

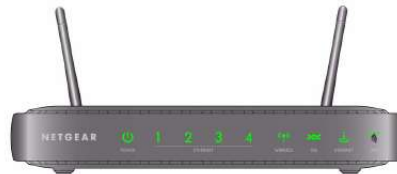


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You can read the recommendations in the user guide, the technical guide or the installation guide for NETGEAR DGN2000. You'll find the answers to all your questions on the NETGEAR DGN2000 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual NETGEAR DGN2000
User guide NETGEAR DGN2000
Operating instructions NETGEAR DGN2000
Instructions for use NETGEAR DGN2000
Instruction manual NETGEAR DGN2000

Wireless-N ADSL2+ Modem Router DGN2000 Setup Manual



NETGEAR

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Manual abstract:

@@@@@@@NETGEAR does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

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· *Wireless On/Off Button. By default, the wireless modem router is set up to work as a wireless access point. Pressing this button turns the wireless access point feature off and on.*

You can also do this through the Wireless Settings screen.



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For more information, see the on-line Reference Manual. A link to the Reference Manual is on the Resource CD. WPS Button. You can use the Wi-Fi Protected Setup (WPS) feature with clients on the network that are Wi-Fi certified and WPA capable. See "Using Push 'N' Connect (WPS) to Configure Your Wireless Network" on page 23. Factory Default Reset. Press the Wireless On/Off and WPS buttons simultaneously for 6 seconds to reset the router to its factory default settings. · · Getting to Know Your Wireless Router 5 Router Label The label on the bottom of the wireless-N modem router shows the router's MAC address, serial number, security PIN, and factory default login information. Figure 4 Positioning Your Wireless Router The wireless-N modem router lets you access your network from virtually anywhere within the operating range of your wireless network.

However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your router. For example, the thickness and number of walls the wireless signal must pass through may limit the range. For best results, place your router: · · · · Near the center of the area where your computers and other devices will operate, preferably within line of sight to your wireless devices. Accessible to an AC power outlet and near Ethernet ports to ensure that the steps you perform are successfully completed. To install your router using the Smart Wizard: 1.

Locate the ADSL settings information provided by your Internet Service Provider. 2. Insert the Resource CD into your Windows PC. The CD will automatically start and detect the language you are using on your PC. Select a different language option, if you prefer.

If the CD does not automatically start, browse the CD and double-click on 3. When the Welcome screen appears, click Setup to start the Smart Wizard. Follow the . instructions and prompts to complete the installation. The Smart Wizard guides you through installing your router, connecting your router to the Internet, configuring your wireless network settings, and selecting the optimum security protection for your network. If you choose not to select a security option during installation, 9 you can always access the router's user interface later to select a security option (see "Accessing Your Router After Installation" on page 10). To ensure optimum performance of your high-speed wireless router, the wireless adapter card for each computer in your network should support the same technology as your router (see the online Reference Manual for more information). You are now connected to the Internet! To set up additional wireless computers in your network for router access and to connect to the Internet, see "Configuring Your Wireless Network" on page 21. Accessing Your Router After Installation The Smart Wizard only appears when you first install the router or when the router is in its factory default state (for example, if you have reset the router to its factory default settings). If you want to change the settings after installing and configuring your router, you can click the desktop shortcut--a preconfigured shortcut placed on your desktop at installation--to open the router management interface.

1 Optionally, you can also open a browser window and log in to the router. After logging in, you can: · · Set up other wireless computers on your network, see "Configuring Your Wireless Network" on page 21. Change settings and configure wireless security, see "Specifying Wireless Settings" on page 21. For advanced features that are not covered in this manual, see the Reference Manual on your Resource CD. A link to the on-line Reference Manual also is available from the router interface. 1. The shortcut icon is installed on your desktop only when using the Smart Wizard installation method. 10 Installing Your Router Using the Smart Wizard Installing Your Router Manually (Advanced, Mac, and Linux Users) Before installing and connecting your router manually, review the list below and make sure that you have all of the necessary information. · · Internet ADSL service connection through an Internet Service Provider (ISP). The configuration information your ISP gave you.

Depending on how your Internet account was set up, you may need the following information to set up your wireless-N modem router and access the Internet:

Host and Domain Name Internet Login Name and Password (frequently an email address and password) 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, ask your ISP. · · ADSL Microfilters (see "Understanding ADSL Microfilters" on page -12). Your computers set to DHCP enabled. If you have not already done so: · · Check the package contents of your router to ensure that it is complete (see "Unpacking Your New Router" on page 1").

Select an optimum location for your wireless-N modem router after reviewing the guidelines presented in "Positioning Your Wireless Router" on page 6." Installing Your Router Manually (Advanced, Mac, and Linux Users) 11 Understanding ADSL Microfilters ADSL technology uses the same wires as your telephone service. However, ADSL adds signals to the telephone lines which create noise in the telephone service. You must use ADSL microfilters to filter out these signals before they reach your telephone. If you purchased the wireless-N modem router in a country where a microfilter is not included, you must acquire one.

ADSL Microfilter Figure 5 Each device such as a telephone, fax machine, answering machine, or caller ID display will require an ADSL microfilter. Do not connect the wireless-N modem router to the ADSL line through a microfilter unless the microfilter is a combination microfilter/splitter specifically designed for this purpose. Doing so will prevent block your connection to the Internet. If you have any doubts about this, connect the wireless-N modem router directly to the ADSL line. ADSL Microfilter with Built-In Splitter Use an ADSL microfilter with built-in splitter when there is a single wall outlet which must provide connectivity for both the wireless-N modem router and telephone equipment. Figure 6 12 Installing Your Router Manually (Advanced, Mac, and Linux Users)

Connecting Your Wireless-N Modem Router Before you install your wireless-N modem router, make sure that the Internet Protocol (TCP/IP) Property settings on your computer are set to "automatically obtain an IP address" using DHCP and "Obtain DNS server address automatically." You can check these settings by looking at the TCP/IP Properties of your Internal Network Connections, which are accessible through the Control Panel of your computer.



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If you are unsure about this, refer to the documentation for your computer or see the link to TCP/IP Addressing in "Related Documents" on page 43. If you are replacing an existing router, disconnect it completely from your network and set it aside before starting to install your new router. To connect the wireless-N modem router, the ADSL filter and the computer: 1.

Connect an ADSL filter as shown below. If you purchased the DGN2000 in a country where an ADSL filter is not included, you must acquire one. · Install an ADSL filter for every telephone that uses the same phone line as your wireless-N modem router. Select the appropriate filter(s) for your wireless setup. 1 2 3 1.

One-Line Filter: Use with a phone or fax machine. 2. Splitter: Use with a one-line filter to share an outlet with a phone and the wireless-N modem router. 3. Two-Line Filter with Splitter: Use to share an outlet with a phone and the wireless-N router.

Figure 7 Installing Your Router Manually (Advanced, Mac, and Linux Users) 13 · Two-Line Filter Example. Insert the two-line filter into the phone outlet and connect the phone to the phone line connector (A), as shown in Figure 8. A Figure 8 To use a one-line filter with a separate splitter, insert the splitter into the phone outlet, connect the one-line filter to the splitter, and connect the phone to the filter. 2. Connect the wireless-N modem router to the ADSL filter.

Using the included phone cable with RJ-11 jacks, connect the ADSL port (B) of the wireless-N modem router to the ADSL port (C) of the two-line filter, as shown in Figure 9. 14 Installing Your Router Manually (Advanced, Mac, and Linux Users) · C B Figure 9 Improperly connecting a filter to your wireless-N modem router will block your ADSL connection. 3. Connect the Ethernet cable (D) from a wireless-N modem router LAN port to the Ethernet adapter in your computer, as shown in Figure 10.

4. Connect the power adapter to the wireless-N modem router and plug it in to a power outlet. Installing Your Router Manually (Advanced, Mac, and Linux Users) 15 D Figure 10 5. Connect any additional wired PCs to your router by inserting an Ethernet cable from a PC into one of the three remaining LAN ports. Verifying Your Connection Verify that your router is connected correctly by checking the wireless-N modem router status lights. . . . The power light is lit after turning on the wireless-N modem router. The DSL light is lit, indicating an ADSL connection. The wireless light is lit after turning on the wireless-N modem router. The Internet light is green, indicating you are connected to the ADSL network. Now, turn on your computer.

If software usually logs you in to your Internet connection, do not run that software. Cancel it if it starts automatically. Verify the following: · The local lights (1 through 4) are lit for any connected computers. 16 Installing Your Router Manually (Advanced, Mac, and Linux Users) Setting Up Your Router for Internet Access When configuring your wireless router manually, you must log in to your wireless-N modem router to set it up initially and to make any changes to your wireless router's settings later. The factory default state is reset when you press the Wireless On/Off and WPS buttons on the side panel of router simultaneously. See "Restoring the Default Configuration and Password" on page 36 for more information. To access the router: 1. Type <http://192.168.0.1>

in the address field of your browser, and then click Enter. You can also enter either of these addresses to connect to your wireless router: <http://www.routerlogin.net> or <http://www.routerlogin>.

com. · Figure 11 A login window similar to the one shown in Figure 12 will display. Figure 12 Installing Your Router Manually (Advanced, Mac, and Linux Users) 17 2. When prompted, enter admin for the router User Name and password for the router Password, both in lowercase letters.

(For security reasons, the router has its own user name and password.) 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. The Main menu will display. 3. From the menu options in the left navigation pane, click Setup Wizard. The Setup Wizard screen will display. Figure 13 4. Select one of the following options: · Select Yes to allow the Setup Wizard to detect your Internet connection. When prompted, click Next. The wizard will assist you with configuring your wireless router to access the Internet.

If you cannot connect to the wireless router, check the Internet Protocol (TCP/IP) properties in the Network Connections section of your Control Panel. It should be set to obtain both IP and DNS server addresses automatically. For assistance, see your computer documentation or see the links in "Related Documents" on page 43. · Select No to set up the connection yourself. Click Next and the Basic Settings screen will display. Enter the required information for your ISP connection in the appropriate fields. If you need assistance, follow the Basic Settings Help screens on the router interface or see the online User's Manual for this wireless-N modem router. 5. Click Apply to save your settings and complete your connection. You should now be connected to the Internet! 18 Installing Your Router Manually (Advanced, Mac, and Linux Users) If you do not connect successfully: · · Review your settings and make sure that you have selected the correct options and typed everything correctly.

Contact your ISP to verify that you have the correct configuration information. Read "Troubleshooting" on page 29. If problems persist, register your NETGEAR product and contact NETGEAR Technical Support. Installing Your Router Manually (Advanced, Mac, and Linux Users) 19 20 Installing Your Router Manually (Advanced, Mac, and Linux Users) Configuring Your Wireless Network After installing your router, you must log into the router to complete your wireless setup. The wireless network settings of the router must match the wireless network settings of any wireless devices that connect wirelessly to the router (such as wireless adapter cards and wireless computers).

For a wireless connection, the router and each wireless computer must use the same SSID, also called the wireless network name, and the same wireless security. NETGEAR strongly recommends that you use wireless security. Indoors, computers can connect over wireless networks at a range of several hundred feet. This can allow others outside of your immediate area to access your network. Specifying Wireless Settings The Wireless Settings screen lets you set your wireless network connections and the wireless security option for your network and router.

To configure the wireless network, you can either manually specify your network name (SSID) and your wireless security settings (see "Setting Your SSID and Wireless Security Manually" on page 22) or, if the clients in your network are WPS capable, you can use Wi-Fi Protected Setup (WPS) to automatically set the SSID and implement WPA/WPA2 security on both the router and the client device (see "Using Push 'N' Connect (WPS) to Configure Your Wireless Network" on page 23).



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If you configure 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. The default SSID for the router is NETGEAR. Wireless security option. NETGEAR strongly recommends that you use wireless security. If they do not match, you will not get a wireless connection. 3. Set the Region. Select the region where the router is located. 4.

Click Apply to save your changes. To set up your computers for wireless connectivity: 1. NETGEAR's Push 'N' Connect feature is based on the Wi-Fi Protected Setup (WPS) standard. All other Wi-Fi-certified and WPS-capable products should be compatible with NETGEAR products that implement Push 'N' Connect. If the router has already been configured manually, and either WPS-PSK or WPA2-PSK security has been enabled, a wireless client can be connected quickly and simply by using the WPS method of connecting to the wireless network. In this case, the existing wireless settings are broadcast to 1. For a list of other Wi-Fi-certified products available from NETGEAR, go to <http://www.wi-fi.org>. Configuring Your Wireless Network 23 the WPS-capable client.

(For more information on setting up a mixed network, see the on-line Reference Manual. A link to the Reference Manual is on the Resource CD.). If you choose to use WPS, the only security methods supported are WPA-PSK and WPA2-PSK. WEP security is not supported by WPS.

These instructions assume that you are configuring WPS on the router for the first time and connecting a WPS-capable device. To set up basic wireless connectivity: 1. On the router main menu, select Add a WPS Client (computers that will connect wirelessly to the router are clients). The Add WPS Client wizard screen displays. Click Next.

Figure 14 3. Select the method for adding the WPS client. A WPS client can be added using the Push Button method or the PIN method. Using the Push Button. This is the preferred method. 24 Configuring Your Wireless Network : Select the Push Button radio box and either press the WPS push button on the side panel of the router or click the soft WPS Push Button on the screen (as shown below). The router will attempt to communicate with the client; you have 2 minutes to enable WPS from the client device using the client's WPS networking utility. Figure 15 Entering a PIN. If you want to use the PIN method, select the PIN radio box. A screen similar to the one shown below displays.

Go to your wireless client and, from the client's WPS utility, obtain the wireless client's security PIN, or follow the client's WPS utility instructions to generate a security PIN. Then, enter this PIN in the Enter Client's PIN field provided on the router and click Next. You have 2 minutes to enable WPS on the router using this method. Figure 16 Using either method, the client wireless device will attempt to detect the WPS signal from the router and establish a wireless connection in the time allotted. If no connection is detected, then no SSID or security settings are configured on the router. Configuring Your Wireless Network 25 If a connection is established, the router WPS screen displays a message confirming that the wireless client was successfully added to the wireless network. (The router has generated an SSID, implemented WPA/WPA2 wireless security (including a PSK security password) on the router and has sent this configuration to the wireless client.) 4. Note the new SSID and WPA/WPA2 password for the wireless network. You should see the wireless-N modem router's Internet LED blink, indicating communication to the ISP.

If you are planning a mixed network of WPS capable devices and non-WPS capable devices, NETGEAR suggests that you set up your wireless network and security settings manually first, and use WPS only for adding additional WPS capable devices. For more information on setting up your wireless network and configuring your wireless security settings, see the Reference Manual. A link to the on-line Reference Manual is on your Resource CD. Testing Basic Wireless Connectivity Once you have established basic wireless connectivity, you can enable security settings appropriate to your needs. To set up and test basic wireless connectivity: 1.

2. Click the Wireless Settings link in the main menu of the wireless-N modem router. 3. Note that the default SSID is NETGEAR. 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. 26 Configuring Your Wireless Network 5. Leave the Wireless mode at the default setting of 130 Mbps. This mode is backward compatible with 802.11b and 802.11g wireless adapters. 6. Click Apply to save your changes.

If you are configuring the Product Family from a wireless computer and you change the Product Family'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 Product Family's new settings. 7. 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 wireless-N modem router. Check that they have a wireless link and are able to obtain an IP address by DHCP from the Product Family. Your wireless-N modem router is now configured to provide Internet access for your network. Your wireless-N modem router automatically connects to the Internet when one of your computers requires access. It is not necessary to run a dialer or login application such as Dial-Up Networking or Internet to connect, log in, or disconnect. These functions are performed automatically by the wireless-N modem router as needed.

You should see the wireless-N modem router's Internet LED blink, indicating communication to the ISP. The browser should begin to display a Web page. Configuring Your Wireless Network 27 28 Configuring Your Wireless Network Troubleshooting This chapter gives information about troubleshooting your wireless-N modem router. After each problem description, instructions are provided to help you diagnose and solve the problem. For the common problems listed, go to the section indicated.

Is the router on? Go to "Basic Functioning" on page 29. Have I connected the router correctly? Go to "Troubleshooting the Web Configuration Interface" on page 31. I cannot access the router's configuration with my browser. Go to "Troubleshooting Internet Browsing" on page 34. I have configured the router but I can't access the Internet.

Go to "Troubleshooting the ISP Connection" on page 32. I cannot remember the router's configuration password.



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Go to "Using the Wireless On/Off and WPS Buttons to Reset the Router" on page 37. · I want to clear the configuration and start over again. Go to "Restoring the Default Configuration and Password" on page 36. 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 LED is on (see "Hardware Features" on page 2 for an illustration and explanation of the LEDs). 2. After approximately 10 seconds, verify that: a. The LAN port LEDs are lit for any local ports that are connected.

b. The ADSL Internet port LED is lit. Troubleshooting 29 If a port's LED 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 LED is green. If the port is 10 Mbps, the LED will be amber. If any of these conditions does not occur, refer to the appropriate following section. Power LED Not On If the Power and other LEDs are off when your router is turned on: · · 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. Power LED is Red When the router is turned on, it performs a power-on self test.

If the Power LED turns red after a few seconds or at any other time during normal operation, there is a fault within the router. The power LED also turns red when you depress the factory default reset push buttons (that is, when you depress the Wireless On/Off and WPS buttons on the side panel of the router simultaneously), and blinks red 3 times when that button is released. However, in this case, the wireless-N modem router is working normally. If the power LED turns red to indicate a router fault: · Cycle the power to see if the router recovers. If the power LED is still red one minute after power up: · · Cycle the power to see if the router recovers.

Clear the router's configuration to factory defaults. This will set the router's IP address to 192.168.0.1.

This procedure is explained in "Using the Wireless On/Off and WPS Buttons to Reset the Router" on page 37. If the error persists, you might have a hardware problem and should contact technical support. LAN or Internet Port LEDs Not On If either the LAN LEDs or ADSL Internet LED do not light when the Ethernet connection is made, check the following: · 30 Make sure that the Ethernet cable connections are secure at the router and at the hub or workstation. Troubleshooting · · Make sure that power is turned on to the connected hub or workstation. Be sure you are using the correct cable: when connecting the ADSL port, use the cable that was supplied with the wireless-N modem router. If the Internet LED is still off, this may mean that there is no ADSL service or the cable connected to the ADSL port is bad. Troubleshooting the Web Configuration Interface If you are unable to access the router's Web Configuration interface from a computer on your local network, 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 your computer's IP address is on the same subnet as the router. If you are using the recommended addressing scheme, your computer's address should be in the range of 192.168.

0.2 to 192.168.0.254. Refer to "Preparing Your Network" on page 43 to find your computer's IP address. If your computer's IP address is shown as 169.254.x.x., it might be because recent versions of Windows and MacOS generate and assign an IP address if the computer cannot reach a DHCP server. These auto-generated addresses are in the range of 169.254.x.x. If your IP address is in this range, check the connection from the computer to the router and reboot your computer.

If your router's IP address was changed and you do not know the current IP address, clear the router's configuration to factory defaults. This will set the router's IP address to 192.168.0.1.

This procedure is explained in "Using the Wireless On/Off and WPS Buttons to Reset the Router" on page 37. 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. 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. · · · · If the router does not save changes you have made in the Web Configuration Interface, check the following: · When entering configuration settings, be sure to click the Apply button before moving to another menu or tab, or your changes are lost. Troubleshooting 31 · Click the Refresh or Reload button in the Web browser. The changes may have occurred, but the Web browser may be caching the old configuration.

Troubleshooting the ISP Connection If your router is unable to access the Internet, you should check the ADSL connection, then the Internet TCP/IP connection. ADSL link If your router is unable to access the Internet, you should first determine whether you have an ADSL link with the service provider. The state of this connection is indicated with the Internet LED. Internet LED Green or Blinking Green If your ADSL Internet LED is green or blinking green, then you have a good ADSL connection. You can be confident that the service provider has connected your line correctly and that your wiring is correct. Internet LED Blinking Amber If your ADSL Internet LED is blinking amber, then your wireless-N modem router is attempting to make an ADSL connection with the service provider. The LED should turn green within several minutes. If the Internet LED does not turn green, disconnect all telephones on the line. If this solves the problem, reconnect the telephones one at a time, being careful to use a microfilter on each telephone. If the microfilters are connected correctly, you should be able to connect all your telephones.

If disconnecting telephones does not result in a green ADSL Internet LED, there may be a problem with your wiring. If the telephone company has tested the ADSL signal at your Network Interface Device (NID), then you may have poor quality wiring in your house. ADSL Internet LED Off If the ADSL Internet LED is off, disconnect all telephones on the line. If this solves the problem, reconnect the telephones one at a time, being careful to use a microfilter on each telephone. If the microfilters are connected correctly, you should be able to connect all your telephones.



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32 Troubleshooting If disconnecting telephones does not result in a green ADSL Internet LED the problem may be one of the following: · Check that the telephone company has made the connection to your line and tested it. Verify that you are connected to the correct telephone line. If you have more than one phone line, be sure that you are connected to the line with the ADSL service. It may be necessary to use a swapper if you ADSL signal is on pins 1 and 4 of the RJ-11 jack. The Wireless-N Modem Router uses pins 2 and 3.

Obtaining an Internet IP Address If your wireless-N modem router is unable to access the internet, and your Internet LED is green or blinking green, you should determine whether the wireless-N modem router is able to obtain a Internet IP address from the ISP. Unless you have been assigned a static IP address, your wirelessN modem router must request an IP address from the ISP. You can determine whether the request was successful using the browser interface. To check the Internet IP address from the browser interface: 1. Launch your browser and select an external site such as <http://www.netgear.com>. 2. Access the Main Menu of the wireless-N modem router's configuration at <http://192.168.0.1>.

0.1. 3. Under Maintenance, select Router Status and check that an IP address is shown for the Internet port. If 0.0.0.0 is shown, your wireless-N modem router has not obtained an IP address from your ISP. If your router is unable to obtain an IP address from the ISP, the problem may be one of the following: · If you have selected a login program, you may have incorrectly set the Service Name, User Name and Password. See "Troubleshooting PPPoE or PPPoA" on page 34.

Your ISP may check for your computer's host name. Assign the computer Host Name of your ISP account to the wireless-N modem router in the browser-based Setup Wizard. Your ISP only allows one Ethernet MAC address to connect to Internet, and may check for your computer's MAC address. In this case: Inform your ISP 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 wireless-N modem router main menu. 33 · Troubleshooting Troubleshooting PPPoE or PPPoA The PPPoE or PPPoA connection can be debugged as follows: 1. Access the main menu of the router at <http://192.168.0.1>.

1. 2. Under Maintenance, select Router Status. 3. Click Connection Status. If all of the steps indicate "OK" then your PPPoE or PPPoA connection is up and working. If any of the steps indicates "Failed", you can attempt to reconnect by clicking Connect. The wireless-N modem 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.

Unless you connect manually, the wireless-N modem router will not authenticate using PPPoE or PPPoA until data is transmitted to the network.

Troubleshooting Internet Browsing If your wireless-N modem router can obtain an IP address but your computer is unable to load any Web pages from the Internet: · 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 wireless-N modem router's configuration, reboot your computer and verify the DNS address as described in "Preparing Your Network" on page 43. Alternatively, you can configure your computer manually with DNS addresses, as explained in your operating system documentation. · Your computer may not have the wireless ADSL modem router configured as its TCP/IP default gateway. If your computer obtains its information from the wireless-N modem router by DHCP, reboot the computer and verify the wireless-N modem router address as described in "Preparing Your Network" on page 43. 34 Troubleshooting Troubleshooting a TCP/IP Network Using the Ping Utility Most TCP/IP terminal devices and routers contain a ping utility that sends an echo request packet to the designated device. The device then responds with an echo reply.

Troubleshooting a TCP/IP network is made easy by using the ping utility in your computer. Testing the LAN Path to Your Router You can ping the router from your computer to verify that the LAN path to your router is set up correctly. To ping the router from a PC running Windows 95 or later: 1. From the Windows toolbar, click the Start button and select Run. 2.

In the field provided, type Ping followed by the IP address of the router, as in this example: ping 192.168.0.1 3. Click OK.

You should see a message like this one: Pinging <IP address> with 32 bytes of data If the path is working, you see this message: Reply from < IP address >: 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 LED is on. If the LED is off, follow the instructions in "LAN or Internet Port LEDs Not On" on page 30. · Check that the corresponding Link LEDs are on for your network interface card and for the hub ports (if any) that are connected to your workstation and router. Wrong network configuration Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your PC or workstation. Troubleshooting 35 Verify that the IP address for your router and your workstation are correct and that the addresses are on the same subnet. Testing the Path from Your Computer to a Remote Device After verifying that the LAN path works correctly, test the path from your PC to a remote device. 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.

@@@ Use the reset buttons on the side panel of the router (that is, press the Wireless On/Off and WPS buttons simultaneously). Use this method for cases when the administration password or IP address is not known. 36 Troubleshooting Using the Wireless On/Off and WPS Buttons to Reset the Router To restore the factory default configuration settings without knowing the administration password or IP address, you must press the Wireless On/Off and WPS buttons on the side panel of the router simultaneously.



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1. Press and hold the Wireless On/Off and WPS buttons until the Power LED blinks red (about 6 seconds). 2. Release the Wireless On/Off and WPS buttons and wait for the router to reboot. The Power LED will blink red three times and then will turn green when the default configuration settings have been restored. Troubleshooting 37 38 Troubleshooting Technical Specifications This appendix provides technical specifications for the wireless-N modem router. General Specifications Network Protocol and Standards Compatibility Data and Routing Protocols: Power Adapter North America: UK, Australia: Europe: All regions (output): Physical Dimensions: Weight: Environmental Operating temperature: Operating humidity: Storage temperature: Storage humidity: Regulatory Compliance Meets requirements of: FCC Part 15 Class B; VCCI Class B; EN 55 022 (CISPR 22), Class B 0° to 40° C (32° to 104° F) 7. 0" x 5.1" x 1.2" 177.5 mm x 130 mm x 31 mm 0.58 lbs. 0.265 kg 120V, 60 Hz, input 240V, 50 Hz, input 230V, 50 Hz, input 12 V AC @ 1.0A output TCP/IP, RIP-1, RIP-2, DHCP, PPPoE or PPPoA, RFC 1483 Bridged or Routed Ethernet, and RFC 1577 Classical IP over ATM 10% to 90% relative humidity, noncondensing -20° to 70° C (-4° to 158° F) 5 to 95% relative humidity, noncondensing Technical Specifications 39 Interface Specifications LAN: WAN: 10BASE-T or 100BASE-Tx, RJ-45 ADSL, Dual RJ-11, pins 2 and 3 T1.413, G.DMT, G. Lite Default Configuration You can use the Wireless On/Off and WPS buttons that are located on the side of your router to reset all settings to their factory defaults. This is called a hard reset. To perform a hard reset, push and hold the Wireless On/Off and WPS buttons simultaneously for 6 seconds. Your router will return to the factory configuration settings that are shown in the table below. Feature Router Login User Login URL User Name (case sensitive) Login Password (case sensitive) Internet Connection WAN MAC Address WAN MTU Size Port Speed Local Network (LAN) Lan IP Subnet Mask RIP Direction RIP Version RIP Authentication DHCP Server DHCP Starting IP Address DHCP Ending IP Address DMZ Time Zone 192.168.0.1 255.255.255. 0 None Disabled None Enabled 192.168.0.2 192.168.0.254 Disabled GMT Use Default address 1500 AutoSense <http://www.routerlogin.net> or <http://www.routerlogin.com> admin password Default Behavior 40 Technical Specifications Feature Time Zone Adjusted for Daylight Saving Time SNMP Firewall Default Behavior Disabled Disabled Inbound (communications coming in from Disabled (except traffic on port 80, the http port) the Internet) Outbound (communications going out to the Internet) Source MAC filtering Wireless Wireless Communication SSID Name Security Broadcast SSID Transmission Speed Country/Region RF Channel Operating Mode Data Rate Output Power Access Point Authentication Type Wireless Card Access List Enabled NETGEAR Disabled Enabled Autoa United States (in North America; otherwise, varies by region) 11 until the region is selected Up to 130 Mbps (with 20/40 MHz bandwidth dynamically selected on a frame-by-frame basis). Best Full Enabled Open System All wireless stations allowed Enabled (all) Disabled a. Maximum Wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Technical Specifications 41 42 Technical Specifications 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 ITCP/IP Networking Basics Wireless Networking Basics Preparing Your Network Virtual Private Networking Basics Glossary Link <http://documentation.netgear.com/reference/enu/tcpip/index.htm> <http://documentation.netgear.com/reference/enu/wireless/index.htm> <http://documentation.netgear.com/reference/enu/wsdhcp/index.htm> <http://documentation.netgear.com/reference/enu/vpn/index.htm> <http://documentation.netgear.com/reference/enu/glossary/index.htm> Related Documents 43 44 Related Documents Registration and Certifications Product Registration, Support, and Documentation Register your product at <http://www.NETGEAR.com/register>. You must register before you can use our telephone support service. Product updates and Web support are always available by going to: <http://kbserver.netgear.com/>. Setup documentation is available on the CD, on the support website, and on the documentation website. When the wireless-N modem router is connected to the Internet, click the KnowledgeBase link to view support information or click the Documentation link to view the online Reference Manual for this wireless-N modem router. Maximum Wireless Signal Rate Derived from IEEE Standard 802.11 Specifications Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate 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. 45 46 .



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