NETGEAR®

User Manual

Orbi LTE Router

Model LBR20

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1

Overview

The Orbi™ LTE Router creates dedicated high-speed WiFi connections to your Internet service. The Orbi router integrates a cellular modem that can connect to the LTE mobile broadband network of your LTE provider. The Orbi router can also connect to the Internet through your wired modem or gateway, with automatic failover support from a wired Internet connection to a mobile broadband connection.

The 4G LTE WiFi Orbi Router is compatible with select Orbi AC Satellites to create a mesh WiFi system, supporting seamless 4K streaming and gaming everywhere in your home.

This manual describes how to manage your 4G LTE WiFi Orbi Router from the Orbi router web interface. If you install an optional satellite, you can manage your Orbi satellite from the Orbi router web interface.

Note: If old features are removed in v2.6 or v2.7, this is becuase they have been retired or replaced.

This chapter contains the following sections:

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

Note: The router requires a nano SIM card to connect to mobile broadband. Get a nano SIM card from your LTE provider. If the SIM has an assigned PIN/PUK, the GUI prompts the user for a PIN.

Note: This manual might refer to the Orbi router as the *router*.

Note: SMS support is dependent on whether your carrier service plan supports SMS. If your carrier supports SMS and you have firmware v2.6 or higher, the device can get SMS messages from the SIM card, and you can read and delete SMS messages.

Orbi router LED behavior

The Orbi router has a Power LED on the back and a Ring LED on the top. For information about the precise locations of the LEDs, see the installation guide, which you can download by visiting netgear.com/support/download.

The following table describes the LED behavior.

Table 1. LED behavior Orbi router

LED color	Description
Power LED	
Solid green	Power is on.
Solid amber	The router is booting.
Blinking amber	The router's firmware is resetting to its factory default settings.
Blinking red	The router's firmware is corrupted.
Off	Power is not supplied
Ring LED	
Pulsing white	The router is booting or someone pressed the **Sync** button.
Solid white	The router is resetting to its factory default settings.
Solid magenta	The router cannot connect to the Internet.
Off	The router finished booting and is working normally.

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 LTE provider.

To connect your router to your 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.

   Note: The router does not support SIM hot-swapping. If you want to change the nano SIM card, power off the router before changing the nano SIM card.

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 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 LTE provider.
   - Ask your LTE provider for the required APN, and enter the APN in the Orbi router web interface (see Change the LTE provider's access point name on page 23).

Download the NETGEAR Orbi app

You can use the NETGEAR Orbi app to set up and access your Orbi network.

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.

For more information about the Orbi app, visit netgear.com/home/apps-services/orbi-app.

Download on the App Store

GET IT ON Google Play

Optional: Connect your router to a wired modem

You can connect your router to a DSL, cable, or fiber-optic modem so that the router uses your wired modem's Internet connection. If the wired modem's Internet connection goes down, the router can use the mobile broadband Internet connection through the nano SIM card that you installed. If you configure automatic failover (see Set up automatic failover on page 21), the router automatically starts using the mobile broadband Internet connection if the wired modem's Internet connection goes down.

IMPORTANT: After you connect your router to a wired modem, access the router web interface and configure the router's WAN/LAN1 port to function as a WAN port. For more information, see Change the function of the WAN/LAN1 port on page 67.

To connect your router to a wired modem:

1. Unplug your modem's power, leaving the modem connected to the wall jack for your Internet service.

   If your modem uses a battery backup, remove the battery.

2. Plug in and turn on your modem.

If your modem uses a battery backup, put the battery back in.

3. Connect your modem to the WAN/LAN1 port of your router with the Ethernet cable that came with your router.
4. Connect the power adapter to your router and plug the power adapter into an outlet.

   The Power LED lights.

You can now access the router web interface (see Connect to Your Network and Access the Router on page 13) and configure the router's WAN/LAN1 port to function as a WAN port (see Change the function of the WAN/LAN1 port on page 67).

2

Connect to Your Network and Access the Router

This chapter contains the following sections:

- Connect to the Orbi network
- Router label
- Types of logins
- Use a web browser to access the router
- Change the language

Connect to the Orbi network

You can connect to the Orbi network through a WiFi or wired connection.

In the unlikely situation that you set up your computer to use a static IP address, change the settings so that it uses Dynamic Host Configuration Protocol (DHCP).

WiFi network

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, select, and join the WiFi Orbi WiFi network:

1. Make sure that the router 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.

   Note: If you bought a satellite, the default WiFi network name for the satellite is different from the default WiFi network name for the router.

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.

Wired connection

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

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 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.

Router label

The router label shows the login information, the WiFi network name and password, the router's MAC address, and the router's serial number.

Types of logins

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

Types of logins:

- **Mobile broadband service login**. The login information that your LTE provider gave you logs you in to your mobile broadband network Internet service. Your LTE 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 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.

Use the automatic Internet setup option

Whether you use a mobile broadband connection or a wired Internet connection, you can set up your router automatically. You can also use a web browser to access the router and set up your router manually.

Before you start the setup process, get your LTE provider information, or if you use a wired Internet connection, your ISP information. Make sure that the computers and devices in the network use the settings described here.

When your Internet service starts, your LTE provider or wired Internet service provider (ISP) typically gives you all the information needed to connect to the Internet. For wired DSL service, you might need the following information to set up your router:

- The ISP configuration information for your DSL account
- ISP login name and password
- Fixed or static IP address settings (special deployment by ISP; this setting is rare)

If you cannot locate this information, ask your DSL provider for the information. When your Internet connection is working, you no longer need to launch an 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. Power on your router.
2. Make sure that your WiFi-enabled computer or mobile device is connected to the router over WiFi with the preset security settings listed on the label or with an Ethernet cable.
3. Launch a web browser.

The page that displays depends on whether you accessed the router web interface 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.

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

5. If the browser does not display the web page, do the following:
   - Make sure that the computer or mobile device is connected to the router, either over WiFi or to one of the LAN Ethernet ports.
   - 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.

6. 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. Make sure that the nano SIM card is installed correctly.
   d. Contact your LTE provider or wired Internet provider to verify that your account is active and that you are using the correct configuration information.
   e. Read Troubleshoot the mobile broadband Internet connection on page 146 or You cannot access the Internet on page 149.
      If problems persist, register your NETGEAR product and contact NETGEAR technical support.

Log in to the Orbi router 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 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.

Change the language

By default, the language is set as Auto.

To change the language:

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. In the upper right corner, select a language from the menu.
5. When prompted, click the **OK** button to confirm this change.
   The page refreshes with the language that you selected.

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
- Orbi features that do not apply to a mobile broadband connection
- Use the Setup Wizard to detect the mobile broadband Internet connection
- Set up automatic failover
- Change the Internet connection mode to wired Internet only or mobile broadband only
- Change the LTE provider's access point name
- Change the mobile broadband network mode
- Configure the mobile broadband PDP, authentication method, and credentials
- Enter the PIN or PUK
- Change the roaming setting

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 LTE provider's mobile broadband network. This process might take several minutes. For more information, see Connect your router to a mobile broadband network on page 10. 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 LTE provider each time that you start the router, the type of mobile broadband service (LTE, 4G, or 3G) 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 your LTE provider to get the Access Point Name (APN) to which the router must connect (see Change the LTE provider's access point name on page 23).

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 22).

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 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 (see Optional: Connect your router to a wired modem on page 11). 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 (see Change the Internet connection mode to wired Internet only or mobile broadband only on page 22), 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 3G/4G mobile connection**.
5. From the **Internet Connection Mode** menu, select **Use WAN Ethernet with mobile as back up in case of failure**.
   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 (see Optional: Connect your router to a wired modem on page 11), 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 21).

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 3G/4G mobile connection**. 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 3G/4G connection**. 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 LTE provider's access point name

By default, the router detects the LTE provider's access point name (APN) when it connects to the mobile broadband network. You only need to change your 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 LTE provider's 4G or 3G network band. In some situations, you might want to set the network mode to either the 4G or 3G 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:

   - **4G**. The router uses the 4G band only and does not connect to the 3G band.

- **3G**. The router uses the 3G band only and does not connect to the 4G band.

  By default, the selection from the menu is **Automatic (4G or 3G)**.

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 LTE provider.

IMPORTANT: For these settings, follow the directions of your 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 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 LTE provider gave you.
   - **Password**. The password that your LTE provider gave you.

   If you do not know the user name and password for the mobile broadband connection, contact your 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 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 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 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 LTE provider.
   - **PUK**. In the **UK Code** field, enter the PUK that you received from your 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

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

This chapter contains the following sections:

- Use the Setup Wizard
- Manually set up the Internet connection
- Manage an IPv6 Internet connection
- Change the MTU size

Use the Setup Wizard

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

To use the Setup Wizard:

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.

   If you select **No**, you are taken to the Internet Setup page (see Manually set up the Internet connection on page 30).
6. Click the **Next** button.

   The Setup Wizard searches your Internet connection for servers and protocols to determine your ISP configuration and checks your operation mode.

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.

   The BASIC Home page displays.

4. Select **Internet**.

   The Internet Setup page.

5. Leave the Does your Internet connection require a login **No** radio button selected.
6. If your Internet connection requires an account name or host name, type it in the **Account Name (If Required)** field.
7. 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.

8. Select an Internet IP Address radio button:

   - **Get Dynamically from ISP**. 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.

9. 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.

10. Select a Router MAC Address radio button:

    - **Use Default Address**. Use the default MAC address.
    - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using. You must use the one computer that the ISP allows.
    - **Use This MAC Address**. Enter the MAC address that you want to use.

11. In the **Vendor Class Identifier String (option 60)** field, enter the enter the vendor class identifier (VCI) string, as indicated by your ISP.

If your ISP did not provide you with a VCI string, leave this field blank.

12. In the **Client Identifier String (option 61)** field, enter the client identifier (client ID) string, as indicated by your ISP.

    If your ISP did not provide you with a client ID string, leave this field blank.

13. Click the **Apply** button.

    Your settings are saved.

14. Click the **Test** button to test your Internet connection.

Specify an Internet connection that uses a login

To view or change the basic Internet setup:

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 **Internet**.

   The Internet Setup page displays.

5. Select the Does your Internet connection require a login **Yes** radio button.

   The page adjusts.

6. From the **Internet Service Provider** menu, select the encapsulation method:

   The selections are **PPPoE**, **PPTP**, or **L2TP**.

7. In the **Login** field, enter the login name your ISP gave you.

   This login name is often an email address.

8. In the **Password** field, type the password that you use to log in to your Internet service.
9. If your ISP requires a service name, type it in the **Service Name (if Required)** field.
10. From the **Connection Mode** menu, select **Always On**, **Dial on Demand**, or **Manually Connect**.

11. To change the number of minutes until the Internet login time out, in the **Idle Timeout (In minutes)** field, type the number of minutes.

    This is how long the router keeps the Internet connection active when no one on the network is using the Internet connection. A value of 0 (zero) means never log out.

12. Select an Internet IP Address radio button:

    - **Get Dynamically from ISP**. 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 gateway IP address that your ISP assigned. The gateway is the ISP router to which your router connects.

13. Select a Domain Name Server (DNS) 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.

14. Select a Router MAC Address radio button:

    - **Use Default Address**. Use the default MAC address.
    - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using. You must use the one computer that the ISP allows.
    - **Use This MAC Address**. Enter the MAC address that you want to use.

15. Click the **Apply** button.

    Your settings are saved.

16. Click the **Test** button to test your Internet connection.

Manage an IPv6 Internet connection

The router supports many different types of IPv6 Internet connections for which you can specify the settings manually.

Note: IPv6 is supported only with firmware v2.6.5 or higher.

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 Setup > IPv6**.
   The IPv6 page displays.
5. From the **Internet Connection Type** menu, select the IPv6 connection type:
   - If you are not sure, select **Auto Detect** so that the router detects the IPv6 type that is in use.
   - If your Internet connection does not use PPPoE, DHCP, or fixed, but is IPv6, select **Auto Config**.
     Your Internet service provider (ISP) can provide this information.
     For more information about IPv6 Internet connection, see the following sections:
   - Use auto detection for an IPv6 Internet connection on page 35
   - Use auto configuration for an IPv6 Internet connection on page 36
   - Set up an IPv6 6rd tunnel Internet connection on page 39
   - Set up an IPv6 6to4 tunnel Internet connection on page 38
   - Set up an IPv6 pass-through Internet connection on page 41

- Set up an IPv6 fixed Internet connection on page 42
- Set up an IPv6 DHCP Internet connection on page 43
- Set up an IPv6 PPPoE Internet connection on page 45

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

Use auto detection for an IPv6 Internet connection

To set up an IPv6 Internet connection through auto detection:

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 Setup > IPv6**.
   The IPv6 page displays.
5. From the **Internet Connection Type** menu, select **Auto Detect**.
   The page adjusts.

   The router automatically detects the information in the following fields:

   - **Connection Type**. This field indicates the connection type that is detected.
   - **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
   - **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. 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 router assigns IPv6 addresses to the devices on your home network (the LAN).

7. (Optional) Select the **Use This Interface ID** check box and specify the interface ID to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.

8. Select an **IPv6 Filtering** radio button:
   - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
   - **Open**. In open mode, the router inspects UDP packets only.

9. Click the **Apply** button.

   Your settings are saved.

Use auto configuration for an IPv6 Internet connection

To set up an IPv6 Internet connection through auto configuration:

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 Setup > IPv6**.

   The IPv6 page displays.

5. From the **Internet Connection Type** menu, select **Auto Config**.

   The page adjusts.

The router automatically detects the information in the following fields:

- **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
- **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. (Optional) In the **DHCP User Class (If Required)** field, enter a host name.

   Most people can leave this field blank, but if your ISP gave you a specific host name, enter it here.

7. (Optional) In the **DHCP Domain Name (If Required)** field, enter a domain name.

   You can type the domain name of your IPv6 ISP. Do not enter the domain name for the IPv4 ISP here. For example, if your ISP's mail server is mail.xxx.yyy.zzz, type xxx.yyy.zzz as the domain name. If your ISP provided a domain name, type it in this field. For example, Earthlink Cable might require a host name of home, and Comcast sometimes supplies a domain name.

8. Select an **IPv6 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.

9. 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.

10. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

    If you do not specify an ID here, the router generates one automatically from its MAC address.

11. Select an **IPv6 Filtering** radio button:
    - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
    - **Open**. In open mode, the router inspects UDP packets only.
12. Click the **Apply** button.
    Your settings are saved.

Set up an IPv6 6to4 tunnel Internet connection

The remote relay router is the router to which your router creates a 6to4 tunnel. Make sure that the IPv4 Internet connection is working before you apply the 6to4 tunnel settings for the IPv6 connection.

To set up an IPv6 Internet connection by using a 6to4 tunnel:

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 Setup > IPv6**.
   The IPv6 page displays.
5. From the **Internet Connection Type** menu, select **6to4 Tunnel**.
   The page adjusts.

   The router automatically detects the information in the Router's IPv6 Address on LAN field. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Select a **Remote 6to4 Relay Router** radio button:
   - **Auto**. Your router uses any remote relay router that is available on the Internet. This is the default setting.
   - **Static IP Address**. Enter the static IPv4 address of the remote relay router. Your IPv6 ISP usually provides this address.
7. Select an **IPv6 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.
8. 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 router assigns IPv6 addresses to the devices on your home network.
9. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
10. Select an **IPv6 Filtering** radio button:
    - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
    - **Open**. In open mode, the router inspects UDP packets only.
11. Click the **Apply** button.

    Your settings are saved.

Set up an IPv6 6rd tunnel Internet connection

The 6rd protocol makes it possible to deploy IPv6 to sites using a service provider's IPv4 network. 6rd uses the service provider's own IPv6 address prefix. This limits the operational domain of 6rd to the service provider's network and is under direct control of the service provider. The IPv6 service provided is equivalent to native IPv6. The 6rd

mechanism relies on an algorithmic mapping between the IPv6 and IPv4 addresses that are assigned for use within the service provider's network. This mapping allows for automatic determination of IPv4 tunnel endpoints from IPv6 prefixes, allowing stateless operation of 6rd.

With a 6rd Tunnel configuration, the router follows the RFC5969 standard, supporting two ways to establish a 6rd tunnel IPv6 WAN connection:

- **Auto Detect Mode**. In IPv6 Auto Detect mode, when the router receives option 212 from the DHCPv4 option, auto detect selects the IPv6 as 6rd Tunnel setting. The router uses the 6rd option information to establish the 6rd connection.
- **Manual Mode**. Select 6rd. If the router receives option 212, the fields are automatically completed. Otherwise, you must enter the 6rd settings.

To set up an IPv6 6rd Tunnel 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 Setup > IPv6**.

   The IPv6 page displays.
5. In the **Internet Connection Type** menu, select **6rd**.

   The page adjusts.

   The router automatically detects the information in the following sections:

   - **6rd (IPv6 Rapid Development) Configuration.** The router detects the service provider's IPv4 network and attempts to establish an IPv6 6rd Tunnel connection. If the IPv4 network returns 6rd parameters to the router, the page adjusts to display the correct settings in this section.
   - **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Select an **IPv6 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.
7. 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 router assigns IPv6 addresses to the devices on your home network.
8. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
9. Select an **IPv6 Filtering** radio button:
   - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
   - **Open**. In open mode, the router inspects UDP packets only.
10. Click the **Apply** button.

    Your settings are saved.

Set up an IPv6 pass-through Internet connection

In pass-through mode, the router works as a Layer 2 Ethernet switch with two ports (LAN and WAN Ethernet ports) for IPv6 packets. The router does not process any IPv6 header packets.

To set up a pass-through 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 Setup > IPv6**.

   The IPv6 page displays.

5. From the **Internet Connection Type** menu, select **Pass Through**.

   The page adjusts, but no additional fields display.

6. Click the **Apply** button.

   Your settings are saved.

Set up an IPv6 fixed Internet connection

To set up a fixed 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 Setup > IPv6**.

   The IPv6 page displays.

5. From the **Internet Connection Type** menu, select **Fixed**.

   The page adjusts.

6. Configure the fixed IPv6 addresses for the WAN connection:

   - **IPv6 Address/Prefix Length**. The IPv6 address and prefix length of the router WAN interface.
   - **Default IPv6 Gateway**. The IPv6 address of the default IPv6 gateway for the router's WAN interface.

- **Primary DNS Server**. The primary DNS server that resolves IPv6 domain name records for the router.
- **Secondary DNS Server**. The secondary DNS server that resolves IPv6 domain name records for the router.

Note: If you do not specify the DNS servers, the router uses the DNS servers that are configured for the IPv4 Internet connection on the Internet Setup page. (See Manually set up the Internet connection on page 30.)

7. 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 router assigns IPv6 addresses to the devices on your home network.
8. In the **IPv6 Address/Prefix Length** fields, specify the static IPv6 address and prefix length of the router's LAN interface.

   If you do not specify an ID here, the router generates one automatically from its MAC address.
9. Select an **IPv6 Filtering** radio button:
   - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
   - **Open**. In open mode, the router inspects UDP packets only.
10. Click the **Apply** button.

    Your settings are saved.

Set up an IPv6 DHCP Internet connection

To set up an IPv6 Internet connection with a DHCP 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 > Advanced Setup > IPv6**.
   The IPv6 page displays.

5. From the **Internet Connection Type** menu, select **DHCP**.
   The page adjusts.

   The router automatically detects the information in the following fields:

   - **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
   - **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. Select an **IPv6 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.

7. (Optional) In the **User Class (If Required)** field, enter a host name.
   Most people can leave this field blank, but if your ISP gave you a specific host name, enter it here.

8. (Optional) In the **Domain Name (If Required)** field, enter a domain name.
   You can type the domain name of your IPv6 ISP. Do not enter the domain name for the IPv4 ISP here. For example, if your ISP's mail server is mail.xxx.yyy.zzz, type xxx.yyy.zzz as the domain name. If your ISP provided a domain name, type it in this field. For example, Earthlink Cable might require a host name of home, and Comcast sometimes supplies a domain name.

9. 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 router assigns IPv6 addresses to the devices on your home network (the LAN).

10. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

    If you do not specify an ID here, the router generates one automatically from its MAC address.

11. Select an **IPv6 Filtering** radio button:
    - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
    - **Open**. In open mode, the router inspects UDP packets only.

12. Click the **Apply** button.

    Your settings are saved.

Set up an IPv6 PPPoE Internet connection

To set up a PPPoE 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 Setup > IPv6**.

   The IPv6 page displays.

5. From the **Internet Connection Type** menu, select **PPPoE**.

   The page adjusts.

The router automatically detects the information in the following fields:

- **Router's IPv6 Address on WAN**. This field shows the IPv6 address that is acquired for the router's WAN (or Internet) interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.
- **Router's IPv6 Address on LAN**. This field shows the IPv6 address that is acquired for the router's LAN interface. The number after the slash (/) is the length of the prefix, which is also indicated by the underline (_) under the IPv6 address. If no address is acquired, the field displays Not Available.

6. In the **Login** field, enter the login information for the ISP connection.

   This is usually the name that you use in your email address. For example, if your main mail account is JerAB@ISP.com, you would type JerAB in this field. Some ISPs (like Earthlink and Deutsche Telekom) require that you use your full email address when you log in. If your ISP requires your full email address, type it in this field.

7. In the **Password** field, enter the password for the ISP connection.
8. In the **Service Name** field, enter a service name.

   If your ISP did not provide a service name, leave this field blank.

   Note: The default setting of the **Connection Mode** field is Always On to provide a steady IPv6 connection. The router never terminates the connection. If the connection is terminated, for example, when the modem is turned off, the router attempts to reestablish the connection immediately after the PPPoE connection becomes available again.

9. Select an **IPv6 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.

10. 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 router assigns IPv6 addresses to the devices on your home network (the LAN).

11. (Optional) Select the **Use This Interface ID** check box and specify the interface ID that you want to be used for the IPv6 address of the router's LAN interface.

    If you do not specify an ID here, the router generates one automatically from its MAC address.

12. Select an **IPv6 Filtering** radio button:

    - **Secured**. In secured mode, which is the default mode, the router inspects both TCP and UDP packets.
    - **Open**. In open mode, the router inspects UDP packets only.

13. 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.
  For example, if a secure website does not open, or displays only part of a web page, you might need to change the MTU.
- 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: 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 2. 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.
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:

- Enable Circle smart parental controls
- Activate and manage NETGEAR Armor using the Orbi app
- 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
- Schedule when to block Internet sites and services
- Set up security event email notifications

Enable Circle smart parental controls

Circle smart parental controls is a parental control technology that helps you monitor your children's devices that are connected to your network.

You can enable Circle using your router web interface, or you can enable Circle using the Orbi app. After you enable Circle using the router web interface or the Orbi app, you must use the Circle app to finish the setup.

You can do the following with the Circle app:

- Set time limits for daily Internet usage
- Set individual filter levels for each family member
- Set a bedtime for your family member's devices
- Pause the Internet
- Manage your family's mobile devices across all networks with Circle

For more information about Circle smart parental controls, visit www.netgear.com/circle.

Enable Circle smart parental controls using the Orbi router web interface

You can enable Circle using the Orbi router web interface, but you must use the Circle app to finish setting up your Circle account.

Before enabling Circle, make sure that your router is running the latest firmware and that your router is in router mode. Your router must be in router mode to work with Circle. You can't enable Circle if your router is in access point (AP) mode or bridge mode.

To enable Circle smart parental controls using the Orbi router web interface:

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. Makes sure that your router is in router mode.

For more information, see Set up router mode on page 87.

5. Update your router's firmware.
   For more information, see Check for firmware updates on page 92 or Manually update the router firmware on page 93.
6. Select **BASIC > Parental Controls**.
   The Parental Controls page displays.
7. Move the **Smart Parental Controls** slider to the right to enable Circle.
   The slider shows Enabled. The links to download the Circle app displays.
8. Click the **Apply** button.
   Your settings are saved.
9. Download the Circle app on your mobile device.
10. Launch the Circle app and follow to prompts to set up Circle.
    Circle smart parental controls is enabled on your NETGEAR router.

Enable Circle smart parental controls using the Orbi app

Before enabling Circle, make sure that your Orbi router is in router mode (which is the default mode). Your router must be in router mode to work with Circle. You can't enable Circle if your router is in access point (AP) mode or bridge mode.

To enable Circle smart parental controls using the Orbi app:

1. Launch the Orbi app.
   The dashboard displays.
2. Tap **Parental Controls**.
   The Parental Control page displays.
3. Move the **Enable Circle** slider to the right to enable Circle.
4. Tap the **Download and Install Circle App** button.
5. Download the Circle app.
   You must use the Circle app to finish setting up your Circle account.
6. Launch the Circle app and follow the prompts.

Activate and manage NETGEAR Armor using the Orbi app

NETGEAR Armor is an advanced multi-layer cyber security solution that protects not only your network but individual devices as well. NETGEAR Armor protects your devices from viruses, spyware, hackers, spam, and phishing.

For more information about NETGEAR Armor, visit netgear.com/landings/armor/default.aspx.

Use the NETGEAR Orbi app to activate and manage NETGEAR Armor.

To activate Armor using the Orbi app:

1. Launch the Orbi app.
   The dashboard displays.
2. Tap **Security**.
   The Armor page displays.
3. Follow the onscreen instructions to set up Armor.

Allow or block access to your network

If you did not enable NETGEAR Smart Parental Controls (SPC) in the Orbi app, you can use access control in the router web interface to allow or 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 57.)
   - **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 77.

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 Schedule when to block Internet sites and services on page 57.
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.

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 53 and Block services from the Internet on page 56.

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. 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:

- Check your Internet bandwidth
- Enable or disable WiFi Multimedia Quality of Service
- Improve network connections with Universal Plug and Play
- Enable or disable implicit beamforming
- Enable or disable MU-MIMO
- Enable or disable fast roaming

Check your Internet bandwidth

You can use Ookla Speedtest to detect your Internet bandwidth.

To check your Internet bandwidth using Speedtest:

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 > Speed Test**.
   The Speed Test page displays.
5. Click the **Test Speed** button.
   After a short time, your Internet's download and upload speeds display.

Enable or disable WiFi 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 Setup > Wireless Settings**.

   The Advanced Wireless Settings page displays.

5. In the Advanced Wireless Settings (2.4GHz b/g/n) or (5GHz 802.11a/n/ac) section, do one of the following:

   - To enable WMM, select the **Enable WMM (Wi-Fi multimedia) settings** check box.
   - To disable WMM, clear the **Enable WMM (Wi-Fi multimedia) settings** check box.

6. 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 Setup > 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.

Enable or disable implicit beamforming

Implicit beamforming allows the router to use information from WiFi clients that support beamforming to improve the WiFi signal.

To enable or disable implicit beamforming:

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 Setup > Wireless Settings**.

   The Advanced Wireless Settings page displays.

5. To enable or disable implicit beamforming, do one of the following:

   - To enable implicit beamforming, select the **Enable Implicit Beamforming** check box.
   - To disable implicit beamforming, clear the **Enable Implicit Beamforming** check box.

6. Click the **Apply** button.

   Your settings are saved.

Enable or disable MU-MIMO

Multiuser multiple input, multiple output (MU-MIMO) improves performance when multiple MU-MIMO-capable WiFi clients transfer data at the same time. WiFi clients must support MU-MIMO, and they must be connected to a 5 GHz WiFi band.

To enable or disable MU-MIMO:

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 Setup > Wireless Settings**.

   The Advanced Wireless Settings page displays.

5. To enable or disable daisy-chain topology, do one of the following:
   - To enable MU-MIMO, select the **Enable MU-MIMO** check box.
   - To disable MU-MIMO, clear the **Enable MU-MIMO** check box.
6. Click the **Apply** button.
   Your settings are saved.

   If you connected over WiFi to the network, you are disconnected from the network and must reconnect.

Enable or disable fast roaming

Fast roaming allows your Orbi devices to direct your client devices to the most optimal WiFi band quicker.

To enable or disable fast roaming:

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 Setup > Wireless Settings**.
   The Advanced Wireless Settings page displays.
5. To enable or disable fast roaming, do one of the following:
   - To enable fast roaming, select the **Enable Fast Roaming** check box.
   - To disable fast roaming, clear the **Enable Fast Roaming** check box.
6. Click the **Apply** button.
   Your settings are saved.

7

Specify Network Settings

This chapter includes the following sections:

- Change the function of the WAN/LAN1 port
- View or change WAN settings
- Change the LAN TCP/IP settings
- Manage Dynamic DNS
- Set up a default DMZ server
- Change the router's device name
- Use the router as a DHCP server
- Disable the DHCP server feature in the router
- Manage reserved LAN IP addresses
- Manage custom static routes
- Specify basic WiFi settings
- Change the WiFi password or security level
- Set up a guest WiFi network
- View or change advanced WiFi settings
- Use the router as a WiFi access point only
- Set up router mode
- Set up a bridge for a port group or VLAN tag group

Change the function of the WAN/LAN1 port

By default the WAN/LAN1 port of the router functions as a LAN port. If you connect the port to a wired modem so that you can use a wired Internet connection, you must change the function of the WAN/LAN1 port so that it functions as a WAN port.

To change the function of the WAN/LAN1 port:

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 **Enable WAN/LAN1 port as LAN** port check box.

   If you use a wired Internet connection, you must clear the check box so that the WAN/LAN1 port functions as a WAN port and you can connect the port to your wired modem.

   By default, this check box is selected and the port functions as a LAN port. That means that if you use a mobile broadband connection only, you can connect a LAN device to the WAN/LAN1 port.
6. Click the **Apply** button.

   Your settings are saved.

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 73.
   - **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 47.
   - **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.

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

Manage Dynamic DNS

Note: Dynamic DNS works only if the router's IP address is a public IP address. However, with a mobile broadband connection, your LTE provider usually assigns the router a private IP address, in which case Dynamic DNS does not function. This limitation does not apply to a wired Internet connection. For more information about Dynamic DNS with a mobile broadband connection, contact your LTE provider.

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 Setup > 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 and privacy policy, 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 DNS account that you already created

If you already own a Dynamic DNS account with NETGEAR, No-IP, or Dyn, 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 Setup > 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 Dyn account, in the **User Name** field, enter the user name for your account.
10. For a NETGEAR account at No-IP, 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 Setup > 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.

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 Setup > 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 Setup > 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 Setup > 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 comes preset with a WiFi network name (SSID) and WiFi security. You can find the SSID and password on the router label.

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. If you connected a satellite to the router, 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 comes preset with a WiFi network name (SSID) and WiFi security. You can find the SSID and password on the router label. 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 option:

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

Some older computers and WiFi devices cannot use 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.
   This is a text string from 8 to 63 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.

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. Leave the **Enable SSID Broadcast** check box selected.
   Allowing the router to broadcast its WiFi network name (SSID) makes it easier to find your network and connect to it. If you clear this check box, that creates a hidden network.
7. 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.

8. Select or clear the **Allow guests to see each other and access my local network** check box.

   To protect your privacy, this check box is cleared by default. That means your guests can use your Internet connection but they cannot access computers or devices that are connected to your Orbi network.

9. To secure the guest network (by default, it is not secured), do the following:
   a. Under Security Options, select a WPA option:
      - **WPA2-PSK [AES]**
      - **WPA-PSK [TKIP] + WPA2-PSK [AES]**

      Some older computers and WiFi devices cannot use 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.
   b. In the **Password (Network Key)** field, enter the network key (password) that you want to use.
      This is a text string from 8 to 63 characters.
   c. Write down the password and keep it in a secure place for future reference.

10. Click the **Apply** button.

    Your settings are saved. If you connected a satellite to the router, the router sends the new settings to the satellite.

View or change advanced WiFi settings

To view or change advanced 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 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 Setup > Wireless Settings**.

The Advanced Wireless Settings page displays.

Note: If you connected a satellite to the router, the backhaul password is a security key that is used in WiFi communication between the router and the satellite. For information about generating a new backhaul password, see Generate a new backhaul password on page 134.

5. From the **Region** menu, select your region.
   In some locations, you cannot change this setting.
6. To control the SSID broadcast, select or clear the **Enable SSID Broadcast** check box.
   When this check box is selected, the router broadcasts its network name (SSID) so that it displays when you scan for local WiFi networks on your computer or WiFi device.
7. Click the **Apply** button.
   Your settings are saved.

Use the router as a WiFi access point only

By default, router functions as both a router and a WiFi access point (AP).

If you disable the mobile broadband connection entirely so that the router uses a wired Internet connection only (see Change the Internet connection mode to wired Internet only or mobile broadband only on page 22), you can set up the router to run exclusively as an AP on the same local network as another router or gateway. If you do so, the router features are disabled.

For example, you can use the Orbi router as an AP that connects to a gateway or modem router that you already use for your Internet service. In this situation, you do not need to change the settings for the gateway or modem router.

To set up the Orbi router as an AP after you set up your Internet connection:

1. Use an Ethernet cable to connect the Internet port of this router to a LAN port on your existing router or gateway.
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 Setup > Router / AP Mode**.
   The Router / AP Mode page displays.

6. Select the **AP Mode** radio button.
   The page adjusts.

7. Select the IP address setting:
   - **Get dynamically from existing router**. The other router on the network assigns an IP address to this router while this router is in AP mode.
   - **Use fixed IP address (not recommended)**. Use this setting if you want to manually assign a specific IP address to this router while it is in AP mode. Using this option effectively requires advanced network experience.

   Note: To prevent WiFi interference with other routers or gateways in your network, we recommend that you use different WiFi settings on each router or gateway. You can also turn off the WiFi radio on the other router or gateway and use only the Orbi router for WiFi client access.

8. Click the **Apply** button.
   The IP address of the router changes, and you are disconnected.

9. To reconnect, close and restart your browser and enter **orbilogin.com**.

Set up router mode

If you set up your router to function as an access point only (see Use the router as a WiFi access point only on page 86), you can change it back to function as a router, which is the default function.

To set up the Orbi router as a 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 > Advanced Setup > Router / AP Mode**.
   The Router / AP Mode page displays.
5. Select the **Router Mode** radio button.
   The page adjusts.
6. Click the **Apply** button.
   Your settings are saved.

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 Change the Internet connection mode to wired Internet only or mobile broadband only on page 22) and if the router function in router mode (its default mode).

Some devices, such as an IPTV, cannot function behind the router's Network Address Translation (NAT) service or firewall. Based on what your wired Internet provider requires, for the device to connect to the wired Internet provider's network directly, you can enable the bridge between the device and the router's wired Internet port or add new VLAN tag groups to the bridge.

Note: If your wired Internet provider gave you directions on how to set up a bridge for IPTV and Internet service, follow those directions.

Set up a bridge for a port group

If the devices that are connected to the router's Ethernet LAN port include an IPTV device, your wired Internet provider might require you to set up a bridge for a port group for the router's Internet interface.

A bridge with a port group prevents packets that are sent between the IPTV device and the router's Internet port from being processed through the router's Network Address Translation (NAT) service.

To configure a port group and enable the bridge:

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 **ADVANCED > Advanced Setup > VLAN / Bridge Settings**.
   The VLAN / Bridge Settings page displays.
5. Select the **Enable VLAN/Bridge** check box.
   The page expands.
6. Select the **By bridge group** radio button.
   The section expands.
7. Select the **Port1** check box
8. Click the **Apply** button.
   Your settings are saved.

Set up a bridge for a VLAN tag group

If the devices that are connected to the router's Ethernet LAN ports include an IPTV device, your wired Internet provider might require you to set up a bridge for a VLAN tag group for the router's Internet interface.

If you are subscribed to IPTV service, the router might require VLAN tags to distinguish between the Internet traffic and the IPTV traffic. A bridge with a VLAN tag group prevents packets that are sent between the IPTV device and the router's Internet port from being processed through the router's Network Address Translation (NAT) service.

You can add VLAN tag groups to a bridge and assign VLAN IDs and priority values to each VLAN tag group.

To add a VLAN tag group and enable the bridge:

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 **ADVANCED > Advanced Setup > VLAN / Bridge Settings**.

   The VLAN / Bridge Settings page displays.

5. Select the **Enable VLAN/Bridge Group** check box.

   The page expands.

6. Select the **By VLAN tag group** radio button.

   The section expands.

7. Either select the radio button for the default VLAN tag group (which includes all wired and WiFi ports), or add a new VLAN tag group by doing the following:

   a. Click the **Add** button.
      The Add VLAN Rule page displays.

   b. Specify the following settings:

      - **Name**. Enter a name for the VLAN tag group. The name can be up to 10 characters.
      - **VLAN ID**. Enter a value from 1 to 4094.
      - **Priority**. Enter a value from 0 to 7.

   c. Select the **Port1** check box.

   d. Click the **Add** button.
      The VLAN tag group is added.

8. Click the **Apply** button.

   Your settings are saved.

8

Manage Your Network

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

The chapter includes the following sections:

- Update the firmware on the router
- Change the admin password
- Enable admin password reset
- Reset the admin password
- View router status and usage information
- Check the mobile broadband Internet connection status
- Check the wired Internet connection status
- Display Internet port statistics
- View and manage logs of router activity
- View devices connected to the network
- Edit device information on the Attached Devices page
- Monitor Internet traffic
- Set your time zone, adjust for daylight saving time, or change the NTP server
- Manage the router configuration file

Update the firmware on the router

You can use the router web interface to check if new firmware is available and update your router, and, if a satellite is connected to your router, your satellite.

You also can manually update the firmware for your router. If a satellite is connected to your router, you can manually update the firmware for your satellite as a separate procedure from the router update.

Check for firmware updates

To check for new firmware, update your router firmware, and, if a satellite is connected to your router, update the satellite 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 > 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, if a satellite is connected to your router, for the satellite.
6. If new firmware is available, click the **Update All** button.
   The router locates and downloads the firmware for the router and, if a satellite is connected to your router, for the 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, if a satellite is connected to your router, the satellite.

   When the upload is complete, your router restarts. If a satellite is connected to your router, the satellite also restarts. The update process typically takes about 12 minutes. Read the new firmware release notes to find out if you must reconfigure the router after updating.

Manually update the router firmware

You can download and manually update the firmware on your router. If a satellite is connected to your router, you can log in to the router to manually upload the firmware on your satellite. For more information, see Manually update satellite firmware on page 133.

WARNING: If a satellite is connected to your router, 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 your router's firmware:

1. Visit netgear.com/support and download the firmware for your Orbi router.
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 > Administration > Firmware Update > Manual Update**.
   The Firmware Update page displays.
6. Click the **Browse** button.
7. Locate and select the router firmware file you downloaded.
   The firmware file name ends in `.img` or `.chk`.
8. Click the **Upload** button.
   The firmware is updated.

Check for LTE module firmware updates

The LTE module firmware enables the router to function with a mobile broadband connection.

To check for new LTE module firmware and update your 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 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 > LTE Update**.
   The LTE module update page displays.
5. Click the **Check** button.
   The router checks to see if new LTE module firmware is available for the router.
6. If new LTE module firmware is available, click the **Update All** button.
   The router locates and downloads the LTE module firmware 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.

   When the upload is complete, your router restarts. An upgrade can take between 1 and 15 minutes depending on the upgrade. If LTE module firmware release notes are available, read the release notes to find out if you must reconfigure the router after updating.

Manually update the router LTE module firmware

The LTE module firmware enables the router to function with a mobile broadband connection.

To manually update your router's LTE module firmware:

1. Visit netgear.com/support and download the LTE module firmware for your Orbi router.
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 > Administration > Firmware Update > LTE Update**.
   The LTE module update page displays.
6. Click the **Browse** button.
7. Locate and select the LTE module firmware file you downloaded.
8. Click the **Upload** button.
   The LTE module firmware 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.orbilogin.com**.
   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.
6. Enter the saved answers to your security questions.
   You defined these answers when you set up the password reset feature.
7. Click the **Continue** button.
   You are requested to enter a new admin password and to set new security questions.
8. Enter your new admin password, set new security questions, and click the **Next** button.
   Your settings are saved.
9. Click the **Login** button.
   A login window opens.
10. 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.

Check the mobile broadband Internet connection status

You can view information about the mobile broadband Internet connection, including the 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.

The table displays the following information:

- **Connection Type**. The connection type, such as DHCP.
- **Received Signal Quality (in dbm)**. The quality of the received radio signal.
- **Network mode**. The broadband network mode, such as LTE.
- **Band**. The LTE frequency operating band.
- **LAC**. The location area code of the cellular network.
- **Cell ID**. The ID of the network cell, that is, the cellular tower, to which the router is connected.
- **SIM Status**. Shows whether the SIM card is inserted in the router, and if so, whether the SIM card is ready for operation.
- **Signal Bar**. The Signal Bar indicates the quality of the signal:
  - 5 signal bar: excellent
  - 4 signal bar: good
  - 2 signal bar: fair
  - 1 signal bar: poor
- **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 LTE provider.
- **Operator**. The LTE provider.
- **DNS Server**. The IP address of the 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.
- **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 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 LTE band.
- **Downlink Frequency (base station to phone)**. The downlink frequency band in the LTE band.
- **Band Number**. The LTE band number.
- **LTE module support**. The geographical area that the router's LTE module supports.
- **ICCID**. The Integrated Circuit Card Identifier (ICCID). This is the serial number of the SIM card.

6. To release (stop) the mobile broadband 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.

Check the wired Internet connection status

To check the wired 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.
6. Scroll down to the Connection Status section.
   The table in the Connection Status section 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.

7. To release (stop) the wired Internet connection, click the **Release** button.
8. To renew the wired Internet connection, click the **Renew** button.
9. To exit the page, click the **Close Window** button.

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 wired WAN and wired LAN (Ethernet) ports and for the WiFi LAN (WLAN) and LTE interfaces. For each port or interface, 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.

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

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.

Monitor Internet traffic

Traffic metering allows you to monitor the volume of either the mobile broadband or the wired 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 Setup > Traffic Meter**.
   The Traffic Meter page displays.
5. Select the **Enable Traffic Meter** check box.
6. From the **WAN Interface** menu, select the interface to monitor:
   - **Ethernet**. The router monitores the traffic volume that passes through the LAN/WAN1 Ethernet port when that port functions as a WAN port.
   - **3G/4G Mobile Connection**. The router monitores the traffic volume that passes through the mobile broadband interface.
7. 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.

8. 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.
9. 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.
10. 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.
11. To stop the Internet connection when the limit is attained, select the **Disconnect and disable the Internet connection** check box.
12. Click the **Apply** button.

    The Internet Traffic Statistics section helps you to monitor the data traffic.
13. To update the Internet Traffic Statistics section, click the **Refresh** button.
14. To display more information about the data traffic on your router and to change the poll interval, click the **Internet Traffic Status** button.

Set your time zone, adjust for daylight saving time, or change the NTP server

When you set up the router, you are specifying the time zone. You can specify another time zone and adjust for daylight saving time. By default, the router gets its time from a NETGEAR Network Time Protocol (NTP) server. However, you can specify another NTP server.

To set your time zone, adjust for daylight saving time, or change the NTP 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 > Administration > NTP Settings**.
   The NTP Settings page displays.
   The page shows the current day, date, and time.
5. To change the time zone, select another time zone from the menu.
6. If you live in a region that observes daylight saving time, select the **Automatically adjust for daylight savings time** check box.
7. To change the NTP server, select the **Set your preferred NTP** server radio button, and specify the name or URL for the NTP server in the **NTP server** field.
8. Click the **Apply** button.
   Your settings are saved.

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.

9

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 Setup > 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 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**.

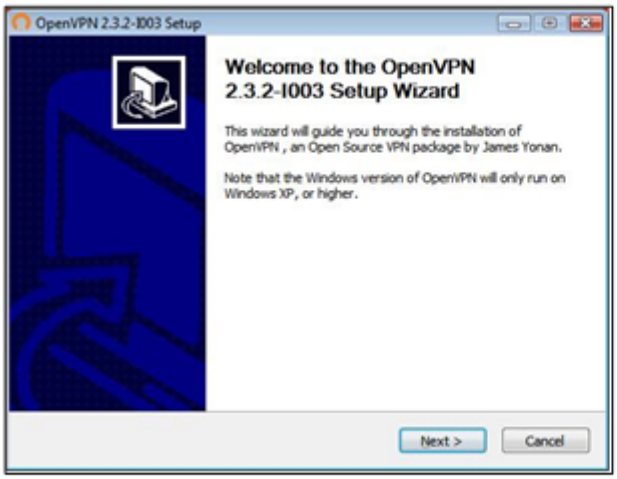
   A login window opens.
3. Enter the admin user name and password.

   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.

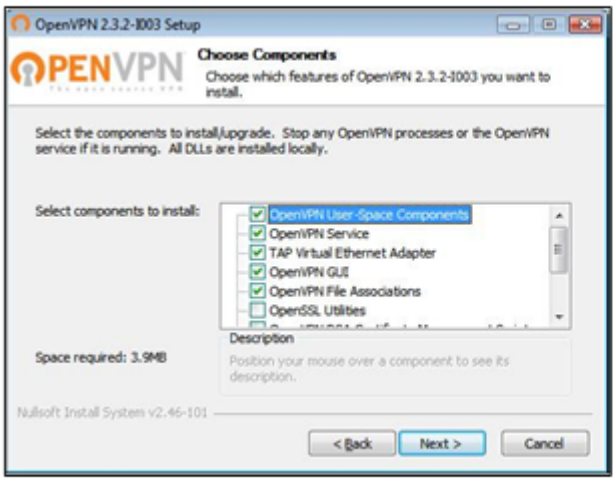
   The BASIC Home page displays.
4. Select **ADVANCED > Advanced Setup > VPN Service**.

   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 111.
7. Click the **FOR WINDOWS** button to download the OpenVPN configuration files.
8. Visit openvpn.net/community-downloads/ 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.

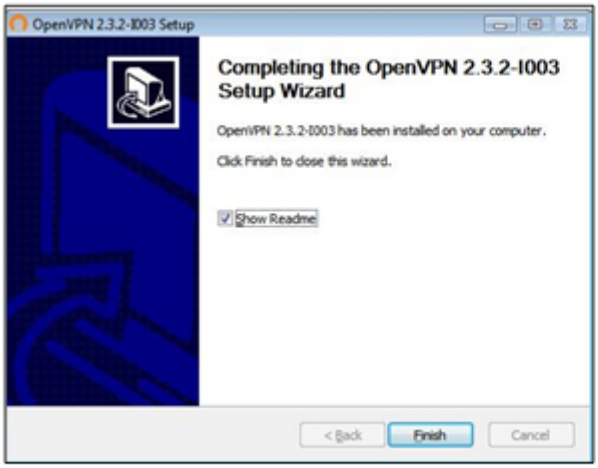


13. Leave the check boxes selected, and click the **Next** button.

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 Setup > 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 111.
7. Click the **FOR MAC OS X** 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 Setup > 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 111.
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 http://www.vpngate.net/en/howto_openvpn.aspx#ios.

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 Setup > 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 111.
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 69.

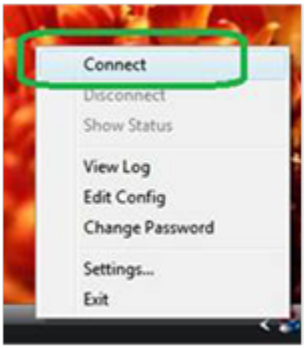
To open a VPN tunnel:

1. Launch the OpenVPN application with administrator privileges.

Figure 1. 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.

Your Orbi 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 Setup > 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:

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 Setup > 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 Specify VPN service in the router on page 111.
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.

10

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:

- Manage port forwarding to a local server
- Manage port triggering

Manage port forwarding to a local server

Note: Port forwarding works only if the router's IP address is a public IP address. However, with a mobile broadband connection, your LTE provider usually assigns the router a private IP address, in which case port forwarding does not function. This limitation does not apply to a wired Internet connection. For more information about port forwarding with a mobile broadband connection, contact your LTE provider.

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:

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 77.
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 Setup > Port Forwarding/Port Triggering**.

   The Port Forwarding/Port Triggering page displays.
7. Leave the **Port Forwarding** radio button selected as the service type.
8. In the **Service Name** menu, select the service name.

If the service that you want to add is not in the list, create a custom service. See Add a custom port forwarding service on page 123.

9. In the **Server IP Address** field, enter the IP address of the computer that will provide the service.
10. Click the **Add** button.
    The service displays in the list.

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 Setup > 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.
    The service is now in the list 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 Setup > 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**. If you are unsure, select TCP/UDP.
   - **External port range**.

- 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.

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 Setup > 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.

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. On 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.

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.

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 Setup > 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 Setup > 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.

11

Set Up and Manage an Optional Orbi Satellite

You can expand the WiFi coverage of your Orbi router with one or more of the following Orbi AC satellite models:

- **RBS50**. Orbi Whole Home WiFi System AC3000 Add-on Satellite
- **RBS50Y**. Orbi High-performance AC3000 Add-on Outdoor Satellite
- **RBS40**. Orbi Whole Home WiFi System AC2200 Add-on Satellite
- **RBS40V**. Orbi Smart Speaker and System Add-on
- **RBW30**. Orbi Whole Home WiFi System AC2200 Add-on Satellite
- **RBS20**. Orbi Whole Home WiFi System AC2200 Add-on Satellite

An Orbi AC satellite is sold separately from your Orbi router.

This chapter contains the following sections:

- Orbi AC satellite LED behavior
- Place your satellite
- Sync an add-on satellite
- Log in to your router and add a satellite to your network
- Manually update satellite firmware
- Generate a new backhaul password
- View the satellite status
- View satellites connected to the network or edit satellite information
- Enable or disable daisy-chain topology
- Set up an Ethernet backhaul connection
- Manage the Orbi Outdoor Satellite LED lighting

Orbi AC satellite LED behavior

An Orbi AC satellite has a Power LED on the back and a Ring LED on the top. The following table describes the LED behavior.

Note: The Orbi AC satellite model RBW30 does not include a Power LED.

Table 3. LED behavior for Orbi AC satellite

LED color	Description
Pulsing white	Router is booting or Sync (WPS) button has been pushed.
Solid blue	Internet connection is established.
Solid amber	Unable to connect to internet.
Pulsing red	The satellite's firmware is corrupted.
White and orange pulse	88% to 99% of data is used.
White and red pulse	100%+ of data is used.
Off	Power is not supplied

Place your satellite

Your satellite must be within range of your router's WiFi signal in order for it to sync with the router. Use the satellite's ring LED to help you determine where to place your satellite.

Sync an add-on satellite

If you already set up the router and are adding an optional add-on satellite (sold separately), follow these steps.

To sync your add-on satellite:

1. Place your satellite.
   Make sure that your satellite is within range of your router's WiFi signal.
2. Connect the satellite to a power source.

3. If the Power LED on the back of the satellite does not light and if satellite has a **Power On/Off** button, press the **Power On/Off** button.
4. Wait about two minutes for the satellite ring LED to light solid white.
5. Press the **Sync** button on the back of the satellite and within two minutes, press the **Sync** button on the back of your router.

   The satellite ring LED pulses white, then lights one of the following colors for about three minutes, and then turns off:

   - **Blue**. The router and satellite successfully synced, and the connection between the router and satellite is good.
   - **Amber**. The router and satellite failed to sync. Move the satellite closer to the router. and try again.

Log in to your router and add a satellite to your network

You can use the router web interface to add a satellite to your Orbi network.

To add a satellite to your Orbi network using the router web interface:

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

   The BASIC Home page displays.
4. Select **Add Orbi Satellite**.

   The Place Your Satellite page displays.
5. Follow the instructions about where to place your satellite in your house.
6. Connect the satellite to a power source.
7. If the Power LED on the back of the satellite does not light and if satellite has a **Power On/Off** button, press the **Power On/Off** button.
8. Click the **NEXT** button.
9. Wait about two minutes for the satellite's ring LED to light solid white.

10. Press the **Sync** button on the satellite.
    The satellite's ring LED pulses white.

11. Click the **SYNC** button in the router web interface.
    The router attempts to sync with the satellite.

    The satellite's ring LED lights one of the following colors for about three minutes and then turns off:

    - **Blue**. The router and satellite successfully synced, and the connection between the router and satellite 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.

Manually update satellite firmware

Note: Rather than manually updating firmware, you can use the Orbi router web interface to check if new firmware is available and update *both* your router and your satellite. For more information, see Check for firmware updates on page 92.

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

To manually update your satellite's firmware by using the router web interface:

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 asks 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 the Orbi satellite finishes updating, select **Status** and double-check the firmware version on the Status page.
    The firmware on your Orbi satellite is updated.

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 Setup > 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.

View the 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 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 2.4 GHz or 5 GHz 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.

Enable or disable daisy-chain topology

Daisy-chain topology allows your Orbi satellite to connect to other Orbi satellites. This feature only applies if you own one Orbi router and two or more Orbi satellites. If you disable this feature, your Orbi satellites can connect only to your Orbi router. This feature is enabled by default.

Note: Enabling or disabling this feature causes all your Orbi devices to reboot.

To enable or disable daisy-chain:

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 Setup > Wireless Settings**.
   The Advanced Wireless Settings page displays.

5. To enable or disable daisy-chain topology, do one of the following:
   - To enable daisy-chain topology, select the **Enable Daisy-Chain Topology** check box.
   - To disable daisy-chain topology, clear the **Enable Daisy-Chain Topology** check box.

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

Set up an Ethernet backhaul connection

Your Orbi satellite automatically connects with WiFi to your Orbi router or another Orbi satellite to create a WiFi backhaul connection, or you can use an Ethernet cable to connect your satellite to your router or another satellite to create a wired backhaul connection.

Before you set up an Ethernet backhaul connection, make sure that you update the firmware on all your Orbi devices.

The following image shows how to connect your Orbi satellites to your Orbi router to create an Ethernet backhaul connection.

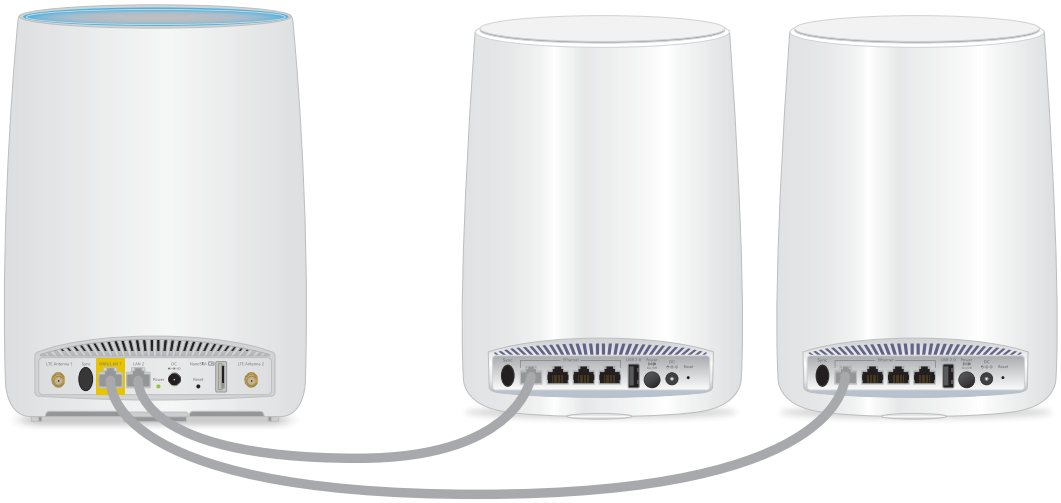


Figure 2. Satellites connected to the router's Ethernet ports

The following image shows another way to connect your Orbi satellites to your Orbi router to create an Ethernet backhaul connection.

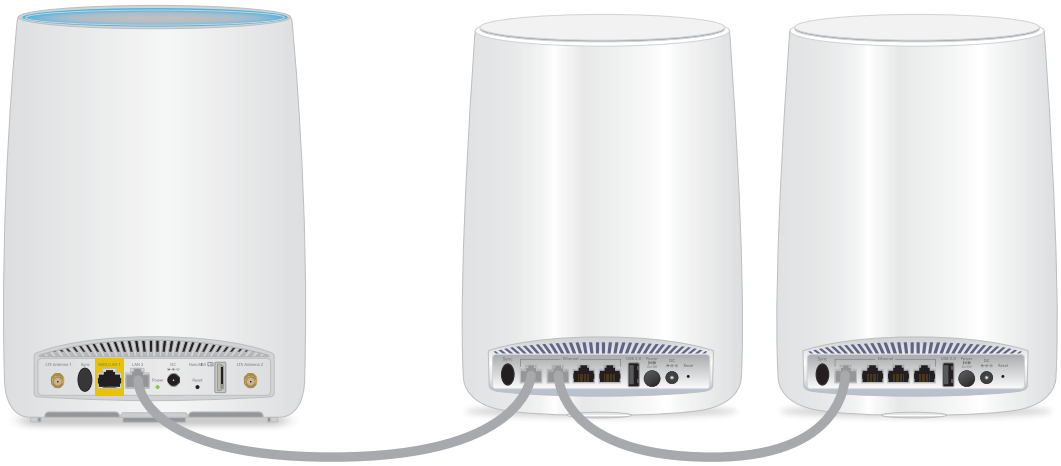


Figure 3. Satellite 1 connected to router and satellite 2 connected to satellite 1

The following image shows how to connect your Orbi satellites and your Orbi router to an Ethernet switch.

Note: The Ethernet ports on the Orbi router and satellite are rated at 1 Gbps. Make sure the switch ports are 1 Gbps or faster.

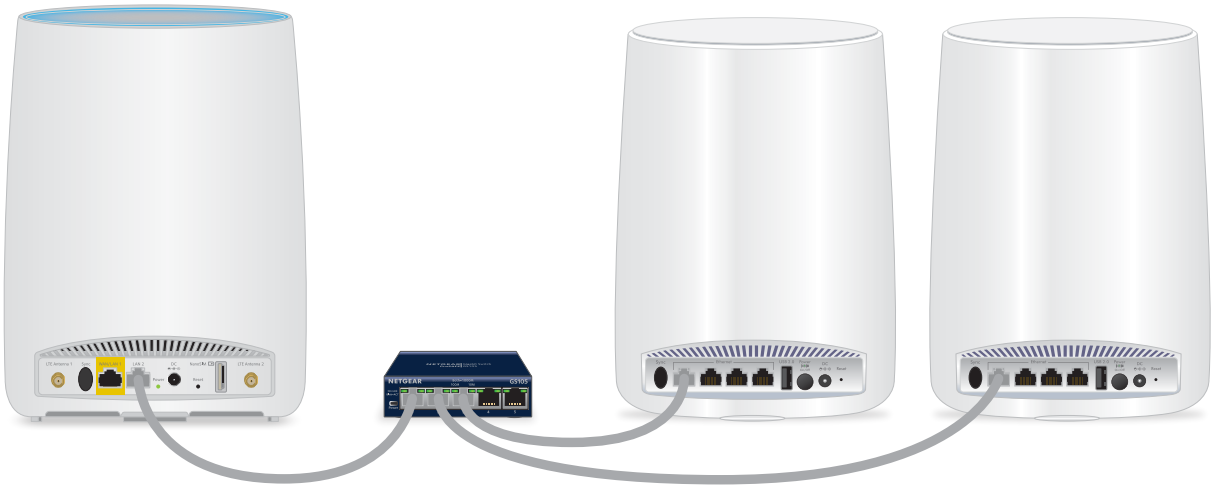


Figure 4. Ethernet backhaul connection using a switch

Manage the Orbi Outdoor Satellite LED lighting

If you own an Orbi Outdoor Satellite, you can turn its LED lighting on or off, adjust the LED brightness, or schedule when to turn on the light. You can also enable or disable the satellite's **Sync** button.

Enable the Sync button

After your satellite syncs with your router, the satellite's **Sync** button is disabled for security reasons. If you press the **Sync** button and the satellite's bottom Light LED pulses magenta, this LED behavior indicates that the **Sync** button is disabled. To enable the **Sync** button, log in to the router and go to the Attached Devices page.

After syncing your satellite and placing your satellite outdoors, we recommend that you disable the **Sync** button to prevent an unauthorized user from connecting to your satellite.

To enable your satellite's Sync button using the router web interface:

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

The BASIC Home page displays.

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

5. Select your satellite.
   The Edit Device page displays.

6. In the Sync Button section, click the **Disabled** button.
   The **Sync** button is enabled. You can now use the **Sync** button to sync your satellite to your router.

Turn the satellite LED lighting on or off

You can use the satellite's top and bottom Light LEDs to provide light to your outdoor area.

To turn the top and bottom LED lighting on or off:

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

   The BASIC Home page displays.

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

5. Select your satellite.
   The Edit Device page displays.

6. To turn the LED lighting on, in the LED On/Off section, click the **Off** button.
   The top and bottom Light LEDs turn on.

7. To turn the LED lighting off, in the LED On/Off section, click the **On** button.
   The top and bottom Light LEDs turn off.

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

Set LED lighting brightness

After you turn on the satellite's LED lighting, you can set its brightness percentage.

To set the satellite's LED lighting brightness:

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 your satellite.
   The Edit Device page displays.
6. Make sure that the **LED On/Off** slider is set to **ON**.
7. If the LED lighting is turned off, click the **LED On/Off** slider to turn the LED on.
   The top and bottom Light LEDs turn on.
8. Select an LED lighting brightness percentage from the **LED Lighting Brightness** menu.
9. Click the **APPLY** button.
   Your settings are saved.

Schedule when to turn on LED lighting

You can schedule when to turn on the satellite's LED lighting:

To schedule the LED lighting:

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 your satellite.
   The Edit Device page displays.

6. Make sure that the **LED On/Off** slider is set to **ON**.
7. If the LED lighting is turned off, click the **LED On/Off** slider to turn the LED on.
   The top and bottom Light LEDs turn on.

8. Select the **Schedule LED Lighting** check box.
9. Click the **ADD A NEW PERIOD** button.
   The LED Lighting Schedule page displays.

10. Specify the lighting schedule settings:
    - **Start**. Select a start time from the menu.
    - **End**. Select an end time from the menu.
    - **Recurrence Pattern**. Select if you want the Light LEDs to turn on daily of select specific days.

11. Click the **APPLY** button.
    The Edit Device page displays. The schedule is added.

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

12

Troubleshooting

This chapter provides information to help you diagnose and solve problems you might experience with your Orbi router and a satellite, if one is connected to your router. If you do not find the solution here, check the NETGEAR support site at netgear.com/support for product and contact information.

This chapter includes the following sections:

- Quick tips
- Troubleshoot the mobile broadband Internet connection
- The router and satellite do not sync
- You cannot access the Internet
- You cannot log in to the router
- Troubleshoot Internet browsing
- Troubleshoot PPPoE
- Troubleshoot WiFi connectivity
- Troubleshoot your network using the ping utility

Quick tips

This section describes tips for troubleshooting some common problems.

Quick tips for mobile broadband troubleshooting

If you cannot connect to the Internet over the mobile broadband connection, check the following:

- Make sure that the nano SIM card is inserted correctly into the router.
- Check with your LTE provider to ensure that good coverage exists in the area.
- Make sure that your LTE provider account is active.

For more information troubleshooting suggestions, see Troubleshoot the mobile broadband Internet connection on page 146.

Check the signal strength of the mobile broadband connection

You can check the signal strength of the mobile broadband connection. If the signal is weak, move the router to another location, for example, closer to a window or higher up in your home.

To check the signal strength of the mobile broadband 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. Click the **ADVANCED** tab.
5. In the Internet Port pane, click the **Connection Status** button.

   The Mobile Information pop-up window opens.
6. Locate the Signal Strength field.

   An icon displays the strength of the signal. One bar is a weak signal. Five bars is a very strong signal.

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

Sequence to restart your wired network

If your router is connected to a wired modem for a wired Internet connection, when you restart your wired network, follow this sequence:

1. Turn off *and* unplug the modem.
2. Turn off the router.
3. Plug in the modem and turn it on. Wait two minutes.
4. Turn on the router and wait two minutes.

WiFi settings

Make sure that the WiFi settings in the WiFi-enabled computer or mobile device and the router match.

The WiFi network name (SSID) and WiFi security settings must match exactly.

If you set up an access list, you must add each WiFi-enabled computer or mobile device's MAC address to the router's access list.

Network settings

Make sure that the network settings of the computer or mobile device are correct. Connected computers and mobile devices must use network IP addresses on the same network as the router. The simplest way to do this is to configure each computer and mobile device to obtain an IP address automatically using DHCP. Most computers and mobile devices are set up this way by default.

Some cable modem service providers require you to use the MAC address of the computer initially registered on the account. You can view the MAC address on the Attached Devices page.

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 LTE provider to ensure that good coverage exists in the area.

- Make sure that your 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.
  For information about the signal strength, see Check the signal strength of the mobile broadband connection on page 145.
- Check to see if your LTE provider is experiencing network problems. It might not be that the router cannot connect to the Internet, but rather that your LTE provider cannot provide an Internet connection.
- You might need to change the APN (see Change the LTE provider's access point name on page 23). Contact your LTE provider.

Note: If you call your LTE provider, they might want you to provide information about your mobile broadband connection. For detailed information, see Check the mobile broadband Internet connection status on page 98 and Display Internet port statistics on page 101.

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. If the Power LED on the back of the satellite does not light and if the satellite has a **Power On/Off** button, press the **Power On/Off** button.
4. Wait for the satellite's ring LED to light solid white or magenta.
5. Press the **Sync** button on the router and then within two minutes, press the **Sync** button on the satellite.
6. Wait for the satellite to sync with the router.

The satellite's ring LED pulses white while it attempts to sync with the router. After the ring LED pulses white, it lights one of the following colors for about three minutes and then turns off:

- **Blue**. The Orbi router and satellite successfully synced, and the connection between the router and satellite is good.
- **Amber**. The Orbi router and satellite successfully synced, but the connection between the router and satellite is only fair. Consider moving the Orbi satellite closer to the Orbi router.
- **Magenta**. The Orbi router and satellite did not sync.

7. Do one of the following:
   - **The sync failed**. If the sync failed, try to sync again by repeating Step 5 and Step 6. If the sync keeps failing, try a different location or position.
   - **The sync is successful**. If the sync is successful, move the satellite to the location where you want to install it and continue with Step 8.
8. At the new location, connect the satellite to a power source.
9. At the new location, resync the satellite with the router by repeating Step 5 and Step 6.

   If the satellite's ring LED lights blue or amber, the satellite synced successfully. If the satellite's ring LED lights blue, the connection is good. If the satellite's ring LED lights amber, consider moving the satellite closer to the router so that you can get a good connection instead of a fair connection.
10. If the satellite's ring LED lights magenta, the satellite did not resync with the router. If they successfully synced when they were placed in the same room, do one of the following:
    - Move the satellite closer to the router and try again. The router must be within the satellite's WiFi cover area for a good or fair connection to the satellite.
    - Place another satellite between the router and the satellite that you are trying to sync. Then try to sync between the two satellites. With daisy chain networking, your satellites can connect to each other or to the router, depending on which connection is best.

You cannot access the Internet

Check your network and Internet connections:

1. Make sure that your WiFi-enabled computer or mobile device is connected to the Orbi network.
2. If you are connected to Orbi but you cannot access the Internet, check to see if your Internet connection is working.
3. Launch a web browser from a computer or WiFi device that is connected to the network.
4. Enter **orbilogin.com**.

   A login window opens.
5. Enter the router 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.
6. Click the **ADVANCED** tab.

   The ADVANCED Home page displays.
7. Check that an IP address is shown for the Internet port.

If 0.0.0.0 is shown, your router did not obtain an IP address from your LTE provider or wired Internet provider.

If your router cannot obtain an IP address from the provider, you can try to force your SIM card or wired modem to recognize your router by restarting your network. For more information, see Troubleshoot the mobile broadband Internet connection on page 146 or Sequence to restart your wired network on page 146.

If your router is still unable to obtain an IP address from your LTE provider or wired Internet provider, the problem might be one of the following:

- If your LTE provider or wired Internet provider requires a login, the login name and password might be set incorrectly.
- Your wired Internet provider might require a login program. Ask your provider whether they require PPP over Ethernet (PPPoE) or some other type of login.

- Your wired Internet provider might check for your computer's host name. Assign the computer host name of your provider account as the account name on the Internet Setup page.
- Your wired Internet provider allows only one Ethernet MAC address to connect to Internet and checks for your computer's MAC address, do one of the following:
  - Inform your provider that you bought a new network device and ask them to use the router's MAC address.
  - Configure your router to clone your computer's MAC address.

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. The computer must have an Ethernet port.

If you changed the admin password and you forgot what it is, see Reset the admin password on page 97.

Troubleshoot Internet browsing

If your router can obtain an IP address but your computer is unable to load any web pages from the Internet, it might be for one of the following reasons:

- The traffic meter is enabled, and the limit was reached.
  By configuring the traffic meter not to block Internet access when the traffic limit is reached, you can resume Internet access. If your ISP sets a usage limit, they might charge you for the overage.
- Your computer might not recognize any DNS server addresses. A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses.
  Typically, your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address during the router's configuration, restart your computer. Alternatively, you can configure your computer manually with a DNS address, as explained in the documentation for your computer.
- The router might not be configured as the default gateway on your computer. Reboot the computer and verify that the router address (www.orbirlogin.com) is listed by your computer as the default gateway address.
- You might be running login software that is no longer needed. If your ISP provided a program to log you in to the Internet (such as WinPoET), you no longer need to

run that software after installing your router.You might need to go to Internet Explorer and select **Tools > Internet Options**, click the **Connections** tab, and select **Never dial a connection**. Other browsers provide similar options.

Troubleshoot PPPoE

If you are using PPPoE with your wired modem, try troubleshooting your Internet connection.

To troubleshoot a PPPoE connection for a wired modem:

1. Launch a web browser from a computer or WiFi device that is connected to the network.
2. Enter **orbilogin.com**.

   A login window opens.
3. Enter the router 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. Click the **ADVANCED** tab.

   The ADVANCED Home page displays.
5. In the Internet Port pane, click the **Connection Status** button.

   The Connection Status window opens.
6. Check the Connection Status window to see if your PPPoE connection is active and working.

   If the router is not connected, click the **Connect** button.

   The router continues to attempt to connect indefinitely.
7. If you cannot connect after several minutes, the router might be set up with an incorrect service name, user name, or password, or your ISP might be experiencing a provisioning problem.

   Unless you connect manually, the router does not authenticate using PPPoE until data is transmitted to the network.

Troubleshoot WiFi connectivity

If you are experiencing trouble connecting to the Orbi WiFi network, try to isolate the problem:

- Does the WiFi-enabled computer or mobile device that you are using find your WiFi network?
  If you disabled the router's SSID broadcast, then your WiFi network is hidden and does not display in the list of networks that your computer or WiFi device finds. (By default, SSID broadcast is enabled.)
- Does your WiFi-capable device support the security that you are using for your WiFi network (WPA or WPA2)?
- To view the WiFi settings for the router, use an Ethernet cable to connect a computer to a LAN 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 1 or 5 GHz 2 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 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.orbilogin.com

3. Click the **OK** button.

You should see a message like this one:

Pinging <IP address > with 32 bytes of data

If the path is working, you see this message:

Reply from < IP address >: bytes=32 time=NN ms TTL=xxx

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

Request timed out

If the path is not functioning correctly, you might be experiencing one of the following problems:

- 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 that the appropriate LEDs are on 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 Test the LAN path to your router on page 152.

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.

13

Supplemental Information

This appendix covers the following topics:

- Factory settings for Orbi router model LBR20
- Technical specifications for Orbi router model LBR20

Factory settings for Orbi router model LBR20

The following table shows the factory default settings for the router.

Table 4. Factory default settings for the router

Feature	Default Setting
Router login	
User login URL	orbilogin.com
User name (case-sensitive)	admin
Login password (case-sensitive)	password
Mobile broadband Internet connection	
Internet connection mode	Always use 3G/4G mobile connection
Network mode	Automatic (4G or 3G)
PDP	PDP-IP (IPv4 or IPv6)
Authentication	None
Roaming	Enabled
Wired Internet connection	
WAN MAC address	Use default hardware address
WAN MTU size	1500
Port speed	AutoSensing
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

Table 4. Factory default settings for the router (Continued)

Feature	Default Setting
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
WiFi	
WiFi communication	Enabled
SSID name	See router label
Security	WPA2-PSK (AES)
Broadcast SSID	Enabled
Transmission speed	Auto **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 2.4 GHz backhaul	Auto

Table 4. Factory default settings for the router (Continued)

Feature	Default Setting
RF channel 5 GHz fronthaul	Channel 48 for NA, PR, AU, CA, and TW Channel 36 for EU, KO, JP, and IN
RF channel 5 GHz backhaul	Channel 157 for NA, PR, AU, CA, and TW Channel 108 for EU, KO, JP, and IN

Technical specifications for Orbi router model LBR20

The following table shows the technical specifications for the router.

Table 5. Technical specifications for the router

Feature	Description
Data and routing protocols	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE, PPTP, Bigpond, Dynamic DNS, UPnP, and SMB
Power adapter input	North America: 120V, 60 Hz Europe: 230V, 50 Hz UK and Australia: 240V, 50 Hz
Power adapter output	All regions: 12V, 2.5A DC
Dimensions	6.7 x 3.1 x 8.9 in. (170 x 78 x 226 mm)
Weight	1.72 lb (780 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 VCCI Class B EN 55 022 (CISPR 22), Class B C-Tick N10947
Mobile bands worldwide	4G bands (LTE-FDD): 1, 3, 5, 7, 8, 20, 28 4G bands (LTE-TDD): 38, 40, 41 3G bands: 1, 3, 5, 8
Mobile bands United States and Canada	4G bands (LTE-FDD): 2, 4, 5, 7, 12, 13, 14, 17, 25, 26, 29, 30, 66, 71 4G bands (LTE-TDD): 41 3G bands: 2, 4, 5
LAN	RJ-45: 10BASE-T, 100BASE-TX, or 1000BASE-T

Table 5. Technical specifications for the router (Continued)

Feature	Description
WAN	RJ-45: 10BASE-T, 100BASE-TX, or 1000BASE-T
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: Maximum 400 Mbps 5 GHz fronthaul: Maximum 866 Mbps 5 GHz backhaul: Maximum 866 Mbps
Data encoding standards	IEEE 802.11b/g/n 2.4 GHz–256 QAM support IEEE 802.11 a/n/ac 5 GHz–256 QAM support
Maximum number of computers per WiFi 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	2.412–2.462 GHz (US) 2.412–2.472 GHz (Japan) 2.412–2.472 GHz (Europe ETSI)
5 GHz operating frequency range	5.18 GHz–5.24 GHz and 5.745 GHz–5.825 GHz (US) 5.18 GHz–5.24 GHz and 5.5 GHz–5.7 GHz (Europe, Japan) 5.26 GHz–5.32 GHz
802.11 security	WPA-PSK [TKIP], WPA2-PSK [AES]