BELKIN®

4-Port Router

Share your broadband Internet access

Ethernet

Wired Ethernet 10/100 Mbps

User Manual

F5D5231-4

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Introduction

Benefits of a Home Network

Creating a home network is easy and very practical if you have more than one computer. Networking lets you share resources, such as printers and hard drives that, in the past, could be used ONLY by the computer directly connected to them.

Belkin home networking lets you easily enjoy these additional advantages:

- Share one high-speed Internet connection among all the computers in your home
- Share documents, music, video, and digital pictures
- Store, retrieve, and copy files from one computer to another
- Simultaneously play games online, check Internet email, and chat
- Share a single scanner or printer among the entire family

Advantages of a Wired Network

- **Low cost –** on average, wired networking devices are less expensive than wireless networking devices
- **Faster speeds –** common speed is 100Mbps with recent technology providing up to 1000Mbps
- **Better range –** wired Ethernet technology provides distance of up to 328 ft. (without a repeater), while wireless range is typically 150 to 200 ft.
- **Existing wired infrastructure –** because of the maturity of wired technology, some new homes are built with an Ethernet cabling infrastructure
- **Widespread industry acceptance –** a wide range of interoperable networking products availble

Product Features

In minutes you will be able to share your Internet connection and network your computers. The following is a list of features that make your new Wired Router an ideal solution for your home or small office network.

Easy Install Wizard

The Easy Install Wizard takes the guesswork out of setting up your Router. This automatic software determines your network settings for you and sets up the Router for connection to your Internet Service Provider (ISP). In a matter of minutes, your Router will be up and running on the Internet.

Note: Easy Install Wizard software is compatible with Windows 98SE, Me, 2000, and XP. If you are using another operating system, the Router can be set up using the Alternate Setup Method described in this manual.

Works with Both PCs and Mac® Computers

The Router supports a variety of networking environments including Mac OS® 8.x, 9.x, X v10.x, AppleTalk®, Linux®, Windows® 95, 98SE, Me, NT®, 2000, and XP, and others. All that is needed is an Internet browser and a network adapter that supports TCP/IP (the standard language of the Internet).

Front-Panel LED Display

Lighted LEDs on the front of the Router indicate which functions are in operation. You'll know at-a-glance whether your Router is connected to the Internet. This feature eliminates the need for advanced software and status-monitoring procedures.

Web-Based Advanced User Interface

You can set up the Router's advanced functions easily through your web browser, without having to install additional software onto the computer. There are no disks to install or keep track of and, best of all, you can make changes and perform setup functions from any computer on the network quickly and easily.

NAT IP Address Sharing

Your Router employs Network Address Translation (NAT) to share the single IP address assigned to you by your Internet Service Provider while saving the cost of adding IP addresses to your Internet service account.

SPI 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, and fragment flooding.

Integrated 10/100 4-Port Switch

The Router has a built-in, 4-port network switch to allow your wired computers to share printers, data and MP3 files, digital photos, and much more. The switch features automatic detection so it will adjust to the speed of connected devices. The switch will transfer data between computers and the Internet simultaneously without interrupting or consuming resources.

Universal Plug-and-Play (UPnP) Compatibility

UPnP (Universal Plug-and-Play) is a technology that offers seamless operation of voice messaging, video messaging, games, and other applications that are UPnP-compliant.

Support for VPN Pass-Through

If you connect to your office network from home using a VPN connection, your Router will allow your VPN-equipped computer to pass through the Router and to your office network.

Built-In Dynamic Host Configuration Protocol (DHCP)

Built-In Dynamic Host Configuration Protocol (DHCP) on-board makes for the easiest possible connection of a network. The DHCP server will assign IP addresses to each computer automatically so there is no need for a complicated networking setup.

Knowing your Router

Package Contents

- Belkin 4-Port Router
- Quick Installation Guide
- Belkin Easy Install Wizard Software CD
- Belkin RJ45 Ethernet Networking Cable
- Power Supply
- User Manual

System Requirements

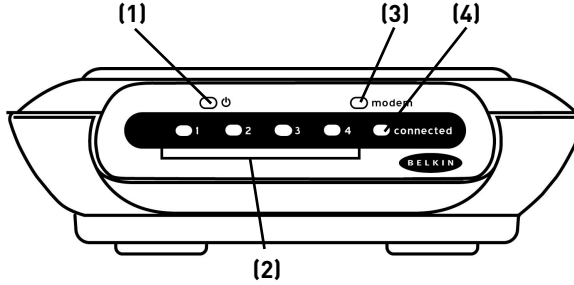
- Broadband Internet connection such as a cable or DSL modem with RJ45 (Ethernet) connection
- At least one computer with an installed network interface adapter
- TCP/IP networking protocol installed on each computer
- RJ45 Ethernet networking cable
- Internet browser

Easy Install Wizard Software System Requirements

- A PC running Windows 98SE, Me, 2000, or XP, or a Mac computer running Mac OS 9.x or OS X
- Minimum 64MB RAM
- Internet browser

The Router has been designed to be placed on a desktop vertically. All of the cables exit from the rear of the Router for better organization and utility. The LED indicators are easily visible on the front of the Router to provide you with information about network activity and status.

Front Panel



(1) Power/Ready LED

When you power ON or restart the Router, the Power/Ready LED blinks. When the Router has completely booted up, the Power/Ready LED turns SOLID. When the LED is SOLID, the Router is ready for use.

OFF	Router is OFF
Blinking Green	Router is booting up
Solid Green	Router is ready

(2) LAN Port Status LEDs

These LEDs are labeled 1–4 and correspond to the numbered ports on the rear of the Router. When a computer is properly connected to one of the LAN ports on the rear of the Router, the LED will turn ON. GREEN means a 10Base-T device is connected, AMBER means a 100Base-TX device is connected. The LED will blink rapidly when information is being sent over the port.

OFF	No device is linked to the port
Green	10Base-T device connected
Orange	100Base-Tx device connected
Blinking (Orange or Green)	Port activity

(3) Modem Status LED

This LED will be GREEN when your modem is connected properly to the Router. The LED will blink rapidly when there is information being sent over the port between the Router and the modem.

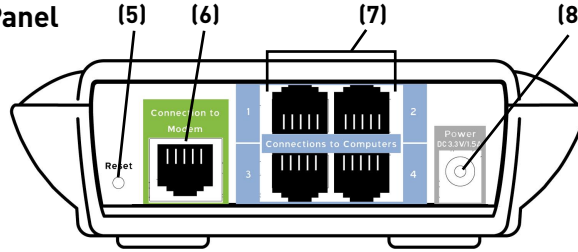
OFF	No modem link
Solid Green	Good modem link
Blinking Green	Modem activity

(4) Connected LED

This unique LED shows you when the Router is connected to the Internet. When the light is OFF, the Router is NOT connected to the Internet. When the light is blinking, the Router is attempting to connect to the Internet. When the light is solid GREEN, the Router is connected to the Internet. When using the “Disconnect after x minutes” feature, this light will come in handy for knowing the status of your Router’s connection.

OFF	Router is not connected to the Internet
Blinking Green	Router is attempting to connect to the Internet
Solid Green	Router is connected to the Internet

Rear Panel



(5) Reset Button

The reset button is used in the rare event that the Router functions improperly. Resetting the Router will restore the Router's normal operation while maintaining the programmed settings. You can also restore the factory default settings by using the reset button. Use the restore option in instances where you may have forgotten your custom password.

a. **Using the Reset Button to Reset the Router**
Push and release the Reset button. The lights on the Router will momentarily flash. The Power/Ready light will begin to blink. When the Power/Ready light becomes solid again, the reset is complete.

b. **Using the Reset Button to Restore the Factory Defaults**
Press and hold the Reset button for five seconds then release it. The lights on the Router will momentarily flash. The Power/Ready light will begin to blink. When the Power/Ready light becomes solid again, the restore is complete.

(6) Modem Port

This port is for connection to your cable or DSL modem. Use the cable that was provided with the modem to connect the modem to this port. We recommend you use the included, high-quality networking cable, rather than another cable, which may not work properly.

(7) Computer (LAN) Ports

Connect your computers to these ports. These ports are RJ45, 10/100 auto-negotiation, auto-uplinking ports for standard UTP category 5 or 6 Ethernet cable. The ports are labeled 1 through 4. These ports correspond to the numbered LEDs on the front of the Router.

(8) Power Jack

Connect the included DC 3.3V /1.5A power supply to this jack.

Verify the contents of your box. You should have the following:

- Belkin 4-Port Router
- Quick Installation Guide
- Belkin Easy Install Wizard Software CD
- Belkin RJ45 Ethernet Networking Cable
- Power Supply
- User Manual

Modem Requirements

Your cable or DSL modem must be equipped with an RJ45 Ethernet port. Many modems have both an RJ45 Ethernet port and a USB connection. If you have a modem with both Ethernet and USB, and are using the USB connection at this time, you will be instructed to use the RJ45 Ethernet port during the installation procedure. If your modem has only a USB port, you can request a different type of modem from your ISP, or you can, in some cases, purchase a modem that has an RJ45 Ethernet port on it.

Ethernet

USB

Easy Install Wizard

Belkin has provided our Easy Install Wizard software to make installing your Router a simple and easy task. You can use it to get your Router up and running in minutes. The Easy Install Wizard requires that your Windows 98SE, Me, 2000, or XP computer be connected directly to your cable or DSL modem and that the Internet connection is **active and working** at the time of installation. If it is not, you must use the "Alternate Setup Method" section of this User Manual to configure your Router. If you are using an operating system other than Windows 98SE, Me, 2000, or XP, Mac OS 9.x, or Mac OS X, you must set up the Router using the "Alternate Setup Method" section of this User Manual.

IMPORTANT: Run the Easy Install Wizard from the computer that is directly connected to the cable or DSL modem. DO NOT CONNECT THE ROUTER AT THIS TIME.

Step 1 | Run the Easy Install Wizard software

1.1 Shut down any programs that are running on your computer at this time.

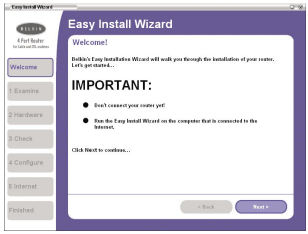
1.2 **DO NOT CONNECT THE ROUTER AT THIS TIME.** Make sure you have the following items at the computer that is now directly connected to the cable or DSL modem.

- Belkin Wired Router
- Quick Installation Guide
- Belkin Easy Install Wizard Software CD
- Belkin RJ45 Networking Cable
- Power Supply
- User Manual

1.3 Turn off any firewall or Internet-connection-sharing software on your computer.

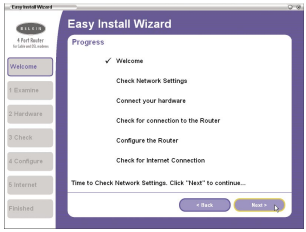
1.4 Insert the Easy Install Wizard Software CD into your CD-ROM drive. The Easy Installation Wizard screen will automatically appear on your screen within 15 seconds. If it does not, select your CD-ROM drive from "My Computer" and double-click on the file named "Setup" on the CD-ROM.

1.5 Follow the Easy Install Wizard to complete the installation.



Welcome Screen

After you insert the CD into your CD-ROM drive, the Wizard's welcome screen will appear. Make sure you have not connected the Router at this point. If you have connected your Router, please reconnect your computer directly to the modem. Click "Next" when you are ready to move on.

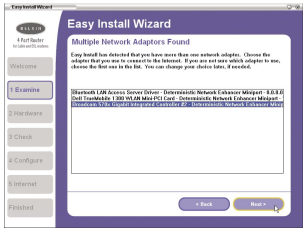


Progress Screen

Easy Install will show you a progress screen each time a step in the setup has been completed. Each time you see the progress screen, click "Next" when you are ready to move to the next step.

Examining Settings

The Wizard will now examine your computer's network settings and gather information needed to complete the Router's connection to the Internet. When the Wizard is finished examining your computer, click "Next" to continue.

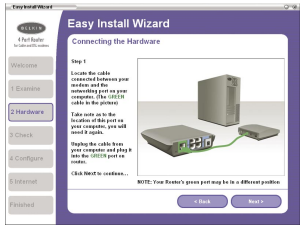


Multi-NICs Screen

If you have more than one network adapter installed in your computer, the Wizard will need to know which adapter is connected to your modem. Select the network card that is connected to your modem from the list and click "Next". If you are not sure which adapter to choose, select the adapter at the top of the list. If you mistakenly choose the wrong adapter now, you will be able to choose a different one later.

Step 2 | Connect the Router to your modem and computer

The Wizard will walk you through connecting your Router to your computer and modem. Follow the steps on the screen using the pictures as a guide.



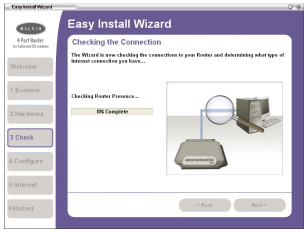
2.1 This step instructs you to locate the cable connected between your modem and the networking port on your computer. Unplug this cable from the computer and plug it into the GREEN port on the Router. Click “Next” to continue.

2.2 This step instructs you to locate the BLUE cable that is included with your Router. Plug one end of this cable into ANY one of the BLUE ports on your Router. Plug the other end of the cable into the networking port on your computer. Click “Next” to continue.

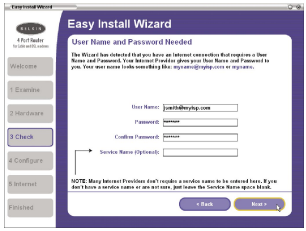
2.3 This step instructs you to locate the power supply that is included with your Router. Plug the power supply’s small connector into the GRAY port on the Router. Plug the power supply into an empty power outlet. Click “Next” to continue.

2.4 This step instructs you to look at the lights on the front of your Router. Make sure the appropriate lights are ON. Refer to the Easy Install Wizard software on your computer’s screen for more details. Click “Next” to continue.

Step 3 | Check the connection



3.1 Once you have completed connecting the Router, the Wizard will check the connection to the Router, then go on to determine what type of Internet connection you have.



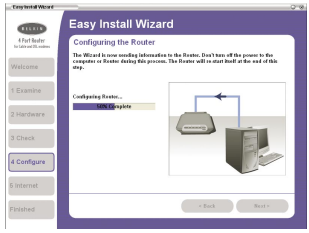
3.2 User Name and Password Needed

If you have a connection type that requires a user name and a password, the Wizard will ask you to type in your user name and password. If your connection type does not require a user name and password, you will not see this screen.

Your user name and password is provided to you by your Internet Service Provider. If you have to type in a user name and password to connect to the Internet, then type that same user name and password in here. Your user name looks something like “jsmith@myisp.com” or simply “jsmith”. The service name is optional and is very rarely required by your ISP. If you don’t know your service name, leave this blank. When you have entered your information, click “Next” to move on.

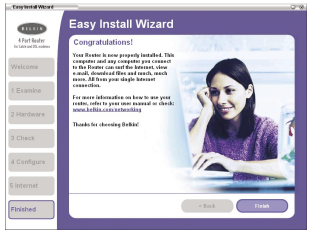
Step 4 | Configure the Router

The Wizard will now transfer all of the configuration information to the Router. This will take approximately one minute. During this time, do not turn off the Router or computer. The Router will restart itself at the end of this step.



4.1 Checking the Internet

The Wizard will now check for an Internet connection. This can take a few minutes. The Wizard may not detect a connection right away. If not, it will retry a number of times. The “Connected” light on the front panel of the Router will flash during this time.



4.2 Finished

When the Internet connection is complete, the Wizard will tell you that you are finished. The “Connected” LED on the front of the Router will be solid GREEN, indicating that the Router is now connected to the Internet.

Your Router is now connected to the Internet. Now you can begin surfing the Internet by opening your browser and going to your favorite web page.

Congratulations! You have finished installing your new Belkin Router. You are ready to set up the other computers in your home. You can also add computers to your Router any time you want. Simply follow the “Alternate Setup Method” on the next page to learn how to add more computers.

Alternate Setup Method

The Advanced User Interface is a web-based tool that you can use to set up the Router if you don't want to use the Easy Install Wizard. You can also manage advanced functions of the Router. From the Advanced User Interface, you can perform the following tasks:

- View the Router's current settings and status.
- Configure the Router to connect to your ISP with the settings that they provided to you.
- Change the current network settings such as the Internal IP address, the IP address pool, DHCP settings, and more.
- Set the Router's firewall to work with specific applications (port forwarding).
- Set up security features such as client restrictions and MAC address filtering.
- Enable the DMZ feature for a single computer on your network.
- Change the Router's internal password.
- Enable/Disable UPnP (Universal Plug-and-Play).
- Reset the Router.
- Back up your configuration settings.
- Reset the Router's default settings.
- Update the Router's firmware.

Alternate Setup Method Step 1	**Connect the Router**

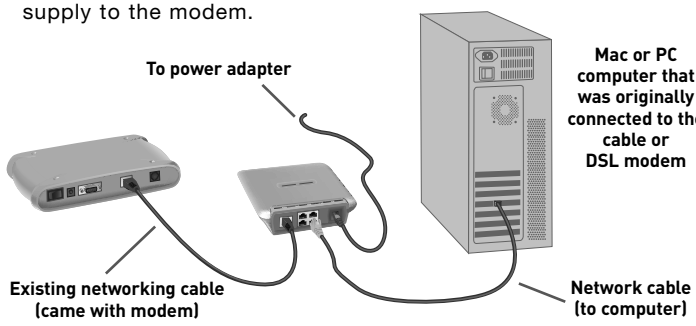
1.1 Turn off the power to your modem by unplugging the power supply from the modem.

1.2 Locate the network cable that is connected between your modem and your computer and unplug it from your computer, leaving the other end connected to your modem.

1.3 Plug the loose end of the cable you just unplugged into the port on the back of the Router labeled "Connection to Modem".

1.4 Connect a new network cable (not included) from the back of the computer to one of the ports labeled "1-4". **Note:** It does not matter which numbered port you choose.

1.5 Turn your cable or DSL modem on by reconnecting the power supply to the modem.



1.6 Before plugging the power cord into the Router, plug the cord into the wall, then plug the cord into the Router's power jack.

1.7 Verify that your modem is connected to the Router by checking the lights on the front of the Router. The green light labeled "Modem" should be ON if your modem is connected correctly to the Router.

1.8 Verify that your computer is connected properly to the Router by checking the lights labeled "LAN 1,2,3,4". The light which corresponds to the numbered port that you connected your computer to should be ON if your computer is connected properly.

Alternate Setup Method Step 2	**Set your computer's network settings to work with a DHCP server**

See the section in this manual called "Manually Configuring Network Settings" for directions (page 56).

Alternate Setup Method Step 3	Configure the Router using the Web-Based User Interface

Using your Internet browser, you can access the Router's Web-Based Advanced User Interface. In your browser, type "192.168.2.1" (do not type in anything else such as "http://" or "www"). Then press the "Enter" key.

Logging into the Router

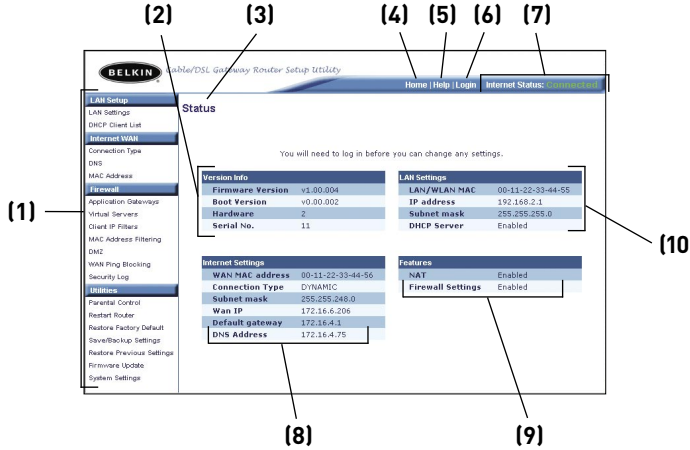
You will see the Router's home page in your browser window. The home page is visible to any user who wants to see it. To make any changes to the settings of the Router, you have to log in. Clicking the "Login" button or clicking on any one of the links on the home page will take you to the Login screen. The Router ships with no password entered. In the login screen, leave the password blank and click the "Submit" button to log in.

Logging out of the Router

One computer at a time can log in to the Router for the purposes of making changes to the settings of the Router. Once a user has logged in to make changes, there are two ways that the computer can be logged out. Clicking the "Logout" button will log the computer out. The second method is automatic. The login will time out after a specified period of time. The default login time out is 10 minutes. This can be changed from 1 to 99 minutes. For more information see the section in this User Manual titled "Changing the Login Timeout Setting".

Understanding the Web-Based Advanced User Interface

The home page is the first page you will see when you access the Advanced User Interface (UI). The home page shows you a quick view of the Router's status and settings. All advanced setup pages can be reached from this page.



(1) Quick Navigation Links

You can go directly to any of the Router's advanced UI pages by clicking directly on these links. The links are divided into logical categories and grouped by tabs to make finding a particular setting easier to find. Clicking on the purple header of each tab will show you a short description of the tab's function.

(2) Version Info

Shows the firmware version, boot code version, hardware version, and serial number of the Router.

(3) Page Name

The page you are on can be identified by this name. This User Manual will sometimes refer to pages by name. For instance "LAN > LAN Settings" refers to the "LAN Settings" page.

(4) Home Button

The home button is available in every page of the UI. Clicking this button will take you back to the "Home" page.

(5) Help Button

The “Help” button gives you access to the Router’s help pages. Help is also available on many pages by clicking “more info” next to certain sections of each page.

(6) Login/Logout Button

This button enables you to log in and out of the Router with the press of one button. When you are logged into the Router, this button will change to read “Logout”. Logging into the Router will take you to a separate login page where you will need to enter a password. When you are logged into the Router you can make changes to the settings. When you are finished making changes, you can log out of the Router by clicking the “Logout” button. For more information about logging into the Router, see the section called “Logging into the Router”.

(7) Status Indicator

This indicator is visible in all pages of the Router. It tells you the connection status of the Router. When the indicator says “connection OK” in GREEN, the Router is connected to the Internet. When the Router is not connected to the Internet, the indicator will read “no connection” in RED. The indicator is automatically updated when you make changes to the settings of the Router.

(8) Internet Settings

Shows the settings of the Internet/WAN side of the Router that connects to the Internet. Changes to any of these settings can be made by clicking on the links or by clicking on the “Internet/WAN” Quick Navigation link on the left side of the screen.

(9) Features

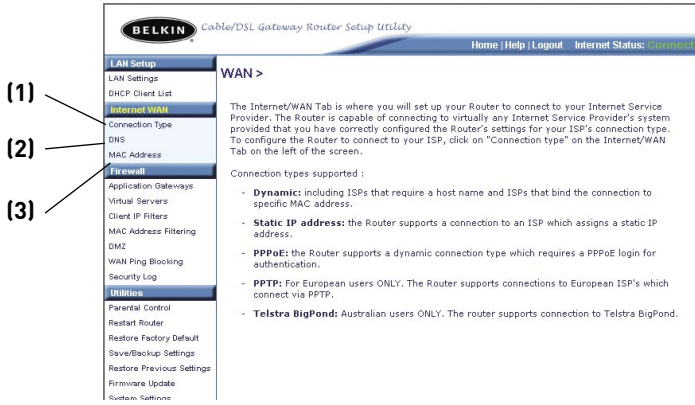
Shows the status of the Router’s NAT, firewall, and wireless features. Changes can be made to the settings by clicking on any one of the links or by clicking the Quick Navigation links on the left side of the screen.

(10) LAN Settings

Shows you the settings of the Local Area Network (LAN) side of the Router. Changes can be made to the settings by clicking on any one of the links (IP address, subnet mask, DHCP server) or by clicking the “LAN” Quick Navigation link on the left side of the screen.

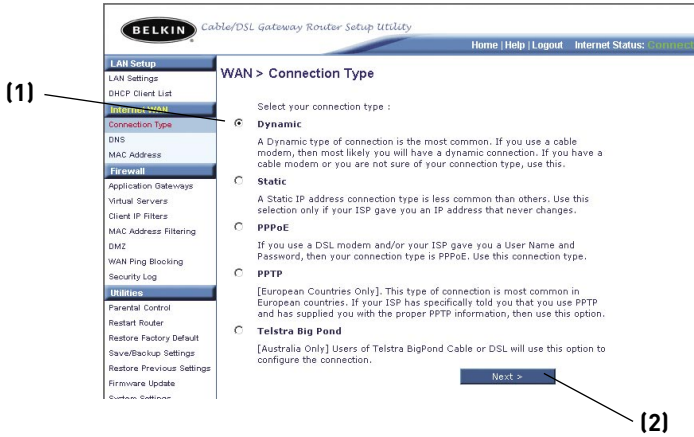
Alternate Setup Method Step 4	Set your computer's network settings to work with a DHCP server

The "Internet/WAN" tab is where you will set up your Router to connect to your Internet Service Provider (ISP). The Router is capable of connecting to virtually any ISP's system provided you have correctly configured the Router's settings for your ISP's connection type. Your ISP connection settings are provided to you by your ISP. To configure the Router with the settings that your ISP gave you, click "Connection Type" **(1)** on the left side of the screen. Select the connection type you use. If your ISP gave you DNS settings, clicking "DNS" **(2)** allows you to enter DNS address entries for ISPs that require specific settings. Clicking "MAC address" **(3)** will let you clone your computer's MAC address or type in a specific WAN MAC address if required by your ISP. When you have finished making settings, the "Internet Status" indicator will read "connection OK" if your Router is set up properly.



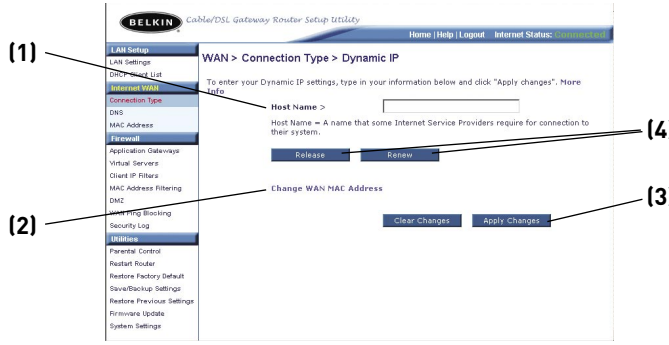
Setting your Connection Type

From the “Connection Type” page, you can select the type of connection you use. Select the type of connection you use by clicking the radio button **(1)** next to your connection type and then click “Next” **(2)**.



Setting your ISP Connection Type to Dynamic IP

A dynamic connection type is the most common connection type found with cable modems. Setting the connection type to dynamic in many cases is enough to complete the connection to your ISP. Some dynamic connection types may require a host name. You can enter your host name in the space provided if you were assigned one. Your host name is assigned by your ISP. Some dynamic connections may require that you clone the MAC address of the PC that was originally connected to the modem.



(1) Host Name

This space is provided to enter a host name that needs to be visible to your ISP. Enter your host name here and click “Apply Changes” **(3)**. If your ISP did not assign you a host name, or you are not sure, leave this blank.

(2) Change WAN MAC Address

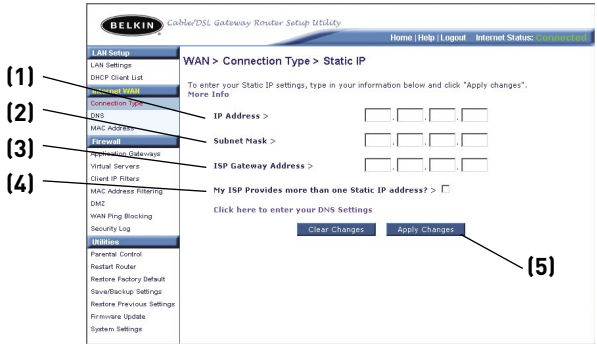
If your ISP requires a specific MAC address to connect to the service, you can enter a specific MAC address or clone the current computer’s MAC address through this link.

(4) Release/Renew Buttons

Assuming that you have already obtained an IP address from your ISP, clicking the “Release” button will release the IP address and disconnect the Router from the Internet. Clicking the “Renew” button will request a new IP address from your ISP and connect the Router to the Internet.

Setting your ISP Connection Type to Static IP

A static IP address connection type is less common than other connection types. If your ISP uses static IP addressing, you will need your IP address, subnet mask, and ISP gateway address. This information is available from your ISP or on the paperwork that your ISP left with you. Type in your information then click “Apply Changes” **(5)**. After you apply the changes, the “Internet Status” indicator will read “connection OK” if your Router is set up properly.



(1) IP Address

Provided by your ISP. Enter your IP address here.

(2) Subnet Mask

Provided by your ISP. Enter your subnet mask here.

(3) ISP Gateway Address

Provided by your ISP. Enter the ISP gateway address here.

(4) My ISP Provides More Than one Static IP Address

If your ISP assigns you more than one static IP address, your Router is capable of handling up to five static WAN IP addresses. Select “My ISP Provides more than one Static IP address” and enter your additional addresses.

Setting your ISP Connection Type to (PPPoE)

Most DSL providers use PPPoE as the connection type. If you use a DSL modem to connect to the Internet, your ISP may use PPPoE to log you into the service. If you have an Internet connection in your home or small office that doesn't require a modem, you may also use PPPoE.

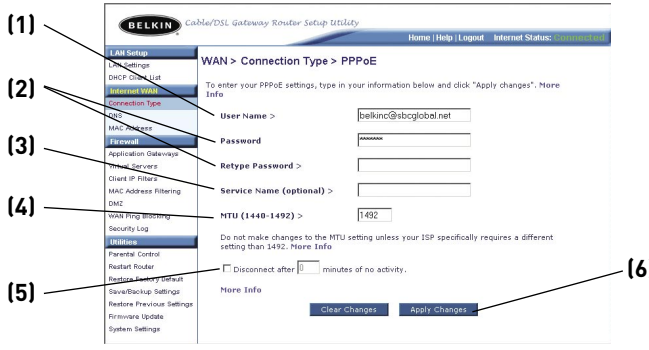
Your connection type is PPPoE if:

1) Your ISP gave you a user name and password which is required to connect to the Internet;

2) Your ISP gave you software such as WinPOET, Enternet300 that you use to connect to the Internet; or,

3) You must double-click on a desktop icon other than your browser to get on the Internet.

To set the Router to use PPPoE, type in your user name and password in the spaces provided. If you do not have a service name or do not know it, leave the "Service Name" field blank. After you have typed in your information, click "Apply Changes" **(6)**. After you have typed the changes, the "Internet Status" indicator will read "connection OK" if your Router is set up properly.



(1) User Name

This space is provided to type in your user name that was assigned by your ISP.

(2) Password

Type in your password and retype it into the “Retype Password” box to confirm it.

(3) Service Name

A service name is rarely required by an ISP. If you are not sure if your ISP requires a service name, leave this blank.

(4) MTU

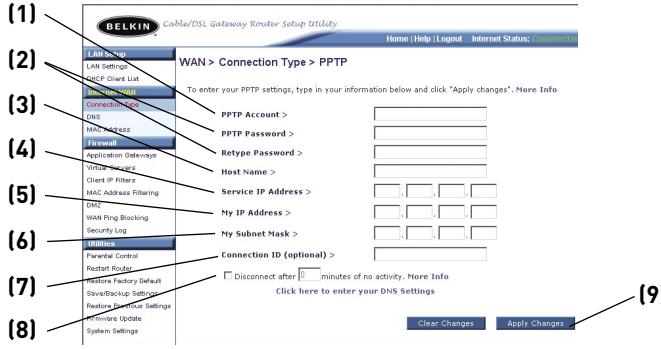
The MTU setting should never be changed unless your ISP gives you a specific MTU setting. Making changes to the MTU setting can cause problems with your Internet connection including disconnection from the Internet, slow Internet access, and problems with Internet applications working properly.

(5) Disconnect after X....

The disconnect feature is used to automatically disconnect the Router from your ISP when there is no activity for a specified period of time. For instance, placing a check mark next to this option and entering “5” into the minute field will cause the Router to disconnect from the Internet after five minutes of no Internet activity. This option should be used if you pay for your Internet service by the minute.

Setting your ISP Connection Type to Point-to-Point Tunneling Protocol (PPTP)

[European Countries Only].This type of connection is most common in European countries. Some ISPs require a connection using PPTP protocol. This sets up a direct connection to the ISP's system. Type in the information provided by your ISP in the space provided. When you have finished, click "Apply Changes" **(9)**. After you apply the changes, the "Internet Status" indicator will read "connection OK" if your Router is set up properly.



(1) PPTP Account

Provided by your ISP. Enter your PPTP account name here.

(2) PPTP Password

Type in your password and retype it into the "Retype Password" box to confirm it.

(3) Host Name

Provided by your ISP. Enter your host name here.

(4) Service IP Address

Provided by your ISP. Enter your service IP address here.

(5) My IP Address

Provided by your ISP. Enter the IP address here.

(6) My Subnet Mask

Provided by your ISP. Enter the IP address here.

(7) Connection ID

Provided by your ISP. If your ISP did not give you a connection ID, leave this blank.

(8) Disconnect after X....

The disconnect feature is used to automatically disconnect the Router from your ISP when there is no activity for a specified period of time. For instance, placing a check mark next to this option and entering “5” into the minute field will cause the Router to disconnect from the Internet after five minutes of no Internet activity. This option should be used if you pay for your Internet service by the minute.