NETGEAR®

802.11ac Wireless Access Point Model WAC104

User Manual

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San Jose, CA 95134
USA

Support

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Conformity

For the current EU Declaration of Conformity, visit *http://kb.netgear.com/app/answers/detail/a_id/11621*.

Compliance

For regulatory compliance information, visit *http://www.netgear.com/about/regulatory*.

See the regulatory compliance document before connecting the power supply.

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Contents

Chapter 1 Hardware Overview of the Access Point

Unpack the Access Point....6
Top Panel With LEDs....6
Back Panel....7
Position the Antennas....8
Product Label....9

Chapter 2 Install and Access the Access Point in Your Network

Position Your Access Point....11
Connect the Access Point to Your Router or Network....12
Connect the Access Point to Your Router....12
Connect the Access Point to a Network With a DHCP Server....14
Connect the Access Point With a Static IP Address to Your Network....16
Log In to the Access Point After Setup to View or Change Settings....19
Change the Language....20
Change the admin Password....21
Set Up Password Recovery....21
Set the Time Zone and Adjust the Daylight Saving Time....22
Connect to the Access Point's Network After Installation....23
Connect to the Access Point Through an Ethernet Cable....23
Join the WiFi Network of the Access Point....23
Manual Method....23
Wi-Fi Protected Setup Method....24

Chapter 3 Manage the Basic WiFi Network Settings

Manage the Basic WiFi Settings and WiFi Security of the WiFi Network....27
View or Change the Basic WiFi Settings....27
Configure WEP Legacy WiFi Security....33
Configure WPA and WPA2 Enterprise WiFi Security....35
Control the WiFi Radios....37
Use the WiFi On/Off Button....37
Enable or Disable the WiFi Radios....37

Chapter 4 Manage the Access Point and Monitor the Traffic

Update the Firmware of the Access Point....40
Check for New Firmware and Update the Access Point....40
Manually Upload New Firmware and Update the Access Point....41
Manage the Configuration File of the Access Point....42
Back Up the Settings....42
Restore the Settings....43
Recover the admin Password....43
Return the Access Point to Its Factory Default Settings....44

Use the Reset Button....45
Erase the Settings....45
Change the IP Address Settings of the Access Point....46
View Devices Currently on the Network....48
View the Status and Statistics of the Access Point....49
View Information About the Access Point and the IP and WiFi Settings....49
View the Traffic Statistics....53
Change the Traffic Statistics Polling Frequency....54
View or Clear the Logs....54

Chapter 5 Manage the Advanced WiFi Features

Add a WiFi Schedule....57
Manage Access to the WiFi Network Through a WiFi Access List....58
Manage the WPS Settings....60
Manage Advanced WiFi Settings....62
Set Up a WiFi Distribution System....63
Set Up the WiFi Base Station....64
Set Up a WiFi Repeater....65

Chapter 6 Troubleshooting

Quick Tips for Troubleshooting....69
Troubleshoot With the LEDs....70
Power LED Is Off....70
Power LED Remains Blinking Green....70
WiFi LED Is Off....71
Troubleshoot the WiFi Connectivity....71
Troubleshoot Internet Browsing....71
You Cannot Log In to the Access Point....72
Changes Are Not Saved....72
Troubleshoot Your Network Using the Ping Utility....73
Test the LAN Path to Your Access Point....73
Test the Path From Your Computer to a Remote Device....73

Appendix A Factory Default Settings and Technical Specifications

Factory Settings....76
Technical Specifications....77

Hardware Overview of the Access Point 1

The NETGEAR 802.11ac Wireless Access Point Model WAC104, in this manual referred to as the access point, supports dual-band concurrent operation at 2.4 GHz and 5 GHz with combined throughput of 1.2 Gbps (300 Mbps at 2.4 GHz and 867 Mbps at 5 GHz). The access point can be used in a standalone configuration connected to a router or integrated in a network.

The chapter contains the following sections:

- *Unpack the Access Point* on page 6
- *Top Panel With LEDs* on page 6
- *Back Panel* on page 7
- *Position the Antennas* on page 8
- *Product Label* on page 9

IMPORTANT:

The access point provides WiFi and LAN connectivity but is a bridge and not a router. Therefore, do not connect the access point directly to your DSL or cable modem. You must connect the access point to a router or, if your network includes a DHCP server, to a switch or hub that is connected to the DHCP server. (For more information, see *Connect the Access Point to Your Router or Network* on page 12.)

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

Note Firmware updates with new features and bug fixes are made available from time to time at *downloadcenter.netgear.com*. You can check for and download new firmware manually. If the features or behavior of your product does not match what is described in this guide, you might need to update your firmware.

Unpack the Access Point

The package contains the access point, Ethernet cable, power adapter (localized to the country of sale), and installation guide.



Figure 1. WAC104 package contents

Top Panel With LEDs

The status LEDs are located on the top panel of the access point.

Table 1. LED descriptions

LED	Description
Power 	• **Solid green**. The access point is ready. • **Solid green temporarily, blinking green temporarily, and finally solid green**. The access point is starting or was reset to factory default settings and is restarting. For more information about resetting the access point to factory default settings, see *Return the Access Point to Its Factory Default Settings* on page 44. • **Blinking green**. The access point is starting or upgrading firmware. If the Power LED is blinking green at any other time, see *Power LED Remains Blinking Green* on page 70. • **Off**. Power is not supplied to the access point.
WPS 	• **Solid green**. (Wi-Fi Protected Setup) is ready for use. By default, the WPS LED is off. • **Blinking green for two minutes**. Someone pressed the **WPS** button on the access point to join the WiFi network. For more information, see *Wi-Fi Protected Setup Method* on page 24.
WiFi 	• **Solid green**. One or both WiFi radios are operating. • **Blinking green**. One or both WiFi radios are sending or receiving traffic. • **Off**. Both WiFi radios are off. For more information, see*Control the WiFi Radios* on page 37.
LAN 	Ethernet LAN ports 1–4: • **Solid green**. A powered-on Ethernet device is connected to the LAN port. • **Blinking green**. The LAN port is sending or receiving traffic. • **Off**. No powered-on Ethernet device is connected to the LAN port.

Back Panel

The back panel of the access point provides ports, buttons, and a DC power connector.

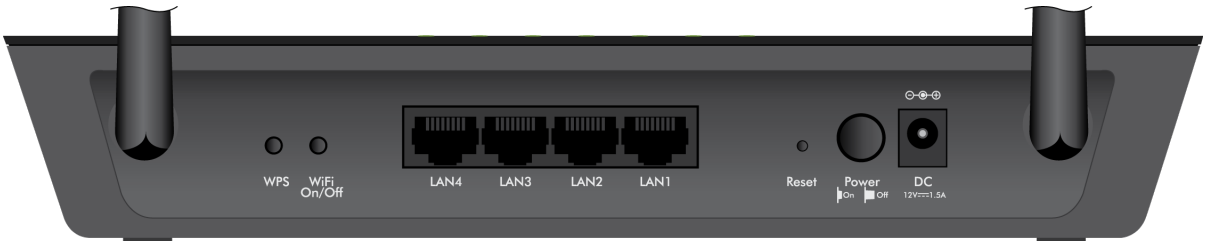


Figure 2. Access point back panel

Viewed from left to right, the back panel contains the following components:

- **WPS button**. Press the **WPS** button to join the access point's WiFi network without typing the WiFi password. For more information, see *Wi-Fi Protected Setup Method* on page 24.
- **WiFi On/Off button**. Press the **WiFi On/Off** button for two seconds to turn the WiFi radios on or off.
- **LAN ports 1–4**. Four Gigabit Ethernet RJ-45 LAN ports to connect the access point to Ethernet devices. You can use one of the LAN ports to connect the access point to a router, network switch, or network hub (see *Connect the Access Point to Your Router or Network* on page 12). You can use the other LAN ports to connect the access point to Ethernet devices such as computers.
- **Reset button**. Press the **Reset** button to reset the access point to factory default settings. For more information, see *Use the Reset Button* on page 45.
- **Power On/Off button**. Press the **Power On/Off** button to provide power to the access point.
- **DC power connector**. Connect the power adapter that came in the product package to the DC power connector.

Position the Antennas

Although you can swivel the antennas in any direction, for best performance, we recommend that you position the access point's antennas perpendicular to each other, that is, at a 90-degree angle.



Figure 3. Examples of recommended antenna positions

Product Label

The product label on the bottom panel of the access point shows the default login information, default WiFi network names (SSIDs), serial number, and MAC address of the access point.

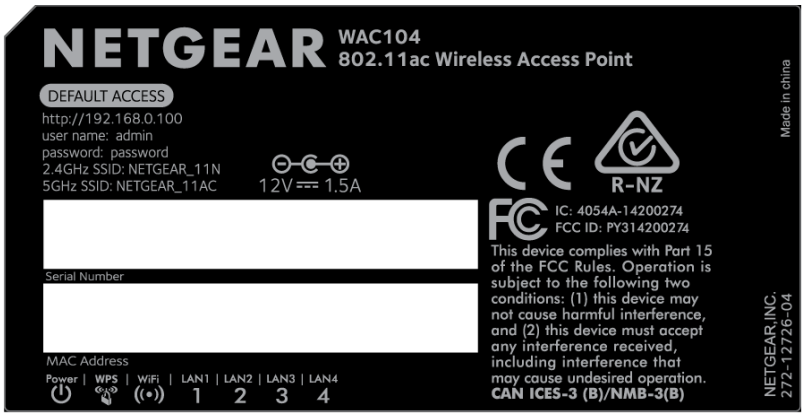


Figure 4. Access point label

Install and Access the Access Point in Your Network

2

This chapter describes how you can install and access the access point in your network.

The chapter contains the following sections:

- *Position Your Access Point* on page 11
- *Connect the Access Point to Your Router or Network* on page 12
- *Log In to the Access Point After Setup to View or Change Settings* on page 19
- *Change the Language* on page 20
- *Change the admin Password* on page 21
- *Set Up Password Recovery* on page 21
- *Set the Time Zone and Adjust the Daylight Saving Time* on page 22
- *Connect to the Access Point's Network After Installation* on page 23

Position Your Access Point

The access point lets you access your network anywhere within the operating range of your WiFi network. However, the operating distance or range of your WiFi connection can vary significantly depending on the physical placement of your access point. For example, the thickness and number of walls the WiFi signal passes through can limit the range.

Additionally, other WiFi access points in and around your home might affect your access point's signal. WiFi access points are routers, repeaters, WiFi range extenders, and any other device that emits a WiFi signal for network access.

Position your access point according to the following guidelines:

- Place your access point near the center of the area where your computers and other devices operate and within line of sight to your WiFi devices.
- Make sure that the access point is within reach of an AC power outlet and near Ethernet cables for wired computers.
- Place the access point in an elevated location, minimizing the number walls and ceilings between the access point and your other devices.
- Place the access point away from electrical devices such as these:
  - Ceiling fans
  - Home security systems
  - Microwaves
  - Computers
  - Base of a cordless phone
  - 2.4 GHz cordless phone
  - 5 GHz cordless phone
- Place the access point away from large metal surfaces, large glass surfaces, insulated walls, and items such as these:
  - Solid metal door
  - Aluminum studs
  - Fish tanks
  - Mirrors
  - Brick
  - Concrete

If you are using adjacent access points, use different radio frequency channels to reduce interference.

Connect the Access Point to Your Router or Network

The access point functions as a WiFi access point and LAN switch for Internet access but does *not* provide routing services such as NAT and a DHCP server. Do not directly connect the access point to your DSL or cable modem. Instead, connect the access point to your router or to a switch or hub that is connected to a DHCP server in your network. Basically, the access point functions as a bridge between your router or DHCP server and the access point's LAN and WiFi clients.

The following sections describe how you can connect the access point to your router or network:

- *Connect the Access Point to Your Router* on page 12
- *Connect the Access Point to a Network With a DHCP Server* on page 14
- *Connect the Access Point With a Static IP Address to Your Network* on page 16

To set up your access point, follow the procedure in *one* of these sections.

Connect the Access Point to Your Router

The easiest way to set up and start using the access point is to connect it to a router.

By default, the DHCP client of the access point is disabled, so the access point does not receive an IP address from the router's DHCP server and you can use the default access point IP address to log in to the access point web management interface. However, because the access point functions as a bridge between your router and the access point's LAN and WiFi clients, these clients do receive an IP address from the router.

After setup, if you want to access the access point web management interface (also referred to as user interface) to change the settings, you must use the default access point IP address 192.168.0.100.

Note If you do want the access point to receive an IP address from the router's DHCP server, you must enable the access point's DHCP client (see *Connect the Access Point to a Network With a DHCP Server* on page 14) and log in to the access point web management interface over the IP address that the DHCP server assigns to the access point.

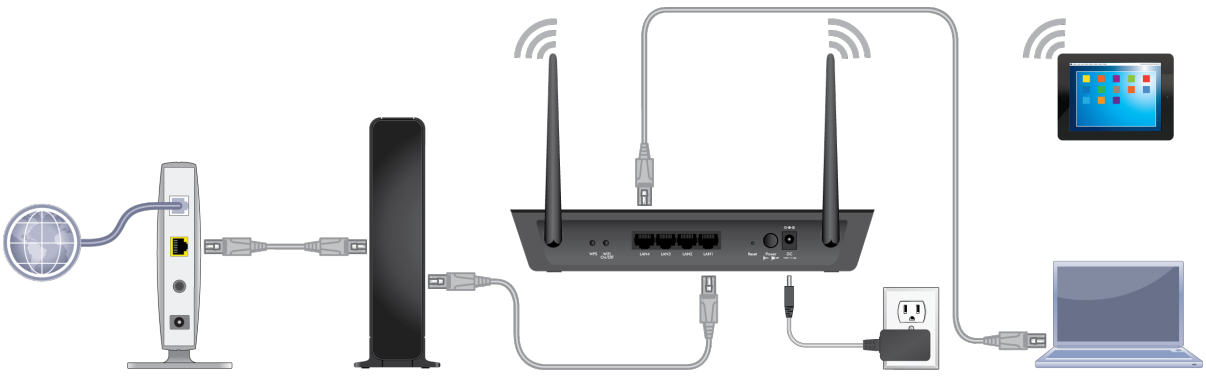


Figure 5. Connect the access point to a router

To connect the access point to a router and log in to the access point:

1. Connect the Ethernet cable that came in the package to one of the access point's Ethernet ports.
   You can use any of the four LAN ports on the access point.
2. Connect the other end of the cable to a LAN port on your router.
3. Power on the access point.

   The Power LED lights solid green. If the Power LED does not light, press the **Power On/Off** button.

   Wait for the WiFi LED to light solid green. If the WiFi LED does not light, press the **WiFi On/Off** button.

   For the next step, you can use WiFi to connect your WiFi device to the access point or you can use a computer and an Ethernet cable to connect to a LAN port on the access point.
4. Connect to the access point by doing one of the following:

   - Connect your WiFi device to the access point by using one of the WiFi network names (SSIDs) on the product label. A network key or password is not required.
     For more information, see *Join the WiFi Network of the Access Point* on page 23.
   - Connect a computer to a LAN port on the access point by doing the following:

     a. Record the IP address and subnet mask of your computer so that you can reinstate these IP address settings when you complete the configuration of the access point.

     b. Temporarily change the IP address on your computer to 192.168.0.210 with 255.255.255.0 as the subnet mask.
     (You can actually use any IP address in the 192.168.0.2–192.168.0.254 range, with the exception of IP address 192.168.0.100, which is the default access point IP address.)
     For more information about changing the IP address on your computer, see the help or documentation for your computer.

     c. Use another Ethernet cable (not provided) to connect your computer to a LAN port on the access point.

5. To customize the features of the access point, log in to the access point by doing the following:

   a. Open a web browser from the computer that is connected to the access point.

   b. Enter **192.168.0.100** in the address field of the web browser.
   Because the DHCP client of the access point is disabled by default, the access point does not receive an IP address from the router's DHCP server and you must the default IP address of the access point.

   c. When prompted, enter **admin** for the user name and **password** for the password.
   The access point' web management interface displays.

6. Change the settings as needed.
   For more information, see the sections in this manual.

Connect the Access Point to a Network With a DHCP Server

If your network includes a DHCP server or you want to let your router's built-in DHCP server assign an IP address to the access point, you must enable the access point's DHCP client.

After setup, to access the access point web management interface (also referred to as user interface), you must use the IP address that the network's DHCP server or router's built-in DHCP server assigns to the access point. (You can no longer use the default access point IP address.)

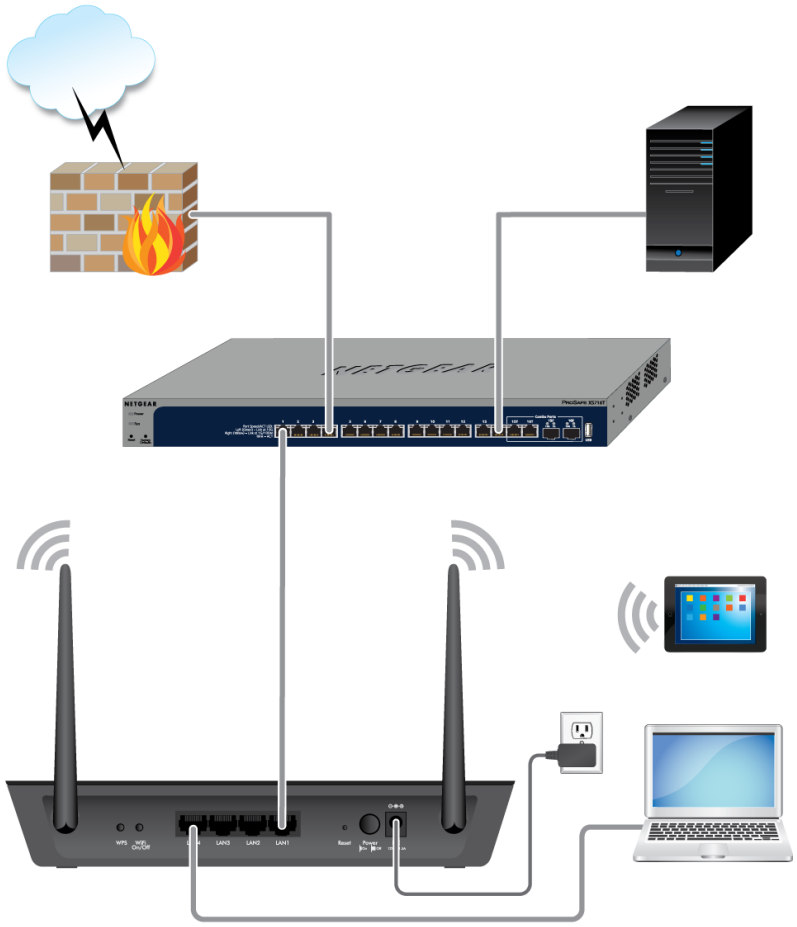


Figure 6. Connect the access point to a network with a DHCP server

To connect the access point to a network or router with a DHCP server and log in to the access point:

1. Connect the Ethernet cable that came in the package to one of the access point's Ethernet ports.
   You can use any of the four LAN ports on the access point.
2. Connect the other end of the cable to an Ethernet port on a switch or hub, which must be connected to the DHCP server in your network.
   If you want to use your router's built-in DHCP server, connect the other end of the cable to a LAN port on your router.
3. Power on the access point.

The Power LED lights solid green. If the Power LED does not light, press the **Power On/Off** button.

Wait for the WiFi LED to light solid green. If the WiFi LED does not light, press the **WiFi On/Off** button.

For the next step, you can use WiFi to connect your WiFi device to the access point or you can use a computer and an Ethernet cable to connect to a LAN port on the access point.

4. Connect to the access point by doing one of the following:

   - Connect your WiFi device to the access point by using one of the WiFi network names (SSIDs) on the product label. A network key or password is not required.
     For more information, see *Join the WiFi Network of the Access Point* on page 23.
   - Connect a computer to a LAN port on the access point by doing the following:

     a. Record the IP address and subnet mask of your computer so that you can reinstate these IP address settings later.

     b. Temporarily change the IP address on your computer to 192.168.0.210 with 255.255.255.0 as the subnet mask.
     (You can actually use any IP address in the 192.168.0.2–192.168.0.254 range, with the exception of IP address 192.168.0.100, which is the default access point IP address.)
     For more information about changing the IP address on your computer, see the help or documentation for your computer.

     c. Use another Ethernet cable (not provided) to connect your computer to a LAN port on the access point.

5. Log in to the access point by doing the following:

   a. Open a web browser from the computer that is connected to the access point.

   b. Enter **192.168.0.100** in the address field of the web browser.
   Because the DHCP client of the access point is disabled by default, the access point cannot yet receive an IP address from the network's DHCP server or router's built-in DHCP server.
   A login window displays.

   c. When prompted, enter **admin** for the user name and **password** for the password.
   The access point web management interface displays.

6. Select **Advanced Setup > IP Settings**.
   The page with IP settings displays.

7. Select the **Get dynamically from existing router** radio button.

8. Click the **Apply** button.
   Your settings are saved and the access point restarts.

9. After the access point becomes available again, to customize the features of the access point, including changing the preset WiFi network names (SSIDs) and setting up WiFi security, log back in to the access point by doing the following:

a. If you changed the IP address settings of your computer in *Step 4*, reinstate the IP address settings that your computer was using before.

> **Note** This step assumes that the access point is now connected to the same router or network that your computer was connected to before you connected it with an Ethernet cable to the access point. For you to configure the access point, the IP addresses of your computer and the access point must be in the same IP subnet. This requirement does not apply if you log in to the access point over a WiFi connection.

b. Open a web browser from the computer that is connected to the access point.

c. In the address field of the web browser, enter the IP address that the network's DHCP server or router's built-in DHCP server assigned to the access point.
You can find this IP address by accessing the DHCP server or the router. You can also use a network IP scanner to find the IP address of the access point in your network. It could take up to ten minutes for the network's DHCP server or router's built-in DHCP server to assign the access point an IP address.

d. When prompted, enter **admin** for the user name and **password** for the password.
The access point web management interface displays.

10. Change the settings as needed.
    For more information, see the sections in this manual.

Connect the Access Point With a Static IP Address to Your Network

For some networks, you might need to configure a static (fixed) IP address on the access point. This is an unusual configuration that requires you to manually enter the IP address settings of the access point.

Before you can do so, you must collect the static IP address, IP subnet mask, network gateway IP address, and the IP address of the primary DNS server, and if available in your network, the secondary DSN server.

After setup, to access the access point's web management interface (also referred to as user interface), you must use the static IP address that you assigned to the access point. (You can no longer use the default access point IP address.)

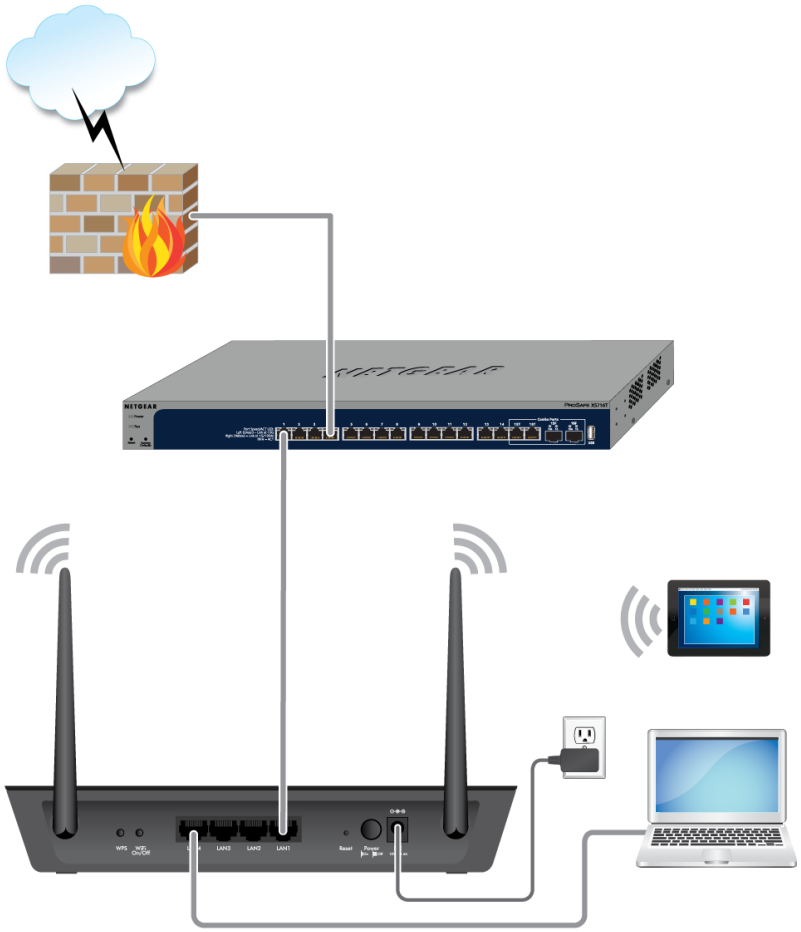


Figure 7. Connect the access point with a static IP address to a network

To connect the access point with a static IP address to a network and log in to the access point:

1. Connect the Ethernet cable that came in the package to one of the access point's Ethernet ports.
   You can use any of the four LAN ports on the access point.
2. Connect the other end of the cable to an Ethernet port on a switch or hub, which must be connected to your network.
   If you want to connect the access point with a static IP address to your router, connect the other end of the cable to a LAN port on your router.
3. Power on the access point.
   The Power LED lights solid green. If the Power LED does not light, press the **Power On/Off** button.
   Wait for the WiFi LED to light solid green. If the WiFi LED does not light, press the **WiFi On/Off** button.
   For the next step, you can use WiFi to connect your WiFi device to the access point or you can use a computer and an Ethernet cable to connect to a LAN port on the access point.

4. Connect to the access point by doing one of the following:

   - Connect your WiFi device to the access point by using one of the WiFi network names (SSIDs) on the product label. A network key or password is not required.
     For more information, see *Join the WiFi Network of the Access Point* on page 23.
   - Connect a computer to a LAN port on the access point by doing the following:

     a. Record the IP address and subnet mask of your computer so that you can reinstate these IP address settings later.

     b. Temporarily change the IP address on your computer to 192.168.0.210 with 255.255.255.0 as the subnet mask.
     (You can actually use any IP address in the 192.168.0.2–192.168.0.254 range, with the exception of IP address 192.168.0.100, which is the default access point IP address.)
     For more information about changing the IP address on your computer, see the help or documentation for your computer.

     c. Use another Ethernet cable (not provided) to connect your computer to a LAN port on the access point.

5. Log in to the access point by doing the following:

   a. Open a web browser from the computer or WiFi device that is connected to the access point.

   b. Enter **192.168.0.100** in the address field of the web browser.
   Because you did not yet configure a static IP address, you must enter the default access point IP address.

   c. When prompted, enter **admin** for the user name and **password** for the password.
   The access point web management interface displays.

6. Select **Advanced Setup > IP Settings**.
   The page with IP settings displays.

7. Select the **Use fixed IP Address (not recommended)** radio button.

8. Enter the IP address information that you collected in the **IP Address**, **IP Subnet Mask**, **Gateway IP Address**, **Primary DNS**, and **Secondary DNS** fields.

9. Click the **Apply** button.
   Your settings are saved and the access point restarts.

10. After the access point becomes available again, to customize the features of the access point, including changing the preset WiFi network names (SSIDs) and setting up WiFi security, log back in to the access point by doing the following:

a. If you changed the IP address settings of your computer in *Step 4*, reinstate the IP address settings that your computer was using before.

> **Note** This step assumes that the access point is now connected to the same router or network that your computer was connected to before you connected it with an Ethernet cable to the access point. For you to configure the access point, the IP addresses of your computer and the access point must be in the same IP subnet. This requirement does not apply if you log in to the access point over a WiFi connection.

b. Open a web browser from the computer or WiFi device that is connected to the access point.

c. In the address field of the web browser, enter the static IP address that you configured on the access point.

d. When prompted, enter **admin** for the user name and **password** for the password.
The access point web management interface displays.

11. Change the settings as needed.

    For more information, see the sections in this manual.

Log In to the Access Point After Setup to View or Change Settings

After you set up the access point, you can view or change the settings for the access point.

To log in to the access point web management interface:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.

> **Note** If you did not enable the access point's DHCP client or configure a static IP address when you connected the access point to your router or network (see *Connect the Access Point to Your Router or Network* on page 12), the access point uses its default IP address of 192.168.0.100. In this situation, you must temporarily change the IP address on your computer to 192.168.0.210 with subnet mask 255.255.255.0 so that the IP addresses of your computer and the access point are in the same IP subnet. This requirement does not apply if you log in to the web management interface over a WiFi connection.

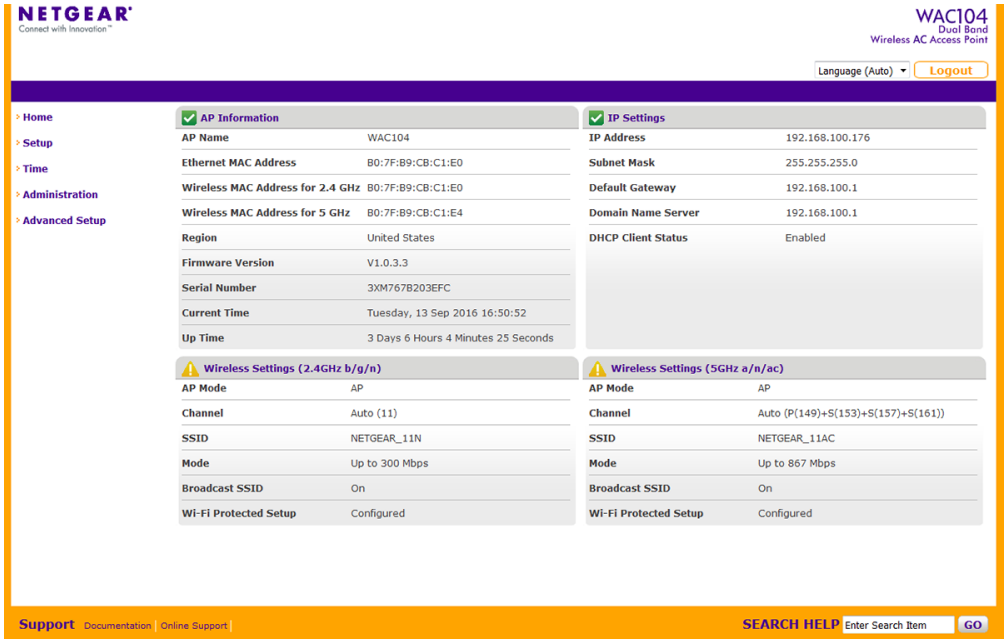
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.

3. Enter the access point user name and password.

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



The Home page displays a dashboard that lets you see the status of your access point at a glance. You can click the **IP Settings**, **Wireless Settings (2.4GHz b/g/n)**, or **Wireless Settings (5GHz a/n/ac)** heading to view more detailed information. For more information, see *View Information About the Access Point and the IP and WiFi Settings* on page 49. The left column displays the main menu.

Change the Language

By default, the language is set as Auto. You can change the language.

To change the language:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The 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.

Change the admin Password

We recommend that you change the default password that you use to log in to the access point to a more secure password. This is the password that you use to log in to the access point with the user name admin.

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.

Note This admin password is the password that you use to log in to the access point web management interface. It is not the password that you use for WiFi access.

To change the password for the user name admin:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Set Password**.

   The Set Password page displays.
5. Enter the old password.
6. Enter the new password twice.

Note For information about setting up password recovery, see *Set Up Password Recovery* on page 21.

7. Click the **Apply** button.

   Your settings are saved.

Set Up Password Recovery

We recommend that you enable password recovery if you change the password for the access point user name admin. Then you can recover the password if it is forgotten. This recovery process is supported in Internet Explorer, Firefox, and Chrome browsers, but not in the Safari browser.

To set up password recovery:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Set Password**.

   The Set Password page displays.
5. Select the **Enable Password Recovery** check box.
6. Select two security questions and provide answers to them.
7. Click the **Apply** button.

   Your settings are saved.

Set the Time Zone and Adjust the Daylight Saving Time

The access point might detect the time zone automatically or you might need to adjust the time zone and daylight saving time settings. When the access point synchronizes its clock with a Network Time Protocol (NTP) server, the page shows the date and time. If the page does not show the correct date and time, you might need to set the time zone and adjust the daylight saving time setting.

To set the time zone and adjust the daylight saving time setting:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Time**.

   The Time Zone page displays.

5. From the menu, select the time zone for the area in which the access point operates.
6. If the access point is in an area that observes daylight saving time, select the **Automatically adjust for Daylight Savings Time** check box.
7. Click the **Apply** button.

   Your settings are saved. When the access point connects over the Internet to an NTP server, the date and time that display on the page are adjusted according to your settings.

Connect to the Access Point's Network After Installation

After you install the access point in your network, you can connect to the access point's LAN through a wired connection or to the access point's WiFi network over a WiFi connection.

If you set up your computer to use a static IP address, change the settings of your computer so that it uses Dynamic Host Configuration Protocol (DHCP), which enables the computer to receive an IP address from the router or network to which the access point is connected.

Connect to the Access Point Through an Ethernet Cable

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

For information about logging in to the access point web management interface, see *Log In to the Access Point After Setup to View or Change Settings* on page 19.

To connect your computer to the access point with an Ethernet cable:

1. Make sure that the access point 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 numbered Ethernet ports on the access point.

   You can use any of the four LAN ports on the access point.

   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.

Join the WiFi Network of the Access Point

Choose either the manual or the WPS method to add a WiFi device such as a WiFi-enabled computer, an iPhone, an iPad, or another mobile device to the WiFi network of the access point.

For information about logging in to the access point web management interface, see *Log In to the Access Point After Setup to View or Change Settings* on page 19.

Manual Method

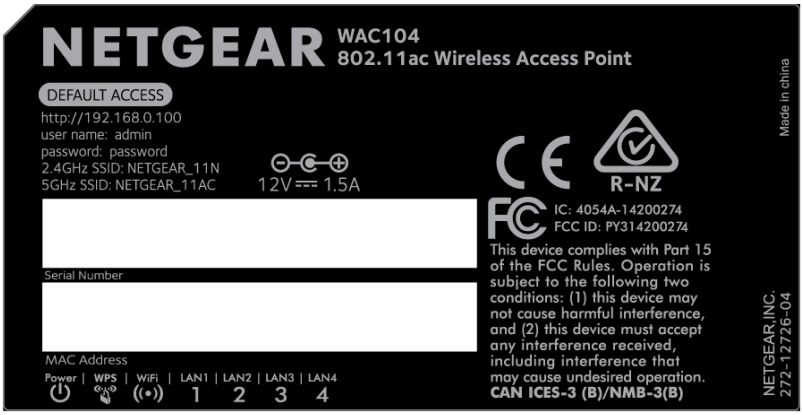
On the WiFi device that you want to connect to the access point, you can use the software application that manages your WiFi connections.

To connect a device manually to the WiFi network of the access point:

1. Make sure that the access point is receiving power (its Power LED is lit) and that the WiFi radios are on (the WiFi LED is lit).
2. On the WiFi device that you want to connect to your access point, open the software application that manages your WiFi connections.

   This software scans for all WiFi networks in your area.
3. Look for the access point's network and select it.

   The default WiFi network name (SSID) for the 2.4 GHz radio band and the default SSID for the 5 GHz radio band are on the product label.



4. If you already implemented security, enter the WiFi password that you set up for the network.

   By default, both default networks are open (that is, unsecured), so you do not need to enter a network key or password.

   Note We recommend that you implement WiFi security (see *View or Change the Basic WiFi Settings* on page 27).

5. Click the **Connect** button.

   The device connects to the WiFi network of the access point.

Wi-Fi Protected Setup Method

Wi-Fi Protected Setup (WPS) is a standard for easily adding computers and other devices to a home network while maintaining security. To use WPS (Push 'N' Connect), make sure that all WiFi devices to be connected to the network are Wi-Fi certified and support WPS. During the connection process, the client gets the security settings from the access point so that every device in the network supports the same security settings.

To use WPS to connect a device to the WiFi network of the access point:

1. Make sure that the access point is receiving power (its Power LED is lit) and that the WiFi radios are on (the WiFi LED is lit).
2. Check the WPS instructions for your computer or WiFi device.

3. Press the **WPS** button of the access point for three seconds.
4. Within two minutes, press the **WPS** button on your WiFi device, or follow the WPS instructions that came with the device.

   The WPS process automatically sets up the device with the network password and connects the device to the WiFi network of the access point.

Manage the Basic WiFi Network Settings 3

This chapter describes how you can manage the basic WiFi network settings of the access point. For information about the advanced WiFi settings, see *Manage the Advanced WiFi Features* on page 56.

Tip If you want to change the settings of the access point's WiFi network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

The chapter includes the following sections:

- *Manage the Basic WiFi Settings and WiFi Security of the WiFi Network* on page 27
- *Control the WiFi Radios* on page 37

Manage the Basic WiFi Settings and WiFi Security of the WiFi Network

The access point comes with preset WiFi network names (SSIDs) and with open networks without WiFi security. You can find the preset SSIDs on the access point label (see *Product Label* on page 9). Whether or not you customize the SSIDs, we do recommend that you set up WiFi security.

View or Change the Basic WiFi Settings

You can view or change the basic WiFi settings and WiFi security. The access point simultaneously supports the 2.4 GHz band for 802.11b/g/n devices and the 5 GHz band for 802.11a/n/ac devices.

Tip If you change the WiFi settings of the access point's network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

To view or change the basic WiFi settings:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

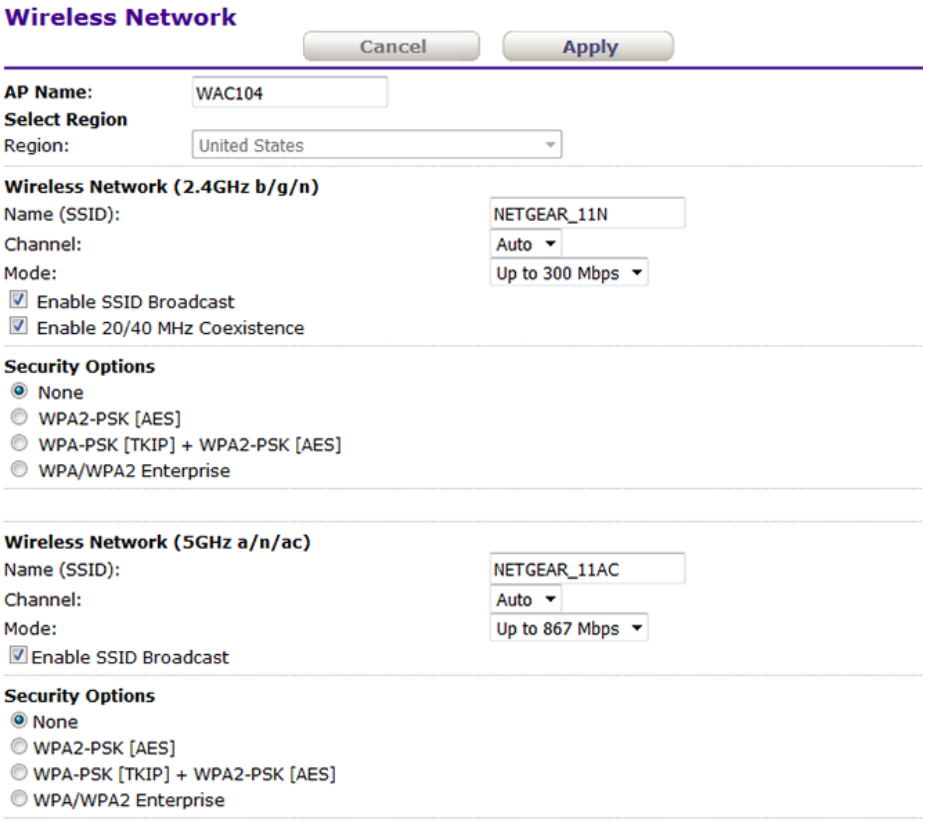
   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.

4. Select **Setup > Wireless Setup**.



5. View or change the basic WiFi settings and security settings.

   The following table describes the fields on the Wireless Network page.

Field	Description
AP Name	The name of the access point. By default, the name is WAC104.
Region	From the menu, select the region in which the access point operates. For some countries. you cannot change the region because it is preset. **Note** It might not be legal to operate the access point in a region other than the regions listed in the menu. If your country or region is not listed, check with your local government agency.
Wireless Network (2.4GHz b/g/n)	
Name (SSID)	The SSID is the WiFi network name. If you did not change the SSID, the default SSID for the 2.4 GHz band displays. The default SSID is also printed on the product label (see *Product Label* on page 9). **Note** If you change the SSID, enter a 32-character (maximum), case-sensitive name in this field.

(Continued)

Field	Description
Channel	From the **Channel** menu, select **Auto** for automatic channel selection or select an individual channel. The default selection is Auto. **Note** 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 situation occurs, experiment with different channels to see which is the best. **Note** If you use multiple WiFi access points (APs), reduce interference by selecting different channels for adjacent APs. We recommend a channel spacing of four channels between adjacent APs (for example, use Channels 1 and 5, or 6 and 10).
Mode	From the **Mode** menu, select one of the following modes: • **Up to 54 Mbps**. Legacy mode. This mode allows 802.11n, 802.11g, and 802.11b devices to join the network but limits 802.11n devices to functioning at up to 54 Mbps. • **Up to 145 Mbps**. Neighbor-friendly mode for reduced interference with neighboring WiFi networks. This mode allows 802.11n, 802.11g, and 802.11b devices to join the network but limits 802.11n devices to functioning at up to 145 Mbps. • **Up to 300 Mbps**. Performance mode. This mode allows 802.11n, 802.11g, and 802.11b devices to join the network and allows 802.11n devices to function at up to 300 Mbps. This mode is the default mode. **Note** WPA-PSK security and WEP security support speeds of up to 54 Mbps. Even if your devices are capable of a higher speed, WPA-PSK security and WEP security limit their speed to 54 Mbps.
Enable SSID Broadcast	By default, the access point broadcasts its SSID so that WiFi stations can detect the WiFi name (SSID) in their scanned network lists. To turn off the SSID broadcast, clear the **Enable SSID Broadcast** check box. Turning off the SSID broadcast provides additional WiFi security, but users must know the SSID to be able to join the WiFi network of the access point. **Note** If you set up a WiFi Distribution System (WDS, see *Set Up a WiFi Distribution System* on page 63), you must keep the SSID broadcast enabled.
Enable 20/40 MHz Coexistence	By default, 20/40 MHz coexistence is enabled to prevent interference between WiFi networks in your environment at the expense of the WiFi speed. If no other WiFi networks are present in your environment, you can clear the **Enable 20/40 MHz Coexistence** check box to increase the WiFi speed to the maximum supported speed. The 20/40 MHz coexistence setting applies to the 2.4 GHz band only.

(Continued)

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td colspan="2">Security Options
This information applies to the 2.4 GHz WiFi network.</td></tr>
<tr><td colspan="2">If you change the WiFi security, select one of the following WiFi security options for the access point's WiFi network:

• None. This option is the default setting. An open WiFi network does not provide any security. Any WiFi device can join the network. We recommend that you do not use an open WiFi network but configure WiFi security.
• WEP. Wired Equivalent Privacy (WEP) security is a legacy authentication and data encryption mode that is superseded by WPA-PSK and WPA2-PSK. The WEP option displays only if you select Up to 54 Mbps from the Mode menu. For information about configuring WEP, see Configure WEP Legacy WiFi Security on page 33.
• WPA2-PSK [AES]. This type of security enables WiFi devices that support WPA2 to join the access point's 2.4 GHz WiFi network. If you did not change the passphrase, the default passphrase displays. The default passphrase is sharedseceret. WPA2 provides a secure connection but some older WiFi devices do not detect WPA2 and support only WPA. If your network includes such older devices, select WPA-PSK [TKIP] + WPA2-PSK [AES] security.
If you change the passphrase, in the Passphrase field, enter a phrase of 8 to 63 characters. To join the access point's WiFi network, a user must enter this passphrase.
• WPA-PSK [TKIP] + WPA2-PSK [AES]. This type of security enables WiFi devices that support either WPA or WPA2 to join the access point's 2.4 GHz WiFi network. However, WPA-PSK [TKIP] is less secure than WPA2-PSK [AES] and limits the speed of WiFi devices to 54 Mbps.
To use this type of security, in the Passphrase field, enter a phrase of 8 to 63 characters. To join the access point's WiFi network, a user must enter this passphrase.
• WPA/WPA2 Enterprise. This type of security requires that your WiFi network can access a RADIUS server. For information about configuring WPA/WPA2 Enterprise, see Configure WPA and WPA2 Enterprise WiFi Security on page 35.</td></tr>
<tr><td colspan="2">Wireless Network (5GHz a/n/ac)</td></tr>
<tr><td>Name (SSID)</td><td>The SSID is the WiFi network name. If you did not change the SSID, the default SSID for the 5 GHz band displays. The default SSID is also printed on the product label (see Product Label on page 9).

Note If you change the SSID, enter a 32-character (maximum), case-sensitive name in this field.</td></tr>
</table>

(Continued)

Field	Description
Channel	From the **Channel** menu, select an individual channel. The default channel depends on your selection from the **Region** menu. **Note** 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 situation occurs, experiment with different channels to see which is the best. **Note** If you use multiple WiFi access points (APs), reduce interference by selecting different channels for adjacent APs. We recommend a channel spacing of four channels between adjacent APs.
Mode	From the **Mode** menu, select one of the following modes: • **Up to 173 Mbps**. Legacy mode. This mode allows 802.11ac, 802.11n, and 802.11a devices to join the network but limits 802.11ac and 802.11n devices to functioning at up to 173 Mbps. • **Up to 400 Mbps**. Neighbor-friendly mode for reduced interference with neighboring WiFi networks. This mode allows 802.11ac, 802.11n, and 802.11a devices to join the network but limits 802.11ac devices to functioning at up to 400 Mbps. • **Up to 867 Mbps**. Performance mode. This mode allows 802.11ac, 802.11n, and 802.11a devices to join the network and allows 802.11ac devices to function at up to 867 Mbps. This mode is the default mode.
Enable SSID Broadcast	By default, the access point broadcasts its SSID so that WiFi stations can detect the WiFi name (SSID) in their scanned network lists. To turn off the SSID broadcast, clear the **Enable SSID Broadcast** check box. Turning off the SSID broadcast provides additional WiFi security, but users must know the SSID to be able to join the WiFi network of the access point. **Note** If you set up a WiFi Distribution System (WDS, see *Set Up a WiFi Distribution System* on page 63), you must keep the SSID broadcast enabled.

(Continued)

Field	Description
Security Options This information applies to the 5 GHz WiFi network.	
If you change the WiFi security, select one of the following WiFi security options for the access point's WiFi network: • **None**. This option is the default setting. An open WiFi network does not provide any security. Any WiFi device can join the network. We recommend that you do *not* use an open WiFi network but configure WiFi security. • **WPA2-PSK [AES]**. This option is the default setting. This type of security enables WiFi devices that support WPA2 to join the access point's 5 GHz WiFi network. If you did not change the passphrase, the default passphrase displays. The default passphrase is sharedsecret. WPA2 provides a secure connection but some older WiFi devices do not detect WPA2 and support only WPA. If your network includes such older devices, select WPA-PSK [TKIP] + WPA2-PSK [AES] security. If you change the passphrase, in the **Passphrase** field, enter a phrase of 8 to 63 characters. To join the access point's WiFi network, a user must enter this passphrase. • **WPA-PSK [TKIP] + WPA2-PSK [AES]**. This type of security enables WiFi devices that support either WPA or WPA2 to join the access point's 5 GHz WiFi network. However, WPA-PSK [TKIP] is less secure than WPA2-PSK [AES] and limits the speed of WiFi devices to 54 Mbps. To use this type of security, in the **Passphrase** field, enter a phrase of 8 to 63 characters. To join the access point's WiFi network, a user must enter this passphrase. • **WPA/WPA2 Enterprise**. This type of security requires that your WiFi network can access a RADIUS server. For information about configuring WPA/WPA2 Enterprise, see *Configure WPA and WPA2 Enterprise WiFi Security* on page 35.	

6. Click the **Apply** button.

   Your settings are saved.

   If you connected over WiFi to the network and you changed the SSID, you are disconnected from the network.

7. Make sure that you can reconnect over WiFi to the network with its new settings.

   If you cannot connect over WiFi, check the following:

   - If your WiFi-enabled computer or mobile device is already connected to another WiFi network in your area, disconnect it from that WiFi network and connect it to the WiFi network that the access point provides. Some WiFi devices automatically connect to the first open network without WiFi security that they discover.
   - If your WiFi-enabled computer or mobile device is trying to connect to your network with its old settings (before you changed the settings), update the WiFi network selection in your WiFi-enabled computer or mobile device to match the current settings for your network.
   - Does your WiFi device display as an attached device? (See *View Devices Currently on the Network* on page 48.) If it does, it is connected to the network.
   - Are you using the correct network name (SSID) and password?

Configure WEP Legacy WiFi Security

Wired Equivalent Privacy (WEP) security is a legacy authentication and data encryption mode that is superseded by WPA-PSK and WPA2-PSK. WEP limits the WiFi transmission speed to 54 Mbps (the access point is capable of speeds of up 300 Mbps in the 2.4 GHz band).

Tip If you want to change the WiFi settings of the access point's network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

To configure WEP security:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

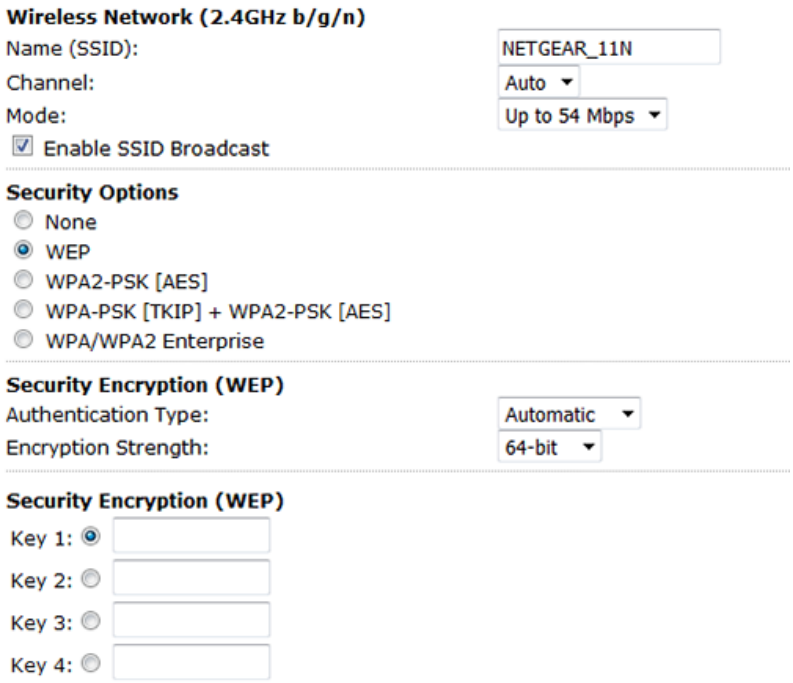
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The Home page displays.
4. Select **Setup > Wireless Setup**.

   The Wireless Network page displays.
5. In the Wireless Network (2.4GHz b/g/n) section, from the **Mode** menu, select **Up to 54 Mbps**.

   The page adjusts to display the **WEP** radio button.

6. In the Security Options section, select the **WEP** radio button.



7. From the **Authentication Type** menu, select one of the following types:
   - **Automatic**. Clients can use either Automatic or Shared Key authentication.
   - **Shared Key**. Clients can use only Shared Key authentication.
8. From the **Encryption Strength** menu, select the encryption key size:
   - **64-bit**. Standard WEP encryption, using 40/64-bit encryption.
   - **128-bit**. Standard WEP encryption, using 104/128-bit encryption. This selection provides higher encryption security.
9. Specify the active key by selecting the **Key 1**, **Key 2**, **Key 3**, or **Key 4** radio button.

   Only one key can be the active key. To join the access point's WiFi network, a user must enter the key value for the key that you specified as the active key.
10. Enter a value for the key:
    - For 64-bit WEP, enter 10 hexadecimal digits (any combination of 0–9, A–F). The key values are not case-sensitive.
    - For 128-bit WEP, enter 26 hexadecimal digits (any combination of 0–9, A–F). The key values are not case-sensitive.

    To join the access point's WiFi network, a user must enter the key value for the key that you specified as the active key.
11. Click the **Apply** button.

    Your settings are saved.
12. Make sure that you can reconnect over WiFi to the network with its new security settings.

    If you cannot connect over WiFi, check the following:

- If your WiFi-enabled computer or mobile device is already connected to another WiFi network in your area, disconnect it from that WiFi network and connect it to the WiFi network that the access point provides. Some WiFi devices automatically connect to the first open network without WiFi security that they discover.
- If your WiFi-enabled computer or mobile device is trying to connect to your network with its old settings (before you changed the settings), update the WiFi network selection in your WiFi-enabled computer or mobile device to match the current settings for your network.
- Does your WiFi device display as an attached device? (See *View Devices Currently on the Network* on page 48.) If it does, it is connected to the network.
- Are you using the correct WiFi network name (SSID) and password?

Configure WPA and WPA2 Enterprise WiFi Security

Remote Authentication Dial In User Service (RADIUS) is an enterprise-level method for centralized Authentication, Authorization, and Accounting (AAA) management. To enable the access point to provide WPA and WPA2 enterprise WiFi security, the WiFi network that the access point provides must be able to access a RADIUS server.

Tip If you want to change the WiFi settings of the access point's network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

Note If you configure WPA and WPA2 enterprise security, you cannot use a WiFi Distribution System (WDS, see *Set Up a WiFi Distribution System* on page 63). If you use a WDS, configure another type of WiFi security.

To configure WPA and WPA2 enterprise security:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

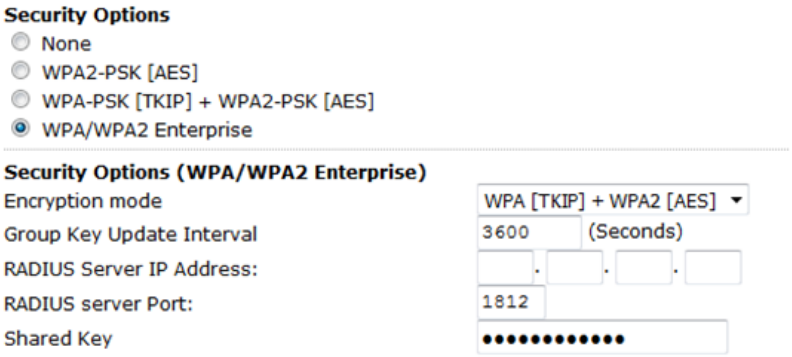
   A login window opens.
3. Enter the access point user name and password.

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

   The Home page displays.
4. Select **Setup > Wireless Setup**.

   The Wireless Network page displays.

5. In the Security Options section below either the Wireless Network (2.4GHz b/g/n) section or the Wireless Network (5GHz a/n/ac) section, select the **WPA/WPA2 Enterprise** radio button.



6. In the WPA/WPA2 Enterprise section, enter the settings as described in the following table.

Field	Description
Encryption mode	From the **Encryption Mode** menu, select the enterprise mode: • **WPA [TKIP] +WPA2 [AES]**. This type of security enables WiFi devices that support either WPA or WPA2 to join the access point's WiFi network. This is the default mode. • **WPA2 [AES]**. WPA2 provides a secure connection but some older WiFi devices do not detect WPA2 and support only WPA. If your network includes such older devices, select WPA [TKIP] + WPA2 [AES] security.
Group Key Update Interval	Enter the interval in seconds after which the RADIUS group key is updated. The default interval is 3600 seconds.
RADIUS Server IP Address	Enter the IPv4 address of the RADIUS server to which the WiFi network can connect.
RADIUS Server Port	Enter the number of the port on the access point that is used to access the RADIUS server for authentication. The default port number is 1812.
Shared Key	Enter the shared key (RADIUS password) that is used between the access point and the RADIUS server during authentication of a WiFi user.

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

8. Make sure that you can reconnect over WiFi to the network with its new security settings.
   If you cannot connect over WiFi, check the following:
   - If your WiFi-enabled computer or mobile device is already connected to another WiFi network in your area, disconnect it from that WiFi network and connect it to the WiFi network that the access point provides. Some WiFi devices automatically connect to the first open network without WiFi security that they discover.
   - If your WiFi-enabled computer or mobile device is trying to connect to your network with its old settings (before you changed the settings), update the WiFi network selection in your WiFi-enabled computer or mobile device to match the current settings for your network.

- Does your WiFi device display as an attached device? (See *View Devices Currently on the Network* on page 48.) If it does, it is connected to the network.
- Are you using the correct network name (SSID) and password?

Control the WiFi Radios

The access point provides internal WiFi radios that broadcast signals in the 2.4 GHz and 5 GHz bands. By default, they are on so that you can connect over WiFi to the access point. When the WiFi radios are off, you can still use an Ethernet cable for a LAN connection to the access point.

You can turn the WiFi radios on and off with the **WiFi On/Off** button on the access point, or you can log in to the access point and enable or disable the WiFi radios through the access point web management interface. If you are close to the access point, it might be easier to press the **WiFi On/Off** button. If you are away from the access point or already logged in, it might be easier to enable or disable the radios through the access point web management interface. You can also turn the WiFi radios off and on based on a schedule. (See *Add a WiFi Schedule* on page 57.)

Use the WiFi On/Off Button

To turn the WiFi radios off and on with the WiFi On/Off button:

Press the **WiFi On/Off** button on the rear panel of the access point for two seconds.

If you turned off the WiFi radios, the WiFi LED turns off. If you turned on the WiFi radios, the WiFi LED lights solid green.

Tip If you want to disable the WiFi radio or radios of the access point, use a wired connection to avoid being disconnected when WiFi radio or radios turn off.

Enable or Disable the WiFi Radios

If you used the **WiFi On/Off** button to turn off the WiFi radios, you cannot log in to the access point over a WiFi connection to turn them back on. You must press the **WiFi On/Off** button again for two seconds to turn the WiFi radios back on.

To enable or disable the WiFi radios:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

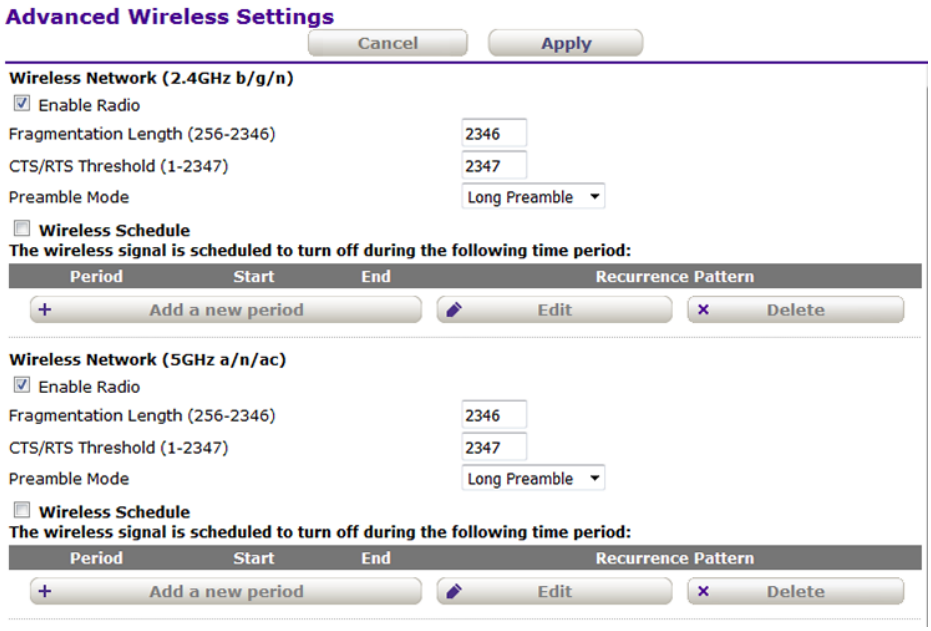
   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.

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



5. Do one of the following in the Wireless Network (2.4GHz b/g/n) section, Wireless Network (5GHz a/n/ac) section, or both sections:

   - **Turn off the radio**. Clear the **Enable Radio** check box.
     The WiFi LED turns off.
   - **Turn on the radio**. Select the **Enable Radio** check box.
     The WiFi LED lights solid green.

6. Click the **Apply** button.

   Your settings are saved.

Manage the Access Point and Monitor the Traffic

4

This chapter describes how you can manage the settings for administering and maintaining the access point and monitor the network.

The chapter includes the following sections:

- *Update the Firmware of the Access Point* on page 40
- *Manage the Configuration File of the Access Point* on page 42
- *Recover the admin Password* on page 43
- *Return the Access Point to Its Factory Default Settings* on page 44
- *Change the IP Address Settings of the Access Point* on page 46
- *View Devices Currently on the Network* on page 48
- *View the Status and Statistics of the Access Point* on page 49
- *View or Clear the Logs* on page 54

Update the Firmware of the Access Point

The access point firmware is stored in flash memory.

You can check to see if new firmware is available and update the access point to the new firmware. You can also visit the NETGEAR support website, download the firmware manually, and update the access point to the new firmware.

Check for New Firmware and Update the Access Point

For you to check for new firmware, the access point must be connected to the Internet.

To check for new firmware and update your access point:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Firmware Update**.

   The Firmware Update page displays.
5. Click the **Check** button.

   The access point detects new firmware if any is available and displays a message asking if you want to download and install it.
6. To download and install the new firmware, click the **Yes** button.

   The access point locates the firmware, downloads it, and begins the update.

   WARNING:
   To avoid the risk of corrupting the firmware, do not interrupt the update. For example, do not close the browser, click a link, or load a new page. Do not turn off the access point. Wait until the access point finishes restarting and the Power LED remains solid green.

   A progress bar shows the progress of the firmware upload process. The firmware upload process takes several minutes. When the upload is complete, your access point restarts.
7. Verify that the access point runs the new firmware version by doing the following:

a. Open a web browser from the computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.

b. Enter the IP address that is assigned to the access point.
A login window opens.

c. Enter the access point user name and password.

The Home page displays. The firmware version is stated in the Firmware Version field of the AP Information panel.

8. Read the new firmware release notes to determine whether you must reconfigure the access point after updating.

Manually Upload New Firmware and Update the Access Point

Downloading firmware and updating the access point are two separate tasks that are combined in the following procedure.

To download new firmware manually and update your access point:

1. Visit *downloadcenter.netgear.com*, locate the support page for your product, and download the new firmware.
2. Read the new firmware release notes to determine whether you must reconfigure the access point after updating.
3. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
4. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.

5. Enter the access point user name and password.

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

   The Home page displays.

6. Select **Administration > Firmware Update**.

   The Firmware Update page displays.

7. Locate and select the firmware file on your computer by doing the following:

   a. Click the **Browse** button.

   b. Navigate to the firmware file.

      The file ends in `.img`. An example of a firmware file name is `WAC104_V1.0.3.7.img`.

   c. Select the firmware file.

8. Click the **Upload** button.



WARNING:
To avoid the risk of corrupting the firmware, do not interrupt the update. For example, do not close the browser, click a link, or load a new page. Do not turn off the access point. Wait until the access point finishes restarting and the Power LED remains solid green.

A progress bar shows the progress of the firmware upload process. The firmware upload process takes several minutes. When the upload is complete, the access point restarts.

9. Verify that the access point runs the new firmware version by doing the following:

   a. Open a web browser from the computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.

   b. Enter the IP address that is assigned to the access point.
   A login window opens.

   c. Enter the access point user name and password.

      The Home page displays. The firmware version is stated in the Firmware Version field of the AP Information panel.

Manage the Configuration File of the Access Point

The configuration settings of the access point are stored within the access point in a configuration file. You can back up (save) this file to your computer or restore it.

Back Up the Settings

You can save a copy of the current configuration settings. If necessary, you can restore the configuration settings later.

To back up the access point's configuration settings:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.

3. Enter the access point user name and password.

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

   The Home page displays.

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

   The Backup Settings page displays.

5. Click the **Backup** button.
6. Choose a location to store the file on your computer.

   The name of the backup file is `NETGEAR_WAC104.cfg`.
7. Follow the directions of your browser to save the file.

Restore the Settings

If you backed up the configuration file, you can restore the configuration from this file.

To restore configuration settings that you backed up:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

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

   The Backup Settings page displays.
5. Click the **Browse** button and navigate to and select the saved configuration file.

   The name of the backup file from which you can restore the configuration is `NETGEAR_WAC104.cfg`.
6. Click the **Restore** button.

   The configuration is uploaded to the access point. When the restoration is complete, the access point reboots. This process takes about two minutes.

WARNING:
To avoid the risk of corrupting the firmware, do not interrupt the restoration. For example, do not close the browser, click a link, or load a new page. Do not turn off the access point. Wait until the access point finishes restarting and the Power LED remains solid green.

Recover the admin Password

We recommend that you enable password recovery if you change the password for the access point user name admin. Then you can recover the password if it is forgotten. This recovery process is supported in Internet Explorer, Firefox, and Chrome browsers, but not in the Safari browser. For information about setting up password recovery, see *Set Up Password Recovery* on page 21.

The following procedure works only if you already did set up password recovery.

To recover your password:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.
3. Click the **Cancel** button.

   If password recovery is enabled, you are prompted to enter the serial number of the access point. The serial number is on the access point label.
4. Enter the serial number of the access point.
5. Click the **Continue** button.

   A page displays requesting the answers to your security questions.
6. Enter the saved answers to your security questions.
7. Click the **Continue** button.

   A page displays your recovered password.
8. Click the **Login again** button.

   A login window opens.
9. With your recovered password, log in to the access point.

Return the Access Point to Its Factory Default Settings

Under some circumstances (for example, if you lost track of the changes that you made to the access point settings or you move the access point to a different network), you might want to erase the configuration and reset the access point to factory default settings.

If you do not know the current IP address of the access point, first try to use an IP scanner application to detect the IP address before you reset the access point to factory default settings.

To reset the access point to factory default settings, you can use either the **Reset** button on the back of the access point or the Erase function. However, if you cannot find the IP address or lost the password to access the access point, you must use the **Reset** button.

After you reset the access point to factory default settings, the user name is admin, the password is password, the LAN IP address is 192.168.0.100, and the access point's DHCP client is disabled. For a list of factory default settings, see *Factory Settings* on page 76.

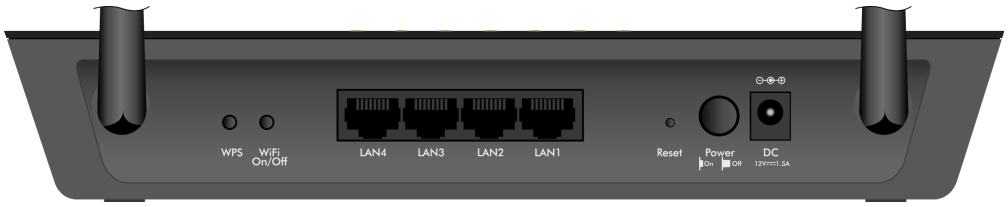
Use the Reset Button

CAUTION:

This process erases all settings that you configured in the access point.

To reset the access point to factory default settings:

1. On the back of the access point, locate the recessed **Reset** button to the left of the **Power On/Off** button.



2. Using a straightened paper clip, press and hold the **Reset** button for at least 10 seconds.
3. Release the **Reset** button.

   The configuration is reset to factory default settings. When the reset is complete, the access point reboots. This process takes about two minutes.

WARNING:

To avoid the risk of corrupting the firmware, do not interrupt the reset. For example, if you are connected to the access point web management interface, do not close the browser, click a link, or load a new page. Do not turn off the access point. Wait until the access point finishes restarting and the Power LED remains solid green.

Erase the Settings

CAUTION:

This process erases all settings that you configured in the access point.

To erase the settings:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.

3. Enter the access point user name and password.

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

   The Home page displays.

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

   The Backup Settings page displays.

5. Click the **Erase** button.

   The configuration is reset to factory default settings. When the reset is complete, the access point reboots. This process takes about two minutes.



WARNING:

To avoid the risk of corrupting the firmware, do not interrupt the reset. For example, do not close the browser, click a link, or load a new page. Do not turn off the access point. Wait until the access point finishes restarting and the Power LED remains solid green.

Change the IP Address Settings of the Access Point

Under some circumstances, for example, when you move the access point from one network to another, you might need to change the IP address settings of the access point. For information about connecting the access point to your router or network, see *Connect the Access Point to Your Router or Network* on page 12.

The following procedure describes how you can either configure a static IP address or enable the DHCP client of the access point.

Note If you enabled the access point's DHCP client and the access point already received an IP address from the DHCP server, you can disable the DHCP client only if you enter a static IP address. If you want to disable the DHCP server but do not want to use a static IP address, you must reset the access point to factory default settings (see *Return the Access Point to Its Factory Default Settings* on page 44).

To change the IP settings of the access point:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

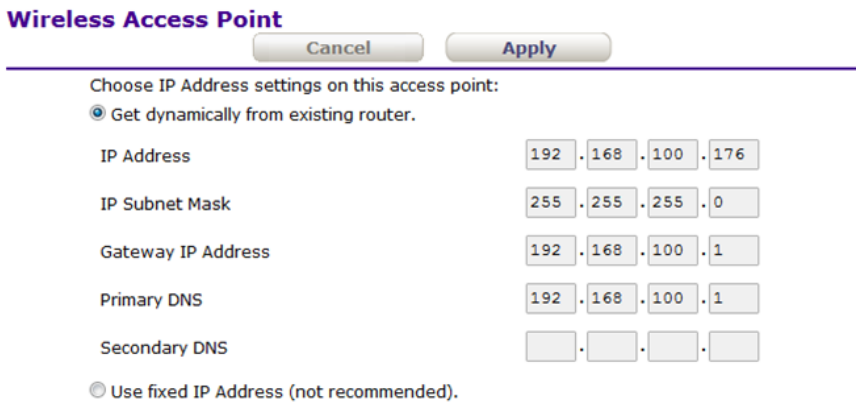
   A login window opens.

3. Enter the access point user name and password.

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

The Home page displays.

4. Select **Advanced Setup > IP Settings**.



The previous figure shows that the access point's DHCP client is enabled.

5. Configure the IP settings by taking one of the following actions:

   - Disable the DHCP client and configure a static IP address by doing the following:

     a. Select the **Use fixed IP Address (not recommended)** radio button.

     b. Enter the IP address information that you collected in the **IP Address**, **IP Subnet Mask**, **Gateway IP Address**, **Primary DNS**, and **Secondary DNS** fields.

   - Enable the DHCP client by selecting the **Get dynamically from existing router** radio button.

   Note If you want to disable the DHCP client but do not want to use a static IP address, you must reset the access point to factory default settings (see *Return the Access Point to Its Factory Default Settings* on page 44).

6. Click the **Apply** button.

   Your settings are saved and the access point restarts. After the access point becomes available again, to log in to the access point web management interface, you must use either the static IP address that you configured or the IP address that the DHCP server assigned to the access point.

View Devices Currently on the Network

You can view the active wired and WiFi devices in both the network to which the access point is connected and the access point network. If you do not recognize a WiFi device, it might be an intruder.

To display the attached wired and WiFi devices:

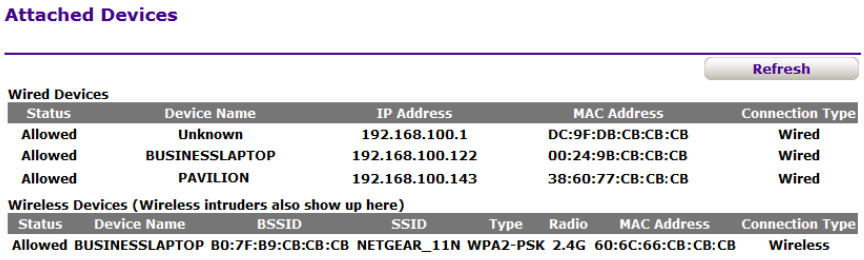
1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Attached Devices**.



Wired devices are connected to the access point with Ethernet cables. WiFi devices are connected to the access point through the WiFi network, in either the 2.4 GHz band or the 5 GHz band.

The following table describes the fields on the Attached Devices page.

Field	Description
Wired Devices	
Status	For LAN devices, the status is always Allowed.
Device Name	The device name, if detected.
IP Address	The IP address that is assigned to the device when it joined the network. This address can change when a device is disconnected and rejoins the network.
MAC Address	The unique MAC address. The MAC address does not change and is usually shown on the product label.
Connection Type	For LAN devices, the connection type is always Wired.

(Continued)

Field	Description
Wireless Devices	
Status	If access control is enabled (see *Manage Access to the WiFi Network Through a WiFi Access List* on page 58), the access control status of the device in the network (Allowed or Blocked).
Device Name	The device name, if detected.
BSSID	The basic service set identifier (BSSID), which is the MAC address of the radio to which the WiFi device is connected.
SSID	The service set identifier (SSID) or WiFi network name that the WiFi device is using.
Type	The type of WiFi security, if any, for the WiFi network to which the device is connected.
Radio	The radio to which the WiFi device is connected (2.4 GHz or 5 GHz).
MAC Address	The unique MAC address. The MAC address does not change and is usually shown on the product label.
Connection Type	For WiFi devices, the connection type is always Wireless.

5. To refresh the information onscreen, click the **Refresh** button.

   The information onscreen is updated.

View the Status and Statistics of the Access Point

You can view information about the access point, its IP settings, and its WiFi network. In addition, you can view traffic statistics for the various ports.

View Information About the Access Point and the IP and WiFi Settings

You can view information about the access point and the IP and WiFi settings for each of the radios.

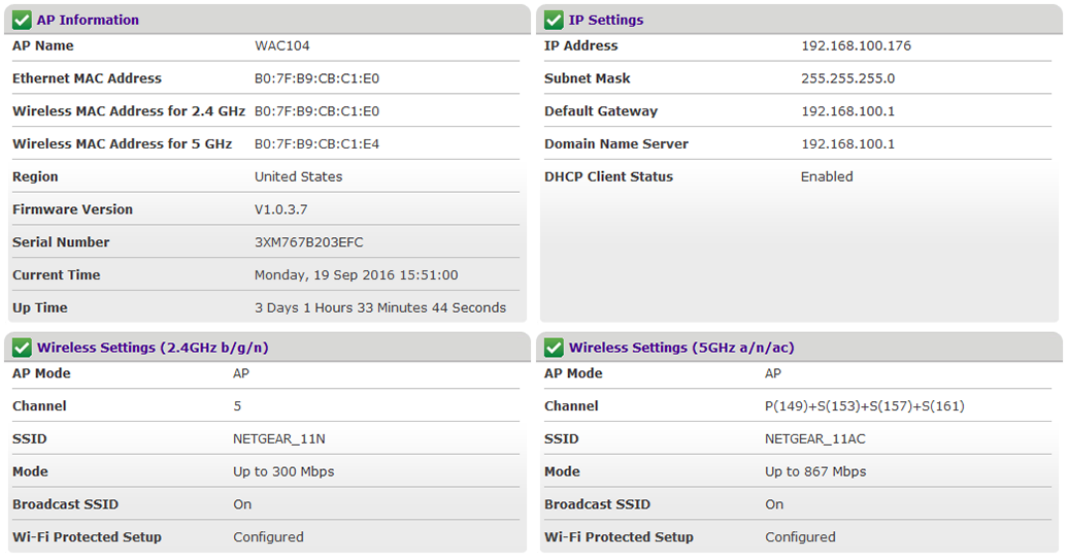
To view information about the access point and the IP and WiFi settings:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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



The information onscreen uses the following color coding:

- A green flag indicates that the AP information and IP settings are fine and no problems exist. For a WiFi network, the network is enabled and secured.
- A red X indicates that a problem exists or the connection is down. For a WiFi network, the network is disabled or down.
- An amber exclamation mark indicates that the access point cannot get an Internet connection (for example, because a cable is disconnected), that a WiFi network is enabled but open (that is, it is unprotected), or that another situation that requires your attention occurred.

Note By default, the access point's WiFi network in the 2.4 GHz and 5 GHz bands is open and unsecured. We recommend that you set up WiFi security for both radio bands.

The following table describes the fields of the four panes on the Home page.

Field	Description
AP Information	
AP Name	The access point name. By default, the name is WAC104. For more information, see *Manage the Basic WiFi Settings and WiFi Security of the WiFi Network* on page 27.
Ethernet MAC Address	The Media Access Control (MAC) address of Ethernet (LAN) interface through which the access point connects to the router or network switch or hub. This address does not change.

(Continued)

Field	Description
Wireless MAC Address for 2.4 GHz	The MAC address of the 2.4 GHz radio. This address is also the basic service set identifier (BSSID) of the 2.4 GHz radio. This address does not change.
Wireless MAC Address for 5 GHz	The MAC address of the 5 GHz radio. This address is also the BSSID of the 5 GHz radio. This address does not change.
Region	The country and region in which the access point is being used. For more information, see see *Manage the Basic WiFi Settings and WiFi Security of the WiFi Network* on page 27.
Firmware Version	The version of the access point firmware. If you upgrade the firmware on the access point, the version changes. For more information, see *Update the Firmware of the Access Point* on page 40.
Serial Number	The serial number of the access point. This number does not change.
Current Time	The current date and time. For more information, see *Set the Time Zone and Adjust the Daylight Saving Time* on page 22.
Up Time	The time elapsed since the access point was last restarted. The up time ignores restarting of the web management interface, which occurs when you save the settings for certain features. (To keep things simple, restarting the web management interface is often referred to as restarting the access point, but it is not the same.)
IP Settings The IP settings that the access point uses. For information about how to configure the Internet settings, see *Connect the Access Point to Your Router or Network* on page 12 or *Change the IP Address Settings of the Access Point* on page 46.	
IP Address	The IP address that the access point uses. By default, this IP address is 192.168.0.100. If the access point receives an IP address from a DHCP server or if you configured a static IP address, the IP address is different from the default address.
Subnet Mask	The IP subnet mask that the access point uses.
Default Gateway	The gateway through which the access point connects to the Internet.
Domain Name Server	The IP address of the Domain Name System (DNS) server that the access point uses.
DHCP Client Status	Indicates whether the DHCP client of the access point is enabled or disabled. By default, the DHCP client is disabled.
Wireless Settings (2.4GHz b/g/n) The settings of the WiFi port for the 2.4 GHz band of the WiFi network. For information about how to configure these settings, see *Manage the Basic WiFi Settings and WiFi Security of the WiFi Network* on page 27 and *Control the WiFi Radios* on page 37.	
AP Mode	The AP mode is always AP.

(Continued)

Field	Description
Channel	The channel that the 2.4 GHz band of the WiFi network uses.
SSID	The WiFi network name for the 2.4 GHz band of the WiFi network.
Mode	The WiFi Mbps settings that the 2.4 GHz band of the WiFi network uses.
Broadcast SSID	Displays whether the 2.4 GHz band of the WiFi network broadcasts its SSID.
Wi-Fi Protected Setup	Displays whether the access point keeps its existing WiFi settings when you use WPS to connect a device to the 2.4 GHz band of the WiFi network: • **Configured**. The access point keeps its existing WiFi settings. This is the default setting. • **Not configured**. The access point generates a random SSID and passphrase and changes the security mode to WPA/WPA2-PSK mixed mode. For more information, see *Manage the WPS Settings* on page 60.
Wireless Settings (5GHz a/n/ac) The settings of the WiFi port for the 5 GHz band of the WiFi network. For information about how to configure these settings, see *Manage the Basic WiFi Settings and WiFi Security of the WiFi Network* on page 27 and *Control the WiFi Radios* on page 37.	
AP Mode	The AP mode is always AP.
Channel	The channel that the 5 GHz band of the WiFi network uses.
SSID	The WiFi network name for the 5 GHz band of the WiFi network.
Mode	The WiFi Mbps settings that the 5 GHz band of the WiFi network uses.
Broadcast SSID	Displays whether the 5 GHz band of the WiFi network broadcasts its SSID.
Wi-Fi Protected Setup	Displays whether the access point keeps its existing WiFi settings when you use WPS to connect a device to the 5 GHz band of the WiFi network: • **Configured**. The access point keeps its existing WiFi settings. This is the default setting. • **Not configured**. The access point generates a random SSID and passphrase and changes the security mode to WPA/WPA2-PSK mixed mode. For more information, see *Manage the WPS Settings* on page 60.

Note If you set up a WiFi Distribution System (WDS, see *Set Up a WiFi Distribution System* on page 63), one or more Wireless Repeater panes show. Depending on the WDS configuration, the MAC address of the base station or the MAC addresses of the repeaters display.

View the Traffic Statistics

You can view the traffic statistics for the ports of the access point.

To view the traffic statistics for the ports of the access point:

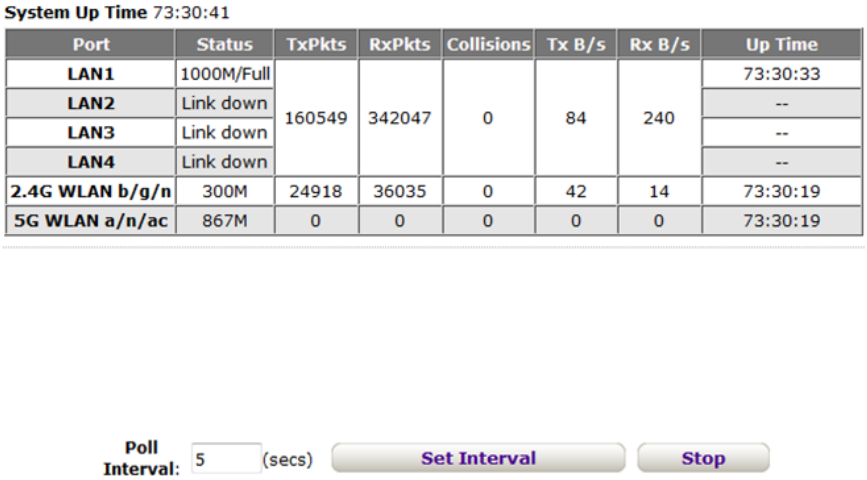
1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Status**.



The following table describes the fields and columns of the table on the page.

Field or Column	Description
System Up Time	The time elapsed since the access point was last restarted.
Port	The statistics for the LAN (Ethernet) ports, WLAN b/g/n, and WLAN a/n/ac ports. For each port, the page displays the information that is described in this table.
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 packets that collided on this port since reset or manual clear.

(Continued)

Field or Column	Description
Tx B/s	The detected rate of packet transmission in bytes per second on this port.
Rx B/s	The detected rate of packet reception in bytes per second on this port.
Up Time	The time elapsed since this port acquired the link.
Poll Interval	The interval at which the statistics are updated on this page. For more information, see *Change the Traffic Statistics Polling Frequency* on page 54.

Change the Traffic Statistics Polling Frequency

You can change the polling frequency or stop traffic polling. For information about the traffic statistics, see *View the Traffic Statistics* on page 53.

To change the traffic statistics polling frequency or stop polling:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Status**.

   The page displays the traffic statistics.
5. To change the polling frequency, do the following:
   a. In the **Poll Interval** field, enter a time in seconds.
   b. Click the **Set Interval** button.
6. To stop polling, click the **Stop** button.

View or Clear the Logs

You can view the log messages (in short, the logs) that are collected on the access point. These logs might be useful if a technical support team helps you to resolve a problem. You can also clear the logs.

To view or clear the logs:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Administration > Logs**.

   The Logs page displays. The page shows the current time and, for each log entry, the following information:

   - **Action**. The action that occurred, such as whether a WLAN connection was made.
   - **Source**. The name, IP address, or MAC address of a device, if applicable.
   - **Date and time**. The date and time that the entry was logged.
5. To refresh the log screen, click the **Refresh** button.
6. To clear the log entries, click the **Clear Log** button.

Manage the Advanced WiFi Features

5

This chapter describes how you can manage the advanced WiFi features of the access point. For information about the basic WiFi settings, see *Manage the Basic WiFi Network Settings* on page 26.

Tip If you want to change the settings of the access point's WiFi network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

The chapter includes the following sections:

- *Add a WiFi Schedule* on page 57
- *Manage Access to the WiFi Network Through a WiFi Access List* on page 58
- *Manage the WPS Settings* on page 60
- *Manage Advanced WiFi Settings* on page 62
- *Set Up a WiFi Distribution System* on page 63

Add a WiFi Schedule

You can use this feature to turn off the WiFi signal from your access point at times when you do not need a WiFi connection. For example, you might turn it off at night or for the weekend. You can add a separate WiFi schedule for each WiFi band. You can also add multiple schedules for each WiFi band.

Note You can add a WiFi schedule only if the access point is connected to the Internet and synchronizes its internal clock with a time server on the Internet. For more information about whether the access point synchronizes its clock, see *Set the Time Zone and Adjust the Daylight Saving Time* on page 22.

To add a WiFi schedule for a WiFi band:

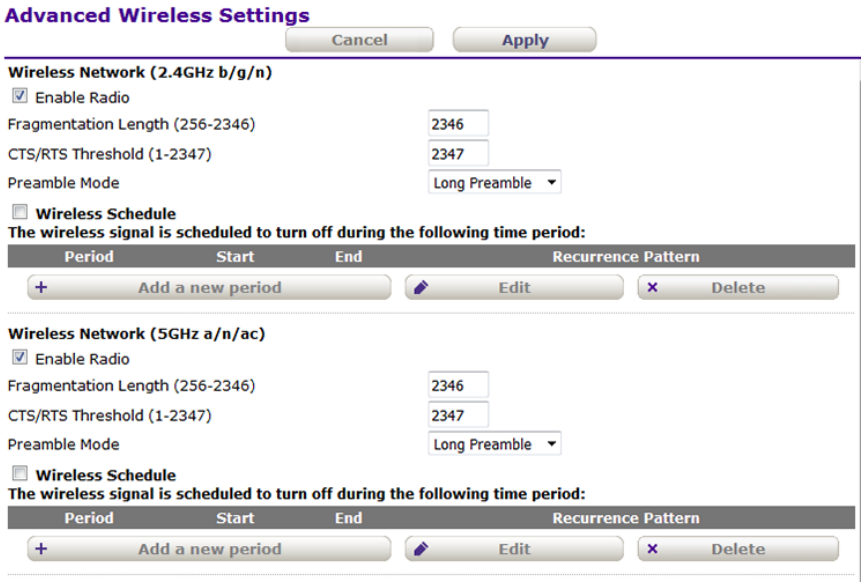
1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Advanced Setup > Advanced Wireless Settings**.



5. In the Wireless Network (2.4GHz b/g/n) section or Wireless Network (5GHz a/n/ac) section, select the **Wireless Schedule** check box.

6. In the Wireless Network (2.4GHz b/g/n) section or Wireless Network (5GHz a/n/ac) section, click the **Add a new period** button.



7. Use the menus, radio buttons, and check boxes to set up a period during which you want to turn off the WiFi signal and specify whether the schedule is recurrent.
8. Click the **Apply** button.

   Your settings are saved, the Advanced Wireless Settings page displays again, and the new schedule shows in the table for the section to which you added the schedule.

   The radio button for the schedule lets you select the schedule if you want to change (edit) or delete it, or if you added multiple schedules, make it the active schedule.

9. Click the **Apply** button.

   Your settings are saved and the schedule becomes active. The WiFi signal is turned off according to the schedule that you added.

Manage Access to the WiFi Network Through a WiFi Access List

By default, all WiFi devices are allowed to connect to the WiFi network. If you enable access control, only devices that you add to the WiFi access control list (ACL) are allowed access to the WiFi network and all other WiFi devices are blocked. An ACL functions with the MAC addresses of WiFi devices.

The access point can detect the MAC addresses of devices that are connected to the WiFi network and list the MAC addresses of devices.

Each network device owns a MAC address, which is a unique 12-character physical address, containing the hexadecimal characters 0–9, a–f, or A–F (uppercase or lowercase) only, and separated by colons (for example, 00:09:AB:CD:EF:01). The MAC address might be on the label of the WiFi device, you might find it in the system information of the device, or you might be able to display it by using the network configuration utility of the device.

To add WiFi devices to the access control list and enable access control:

1. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.

2. Enter the access point user name and password.

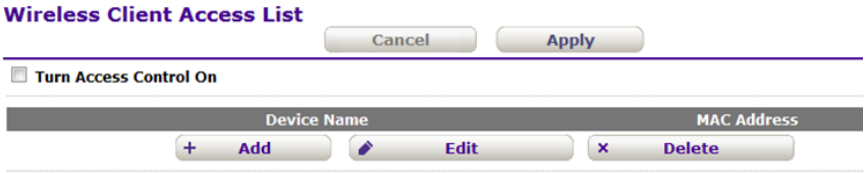
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The Home page displays.

3. Select **Advanced Setup > Advanced Wireless Settings**.

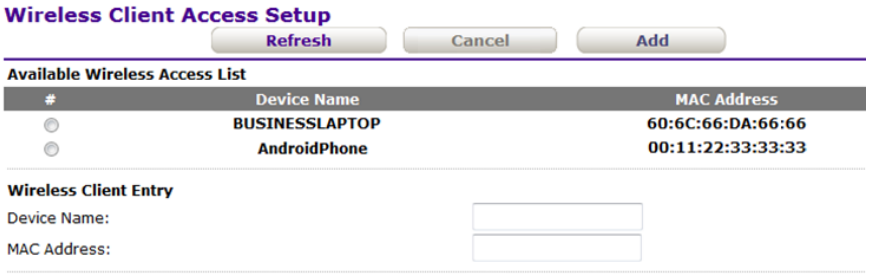
   The Advanced Wireless Settings page displays.

4. Scroll down to the bottom of the page and click the **Set Up Access List** button.



   If you did not yet add any WiFi devices to the access list, the table does not show any.

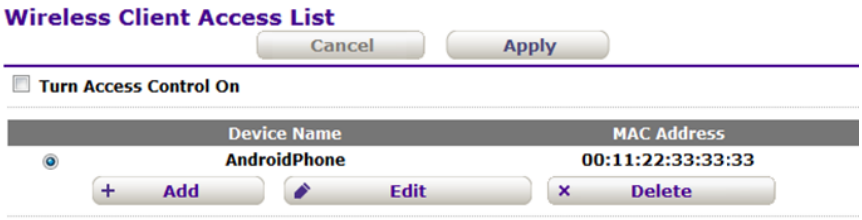
5. Click the **Add** button.



   The Available Wireless Client List shows the detected WiFi devices with their device name and MAC addresses.

6. To add a device to the allowed list, either select the radio button of a WiFi device on the Available Wireless Client List or, if the WiFi device does not show on the Available Wireless Client List, enter the device name in the **Device Name** field and the MAC address in the **MAC Address** field.

7. Click the **Add** button.



   The WiFi device that you added shows in the table on the Wireless Client Access List, that is, it is added to the access control list.

   The radio button for the WiFi device lets you select the device if you want to change (edit) it or remove it from the access control list.

8. To add another WiFi device to the access control list, repeat *Step 5* through *Step 7*.

   Note If you are connected to the access point over a WiFi connection, make sure that you add your own WiFi device to the access control list before you enable access control.

9. Select the **Turn Access Control On** button.
10. Click the **Apply** button.

    The access control list is saved and the Advanced Wireless Settings page displays again.

11. Click the **Apply** button.

    Your settings are saved and the access control list becomes active. Only WiFi devices that are on the access control list are now allowed to connect to the WiFi network of the access point.

Manage the WPS Settings

Wi-Fi Protected Setup (WPS) lets you join the WiFi network without typing the WiFi password. You can change the WPS default settings.

To manage the WPS settings:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

   A login window opens.

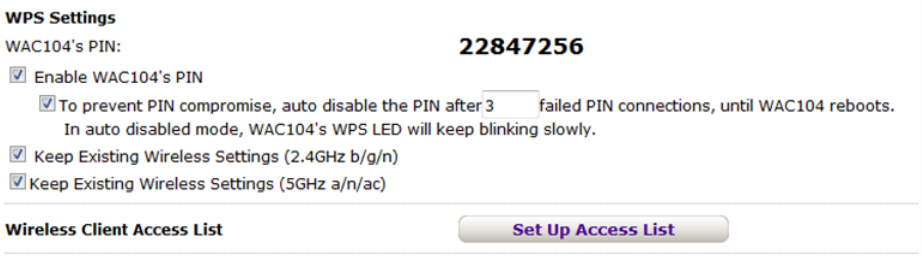
3. Enter the access point user name and password.

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

   The Home page displays.

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

5. Scroll down to the bottom of the page.



   The WAC104's PIN field displays the fixed PIN that you use if you want to configure the access point's WiFi settings from another platform through WPS.

6. To disable the PIN, clear the **Enable WAC104's PIN** check box.
   By default, the **Enable WAC104's PIN** check box is selected and the access point's PIN is enabled. For enhanced security, you can disable the access point's PIN by clearing the **Enable WAC104's PIN** check box. However, when you disable the access point's PIN, WPS is not disabled because you can still use the physical **WPS** button.

   Note The PIN function might temporarily be disabled automatically if the access point detects suspicious attempts to break into the access point's WiFi settings by using the access point's PIN through WPS.

7. To allow the WiFi settings to be changed automatically when you use WPS, clear the **Keep Existing Wireless Settings** check box for the 2.4 GHz band, for the 5 GHz band, or for both bands.
   By default, the **Keep Existing Wireless Settings** check boxes are selected. We recommend that you leave these check boxes selected. If you clear the check box for a band, the next time a new WiFi device uses WPS to connect to the access point, the access point WiFi settings for the band change to an automatically generated random SSID and passphrase. For information about viewing this SSID and passphrase, see *View or Change the Basic WiFi Settings* on page 27. Clear the **Keep Existing Wireless Settings** check box for a band only if you want to allow the WPS process to change the SSID and passphrase for WiFi access.

   WARNING:
   If you clear the Keep Existing Wireless Settings check box for a band and use WPS to add a WiFi device to the access point's WiFi network, the SSID and passphrase for the band are automatically generated and other WiFi devices that are already connected to the access point's WiFi network might be disconnected.

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

Manage Advanced WiFi Settings

For most WiFi networks, the advanced WiFi settings work fine and you do not need to change the settings.

To manage advanced WiFi features:

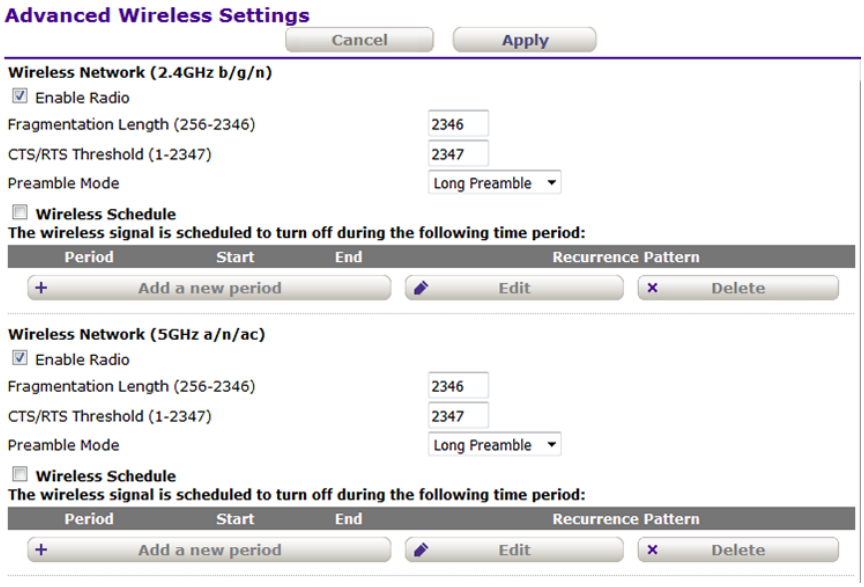
1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

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

   The Home page displays.
4. Select **Advanced Setup > Advanced Wireless Settings**.



5. Enter the settings as described in the following table.

   The descriptions in the table (not the settings onscreen) apply to both the Advanced Wireless Settings (2.4GHz b/g/n) section and the Advanced Wireless Settings (5GHz 802.11a/n/ac) section.

Field	Description
Fragmentation Length (256-2346)	The fragmentation length (the default is 2346), CTS/RTS threshold (the default is 2347), and the preamble mode (the default is Automatic) are reserved for WiFi testing and advanced configuration only. Do not change these settings unless directed by NETGEAR support or unless you are sure what the consequences are. Incorrect settings might disable the WiFi function of the access point unexpectedly.
CTS/RTS Threshold (1-2347)	
Preamble Mode	

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

Set Up a WiFi Distribution System

The access point can function as a WiFi base station or a WiFi repeater in a WiFi distribution system (WDS). A WDS expands a WiFi network through multiple access points. The access point supports both point-to-point and point-to-multipoint configurations.

A WiFi base station connects to the Internet, wired and WiFi clients can connect to the base station, and the base station sends its WiFi signal to one or more access points that function as WiFi repeaters. Wired and WiFi clients can also connect to a WiFi repeater, but the repeater connects to the Internet through the WiFi base station. The following figure shows a WiFi repeating scenario with a WiFi base station on the left side and a single WiFi repeater on the right side.

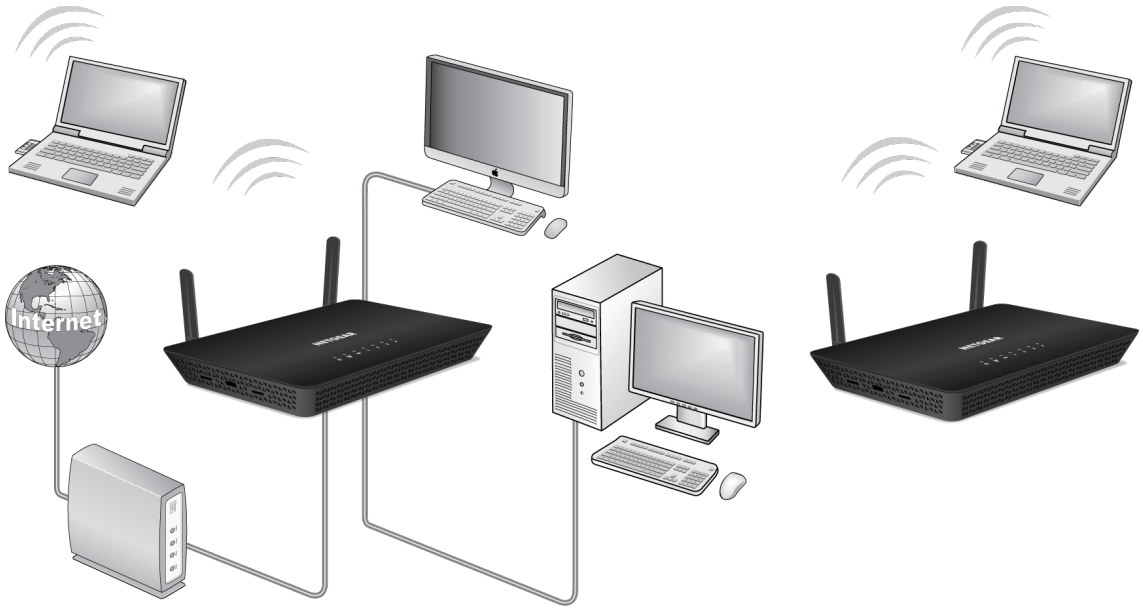


Figure 8. WiFi repeating scenario with a point-to-point configuration

To use the WiFi repeating function, you cannot use the auto channel feature for the access point, the SSID broadcast must be enabled, and you cannot use WPA and WPA2 enterprise security.

For WiFi repeating, you must set up a WiFi base station and a WiFi repeater:

- **WiFi base station**. The access point functions as the parent access point that bridges traffic to and from the child repeater access point. The base station also handles local WiFi and wired computers. To configure this mode, you must know the MAC address of the child repeater access point. Often, the MAC address is on the product label.
- **WiFi repeater**. The access point sends all traffic from its local WiFi or wired computers to a remote access point. To configure this mode, you must know the MAC address of the remote parent access point.

By default, the access point functions in dual-band concurrent mode. If you enable the WiFi repeater in either radio band, the WiFi base station or WiFi repeater cannot be enabled in the other radio band. However, if you enable the WiFi base station in either radio band and use the other radio band for either client access or as a WiFi base station, dual-band concurrent mode is not affected.

Before you can set up a WiFi network with WDS, both access points must meet the following conditions:

- Use the same WiFi channel and WiFi security settings.
- Be on the same LAN IP subnet. That is, all of the access point LAN IP addresses are in the same network.
- All LAN devices (wired and WiFi computers) are configured to operate in the same LAN network address range as the access points.

Set Up the WiFi Base Station

The WiFi repeating function works only in hub and spoke mode. Units cannot be daisy-chained. You must know the WiFi settings for all units. You must also know the MAC addresses of the remote units. First, set up the base station, then set up one or more repeaters.

To set up the base station:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

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

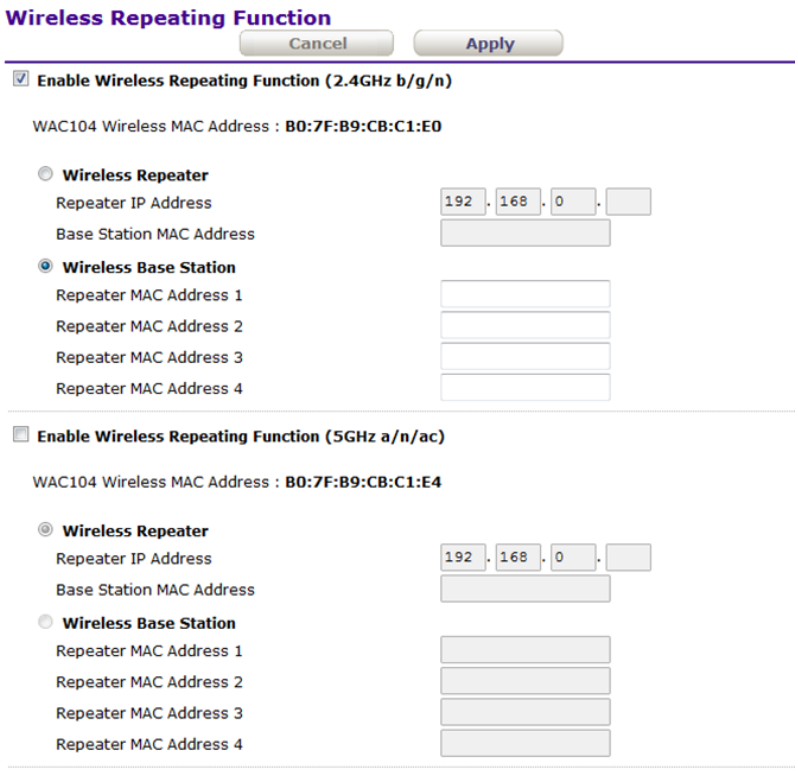
   The user name is **admin**. The default password is **password**. The user name and password are case-sensitive.

   The Home page displays.
4. Make sure that the WiFi settings match the requirements for the WiFi repeating function.

   For you to use the WiFi repeating function, you cannot use the auto channel feature for the access point and the SSID broadcast must be enabled. We recommend that you use WPA2-PSK to secure the WiFi communication for the WDS.
5. Select **Advanced Setup > Wireless Repeating Function**.

The Wireless Repeating Function page displays.

6. Select the **Enable Wireless Repeating Function (2.4GHz b/g/n)** check box or the **Enable Wireless Repeating Function (5GHz a/n/ac)** check box.
7. Select the **Wireless Base Station** radio button.



8. In the **Repeater MAC Address 1** through **4** fields, enter the MAC addresses of the access points that must function as repeaters.

   If your access point is the base station, it can function as the “parent” for up to four other access points.
9. Click the **Apply** button.

   Your settings are saved.

Set Up a WiFi Repeater

Use a wired Ethernet connection to set up a repeater unit to avoid conflicts with the WiFi connection to the base station.

If you are using the access point as the base station with a non-NETGEAR access point as a repeater, you might need to change more configuration settings. In particular, you might need to disable the DHCP server function on the non-NETGEAR access point that is the repeater.

You can configure up to four repeaters.

To set up a NETGEAR access point as a repeater:

1. Open a web browser from a computer that is connected to the same network as the access point or to the access point directly through an Ethernet cable or WiFi connection.
2. Enter the IP address that is assigned to the access point.

   If you did not enable the DHCP client on the access point or did not assign a static IP address, enter the default access point IP address **192.168.0.100**.

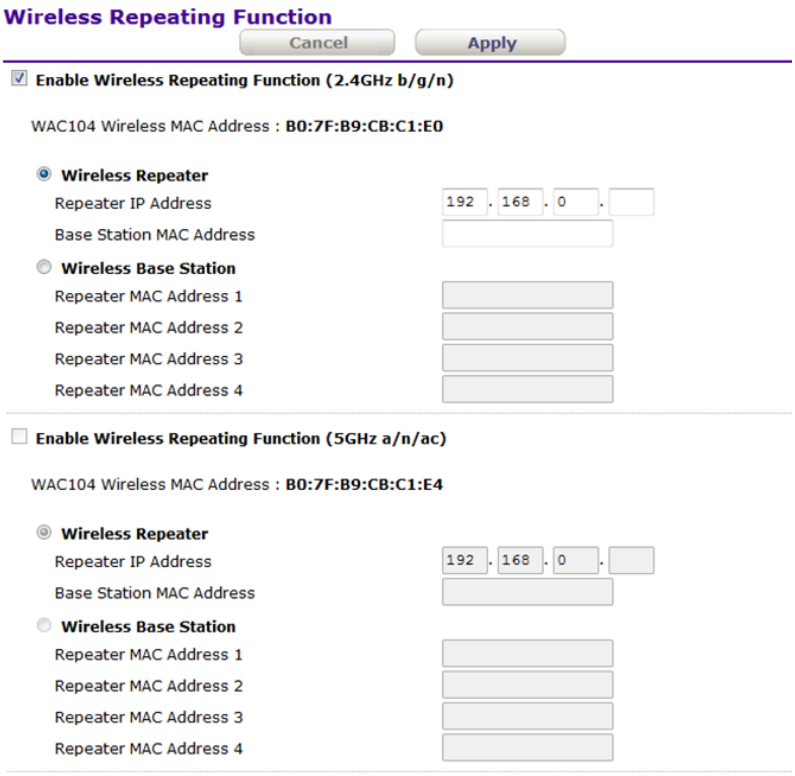
   A login window opens.
3. Enter the access point user name and password.

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

   The Home page displays.
4. Make sure that the WiFi settings match the requirements for the WiFi repeating function.

   For you to use the WiFi repeating function, you cannot use the auto channel feature for the access point and the SSID broadcast must be enabled. We recommend that you use WPA2-PSK to secure the WiFi communication for the WDS.
5. Select **Advanced Setup > Wireless Repeating Function**.

   The Wireless Repeating Function page displays.
6. Select the **Enable Wireless Repeating Function (2.4GHz b/g/n)** check box or the **Enable Wireless Repeating Function (5GHz a/n/ac)** check box.
7. Maker sure that the **Wireless Repeater** radio button is selected.



8. In the **Repeater IP Address** fields, type the IP address of the repeater access point.

   This IP address must be in the same subnet as the base station, but different from the LAN IP address of the base station.

9. In the **Base Station MAC Address** field, enter the MAC address of the access point that functions as the base station.
10. Click the **Apply** button.

    Your settings are saved.

11. Verify connectivity across the LANs.

    If the configuration is set up correctly, a computer on any WiFi or wired LAN segment of the access point that functions as the repeater can connect to the Internet or share files and printers with any other computer or server connected to the access point that functions as the base station.

Troubleshooting

6

This chapter provides information to help you diagnose and solve problems that you might experience with the access point. If you do not find the solution here, check the NETGEAR support site at *netgear.com/support* for product and contact information.

The chapter contains the following sections:

- *Quick Tips for Troubleshooting* on page 69
- *Troubleshoot With the LEDs* on page 70
- *Troubleshoot the WiFi Connectivity* on page 71
- *Troubleshoot Internet Browsing* on page 71
- *You Cannot Log In to the Access Point* on page 72
- *Changes Are Not Saved* on page 72
- *Troubleshoot Your Network Using the Ping Utility* on page 73

IMPORTANT:

The access point provides WiFi and LAN connectivity but is a bridge and not a router. Therefore, do not connect the access point directly to your DSL or cable modem. You must connect the access point to a router or, if your network includes a DHCP server, to a switch or hub that is connected to the DHCP server. (For more information, see *Connect the Access Point to Your Router or Network* on page 12.)

Quick Tips for Troubleshooting

If your network is unresponsive or does not function normally, restart your network:

1. Unplug the Ethernet cable from the access point to your router, network switch, or network hub.
2. Turn off the access point.
3. Plug in the Ethernet cable from the access point to your router, network switch, or network hub. Wait two minutes.
4. Turn on the access point and wait two minutes.

If you cannot connect over an Ethernet cable to the access point, try the following:

- Make sure that the Ethernet cables are securely plugged in.
- Make sure that your computer or WiFi device does not use a static IP address but is configured to receive an IP address automatically with DHCP. (For most devices, DHCP is the default setting.)

If you cannot connect over WiFi to the access point, try the following:

- Make sure that the WiFi LED on the access point is not off.
  If the WiFi LED is off, both WiFi radios are probably off too. For more information about the WiFi radios, see *Control the WiFi Radios* on page 37.
- Make sure that the WiFi settings in your WiFi device and access point match exactly.
  For a device that is connected over WiFi, the WiFi network name (SSID) and WiFi security settings of the access point and WiFi device must match exactly. The default SSIDs are on the product label (see *Product Label* on page 9). By default, the access point provides an open WiFi network that does not require a network key or password.
- Make sure that your WiFi device supports the security that you are using for your WiFi network (WEP, WPA, or WPA2). For information about WiFi security settings, see *View or Change the Basic WiFi Settings* on page 27.
- Make sure that your WiFi device is not too far from the access point or too close. To see if the signal strength improves, move your WiFi device near the access point but at least 6 feet (1.8 meters) away.
- Make sure that the WiFi signal is not blocked by objects between the access point and your WiFi device.
- Make sure that the access point's SSID broadcast is not disabled.
  If the access point's SSID broadcast is disabled, the WiFi network name is hidden and does not display in your WiFi device's scanning list. To connect to a hidden network, you must enter the network name and the WiFi password. For more information about the SSID broadcast, see *View or Change the Basic WiFi Settings* on page 27.
- Make sure that your WiFi device does not use a static IP address but is configured to receive an IP address automatically with DHCP. (For most devices, DHCP is the default setting.)

Troubleshoot With the LEDs

When you turn on the power, the LEDs light as described here:

1. The Power LED lights solid green temporarily, then blinks green, and finally turns solid green and remains that way, indicating that the startup procedure is complete and the access point is ready.
2. When the startup procedure is complete, verify the following:
   - The WiFi LED lights solid green or blinks green (unless the WiFi radios are turned off).
   - If a LAN device is connected to a LAN port, the associated LAN LED lights solid green or blinks green.

You can use the LEDs for troubleshooting. For more information, see the following sections:

- *Power LED Is Off* on page 70
- *Power LED Remains Blinking Green* on page 70
- *WiFi LED Is Off* on page 71

Power LED Is Off

If the Power LED and other LEDs are off when the access point is turned on, do the following:

- Make sure that the **Power On/Off** button on the back is in the on position, that is, it is pushed in.
- Make sure that the power cord is correctly connected to the access point and that the power supply adapter is correctly connected to a functioning power outlet.
- Make sure that you are using the 12V, 1.5A power adapter that NETGEAR supplied for this product.

If the error persists, a hardware problem might exist. For recovery instructions or help with a hardware problem, contact technical support at *netgear.com/support*.

Power LED Remains Blinking Green

When you turn on the power to the access point, the Power LED lights solid green temporarily, then blinks green, and finally turns solid green and remains that way, indicating that the startup procedure is complete and the access point is ready. During operation, the only time that the Power LED might be blinking green is when firmware is being upgraded.

If the Power LED remains blinking green and does not turn solid green, a failure occurred or the access point is malfunctioning.

If the Power LED does not turn solid green, do the following:

1. Turn the power off and back on and wait several minutes to see if the access point recovers.
2. If the access point does not recover, press and hold the **Reset** button to return the access point to its factory settings (see *Use the Reset Button* on page 45).

If the error persists, a hardware problem might exist. For recovery instructions or help with a hardware problem, contact technical support at *netgear.com/support*.

WiFi LED Is Off

If the WiFi LED remains off, check to see if both radios on the access point are disabled (see *Control the WiFi Radios* on page 37). By default, both radios are enabled and the WiFi LED lights solid green.

Troubleshoot the WiFi Connectivity

If you are experiencing trouble connecting over WiFi to the access point, try to isolate the problem:

- Make sure that the WiFi settings in your WiFi device and access point match exactly.
  For a device that is connected over WiFi, the WiFi network name (SSID) and WiFi security settings of the access point and WiFi device must match exactly. The default SSIDs are on the product label (see *Product Label* on page 9). By default, the access point provides an open WiFi network that does not require a network key or password.
- Does the WiFi device that you are using find your WiFi network?

  If not, check the WiFi LED on the top of the access point. If the WiFi LED is off, both WiFi radios are probably off too. For more information about the WiFi radios, see *Control the WiFi Radios* on page 37.
- If you disabled the access point's SSID broadcast, your WiFi network is hidden and does not display in your WiFi client's scanning list. (By default, SSID broadcast is enabled.) For more information, see *View or Change the Basic WiFi Settings* on page 27.
- Does your WiFi device support the security that you are using for your WiFi network (WEP, WPA, or WPA2)? For information about changing the WiFi security, see *View or Change the Basic WiFi Settings* on page 27.

Tip If you want to change the WiFi settings of the access point's network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

If your WiFi device finds your network but the signal strength is weak, check these conditions:

- Is your access point too far from your WiFi device or too close? Place your WiFi device near the access point but at least 6 feet (1.8 meters) away and see whether the signal strength improves.
- Are objects between the access point and your WiFi device blocking the WiFi signal?

Troubleshoot Internet Browsing

If your computer or WiFi device is connected to the access point but unable to load any web pages from the Internet, it might be for one of the following reasons:

- 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. If you manually entered a DNS address when you set up the access point (that

is, the access point uses static IP address settings), reboot your computer and verify the DNS address. Alternatively, you can configure your computer manually with DNS addresses, as explained in your operating system documentation.

- Your computer might not use the router to which the access point is connected as its TCP/IP bridge. If your computer obtains its information by DHCP, reboot the computer and verify the address of the router to which the access point is connected.
  For information about TCP/IP problems, see *Troubleshoot Your Network Using the Ping Utility* on page 73.

You Cannot Log In to the Access Point

If you are unable to log in to the access point from a computer on your local network and use the access point web management interface, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the access point.
- Make sure that the IP address of your computer is in the same subnet as the access point.
  If you did not enable the access point's DHCP client or configure a static IP address when you connected the access point to your router or network (see *Connect the Access Point to Your Router or Network* on page 12), the access point uses its default IP address of 192.168.0.100. In this situation, you must change the IP address on your computer to 192.168.0.210 with subnet mask 255.255.255.0 so that the IP addresses of your computer and the access point are in the same IP subnet.
- If your access point's IP address was changed and you do not know the current IP address, use an IP scanner application to detect the IP address. If you still cannot find the IP address, clear the access point's configuration to factory defaults. This sets the access point's IP address to 192.168.0.100. For more information, see *Return the Access Point to Its Factory Default Settings* on page 44 and *Factory Settings* on page 76.
- Make sure that Java, JavaScript, or ActiveX is enabled in your browser. If you are using Internet Explorer, click the **Refresh** button to be sure that the Java applet is loaded.
- Try quitting the browser and launching it again.
- Make sure that you are using the correct login information. The user name is **admin**, and the default password is **password**. Make sure that Caps Lock is off when you enter this information.

Changes Are Not Saved

If you are logged in to the access point web management interface and the access point does not save the changes that you make on a page, do the following:

- When entering configuration settings, always click the **Apply** button before moving to another page or tab or your changes are lost.
- Click the **Refresh** or **Reload** button in the web browser. It is possible that the changes occurred but that the old settings remain in the web browser's cache.

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 Access Point

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

To ping the access point from a Windows computer:

1. From the Windows taskbar, click the **Start** button and select **Run**.
2. In the field provided, enter **ping** followed by the IP address of the access point, as in this example:
   ping 192.168.0.100
3. Click the **OK** button.
   A message such as the following one displays:

   ```
   Pinging <IP address> with 32 bytes of data
   ```

   If the path is working, you see this message:

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

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

   ```
   Request timed out
   ```

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

- Wrong physical connections
  For a wired connection, make sure that the numbered LAN LED is lit for the port to which you are connected.
  Check that the appropriate LEDs are on for your network devices. If your access point 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 access point.
- 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 access point and your computer are correct and that the addresses are in the same subnet.

Test the Path From Your Computer to a Remote Device

After you verify 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 field provided, enter **ping -n 10** *IP address*.

IP address is the IP address of a remote device such as a remote DNS server.

If the path is functioning correctly, replies as described in *Test the LAN Path to Your Access Point* on page 73 display. If you do not receive replies, do the following:

- Check to see that your computer lists the IP address of the router to which the access point is connected as the default router. If the IP configuration of your computer is assigned by DHCP, this information is not visible in your computer's Network Control Panel.
- Check to see that the network address of your computer (the portion of the IP address specified by the netmask) is different from the network address of the remote device.

Factory Default Settings and Technical Specifications

A

This appendix includes the following sections:

- *Factory Settings* on page 76
- *Technical Specifications* on page 77

Factory Settings

You can reset the access point to the factory default settings, which are shown in the following table.

For more information about resetting the access point to its factory settings, see *Return the Access Point to Its Factory Default Settings* on page 44.

Table 2. WAC104 access point factory default settings

Feature	Default Setting
Access point login	
User login URL	192.168.0.100
User name (case-sensitive)	admin, nonconfigurable
Login password (case-sensitive)	password
IP settings	
DHCP client	Disabled **Note** The access point functions as a bridge between its WiFi and LAN clients and the router in your network. The access point does not provide routing services such as NAT and a DHCP server.
WiFi network	
WiFi communication	Enabled
SSID names	See product label
Security	None (open WiFi network)
Country/region	• North America: United States • Europe: Europe • Other continents: Varies by region
RF channel	Auto. The available channels depend on the region.
WiFi operating mode	• Up to 300 Mbps at 2.4 GHz • Up to 867 Mbps at 5 GHz
SSID broadcast	Enabled
20/40 MHz coexistence	Enabled

Table 2. WAC104 access point factory default settings (Continued)

Feature	Default Setting
Fragmentation length	2346
CTS/RTS threshold	2347
Preamble mode	Long Preamble
Transmission speed	Automatic, nonconfigurable **Note** Throughput can vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, affect the data throughput rate.
Radio transmission power	100%, nonconfigurable
802.11e WMM	Enabled, nonconfigurable
WPS	
WPS capability	Enabled
Access point's PIN	Enabled. For more information, see *Manage the WPS Settings* on page 60.
Keep Existing Wireless Settings	Enabled

Technical Specifications

The following table shows the technical specifications of the access point.

Table 3. WAC104 access point specifications

Feature	Description
Power adapter	12V, 1.5A (18W) The plug is localized to the country of sale. Power consumption 8.1W maximum
Dimensions (L x W x H)	239.65 x 181.45 x 40.6 mm (9.43 x 7.16 x 1.61 in.)
Weight	385 g (0.85 lb)
Operating temperature	0° to 40°C (32º to 104ºF)
Operating humidity	10 to 90% maximum relative humidity, noncondensing

Table 3. WAC104 access point specifications (Continued)

Feature	Description
Storage temperature	–4° to 158°C (–20º to 70ºF)
Storage humidity	5 to 95% maximum relative humidity, noncondensing
LAN	Four 10/100/1000BASE-T Ethernet (RJ-45) ports with Auto Uplink (Auto MDI-X)
WiFi standards	• IEEE 802.11ac specification • IEEE 802.11n 2.0 specification • IEEE 802.11g • IEEE 802.11b • IEEE 802.11a
Radio bands	2.4 GHz and 5 GHz, concurrent operation
Maximum theoretical WiFi throughput	300 Mbps in the 2.4 GHz band and 867 Mbps in the 5GHz band **Note** Throughput can vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, affect the data throughput rate.
Maximum number of supported clients	The access point can support a maximum of 128 WiFi clients: • Maximum number of 2.4 GHz WiFi clients: 64 • Maximum number of 5 GHz WiFi clients: 64 **Note** In a WiFi network, the number of clients is limited by the amount of WiFi traffic that is generated by each client.

Table 3. WAC104 access point specifications (Continued)

Feature	Description
Operating frequency range	• 2.4 GHz band - US: 2.412–2.462 GHz - Europe: 2.412–2.472 GHz - Australia: 2.412–2.472 GHz - Japan: 2.412–2.472 GHz • 5 GHz band - US: 5.18–5.24 + 5.745–5.825 GHz - Europe: 5.18–5.24 GHz and DFS (5.25–5.35 + 5.50–5.70) - Australia: 5.18–5.24 + 5.745–5.825 GHz - Japan: 5.18–5.24 GHz
802.11 security	WPA2-PSK, WPA and WPA2 (mixed mode), WPA/WPA2 Enterprise, and WEP