NETGEAR®
User Manual

802.11ac Wireless Access Point

Model WAC104

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Do not use this device outdoors.

Applicable to 6 GHz devices only: Only use the device indoors. The operation of 6 GHz devices is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet. Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

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Revision History

Publication Part Number	Publish Date	Comments
202-11698-05	July 2021	We added information about the initial set up page and changed the steps to log in to the local browser user interface (UI) for *all* tasks in this UM. **Chapter 1** : We changed: <u>Hardware Overview of the Access Point</u> on page 7, <u>Top panel with LEDs</u> on page 10, and <u>AP label</u> on page 12. We added <u>Additional documentation</u> on page 9 and <u>Safety instructions and warnings for an indoor access point</u> on page 13. **Chapter 2**: We changed <u>Connect and log in to the AP for initial configuration</u> on page 19, including the subsections, and <u>Connect a WiFi or wired device to the AP's network after installation</u> on page 29, including the subsections. We added <u>About logging in to the local browser UI</u> on page 18 and <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24. **Chapter 3**: We changed <u>Manage the basic WiFi settings and WiFi security of the WiFi network</u> on page 33. **Chapter 4**: We changed <u>Update the firmware of the AP</u> on page 47, including the subsections. We added <u>Change the local device password</u> on page 52 and <u>Enable password recovery or change the recovery questions</u> on page 53. **Chapter 5**: No changes (other than general changes that we applied throughout the entire manual). **Chapter 6**: We changed <u>Quick tips for troubleshooting</u> on page 83, <u>Power LED remains blinking green</u> on page 85, <u>Troubleshoot the WiFi connectivity</u> on page 86, <u>Troubleshoot Internet browsing</u> on page 87, and <u>You cannot log in to the AP's local browser UI</u> on page 88. **Appendix**: We changed <u>Factory default settings</u> on page 92 and <u>Technical specifications</u> on page 93. **General**: We made multiple other changes and improvements, and we reorganized the information in some chapters.
202-11698-04	January 2018	We updated the operating frequency ranges for the 5 GHz band in <u>Technical specifications</u> on page 93.
202-11698-03	July 2017	The DHCP client of the access point is now enabled by default. The default WiFi security is now WPA and WPA2 mixed mode and the default WiFi passphrase is sharedsecret. The access point now supports the www.aplogin.net URL. To document this new behavior, we made changes to the following sections: <u>AP label</u> on page 12 <u>Set up and connect the AP to your router</u> on page 17 <u>Connect and log in to the AP for initial configuration</u> on page 19 <u>Log in to the AP after you complete the initial log-in process</u> on page 26 <u>Connect a WiFi or wired device to the AP's network after installation</u> on page 29 <u>View or change the basic WiFi settings</u> on page 33 <u>Change the IP address settings of the AP</u> on page 57 We made very minor changes to multiple other sections.
202-11698-02 and 202-11698-01	November 2016	First publication.

Contents

Appendix A Factory Default Settings and Technical Specifications

1

Hardware Overview of the Access Point

The NETGEAR 802.11ac Wireless Access Point Model WAC104, in this manual referred to as the AP, 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 AP can be used in a standalone configuration connected to a router in a small network or integrated in a larger network.

IMPORTANT: The steps in this manual apply only if you update your AP firmware to version 1.0.4.15 or a later version and then reset the AP to factory defaults. For more information, see About logging in to the local browser UI on page 18. If your AP is running a firmware version earlier than version 1.0.4.15 and you do not update to version 1.0.4.15 or a later version, see the old user manual, which you can download by visiting netgear.com/support/download/. However, we strongly recommend that you download and install the latest firmware as soon as possible.

The chapter contains the following sections:

- Additional documentation
- Unpack the AP
- Top panel with LEDs
- Back panel
- Position the antennas
- AP label
- Safety instructions and warnings for an indoor access point

IMPORTANT: The AP provides WiFi and LAN connectivity but is a bridge and not a router. Therefore, do not connect the AP directly to your DSL or cable modem. You must connect the AP 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 Set up and connect the AP to your router on page 17.)

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

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.

Additional documentation

The following documents are available at netgear.com/support/download/:

- Installation guide for firmware version 1.0.4.15 and later versions
- Installation guide for firmware versions earlier than version 1.0.4.15
- User manual for firmware versions earlier than version 1.0.4.15
- Data sheet

Unpack the AP

The package contains the AP, 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 AP.

Figure 2. Overview of the LEDs

Table 1. LED descriptions

LED	Description
Power	**Solid green**. The AP is ready. **Solid green temporarily, blinking green temporarily, and finally solid green**. The AP is starting or was reset to factory default settings and is restarting. For more information about resetting the AP to factory default settings, see Return the AP to its factory default settings on page 55. **Blinking green**. The AP is starting or upgrading firmware. If the Power LED is blinking green at any other time, see Power LED remains blinking green on page 85. **Off**. Power is not supplied to the AP.
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 AP to join the WiFi network. For more information, see Use Wi-Fi Protected Setup to join the WiFi network of the AP on page 30.
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, seeControl the WiFi radios on page 43.
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 AP provides ports, buttons, and a DC power connector.
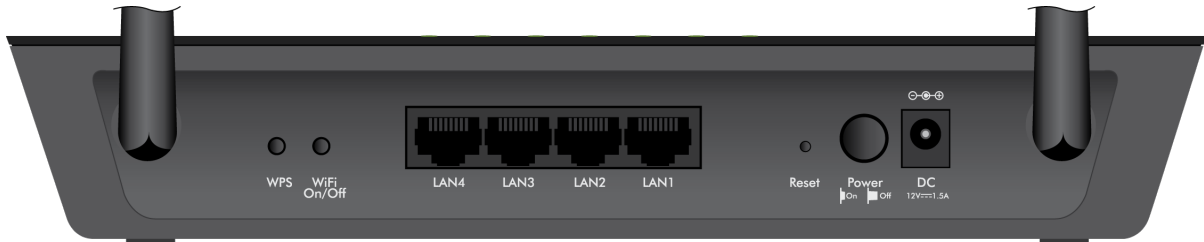
Figure 3. AP back panel

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

- **WPS button**. Press the **WPS** button to join the AP's WiFi network without typing the WiFi password. For more information, see Use Wi-Fi Protected Setup to join the WiFi network of the AP on page 30.

- **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 AP to Ethernet devices. You can use one of the LAN ports to connect the AP to a router, network switch, or network hub (see Set up and connect the AP to your router on page 17). You can use the other LAN ports to connect the AP to Ethernet devices such as a printer and desktop computers.

- **Reset button**. Press the **Reset** button to reset the AP to factory default settings. For more information, see Use the Reset button on page 55.

- **Power On/Off button**. Press the **Power On/Off** button to provide power to the AP.

- **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 AP's antennas perpendicular to each other, that is, at a 90-degree angle.

Figure 4. Examples of recommended antenna positions

AP label

The AP label on the bottom panel of the AP shows the default login information, serial number and MAC address of the AP, and other information. Depending on when you purchased your AP, the label might also show the default WiFi network names (SSIDs) and default WiFi passphrase.

The following figure is an example. The label on your AP might look differently.
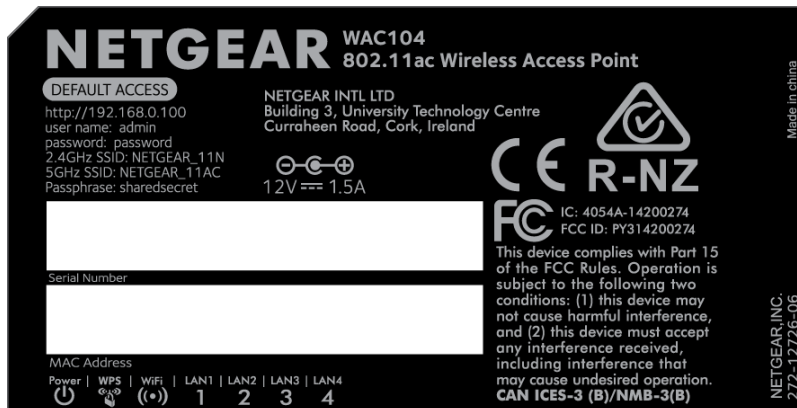
Figure 5. AP label

If the label does not show the defaults SSIDs and default WiFi passphrase, use the following information:

- The default SSID in the 2.4 GHz radio band is **NETGEAR_11N** with the default WiFi passphrase **sharedsecret**.

- The default SSID in the 5 GHz radio band is **NETGEAR_11AC** with the default WiFi passphrase **sharedsecret**.

Safety instructions and warnings for an indoor access point

Use the following safety guidelines to ensure your own personal safety and to help protect your system from potential damage.

To reduce the risk of bodily injury, electrical shock, fire, and damage to the equipment, observe the following precautions:

- This product is designed for indoor use only in a temperature-controlled and humidity-controlled environment. Note the following:

  - For more information about the environment in which this product must operate, see the environmental specifications in the appendix or the data sheet.

  - If you want to connect the product over an Ethernet cable to a device located outdoors, the outdoor device must be properly grounded and surge protected, and you must install an Ethernet surge protector inline between the indoor product and the outdoor device. Failure to do so can damage the product.

  - Before connecting the product to outdoor cables or wired outdoor devices, see https://kb.netgear.com/000057103 for additional safety and warranty information.

  Failure to follow these guidelines can result in damage to your NETGEAR product, which might not be covered by NETGEAR's warranty, to the extent permissible by applicable law.

- Do not service the product except as explained in your product documentation. Some devices should never be opened.

- If any of the following conditions occur, unplug the product from its power source, and then replace the part or contact your trained service provider:

  - Depending on your product, the power adapter, power adapter cable, power adapter plug, or PoE Ethernet cable is damaged.

  - An object fell into the product.

  - The product was exposed to water.

  - The product was dropped or damaged.

  - The product does not operate correctly when you follow the operating instructions.

- Keep the product away from radiators and heat sources. Also, do not block cooling vents.

- Do not spill food or liquids on your product components, and never operate the product in a wet environment. If the product gets wet, see the appropriate section in your troubleshooting guide, or contact your trained service provider.

- Do not push any objects into the openings of your product. Doing so can cause fire or electric shock by shorting out interior components.

- Use the product only with approved equipment.

- If applicable to your product, allow the product to cool before removing covers or touching internal components.

- Be sure that devices that are attached over Ethernet cables are electrically rated to operate with the power available in your location.

- Depending on your product, use only the supplied power adapter or an Ethernet cable that provides PoE.
  If your product uses a power adapter:

  - If you were not provided with a power adapter, contact your local NETGEAR reseller.

  - The power adapter must be rated for the product and for the voltage and current marked on the product electrical ratings label.

- To help prevent electric shock, plug any system and peripheral power cables into properly grounded power outlets.

- If applicable to your product, the peripheral power cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a three-wire cable with properly grounded plugs.

- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the extension cable or power strip does not exceed 80 percent of the ampere ratings limit for the extension cable or power strip.

- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).

- Position system cables, power adapter cables, and PoE Ethernet cables carefully. Route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.

- Do not modify power adapters, power adapter cables, or plugs. Consult a licensed electrician or your power company for site modifications.

- Always follow your local and national wiring rules.

2

Install and Access the AP in Your Network

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

The chapter contains the following sections:

- Position your AP
- Set up and connect the AP to your router
- About logging in to the local browser UI
- Connect and log in to the AP for initial configuration
- Find the IP address of the AP when you cannot use aplogin.net
- Log in to the AP after you complete the initial log-in process
- Change the language
- Set the time zone and adjust the daylight saving time
- Connect a WiFi or wired device to the AP's network after installation

Note: In this chapter, we refer to the access point as the AP.

Position your AP

Consider how you want to position the AP. Place it where you want to add WiFi, positioned so the WiFi range of the AP provides an optimal coverage area for your WiFi devices.

The WiFi range or coverage area can vary significantly depending on the physical placement of your AP. For example, the thickness and number of walls that the WiFi signal passes through can limit the range.

Additionally, other WiFi access points in and around your office or home might affect your AP's signal. WiFi access points can be routers, repeaters, WiFi range extenders, and any other devices that emit WiFi signals.

Tips for positioning your AP:

- Place your AP so that you can connect it with an Ethernet cable to your router and within reach of an AC power outlet.

- Place the AP near the center of the area where your computers and other devices operate, and within a line of sight to your WiFi devices.

- Place the AP in an elevated location, minimizing the number of walls and ceilings between the AP and your WiFi client devices.

- Place the AP away from electrical devices like these:

   - Ceiling fans

   - Home security systems

   - Microwaves

   - Computers

   - Base of a cordless phone

   - 2.4 GHz and 5.8 GHz cordless phones

- Place the AP 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 (see <u>Manage the basic WiFi settings and WiFi security of the WiFi network</u> on page 33).

Set up and connect the AP to your router

The AP functions as a WiFi access point and LAN switch for Internet access but does *not* provide routing services such as NAT and does not include a DHCP server. Basically, the AP functions as a bridge between your existing router and the AP's LAN and WiFi clients, which receive an IP address from or through the router.

The easiest way to set up and start using the AP is to connect it to your router. If your network includes an independent DHCP server, connect the AP to a switch or hub that is connected to the DHCP server.

Note: Do not directly connect the AP to your DSL or cable modem.

By default, the DHCP client of the AP is enabled, so the AP receives an IP address from your router (almost any router functions as a DHCP server) or from a DHCP server in your network.
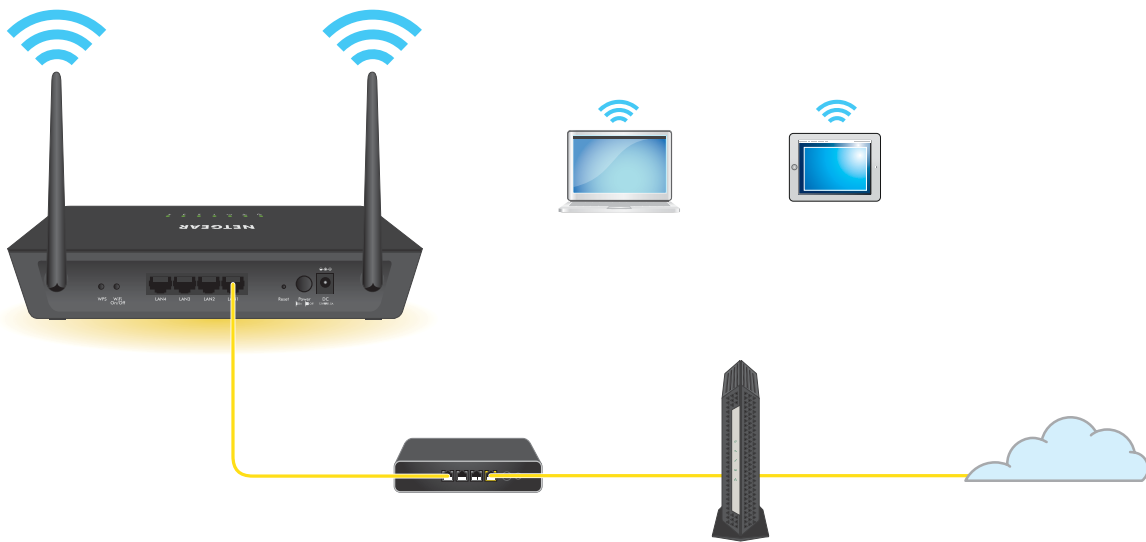
Figure 6. Connect the AP to a router

To connect the AP to a router (or switch or hub that is connected to a DHCP server):

1. Connect the Ethernet cable that came in the package to one of the AP's Ethernet ports.

    You can use any of the four LAN ports on the AP.

2. Connect the other end of the cable to a LAN port on your router (or switch or hub that is connected to a DHCP server).

3. Power on the AP.

    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.

4. Log in to the AP by using one of the methods that are described in Connect and log in to the AP for initial configuration on page 19.

About logging in to the local browser UI

IMPORTANT: The steps to log in to the local browser user interface (UI) of your AP depend on the firmware version that your AP is running.

The steps in this manual apply only if you update your AP firmware to version 1.0.4.15 or a later version and then reset the AP to factory defaults. If you already reset the AP to factory defaults after you updated to version 1.0.4.15, and you update the AP to a version later than 1.0.4.15, you do not need to reset the AP to factory defaults again.

If your AP is running a firmware version earlier than version 1.0.4.15 and you do not update to version 1.0.4.15 or a later version, see the old user manual, which you can download by visiting netgear.com/support/download/.

IMPORTANT: We strongly recommend that you download and install the latest firmware as soon as possible.

Connect and log in to the AP for initial configuration

After you set up the AP, you can use several methods to connect and log in to the AP for initial configuration.

You can use WiFi to connect your WiFi-enabled computer or mobile device such as a tablet or smartphone to the AP or you can use a computer and an Ethernet cable to connect to a LAN port on the AP. If you connect the AP to your network (for example, through a switch or hub), you can also connect to the AP over Ethernet using a computer that is connected to the same network as the AP.

The following sections describe how you can connect to the AP:

- Connect over WiFi using a computer or mobile device on page 19

- Connect over Ethernet using a computer connected to the same network on page 21

- Connect over Ethernet using a directly connected computer on page 23

To connect to the AP for initial configuration, follow the procedure in *one* of these sections.

Connect over WiFi using a computer or mobile device

This section describes how to connect to the AP for the first time over WiFi using a WiFi-enabled computer or mobile device. With this method, it does not matter whether the AP received an IP address from the router or a DHCP server or if the AP functions with its default IP address of 192.168.0.100.

To connect to the AP over WiFi using a WiFi-enabled computer or mobile device:

1. Connect a WiFi-enabled computer or mobile device to the AP either by using the manual method or the Wi-Fi Protected Setup (WPS) method:

   • **Manual method**: Do the following:

     a. Open the software utility that manages your WiFi connections.
        The utility scans for all WiFi networks in your area.

     b. Find and select one of the AP's default WiFi network names (SSIDs), which are **NETGEAR_11N** and **NETGEAR_11AC**.
        If you cannot find the SSIDs, press the **WiFi On/Off** button on the back panel of the AP, wait one minute, and see if the utility displays one or both of the SSIDs.

     c. Type the default WiFi passphrase, which is **sharedsecret**.

   • **WPS method**: Do the following:

     a. For help with the WPS button on *your* device, check the instructions or online help that came with that device. (Some older equipment cannot use WPS.)

     b. Press the **WPS** button on the back panel of the AP.

     c. Within two minutes, on your computer or mobile device, press its physical **WPS** button or click its onscreen **WPS** button.

   Your computer or mobile device connects to the AP's WiFi network.

2. Launch a web browser and enter **http://www.aplogin.net** or **http://www.aplogin.com** in the address field.
   These URLs are the same as the IP address 192.168.0.100.

   A login window displays.

3. Enter the AP user name and password.

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

   The initial set up page displays. This page displays only the first time that you log in to the local browser user interface (UI).

4. Set up a new admin password (also called the local device password) and specify answers to two security questions (you can choose the questions).

   The new admin password replaces the default password **password**, so we recommend that you write down your new password or save it in another way.

5. As an option for greater security, set new WiFi network names (SSIDs) for the NETGEAR_11N and NETGEAR_11AC default SSIDs and new WiFi passphrases for the default sharedsecret WiFi passphrase that is used for both SSIDs.

    The new SSIDs and WiFi passphrases replace the default SSIDs and WiFi passphrase, so we recommend that you write down the new information or save it in another way.

6. If your router does not function as a DHCP server (this is very uncommon), assign a static IP address to the AP by typing the static IP address information.

    Note: If you are not sure, we recommend that you leave the default setting (that is, leave the **Get dynamically from existing router** button selected). The default settings works for almost all networks.

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

8. If you set a new SSID and passphrase, reconnect to the AP using the new SSID and passphrase.

9. Log back in to the local browser UI using your new admin password.
    The Home page displays. The IP Settings pane shows the IP address that is assigned to the AP.

10. Write down the AP IP address or save it in another way.
    You might need this IP address to log in to the AP in the future.

    You can now use the AP or customize the settings for your network environment.

Connect over Ethernet using a computer connected to the same network

The following procedure assumes that your network includes a router that functions as a DHCP server and that the AP and the computer are on the same network. By default, the DHCP client of the AP is enabled.

If you want to set up the AP with a static (fixed) IP address, we recommend that you follow the procedure that is described in Connect over WiFi using a computer or mobile device on page 19 or Connect over Ethernet using a directly connected computer on page 23.

To connect to the AP using a computer that is connected to the same network as the AP:

1. Determine the IP address that your router assigned to the AP by one of the following ways:

   - **Access your router**: Access the DHCP server information of your router to see the devices that are connected to it, including the AP. The IP address that is assigned to the AP is listed.

   - **Use an IP scanner**: Use an IP scanner application (they are available free of charge on the Internet) in the network of your existing router. The IP scanner results include the IP address that is assigned to the AP.

2. On the computer, launch a web browser and, in the address bar, enter the IP address that is assigned to the AP.

   A login window displays.

3. Enter the AP user name and password.

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

   The initial set up page displays. This page displays only the first time that you log in to the local browser user interface (UI).

4. Set up a new admin password (also called the local device password) and specify answers to two security questions (you can choose the questions).

   The new admin password replaces the default password **password**, so we recommend that you write down your new password or save it in another way.

5. As an option for greater security, set new WiFi network names (SSIDs) for the NETGEAR_11N and NETGEAR_11AC default SSIDs and new WiFi passphrases for the default sharedsecret WiFi passphrase that is used for both SSIDs.

   The new SSIDs and WiFi passphrases replace the default SSIDs and WiFi passphrase, so we recommend that you write down the new information or save it in another way.

6. Click the **Apply** button.

   Your settings are saved.

7. Log back in to the local browser UI using your new admin password.

   The Home page displays. The IP Settings pane shows the IP address that is assigned to the AP.

   You can now use the AP or customize the settings for your network environment.

Connect over Ethernet using a directly connected computer

You can use a computer that is directly connected through an Ethernet cable to a LAN port on the AP.

The default IP address of the AP is 192.168.0.100.

To connect to the AP using a computer that is connected to a LAN port on the AP:

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

2. 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 AP IP address.)

   For more information about changing the IP address on your computer, see the help or documentation for your computer.

3. Use an Ethernet cable to connect your computer to a LAN port on the AP.

4. On the computer, launch a web browser and enter **192.168.0.100** in the address bar.

   A login window displays.

5. Enter the AP user name and password.

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

   The initial set up page displays. This page displays only the first time that you log in to the local browser user interface (UI).

6. Set up a new admin password (also called the local device password) and specify answers to two security questions (you can choose the questions).

   The new admin password replaces the default password **password**, so we recommend that you write down your new password or save it in another way.

7. If your router does not function as a DHCP server (this is very uncommon), assign a static IP address to the AP by typing the static IP address information.

   Note: If you are not sure, we recommend that you leave the default setting (that is, leave the **Get dynamically from existing router** button selected). The default settings works for almost all networks.

8. Click the **Apply** button.

   Your settings are saved.

9. If you changed the IP address of the AP to a static IP address in a subnet that is different from the 192.168.0.x subnet, temporarily change the IP address on your computer to an address in the same subnet as the static IP address that you just assigned to the AP.

    You can use 255.255.255.0 as the subnet mask.

10. Log back in to the local browser UI using your new admin password.

    The Home page displays. The IP Settings pane shows the IP address that is assigned to the AP.

    You can now use the AP or customize the settings for your network environment.

11. After you complete the initial configuration, you can change the computer back to its original IP address settings.

Find the IP address of the AP when you cannot use aplogin.net

Under the following circumstances, you cannot use **http://www.aplogin.net** (or **http://www.aplogin.com** or **http://www.192.168.0.100**) to log in to the AP:

*   Your computer or mobile device is not directly connected to the AP network even it is on the same network as the AP.

*   Your computer or mobile device *is* directly connected to the AP, but the AP is using a static IP address.

    Note: If the AP can reach its DNS server only over the Internet (for example, the IP address of the DNS server is 8.8.8.8), you cannot use **http://www.aplogin.net**. However, if the DNS server is the IP address of the router to which the AP connects but the router's Internet connection is down, you *can* use **http://www.aplogin.net** because the AP can still reach the router.

*   Your network includes another NETGEAR device that is also accessible by using **http://www.aplogin.net**. In such a situation, if you use **http://www.aplogin.net**, you might log in to the AP or you might log in to the other NETGEAR device, depending on your network situation.

In these situations, use the IP address that was assigned to the AP by your router during the setup process (see Connect and log in to the AP for initial configuration on page 19) to log in to the local browser UI of the AP.

If you do not know the IP address that was assigned to the AP, use *one* of the following options to find the IP address of the AP:

- Only if the AP is connected to the Internet, do one of the following:

  - **Option 1. Temporarily connect directly and log in**: Temporarily connect a computer directly either through an Ethernet cable or over WiFi or a mobile device over WiFi to the AP and do the following:

    1. Launch a web browser and enter **http://www.aplogin.net** in the address field.
       A login window displays.

    2. Enter the AP local device password.
       The local device password is the one that you specified. The local device password is case-sensitive.
       The Home page displays.

    3. In the IP Settings pane, the IP Address field displays the IP address that is assigned to the AP.

  - **Option 2. Temporarily connect directly and ping the AP**: Temporarily connect a computer or mobile device directly through an Ethernet cable or over WiFi to the AP and send a ping to **www.aplogin.net**.
    How to send a ping depends on your computer or mobile device.
    On your computer or mobile device, the field with the ping results displays the IP address that is assigned to the AP.

- Regardless of whether the AP is connected to the Internet, do one of the following:

  - **Option 1. Access your router**: Access the DHCP server information of your router to see the devices that are connected to it, including the AP. The IP address that is assigned to the AP is listed.

  - **Option 2. Use an IP scanner**: Use an IP scanner application (they are available free of charge on the Internet) in the network of your existing router. The IP scanner results include the IP address that is assigned to the AP.

If you made a direct connection to the AP, you can now terminate that connection. Connect your computer or mobile device to the same network as the AP, and use the discovered IP address to log in to the AP.

Log in to the AP after you complete the initial log-in process

After you complete the initial log-in process, the AP is ready for use and you can change the settings and monitor the traffic. To log in to the AP's local browser UI after you complete the initial log-in process

To log in to the AP's local browser UI after you complete the initial log-in process:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is case-sensitive.

   The Home page displays.

The Home page displays a dashboard that lets you see the status of your AP 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 <u>View information about the AP and the IP and WiFi settings</u> on page 61. 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

The local device password is the one that you specified. The local device password is 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.

Set the time zone and adjust the daylight saving time

The AP might detect the time zone automatically or you might need to adjust the time zone and daylight saving time settings. When the AP 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

   A login window displays.

3. Enter the AP local device password.
   The local device password is the one that you specified. The local device password is 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 AP operates.

6. If the AP 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 AP connects over the Internet to an NTP server, the date and time that display on the page are adjusted according to your settings.

Connect a WiFi or wired device to the AP's network after installation

After you install the AP in your network (see Set up and connect the AP to your router on page 17), you can connect devices to a WiFi network on the AP or to the AP's LAN through Ethernet cables.

If the device that you are trying to connect is set up to use a static IP address, change the settings of your device so that it uses Dynamic Host Configuration Protocol (DHCP) and can receive an IP address through or from the AP.

Note: Connecting to the AP's network is not the same as connecting to the local browser UI to view or manage the AP's settings. For information about logging in to the AP's local browser UI, see Log in to the AP after you complete the initial log-in process on page 26.

Join a WiFi network on the AP

You can manually add a WiFi device such as a WiFi-enabled computer, tablet, or smartphone to a WiFi network of the AP.

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

To connect a device to a WiFi network on the AP:

1. Make sure that the AP 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, open the software application that manages your WiFi connections.

    This application scans for all WiFi networks in your area.

3. Look for one of the AP's networks and select it.

    If you did *not* change the default WiFi network names (SSIDs), the SSID for the 2.4 GHz radio band is **NETGEAR_11N** and the SSID for the 5 GHz radio band is **NETGEAR_11AC**.

4. Enter the WiFi passphrase.

   If you did *not* change the default WiFi passphrase, it is **sharedsecret**, and it applies to either default SSID.

5. Click the **Connect** button.

   The device connects to the WiFi network of the AP.

Use Wi-Fi Protected Setup to join the WiFi network of the AP

You can use Wi-Fi Protected Setup (WPS) to add a WiFi device such as a WiFi-enabled computer, tablet, or smartphone to the WiFi network on the AP.

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 device gets the security settings from the AP 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 AP:

1. Make sure that the AP 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 AP for three seconds.

   For more information, see Back panel on page 11.

   For two minutes, the AP attempts to find the WiFi device (that is, the client) that you want to join the AP's WiFi network, and the WPS LED on the top panel of the AP blinks slowly.

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 AP.

Connect to the AP through an Ethernet cable

You can connect a computer or other LAN device to the AP using an Ethernet cable and join the AP's local area network (LAN).

To connect a computer or LAN device to the AP with an Ethernet cable:

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

2. Connect an Ethernet cable to an Ethernet port on the computer or LAN device.

3. Connect the other end of the Ethernet cable to one of the numbered Ethernet ports on the AP.

   You can use any of the four LAN ports on the AP.

   Note: You can also connect the computer to a switch or hub that is connected to one of the LAN ports on the .

   The AP LAN LED for the port to which you attached the device lights solid green. Your computer or LAN device connects to the local area network (LAN).

3

Manage the Basic WiFi Network Settings

This chapter describes how you can manage the basic WiFi network settings of the AP. For information about the advanced WiFi settings, see Manage the Advanced WiFi Features on page 68.

Tip: If you want to change the settings of the AP'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
- Control the WiFi radios

Note: In this chapter, we refer to the access point as the AP.

Manage the basic WiFi settings and WiFi security of the WiFi network

The AP comes with preset WiFi network names (SSIDs) and WPA and WPA2 mixed mode WiFi security with a preset WiFi passphrase:

- The default SSID in the 2.4 GHz radio band is **NETGEAR_11N** with the default WiFi passphrase **sharedsecret**.

- The default SSID in the 5 GHz radio band is **NETGEAR_11AC** with the default WiFi passphrase **sharedsecret**.

View or change the basic WiFi settings

You can view or change the basic WiFi settings and WiFi security. The AP 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 AP'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. Connect your computer or mobile device to the AP in one of the following ways:

    - Connect directly to the AP's WiFi network or LAN.

    - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

    Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

    A login window displays.

3. Enter the AP local device password.

    The local device password is the one that you specified. The local device password is 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 AP. By default, the name is WAC104.
Region	From the menu, select the region in which the AP operates. For some countries, you cannot change the region because it is preset. **Note**: Make sure the country is set to the location where the device is operating. The customer is responsible for complying within the local, regional, and national regulations set for channels, power levels, and frequency ranges. **Note**: It might not be legal to operate the AP 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.

(Continued)

Field	Description
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 (NETGEAR_11N). If you change the SSID, enter a 32-character (maximum), case-sensitive name in this field.
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 AP 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 AP. **Note**: If you set up a WiFi distribution system (WDS; see Set up a WiFi distribution system on page 76), 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)

Field	Description

Security Options
This information applies to the 2.4 GHz WiFi network.

If you change the WiFi security, select one of the following WiFi security options for the AP's WiFi network:

- **None**. 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 39.

- **WPA2-PSK [AES]**. This type of security enables WiFi devices that support WPA2 to join the AP'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 AP's WiFi network, a user must enter this passphrase.

- **WPA-PSK [TKIP] + WPA2-PSK [AES]**. This option is the default setting and the default WiFi passphrase is sharedsecret. This type of security enables WiFi devices that support either WPA or WPA2 to join the AP'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 AP'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 41.

Wireless Network (5GHz a/n/ac)

Name (SSID)	The SSID is the WiFi network name. If you did not change the SSID, the default SSID for the 5 GHz band displays (NETGEAR-11AC). 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 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 AP 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 AP. **Note**: If you set up a WiFi distribution system (WDS; see Set up a WiFi distribution system on page 76), 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 AP's WiFi network:

- **None**. 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 AP'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 AP's WiFi network, a user must enter this passphrase.

- **WPA-PSK [TKIP] + WPA2-PSK [AES]**. This option is the default setting and the default WiFi passphrase is sharedsecret. This type of security enables WiFi devices that support either WPA or WPA2 to join the AP'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 AP'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 41.

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 AP 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 <u>View devices on the network</u> on page 59.) 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 AP 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 AP's network, use a wired connection to avoid being disconnected when the new WiFi settings take effect.

To configure WEP security:

1. Enter the AP 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.

2. Select **Setup > Wireless Setup**.

   The Wireless Network page displays.

3. 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.

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

Wireless Network (2.4GHz b/g/n)

Name (SSID): NETGEAR_11N

Channel: Auto ▾

Mode: Up to 54 Mbps ▾

☑ Enable SSID Broadcast

Security Options

○ None

◉ WEP

○ WPA2-PSK [AES]

○ WPA-PSK [TKIP] + WPA2-PSK [AES]

○ WPA/WPA2 Enterprise

Security Encryption (WEP)

Authentication Type: Automatic ▾

Encryption Strength: 64-bit ▾

Security Encryption (WEP)

Key 1: ◉

Key 2: ○

Key 3: ○

Key 4: ○

5. 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.

6. 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.

7. 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 AP's WiFi network, a user must enter the key value for the key that you specified as the active key.

8. 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 AP's WiFi network, a user must enter the key value for the key that you specified as the active key.

9. Click the **Apply** button.

Your settings are saved.

10. 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 AP 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 <u>View devices on the network</u> on page 59.) 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 AP to provide WPA and WPA2 Enterprise WiFi security, the WiFi network that the AP provides must be able to access a RADIUS server.

Tip: If you want to change the WiFi settings of the AP'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 <u>Set up a WiFi distribution system</u> on page 76). If you use a WDS, configure another type of WiFi security.

To configure WPA and WPA2 security:

1. Connect your computer or mobile device to the AP in one of the following ways:

- Connect directly to the AP's WiFi network or LAN.

- Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP'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.

(Continued)

Field	Description
RADIUS Server Port	Enter the number of the port on the AP 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 AP 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 AP 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 <u>View devices on the network</u> on page 59.) If it does, it is connected to the network.
    - Are you using the correct network name (SSID) and password?

Control the WiFi radios

The AP 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 AP. When the WiFi radios are off, you can still use an Ethernet cable for a LAN connection to the AP.

You can turn the WiFi radios on and off with the **WiFi On/Off** button on the AP, or you can log in to the AP and enable or disable the WiFi radios through the AP local browser UI. If you are close to the AP, it might be easier to press the **WiFi On/Off** button. If you are away from the AP or already logged in, it might be easier to enable or disable the radios through the AP local browser UI. You can also turn the WiFi radios off and on based on a schedule. (See <u>Add a WiFi schedule</u> on page 69.)

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 AP 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 AP, 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 AP 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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.

4

Manage the AP and Monitor the Traffic

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

The chapter includes the following sections:

- Update the firmware of the AP
- Manage the configuration file of the AP
- Change the local device password
- Enable password recovery or change the recovery questions
- Recover the local device admin password
- Return the AP to its factory default settings
- Change the IP address settings of the AP
- View devices on the network
- View the status and statistics of the AP
- View or clear the logs

Note: In this chapter, we refer to the access point as the AP.

Update the firmware of the AP

From time to time, or as needed, NETGEAR makes new firmware (software) available.

You can log in to the AP and let the AP check if new firmware is available, or you can manually upload a specific firmware version to your AP.

Depending on how you are connected to the AP, we recommend the following firmware update methods:

- **WiFi connection from a computer or mobile device**: If you are connected over WiFi to the AP, we recommend that you let the AP check the Internet to see if new firmware is available. See <u>Check for new firmware and update the AP</u> on page 47. If you let the AP check for new firmware and new firmware is available, it is downloaded directly to the AP.

  Note: If you want to load a particular firmware version (but not necessarily the latest firmware version), you must manually update the firmware (see below). In that situation, we recommend that you use a wired connection to the AP.

- **Wired connection from a computer**: If you are connected over an Ethernet cable to a LAN port on the AP or over a LAN connection to the same network as the AP, we recommend that you manually update the firmware. See <u>Download new firmware and update the AP</u> on page 49. With the manual update mode, if new firmware is available, or you want to load a particular firmware version (but not necessarily the latest firmware version), you must download it to your computer and then upload it to your AP.

Check for new firmware and update the AP

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

IMPORTANT: If you update from a firmware version *earlier* than version to 1.0.4.15 to version 1.0.4.15 or a later version, you must reset the AP to factory defaults *after* you update the firmware.

To check for new firmware and update your AP:

1. Connect your computer or mobile device to the AP in one of the following ways:

   • Connect directly to the AP's WiFi network or LAN.

   • Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is case-sensitive.

   The Home page displays.

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

   The Firmware Update page displays.

5. Click the **Check** button.

   The AP 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 AP 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 AP. Wait until the AP 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 AP restarts.

7. Verify that the AP runs the new firmware version by logging back into the local browser UI.

   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 AP after updating.

Download new firmware and update the AP

IMPORTANT: If you update from a firmware version *earlier* than version to 1.0.4.15 to version 1.0.4.15 or a later version, you must reset the AP to factory defaults *after* you update the firmware.

To download new firmware and update your AP:

1. Visit <u>netgear.com/support/download/</u> and locate the support page for the router.

2. Read the new firmware release notes to determine whether you must reconfigure the AP after updating.

3. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

4. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

5. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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`.

   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 AP. Wait until the AP 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 AP restarts.

9. Verify that the AP runs the new firmware version by logging back into the local browser UI.

   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 AP

The configuration settings of the AP are stored within the AP 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 AP's configuration settings:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP. When the restoration is complete, the AP 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 AP. Wait until the AP finishes restarting and the Power LED remains solid green.

Change the local device password

During the initial log-in process, you specified the local device password (also referred to as the admin password). This is the password that you use to log in to the local browser UI of the AP with the user name admin. You can change this password again.

Your password must contain:

- 8 to 32 characters
- At least one uppercase character
- At least one lowercase character
- At least one number
- At least one special character, such as the following characters:
  @ # $ % ^ & * ( ) !

To change the password for the user name admin for login to the local browser UI of the AP:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.
   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 <u>Enable password recovery or change the recovery questions</u> on page 53.

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

Enable password recovery or change the recovery questions

During the initial log-in process, you were prompted to set up password recovery for the local device password (also referred to as the admin password). This is the password that you use to log in locally to the AP with the user name admin. If you forget this password, you can recover it. The recovery process is supported in the Chrome, Safari, Firefox, and Internet Explorer browsers.

If you did not enable password recovery during the initial log-in process, you can enable it. If you did enable password recovery, you change the password recovery questions.

To enable password recovery or change the password recovery questions:

1. Connect your computer or mobile device to the AP in one of the following ways:

    - Connect directly to the AP's WiFi network or LAN.

    - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

    Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

    A login window displays.

3. Enter the AP local device password.

    The local device password is the one that you specified. The local device password is case-sensitive.

    The Home page displays.

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

    The Set Password page displays.

5. If you did not yet do so, select the **Enable Password Reset** check box.

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

7. Click the **Apply** button.

    Your settings are saved.

Recover the local device admin password

During the initial log-in process, you must both customize the local device password and set up password recovery. If three local login failures occur, you can try to recover the password. This recovery process is supported in the Internet Explorer, Firefox, Chrome, and Safari browsers.

To recover your local device password:

1. Connect your computer or mobile device to the AP in one of the following ways

    - Connect directly to the AP's WiFi network or LAN.

    - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **www.aplogin.net** in the address field.

    Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

    A login window displays.

3. Enter your local device password.

    If you enter an incorrect password three times, you are prompted to enter the serial number of the AP.

    The serial number is on the AP label.

4. Enter the serial number of the AP.

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 window displays prompts for the answers to your security questions.

8. Enter the saved answers to your security questions.

9. Click the **Continue** button.

   A window displays your recovered password.

10. Click the **Login again** button.

    A login window displays.

11. With your recovered password, log in to the AP.

Return the AP to its factory default settings

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

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

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

After you reset the AP to factory default settings, the user name is admin, the password is password, and the AP's DHCP client is enabled. If the AP is not connected to a network, its default LAN IP address is 192.168.0.100. For a list of factory default settings, see Factory default settings on page 92.

Use the Reset button

> **CAUTION:** This process erases all settings that you configured in the AP.

To reset the AP to factory default settings:

1. On the back of the AP, 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 AP 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 AP local browser UI, do not close the browser, click a link, or load a new page. Do not turn off the AP. Wait until the AP finishes restarting and the Power LED remains solid green.

Erase the settings

> **CAUTION:** This process erases all settings that you configured in the AP.

To erase the settings:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP 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 AP. Wait until the AP finishes restarting and the Power LED remains solid green.

Change the IP address settings of the AP

Under some circumstances, for example, when you move the AP from one network to another, you might need to change the IP address settings of the AP.

For information about connecting the AP to your router or network, see Set up and connect the AP to your router on page 17 and Connect and log in to the AP for initial configuration on page 19.

The following procedure describes how you can either configure a static IP address or reenable the DHCP client of the AP.

To change the IP settings of the AP:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is case-sensitive.

   The Home page displays.

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

The previous figure shows that the AP'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.

6. Click the **Apply** button.

    Your settings are saved and the AP restarts. After the AP becomes available again, to log in to the AP local browser UI, you must use either the static IP address that you configured or the IP address that your router or DHCP server in the network assigned to the AP.

    You can determine that IP address either by accessing the router or DHCP server or by using an IP network scanner. (Free IP address scanner utilities are available online.)

View devices on the network

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

To display the attached wired and WiFi devices:

1. Connect your computer or mobile device to the AP in one of the following ways:

   • Connect directly to the AP's WiFi network or LAN.

   • Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is case-sensitive.

   The Home page displays.

4. Select **Administration > Attached Devices**.

Attached Devices

				Refresh

Wired Devices

Status	Device Name	IP Address	MAC Address	Connection Type
Allowed	Unknown	192.168.100.1	DC:9F:DB:CB:CB:CB	Wired
Allowed	BUSINESSLAPTOP	192.168.100.122	00:24:9B:CB:CB:CB	Wired
Allowed	PAVILION	192.168.100.143	38:60:77:CB:CB:CB	Wired

Wireless Devices (Wireless intruders also show up here)

Status	Device Name	BSSID	SSID	Type	Radio	MAC Address	Connection Type
Allowed	BUSINESSLAPTOP	B0:7F:B9:CB:CB:CB	NETGEAR_11N	WPA2-PSK	2.4G	60:6C:66:CB:CB:CB	Wireless

Wired devices are connected to the AP with Ethernet cables. WiFi devices are connected to the AP 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.
Wireless Devices	
Status	If access control is enabled (see <u>Manage access to the WiFi network through a WiFi access list</u> on page 71), 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 AP

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

View information about the AP and the IP and WiFi settings

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

To view information about the AP and the IP and WiFi settings:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is case-sensitive.

   The Home page displays.

AP Information	
AP Name	WAC104
Ethernet MAC Address	B0:7F:B9:CB:C1:E0
Wireless MAC Address for 2.4 GHz	B0:7F:B9:CB:C1:E0
Wireless MAC Address for 5 GHz	B0:7F:B9:CB:C1:E4
Region	United States
Firmware Version	V1.0.3.7
Serial Number	3XM767B203EFC
Current Time	Monday, 19 Sep 2016 15:51:00
Up Time	3 Days 1 Hours 33 Minutes 44 Seconds

IP Settings	
IP Address	192.168.100.176
Subnet Mask	255.255.255.0
Default Gateway	192.168.100.1
Domain Name Server	192.168.100.1
DHCP Client Status	Enabled

Wireless Settings (2.4GHz b/g/n)	
AP Mode	AP
Channel	5
SSID	NETGEAR_11N
Mode	Up to 300 Mbps
Broadcast SSID	On
Wi-Fi Protected Setup	Configured

Wireless Settings (5GHz a/n/ac)	
AP Mode	AP
Channel	P(149)+S(153)+S(157)+S(161)
SSID	NETGEAR_11AC
Mode	Up to 867 Mbps
Broadcast SSID	On
Wi-Fi Protected Setup	Configured

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 AP 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 AP'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 AP name. By default, the name is WAC104. For more information, see <u>Manage the basic WiFi settings and WiFi security of the WiFi network</u> on page 33.
Ethernet MAC Address	The Media Access Control (MAC) address of Ethernet (LAN) interface through which the AP connects to the router or network switch or hub. This address does not change.
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 AP is being used. For more information, see see <u>Manage the basic WiFi settings and WiFi security of the WiFi network</u> on page 33.
Firmware Version	The version of the AP firmware. If you upgrade the firmware on the AP, the version changes. For more information, see <u>Update the firmware of the AP</u> on page 47.
Serial Number	The serial number of the AP. This number does not change.
Current Time	The current date and time. For more information, see <u>Set the time zone and adjust the daylight saving time</u> on page 28.
Up Time	The time elapsed since the AP was last restarted. The up time ignores restarting of the local browser UI, which occurs when you save the settings for certain features. (To keep things simple, restarting the local browser UI is often referred to as restarting the AP, but it is not the same.)

IP Settings

The IP address settings that the AP uses. In almost all situations, these IP address settings are assigned by your router or a DHCP server in your network.

For information about how to configure the Internet settings, see <u>Connect and log in to the AP for initial configuration</u> on page 19 or <u>Change the IP address settings of the AP</u> on page 57.

(Continued)

Field	Description
IP Address	The IP address that the AP uses. By default, this IP address is 192.168.0.100. After the AP receives an IP address from your router or a DHCP server in your network, or if you configure a static IP address, the IP address is different from the default address.
Subnet Mask	The IP subnet mask that the AP uses.
Default Gateway	The gateway through which the AP connects to the Internet.
Domain Name Server	The IP address of the Domain Name System (DNS) server that the AP uses.
DHCP Client Status	Indicates whether the DHCP client of the AP is enabled or disabled. By default, the DHCP client is enabled.

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 33 and Control the WiFi radios on page 43.

Field	Description
AP Mode	The AP mode is always AP.
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 AP 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 AP keeps its existing WiFi settings. This is the default setting. • **Not configured**. The AP 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 73.

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 33 and Control the WiFi radios on page 43.

Field	Description
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.

(Continued)

Field	Description
Broadcast SSID	Displays whether the 5 GHz band of the WiFi network broadcasts its SSID.
Wi-Fi Protected Setup	Displays whether the AP keeps its existing WiFi settings when you use WPS to connect a device to the 5 GHz band of the WiFi network: • **Configured**. The AP keeps its existing WiFi settings. This is the default setting. • **Not configured**. The AP 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 73.

Note: If you set up a WiFi distribution system (WDS; see Set up a WiFi distribution system on page 76), 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 AP.

To view the traffic statistics for the ports of the AP:

1. Connect your computer or mobile device to the AP in one of the following ways:

   • Connect directly to the AP's WiFi network or LAN.

   • Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is case-sensitive.

   The Home page displays.

4. Select **Administration > Status**.

System Up Time 73:30:41

Port	Status	TxPkts	RxPkts	Collisions	Tx B/s	Rx B/s	Up Time
LAN1	1000M/Full						73:30:33
LAN2	Link down						--
LAN3	Link down	160549	342047	0	84	240	--
LAN4	Link down						--
2.4G WLAN b/g/n	300M	24918	36035	0	42	14	73:30:19
5G WLAN a/n/ac	867M	0	0	0	0	0	73:30:19

Poll Interval: 5 (secs)   Set Interval   Stop

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 AP 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.
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 65.

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 64.

To change the traffic statistics polling frequency or stop polling:

1. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP. 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

A login window displays.

3. Enter the AP local device password.

The local device password is the one that you specified. The local device password is 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.

5

Manage the Advanced WiFi Features

This chapter describes how you can manage the advanced WiFi features of the AP. For information about the basic WiFi settings, see <u>Manage the Basic WiFi Network Settings</u> on page 32.

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

The chapter includes the following sections:

- <u>Add a WiFi schedule</u>
- <u>Manage access to the WiFi network through a WiFi access list</u>
- <u>Manage the WPS settings</u>
- <u>Manage advanced WiFi settings</u>
- <u>Set up a WiFi distribution system</u>

Note: In this chapter, we refer to the access point as the AP.

Add a WiFi schedule

You can use this feature to turn off the WiFi signal from your AP 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 AP is connected to the Internet and synchronizes its internal clock with a time server on the Internet. For more information about whether the AP synchronizes its clock, see Set the time zone and adjust the daylight saving time on page 28.

To add a WiFi schedule for a WiFi band:

1. Connect your computer or mobile device to the AP in one of the following ways:

   • Connect directly to the AP's WiFi network or LAN.

   • Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 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.

6. Click the **Add** button.

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

7. 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.

8. 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.

9. To add another WiFi device to the access control list, repeat Step 6 through Step 8.

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

10. Select the **Turn Access Control On** button.

11. Click the **Apply** button.

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

12. 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 AP.

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. Connect your computer or mobile device to the AP in one of the following ways:

    - Connect directly to the AP's WiFi network or LAN.

    - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

    Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see Find the IP address of the AP when you cannot use aplogin.net on page 24.

    A login window displays.

3. Enter the AP local device password.

    The local device password is the one that you specified. The local device password is 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.

WPS Settings

WAC104's PIN: **22847256**

☑ Enable WAC104's PIN

  ☑ To prevent PIN compromise, auto disable the PIN after 3   failed PIN connections, until WAC104 reboots.
     In auto disabled mode, WAC104's WPS LED will keep blinking slowly.

☑ Keep Existing Wireless Settings (2.4GHz b/g/n)

☑ Keep Existing Wireless Settings (5GHz a/n/ac)

Wireless Client Access List   **Set Up Access List**

The WAC104's PIN field displays the fixed PIN that you use if you want to configure the AP'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 AP's PIN is enabled. For enhanced security, you can disable the AP's PIN by clearing the **Enable WAC104's PIN** check box. However, when you disable the AP'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 AP detects suspicious attempts to break into the AP's WiFi settings by using the AP'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 AP, the AP 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 33. 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 AP's WiFi network, the SSID and passphrase for the band are automatically generated and other WiFi devices that are already connected to the AP'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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP unexpectedly.
CTS/RTS Threshold (1-2347)	
Preamble Mode	

6. Click the **Apply** button.

    Your settings are saved.

Set up a WiFi distribution system

The AP 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 AP 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.
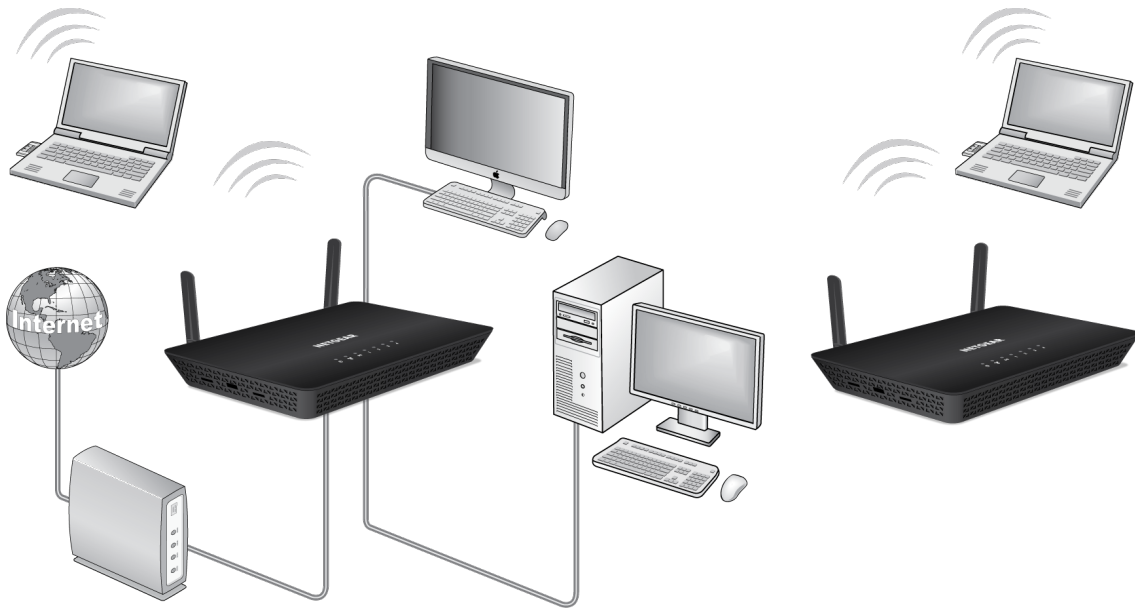
Figure 7. WiFi repeating scenario with a point-to-point configuration

To use the WiFi repeating function, you cannot use the auto channel feature for the AP, 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 AP 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 AP 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 AP 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. Connect your computer or mobile device to the AP in one of the following ways:

   - Connect directly to the AP's WiFi network or LAN.

   - Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

   Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

   A login window displays.

3. Enter the AP local device password.

   The local device password is the one that you specified. The local device password is 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 AP 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 APs that must function as repeaters.

    If your AP is the base station, it can function as the "parent" for up to four other APs.

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 AP as the base station with a non-NETGEAR AP 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 AP that is the repeater.

You can configure up to four repeaters.

To set up a NETGEAR AP as a repeater:

1. Connect your computer or mobile device to the AP in one of the following ways:

    -   Connect directly to the AP's WiFi network or LAN.

    -   Connect to the same network that the AP is connected to.

2. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.

    Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.

    A login window displays.

3. Enter the AP local device password.

    The local device password is the one that you specified. The local device password is 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 AP 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 AP.

   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 AP 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 AP that functions as the repeater can connect to the Internet or share files and printers with any other computer or server connected to the AP that functions as the base station.

6
Troubleshooting

This chapter provides information to help you diagnose and solve problems that you might experience with the AP. 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
- Troubleshoot with the LEDs
- Troubleshoot the WiFi connectivity
- Troubleshoot Internet browsing
- You cannot log in to the AP's local browser UI
- Changes are not saved
- Troubleshoot your network using the ping utility

IMPORTANT: The AP provides WiFi and LAN connectivity but is a bridge and not a router. Therefore, do not connect the AP directly to your DSL or cable modem. You must connect the AP 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 Set up and connect the AP to your router on page 17.)

Note: In this chapter, we refer to the access point as the AP.

Quick tips for troubleshooting

Network problems:

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

1. Unplug the Ethernet cable from the AP to your router, network switch, or network hub.

2. Turn off the AP.

3. Plug in the Ethernet cable from the AP to your router, network switch, or network hub. Wait two minutes.

4. Turn on the AP and wait two minutes.

Ethernet connection problems:

If you cannot connect over an Ethernet cable to the AP, 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.)

WiFi connection problems:

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

- Make sure that the WiFi LED on the AP is not off.
  If the WiFi LED is off, both WiFi radios are probably off too. For more information about the WiFi radios, see <u>Control the WiFi radios</u> on page 43.

- Make sure that the WiFi settings on your WiFi device and AP match exactly.
  For a device that is connected over WiFi, the WiFi network name (SSID) and WiFi security settings of the AP and WiFi device must match exactly. If you did not change the default settings, the default SSIDs and default WiFi passphrase are as follows:

  - The default SSID in the 2.4 GHz radio band is **NETGEAR_11N** with the default WiFi passphrase **sharedsecret**.

  - The default SSID in the 5 GHz radio band is **NETGEAR_11AC** with the default WiFi passphrase **sharedsecret**.

- 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 <u>View or change the basic WiFi settings</u> on page 33.

- Make sure that your WiFi device is not too far from the AP or too close. To see if the signal strength improves, move your WiFi device near the AP but at least 6 feet (1.8 meters) away.

- Make sure that the WiFi signal is not blocked by objects between the AP and your WiFi device.

- Make sure that the AP's SSID broadcast is not disabled.
  If the AP'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 <u>View or change the basic WiFi settings</u> on page 33.

- 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.)

Internet problems:

If you cannot access the Internet from a device that is connected to the AP, try the following:

- Make sure that one of the AP's LAN ports is connected to a router in your network. (Do not connect the AP directly to your modem. The AP must be connected to your router.)

- Make sure that the router is connected to your modem.

- Make sure that your modem is connected to the Internet outlet.

- Make sure your Internet service provider (ISP) is not experiencing an outage.

Troubleshoot with the LEDs

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

1. The Power LED ![icon] 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 AP is ready.

2. When the startup procedure is complete, verify the following:

   - The WiFi LED ![icon] 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 ![icon] lights solid green or blinks green.

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

- <u>Power LED is off</u> on page 85
- <u>Power LED remains blinking green</u> on page 85
- <u>WiFi LED is off</u> on page 86

Power LED is off

If the Power LED ⏻ and other LEDs are off when the AP 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 AP 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 <u>netgear.com/support</u>.

Power LED remains blinking green

When you turn on the power to the AP, 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 AP 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 AP is malfunctioning.

If the Power LED does not turn solid green five minutes after startup, do the following:

1. Turn the power off and back on and wait several minutes to see if the AP recovers. If the problem occurs again, try one more time.

2. If the AP does not recover, try to upload firmware to the AP using a TFTP client. For more information, see <u>https://kb.netgear.com/000059633</u>.

3. If the AP still does not recover, press and hold the **Reset** button to return the AP to its factory settings (see <u>Use the Reset button</u> on page 55). If the problem occurs again, try one more time.

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

WiFi LED is off

If the WiFi LED [icon] remains off, check to see if both radios on the AP are disabled (see Control the WiFi radios on page 43). 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 AP, try to isolate the problem:

- Make sure that the WiFi settings in your WiFi device and AP match exactly.
  For a device that is connected over WiFi, the WiFi network name (SSID) and WiFi security settings of the AP and WiFi device must match exactly. If you did not change the default settings, the default SSIDs and default WiFi passphrase are as follows:

    - The default SSID in the 2.4 GHz radio band is **NETGEAR_11N** with the default WiFi passphrase **sharedsecret**.

    - The default SSID in the 5 GHz radio band is **NETGEAR_11AC** with the default WiFi passphrase **sharedsecret**.

- Does the WiFi device that you are using find your WiFi network?
  If not, check the WiFi LED [icon] on the top of the AP. 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 43.

- If you disabled the AP'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 33.

- 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 33.

    Tip: If you want to change the WiFi settings of the AP'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 AP too far from your WiFi device or too close? Place your WiFi device near the AP but at least 6 feet (1.8 meters) away and see whether the signal strength improves.

- Are objects between the AP and your WiFi device blocking the WiFi signal?

If you cannot connect more than five WiFi devices to the AP, the AP might not be able to find a DHCP server in your network. If this situation occurs, make sure that one of the AP's LAN ports is connected to a router in your network so that the AP can receive a DHCP address.

Troubleshoot Internet browsing

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

- Your AP, router, or modem might not be connected to the Internet.

  - Make sure that one of the AP's LAN ports is connected to a router in your network. (Do not connect the AP directly to your modem. The AP must be connected to your router.)

  - Make sure that the router is connected to your modem.

  - Make sure that your modem is connected to the Internet outlet.

  - Make sure your Internet service provider (ISP) is not experiencing an outage.

- 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 AP (that is, the AP 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 AP 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 AP is connected.
  For information about TCP/IP problems, see <u>Troubleshoot your network using the ping utility</u> on page 89.

You cannot log in to the AP's local browser UI

If you are unable to log in to the AP from a computer on your local network and use the AP local browser UI, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the AP.

- Make sure that the IP address of your computer is in the same subnet as the AP. If the AP is not connected to your network and you are trying to log in to the AP over its default IP address of 192.168.0.100, 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 AP are in the same IP subnet.

- If your AP's IP address was changed and you do not know the current IP address, access the router or DHCP server that assigned the IP address to the AP to find the IP address or use an IP scanner application to detect the IP address. If you still cannot find the IP address, clear the AP's configuration to factory defaults. This sets the AP's IP address to 192.168.0.100 and activates the www.aplogin.net URL for initial configuration. For more information, see <u>Return the AP to its factory default settings</u> on page 55 and <u>Factory default settings</u> on page 92.

- 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 local device password is the one that you specified during the initial log-in process. (The default password is **password**). The local device password is case-sensitive. Make sure that Caps Lock is off when you enter this information.

- If your updated the firmware to version 1.0.4.15 and did not reset the AP to factory defaults, the new firmware did not yet fully install. Do the following:

  1. Reset the AP to factory defaults by pressing the recessed **Reset** button on the back panel for at least 10 seconds.

  2. Wait until the Power LED turns solid green.

  3. Connect your computer or mobile device to the AP in one of the following ways:

     - Connect directly to the AP's WiFi network or LAN.

     - Connect to the same network that the AP is connected to.

4. Launch a web browser and enter **http://www.aplogin.net** (or **aplogin.net**) in the address field.
    Instead, if you are connected to same network as the AP, enter the LAN IP address that is assigned to the AP. For information about finding the IP address, see <u>Find the IP address of the AP when you cannot use aplogin.net</u> on page 24.
    A login window displays.

5. Log in to the local browser UI with the user name is **admin** and the default password **password**.

Changes are not saved

If you are logged in to the AP local browser UI and the AP 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 AP

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

To ping the AP 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 AP, 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 AP 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 AP.

- 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 AP 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 <u>Test the LAN path to your AP</u> on page 89 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 AP 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.

A

Factory Default Settings and Technical Specifications

This appendix includes the following sections:

- Factory default settings
- Technical specifications

Note: In this appendix, we refer to the access point as the AP.

Factory default settings

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

For more information about resetting the AP to its factory settings, see <u>Return the AP to its factory default settings</u> on page 55.

Table 2. WAC104 AP factory default settings

Feature	Default Setting
AP login	
User login IP address	192.168.0.100
User login URL	http://www.aplogin.net (or aplogin.net) or http://www.aplogin.com (or aplogin.com)
User name (case-sensitive)	admin, nonconfigurable
Login password (case-sensitive)	password
IP settings	
DHCP client	Enabled **Note**: The AP functions as a bridge between its WiFi and LAN clients and the router in your network. The AP does not provide routing services such as NAT and a DHCP server.
WiFi network	
WiFi communication	Enabled
SSID names	NETGEAR-11N NETGEAR-11AC
Security	WPA and WAP2 mixed mode The default WiFi passphrase is sharedsecret.
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 AP 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
AP's PIN	Enabled. For more information, see Manage the WPS settings on page 73.
Keep Existing Wireless Settings	Enabled

Technical specifications

The following table shows the technical specifications of the AP.

Table 3. WAC104 AP 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)	9.43 x 7.16 x 1.61 in. (239.65 x 181.45 x 40.6 mm)
Weight	0.85 lb (385 g)
Operating temperature	32° to 104°F (0° to 40°C)
Operating humidity	10 to 90% maximum relative humidity, noncondensing
Storage temperature	–20° to 70°F (–4° to 158°C)
Storage humidity	5 to 95% maximum relative humidity, noncondensing

Table 3. WAC104 AP specifications (Continued)

Feature	Description
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 AP can support a maximum of 64 WiFi clients: Maximum number of 2.4 GHz WiFi clients: 64 Maximum number of 5 GHz WiFi clients: 64 Even though each individual radio can support 64 clients, the total number of clients that the AP can support is 64. (For example, 44 clients on the 2.4 GHz radio and 20 clients on the 5 GHz radio.) **Note**: In a WiFi network, the number of clients is limited by the amount of WiFi traffic that is generated by each client.
Operating frequency range in the 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
Operating frequency range in the 5 GHz band	US: 5.180–5.240 + 5.745–5.825 GHz Europe: 5.180–5.240 GHz Australia: 5.180–5.240 + 5.745–5.825 GHz Japan: 5.180–5.240 GHz
802.11 security	WPA2-PSK, WPA and WPA2 (mixed mode), WPA/WPA2 Enterprise, and WEP