Router Setup Manual

NETGEAR

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Router Setup Manual

Chapter 1
Connecting the Router to the Internet

This chapter describes how to connect your router and how to access the Internet through it.

What's in the Box?

The product package should contain the following items:

- The router
- An AC power adapter (varies by region)
- A yellow Ethernet cable
- *Resource CD*, including:
    - The Smart Wizard Installation Assistant
    - This manual
- Warranty and Support Information cards

If any of the parts are incorrect, missing, or damaged, contact your NETGEAR dealer. Keep the carton, including the original packing materials, in case you need to return the product for repair.

The Router Bottom Label

View the label on the bottom of the router to identify the serial number, security PIN number, port connectors, status lights, and default login information.

The Front of the Router
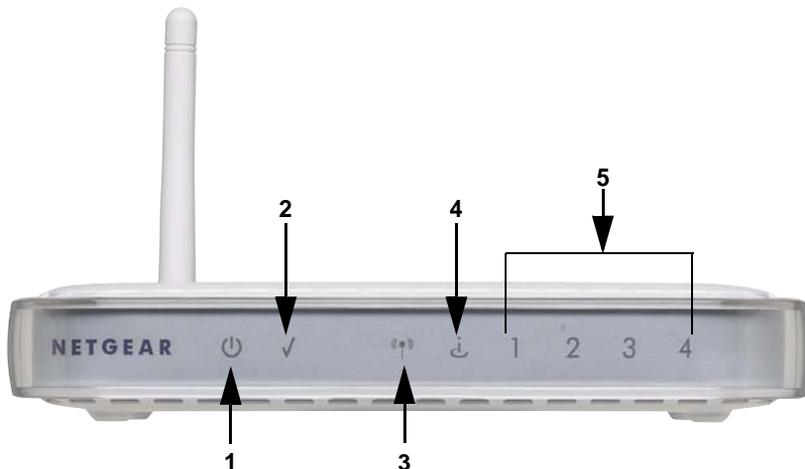
Figure 1-1

You can use the status lights on the front of the router to verify various conditions.

Table 1-1.

Status Light	Activity	Description
1. Power	On Blink Off	Power is supplied to the router. The firmware is corrupt, and the router is in rescue mode running TFTP server. You can use TFTP client to upload valid firmware. Power is not supplied to the router.
2. Test	On Blink Off	The system is initializing. Firmware is upgrading or restoring to factory default settings. The system is ready and running.
3. Wireless	On Off	Indicates that the wireless router radio is enabled. The wireless router radio is disabled.
4. Internet	On (amber) On (green) Blink	The Ethernet cable is connected but the router has not gotten an Internet address. The router has an Internet address. Data is being communicated through the Internet port.
5. LAN (Local Area Network) Lights 1-4	On (green) Blink (green) On (amber) Blink (amber) Off	The local port is connected to a 100 Mbps device. Data is being transmitted at 100 Mbps. The local port has detected a link with a 10 Mbps device. Data is being transmitted at 10 Mbps. No link is detected on this port.

The Back of the Router
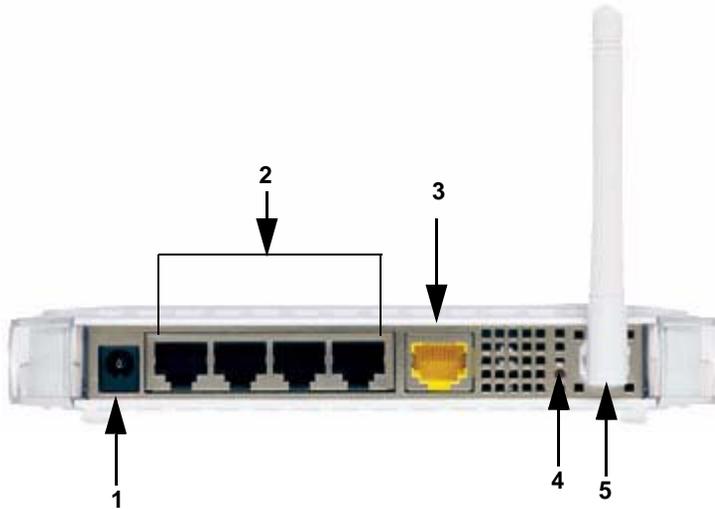
Figure 1-2

The back of the router has the following port connections:

1. Power adapter port
2. Four local Ethernet ports for connecting the local computers
3. Internet port for connecting to a cable or ADSL modem
4. Factory default reset button
5. Wireless antenna

What You Need Before You Begin

Prepare the following before you set up your router:

• Internet service.

• The configuration information your Internet Service Provider (ISP) gave you. Depending on how your Internet account was set up, your may need one or more of these settings for the router to access the Internet:

   – Host and Domain Names

   – Internet Login Name and Password (frequently an email address and password)

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- – Domain Name Server (DNS) Addresses

- – Fixed or Static IP Address

Your ISP should have provided you with all the information needed to connect to the Internet. If you cannot locate this information, you can ask your ISP to provide it.

• For cable modem service, use the computer you first used to set up your Internet service.

Two Setup Methods: 1) Smart Wizard Setup 2) Manual Setup

You have two methods available for setting up your router.

• **Smart Wizard Setup**: Click Setup on the CD to use the Smart Wizard.

- – This option is the easiest. The wizard guides you through the setup process, automates many of the steps, and verifies that necessary conditions exist and that steps you perform have been successfully completed.

- – This option requires a PC running Microsoft Windows.

• **Manual Setup**: This option is best if you cannot use the wizard on the CD, are replacing an existing router, or are technically knowledgeable. Follow the instructions in this manual to set up your router.

Use the setup option that best suites you.

Smart Wizard Setup

The wizard setup process should take about 20 minutes to complete.

1. Insert the NETGEAR CD into a Windows PC. The CD will automatically start and detect the language you are using on your PC. Accept the language option or change to a different language.

> **Note:** If the CD does not automatically start, browse the CD and double-click on Autorun.

2. Click **Next** to proceed.

3. Click **Setup** to start the Smart Wizard installation assistant. Follow the wizard instructions.

Manual Setup

There are two steps to setting up your router:

1. Connect the router to the ADSL or cable modem, and connect a computer to the router.

> **Note:** Your computer has to be set to automatically get its TCP/IP network settings from the router via DHCP. This is usually the case. If your are unsure about this, use the wizard on the CD which automatically takes care of this for you, or refer to the documentation for your computer.

2. Configure the router to use your Internet service.

Connecting Your Router

1. Connect the router, the computer, and the modem.

    a. Turn off your computer.

    b. Turn off and unplug the cable or ADSL broadband modem.

    c. Locate the Ethernet cable (**1**) that connects your computer to the modem.
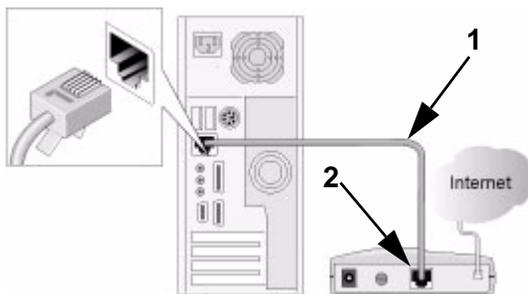
Figure 1-3

    d. Disconnect the cable at the modem end only (**2**).

e. Securely insert the free end of the cable (**1**) into a LAN port on the router, such as LAN port 4 (**3**).
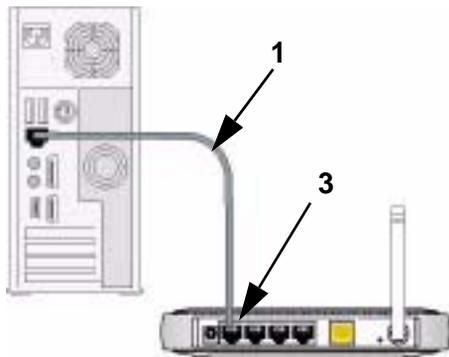

Figure 1-4

f. Securely insert the yellow cable (**5**) that came with your router into the yellow Internet port of the router (**4**) and the other end into the modem (**2**).
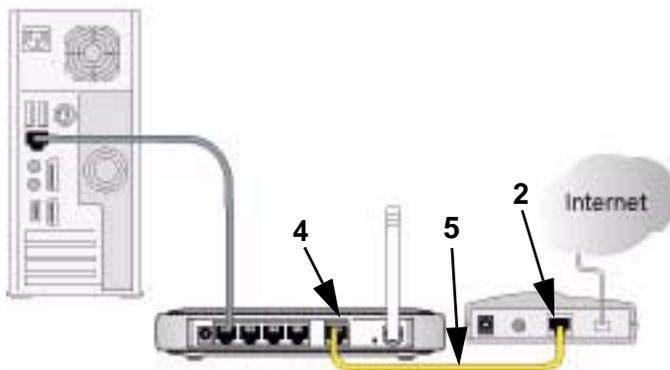

Figure 1-5

Your network cables are connected and you are ready to start your network.

2. Start your network in the correct sequence

> ⚠️ **Warning:** Failure to start or restart your network in the correct sequence could prevent you from accessing the Internet.

a. First, plug in and turn on the cable or DSL modem. Wait 2 minutes.

b. Now, plug the power cord into your router and into a power outlet. Wait 1 minute.

c. Last, turn on your computer.

> → **Note:** For DSL customers, if software logs you in to the Internet, *do not* run that software. You may need to go to the Internet Explorer Tools menu, Internet Options, Connections tab page where you can select "Never dial a connection."

Figure 1-6

d. Check the router status lights to verify the following:

- *Power*: The power light (**1**) should turn solid green. If it does not, see "Quick Tips" on page 2-1.
- Test: The test light (**2**) should turn solid green when the router is first turned on, then go off. If after 2 minutes it is still on, see "Quick Tips" on page 2-1.
- *Wireless*: The Wireless light (**3**) should be on.
- *Internet*: The Internet port light (**4**) should be lit. If not, make sure the Ethernet cable is securely attached to the router Internet port and the modem, and the modem is powered on.
- *LAN*: A LAN light (**5**) should be lit. Green indicates your computer is communicating at 100 Mbps; amber indicates 10 Mbps. If a LAN light is not lit, check that the Ethernet cable from the computer to the router is securely attached at both ends, and that the computer is turned on.

Setting Up Your Router for Internet Access

To access the router using its login name and password, follow these instructions.

1. Connect to the router by typing **http://www.routerlogin.net** in the address field of your browser, then click **Enter**.

Figure 1-7

> **Tip:** Connect to the router by typing any one of these three URLs in the address field of your browser, then clicking Enter:
> • *http://www.routerlogin.net*
> • *http://www.routerlogin.com*
> The router will prompt you to enter the user name of admin and the password.

2. For security reasons, the router has its own user name and password. When prompted, enter **admin** for the router user name and **password** for the router password, both in lower case letters.

> **Note:** The router user name and password are not the same as any user name or password you may use to log in to your Internet connection.

A login window like the one shown below opens:

Figure 1-8

3. Enter the user name and password. The router will display its home page.

When the router is connected to the Internet, click the Knowledge Base or the Documentation link under the Web Support menu to view support information or the documentation for the router.

If you do not click Logout, the router will wait 5 minutes after there is no activity before it automatically logs you out.

Set Up and Test Basic Wireless Connectivity

> **For Advanced Users Only!** If you are using the Microsoft Vista OS, you can elect to use Windows Connect Now to implement WPS (Wi-Fi Protected Setup) and configure the SSID and WPA security password for your router. You will be prompted for your security PIN number which is on the label on the bottom of your router. To configure other router settings, access the router interface following the steps below; or see the *Reference Manual* for your router.
>
> This feature is available only if the router is in its default state or if the "allow a registrar to configure this router" radio box has been checked.

Follow the instructions below to set up and test basic wireless connectivity. Once you have established basic wireless connectivity, you can enable security settings appropriate to your needs.

1. Log in to the router at its default LAN address of **http://www.routerlogin.net** with its default user name of **admin** and default password of **password**, or using whatever LAN address and password you have set up.

2. Click the Wireless Settings link in the main menu of the router.

3. Note that the default SSID is **NETGEAR**.

> **Note:** The SSID of any wireless adapters must match the SSID you configure in the router. If they do not match, you will not get a wireless connection.

4. Set the Region. Select the region in which the wireless interface will operate.

5. Click Apply to save your changes.

> → **Note:** If you are configuring the router from a wireless computer and you change the router's SSID, channel, or security settings, you will lose your wireless connection when you click Apply. You must then change the wireless settings of your computer to match the router's new settings.

6. Configure and test your computers for wireless connectivity.

Program the wireless adapter of your computers to have the same wireless network name (SSID) as the router. Check that they have a wireless link and are able to obtain an IP address by DHCP from the router.

Implement Appropriate Wireless Security

> ⚠ **Warning:** Indoors, computers can connect over 802.11g wireless networks at a maximum range of up to 300 feet. Such distances can allow for others outside of your immediate area to access your network.

Unlike wired network data, your wireless data transmissions can extend beyond your walls and can be received by anyone with a compatible adapter. For this reason, use the security features of your wireless equipment. The router provides highly effective security features which are covered in detail in full reference manual that is available from a link on the CD as well as a link in the main menu of your router. Follow the instructions in the full manual and in the router help screens to deploy the security features appropriate to your needs.

Product Registration, Support, and Documentation

Register your product at *http://www.NETGEAR.com/register*. Registration is required before you can use our telephone support service. Product updates and Web support are always available by going to: *http://kbserver.netgear.com/*.

Documentation is available on the CD, on the support Web site, and on the documentation Web site. When the router is connected to the Internet, click the Knowledge Base or the Documentation link under the Web Support menu to view support information or the documentation for the router.

Connecting the Router to the Internet

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Chapter 2
Troubleshooting

This chapter gives information about troubleshooting your router.

Quick Tips

Here are some tips for correcting simple problems you may have.

Be sure to always start your network in this sequence:

1. Turn off and unplug the modem from it's power outlet, and turn off the router and computer.

2. Turn on the modem, and wait two minutes

3. Turn on the router and wait 1 minute

4. Turn on the computer.

Make sure the Ethernet cables are securely plugged in.

- The Internet status light on the router will be lit if the Ethernet cable to the router from the modem is plugged in securely and the modem and router are both turned on.

- For each powered on computer connected to the router with a securely plugged in Ethernet cable, the corresponding router LAN port status light will be lit. The label on the bottom of the router identifies the number of each LAN port.

Make sure the network settings of the computer are correct.

- LAN connected computers *must* be configured to obtain an IP address automatically via DHCP. Please see the links see links in *Appendix B, "Related Documents"* for help with this.

- Some cable modem services require you to use the MAC address of the computer registered on the account. If so, in the Router MAC Address section of the Basic Settings menu, select, "Use this Computer's MAC Address." Click **Apply** to save your settings. Restart the network in the correct sequence.

Check the router status lights to verify correct router operation.

If the Power light does not turn solid green within 2 minutes after turning the router on, reset the router according to the instructions in "Restoring the Default Configuration and Password" on page 2-6.

To Verify Basic Functioning

After you turn on power to the router, the following sequence of events should occur:

1. When power is first applied, verify that the Power light is on (see "The Front of the Router" on page 1-2 for an illustration).

2. Verify that the Test light lights within a few seconds, indicating that the self-test procedure is running.

3. After approximately 20 seconds, verify that:

   a. The Test light turned off.

   b. The LAN port lights are lit for any local ports that are connected.

   c. The Internet port is connected and its light is lit.

   d. The Wireless port light is lit.

   If a port's light is lit, a link has been established to the connected device. If a LAN port is connected to a 100 Mbps device, verify that the port's light is green. If the port is 10 Mbps, the light will be amber.

Power Light Not On

If the Power and other lights are off, check the following:

* Make sure that the power cord is properly connected to your router and that the power supply adapter is properly connected to a functioning power outlet.

* Check that you are using the power adapter supplied by NETGEAR for this product.

If the error persists, you have a hardware problem and should contact technical support.

Test Light Never Turns On or Stays On

When the router is turned on, the Test light turns on for about 20 seconds and then turns off. If the Test light does not turn on or stays on, the router has a problem.

If you experience problems with the Test light, cycle the power to see if the router recovers.

If all lights including the Test light are still on one minute after power up:

- Turn the power off and back on to see if the router recovers.
- Clear the router's configuration to factory defaults. This will set the router's IP address to www.routerlogin.net. This procedure is explained in "Restoring the Default Configuration and Password" on page 2-6.

If the error persists, you might have a hardware problem and should contact technical support.

LAN or Internet Port Lights Not On

If either the LAN or Internet lights do not light when the Ethernet connection is made, check the following:

- Make sure that the Ethernet cable connections are secure at the router and at the computer.
- Make sure that power is turned on to the connected computer.
- Be sure you are using Ethernet cables like the cable that was supplied with the router.

Troubleshooting Logging In to the Router

If you are unable to log in to the router, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the router as described in the previous section.
- Make sure you are using the correct login information. The factory default login name is **admin** and the password is **password**. Make sure that CAPS LOCK is off when entering this information.
- Make sure your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click Refresh to be sure the Java applet is loaded. Try quitting the browser and launching it again.

Troubleshooting the Internet Service Connection

If your router is unable to access the Internet, check that the Internet connection is working, and then check that the router can get an Internet address.

Internet Connection

First verify that your cable or ADSL modem has a successful connection. The cable or ADSL modem status lights indicate if the modem connection is successful or not. Check your modem documentation or call your Internet service provider for help with verifying that the modem has a successful connection.

Router Internet Light is Green or Blinking Green

If your Internet light is green or blinking green, then you have a good Internet connection, and your wiring is correct.

Router Internet Light Blinking Amber

If your Internet light is blinking amber, then your router is attempting to make an Internet connection with the service provider. The LED should turn green within several minutes. If it does not, check the Internet connection on the modem as described above.

Router Internet Light Off

If the Internet light is off, verify that the Ethernet cable is securely connected between the cable or ADSL modem, and that both the modem and router are turned on.

Obtaining an Internet IP Address

If your router is unable to access the internet, and your Internet light is amber or blinking amber, check the router to see if it is able to get an Internet IP address from your service provider. Unless you have a static IP address, your router automatically requests an IP address from your service provider.

To check the Internet IP address from the browser interface:

1. Log in to the router.

2. Use the Router Status link under the Maintenance heading to check that an IP address is shown for the Internet Port. If 0.0.0.0 is shown, your router has not obtained an IP address from your service provider.

If your router is unable to obtain an IP address from the your service provider, the problem may be one of the following:

- Your service provider may require a login. Ask your service provider whether they require PPP over Ethernet (PPPoE) login.

- You may have incorrectly set the Service Name, User Name and Password. See "Troubleshooting PPPoE", below.

- Your service provider may check for your computer's host name.
  Assign the computer Host Name of your ISP account to the router in the browser-based Basic Settings menu.

- Your service provider only allows one Ethernet MAC address to connect to Internet, and may check for your computer's MAC address.

  In this case, inform your service provider that you have bought a new network device, and ask them to use the router's MAC address.

  OR

  Configure your router to spoof your computer's MAC address. This can be done in the Basic Settings menu. Refer to the online help in the router main menu.

Troubleshooting PPPoE

Troubleshoot a PPPoE connection in this way:

1. Log in to the router.

2. Under the Maintenance heading, select the Router Status link.

3. Click the Connection Status button.

4. If all of the steps indicate "OK" then your PPPoE connection is up and working.

5. If any of the steps indicates "Failed", you can attempt to reconnect by clicking "Connect". The router will continue to attempt to connect indefinitely.

If you cannot connect after several minutes, you may be using an incorrect Service Name, User Name or Password. There also may be a provisioning problem with your ISP.

> **Note:** Unless you connect manually, the router will not authenticate using PPPoE until data is transmitted to the network.

Troubleshooting Internet Browsing

If your router can obtain an IP address but your computer is unable to load any Web pages from the Internet, check the following.

• Your computer may not recognize any DNS server addresses.

A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically your ISP will provide the addresses of one or two DNS servers for your use. If you entered a DNS address during the router's configuration, restart your computer. Alternatively, you can configure your computer manually with DNS addresses, as explained in the documentation for your computer.

• Your computer may not have the router configured as its default gateway.

Reboot the computer and verify the router address (www.routerlogin.net) is listed by your computer as the default gateway address.

Restoring the Default Configuration and Password

This section explains how to restore the factory default configuration settings, changing the router's administration password to **password** and the IP address to www.routerlogin.net. You can erase the current configuration and restore factory defaults.

To restore the factory default configuration settings, use the Default Reset button on the rear panel of the router.

1. Use a sharp object like a pen or a paper clip to press and hold the default reset button for about 20 seconds (see page 1-3), until the test light on the front turns on.

2. Release the reset button and wait for the router to reboot.

Advanced Troubleshooting Using the Ping Utility

Most computers and routers have a diagnostic utility called *ping* that sends an request to a target device. The device then replies. The ping utility makes it easy to troubleshoot a network.

Testing the Path from a PC to Your Router

You can ping the router to verify that the LAN path from your computer to your router is set up correctly.

1. From the Windows toolbar, click **Start** and select **Run**.

2. In the field provided, type Ping followed by the address of the router, as in this example:

   ping www.routerlogin.net

3. Click **OK**.

   You should see a message like this one:

   Pinging www.routerlogin.net with 32 bytes of data

   If the path is working, you see this message:

   Reply from www.routerlogin.net: bytes=32 time=NN ms TTL=xxx

   If the path is not working, you see this message:

   Request timed out

   If the path is not functioning correctly, you could have one of the following problems:

   - Wrong physical connections
     — Make sure the LAN port light is on. If the light is off, follow the instructions in "LAN or Internet Port Lights Not On" on page 2-3.
     — Check that the corresponding lights are on for your computer's network interface card.
   - Wrong network configuration
     — Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer.

Testing the Path from a PC to the Internet

After verifying that the path between your computer and the router works correctly, test the path from your PC to the Internet. From the Windows run menu, type:

```
PING -n 10 <IP address>
```

where *<IP address>* is the IP address of a remote device such as your ISP's DNS server.

If the path is functioning correctly, replies as in the previous section are displayed. If you do not receive replies:

— Check that your PC has the IP address of your router listed as the default gateway. If the IP configuration of your PC is assigned by DHCP, this information will not be visible in your PC's Network Control Panel. Verify that the IP address of the router is listed as the TCP/IP default gateway.

— Check to see that the network address of your PC (the portion of the IP address specified by the netmask) is different from the network address of the remote device.

— If your ISP assigned a host name to your PC, enter that host name as the Account Name in the Basic Settings menu.

Appendix A
Technical Specifications

This appendix provides technical specifications for the router.

Network Protocol and Standards Compatibility

Data and Routing Protocols:	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE, PPTP, Bigpond, Dynamic DNS, and UPnP

Power Adapter

North America:	120V, 60 Hz, input
UK, Australia:	240V, 50 Hz, input
Europe:	230V, 50 Hz, input
Japan:	100V, 50/60 Hz, input
All regions (output):	12 V DC @ 1.0A output

Physical

Dimensions:	1.1" x 6.89" x 4.68" 28 x 175 x 119 mm
Weight:	0.57 lbs. 0.26 kg

Environmental

Operating temperature:	$0°$ to $40°$ C ($32°$ to $104°$ F)
Operating humidity:	90% maximum relative humidity, noncondensing

Electromagnetic Emissions

Meets requirements of:	FCC Part 15; EN 301489; EN 60950 (CE LVD)

Interface Specifications

LAN:	10BASE-T or 100BASE-Tx, RJ-45
WAN:	10BASE-T or 100BASE-Tx, RJ-45

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Appendix B
Related Documents

This appendix provides links to reference documents you can use to gain a more complete understanding of the technologies used in your NETGEAR product.

Document	Link
Internet Networking and TCP/IP Addressing	*http://documentation.netgear.com/reference/enu/tcpip/index.htm*
Preparing a Computer for Network Access	*http://documentation.netgear.com/reference/enu/wsdhcp/index.htm*
Glossary	*http://documentation.netgear.com/reference/enu/glossary/index.htm*