



# WA-2200 Series

WA-2200, WA-2200-1,  
WA-2200-C, WA-2200-C-1

802.11ac 2x2 Wave 2 Access Point  
User Guide



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# Regulatory notices

### *FCC notice:*

Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

### *FCC Class B:*

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### *ISED (IC):*

- This product meets the applicable Innovation, Science and Economic Development Canada technical specifications.
- Ce produit répond aux spécifications techniques applicables à l'innovation, Science et Développement économique Canada.

### *ISED (IC):*

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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### *ISED (IC) 5G caution*

Operations in the 5.15-5.25 Ghz band are restricted to indoor usage only.

Le fonctionnement sur la bande 5,15-5,25 Ghz est limité à une utilisation intérieure uniquement.

### *FCC/ISED (IC) RF Radiation Exposure Statement: (For MPE report)*

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

### *ISED (IC):*

This device complies with the ISED radiation exposure limit set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.

Cet équipement est conforme avec l'exposition aux radiations ISED définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimum de 20 cm entre le radiateur et votre corps.

CAN ICES-3 (B)/NMB-3(B)

### *EU Countries Intended for Use*

The ETSI version of this device is intended for home and office (5150-5350MHz) use in Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

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# Introduction

As the central component of your wireless network, the WA-2200 802.11ac 2x2 Wave 2 Access Point provides you with high-speed, high-range wireless 802.11ac networking. The AP broadcasts on both the 2.4 GHz and 5 GHz bands so that select devices can choose their preferred source of wireless connectivity, improving the overall stability, reliability, and performance of the wireless network.

# System requirements

Minimum system requirements:

- PoE switch or injector, or an AC power adapter (not included)
- A computer with an Ethernet port (for first AP setup).

# Hardware installation

For hardware installation and first-time startup instructions, see the *Quick Start Guide* found in the box.

# Default settings and credentials

- IP address: IP will be automatically assigned by router if a DHCP server is detected or, if no DHCP server is detected, the default IP address will be automatically set to **192.168.1.21**.
- Username/Password (default): **admin/password**
- SSIDs (default): **Pakedge\_Main** (5 GHz) and **Pakedge\_Alt** (2.4 GHz)  
Security/password: WPA2-PSK/**pakedgewireless**
- Guest SSIDs (default): PakedgeGuest2.4 and PakedgeGuest5, security/password: WPA2/**pakedgeguest**
- Transmit power: 13 dBm for 2.4 GHz and 18 dBm for 5 GHz.

# First-time login

The first time you log in, you are brought to the *Configure* tab. Here you can change your username and password (strongly recommended), specify the device's network name and physical location, set the Country Code, and create or hide wireless networks.

For BakPak Lite setup instructions, see the *WA-2200 Quick Start Guide*.

**Note:** For APs sold in the U.S. and Israel, the Country Code will be preconfigured and locked. For units sold in the rest of the world, the Country Code will be blank and *must* be configured on the *Configure* tab during first-time setup.

# Configure

The *Configure* tab allows you to change the most common AP settings in one screen. This is the default tab that displays after login.

The screenshot shows the 'Configure' tab of the WA-2200 Series user interface. The interface has a top navigation bar with tabs: Overview, Connections, Configure (selected), Backup/Restore, Logs, and Advanced. Below the navigation bar, there are three main sections:

- Edit Login Credentials:** Contains three input fields: Username, Current Password, and New Password. The password fields have eye icons for toggling visibility.
- General Device Information:** Contains three input fields: Friendly DeviceName (with value 'My WA-2200'), Device Location (with value 'Lobby'), and Device Note (with value 'WA-2200-C in lobby').
- Device Settings:** Contains two dropdown menus: Time Zone (with value 'America/Los\_Angeles' and a timestamp '09:38:39 Fri, 16 Nov 2018') and Country Code (with value 'United States (Locked)').

- **Username and Password:** The first time you log in, you should change these from the defaults (“admin” and “password”) to new credentials.
- **Friendly Device Name:** Give the AP a descriptive name to identify it on its web interface screen and in BakPak.
- **Device Location:** Describe the physical location of the AP here.
- **Device Note:** Add any other notes here, such as date of installation and the technician name.
- **Time Zone:** Select the time zone used for the AP’s event logs.
- **Country Code:** Select the country where the AP is installed.

**Note:** For APs sold in the U.S. and Israel, the Country Code will be preconfigured and locked. For units that are sold in the rest of the world, the Country Code will be blank and *must* be configured on the *Configure* tab.

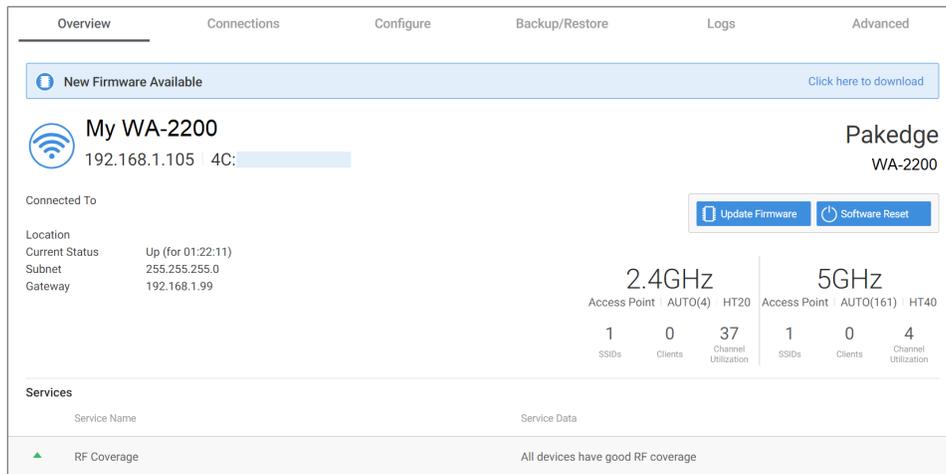
- LAN Settings:
  - **IP Network Settings:** Select the method used for assigning IP addresses (DHCP or Static).
  - **IP Address:** For a static IP network, enter the AP’s IP address here. For a DHCP network, this field is read-only.
  - **Subnet Mask:** For a static IP network, enter the AP’s subnet mask here. For a DHCP network, this field is read-only.
  - **Gateway:** For a static IP network, enter the AP’s Gateway address here. For a DHCP network, this field is read-only.

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- **DNS Settings:**
  - **DNS Server  $n$**  (server's IP address): For a static IP network, enter up to two DNS server IP addresses here. For a DHCP network, these fields are read-only.
- **5 GHz Networks and 2.4 GHz Networks, and guest networks:** Enter an SSID (wireless network name), the authentication type to use, the WiFi password, and the VLAN this wireless network is associated with. To view the password that's entered, click the eyeball icon. Select **Hide** to not broadcast the wireless network's SSID.
- **5 GHz Guest Network and 2.4 GHz Guest Network:** Enter an SSID (wireless network name), the authentication type to use, and the WiFi password. To view the password that's entered, click the eyeball icon. Select **Hide** to not broadcast the wireless network's SSID.

## Overview

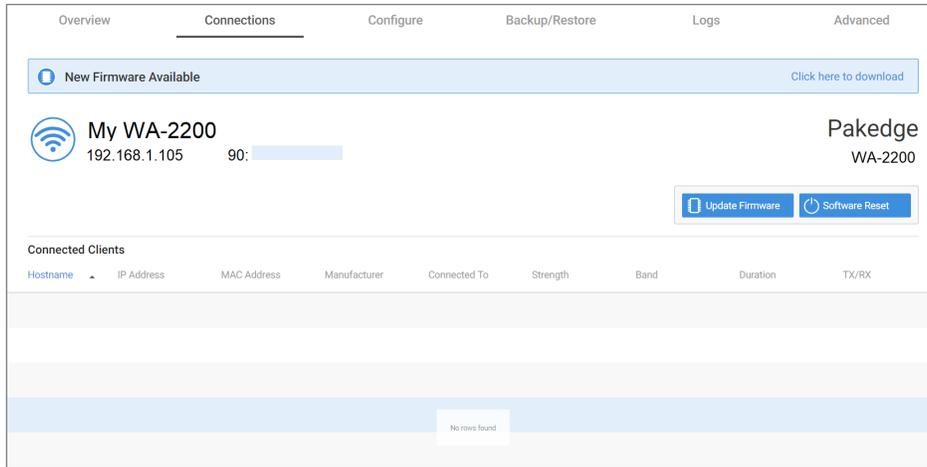
The *Overview* tab gives you a quick view of the AP's status and critical settings.



- **Notifications:** System notifications at the very top of the tab. This example shows a firmware update is available.
- **Name:** The device name (assigned in the Configure tab) appears here.
- **IP address and MAC address:** The device's assigned IP address and unique MAC address is shown here.
- **Update Firmware:** Click to open the Update Firmware screen (also accessible under the Advanced tab). The screen also displays the firmware's release notes.
- **Software Reset:** Click to restart (power cycle) the AP. It happens immediately, with no confirmation dialog.
- **Network information:** Displays the number of wireless network SSIDs and the number of channels used by each.
- **Services:** Displays the status of current services and settings and indicates with an icon whether the service or setting is optimally configured.

## Connections

The *Connections* tab displays a list of connected wireless devices.

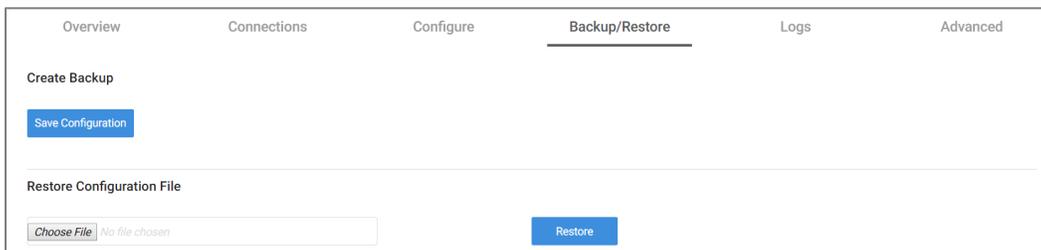


Click any column head to sort the list by that field. Available fields are:

- Hostname
- IP Address
- MAC Address
- Manufacturer
- Connected To
- Strength
- Band
- Duration
- TX/RX

## Backup/Restore

The *Backup/Restore* tab allows you to save a configuration (backup) and restore the configuration file.



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- **Save Configuration:** Click to save a file that contains all of this AP's settings.
- **Choose File:** Click to select a saved configuration backup file to use for restoring settings.
- **Restore:** Click to restore AP settings using the selected configuration backup file.

## Logs

The *Logs* tab displays a record of system events effected by the AP. The events are categorized and sortable by severity, timestamp, and details.

Overview Connections Configure Backup/Restore **Logs** Advanced

**Remote Syslog**

Server IP Address Port

Enable 0.0.0.0 514

Severity Timestamp Detail [Download Detailed Logs](#)

- Enable **Remote Syslog** to save the logs on another network. You'll also need to specify the remote Syslog server IP address and port.
- **Download Detailed Logs:** Click to download more verbose descriptions of the logged events.

## Advanced

### Device Settings

Click this tile to configure LED settings, change the hostname or factory defaults, or to access diagnostic tools.

Overview Connections Configure Backup/Restore Logs **Advanced**

**Device Settings**

LEDs Hostname

Enable WA-2200

[Factory Default](#)

**Diagnostic Tools**

Type IP Address / Domain

ping  [Run](#)

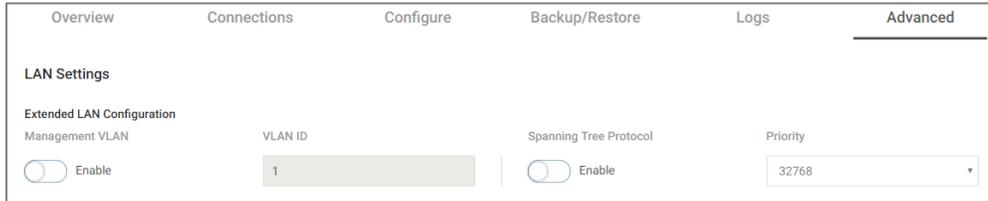
- **LEDs:** Select to enable (or deselect to disable) the AP's LEDs.
- **Hostname:** Enter the hostname here.
- **Factory Default:** Click to restore factory default settings.

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- Diagnostic Tools
  - **Ping:** Select to ping a device at the indicated address.
  - **Traceroute:** Select to run a traceroute to the indicated address.

## LAN Settings

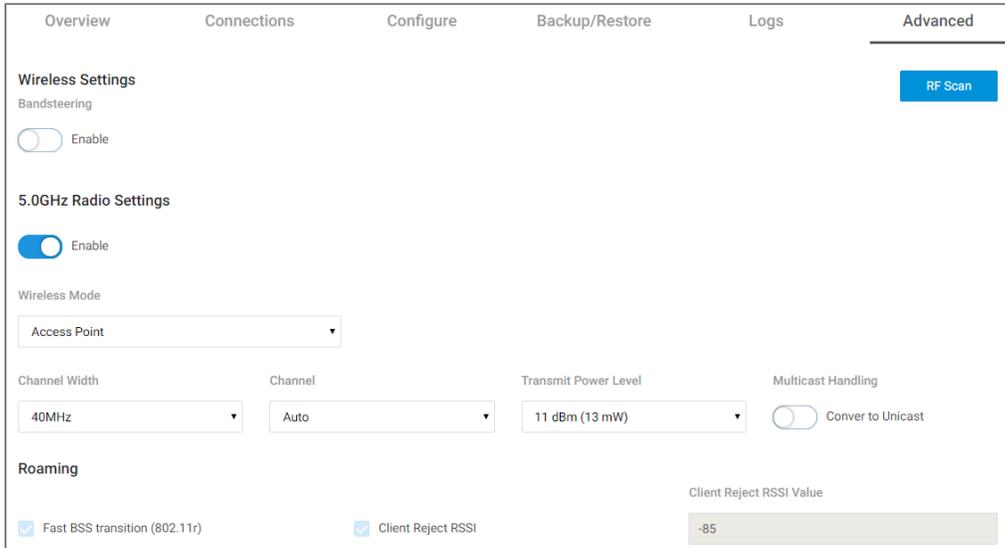
Click this tile to configure the advanced LAN port settings, such as management VLAN and STP.



- **Management VLAN:** Click this toggle to enable the management VLAN.
- **VLAN ID:** Enter the VLAN ID the AP is associated with.
- **Spanning Tree Protocol:** Click this toggle to enable spanning tree protocol, then select **Priority** to change the priority from its default (32768). The lower the priority, the more likely the switch is to become the root bridge. (STP is changed in increments of 4,096.)

## Wireless Settings

Click this tile to configure advanced WiFi radio settings such as channel, power, RF scan, and roaming features.



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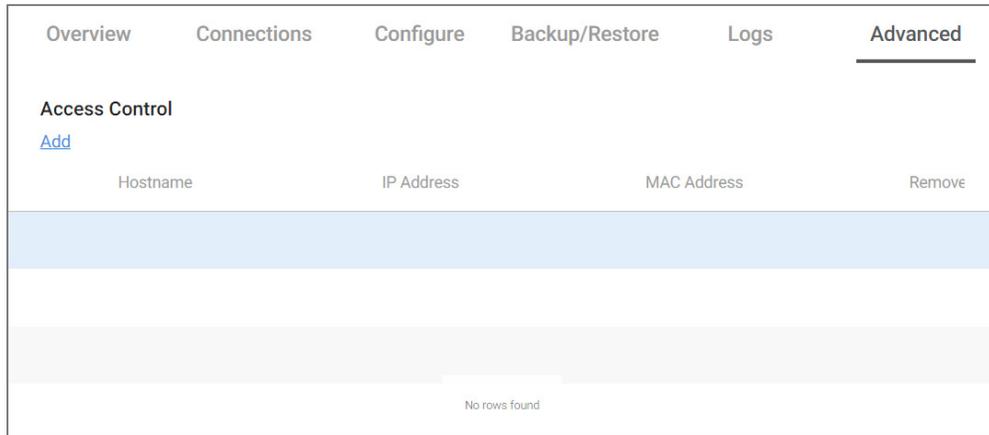
- **Wireless Settings**
  - **Band Steering:** Band steering steers 5 GHz-capable clients to that frequency. By enabling this function, the 2.4 GHz SSID and settings will be copied to the 5 GHz band.
  - **RF Scan:** Click to perform an automatic site survey of RF signals. The AP will scan the channels for connected devices and will then display them in a table.
- **5 GHz and 2.4 GHz Radio Settings**
  - **Enable:** Click this toggle to enable this WiFi radio band.
  - **Operation Mode:** Both the 2.4 and the 5 GHz bands have the following operating modes:
    - **Access Point:** Standard mode of operation. Allows a wireless connection to the LAN.
    - **WDS Root:** The AP with this mode set will be the “root” device that APs configured with WDS Repeater and WDS Bridge will connect to.
    - **WDS Bridge:** This mode allows the AP to connect to a WDS Root Access Point. This mode takes in the SSID broadcasted by the WDS Root Access Point and turns it into Ethernet connectivity for client devices.
    - **WDS Repeater:** This mode allows the AP to connect to a WDS Root Access Point. This setting will take the SSID broadcasted by the WDS Root Access Point and rebroadcast it to end-user devices.
    - Additional WDS Bridge and WDS Repeater settings:
      - WDS Root Access Point BSSID:
      - WDS Root Access Point SSID:
  - **Wireless Mode:** Choose the setting that corresponds to the type of wireless clients connected to your network. If you aren’t sure which type of clients will access the wireless networks, we recommend you keep the default settings.
  - **Channel Width:** Select the channel width for the selected channel to use. By default, it’s set to HT 20 MHz (when using 2.4 GHz) and HT 80 MHz (when using 5 GHz). Selecting 40 MHz on the 2.4 GHz band is possible, but not recommended, because it will also increase the risk of impacting wireless performance. We recommend keeping the 2.4 GHz radio set to 20 MHz and using only channel 1, 6, or 11, because they are the only three non-overlapping channels.
  - **Channel:** Using the default setting (Auto), the AP automatically selects the channel with best performance for the wireless network. To select a channel manually, click the drop-down list and select a channel. The channel options available depend on the Country Code selected.
  - **Transmit Power Level:** The power depends on the distance of the devices in your wireless network. You can use this feature to increase or decrease the coverage area; however, we do not recommend changing this setting unless a professional site survey is conducted. Contact your network administrator for help.

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- **Auto:** This setting adjusts the power of the AP based on the distance to the furthest client device.
- **11 dBm (13mW) - 24 dBm (252mW):** These are static power settings. The AP will broadcast at the selected power level.
- **Multicast Handling:** Enable the **Convert to Multicast** toggle to enhance the video/audio quality when streaming multicast content to multiple devices over WiFi. When enabled, all the multicast traffic is converted to unicast, which increases the delivery speed to individual devices. This feature is not recommended if the multicast group exceeds 10 devices.
- Roaming
  - **Fast BSS transition (802.11r):** IEEE 802.11r standard for fast roaming reduces the authentication time when clients roam from one AP to the other. This feature is beneficial for video streaming and voice application. 802.11r requires WPA2/AES encryption in order to work.  
**Note:** The roaming behavior depends on clients. To obtain full benefit from fast roaming, wireless clients need to support 802.11r fast roaming standard. It is not recommended to enable both band steering and fast roaming features, which will cause some incompatibility issues.
  - **Client Reject RSSI:** Helps with “sticky” clients that don’t reliably roam to the closest AP. By enabling this feature, the AP continuously monitors the station’s received signal and will de-authenticate the client when the RSSI falls below the user-defined **Client Reject RSSI Value** threshold. This setting can be configured independently on 2.4 GHz and 5 GHz radios.
- Guest Network Client IP Assignment
  - **DHCP:** Select **Internal** or **External**.
  - **Starting IP Address:** This is the beginning of the DHCP range used on the guest network. If you have multiple APs, you can give them the same DHCP range because the guest network of each AP will be independent of each other.
  - **Ending IP Address:** This is the last IP address available on the DHCP range.
  - **Subnet Mask:** Select the class of the guest network. 255.255.255.0 is the standard setting and is selected by default.
  - **GW IP Address:** Enter the Gateway IP address
  - **DNS server IP address:** The DNS Server IP can be set to an external DNS or to the router’s IP address if the router provides a DNS server.

## Access Control

Click this tile to set up access control for connected clients.



To add a client for access control, click **Add**, then select the client and click **Apply**. The client and its identifying information are added to the *Access Control* list.

Click any column head to sort the list by that field. Available fields are:

- Hostname
- IP Address
- MAC Address
- Remove

## Firmware

Click this tile to access cloud and local firmware upgrades.

**New Firmware Available v0.9.9**  
[What's New / Release Notes 08/30/2018](#)

**Features:**

- 1-click remote management with BakPak Lite
  - View WAN settings
  - Edit LAN settings
  - Edit wireless SSID configuration and security profiles
- Configure 2 additional Packedge WAPs directly from the WR-1
  - Requires WAPs to be on firmware version 1.20 or later

**Bug fixes:**

- Some GUI compatibility issues with Internet Explorer 11
- Speed test results may reflect slower download speeds when connecting to certain servers
- Some secondary controllers are not discovered via SDDP when connected to wireless with multicast enhancements enabled

**Hot fix:**

- Addressed issue in 1.02.0 which could cause a US region wireless setting to be lost on factory default. Please update to this patch as soon as possible

[Upgrade](#)

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**Current / Insatalled Firmware v0.3.0.0**  
[Release Notes 08/28/2018](#)

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If your firmware is up to date, this screen shows your current firmware version and provides a link for that firmware's release notes.

If a firmware update is available, this screen also shows the update version and the update's release notes. Click **Upgrade** to update the firmware from the cloud.

# BakPak Lite

BakPak Lite is designed to provide remote cloud monitoring and configuration to the AP. Using BakPak, you can remotely monitor and configure your customer's AP without requiring a truck roll or a VPN session to the customer's network. In just a few clicks, register your AP with your new or existing BakPak account. Registration is a two-step process where you register the Management Agent in BakPak, and then you link the management agent to an existing site or create a new site.

## BakPak Lite

The AP has BakPak Lite built in, which means it can remotely monitor other WE Series APs via BakPak. After the AP has been enrolled in BakPak, you can access it from anywhere in the world by using the BakPak app or the web interface at [mybakpak.com](http://mybakpak.com).

If you see this message bar at the top of your access point's web interface, the AP is not yet enrolled in BakPak.



### To enroll the AP in BakPak:

1. On the message bar, click **Click here to enroll**. You are automatically redirected to [mybakpak.com](http://mybakpak.com).
2. Log in with your BakPak credentials or create a new admin account. When you are logged in, the serial number and MAC address will be automatically populated on your BakPak account.

### To log in and view a site using the web interface:

1. In a web browser, log in to [mybakpak.com](http://mybakpak.com).
2. Under *Sites*, click **Manage**. A list of BakPak and BakPak Lite sites opens.
3. Click the site you want to access, then click the BakPak Lite device that you want to manage. The site's management window expands, providing the following information:
  - **Device information:** Identifies all information about the device, including the serial number and firmware version, and has ability to reboot the wireless router remotely.
  - **SSID configuration:** Configure/edit wireless information for the primary SSID and guest networks.
  - **Firmware:** Applies firmware updates to the device.
  - **Events:** Displays network analytics, including a log of user events, for network troubleshooting.

# Reset to factory default settings

While setting up or troubleshooting, you may need to reboot the AP or restore it to its factory default settings.

**Caution:** Do *not* power off the AP during a factory reset.

## Reset using the interface

**To only restart the AP, maintaining all settings:**

1. In the Overview or Connections tab, click Software Reset. The AP restarts.

**To reset to factory default settings, deleting all user settings:**

**Caution:** Performing this reset will delete all of your settings on the AP.

1. Go to the Advanced tab and click Device Settings.
2. Click **Factory Default**, then click **Yes**.

## Reset using the physical RESET button

Your AP has a recessed RESET button accessible through a pinhole next to the Ethernet port underneath the AP.

**To only reboot the AP, maintaining all settings:**

1. While power is connected, insert a narrow, pointed object (such as a straightened paper clip) into the hole.
2. Press and release the button.

**To reset to factory default settings, deleting all user settings:**

**Caution:** Performing this reset will delete all of your settings on the AP.

1. While power is connected, insert a narrow, pointed object (such as a straightened paper clip) into the hole.
2. Press and hold the button for at least **ten** seconds, then release it.



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