NETGEAR®

User Manual

Orbi 5G WiFi Mesh System
With Built-in 5G Modem

Models:
  Orbi Modem Router NBR750
  Orbi Satellite Model RBS750

Support and Community

Visit www.netgear.com/support to get your questions answered and access the latest downloads.

You can also check out our NETGEAR Community for helpful advice at community.netgear.com.

Regulatory and Legal

Si ce produit est vendu au Canada, vous pouvez accéder à ce document en français canadien à https://www.netgear.com/support/download/.

(If this product is sold in Canada, you can access this document in Canadian French at https://www.netgear.com/support/download/.)

For regulatory compliance information including the EU Declaration of Conformity, visit http://www.netgear.com/about/regulatory/.

See the regulatory compliance document before connecting the power supply.

For NETGEAR's Privacy Policy, visit https://www.netgear.com/about/privacy-policy/.

By using this device, you are agreeing to NETGEAR's Terms and Conditions at https://www.netgear.com/about/terms-and-conditions. If you do not agree, return the device to your place of purchase within your return period.

Contents

Chapter 10 Use VPN to Access Your Network

Appendix A Troubleshooting

Appendix B Supplemental Information

1
Hardware Setup

You can purchase an Orbi 5G Modem Router, or an Orbi Whole Home WiFi System kit. If you purchased the kit, your package comes with a router and satellite, The following includes instructions for the router and the satellite. If you did not purchase a satellite, skip the instructions about installing a satellite.

This chapter covers the following topics:

- Orbi 5G Modem Router Model NBR750 Hardware Overview
- Orbi Satellite Model RBS750 Hardware Overview
- Orbi Modem Router Model NBR750 LEDs
- Orbi Satellite Model RBS750 LEDs
- Labels
- System Requirements
- Connect your router to a mobile broadband network
- Install your Orbi Whole Home WiFi System
- Perform a Speed Test

For more information about the topics covered in this manual, visit the support website at support.netgear.com.

Orbi 5G Modem Router Model NBR750 Hardware Overview

Figure 1. Orbi modem router model front and rear view

1. Ring LED

2. Sync button (also used for WPS connection)

3. SMA LTE antenna connectors (Optional - the satellite does not include antenna connector)

4. Nano SIM slot

5. Ethernet ports

6. LAN/WAN port

7. DC power connector

8. Reset button

9. Power LED

Orbi Satellite Model RBS750 Hardware Overview
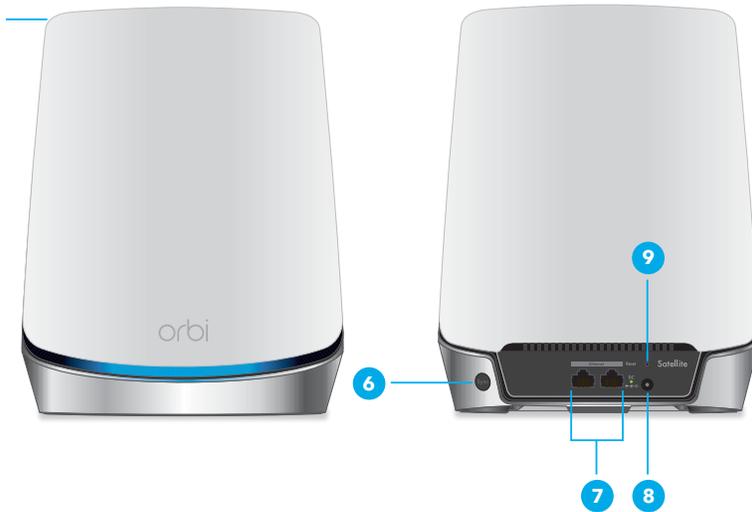
Figure 2. Orbi satellite model RBS20, front and back views

1. Ring LED (not shown in image)
2. Sync button (also used for WPS connection)
3. Ethernet ports
4. Power On/Off button
5. Power LED
6. DC power connector
7. Reset button

Orbi Modem Router Model NBR750 LEDs

You can use the LEDs on the 5G modem router to verify status and connections. The following table lists and describes each LED on the top panel of the 5G modem router.

Table 1. LED descriptions

LED color	Description
Pulsing white	The router is booting or someone pressed the **Sync** button.
Solid white	The router is resetting to its default factory settings.
Solid magenta	The router cannot connect to the Internet
Off	The router finished booting and is working normally

Orbi Satellite Model RBS750 LEDs

The following table describes the Power LED and Ring LED behavior for an Orbi satellite.

Table 2. Orbi satellite LED descriptions

LED	LED Behavior
Power LED	The Power LED is located above the **Power On/Off** button on the rear panel. • **Solid green**. Power is on. • **Solid amber**. The satellite is booting. • **Blinking amber**. The satellite is resetting to factory default settings. • **Blinking red**. The firmware is corrupted. • **Off**. Power is not supplied.
Ring LED	The ring LED is located on the top. • **White**. The satellite is attempting to sync with the router. • **Blue**. The router and satellite successfully synced, and the connection is good. • **Amber**. The router and satellite successfully synced, and the connection between the router and satellite is fair. Consider moving the satellite closer to the router. • **Magenta**. The router and satellite failed to sync. Move the satellite closer to the router and try again. • **Off**. The satellite synced to the router and is working normally.

Labels

The router label shows the admin login information, WiFi network name and password, serial number, and password, serial number, MAC address, and IMEI.
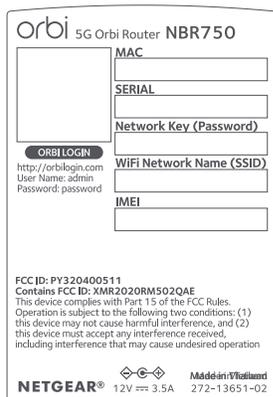
Figure 3. Router label

The satellite label shows satellite's serial number and MAC address. The satellite label also shows the same WiFi network name and password that's on the router label.
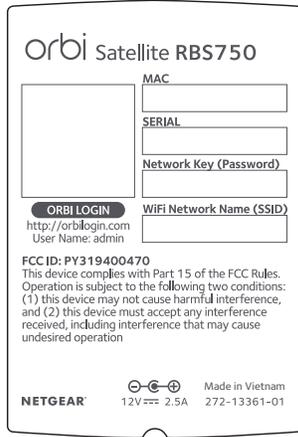
Figure 4. Satellite label

System Requirements

You need the following to install your modem router:

- Compatible operating system:

  - Windows® 7
  - Windows 8
  - Windows 10
  - Windows Vista®
  - Windows XP®
  - Windows 2000
  - Mac OS®
  - UNIX®
  - Linux®

- Compatible web browser:

  - Microsoft® Internet Explorer® 5.0 or higher
  - Firefox® 2.0 or higher

- Safari® 1.4 or higher
- Google Chrome™ 11.0 or higher

- Activated 5G/LTE Nano SIM card

Connect your router to a mobile broadband network

You can use the mobile broadband connection as either:

- Your only Internet connection.
- Your backup Internet connection if your primary Internet connection is offline. This requires a wired modem such as a DSL, cable, or fiber-optic modem to provide your primary Internet connection.

Note: The router requires a nano SIM card to connect to mobile broadband. Get a nano SIM card from your 5G/LTE provider.

To connect your router to your 5G/LTE provider's mobile broadband network:

1. Make sure that the router is powered off before inserting the nano SIM card.

2. Insert the nano SIM card into the nano SIM slot on the back of the router.

3. Connect the power adapter to your router and plug the power adapter into an outlet. The Power LED lights.

4. Wait for the router's ring LED to light white.

   Your router tries to connect to the mobile broadband network automatically.

   This process might take up to 10 minutes.

   If the router cannot connect, you might need to enter your SIM card's Personal Identification Number (PIN), manually set your 5G/LTE provider's Access Point Name (APN), or do both.

5. If the router cannot connect to the mobile broadband network, access the router web interface (see Connect to Your Network and Access the Router on page 13) and do one or both of the following:

   - Enter your SIM card's PIN in the Orbi router web interface (see Enter the PIN or PUK on page 26). If you do not know the PIN, contact your 5G/LTE provider.
   - Ask your 5G/LTE provider for the required APN, and enter the APN in the Orbi router web interface (see Change the 5G/LTE provider's access point name on page 23).

Install your Orbi Whole Home WiFi System

Set up and activate your Orbi router and satellite using the NETGEAR Orbi app. If you do not own a smart phone, you can manually set up and activate your router and satellite without the app.

Set Up and Activate Using the NETGEAR Orbi App

You can use the NETGEAR Orbi app to set up and activate your Orbi router and satellite.

To find the app, scan a QR code or search for NETGEAR Orbi in the Apple App Store or Google Play Store. Launch the NETGEAR Orbi app on your mobile device and follow the prompts.

Figure 5. NETGEAR Orbi app

Set Up and Activate Using the Orbi Router Web Interface

If you do not want to use the NETGEAR Orbi app to set up and activate your Orbi router and satellite, you can use the instructions in the following sections to help you install your router and satellite.

Perform a Speed Test

To determine the accurate Internet speed, visit the speed test website of your cable Internet provider and perform a speed test.

If your actual speed is lower than your subscribed speed, contact your cable Internet provider.

2

Connect to the Network and Access the Router

This chapter contains the following sections:

- <u>Connect to the Network</u>
- <u>Types of Logins</u>
- <u>Use a Web Browser to Access the Router</u>

Connect to the Network

You can connect to the Orbi network through a wired or WiFi connection. If you set up your computer to use a static IP address, change the settings so that it uses Dynamic Host Configuration Protocol (DHCP).

Wired Connection

You can connect your computer to the router using an Ethernet cable and join the router's local area network (LAN).

To connect your computer to the router with an Ethernet cable:

1. Make sure that the router is receiving power (its Power LED is lit).

2. Connect an Ethernet cable to an Ethernet port on your computer.

3. Connect the other end of the Ethernet cable to one of the router's Ethernet ports.

   Your computer connects to the local area network (LAN). A message might display on your computer screen to notify you that an Ethernet cable is connected.

WiFi Connection

If you're installing your Orbi router for the first time, you can connect to the router's WiFi network by scanning the QR code on your router with the camera app on your mobile device. To scan the QR code with your camera app, your mobile device must have iOS version 11 or later or Android version 10 or later.
You can also manually find and select the Orbi router's WiFi network from your WiFi-enabled computer or mobile device.

To find and select the WiFi network:

1. Make sure that the router or satellite is receiving power (its Power LED is lit).

2. On your WiFi-enabled computer or mobile device, find and select the WiFi network.

   The WiFi network name is on the router label. The WiFi network name is the same for the router and the satellite in the Orbi WiFi System.

   Note: If you bought the router and the satellite separately, their default WiFi network names are different.

3. Join the WiFi network and enter the WiFi password.

   The password is on the router label.

   Your WiFi-enabled computer or mobile device connects to the WiFi network.

WiFi Connection Using WPS

You can connect to the router's WiFi network with Wi-Fi Protected Setup (WPS) or you can find and select the WiFi network.

To use WPS to connect to the WiFi network:

1. Make sure that the router is receiving power (its Power LED is lit).

2. Check the WPS instructions for your computer or WiFi device.

3. Press the **Sync** button on the router.

4. Within two minutes, on your WiFi-enabled computer or mobile device, press its **WPS** button or follow its instructions for WPS connections.
    Your computer or mobile device connects to the WiFi network.

Types of Logins

Separate types of logins serve different purposes. It is important that you understand the difference so that you know which login to use when.

Types of logins:

*   **Mobile broadband service login**. The login information that your LTE/5G provider gave you logs you in to your mobile broadband network Internet service. Your LTE/5G provider gave you this login information in an email, a letter, or in some other way. If you cannot find this login information, contact your LTE/5G provider.

*   **Wired Internet service login**. The login that your Internet service provider (ISP) gave you logs you in to your wired Internet service. Your service provider gave you this login information in an email, a letter, or in some other way. If you cannot find this login information, contact your service provider.

*   **WiFi network key or password**. Your router is preset with a WiFi network name (SSID) and password for WiFi client access. This information is on the router label.

*   **Orbi app login**. Your NETGEAR account credentials that log you in to the Orbi app.

*   **Router login**. The password that logs you in to the router web interface from a web browser as admin.

Use a Web Browser to Access the Router

When you connect to the network (either with WiFi or with an Ethernet cable), you can use a web browser to access the router to view or change its settings. The first time you

access the router, the NETGEAR installation assistant automatically checks to see if your router can connect to your Internet service.

Automatic Internet Setup

You can set up your router automatically, or you can use a web browser to access the router and set up your router manually. Before you start the setup process, get your ISP information and make sure that the computers and devices in the network use the settings described here.

When your Internet service starts, your Internet service provider (ISP) typically gives you all the information needed to connect to the Internet. If you cannot locate this information, ask your ISP to provide it. When your Internet connection is working, you no longer need to launch the ISP login program on your computer to access the Internet. When you start an Internet application, your router automatically logs you in.

Installation and basic setup takes about 15 minutes to complete.

To automatically set up your router:

1. Make sure that your WiFi-enabled computer or mobile device is connected to the router with an Ethernet cable (wired) or wirelessly with the preset security settings listed on the label.

   Note: If you want to change the router's WiFi settings, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

2. Launch a web browser.
   The page that displays depends on whether you accessed the router before:

   • The first time that you set up the Internet connection for your router, the browser goes to **orbilogin.com**, and the Orbi login page displays.

   • If you already set up the Internet connection, enter **orbilogin.com** in the address field for your browser to start the installation process.

3. Follow the onscreen instructions.
   The router connects to the Internet.

4. If the browser does not display the web page, do the following:

   • Make sure that the computer is connected to one of the two LAN Ethernet ports or over WiFi to the router.

   • Make sure that the router is receiving power, and that its Power LED is lit.

   • Close and reopen the browser or clear the browser cache.

- Browse to **orbilogin.com**.

- If the computer is set to a static or fixed IP address (this setting is uncommon), change it to obtain an IP address automatically from the router.

5. If the router does not connect to the Internet, do the following:

   a. Review your settings.

   b. Make sure that you selected the correct options and typed everything correctly.

   c. Contact your ISP to verify that you are using the correct configuration information.

   d. Read <u>Troubleshooting</u> on page 110.

      If problems persist, register your NETGEAR product and contact NETGEAR technical support.

Log In to Orbi Web Interface

When you log in to the Orbi, the browser displays the router web interface. You can use the router web interface to change the router or satellite settings.

To log in to your Orbi:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the Orbi admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

3

Manage the Mobile Broadband Connection

Usually, the quickest way to set up the router to use your mobile broadband Internet connection is to allow Orbi to detect the mobile broadband Internet connection when you first access the router with a web browser. You can also customize or manually specify your mobile broadband Internet connection settings.

This chapter contains the following sections:

Internet connection over mobile broadband

By default, when the router powers up with a nano SIM card installed, and if you did not configure mobile broadband as a backup connection only, the router automatically searches for and connects to your 5G/LTE provider's mobile broadband network. This process might take several minutes. The nano SIM card that is installed determines the mobile broadband network to which the router connects.

Note: Even though the router might connect to the mobile broadband network of the same 5G/LTE provider each time that you start the router, the type of mobile broadband service (5G or 5G/LTE) to which the router connects might differ.

If the router does not automatically connect to the mobile broadband network, the Ring LED lights solid magenta, and you might need to contact your5G/ LTE provider to get the Access Point Name (APN) to which the router must connect (see Change the 5G/LTE provider's access point name on page 26).

If you do not want the router to connect automatically to the mobile broadband network, change the default autoconnect option (see Change the Internet connection mode to wired Internet only or mobile broadband only on page 25).

Orbi features that do not apply to a mobile broadband connection

When the router Is using a wired Internet connection, all Orbi features work. Because of mobile broadband limitations, when the router is using a mobile broadband Internet connection, the following Orbi features do not work:

- Dynamic DNS
- Port forwarding
- VLAN bridge
- AP mode (that is, the router functions an access point only with its default router mode disabled)

The first three features on the list work only if the router's IP address is a public IP address. However, with a mobile broadband connection, your LTE provider assigns the router a private IP address. The AP mode feature does not work with a mobile broadband connection because the router cannot receive an IP address if its router features are disabled.

Use the Setup Wizard to detect the mobile broadband Internet connection

You can use the Setup Wizard to detect your mobile broadband Internet connection settings and automatically set up your router.

To use the Setup Wizard to detect the mobile broadband Internet connection:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Setup Wizard**.

    The Setup Wizard page displays.

5. Select the **Yes** radio button.

6. Click the **Next** button.

    The Setup Wizard searches your mobile broadband Internet connection to determine your 5G/LTE provider configuration and checks your operation mode.

Set up automatic failover

The router can use a wired Internet connection with automatic failover support so that you can connect the router to an existing DSL, cable, or fiber-optic modem . If the wired Internet connection goes down, the router can automatically and seamlessly switch over to the backup Internet connection over the mobile broadband network for continuous connectivity.

If you change the Internet connection mode to either wired Internet connection only or mobile broadband only, the router does not provide failover.

To set up automatic failover:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.
   The Mobile Broadband Settings page displays.
   By default, the Internet connection mode is to always use a mobile broadband Internet connection. That is, the selection from the **Internet Connection Mode** menu is **Always use 5G/LTE mobile connection**.

5. From the **Internet Connection Mode** menu, select **Use Ethernet as Primary and failover to Mobile Network**.
   The router uses a wired Internet connection by default and fails over to mobile broadband only if the wired Internet connection is down.

6. Click the **Apply** button.
   Your settings are saved.

Change the Internet connection mode to wired Internet only or mobile broadband only

By default, the Internet connection mode is to always use a mobile broadband Internet connection.

If you set up a wired Internet connection, you can change the Internet connection mode to a wired Internet connection only. After you do so, you can also change it back to a mobile broadband connection only. The router can also support a wired Internet connection with automatic failover to a mobile broadband network (see Set up automatic failover on page 24).

To change the Internet connection mode to wired Internet only or mobile broadband only:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.

   The Mobile Broadband Settings page displays.

5. From the **Internet Connection Mode** menu, select one of the following:

   - **Always use Mobile Network**. The router uses the mobile broadband connection only. Even if you connect the router to a wired modem, the router does not use the wired Internet connection. This is the default selection.

   - **Disable Mobile Network**. The router does not use the mobile broadband connection. If you connect the router to a wired modem, the router uses the wired Internet connection only.

6. Click the **Apply** button.

   Your settings are saved.

Change the 5G/LTE provider's access point name

By default, the router detects the 5G/LTE provider's access point name (APN) when it connects to the mobile broadband network. You only need to change your 5G/LTE provider's APN if the router cannot connect to your provider's mobile broadband. After you contact your provider, enter the APN that your provider gives you.

To change the provider's APN:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.

   The Mobile Broadband Settings page displays.

5. In the **APN** field, enter the APN that your provider gave you.

6. Click the **Apply** button.

   Your settings are saved.

   Your router tries to connect to the mobile broadband network using the new APN. This process might take up to 10 minutes.

Change the mobile broadband network mode

By default, the mobile broadband network mode is automatic, which lets the router connect to either the 5G/LTE provider's 5G or 4G network band. In some situations, you might want to set the network mode to either the 4G band.

To change the mobile broadband network mode:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.

   The Mobile Broadband Settings page displays.

5. From the **Network mode** menu, select one of the following:

   - **Automatic**. The router uses the 5G or 4G band (default).

- **4G**. The router uses the 4G band only and does not connect to the 5G band.

  By default, the selection from the menu is **Automatic (5G or 4G)**.

6. Click the **Apply** button.
   Your settings are saved.

Configure the mobile broadband PDP, authentication method, and credentials

Whether you need to configure the mobile broadband packet data protocol (PDP), authentication method, and credentials depends on the mobile broadband network requirements of your 5G/LTE provider.

IMPORTANT: For these settings, follow the directions of your 5G/LTE provider.

To configure the mobile broadband PDP, authentication method, and credentials:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.
   The Mobile Broadband Settings page displays.

5. If the 5G/LTE provider requires credentials for the router to connect to the mobile broadband network, enter the user name and password:

   - **User Name**. The user name that your 5G/LTE provider gave you.

   - **Password**. The password that your 5G/LTE provider gave you.

   If you do not know the user name and password for the mobile broadband connection, contact your 5G/LTE provider.

> **Note:** The user name and password for the mobile broadband connection are not the same as the user name and password to log in to your router.

6. If the LTE provider requires a specific PDP for the router to connect to the mobile broadband network, select the PDP from the **PDP Type** menu:

   - **PDP-IP(IPv4)**. The mobile broadband network uses IPv4 only.

   - **PDP-IPv6**. The mobile broadband network uses IPv6 only.

   - **PDP-IPv4v6**. The mobile broadband network uses either IPv4 or IPv6.

7. If the 5G/LTE provider requires a specific authentication method for the router to connect to the mobile broadband network, select the authentication method from the **Authentication Type** menu:

   - **Pap**. The mobile broadband network uses Password Authentication Protocol (PAP).

   - **Chap**. The mobile broadband network uses Challenge Handshake Authentication Protocol (CHAP).

   - **MsChapV2**. The mobile broadband network uses Microsoft CHAP version 2 (MS-CHAP v2).

   By default, the selection from the menu is **None**.

8. Click the **Apply** button.
   Your settings are saved.

Enter the PIN or PUK

Many SIM cards require a Personal Identification Number (PIN). Without the PIN, your router might not be able to connect to the mobile broadband network. If you do not know your PIN, contact your 5G/LTE provider.

Note: Be careful entering the SIM PIN multiple times because you can enter only a limited number of incorrect PINs before the SIM card is blocked. The number of allowed attempts depends on the SIM card. If the SIM card is blocked, you must enter the PIN unlock key (PUK). If you do not know your PUK, contact your 5G/LTE provider.

To enter the PIN or PUK:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.

The Mobile Broadband Settings page displays.

5. Do one or both of the following:

- **PIN**. In the **PIN Code** field, enter the PIN that you received from your 5G/LTE provider.

- **PUK**. In the **UK Code** field, enter the PUK that you received from your 5G/LTE provider.

6. Click the **Apply** button.

Your settings are saved.

Change the roaming setting

For most situations, the roaming setting does not need to be changed. The default setting is to allow the router to roam. However, if you use the router at different locations, or you use different SIM cards, you might want to change the roaming setting.

To change the roaming setting:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Setup > Internet Setup > Mobile Broadband Settings**.

The Mobile Broadband Settings page displays.

5. Clear or select the **Roaming automatically** check box.

By default, the check box is selected and the router can roam. If you clear the check box, the router cannot roam.

6. Click the **Apply** button.
   Your settings are saved.

4

Specify the Wired Internet Settings

Usually, the quickest way to set up the router to use your Internet connection is to allow Orbi to detect the Internet connection when you first access the router with a web browser. You can also customize or specify your Internet settings.

This chapter contains the following sections:

- Manually set up the Internet connection
- Specify an Internet connection without a login
- Manage an IPv6 Internet connection
- Change the MTU size

Manually set up the Internet connection

You can view or change the router's Internet connection settings.

Specify an Internet connection without a login

To specify the Internet connection settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

4. Select **Advanced > Setup > Internet**.

   The Internet page displays.

5. Select **Internet Setup**.

   The Internet Setup page displays.

6. Leave the Does your Internet connection require a login **No** radio button selected.

7. If your Internet connection requires an account name or host name, type it in the **Account Name (If Required)** field.

8. If your Internet connection requires a domain name, type it in the **Domain Name (If Required)** field.

   For the other sections in this page, the default settings usually work, but you can change them.

9. Select an Internet IP Address radio button:

   • **Get Dynamic IP Address From Router**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.

   • **Use Static IP Address**. Enter the IP address, IP subnet mask, and the gateway IP address that your ISP assigned. The gateway is the ISP router to which your router connects.

10. Select a Domain Name Server (DNS) Address radio button:

- **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns this address.

- **Use These DNS Servers**. If you know that your ISP requires specific servers, select this option. Enter the IP address of your ISP's primary DNS server. If a secondary DNS server address is available, enter it also.

11. Click the **Apply** button.

    Your settings are saved.

Manage an IPv6 Internet connection

In Ethernet WAN connection mode, the router supports many different types of IPv6 Internet connections. For information on Mobile, see <u>Configure the mobile broadband PDP, authentication method, and credentials</u> on page 28 for which you can specify the settings manually.

Requirements for entering IPv6 addresses

IPv6 addresses are denoted by eight groups of hexadecimal quartets that are separated by colons. You can reduce any four-digit group of zeros within an IPv6 address to a single zero or omit it. The following errors invalidate an IPv6 address:

- More than eight groups of hexadecimal quartets

- More than four hexadecimal characters in a quartet

- More than two colons in a row

Specify IPv6 Internet connections

You can set up an IPv6 Internet connection if the router does not detect it automatically.

To set up an IPv6 Internet connection:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Advanced > IPv6**.

   The IPv6 page displays.

5. Select an IP Address Assignment radio button:

   • Use DHCP Server. This method passes more information to LAN devices, but some IPv6 systems might not support the DHCv6 client function.

   • Auto Config. This is the default setting.
     This setting specifies how the modem router assigns IPv6 addresses to the home network (the LAN).

6. Click the **Apply** button.

   Your settings are saved.

Change the MTU size

The maximum transmission unit (MTU) is the largest data packet a network device transmits. When one network device communicates across the Internet with another, the data packets travel through many devices along the way. If a device in the data path uses a lower MTU setting than the other devices, the data packets must be split or "fragmented" to accommodate the device with the smallest MTU.

The best MTU setting for NETGEAR equipment is often the default value. In some situations, changing the value fixes one problem but causes another. Leave the MTU unchanged unless one of these situations occurs:

• You experience problems connecting to your ISP or other Internet service, and the technical support of either the ISP or NETGEAR recommends changing the MTU setting. These web-based applications might require an MTU change:

  - A secure website that does not open, or displays only part of a web page

  - Yahoo email

  - MSN portal

• You use VPN and experience severe performance problems.

• You used a program to optimize MTU for performance reasons, and now you are experiencing connectivity or performance problems.

Note: This MTU is applied on wired connections only. For Mobile Broadband, MTU is negotiated with the 5G/LTE provider.

Note: An incorrect MTU setting can cause Internet communication problems. For example, you might not be able to access certain websites, frames within websites, secure login pages, or FTP or POP servers.

To change the MTU size:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Setup > WAN Setup**.

   The WAN Setup page displays.

5. In the **MTU Size** field, enter a value from 64 to 1500.

6. Click the Apply button.

   Your settings are saved.

   If you suspect an MTU problem, a common solution is to change the MTU to 1400. If you are willing to experiment, you can gradually reduce the MTU from the maximum value of 1500 until the problem goes away. The following table describes common MTU sizes and applications.

Table 3. Common MTU sizes

MTU	Application
1500	The largest Ethernet packet size. This setting is typical for connections that do not use PPPoE or VPN, and is the default value for NETGEAR routers, adapters, and switches.
1492	Used in PPPoE environments.
1472	Maximum size to use for pinging. (Larger packets are fragmented.)
1468	Used in some DHCP environments.

Table 3. Common MTU sizes (Continued)

MTU	Application
1436	Used in PPTP environments or with VPN.
576	Typical value to connect to dial-up ISPs.

5
Control Access to the Internet

The router comes with a built-in firewall that helps protect your home network from unwanted intrusions from the Internet.

This chapter includes the following sections:

- Allow or block access to your network
- Use keywords to block Internet sites
- Delete keywords that are used to block Internet sites
- Avoid blocking on a trusted computer
- Block services from the Internet
- Manage network access control lists
- Schedule when to block Internet sites and services
- Set up security event email notifications

Allow or block access to your network

You can use access control to block access to your network.

To set up access control:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Security > Access Control**.

   The Access Control page displays.

5. Select the **Turn on Access Control** check box.

   You must select this check box before you can specify an access rule and use the Allow and Block buttons. When this check box is cleared, all devices are allowed to connect, even if a device is in the blocked list.

6. Select an access rule:

   - **Allow all new devices to connect**. With this setting, if you buy a new device, it can access your network. You don't need to enter its MAC address on this page. We recommend that you leave this radio button selected.

   - **Block all new devices from connecting**. With this setting, if you buy a new device, before it can access your network, you must enter its MAC address for an Ethernet connection and its MAC address for a WiFi connection in the allowed list.

   The access rule does not affect previously blocked or allowed devices. It applies only to devices joining your network in the future after you apply these settings.

7. To allow the computer or device you're currently using to continue to access the network, select the check box next to your computer or device, and click the **Allow** button.

8. To view a list of allowed or blocked devices that are not connected, click one of the following links:

- **View list of allowed devices not currently connected to the network**
- **View list of blocked devices not currently connected to the network**

The list displays.

9. Click the **Apply** button.
Your settings are saved.

Use keywords to block Internet sites

You can use keywords to block certain Internet sites from your network. You can use blocking all the time or based on a schedule.

To block Internet sites:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
A login window opens.

3. Enter the admin user name and password.
The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
The BASIC Home page displays.

4. Select **ADVANCED > Security > Block Sites**.
The Block Sites page displays.

5. Select a keyword blocking option:

- **Per Schedule**. Turn on keyword blocking according to a schedule that you set. (See Schedule When to Block Internet Sites and Services on page 56.)
- **Always**. Turn on keyword blocking all the time, independent of the Schedule page.

6. In the **Type keyword or domain name here** field, enter a keyword or domain that you want to block.

For example:

- Specify XXX to block http://www.badstuff.com/xxx.html.

- Specify .com if you want to allow only sites with domain suffixes such as .edu or .gov.

- Enter a period (.) to block all Internet browsing access.

7. Click the **Add Keyword** button.

   The keyword is added to the keyword list. The keyword list supports up to 32 entries.

8. Click the **Apply** button.

   Keyword blocking takes effect.

Delete keywords that are used to block Internet sites

To delete keywords that are used to block Internet sites:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Security > Block Sites**.

   The Block Sites page displays.

5. Do one of the following:

   - To delete a single word, select it and click the **Delete Keyword** button. The keyword is removed from the list.

   - To delete all keywords on the list, click the **Clear List** button.

   All keywords are removed from the list.

6. Click the **Apply** button.

Your settings are saved.

Avoid blocking on a trusted computer

You can exempt one trusted computer from blocking. The computer that you exempt must be assigned a fixed IP address. You can use the reserved IP address feature to specify the IP address. See Manage reserved LAN IP addresses on page 62.

To specify a trusted computer:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Security > Block Sites**.

   The Block Sites page displays.

5. Scroll down and select the **Allow trusted IP address to visit blocked sites** check box.

6. In the **Trusted IP Address** field, enter the IP address of the trusted computer.

7. Click the **Apply** button.

   Your settings are saved.

Block services from the Internet

You can block Internet services on your network based on the type of service. You can block the services all the time or based on a schedule.

To block services:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Security > Block Services**.

    The Block Services page displays.

5. Specify when to block the services:

    *   To block the services all the time, select the **Always** radio button.

    *   To block the services based on a schedule, select the **Per Schedule** radio button.

    For information about how to specify the schedule, see <u>Schedule when to block Internet sites and services</u> on page 44.

6. Click the **Add** button.

    The Block Services Setup page displays.

7. To add a service that is in the **Service Type** list, select the application or service.

    The settings for this service automatically display in the fields.

8. To add a service or application that is not the list, select **User Defined**.

    a. If you know that the application uses either TCP or UDP, select the appropriate protocol.

        Otherwise, select **TCP/UDP (both)**.

    b. Enter the starting port and ending port numbers.

        *   If the service uses a single port number, enter that number in both fields.

        *   To find out which port numbers the service or application uses, you can contact the publisher of the application, ask user groups or newsgroups, or search on the Internet.

9. To specify how to filter the services, select one of the following radio buttons:

    *   **Only This IP Address**. Block services for a single computer.

    *   **IP Address Range**. Block services for a range of computers with consecutive IP addresses on your network.

    *   **All IP Addresses**. Block services for all computers on your network.

10. Click the **Add** button.

Your settings are saved.

Manage network access control lists

You can use access control to block or allow access to your network.

To manage devices that are allowed or blocked:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
    A login window opens.

3. Enter the admin user name and password.
    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
    The BASIC Home page displays.

4. Select **ADVANCED > Security > Access Control**.
    The Access Control page displays.

5. Select the **Turn on Access Control** check box.

6. Click the **View list of allowed devices not currently connected to the network** link.
    The list displays.

7. Select the check box for a device.

8. Use the **Add** button, **Edit** button, and **Remove from the** list button as needed.

9. Click the **Apply** button.
    Your settings are saved.

Schedule when to block Internet sites and services

When you schedule blocking, the same schedule is used to block sites and to block services. For information about how to specify what you want the router to block, see Use keywords to block Internet sites on page 40 and Avoid blocking on a trusted computer on page 42.

To schedule blocking:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Security > Schedule**.

5. Specify when to block keywords and services:

   - **Days to Block**. Select the check box for each day that you want to block the keywords or select the Every Day check box, which automatically selects the check boxes for all days.

   - **Time of Day to Block**. Select a start and end time in 24-hour format, or select All Day for 24-hour blocking.

6. Select your time zone from the list.

7. If you live in a region that observes daylight saving time, select the **Automatically adjust for daylight savings time** check box.

8. Click the **Apply** button.
   Your settings are saved.

Set up security event email notifications

The router can email you its logs of router activity. The log records router activity and security events such as attempts to access blocked sites or services.

To set up email notifications:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Security > E-mail**.

The E-mail page displays.

5. Select the **Turn Email Notification On** check box.

6. In the **Primary E-mail Address** field, enter the email address to which logs and alerts are sent.

This email address is also used for the From address. If this field is blank, log and alert messages are not sent.

7. In the **Your Outgoing Mail Server** field, enter the name of your ISP outgoing (SMTP) mail server (such as mail.myISP.com).

You might be able to find this information in the configuration window of your email program. If you leave this field blank, log and alert messages are not sent.

8. In the **Outgoing Mail Server Port Number** field, enter your mail server's port number.

You might be able to find this information in the configuration window of your email program.

9. If your outgoing email server requires authentication, select the **My Mail Server requires authentication** check box and do the following:

   • In the **User Name** field, type the user name for the outgoing email server.

   • In the **Password** field, type the password for the outgoing email server.

10. To send alerts immediately, select the **Send Alerts Immediately** check box.

Email alerts are sent immediately when someone attempts to visit a blocked site.

11. To send logs based on a schedule, specify these settings:

   • From **Send logs according to this schedule** menu, select the schedule type.

   • From the **Day** menu, select the day.

   • From the **Time** menu, select the time, and select the **am** or **pm** radio button.

12. Click the **Apply** button.

Your settings are saved.

Logs are sent automatically. If the log fills before the specified time, it is sent. After the log is sent, it is cleared from the router memory. If the router cannot email the log and the log buffer fills, the router overwrites the log.

6

Optimize Performance

This chapter contains the following sections:

-

Enable or disable Wi-Fi Multimedia Quality of Service

Wi-Fi Multimedia Quality of Service (WMM QoS) prioritizes WiFi voice and video traffic over the WiFi link. WMM QoS is automatically enabled.

WMM QoS prioritizes WiFi data packets from different applications based on four access categories: voice, video, best effort, and background. For an application to receive the benefits of WMM QoS, WMM must be enabled for both it and the client running that application. Legacy applications that do not support WMM and applications that do not require QoS are assigned to the best effort category, which receives a lower priority than voice and video.

To enable or disable WMM QoS:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Wireless Settings**.

   The Advanced Wireless Settings page displays.

5. In the Advanced Wireless Settings (2.4GHz b/g/n/ax), do one of the following:

   - To enable WMM for the 2.4 GHz radio, select the **Enable WMM (Wi-Fi multimedia) settings (2.4GHz b/g/n/ax)** check box. (This is the default selection.)

   - To disable WMM for the 2.4 GHz radio, clear the **Enable WMM (Wi-Fi multimedia) settings (2.4GHz b/g/n/ax)** check box.

6. In the Advanced Wireless Settings (5GHz 802.11a/n/ac/ax) section, do one of the following:

   - To enable WMM for the 5 GHz radio, select the **Enable WMM (Wi-Fi multimedia) settings (5GHz a/n/ac/ax)** check box. (This is the default selection.)

   - To disable WMM for the 5 GHz radio, clear the **Enable WMM (Wi-Fi multimedia) settings (5GHz a/n/ac/ax)** check box.

7. Click the **Apply** button.

   Your settings are saved.

Improve network connections with Universal Plug and Play

Universal Plug and Play (UPnP) helps devices, such as Internet appliances and computers, access the network and connect to other devices as needed. UPnP devices can automatically discover the services from other registered UPnP devices on the network.

If you use applications such as multiplayer gaming, peer-to-peer connections, or real-time communications such as instant messaging or remote assistance, enable UPnP.

To enable Universal Plug and Play:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > UPnP**.

   The UPnP page displays.

5. Select the **Turn UPnP On** check box.

   By default, this check box is selected. UPnP for automatic device configuration can be enabled or disabled. If the **Turn UPnP On check box** is cleared, the router does not allow any device to automatically control router resources, such as port forwarding.

6. Type the advertisement period in minutes.

   The advertisement period specifies how often the router broadcasts its UPnP information. This value can range from 1 to 1440 minutes. The default period is 30 minutes. Shorter durations ensure that control points receive current device status at the expense of more network traffic. Longer durations can compromise the freshness of the device status but can significantly reduce network traffic.

7. Type the advertisement time to live in hops.

The time to live for the advertisement is measured in hops (steps) for each UPnP packet sent. Hops are the steps a packet takes between routers. The number of hops can range from 1 to 255. The default value for the advertisement time to live is 4 hops, which should be fine for most home networks. If you notice that some devices are not being updated or reached correctly, it might be necessary to increase this value.

8. Click the **Apply** button.

   The UPnP Portmap Table displays the IP address of each UPnP device that is accessing the router and which ports (internal and external) that device opened. The UPnP Portmap Table also displays what type of port is open and whether that port is still active for each IP address.

9. To refresh the information in the UPnP Portmap Table, click the **Refresh** button.

7
Specify Network Settings

This chapter includes the following sections:

- <u>View or change WAN settings</u>
- <u>Manage Dynamic DNS</u>
- <u>Set up a default DMZ server</u>
- <u>Change the router's device name</u>
- <u>Change the LAN TCP/IP settings</u>
- <u>Use the router as a DHCP server</u>
- <u>Disable the DHCP server feature in the router</u>
- <u>Manage reserved LAN IP addresses</u>
- <u>Manage custom static routes</u>
- <u>Specify basic WiFi settings</u>
- <u>Change the WiFi password or security level</u>
- <u>Set up a guest WiFi network</u>
- <u>Generate a new backhaul password</u>
- <u>Set up a bridge for a port group or VLAN tag group</u>

View or change WAN settings

You can view or configure wide area network (WAN) settings for the Internet port. You can set up a DMZ (demilitarized zone) server, change the maximum transmit unit (MTU) size, and enable the router to respond to a ping to its WAN (Internet) port.

To view the WAN settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > WAN Setup**
   The WAN Setup page displays.

5. View or change the following settings:

   - **Disable Port Scan and DoS Protection**. DoS protection protects your LAN against denial of service attacks such as Syn flood, Smurf Attack, Ping of Death, and many others. Select this check box only in special circumstances.

   - **Default DMZ Server**. This feature is sometimes helpful when you are playing online games or videoconferencing, but it makes the firewall security less effective. See Set up a default DMZ server on page 57.

   - **Respond to Ping on Internet Port**. This feature allows your router to be discovered. Use this feature only as a diagnostic tool or if you have a specific reason.

   - **Disable IGMP Proxying**. IGMP proxying allows a computer on the local area network (LAN) to receive the multicast traffic it is interested in from the Internet. If you do not need this feature, select this check box to disable it.

   - **MTU Size (in bytes)**. The normal MTU (maximum transmit unit) value for most Ethernet networks is 1500 bytes, or 1492 bytes for PPPoE connections. Change the MTU only if you are sure that it is necessary for your ISP connection. See Change the MTU size on page 35.

   - **NAT Filtering**. Network Address Translation (NAT) determines how the router processes inbound traffic. Secured NAT protects computers on the LAN from attacks from the Internet, but might prevent some Internet games, point-to-point

applications, or multimedia applications from working. Open NAT provides a much less secured firewall, but allows almost all Internet applications to work.

- **Disable SIP ALG**. The application-level gateway (ALG) for the Session Initiation Protocol (SIP) is enabled by default for enhanced address and port translation. However, some types of VoIP and video traffic might not work well when the SIP ALG is enabled. For this reason, the router provides the option to disable the SIP ALG.

6. Click the **Apply** button.

Your settings are saved.

Manage Dynamic DNS

Internet service providers (ISPs) assign numbers called IP addresses to identify each Internet account. Most ISPs use dynamically assigned IP addresses. This means that the IP address can change at any time. You can use the IP address to access your network remotely, but most people don't know what their IP addresses are or when this number changes.

To make it easier to connect, you can get a free account with a Dynamic DNS service that lets you use a domain name to access your home network. To use this account, you must set up the router to use Dynamic DNS. Then the router notifies the Dynamic DNS service provider whenever its IP address changes. When you access your Dynamic DNS account, the service finds the current IP address of your home network and automatically connects you.

If your ISP assigns a private WAN IP address (such as 192.168.x.x or 10.x.x.x), the Dynamic DNS service does not work because private addresses are not routed on the Internet.

Set up a new Dynamic DNS account

To set up Dynamic DNS and register for a free NETGEAR account:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Dynamic DNS**.

    The Dynamic DNS page displays.

5. Select the **Use a Dynamic DNS Service** check box.

6. In the **Service Provider** list, select **NETGEAR**.

7. Select the **No** radio button.

8. In the **Host Name** field, type the name that you want to use for your URL.

    The host name is sometimes called the domain name. Your free URL includes the host name that you specify, and ends with mynetgear.com. For example, specify *MyName*.mynetgear.com.

9. In the **Email** field, type the email address that you want to use for your account.

10. In the **Password (6-32 characters)** field, type the password for your account.

11. To agree to the terms of service, select the check box above the **Register** button.

12. Click the **Register** button.

13. Follow the onscreen instructions to register for your NETGEAR Dynamic DNS service.

14. To check that Dynamic DNS is enabled in the router, click the **Show Status** button.

    A message displays the Dynamic DNS status.

Specify a Dynamic DNS account that you already created

If you already own a Dynamic DNS account with NETGEAR, No-IP, or DynDNS, you can set up the router to use your account.

To set up Dynamic DNS if you already created an account:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Dynamic DNS**.

    The Dynamic DNS page displays.

5. Select the **Use a Dynamic DNS Service** check box.

6. In the **Service Provider** list, select your provider.

7. Select the **Yes** radio button.

   The page adjusts and displays to show the **Status**, **Cancel**, and **Apply** buttons.

8. In the **Host Name** field, type the host name (sometimes called the domain name) for your account.

9. For a No-IP account or DynDNS account, in the **User Name** field, enter the user name for your account.

10. For a NETGEAR account, in the **Email** field, type the email address for your account.

11. In the **Password (6-32 characters)** field, type the password for your DDNS account.

12. Click the **Apply** button.

    Your settings are saved.

13. To verify that your Dynamic DNS service is enabled in the router, click the **Show Status** button.

    A message displays the Dynamic DNS status.

Change the Dynamic DNS settings

To change your settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Dynamic DNS**.

   The Dynamic DNS page displays.

5. Change your DDNS account settings as necessary.

6. Click the **Apply** button.

   Your settings are saved.

Set up a default DMZ server

The default DMZ server feature is helpful when you are using some online games and videoconferencing applications that are incompatible with Network Address Translation (NAT). The router is programmed to recognize some of these applications and to work correctly with them, but other applications might not function well. In some cases, one local computer can run the application correctly if the IP address for that computer is entered as the default DMZ server.

DMZ servers pose a security risk. A computer designated as the default DMZ server loses much of the protection of the firewall and is exposed to exploits from the Internet. If compromised, the DMZ server computer can be used to attack other computers on your network.

The router usually detects and discards incoming traffic from the Internet that is not a response to one of your local computers or a service that you configured in the Port Forwarding/Port Triggering page. Instead of discarding this traffic, you can specify that the router forwards the traffic to one computer on your network. This computer is called the default DMZ server.

To set up a default DMZ server:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Setup > WAN Setup**.

    The WAN Setup page displays.

5. Select the Default DMZ Server check box.

6. Type the IP address.

7. Click the **Apply** button.

    Your settings are saved.

Change the router's device name

The router's device name is its model number. This device name displays in a file manager when you browse your network.

To change the router's device name:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Setup > Device Name**.

   The Device Name page displays.

5. In the **Device Name** field, type a new name.

6. Click the **Apply** button.

   Your settings are saved.

Change the LAN TCP/IP settings

The router is preconfigured to use private IP addresses on the LAN side and to act as a DHCP server. The router's default LAN IP configuration is as follows:

- **LAN IP address**. 192.168.1.1

- **Subnet mask**. 255.255.255.0

These addresses are part of the designated private address range for use in private networks and are suitable for most applications. If your network requires a different IP addressing scheme, you can change these settings.

You might want to change these settings if you need a specific IP subnet that one or more devices on the network uses, or if you use competing subnets with the same IP scheme.

To change the LAN TCP/IP settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
   The LAN Setup page displays.

5. In the **IP Address** field, type the IP address.

6. In the **IP Subnet Mask**, type the subnet mask of the router.
   The IP address and subnet mask identifies which addresses are local to a specific device and which must be reached through a gateway or router.

7. Change the RIP settings.
   Router Information Protocol (RIP) allows a router to exchange routing information with other routers.

   a. Select the RIP direction:

      - **Both**. The router broadcasts its routing table periodically and incorporates information that it receives.

      - **Out Only**. The router broadcasts its routing table periodically.

      - **In Only**. The router incorporates the RIP information that it receives.

   b. Select the RIP version:

      - **Disabled**. This is the default setting.

      - **RIP-1**. This format is universally supported. It is adequate for most networks, unless you are using an unusual network setup.

      - **RIP-2**. This format carries more information. Both RIP-2B and RIP-2M send the routing data in RIP-2 format. RIP-2B uses subnet broadcasting. RIP-2M uses multicasting.

8. Click the **Apply** button.
   Your settings are saved.

If you changed the LAN IP address of the router, you are disconnected when this change takes effect.

9. To reconnect, close your browser, relaunch it, and log in to the router.

Use the router as a DHCP server

By default, the router acts as a Dynamic Host Configuration Protocol (DHCP) server. The router assigns IP, DNS server, and default gateway addresses to all computers connected to the LAN. The assigned default gateway address is the LAN address of the router.

These addresses must be part of the same IP address subnet as the router's LAN IP address. Using the default addressing scheme, define a range between 192.168.1.2 and 192.168.1.254, although you can save part of the range for devices with fixed addresses.

To use the router as a DHCP server and specify the pool of IP addresses that the router assigns:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
   The LAN Setup page displays.

5. If you previously disabled the DHCP server feature, select the **Use Router as DHCP Server** check box.

6. Specify the range of IP addresses that the router assigns:
   a. In the **Starting IP Address** field, enter the lowest number in the range.
      This IP address must be in the same subnet as the router. The default starting IP address is 192.168.1.2.
   b. In the **Ending IP Address** field, enter the number at the end of the range of IP addresses.
      This IP address must be in the same subnet as the router. The default ending IP address is 192.168.1.254.

7. Click the **Apply** button.

   Your settings are saved.

   The router delivers the following parameters to any LAN device that requests DHCP:

   - An IP address from the range that you defined
   - Subnet mask
   - Gateway IP address (the router's LAN IP address)
   - DNS server IP address (the router's LAN IP address)

Disable the DHCP server feature in the router

By default, the router acts as a DHCP server. The router assigns IP, DNS server, and default gateway addresses to all computers connected to the LAN. The assigned default gateway address is the LAN address of the router.

You can use another device on your network as the DHCP server, or specify the network settings of all your computers.

To disable the DHCP server feature in the router:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.

   The LAN Setup page displays.

5. Clear the **Use Router as DHCP Server** check box.

6. Click the **Apply** button.

7. (Optional) If this service is disabled and no other DHCP server is on your network, set your computer IP addresses manually so that they can access the router.

Manage reserved LAN IP addresses

When you specify a reserved IP address for a computer on the LAN, that computer always receives the same IP address each time it accesses the router's DHCP server. Assign reserved IP addresses to computers or servers that require permanent IP settings.

Reserve an IP address

To reserve an IP address:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
    A login window opens.

3. Enter the admin user name and password.
    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
    The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
    The LAN Setup page displays.

5. In the **Address Reservation** section of the page, click the **Add** button.

6. In the **IP Address** field, type the IP address to assign to the computer or server.
    The page adjusts.

7. Choose an IP address from the router's LAN subnet, such as 192.168.1.x.

8. Type the MAC address of the computer or server.

    Tip: If the computer is already on your network, you can copy its MAC address from the Attached Devices page and paste it here.

9. Click the **Apply** button.
    The reserved address is entered into the table.

    The reserved address is not assigned until the next time the computer contacts the router's DHCP server. Reboot the computer, or access its IP configuration and force a DHCP release and renew.

Edit a reserved IP address

To edit a reserved address entry:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
   The LAN Setup page displays.

5. Select the radio button next to the reserved address.

6. Click the **Edit** button.
   The Address Reservation page displays.

7. Change the settings.

8. Click the **Apply** button.
   Your settings are saved.

Delete a reserved IP address entry

To delete a reserved address entry:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Setup > LAN Setup**.
   The LAN Setup page displays.

5. Select the radio button next to the reserved address.

6. Click the **Delete** button.
    The address is removed.

Manage custom static routes

Typically, you do not need to add static routes unless you use multiple routers or multiple IP subnets on your network.

As an example of when a static route is needed, consider the following case:

*   Your main Internet access is through a cable modem to an ISP.

*   Your home network includes an ISDN router for connecting to the company where you are employed. This router's address on your LAN is 192.168.1.100.

*   Your company's network address is 134.177.0.0.

When you set up your router, two implicit static routes were created. A default route was created with your ISP as the gateway, and a second static route was created to your local network for all 192.168.1.x addresses. With this configuration, if you try to access a device on the 134.177.0.0 network, your router forwards your request to the ISP. The ISP forwards your request to the company where you are employed, and the company firewall is likely to deny the request.

In this case you must define a static route, telling your router to access 134.177.0.0 through the ISDN router at 192.168.1.100. Here is an example:

*   The **Destination IP Address** and **IP Subnet Mask** fields specify that this static route applies to all 134.177.x.x addresses.

*   The **Gateway IP Address** field specifies that all traffic for these addresses will be forwarded to the ISDN router at 192.168.1.100.

*   The **Private** check box is selected only as a precautionary security measure in case RIP is activated.

Set up a static route

To set up a static route:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
    A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Static Routes**.

   The Static Routes page displays.

5. Click the **Add** button.

   The page adjusts.

6. In the **Route Name** field, type a name for this static route (for identification purposes only.)

7. To limit access to the LAN only, select the **Private** check box.

   If Private is selected, the static route is not reported in RIP.

8. Select the **Active** check box to make this route take effect.

9. Type the IP address of the final destination.

10. Type the IP subnet mask for this destination.

    If the destination is a single host, type **255.255.255.255**.

11. Type the gateway IP address.

    This address must be on the same LAN segment as the router.

12. Type a number from 2 through 15 as the metric value.

    This value represents the number of routers between your network and the destination. Usually, a setting of 2 or 3 works.

13. Click the **Apply** button.

    The static route is added.

Edit a static route

To edit a static route:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Static Routes**.

   The Static Routes page displays.

5. In the table, select the radio button for the route.

6. Click the **Edit** button.

   The Static Routes page adjusts.

7. Edit the route information.

8. Click the **Apply** button.

   Your settings are saved.

Delete a static route

To delete a static route:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Static Routes**.

   The Static Routes page displays.

5. In the table, select the radio button for the route.

6. Click the **Delete** button.

   The route is removed from the table.

Specify basic WiFi settings

The router and satellite come preset with the same WiFi network name (SSID) and the same WiFi security. You can find the SSID and password on the router label and on the satellite label. If you log in to the router and change the WiFi settings, the router automatically sends the new settings to the satellite.

If you change your WiFi settings, make a note of the new settings and store it in a safe place where you can easily find it.

If your computer or mobile device is using a WiFi connection when you change the network name (SSID) or other WiFi security settings, you are disconnected when you click the **Apply** button. To avoid this problem, use a computer with a wired connection to access the router.

To specify basic WiFi settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the Orbi admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **Wireless**.

   The Wireless Settings page displays.

5. To change the network name (SSID), type a new name in the **Name (SSID)** field.

   The name can be up to 32 characters long and it is case-sensitive. The default SSID is randomly generated and is on the router's label. If you change the name, make sure to write down the new name and keep it in a safe place.

6. To change the WiFi channel, select a number in the **Channel** list.

   In some regions, not all channels are available. Do not change the channel unless you experience interference (shown by lost connections or slow data transfers). If this happens, experiment with different channels to see which is the best.

   When you use multiple access points, it is better if adjacent access points use different channels to reduce interference. The recommended channel spacing between adjacent access points is four channels (for example, use Channels 1 and 5, or 6 and 10).

7. Click the **Apply** button.

    Your settings are saved. The router sends the new settings to the satellite.

    If you are using a WiFi connection and you changed the SSID, you are disconnected from the network.

8. Make sure that you can connect to the WiFi network with its new settings.

    If you cannot connect using WiFi, check the following:

    - Is your WiFi-enabled computer or mobile device connected to another WiFi network in your area? Some WiFi devices automatically connect to the first open network without WiFi security that they discover.

    - Is your computer or WiFi device trying to connect to your network with its old settings (before you changed the settings)? If so, update the WiFi network selection in your computer or WiFi device to match the current settings for your network.

Change the WiFi password or security level

The router and satellite come preset with the same WiFi network name (SSID) and the same WiFi security. You can find the SSID and password on the router label and on the satellite label. If you log in to the router and change the WiFi settings, the router automatically sends the new settings to the satellite. We recommend that you do not disable security.

To change the WPA settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the Orbi admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **Wireless**.

    The Wireless Settings page displays.

5. Under Security Options, select a WPA radio button:

- **WPA2-PSK [AES]**
- **WPA-PSK [TKIP] + WPA2-PSK [AES]**
- **WPA3-Personal [SAE]**

The WPA3 option uses the newest standard for the strongest security.

Some older computers and WiFi devices cannot use WPA3 or WPA2. If your network includes old computers and WiFi devices, select the **WPA-PSK [TKIP] + WPA2-PSK [AES]** radio button.

The **Password (Network Key) field** displays.

6. In the **Password (Network Key)** field, enter the network key (password) that you want to use.

For WPA and WPA2, it is a text string from 8 to 63 characters. For WPA3, it is a text string from 8 to 127 characters.

7. Write down the new password and keep it in a secure place for future reference.

8. Click the **Apply** button.

Your settings are saved. The router sends the new settings to the satellite.

Set up a guest WiFi network

To set up a guest WiFi network:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

A login window opens.

3. Enter the Orbi admin user name and password.

The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **Guest Network**.

The Guest Network Settings page displays.

5. Select the **Enable Guest Network** check box.

6. To change the network name, type a new name in the **Guest Wireless Network Name (**SSID) field.

   The name can be up to 32 characters long and it is case-sensitive. If you change the name, make sure to write down the new name and keep it in a safe place.

   By default, security and encryption are disabled for the guest WiFi network. (Under Security Options, the **None** radio button is selected).

7. To enable security and encryption for the guest WiFi network, under Security Options, select a WPA radio button:

   - **WPA2-PSK [AES]**
   - **WPA-PSK [TKIP] + WPA2-PSK [AES]**
   - **WPA3-Personal [AES]**

   The WPA3 option uses the newest standard for the strongest security.

   Some older computers and WiFi devices cannot use WPA3 or WPA2. If your network includes old computers and WiFi devices, select the **WPA-PSK [TKIP] + WPA2-PSK [AES]** radio button.

   The **Password (Network Key) field** displays.

8. In the **Password (Network Key)** field, enter the network key (password) that you want to use.

   For WPA and WPA2, it is a text string from 8 to 63 characters. For WPA3, it is a text string from 8 to 127 characters.

9. Write down the new password and keep it in a secure place for future reference.

10. Click the **Apply** button.

    Your settings are saved. The router sends the new settings to the satellite.

Generate a new backhaul password

The backhaul password is a security key that is used in WiFi communication between the router and the satellite. You can generate a new backhaul password. After you generate a new backhaul password, you must use the **Sync** button to build a new backhaul connection so that the router and satellite can communicate with each other using WiFi.

To generate a new backhaul password:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Wireless Settings**.
   The Advanced Wireless Settings page displays.

5. In the **Backhaul Password** section, click the **Generate** button.
   The router generates a new backhaul password.

Set up a bridge for a port group or VLAN tag group

This feature can function only if you disable the mobile broadband connection entirely so that the router uses a wired Internet connection only (see <u>Change the Internet connection mode to wired Internet only or mobile broadband only</u> on page 25 and if the router functions in router mode (its default mode).

8

Manage Your Network

This chapter describes the router settings for administering and maintaining your router and home network.

The chapter includes the following sections:

- Update the router and satellite firmware
- Change the admin password
- Enable admin password reset
- Reset the admin password
- View router status and usage information
- Display Internet port statistics
- Check the Internet connection status
- Check the mobile broadband Internet connection status
- View satellite status
- View and manage logs of router activity
- View devices connected to the network or edit device information
- View satellites connected to the network or edit satellite information
- Monitor Internet traffic
- Manage the router configuration file
- Remotely access your router using the Orbi app

Update the router and satellite firmware

You can use the router web interface to check if new firmware is available and update your router and satellite, or you can manually update the firmware for your router and satellite.

Check for firmware updates

To check for new firmware and update your router and satellite:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the router admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Firmware Update > Online Update**.
   The Firmware Update page displays.

5. Click the **Check** button.
   The router checks to see if new firmware is available for the router and satellite.

6. If new firmware is available, click the **Update All** button.
   The router locates and downloads the firmware for the router and satellite and begins the update.

   Note: To avoid the risk of corrupting the firmware, do not interrupt the upgrade. For example, do not close the browser, click a link, or load a new page. Do not turn off the router or satellite.

   When the upload is complete, your router and satellite restart. The update process typically takes about one minute. Read the new firmware release notes to find out if you must reconfigure the router after updating.

Manually update firmware

If a satellite is connected to your router, you can log in to the router to manually upload the firmware on your satellite.

WARNING: We recommend that you always update the firmware on your satellite first, and then update your router. Also, do not update the firmware on your router and satellite at the same time, and do not update more than one Orbi device (router or satellite) at a time. If you need to update more than one Orbi device, wait for the first Orbi device to finish updating before updating your next Orbi device.

To manually update the firmware on your Orbi router and satellite, follow these high level steps:

1. Visit netgear.com/support and download the firmware for both your Orbi router and satellite.

2. Update the firmware on your Orbi satellite.

   For more information, see Manually update satellite firmware on page 74.

3. Update the firmware on your Orbi router.

Manually update satellite firmware We recommend that you update your satellite's firmware *before* you update the router's firmware.

To manually update your satellite's firmware:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the router admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Firmware Update > Manual Update**.

   The Firmware Update page displays.

5. Select the check box next to your satellite's model name.

   If you have more than one satellite, only update one satellite at a time. You must wait for the first satellite to finish updating before updating the next satellite.

6. Click the **Update** button.

   The Orbi satellite Firmware Update window opens.

---

7. If the browser ask you for the admin password, enter the same password that you entered for the router.

8. Click the **BROWSE** button.

9. Locate and select the satellite firmware file that you downloaded.

    The firmware file name ends in `.img` or `.chk`.

10. Click the **UPLOAD** button.

    It takes a few minutes to complete the process.

11. After Orbi satellite finishes updating, select **Status** and double-check the firmware version on the Status page.

    The firmware on your Orbi satellite is updated.

Change the admin password

This feature let you change the default password that is used to log in to the router with the user name admin. This password is not the one that you use to access the Orbi WiFi network.

Note: Be sure to change the password for the user name admin to a secure password. The ideal password contains no dictionary words from any language and contains uppercase and lowercase letters, numbers, and symbols. It can be up to 30 characters.

To set the password for the user name admin:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Administration > Set Password**.

    The Set Password page displays.

5. Type the old password, and type the new password twice.

6. To be able to reset the password, select the **Enable Password Reset** check box.

We recommend that you enable password reset.

7. Click the **Apply** button.

    Your settings are saved.

Enable admin password reset

The router admin password is used to log in to your router web interface. We recommend that you enable the password reset feature so that you can reset the password if it is forgotten. This reset process is supported in Internet Explorer, Firefox, and Chrome browsers but not in the Safari browser.

To enable password reset:

1. Launch a web browser from a computer or WiFi device that is connected to the network.

2. Enter **http://www.routerlogin.net**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Administration > Set Password**.

    The Set Password page displays.

5. Select the **Enable Password Reset** check box.

6. Select two security questions and provide answers to them.

7. Click the **Apply** button.

    Your settings are saved.

Reset the admin password

If you set up the password reset feature, you can reset your router admin password if you forgot it.

To reset your admin password:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Click the **Cancel** button.
   If password reset is enabled, you are prompted to enter the router's serial number.

   You can find the router's serial number on the router label.

4. Enter the router's serial number in the field.

5. Click the **Continue** button.
   You are requested to enter a new admin password and to set new security questions.

6. Enter your new admin password, set new security questions, and click the **Next** button.
   Your settings are saved.

7. Click the **Login** button.
   A login window opens.

8. With your new admin password, log in to the router.

View router status and usage information

To view router status and usage information:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Click the **ADVANCED** tab.
   The ADVANCED Home page displays the router status.

Display Internet port statistics

To display Internet port statistics:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Click the **ADVANCED** tab.

5. In the Internet Port pane, click the **Show Statistics** button.

   The Show Statistics window opens and displays following information:

   - **System Up Time**. The time elapsed since the router was last restarted.

   - **Port**. The statistics for the WAN (Internet) and LAN (Ethernet) ports. For each port, the page displays the following information:

     - **Status**. The link status of the port.

     - **TxPkts**. The number of packets transmitted on this port since reset or manual clear.

     - **RxPkts**. The number of packets received on this port since reset or manual clear.

     - **Collisions**. The number of collisions on this port since reset or manual clear.

     - **Tx B/s**. The current transmission (outbound) bandwidth used on the WAN and LAN ports.

     - **Rx B/s**. The current reception (inbound) bandwidth used on the WAN and LAN ports.

     - **Up Time**. The time elapsed since this port acquired the link.

     - **Poll Interval**. The interval at which the statistics are updated in this page.

6. To change the polling frequency, enter a time in seconds in the **Poll Interval** field and click the **Set Interval** button.

7. To stop the polling entirely, click the **Stop** button.

Check the Internet connection status

To check the Internet connection status:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Click the **ADVANCED** tab.

5. In the Internet Port pane, click the **Connection Status** button.
   The Connection Status window opens and displays the following information

   - **IP Address**. The IP address that is assigned to the router.

   - **Subnet Mask**. The subnet mask that is assigned to the router.

   - **Default Gateway**. The IP address for the default gateway that the router communicates with.

   - **DHCP Server**. The IP address for the Dynamic Host Configuration Protocol server that provides the TCP/IP configuration for all the computers that are connected to the router.

   - **DNS Server**. The IP address of the Domain Name Service server that provides translation of network names to IP addresses.

   - **Lease Obtained**. The date and time when the lease was obtained.

   - **Lease Expires**. The date and time that the lease expires.

6. To return the status of all items to 0, click the **Release** button.

7. To refresh the page, click the **Renew** button.

8. To exit the page, click the **Close Window** button.

Check the mobile broadband Internet connection status

You can view information about the mobile broadband Internet connection, including the 5G/LTE provider, type of service, and signal strength.

To check the mobile broadband Internet connection status:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
    A login window opens.

3. Enter the admin user name and password.
    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
    The BASIC Home page displays.

4. Click the **ADVANCED** tab.

5. In the Internet Port pane, click the **Connection Status** button.
    The Mobile Information pop-up window opens and shows the following information:

    *   **Network mode.** The broadband network mode, such as 5G or 5G/LTE.

    *   **Band**. The 5G/LTE frequency operating band.

    *   **LAC.** The location area code of the cellula/r network.

    *   **Cell ID.**.The ID of the network cell, that is, the cellular tower, to which the router is connected.

    *   **LAC**. The location area code of the cellular network.

    *   **SIM Status**. Shows whether the SIM card is ready for operation.

    *   **IMEI**. The International Mobile Station Equipment Identity (IMEI), used to identify the device (that is, the router) on the network .

    *   **IMSI.** The International Mobile Subscriber Identity (IMSI), used to identify the subscriber account (that is, the SIM card) on the network

    *   **System Up Time**. The time elapsed since the router was last restarted.

    *   **Roaming State.**. Shows whether the router is in its home area or is roaming.

    *   **Connection Status**. Shows whether the router is connected.

    *   **IP Address**. The IP address that is assigned by the 5G/LTE provider.

- **Operator**. The 5G/LTE provider.

- **DNS Server.**DNS Server. The IP address of the 5G/LTE provider's Domain Name Service server that provides translation of network names to IP addresses

- **RSRP**. The Reference Signals Received Power.

- **RSRQ**The Reference Signal Received Quality.

- **Received Signal Quality (in dbm)**Received Signal Quality (in dbm). The quality of the received radio signal

- **Signal Strength.** An icon that displays the strength of the signal. One bar is a weak signal. Five bars is a very strong signal.

- **Network Type**. The 5G/LTE network type.

- **E/U/ARFCN** . The E-UTRA Absolute Radio Frequency Channel Number

- **Band Name**. By default, the band name is BRS/EBS.

- **Uplink Frequency (phone to base station)** . The uplink frequency band in the 5G/LTE band.

- **Downlink Frequency (base station to phone)**. The downlink frequency band in the 5G/LTE band.

- **ICCID**. The Integrated Circuit Card Identifier (ICCID). This is the serial number of the SIM card.

6. To release (stop) themobile broaedband Internet connection, click the **Release** button.

7. To renew the mobile broadband Internet connection,, click the **Renew** button.

8. To exit the page, click the **Close Window** button.

View satellite status

To view your satellite's status, it must be connected to your Orbi network.

To view your satellite's status:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the router admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

The BASIC Home page displays.

4. Select **Attached Devices**.
   The Attached Devices page displays.

5. In the Connected Satellites section, find your satellite's IP address.

6. Enter your satellite's IP address in your web browser's address bar.
   A login window opens.

7. Enter the same admin user name and password that you entered for the router.
   The satellite's status displays.

View and manage logs of router activity

The log is a detailed record of the websites you accessed or attempted to access and other router actions. Up to 256 entries are stored in the log.

To view and manage logs:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Logs**.
   The Logs page displays the following information:

   - **Date and time**. The date and time the log entry was recorded.

   - **Source IP**. The IP address of the initiating device for this log entry.

   - **Target address**. The name or IP address of the website or news group visited or to which access was attempted.

   - **Action**. The action that occurred, such as whether Internet access was blocked or allowed.

5. To refresh the log page, click the **Refresh** button.

6. To clear the log entries, click the **Clear Log** button.

7. To email the log immediately, click the **Send Log** button.

View devices connected to the network or edit device information

You can view the devices that are connected to your Orbi network. You can also edit the information that displays on the Attached Devices page in the router web interface.

View devices connected to the network

You can view all computers or devices that are currently connected to your Orbi network.

To view devices connected to your network:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the router admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **Attached Devices**.

    The Attached Devices page displays the following information in the Connected Devices section:

    - **Device Name**. This section displays the device model, name, type, and IP address.

    - **IP Address**. This section displays the device IP address. The device's IP address can change because the router assigns an IP address to each device when it joins the network.

    - **MAC Address**. This section displays the device MAC address. The unique MAC address for each device does not change.

    - **Connection Type**. This section displays how the device is connected to the Orbi network through a wired Ethernet connection or WiFi connection.

    - **Connected Orbi**. This section displays the Orbi router or satellite that the device is connected to. The Orbi router's or satellite's MAC address also displays.

5. To update this page, click the **Refresh** button.

Edit device information on the Attached Devices page

You can change the connected device model and name that display on the Attached Devices page.

To view devices connected to your network:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
    A login window opens.

3. Enter the router admin user name and password.
    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
    The BASIC Home page displays.

4. Select **Attached Devices**.
    The Attached Devices page displays.

5. Select a connected device that displays on the page.
    The Edit Device page displays.

6. To change the device model, enter a new model in the **Device Model** field.

7. To change the device name, enter a new name in the **Device Name** field.

8. To change the device type, select a device from the **Device Type** menu.

9. Click the **APPLY** button.
    Your settings are saved.

View satellites connected to the network or edit satellite information

You can view the satellites that are connected to your Orbi network. You can also edit the information that displays on the Attached Devices page in the router web interface.

View satellites connected to the network

You can view the satellites that are connected to your Orbi network.

To view satellites connected to your network:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
    A login window opens.

3. Enter the router admin user name and password.
    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
    The BASIC Home page displays.

4. Select **Attached Devices**.
    The Attached Devices page displays the following information in the Connected Satellites section:

    *   **Device Name**. This section displays the satellite model, name, and IP address.

    *   **IP Address**. This section displays the satellite IP address. The satellite's IP address can change because the router assigns an IP address to each satellite when it joins the network.

    *   **MAC Address**. This section displays the satellite MAC address. The unique MAC address for each satellite does not change.

    *   **Connection Type**. This section displays how the satellite is connected to the Orbi network through a wired Ethernet connection or 2G or 5G WiFi connection.

    *   **Connected Orbi**. This section displays the Orbi router or satellite that the satellite is connected to. The Orbi router's or satellite's MAC address also displays.

    *   **Backhaul Status**. This section displays the backhaul connection status between the satellite and router or another satellite.

5. To update this page, click the **Refresh** button.

Edit satellite information that displays on the Attached Devices page

You can change the satellite's model and name that display on the Attached Devices page.

To edit the satellite's model or name that displays on the Attached Devices page:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

A login window opens.

3. Enter the router admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **Attached Devices**.

   The Attached Devices page displays.

5. Select a connected device that displays on the page.

   The Edit Device page displays.

6. To change the device model, enter a new model in the **Device Model** field.

7. To change the device name, enter a new name in the **Device Name** field.

8. Click the **APPLY** button.

   Your settings are saved.

Monitor Internet traffic

Traffic metering allows you to monitor the volume of Internet traffic that passes through the router Internet port. You can set limits for traffic volume.

To monitor Internet traffic:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Traffic Meter**.

   The Traffic Meter page displays.

5. Select the **Enable Traffic Meter** check box.

6. To control the volume of Internet traffic, use either the traffic volume control feature or the connection time control feature:

- Select the **Traffic volume control by** radio button and then select one of the following options:

  - **No Limit**. No restriction is applied when the traffic limit is reached.

  - **Download only**. The restriction is applied to incoming traffic only.

  - **Both directions**. The restriction is applied to both incoming and outgoing traffic.

- Select the **Connection time control** radio button and enter the allowed hours in the **Monthly limit** field.

7. If your ISP charges for extra data volume when you make a new connection, enter the extra data volume in MB in the **Round up data volume for each connection by** field.

8. In the Traffic Counter section, set the traffic counter to begin at a specific time and date.

   To start the traffic counter immediately, click the **Restart Counter Now** button.

9. If you want the router to issue a warning message before the monthly limit of Mbytes or hours is reached, in the Traffic Control section, enter a numeric value.

   By default, the value is 0 and no warning message is issued.

10. To stop the Internet connection when the limit is exceeded, select the **Disconnect and disable the Internet connection** check box.

11. Click the **Apply** button.

    The Internet Traffic Statistics section helps you to monitor the data traffic.

12. To update the Internet Traffic Statistics section, click the **Refresh** button.

13. To display more information about the data traffic on your router and to change the poll interval, click the **Traffic Status** button.

Manage the router configuration file

The configuration settings of the router are stored within the router in a configuration file. You can back up (save) this file to your computer, restore it, or reset it to the factory default settings.

Back up settings

To back up the router's configuration settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Backup Settings**.
   The Backup Settings page displays.

5. Click the **BACK UP** button.

6. Specify a location on your network.
   A copy of the current settings is saved in the location you specified.

Restore configuration settings

To restore configuration settings that you backed up:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Backup Settings**.
   The Backup Settings page displays.

5. Click the **Browse** button to find and select the **.cfg** file.

6. Click the **RESTORE** button.
   The file is uploaded to the router and the router reboots.

WARNING: Do not interrupt the reboot process.

Erase the current configuration settings

You can erase the current configuration and restore the factory default settings. You might want to do this if you move the router to a different network.

To erase the configuration settings:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Administration > Backup Settings**.

   The Backup Settings page displays.

5. Click the **ERASE** button.

   The factory default settings are restored. The user name is admin, the password is password, and the LAN IP address is 192.168.1.1. DHCP is enabled.

Remotely access your router using the Orbi app

You can use the Orbi app to remotely access your router and change its settings. Before you can use remote access with the Orbi app, you must update your router's firmware and download the latest Orbi app for your mobile device.

To download the latest Orbi app for your mobile device, visit https://www.netgear.com/home/apps-services/orbi-app.

9

Customize Internet Traffic Rules for Ports

You can use port forwarding and port triggering to set up rules for Internet traffic. You need networking knowledge to set up these features.

This chapter includes the following sections:

- <u>Manage port forwarding to a local server</u>
- <u>Manage port triggering</u>

Manage port forwarding to a local server

If your home network includes a server, you can allow certain types of incoming traffic to reach the server. For example, you might want to make a local web server, FTP server, or game server visible and available to the Internet.

The router can forward incoming traffic with specific protocols to computers on your local network. You can specify the servers for applications and you can also specify a default DMZ server to which the router forwards all other incoming protocols.

Set up port forwarding to a local server

To forward specific incoming protocols to a local server:

1. Decide which type of service, application, or game you want to provide.

2. Find the local IP address of the computer on your network that will provide the service.

    The server computer must always use the same IP address. To specify this setting, use the reserved IP address feature. See Manage reserved LAN IP addresses on page 62.

3. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

4. Enter **orbilogin.com**.

    A login window opens.

5. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

6. Select **ADVANCED > Advanced > Port Forwarding / Port Triggering**.

    The Port Forwarding / Port Triggering page displays.

7. Leave the **Port Forwarding** radio button selected as the service type.

8. From the **Service Name** menu, select the service name.

    If the service that you want to add is not in the menu, create a custom service. See Add a custom port forwarding service on page 92.

9. In the **Server IP Address** field, enter the IP address of the computer that must provide the service.

10. Click the **Add** button.

The service displays in the table.

Add a custom port forwarding service

To add a custom service:

1. Find out which port number or range of numbers the application uses.
   You can usually find this information by contacting the publisher of the application or user groups or news groups.

2. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

3. Enter **orbilogin.com**.
   A login window opens.

4. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

5. Select **ADVANCED > Advanced > Port Forwarding / Port Triggering**.
   The Port Forwarding / Port Triggering page displays.

6. Leave the **Port Forwarding** radio button selected as the service type.

7. Click the **Add Custom Service** button.
   The Ports - Custom Services page displays.

8. In the **Service Name** field, enter a descriptive name.

9. In the **Protocol** menu, select the protocol.
   If you are unsure, select **TCP/UDP**.

10. In the **External Port range** field, enter the port numbers.

11. Specify the internal ports by one of these methods:

    • Leave the **Use the same port range for Internal port** check box selected.

    • Type the port numbers in the **Internal port range** field.

12. Type the IP address in the **Internal IP address** fields or select the radio button for an attached device listed in the table.

13. Click the **Apply** button.

Your settings are saved. The service is now in the table on the Port Forwarding / Port Triggering page.

Edit a port forwarding service

To edit a port forwarding entry:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Port Forwarding / Port Triggering**.
   The Port Forwarding / Port Triggering page displays.

5. Leave the **Port Forwarding** radio button selected as the service type.

6. In the table, select the radio button next to the service name.

7. Click the **Edit Service** button.
   The Ports - Custom Services page displays.

8. Specify changes to any of the following settings:

   - **Service Name**. Type the service name.

   - **Protocol**. Select the protocol. If you are unsure, select **TCP/UDP**.

   - **External port range**. Enter the port numbers.

   - For the internal ports, leave the **Use the same port range for Internal port** check box selected or enter the ports in the **Internal port range** field.

   - **Internal IP address**. Type the IP address in the **Internal IP address** fields, or select the radio button for an attached device listed in the table.

9. Click the **Apply** button.
   Your settings are saved. The service is changed in the table on the Port Forwarding / Port Triggering page.

Delete a port forwarding entry

To delete a port forwarding entry:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Port Forwarding / Port Triggering**.
   The Port Forwarding / Port Triggering page displays.

5. Select the **Port Forwarding** radio button as the service type.

6. In the table, select the radio button next to the service name.

7. Click the **Delete Service** button.
   The port forwarding entry is removed from the table.

How the router implements the port forwarding rule

The following sequence shows the effects of a port forwarding rule:

1. When you type the URL www.example.com in your browser, the browser sends a web page request message with the following destination information:

   - **Destination address**. The IP address of www.example.com, which is the address of your router.

   - **Destination port number**. 80, which is the standard port number for a web server process.

2. Your router receives the message and finds your port forwarding rule for incoming port 80 traffic.

3. The router changes the destination in the message to IP address 192.168.1.123 and sends the message to that computer.

4. Your web server at IP address 192.168.1.123 receives the request and sends a reply message to your router.

5. Your router performs Network Address Translation (NAT) on the source IP address, and sends the reply through the Internet to the computer or WiFi device that sent the web page request.

Application example: Make a local web server public

If you host a web server on your local network, you can use port forwarding to allow web requests from anyone on the Internet to reach your web server.

To make a local web server public:

1. Assign your web server either a fixed IP address or a dynamic IP address using DHCP address reservation.

   In this example, your router always gives your web server an IP address of 192.168.1.33.

2. In the **Port Forwarding/Port Triggering** page, configure the router to forward the HTTP service to the local address of your web server at 192.168.1.33.

   HTTP (port 80) is the standard protocol for web servers.

3. (Optional) Register a host name with a Dynamic DNS service, and specify that name on the Dynamic DNS page of the router.

   Dynamic DNS makes it much easier to access a server from the Internet because you can type the name in the Internet browser. Otherwise, you must know the IP address that the ISP assigned, which typically changes.

Manage port triggering

Port triggering is a dynamic extension of port forwarding that is useful in these cases:

- An application must use port forwarding to more than one local computer (but not simultaneously).

- An application must open incoming ports that are different from the outgoing port.

With port triggering, the router monitors traffic to the Internet from an outbound "trigger" port that you specify. For outbound traffic from that port, the router saves the IP address of the computer that sent the traffic. The router temporarily opens the incoming port or ports that you specify in your rule and forwards that incoming traffic to that destination.

Port forwarding creates a static mapping of a port number or range of ports to a single local computer. Port triggering can dynamically open ports to any computer when needed and close the ports when they are no longer needed.

Add a port triggering service

To add a port triggering service:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Port Forwarding / Port Triggering**.
   The Port Forwarding / Port Triggering page displays.

5. Select the **Port Triggering** radio button.
   The page adjusts.

6. Click the **Add Service** button.
   The Port Triggering - Services page displays.

7. In the **Service Name** field, type a descriptive service name.

8. In the **Service User** menu, select **Any,** or select **Single address** and enter the IP address of one computer:

   - **Any**. This selection (the default) allows any computer on the Internet to use this service.

   - **Single address**. This selection restricts the service to a particular computer. Enter the IP address in the field that becomes available with this selection from the menu.

9. From the **Service Type** menu, select the service type, either **TCP** or **UDP**.

10. In the **Triggering Port** field, enter the number of the outbound traffic port that must open the inbound ports.

11. From the **Connection Type** menu, select the inbound connection type, **TCP**, **UDP**, or **TCP/UDP**.
    If you are not sure, select **TCP/UDP**.

12. Enter the inbound connection port numbers the **Starting Port**, and **Ending Port** fields.

13. Click the **Apply** button.

    The service is now in the Portmap Table.

Disable port triggering or change the time-out period

By default, port triggering is enabled and a default time-out period is defined. You can disable port triggering or change the time-out period.

To disable port triggering or change the time-out period:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Advanced > Port Forwarding / Port Triggering**.

    The Port Forwarding / Port Triggering page displays.

5. Select the **Port Triggering** radio button.

    The page adjusts.

6. To disable port triggering, select the **Disable Port Triggering** check box.

    If this check box is selected, the router does not use port triggering even if you specified port triggering settings.

7. To change the time-out period, in the **Port Triggering Timeout** field, enter a value up to 9999 minutes.

    This value controls how long the inbound ports stay open when the router detects no activity. This value is required because the router cannot detect when the application terminates.

Application example: Port triggering for Internet Relay Chat

Some application servers, such as FTP and IRC servers, send replies to multiple port numbers. Using port triggering, you can tell the router to open more incoming ports when a particular outgoing port starts a session.

An example is Internet Relay Chat (IRC). Your computer connects to an IRC server at destination port 6667. The IRC server not only responds to your originating source port, but also sends an "identify" message to your computer on port 113. Using port triggering, you can tell the router, "When you initiate a session with destination port 6667, you must also allow incoming traffic on port 113 to reach the originating computer." The following sequence shows the effects of the port triggering rule you define:

1. You open an IRC client program to start a chat session on your computer.

2. Your IRC client composes a request message to an IRC server using a destination port number of 6667, the standard port number for an IRC server process. Your computer then sends this request message to your router.

3. Your router creates an entry in its internal session table describing this communication session between your computer and the IRC server. Your router stores the original information, performs Network Address Translation (NAT) on the source address and port, and sends this request message through the Internet to the IRC server.

4. Noting your port triggering rule and observing the destination port number of 6667, your router creates another session entry to send any incoming port 113 traffic to your computer.

5. The IRC server sends a return message to your router using the NAT-assigned source port (for example, port 33333) as the destination port. The IRC server also sends an "identify" message to your router with destination port 113.

6. When your router receives the incoming message to destination port 33333, it checks its session table to see if a session is active for port number 33333. Finding an active session, the router restores the original address information replaced by NAT and sends this reply message to your computer.

7. When your router receives the incoming message to destination port 113, it checks its session table and finds an active session for port 113 associated with your computer. The router replaces the message's destination IP address with your computer's IP address and forwards the message to your computer.

8. When you finish your chat session, your router eventually senses a period of inactivity in the communications. The router then removes the session information from its session table, and incoming traffic is no longer accepted on port numbers 33333 or 113.

10

Use VPN to Access Your Network

You can use OpenVPN software to remotely access your router using virtual private networking (VPN). This chapter explains how to set up and use VPN access.

This chapter includes the following sections:

- Set up a VPN connection
- Specify VPN service in the router
- Install OpenVPN software
- Use a VPN tunnel on your Windows-based computer
- Use VPN to access your Internet service at home

Set up a VPN connection

A virtual private network (VPN) lets you use the Internet to securely access your network when you aren't home.

This type of VPN access is called a client-to-gateway tunnel. The computer is the client, and the router is the gateway. To use the VPN feature, you must log in to the router and enable VPN, and you must install and run VPN client software on the computer.

VPN uses DDNS or a static IP address to connect with your router.

To use a DDNS service, register for an account with a host name (sometimes called a domain name). You use the host name to access your network. The router supports these accounts: NETGEAR, No-IP, and Dyn.

If your Internet service provider (ISP) assigned a static WAN IP address (such as 50.196.x.x or 10.x.x.x) that never changes to your Internet account, the VPN can use that IP address to connect to your home network.

Specify VPN service in the router

You must specify the VPN service settings in the router before you can use a VPN connection.

To specify the VPN service:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.

   The VPN Service page displays.

5. Select the **Enable VPN Service** check box.

   By default, VPN uses the UDP service type with port number 12973 for TUN mode and port number 12874 for TAP mode. If you want to customize the service type, mode, and port, we recommend that you change these settings before you install the OpenVPN software.

6. To change the TUN mode service type, select the **UCP** or **TCP** radio button.

7. To change the TUN mode service port, type the port number that you want to use in the field.

    The default port number is 12973.

8. To change the TAP mode service type, select the **UCP** or **TCP** radio button.

9. To change the TAP mode service port, type the port number that you want to use in the field.

    The default port number is 12974.

10. Click the **Apply** button.

    Your settings are saved. VPN is enabled in the router, but you must install and set up OpenVPN software on your computer or mobile device before you can use a VPN connection.

Install OpenVPN software

You must install this software on each Windows-based computer, Mac computer, iOS device, or Android device that you plan to use for VPN connections to your router.

Install OpenVPN software on your Windows-based computer

You must install this software on each Windows-based computer that you plan to use for VPN connections to your router.

To install VPN client software on your Windows-based computer:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.

    The VPN Service page displays.

5. Make sure that the **Enable VPN Service** check box is selected.

6. Specify any VPN service settings on the page.
    For more information, see <u>Specify VPN service in the router</u> on page 100.

7. Click the **For Windows** button to download the OpenVPN configuration files.

8. Visit <u>openvpn.net/community-downloads/</u> to download the OpenVPN client utility.

9. In the Windows Installer section of the page, double-click the **openVPN-install-xxx.exe** link.

10. Download and install the Open VPN software on your computer, click the **openVPN-install-xxx.exe** file.

11. Click the **Next** button.

12. When prompted, read the License Agreement and click the **I Agree** button.

13. Leave the check boxes selected, and click the **Next** button.

14. To specify the destination folder, click the **Browse** button and select a destination folder.

15. Click the **Install** button.

    The window displays the progress of the installation and then displays the final installation page.
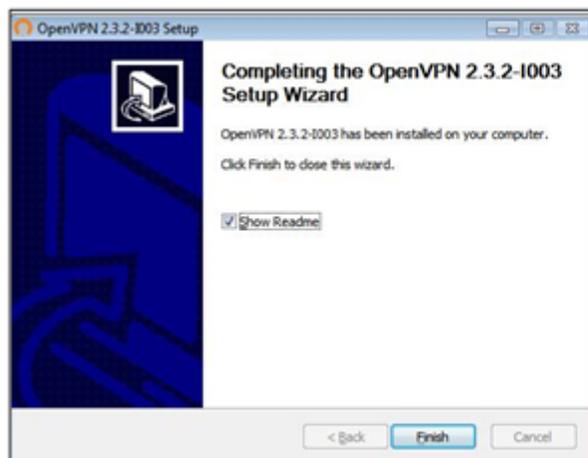
16. Click the **Finish** button.

17. Unzip the configuration files that you downloaded and copy them to the folder where the VPN client is installed on your device.

    For a client device with Windows 64-bit system, the VPN client is installed at C:\Programfiles\OpenVPN\config\ by default.

18. For a client device with Windows, modify the VPN interface name to **NETGEAR-VPN**:

    a. On your computer, go to the Networks page. If you are using Windows 10, select **Control Panel > Network and Sharing Center > Change adapter settings**.

    b. In the local area connection list, find the local area connection with the device name **TAP-Windows Adapter**.

c. Select the local area connection and change its name (not its device name) to **NETGEAR-VPN**.

If you do not change the VPN interface name, the VPN tunnel connection will fail.

For more information about using OpenVPN on your Windows-based computer, visit https://openvpn.net/index.php/open-source/documentation/howto.html#quick.

Install OpenVPN software on your Mac computer

You must install this software on each Mac computer that you plan to use for VPN connections to your router.

To install VPN client software on your Mac computer:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.

    The VPN Service page displays.

5. Make sure that the **Enable VPN Service** check box is selected.

6. Specify any VPN service settings on the page.

    For more information, see Specify VPN service in the router on page 100.

7. Click the **For non-Windows** button to download the OpenVPN configuration files.

8. Visit https://tunnelblick.net/index.html to download the OpenVPN client utility for Mac OS X.

9. Download and install the file.

10. Unzip the configuration files that you downloaded and copy them to the folder where the VPN client is installed on your device.

    The client utility must be installed by a user with administrative privileges.

    For more information about using OpenVPN on your Mac computer, visit https://openvpn.net/vpn-server-resources/installation-guide-for-openvpn-connect-client-on-macos/.

Install OpenVPN software on an iOS device

You must install this software on each iOS device that you plan to use for VPN connections to your router.

To install VPN client software on an iOS device:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.

   The VPN Service page displays.

5. Make sure that the **Enable VPN Service** check box is selected.

6. Specify any VPN service settings on the page.

   For more information, see <u>Specify VPN service in the router</u> on page 100.

7. Click the **For Smart Phone** button to download the OpenVPN configuration files.

8. On your iOS device, download and install the OpenVPN Connect app from the Apple app store.

9. On your computer, unzip the configuration files that you downloaded and send the files to your iOS device.

   Note that when you open the .ovpn file, a list of apps displays. Select the OpenVPN Connect app to open the .ovpn file.

   For more information about using OpenVPN on your iOS device, visit <u>http://www.vpngate.net/en/howto_openvpn.aspx#ios</u>.

Install OpenVPN software on an Android device

You must install this software on each Android device that you plan to use for VPN connections to your router.

To install VPN client software on an Android device:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

    A login window opens.

3. Enter the admin user name and password.

    The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

    The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.

    The VPN Service page displays.

5. Make sure that the **Enable VPN Service** check box is selected.

6. Specify any VPN service settings on the page.

    For more information, see .

7. Click the **For Smart Phone** button to download the OpenVPN configuration files.

8. On your Android device, download and install the OpenVPN Connect app from the Google Play Store.

9. On your computer, unzip the configuration files that you downloaded and send the files to your Android device.

10. Open the files on your Android device.

11. Open the .ovpn file using the OpenVPN Connect app.

    For more information about using OpenVPN on your Android device, visit http://www.vpngate.net/en/howto_openvpn.aspx#android.

Use a VPN tunnel on your Windows-based computer

After you set up the router to use VPN and install the OpenVPN application on your computer, you can open a VPN tunnel from your computer to your router over the Internet.

For the VPN tunnel to work, the local LAN IP address of the remote router must use a different LAN IP scheme from that of the local LAN where your VPN client computer is connected. If both networks use the same LAN IP scheme, when the VPN tunnel is

established, you cannot access your home router or your home network with the OpenVPN software.

The default LAN IP address scheme for the router is 192.x.x.x.The most common IP schemes are 192.x.x.x, 172.x.x.x, and 10.x.x.x. If you experience a conflict, change the IP scheme either for your home network or for the network with the client VPN computer. For information about changing these settings, see Change the LAN TCP/IP settings on page 58.

To open a VPN tunnel:

1. Launch the OpenVPN application with administrator privileges.

Figure 6. The OpenVPN icon displays in the Windows taskbar.

TIP: You can create a shortcut to the VPN program, then use the shortcut to access the settings and select the **run as administrator** check box. Then every time you use this shortcut, OpenVPN automatically runs with administrator privileges.

2. Right-click the **OpenVPN** icon.
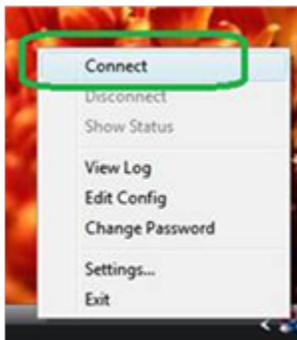
3. Select **Connect**.
   The VPN connection is established. You can launch a web browser and log in to your router.

Use VPN to access your Internet service at home

When you're away from home and you access the Internet, you usually use a local Internet service provider. For example, at a coffee shop you might be given a code that lets you use the coffee shop's Internet service account to surf the web.

Orbi Pro lets you use a VPN connection to access your own Internet service when you're away from home. You might want to do this if you travel to a geographic location that doesn't support all the Internet services that you use at home. For example, your Netflix account might work at home but not in a different country.

Set up VPN client Internet access in the router

By default, the router is set up to allow VPN connections only to your home network, but you can change the settings to allow Internet access. Accessing the Internet remotely through a VPN might be slower than accessing the Internet directly.

To allow VPN clients to use your home Internet service:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.

   A login window opens.

3. Enter the admin user name and password.

   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.

   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.

   The VPN Service page displays.

5. Select the **Enable VPN Service** radio button.

6. Scroll down to the Clients will use this VPN connection to access section, and select the **All sites on the Internet & Home Network** radio button.

   When you access the Internet with the VPN connection, instead of using a local Internet service, you use the Internet service from your home network.

7. Click the **Apply** button.

   Your settings are saved.

Block VPN client Internet access in the router

By default, the router is set up to allow VPN connections only to your home network, not to the Internet service for your home network. If you changed this setting to allow Internet access, you can change it back.

To allow VPN clients to access only your home network and block access to the Internet service for your home network:

1. Launch a web browser from a computer or mobile device that is connected to your Orbi network.

2. Enter **orbilogin.com**.
   A login window opens.

3. Enter the admin user name and password.
   The user name is **admin**. The password is the one that you specified the first time that you logged in. The user name and password are case-sensitive.
   The BASIC Home page displays.

4. Select **ADVANCED > Advanced > VPN Service**.
   The VPN Service page displays.

5. Select the **Enable VPN Service** radio button.

6. Scroll down to the Clients will use this VPN connection to access section, and select the **Home Network only** radio button.
   This is the default setting. The VPN connection is only to your home network, not to the Internet service for your home network.

7. Click the **Apply** button.
   Your settings are saved.

Use a VPN tunnel to access your Internet service at home

To access your Internet service:

1. Set up the router to allow VPN access to your Internet service.
   See <u>Specify VPN service in the router</u> on page 100.

2. On your computer, launch the OpenVPN application.
   The OpenVPN icon displays in the Windows taskbar.

3. Right-click the icon and select **Connect**.

4. When the VPN connection is established, launch your Internet browser.

A

Troubleshooting

This chapter provides information to help you diagnose and solve problems you might experience with your Orbi router or satellite. If you do not find the solution here, check the NETGEAR support site at support.netgear.com for product and contact information.

This chapter includes the following sections:

- Troubleshoot With the LEDs
- Troubleshoot the mobile broadband Internet connection
- You cannot log in to the router
- Changes Not Saved
- Troubleshoot WiFi connectivity
- Troubleshoot your network using the ping utility
- The router and satellite do not sync

Troubleshoot With the LEDs

You can use the LEDs on the front panel of the mobile router for troubleshooting.

Power LED Is Off

- Make sure that the power adapter is securely connected to your mobile router and securely connected to a working power outlet.
- Check that you are using the power adapter that NETGEAR supplied for this product.
- If the problem persists, contact technical support for help at

LEDs Never Turn Off

When the mobile router is turned on, the LEDs light for about 10 seconds and then turn off. If all the LEDs stay on, this indicates a fault within the mobile router.

If all LEDs are still lit one minute after power-up, do the following:

- Cycle the power to see if the mobile router recovers.
- Press and hold the Reset button to return the mobile router to its factory settings. For more information, see .

If the error persists, a hardware problem might be the asue. Contact technical support at .

Internet LED Is Off

If the Internet LED is off and the mobile router is connected to the cable television cable, try the following:

- Make sure that the coaxial cable connections are secure at the mobile router and at the wall jack.
- Make sure that your cable Internet provider provisioned your cable Internet service. Your provider can verify that the signal quality is good enough for mobile router service.
- Remove any excessive splitters that are on your cable line.

Troubleshoot the mobile broadband Internet connection

If your router cannot access the Internet over a mobile broadband connection, check the following:

- Make sure that the nano SIM card is inserted correctly into the router.
- Check with your 5G/LTE provider to ensure that good coverage exists in the area.
- Make sure that your 5G/LTE provider account is active.
- Check to see if the router gets better access to the mobile broadband signal if you move the router closer to a window or higher up in your home.
- Check to see if your 5G/LTE provider is experiencing network problems. It might not be that the router cannot connect to the Internet, but rather that your 5G/LTE provider cannot provide an Internet connection.
- You might need to change the APN . Contact your 5G/.LTE provider.

Note: If you call your 5G/LTE provider, they might want you to provide information about your mobile broadband connection.

You cannot log in to the router

Make sure that your computer or mobile device is connected to the Orbi WiFi network. If you do not want to use a WiFi connection, you can connect your computer to the Orbi router with an Ethernet cable.

If you changed the admin password and you forgot what it is, see Recover the admin password.

Changes Not Saved

If the mobile router does not save the changes you that make in the mobile router interface, check the following:

- When entering configuration settings, always click the >**Apply** button before moving to another page or tab, or your settings are lost.
- Click the **Refresh** or **Reload** button in the web browser. The changes might be saved, but the old settings might be in the web browser's cache.

Troubleshoot WiFi connectivity

If you are experiencing trouble connecting to the Orbi WiFi network, try to isolate the problem:

- Can your WiFi-enabled computer or mobile device that you are using find your WiFi network?

- Does your WiFi-capable device support the security that you are using for your WiFi network (WPA3, WPA2, or WPA)?

- To view the WiFi settings for the router, use an Ethernet cable to connect a computer to an Ethernet port on the router. Then log in to the router, and select **BASIC > Wireless**.

  Note: Be sure to click the **Apply** button if you change settings.

- If you are trying to connect to the 5 GHz WiFi band, does your WiFi-enabled computer or mobile device support this standard?

- Did your computer or WiFi device automatically connect to a different WiFi network in your area, such as a WiFi hotspot?

Troubleshoot your network using the ping utility

Most network 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. You can easily troubleshoot a network using the ping utility in your computer or workstation.

Test 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 Windows-based computer:

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 www.routerlogin.net

3. Click the **OK** button.

You 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, one of the following problems might be occurring:

- Wrong physical connections
  For a wired connection, make sure that the numbered LAN port LED is lit for the port to which you are connected.
  Check to see that the appropriate LEDs are lit for your network devices. If your router and computer are connected to a separate Ethernet switch, make sure that the link LEDs are lit for the switch ports that are connected to your computer and router.

- Wrong network configuration
  Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer.
  Verify that the IP address for your router and your computer are correct and that the addresses are on the same subnet.

Test the path from your computer to a remote device

After verifying that the LAN path works correctly, test the path from your computer to a remote device.

To test the path from your computer to a remote device:

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

2. In the Windows Run window, type:

ping -n 10 *<IP address>*

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

If the path is functioning correctly, messages display that are similar to those shown in

If you do not receive replies, check the following:

- Check to see that the IP address of your router is listed as the default gateway for your computer. If DHCP assigns the IP configuration of your computers, this

information is not visible in your computer Network Control Panel. Verify that the IP address of the router is listed as the default gateway.

- Check to see that the network address of your computer (the portion of the IP address specified by the subnet mask) is different from the network address of the remote device.

- Check to see that your cable or DSL modem is connected and functioning.

- If your ISP assigned a host name to your computer, enter that host name as the account name on the Internet Setup page.

- Your ISP might be rejecting the Ethernet MAC addresses of all but one of your computers.

Many broadband ISPs restrict access by allowing traffic only from the MAC address of your broadband modem. Some ISPs additionally restrict access to the MAC address of a single computer connected to that modem. If your ISP does this, configure your router to "clone" or "spoof" the MAC address from the authorized computer.

The router and satellite do not sync

If you are experiencing difficulty syncing the router and the satellite, we recommend that you move the satellite into the same room as the router during the sync. Then move the satellite to a different location.

To sync the router and the satellite:

1. Place the satellite in the same room as the Orbi router.

   Use this satellite location only during the sync process.

2. Connect the satellite to a power source.

3. Wait for the satellite LED to light solid white or magenta.

4. Press the **Sync** button on the router and then within two minutes, press the **Sync** button on the satellite.

5. Wait for the satellite to light.

   The satellite LED pulses white while it attempts to sync with the router. After the LED pulses white, it lights one of the following colors:

   - **Blue**. The Orbi router and satellite successfully synced, and the connection between the router and satellite is good.

   - **Amber**. The Orbi router and satellite failed to sync. Try repeating Step 4 again. If the sync keeps failing, try moving the satellite to a different location that's closer to the router.

6. Move the satellite to a new location and connect the satellite to a power source.

7. At the new location, check the satellite LED and make sure it lights blue.

    If the satellite LED lights blue, the satellite synced successfully. If the satellite LED lights amber, move the satellite closer to the router and try again. The satellite must be within range of the router's WiFi cover area for a good connection to the router.

B

Supplemental Information

This appendix covers the following topics:

* Reset to Factory Settings
* Technical Specifications

Reset to Factory Settings

You can return the modem router and satellite to its factory settings. Use the end of a paper clip or a similar object to press and hold the **Reset** button on the back of the modem router or satellite for at least seven seconds. The modem router or satellite resets, and returns to the factory settings.

Factory Settings for Orbi Modem Router NBR750

The following table shows the factory default settings for the modem router.

Table 4. Factory default settings for the modem router

Feature		Default Setting
Router login	User login URL	orbilogin.com
	User name (case-sensitive)	admin
	Login password (case-sensitive)	password
Mobile boadband Internet connection	Internet connection mode	Always use Mobile Network
	Network mode	Automatic
	PDP	PDP-IP(IPv4)
	Authentication	None
	Roaming	Disabled
Wired Internet connection	WAN MAC address	Use default hardware address
	WAN MTU size	1500
	Port speed	AutoSensing

Table 4. Factory default settings for the modem router (Continued)

Feature		Default Setting
Local network (LAN)	LAN IP	192.168.1.1
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP range	192.168.1.2 to 192.168.1.254
	DHCP starting IP address	192.168.1.2
	DHCP ending IP address	192.168.1.254
	DMZ	Disabled
	Time zone	GMT for WW except NA, GMT-8 for NA
	Time zone adjusted for daylight saving time	Disabled
Firewall	Inbound (communications coming in from the Internet)	Disabled (except traffic on port 80, the HTTP port)
	Outbound (communications going out to the Internet)	Enabled (all)
	Source MAC filtering	Disabled

Table 4. Factory default settings for the modem router (Continued)

Feature		Default Setting
WiFi	WiFi communication	Enabled
	SSID name	See router label
	Broadcast SSID	Enabled
	Transmission speed	**Note:** Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput can vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.
	Country/region	United States in the US; otherwise, varies by region
	RF channel 2.4 GHz fronthaul	Auto
	RF channel 2.5 GHz backhaul	Auto
	RF channel 5 GHz fronthaul	NA: Channel 48 WW: Channel 36
	RF channel 5 GHz backhaul	NA: Channel 157 WW: Channel 108

Factory Settings for Orbi Satellite Model RBS750

The following table shows the factory default settings for the satellite.

Table 5. Factory default settings for the satellite

Feature		Default Setting
Router login	User login URL	orbilogin.com
	User name (case-sensitive)	admin
	Login password (case-sensitive)	password

Table 5. Factory default settings for the satellite (Continued)

Feature		Default Setting
Internet connection	WAN MAC address	Use default hardware address
	WAN MTU size	1500
	Port speed	AutoSensing
Local network (LAN)	LAN IP	192.168.1.250
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP range	192.168.1.2 to 192.168.1.254
	DHCP starting IP address	192.168.1.2
	DHCP ending IP address	192.168.1.254
	DMZ	Disabled
	Time zone	GMT for WW except NA and GR, GMT+1 for GR, GMT-8 for NA
	Time zone adjusted for daylight saving time	Disabled
	SNMP	Disabled
Firewall	Inbound (communications coming in from the Internet)	Disabled (except traffic on port 80, the HTTP port)
	Outbound (communications going out to the Internet)	Enabled (all)
	Source MAC filtering	Disabled

Table 5. Factory default settings for the satellite (Continued)

Feature		Default Setting
WiFi	WiFi communication	Enabled
	SSID name	See satellite label
	Security	WPA2-PSK (AES)
	Broadcast SSID	Enabled
	Transmission speed	Auto[1]
	Country/region	United States in the US
	RF channel	2.4 GHz front and back haul: Auto 5 GHz front haul: Channel 48 5 GHz back haul: Channel 157

[1]*Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput can 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

The following are the technical specifications for Orbi modem router and satellite.

Technical Specifications for Orbi Modem Router NBR750

The following table shows the technical specifications for the modem router.

Table 6. Modem router specifications

Feature	Description
Data and routing protocols	TCP/IP, DHCP, Dynamic DNS, and UPnP
Power adapter	North America: 100-120V, 50/60 Hz input UK: 220V, 50/60 Hz, input Europe: 220V, 50/60 Hz input All regions (output): 12V/3.5A DC output
Dimensions	7.7.2 x 9.69 x 3.46 in. (196.1 x 246.1 x 1.41 mm) each

Table 6. Modem router specifications (Continued)

Feature	Description
Weight	2.75 lb (1247 g)
Operating temperature	0° to 40°C (32° to 104°F)
Operating humidity	90% maximum relative humidity, noncondensing
Electromagnetic emissions	FCC Part 15 Class B EN 55032/24/35 EN 301489-1-17-52
LAN	10BASE-T or 100BASE-TX or 1000BASE-T, RJ-45
WAN	Mobile bands worldwide • 4G bands (LTE-FDD): 1, 3, 7, 8, 20, 28 • 4G bands (LTE-TDD): 38, 40, 41 • 5G bands: n1, n3, n7, n8, n20, n28, n40, n41, n77, n78 Mobile bands United States • 4G bands (LTE-FDD): 2, 4, 5, 7, 12, 13, 14, 25, 26, 29, 30, 66, 71 • 4G bands (LTE-TDD): 41, 48 • 5G bands: n2, n5, n25, n41, n48, n66, n71, n77 Mobile bands Canada • 4G bands (LTE-FDD): 2, 4, 5, 7, 12, 13, 17, 29, 66 • 4G bands (LTE-TDD): 38, 41 • 5G bands: n2, n5, n25, n66, n71, n77, n78 5G NR SA/NSA LTE Cat 20
WiFi	Maximum wireless signal rate complies with the IEEE 802.11 standard. **Note:** Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput can vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.
Radio data rates	2.4 GHz: Max. 600 Mbps 5 GHz Front haul: Max. 1200 Mbps 5 GHz Back haul: Max. 2400 Mbps
Data encoding standards radio 1	IEEE 802.11b/g/n/ax 2.4 GHz–1025-QAM support
Data encoding standards radio 2	IEEE 802.11a/n/ac/ax 5GHz–1024-QAM support
Data encoding standards radio 3	IEEE 802.11a/n/ac/ax 5GHz–1024-QAM support

Table 6. Modem router specifications (Continued)

Feature	Description
Maximum number of computers per wireless network	Limited by the amount of WiFi network traffic generated by each node (typically 50–70 nodes) 2.4 GHz: 127 5 GHz (front haul): 127
Operating frequency range	2.412–2.472 GHz (Europe ETSI) 2.412–2.462 GHz (US) 5.18–5.24 GHz and 5.745–5.825 GHz (US) 5.18–5.24 GHz and 5.5–5.7 GHz (Europe)
802.11 security	WPA2-PSK [AES] WPA-PSK [TKIP] + WPA2-PSK [AES] WPA3-Personal [AES]

Technical specifications for Orbi satellite model RBS750

The following table shows the technical specifications for Orbi satellite model RBS750.

Table 7. Technical specifications for Orbi satellite model RBS750

Feature	Description
Data and routing protocols	TCP/IP, DHCP, Dynamic DNS, and UPnP
Power adapter	North America: 120V, 60 Hz, input
Dimensions	9.1 x 7.2 x 2.8 in. (231 x 183 x 71 mm)
Weight	1.9 lb (862 g)
Operating temperature	0° to 40°C (32° to 104°F)
Operating humidity	90% maximum relative humidity, noncondensing
Electromagnetic emissions	FCC Part 15, Subpart B, Class B IECS-003, Class B EN 55032, EN 55035, Class B AS/NZS CISPR 32, Class B
LAN	Compatible with 10BASE-T, 100BASE-TX, 1000BASE-T, RJ-45
WiFi	Maximum wireless signal rate complies with the IEEE 802.11 standard. **Note**: Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput can vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate.

Table 7. Technical specifications for Orbi satellite model RBS750 (Continued)

Feature	Description
Radio data rates	2.4 GHz: Max. 600 Mbps 5 GHz fronthaul: Max. 1200 Mbps 5 GHz backhaul: Max. 2400 Mbps
Data encoding standards radio 1	IEEE 802.11b/g/n/ax 2.4GHz–1024-QAM support
Data encoding standards radio 2	IEEE 802.11a/n/ac/ax 5GHz–1024-QAM support
Data encoding standards radio 3	IEEE 802.11a/n/ac/ax 5GHz–1024-QAM support
Maximum number of computers per wireless network	Limited by the amount of WiFi network traffic generated by each node (typically 50–70 nodes) 2.4 GHz: 127 5 GHz (fronthaul): 127
2.4 GHz operating frequency range	2.412–2.472 GHz (Europe ETSI, Japan, and China) 2.412–2.462 GHz (US)
5 GHz operating frequency range	5.18–5.24 GHz and 5.745–5.825 GHz (US and China) 5.18–5.24 GHz and 5.5–5.7 GHz (Europe and Japan)
802.11 security	WPA2-PSK [AES] WPA-PSK [TKIP] + WPA2-PSK [AES] WPA3-Personal [AES]