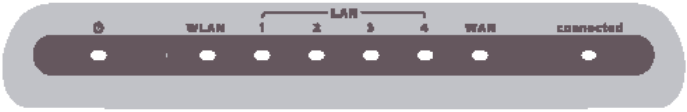
Before proceeding with the installation of your F5D6231-4 Wireless Gateway, please be sure you have the following:

- A computer with an Ethernet network card installed
- Your Windows CD, if your computer is running Windows 95, 98, NT, Me or 2000
- An Internet connection through a cable or DSL modem, or an external dial-up or ISDN modem
- An additional Ethernet network cable
- A Web browser such as Internet Explorer or Netscape

Hardware Setup

Indicator LEDs

Front Panel



The front panel of the F5D6231-4 Wireless Gateway provides indicator LEDs for easy monitoring. The following table defines the function of each LED.

LED	Condition	Status
Ready (Power)	On Green	Gateway is receiving power.
Connected (Internet Status)	On Green	Gateway stays on internet connection.
WLAN (Wireless AP)	On Green	The WAN port has established a valid wireless connection.
WAN	On Green	The WAN port has established a valid network connection.
LAN	On Green	The indicated LAN port has connected at speed of 10 Mbps.
	On Amber	The indicated LAN port has connected at speed of 100 Mbps.
	Blinking	The indicated LAN port is transmitting or receiving traffic.

Connecting Devices

Rear Panel

1. **Connecting Computers with Wires:** Connect computers directly to the Gateway on ports **1-4** on the rear panel. If you have more than 4 computers to plug in, connect a hub or a switch to one of these ports and connect additional computers to that device.

2. **Connecting Wireless Computers:** Simply make sure your wireless computers are within range of the Gateway.

3. **Connecting a Cable Modem or DSL Modem:** Connect your Cable or DSL modem to the **WAN** port on the rear panel.

4. **Power:** Plug the power adapter into the power jack (9 V/1000 mA).

5. **Reset Button:** The Reset Button is designed and positioned at rear panel for rebooting and resetting system configuration to its default parameters. It acts as:
   - Reboot: by pushing 2 seconds
   - Back to factory default settings: by pushing 5 seconds

Configuring Wireless Connections

Make sure each wireless network adapter is properly installed along with all associated drivers and utilities. (Please see your wireless adapter's documentation for complete setup information.) You may need to change certain settings for your wireless network card to communicate with the Gateway. Use the following values where they apply:

Network Type: Infrastructure

SSID: Default (WLAN)

Channel: 11 for North America; 13 for European (ETSI); 2 for Spain; 3 for France; 14 for Japan

WEP Security: Disable

Note: We recommend establishing your wired connections to the Gateway before setting up your wireless connections.

Configuring Your Computer

This Installation Guide provides configuration instructions for Windows 95, 98, Me, NT4.0 and 2000, as well as for Mac OS 7.x or later. Please be sure that you are following the proper instruction set for your operating system.

- Configuring Your Computer with Windows 95/98/Me begins on this page.
- Configuring Your Computer with Windows 2000 begins on page 6.
- Configuring Your Computer with Windows NT 4.0 begins on page 8.
- Configuring Your Macintosh Computer begins on page 10.

Configuring Your Computer with Windows 95/98/Me

You may find that the instructions here do not exactly match your version of Windows. This is because these steps were created from Windows 98. Windows 95 and Windows Millennium Edition are very similar, but not identical, to Windows 98.

Step 1. Configure TCP/IP Settings

After you have completed the hardware setup by connecting your devices, configure your computer to connect to your F5D6231-4 Gateway. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

1. From the Windows desktop, click the “Start” button. Choose “Settings,” then click “Control Panel.”

2. From “Control Panel” Double-click the “Network” icon.

3. In the “Network” window, under the “Configuration” tab, double-click the “TCP/IP” component that is listed with your network card.

4. Select the “IP Address” tab. If “Obtain an IP address automatically” is already selected, your computer is already configured for DHCP. Click “Cancel” to close each window, and skip to Step 2 “Disable HTTP Proxy.”

5. Locate your IP address and Subnet Mask. Record them in the spaces below.

TCP/IP Configuration Setting	
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____
Host Name	

6. Click the “Gateway” tab and record the numbers listed under “Installed gateways.”

7. Click the “DNS Configuration” tab. Locate the DNS servers listed under “DNS Server Search Order.” Record any listed addresses.

8. After writing down your settings, check to make sure you have recorded them correctly. Click the “IP Address” tab and then click “Obtain an IP address automatically.” After then, click “OK.”

9. Windows may need your Windows 95/98/Me CD to copy some files. After it finishes copying, it will then prompt you to restart your system. Click “Yes” and your computer will shut down and restart.

Step 2. Disable HTTP Proxy

You will need to verify that the “HTTP Proxy” feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your Gateway. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

1. Open Internet Explorer and click the “Stop” button. Click “Tools,” then select “Internet Options.”

2. In the “Internet Options” window click the “Connections” tab. Next, click the “LAN Settings...” button.

3. Clear all the checkboxes.

4. Click “OK,” and then click “OK” again to close the “Internet Options” window.

Netscape

1. Open Netscape and click the stop button. Click “Edit,” then click “Preferences...”

2. In the “Preferences” window, under “Category” click “Advanced,” then click “Proxies.” Select “Direct connection to the Internet.” Then, click “OK.”

3. Repeat these steps for each Windows 95/98/Me computer connected to your F5D6231-4 Wireless Gateway.

Step 3. Obtain IP Settings from Your Gateway

Now that you have configured your computer to connect to your F5D6231-4 Wireless Gateway, it needs to obtain new network settings. By releasing any old IP settings and renewing them with settings from your F5D6231-4 Wireless Gateway, you will also verify that you have configured your computer correctly.

1. Click “Start,” then “Run...”

2. Type “WINIPCFG” and click “OK.” It may take a minute or two for the “IP Configuration” window to appear.

3. From the drop-down menu, select your network card. Click “Release” and then “Renew.” **Verify that your IP address is now 192.168.2.xxx (2~255), your Subnet Mask is 255.255.255.0, and your Default Gateway is 192.168. 2.1. These values confirm that your F5D6231-4 Wireless Gateway is functioning.**

4. Click “OK” to close the “IP Configuration” window.

Now that your computer is configured to connect to your F5D6231-4 Wireless Gateway, please skip to “Configuring Your Gateway” on page 12.

Configuring Your Computer with Windows 2000

Step 1. Configure TCP/IP Settings

After you have completed the hardware setup by connecting your devices, configure your computer to connect to your F5D6231-4 Wireless Gateway. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

1. From the Windows desktop, click the “Start” button. Choose “Settings,” then click “Control Panel.”

2. Double-click the “Network & Dial-Up Connections” icon.

3. Double-click the icon that corresponds to the connection to your F5D6231-4 Wireless Gateway.

4. Click “Properties.” After then, double-click “Internet Protocol (TCP/IP).”

5. All information you need to record is on the “Internet Protocol (TCP/IP) Properties” dialog box. Use the spaces below to record the information.

TCP/IP Configuration Setting	
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____
Host Name	

If “Obtain an IP address automatically” and “Obtain DNS server address automatically” are already selected, your computer is already configured for DHCP. Click “Cancel” to close each window, and skip to Step 2 “Disable HTTP Proxy.”

6. Select “Obtain an IP address automatically” and then select “Obtain DNS server address automatically.” Click “OK.”

7. Click “OK” or “Close” to close each window.

Step 2. Disable HTTP Proxy

You will need to verify that the “HTTP Proxy” feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your F5D6231-4 Wireless Gateway. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

1. Open Internet Explorer and click the stop button. Click “Tools,” then “Internet Options.”

2. In the “Internet Options” window click the “Connections” tab. Next, click the “LAN Settings...” button.

3. Clear all the checkboxes.

4. Click “OK,” and then click “OK” again to close the “Internet Options” window.

Netscape

1. Open Netscape and click the stop button. Click “Edit,” then click “Preferences...”

2. In the “Preferences” window, under “Category” double-click “Advanced,” then click “Proxies.” Select “Direct connection to the Internet.” Then, click “OK.”

Step 3. Obtain IP Settings from Your Gateway

Now that you have configured your computer to connect to your F5D6231-4 Wireless Gateway, it needs to obtain new network settings. By releasing any old IP settings and renewing them with settings from your F5D6231-4 Wireless Gateway, you will also verify that you have configured your computer correctly.

1. From the Windows desktop, click the “Start” button, then “Programs,” then “Accessories,” and then click “Command Prompt.”

2. In the “Command Prompt” window, type “IPCONFIG /RELEASE” and press the <ENTER> key.

3. Type “IPCONFIG/RENEW” and press the <ENTER> key. **Verify that your IP address is now 192.168.2.xxx (2~255), your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your F5D6231-4 Wireless Gateway is functioning.**

4. Type “EXIT” and press <ENTER> to close the “Command Prompt” window.

Now that your computer is configured to connect to your F5D6231-4 Wireless Gateway, please skip to “Configuring Your Gateway” on page 12.

Configuring Your Computer with Windows NT 4.0

Step 1. Configure TCP/IP Settings

After you have completed the hardware setup by connecting your devices, configure your computer to connect to your F5D6231-4 Wireless Gateway. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

1. From the Windows desktop click “Start,” then “Settings,” and click “Control Panel.”

2. Double-click the “Network” icon, then select the “Protocols” tab.

3. Double-click “TCP/IP Protocol,” then select the “IP Address” tab.

4. In the “Adapter” drop-down list, be sure your Ethernet adapter is selected. If “Obtain an IP address automatically” is already selected, your computer is already configured for DHCP. Click “Cancel,” and skip to Step 2 “Disable HTTP Proxy.”

5. In the “TCP/IP Properties” dialog box, click the “IP address” tab to locate your IP address, subnet Mask, and default gateway. Record these values in the spaces provided below.

6. Click the “DNS” tab to see the primary and secondary DNS servers. Record these values in the appropriate spaces below.

TCP/IP Configuration Setting	
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____
Host Name	

7. After writing down your IP settings, click the “IP address” tab. Select “Obtain IP address automatically” and click “OK.”

8. Click “OK” again to close the “Network” window.

9. Windows may copy some files, and will then prompt you to restart your system. Click “Yes” and your computer will shut down and restart.

Step 2. Disable HTTP Proxy

You will need to verify that the “HTTP Proxy” feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your F5D6231-4 Wireless Gateway. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

1. Open Internet Explorer and click the stop button. Click “Tools,” then “Internet Options.”

2. In the “Internet Options” window click the “Connections” tab. Next, click the “LAN Settings...” button.

3. Clear all the checkboxes.

4. Click “OK,” and then click “OK” again to close the “Internet Options” window.

Netscape

1. Open Netscape and click the stop button. Click “Edit,” then click “Preferences...”

2. In the “Preferences” window, under “Category” double-click “Advanced,” then click “Proxies.” Select “Direct connection to the Internet.” Click “OK.”

Step 3. Obtain IP Settings from Your Gateway

Now that you have configured your computer to connect to your F5D6231-4 Wireless Gateway, it needs to obtain new network settings. By releasing any old IP settings and renewing them with settings from your F5D6231-4 Wireless Gateway, you will also verify that you have configured your computer correctly.

1. From the Windows desktop, click the “Start” button, then “Programs.” After then, select “Command Prompt.”

2. In the “Command Prompt” window, type “IPCONFIG/RELEASE” and press the <ENTER> key.

3. Type “IPCONFIG /RENEW” and press the <ENTER> key. **Verify that your IP address is now 192.168.2.xxx (2~255), your Subnet Mask is 255.255.255.0, and your Default Gateway is 192.168.2.1. These values confirm that your F5D6231-4 Wireless Gateway is functioning.**

4. Type “EXIT” and press <ENTER> to close the “Command Prompt” window.

Now that your computer is configured to connect to your F5D6231-4 Wireless Gateway, please continue to “Configuring Your Gateway” on page 12.

Configuring Your Macintosh Computer

You may find that the instructions here may not exactly match your screen. This is because these steps was created using Mac OS 8.5. Mac OS 7.x and above are all very similar, but may not be identical to Mac OS 8.5.

Step 1. Configure TCP/IP Settings

After you have completed the hardware setup by connecting your devices, configure your computer to connect to your F5D6231-4 Wireless Gateway. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

1. Pull down the Apple Menu. Click “Control Panels” and select “TCP/IP.”

2. In the TCP/IP dialog box, make sure that “Ethernet” is selected in the “Connect via:” field.

   If “Using DHCP Server” is already selected in the “Configure” field, your computer is already configured for DHCP. Close the TCP/IP dialog box, and skip to Step 2 “Disable HTTP Proxy.”

3. All the information you need to record is in the “TCP/IP” dialog box. Use the space below to record the information.

TCP/IP Configuration Setting	
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____
Host Name	

4. After writing down your IP settings, select “Using DHCP Server” in the “Configure” field and close the window.

5. Another box will appear asking whether you want to save your TCP/IP settings. Click “Save.”

Step 2. Disable HTTP Proxy

You will need to verify that the “HTTP Proxy” feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your F5D6231-4 Wireless Gateway. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

1. Open Internet Explorer and click the stop button. Click “Edit” and select “Preferences.”

2. In the Internet Explorer Preferences window, under “Network,” select “Proxies.”

3. Uncheck all checkboxes and click “OK.”

Netscape

1. Open Netscape and click the stop button. Click “Edit” and select “Preferences.”

2. In the “Preferences” dialog box, in the left-hand column labeled “Category,” select “Advanced.” Under the “Advanced” category, select “Proxies.”

3. Select “Direct Connection to the Internet” and click “OK.”

Step 3. Obtain IP Settings from Your Gateway

Now that you have configured your computer to connect to your F5D6231-4 Wireless Gateway, it needs to obtain new network settings. By releasing any old IP settings and renewing them with settings from your F5D6231-4 Wireless Gateway, you will also verify that you have configured your computer correctly.

1. Pull down the Apple Menu. Click “Control Panels” and select “TCP/IP.”

2. In the TCP/IP window, your new settings will be shown. **Verify that your IP address is now 192.168.2.xxx (2~255), your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your F5D6231-4 Wireless Gateway is functioning.**

3. Close the TCP/IP window.

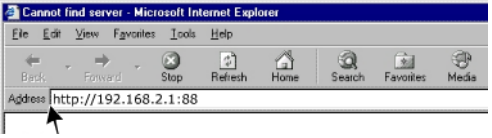
Now that your computer is configured to connect to your F5D6231-4 Wireless Gateway, please skip to “Configuring Your Gateway” on the next page.

Configuring Your Gateway

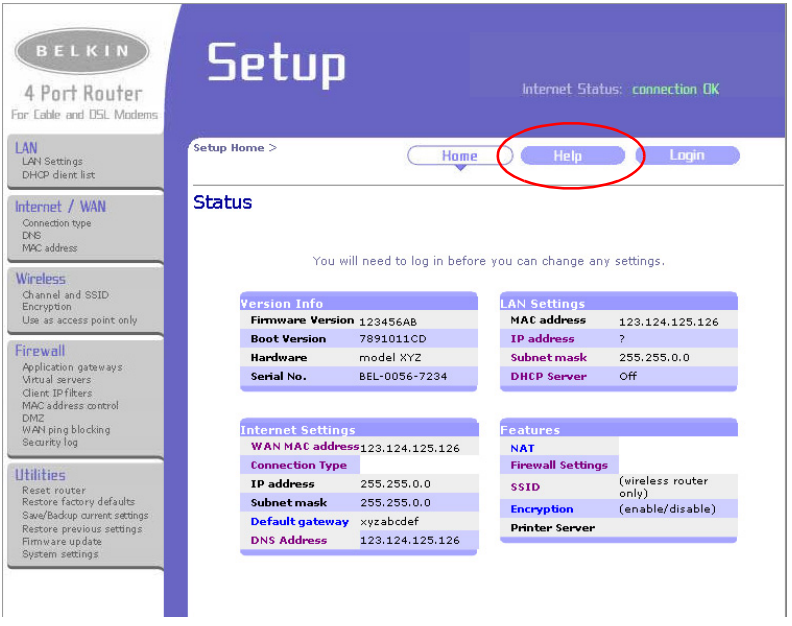
Now that you have successfully configured your computer and retrieved your new network settings from your F5D6231-4 Wireless Gateway, you are ready to configure the Gateway's settings for your LAN.

1. Open your Web browser (i.e. Internet Explorer or Netscape Navigator) and click the stop button.

2. In the "Address" field type "http://192.168.2.1" or "http://192.168.2.1:88" and press <ENTER> on your keyboard.



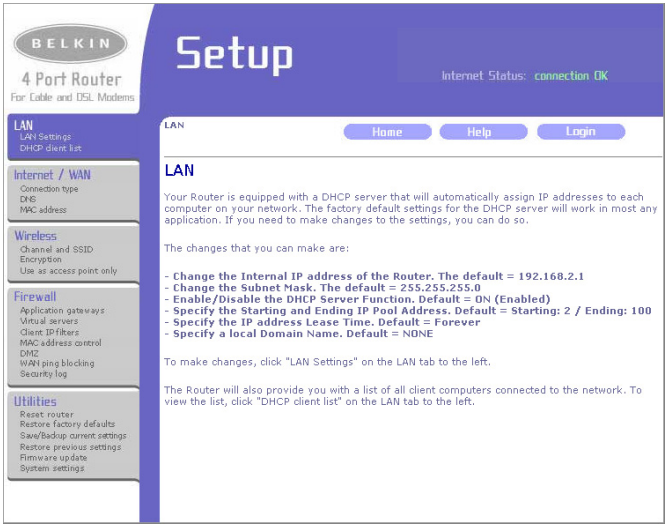
3. On the main page of the Gateway Web console, you will see the Gateway status information as below. There is no password by default. For security reasons, you should assign a password as soon as possible (refer to page 19 for password setting).



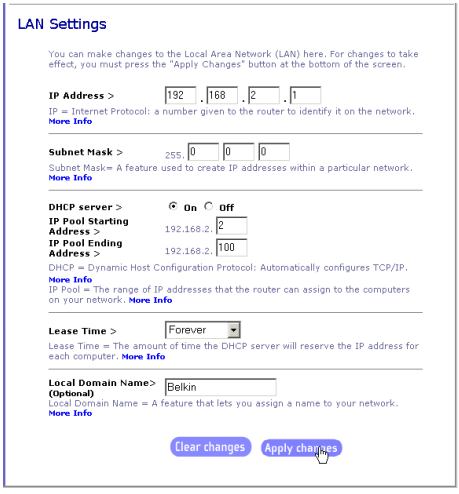
Notes: **1.** That the password login is case sensitive.
2. For detail setting, please refer to online Help function.

Configuring LAN

1. The F5D6231-4 is equipped with a DHCP server, which means that will automatically assign IP addresses to each computer on your network, and it will work properly in most applications.



2. Enter the IP address, subnet mask, and gateway provided to you by your ISP in the appropriate fields. You recorded these numbers earlier when you configured your computer to connect to the Gateway.

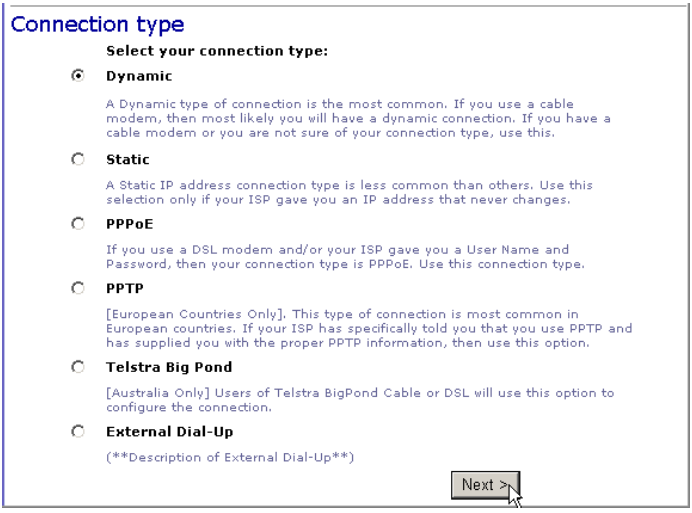


3. If you have any difficulty for LAN setting, please refer to online “Help” function.

Configuring Internet/WAN

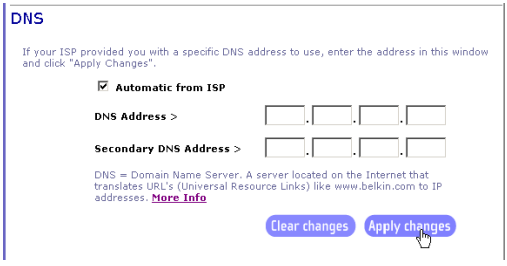
The Router is capable of connecting to virtually any Internet Service Provider's system provided that you have correctly configured the Router's settings for your ISP's connection type. To configure the Router to connect to your ISP, click on "Connection type" on the Internet/WAN Tab on the left of the screen.

For specific settings, select your connection type, then click “Next“ to proceed.



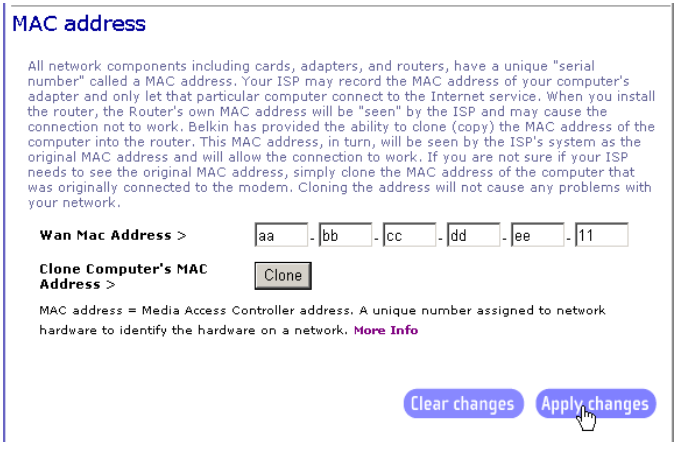
A Domain Name Server (DNS) is like an index of IP addresses and Web addresses. If you type a Web address into your browser, such as **www.belkin.com**, a DNS server will find that name in its index and find the matching IP address. Most ISPs provide a DNS server for speed and convenience. Since you are connecting to the Internet with dynamic IP settings, it is likely that your DNS servers are also provided dynamically.

If you are connecting to the Internet with a dynamic IP address, you probably do not need to enter anything here.



Some ISPs register the MAC Address of your network card. A MAC (Media Access Control) Address is a unique identification number (in hexadecimal digits) given to each networking device. Once your MAC address is registered, the ISP's server will verify that the MAC address you are connecting with matches the one that's registered. If it does not match, you cannot connect. The F5D6231-4 Wireless Gateway's MAC Address will not be the same as your network card's address—and therefore will not be the same as the address that your ISP has registered—so you may need the Gateway to "Clone" the address from your network card. Then the ISP will find a MAC Address that matches the one they have recorded.

Your ISP may have assigned you a host name. If so, enter it in the Host Name Field. Otherwise, enter your Adapter Address in the Mac Address Field. Click "Clone" button.



Configuring Wireless

You may need to change certain settings for your wireless network card to communicate with the Gateway.

SSID: default (WLAN)

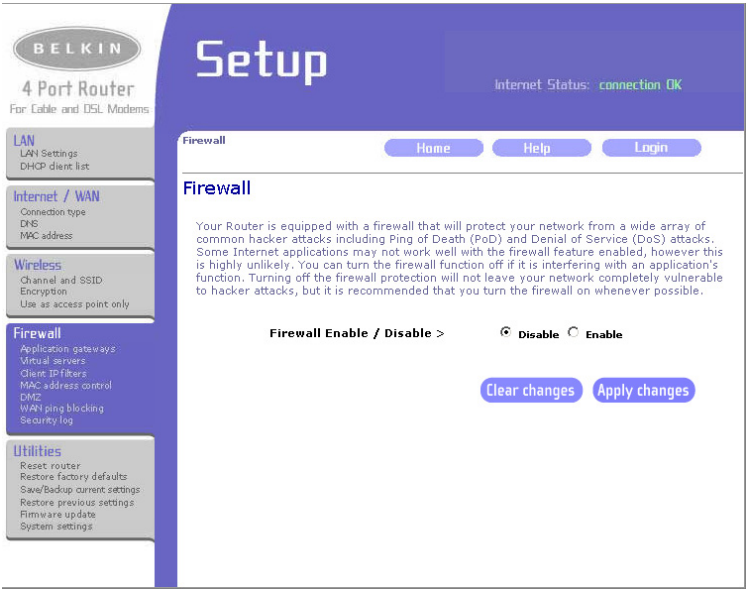
Channel: 11 for North America; 13 for European (ETSI); 2 for Spain; 3 for France; 14 for Japan

Note: We recommend establishing your wired connections to the Gateway before setting up your wireless connections.

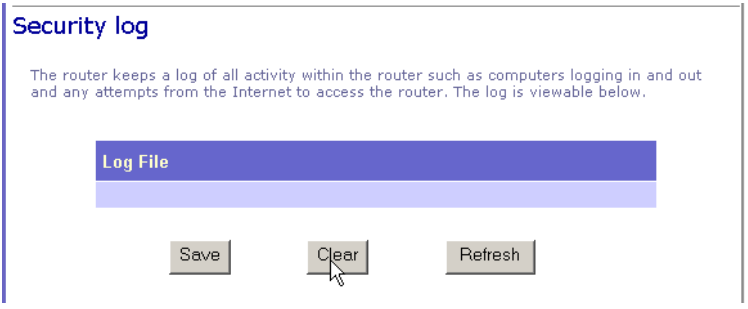
Configuring Firewall

The F5D6231-4 is equipped with a firewall that will protect your network from a wide array of common hacker attacks including Ping of Death (PoD) and Denial of Service (DoS) attacks. Some Internet applications may not work well with the firewall feature enabled, however, this is highly unlikely.

You can turn the firewall function off if it is interfering with an application's function. Turning off the firewall protection will not leave your network completely vulnerable to hacker attacks, but it is recommended that you turn the firewall on whenever possible.



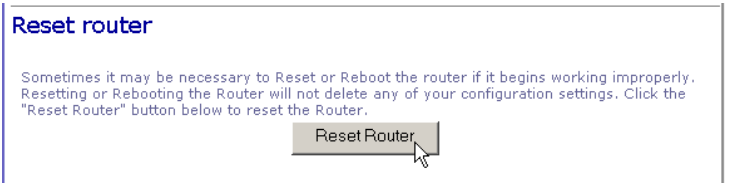
This Gateway Router keeps a log of all activity within the router such as computers logging in and out and any attempts from the Internet to access the router.



Configuring Utilities

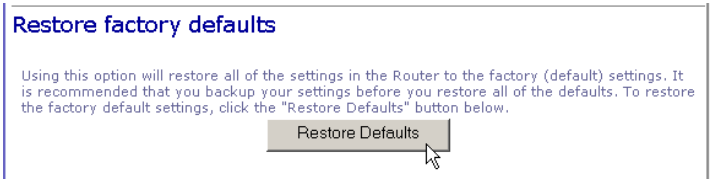
The F5D6231-4 lets you manage functions such as assign a password, setting the time zone, save and backup your configuration, and update firmware. Before making any change, please read the direction carefully.

1. Click the “Reset Router” button to reset the configuration.



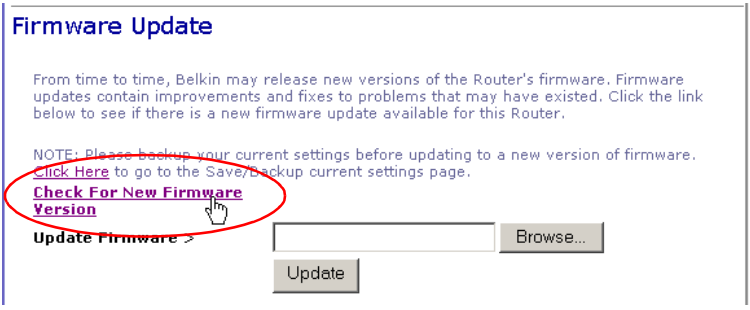
Note: It may be necessary to Reset or Reboot the router if it begins working improperly.

2. To restore the factory default settings, click the "Restore Defaults" button.

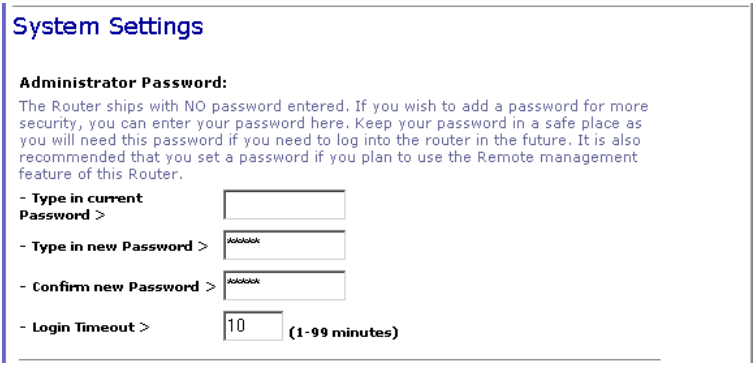


Note: Before you restore all of the defaults, recommended you backup your present settings.

3. Mostly, Belkin may release new versions of the Router's firmware time to time. 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 online for this Router.



4. The F5D6231-4 enters with NO password. For more security, you should add a password here. As you will need this password if you need to log into the router in the future, therefore, keep your password in a safe place.



Note: It is recommended that you set a password here if you plan to use the Remote management feature.

Congratulations! Configuration is complete and your F5D6231-4 Wireless Gateway is now connected to the Internet. There are also some advanced configuration options that may be configured, but we do not recommend making any changes to these options unless you need to.

Common Configurations for Popular ISPs

WAN Types	Characteristics	Popular ISPs
Dynamic IP (Clone MAC)	Cable modem ISP, non-hostname based. Need to clone MAC in the DHCP page of router.	MediaOne, RoadRunner, Optimum Online, Time Warner, Charter and Adelphia
Dynamic IP (Hostname)	Cable ISP, Requires Hostname to authenticate ie. cx213818-B. Need to enter the hostname in the DHCP page of the router, exactly as it appears in your documentation.	@Home Network, Cogoco, ComCast, Cox, Excite, Rogers, Shaw, Insight, Videotron, SCV MaxOnline
PPPoE (DSL)	Usually special software installed on PC, MacPOET/WinPOET, EnterNet 300. F5D6231-4 has this software built in and you can remove it from your PC. You will need to enter the account name and password that your ISP provided to you in the PPPoE page of the router. Leave the service name blank unless your ISP requires it.	Bell*, Century Tel, Citizens, Primus, Prodigy, Snet, Sprint FC, Verizon, First World, Brightnet, Earthlink, Ameritech, Covad, Mindspring, Sympatico DSL, USwest, SingNet Broadband, SingTel Magix, Pacific Internet Broadband
Static (DSL)	DSL Modem, always on. Need to enter ALL IP information from ISP in the “Fixed IP” section of the router.	CableSpeed, Cnet, Direct Link, Drizzle, DSL Extreme, Earthlink Wireless, Fast Point, Flashcom, GTE-WhirlWind, Heavenet, HSA Corp, I-55, InterAccess, LinkLine, Mission, Nauticom, NAS, Omitel, Onterra, Phatpipe, Rhythms, Speakeasy, Sterling, XO, Zyan
Static (Cable)	Cable Modem, Always on, ISP assigns specific IP information which needs to be entered on the “Fixed IP” page of the router.	Cox Cable, Sprint, US Cable, Cable-Cable

Specifications

Hardware

Model
F5D6231-4

Ports
4 RJ-45 10BASE-T/100BASE-TX Ethernet Port
1 RJ-45 10/100 Mbps WAN Port
1 Uplink Port

Host Processor
CX84200-11

Flash
Upgradeable memory (1 MByte)

SDRAM
8 MByte memory

Wireless Module
PCMCIA interfaced wireless module with Atmel and RFMD solution

Antenna
2 Fixed external antenna

Temperature
Operating: 0 to 40 °C (32 to 104 °F)
Storage: -25 to 60 °C (-25 to 140 °F)

Humidity
Operating: 15% to 95%

Power
9 V, 1000 mA

Cable
CAT 5 UTP

Standards
IEEE 802.3
IEEE 802.3u
IEEE 802.11b
RFC DHCP
RFC NAT

Compliances
EMI: CE, FCC Class B
Safety: UL 1950, EN60950

Wireless RF

Radio
IEEE 802.11b

Frequency Band
USA-FCC: 2412~2462MHz (Ch1~Ch11), 11 channels
Canada-IC: 2412~2462MHz (Ch1~Ch11), 11 channels
Europe-ETSI: 2412~2472MHz (Ch1~Ch13), 13 channels
Spain: 2457~2462MHz (Ch10~Ch11), 2 channels
France: 2457~2472MHz (Ch10~Ch13), 3 channels
Japan-STD-T66/STD-33:2412~2482MHz (Ch1~Ch14), 14 channels

Operating Channel
IEEE 802.11b

Modulation Type (Data Rate)
BPSK for 1 Mbps
QPSK for 2 Mbps
CCK for 5.5/11 Mbps

Radio Technology
DSSS: Direct Sequence Spread Spectrum

Output Power
>+15 dBm; Typically +17 dBm

Current Consumption
TX 450 mA Max.
RX 320 mA Max.

Receive Sensitivity
-80 dBm for 11 Mbps, 8% @ BER 1E-5
-83 dBm for 5.5 Mbps, 8% @ BER 1E-5
-88 dBm for 2 Mbps, 8% @ BER 1E-5
-90 dBm for 1 Mbps, 8% @ BER 1E-5

F5D6231-4
E112002-R01