The HP M220 is a Wi-Fi Alliance authorized Wi-Fi CERTIFIED 802.11a/b/g and 802.11n product. The Wi-Fi CERTIFIED logo is a certification mark of the Wi-Fi Alliance.

HP M220 802.11n Access Point Quickstart

This Quickstart shows you how to install and get started using the HP M220 Access Point (J9798A AM, J9799A WW).

See also the *M220 Configuration and Administration Guide* and other M220 documentation available at www.hp.com/support/manuals. The M220 Access Point is an IEEE 802.11n, dual-band, high-speed access point that provides simplified wireless LAN administration with clustering technology.

Hardware overview

1	Power LED	4	Reset button
2	WLAN LED	5	Ethernet connector
3	Ethernet LED	6	Power connector

Package contents
M220 Access Point (AP), power supply, documentation.

Ethernet port
The M220 is equipped with an auto-sensing 10/100/1000 BaseT Ethernet port with RJ-45 connector. This port is IEEE 802.3af-compliant enabling the M220 to be powered by Power over Ethernet (PoE).

Radio and antennas
The M220 features an IEEE 802.11a/b/g/n-compliant radio with internal dual-band omni-directional MIMO antennas.

Reset button
Press and quickly release the Reset button to restart the M220. To reset the M220 to factory defaults, press the button until the status lights blink three times, then release.

Status LEDs

The status LEDs (left to right) indicate the following:

LED	State	Description
Power	Off	The M220 has no power.
	Flashing (1 second interval)	The M220 is starting up. If the Power LED continues to flash after several minutes, it indicates that the software failed to load. Reset or turn the M220 power off then on. If this condition persists, contact support (**www.hp.com/networking/support**).
	On	The M220 is fully operational.
WLAN	Flashing	Radio is transmitting or receiving data.
Ethernet	Off	The port is not connected or there is no activity.
	Flashing	The port is transmitting or receiving data.

Important information to read before installing

Caution: **Prior to installing or using the M220, make sure that the installation plans are in compliance with RF and other regulations, such as building and wiring codes, safety, channel, indoor/outdoor restrictions, and license requirements for the intended country of use. It is the responsibility of the end user to ensure that installation and use comply with local safety and radio regulations.**

Other documentation: Become fully familiar with the Safety and Regulatory information provided with the M220 and available online.

Surge protection and grounding: Make sure that proper surge protection and grounding precautions are taken according to local electrical code. Failure to do so may result in personal injury, fire, equipment damage, or a voided warranty. The HP hardware warranty provides no protection against damage caused by static discharge or power surge.

Cabling: You must use the appropriate cables and where applicable, surge protection for your region. Use Cat 5e or better Ethernet cabling.

Country of use: In some regions, you are prompted to select the country of use during setup. Once the country has been set, the M220 will automatically limit the available wireless channels, ensuring compliant operation in the selected country. Entering the incorrect country can result in illegal operation and can cause harmful interference to other systems.

Safety: Take note of the following safety information during installation:

- If your network covers an area served by more than one power distribution system, be sure all safety grounds are securely interconnected.
- Network cables may occasionally be subject to hazardous transient voltages (caused by lightning or disturbances in the electrical power grid).
- Handle exposed metal components of the network with caution.

- The M220 is powered-on when the Ethernet port is plugged into a PoE power source or when an external power supply is connected.
- The M220 and all interconnected equipment must be installed indoors within the same building, including all PoE-powered network connections, as described by Environment A of the IEEE 802.3af standard.

The M220 can be powered by:

- The provided external power supply.
- A 10/100 or 10/100/1000 PoE-enabled switch. Various PoE-enabled switches are available from HP Networking.
- An HP Networking 1-Port Power Injector (J9407B).

Installation

The M220 can be placed on a desktop or be mounted on a wall.

Mounting the M220 on a wall

Screw holes on the back of the M220 enable it to be mounted in one horizontal orientation (pictured) or two vertical orientations. **HP recommends that you experiment with the mounting orientation to achieve the best reception for your wireless clients.**

Select mounting screws with a pan head (non-counter-sunk head) approximately 6 mm (.25 inches) in diameter so that the screw head fits into the mounting holes on the back of the M220. The screws should have an approximate length of 25 mm to 30 mm (1 to 1.25 inches) and a diameter of 3.5 mm (.14 inches) (#6 in North America). For drywall, HP recommends that wall anchors be used with the screws. In North America, a #6 screw with matching wall anchor works well.
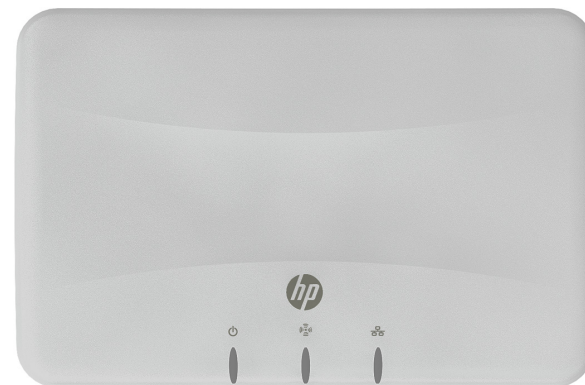
Mount the M220 as follows:

1. The M220 has two mounting screw holes (**1** in illustration) on the center of the back of the unit. Use the two embossed arrows (**2** in illustration) at one end of the M220 to mark the two screw hole positions 83 mm (3.25 inches) apart.

2. Drill two holes of appropriate diameter for the screws or wall anchors. Insert the wall anchors if applicable.

3. Tighten both screws until they protrude 6 mm (.25 inches).

4. Position the two mounting holes on the back of the M220 against the two screws.

5. Gently push the M220 against the two screws so that they fit into the mounting holes and then slide the M220 slightly down until it is sufficiently anchored.
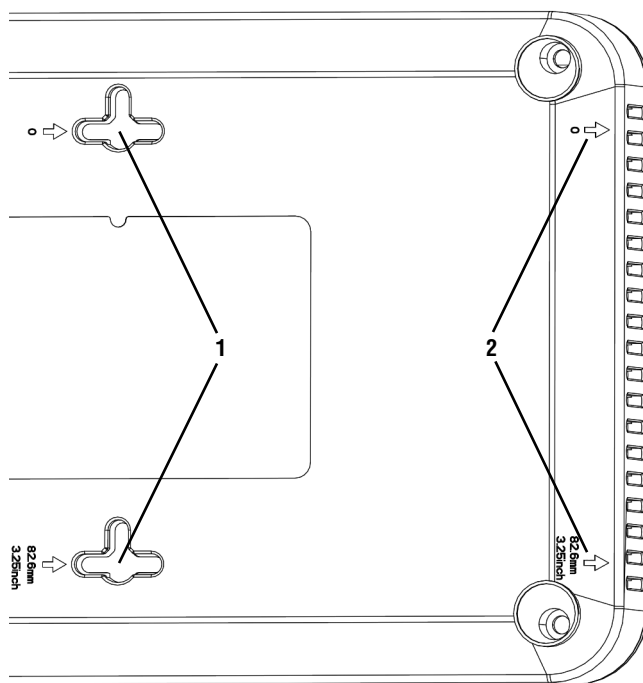
Configure a simple wireless network

This procedure describes how to configure a simple wireless network that enables you to establish a wireless connection to the Internet through the M220. Other wireless network configurations are possible. See the *M220 Configuration and Administration Guide.* The topology of this simple wireless network is as follows:
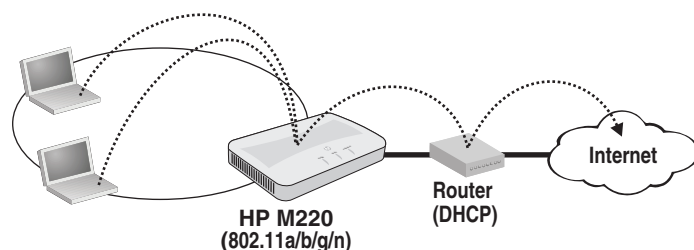
A. Connect and power on the M220

1. Configure your computer to use a static IP address in the range **192.168.1.2** to **192.168.1.254** and a subnet mask of **255.255.255.0.** Set the default gateway to **192.168.1.1** and DNS server to **192.168.1.1**.

2. Disable any wireless connection on your computer.

3. Disconnect the M220 power source (power adapter, PoE switch, or PoE injector).

4. Connect the Ethernet cables.

   • If using a power supply, connect your computer LAN port to the M220 Ethernet port.

   • If using a PoE switch, connect your computer and the M220 to the PoE switch.

   • If using a PoE injector, connect your computer LAN port to the PoE injector data in port and connect the PoE injector data and power out port to the M220.

5. Power on the M220.

   • If using a power supply, plug it into the wall and connect it to the M220.

   • If using a PoE switch or injector, power it on.

   The M220 power LED flashes once per second as it starts up. Wait for the power LED to remain on before proceeding to the next step.

B. Log in

A factory-default M220 is assumed.

Note: The M220 is managed via its web-based management tool using Microsoft Internet Explorer 8 or later, Google Chrome v29 or later, or Mozilla Firefox v24 or later.

Note: You can access the M220 management tool using either **http** or **https**. Using **https** is more secure, but you will see a security warning until you purchase and install your own certificate. With https, it is acceptable to choose the option that allows you to proceed through the security warning.

1. In a web browser, specify either: **http://192.168.1.1** or **https://192.168.1.1**.

2. On the *Welcome* page, specify **admin** for both **Username** and **Password,** and then select **Login**.

3. On the *HP end user license agreement* page, read the agreement, and then select **Accept HP End User License Agreement**.

4. In some regions, a **Country** prompt appears. Select the country in which the M220 will operate and then select **Save**. See *Country of use* on page 2.

C. Perform a Quick Setup

The first time you log in to the management tool (and after a factory default reset), the *Quickly set up the M220* page is automatically presented. The default selection **Recommend wireless network settings based upon your network environment** enables you to you choose a typical network environment.
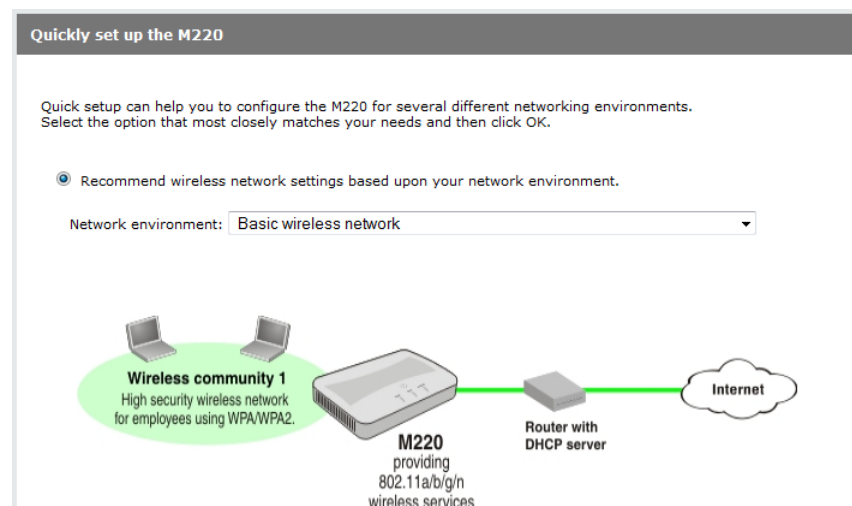
Select the environment that resembles your network, and then make the appropriate settings.

This procedure uses the first option, **Basic wireless network** as an example.

Select **Basic wireless network,** and then **OK**. The *Quick setup - Basic wireless network* page is divided into three sections: **Step 1**, **Step 2**, and **Step 3**.

Step 1: Specify access point settings

Configure the radio: Wireless mode

Select the desired **Wireless mode**. Supported modes and channels are determined by the regulatory domain.

Available modes in most regulatory domains are as follows:

- **IEEE 802.11a**: Up to 54 Mbps in the 5 GHz band.
- **IEEE 802.11b/g**: Up to 11 (802.11b) and 54 Mbps (802.11g) in the 2.4 GHz band.
- **IEEE 802.11a/n:** Up to 300 Mbps for 802.11n and 54 Mbps for 802.11a in the 5 GHz band.
- **IEEE 802.11b/g/n:** Up to 300 Mbps for 802.11n, 54 Mbps for 802.11g, and 11 Mbps for 802.11b in the 2.4 GHz band.
- **5 GHz IEEE 802.11n:** (Pure 802.11n) Up to 300 Mbps in the 802.11n 5 GHz band.
- **2.4 GHz IEEE 802.11n:** (Pure 802.11n) Up to 300 Mbps in the 802.11n 2.4 GHz band.

Note: In **5 GHz IEEE 802.11n** and **2.4 GHz IEEE 802.11n** modes, the M220 does not permit non-802.11n clients to associate. Also in these modes, the M220 does not use protection mechanisms (RTS/CTS or CTS-to-self) to enable legacy APs to operate on the same frequency. This can potentially cause problems with legacy (a/b/g) APs operating on the same channel, but provides the best M220 throughput.

Note: In **IEEE 802.11a/n** and **IEEE 802.11b/g/n** modes, the M220 permits both 802.11n and legacy clients (a/b/g) to associate. The M220 uses protection mechanisms (RTS/CTS or CTS-to-self) when sending 802.11n data to prevent disruption to legacy (a/b/g) clients associated on the same channel.

Get an IP address

IPv4 and IPv6 addressing are both available on the M220. Click the **+** symbol to the left of **IPv4** or **IPv6** to expand their respective settings. Only IPv4 supports DHCP.

Note: For IPv6, consult the *M220 Configuration and Administration Guide*.

IPv4: IP configuration set to DHCP

For this sample procedure, DHCP is assumed. With **IP configuration** set to **DHCP**, the M220 will operate as a DHCP client, automatically obtaining an IP address from a DHCP server. If no DHCP server is found, the default IP address **192.168.1.1** is used.

With DHCP you can preconfigure the address or find the assigned address as follows:

- Preconfigure the DHCP server to assign a specific IP address to the M220. To do this you need to specify the M220 Ethernet MAC address as a reserved IP address on the DHCP server. The M220 Ethernet MAC address is printed on the M220 product label and it is also listed on the management tool **Home > System summary** page.
- Let the DHCP server automatically assign an IP address. By default, the DHCP server will assign an IP address after the M220 connects to the network. When the DHCP server has assigned the M220 an IP address, you can then find the M220 IP address by looking for the M220 MAC address in the DHCP server log.
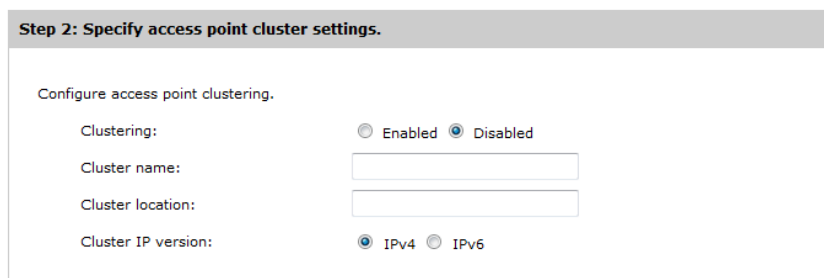
IPv4: IP configuration set to Static IP

- **IP address:** Specify the desired address that is on the same subnet as the network to which the M220 will connect after installation. Respect any DHCP server-mandated static address ranges.

- **Subnet mask:** Specify the appropriate mask.

- **Default gateway:** Specify the address of the device on the wired network that provides access to the Internet.

Change administrator login credentials

To safeguard the M220 management tool, HP strongly recommends that you change its password. For **Current password** enter **admin**. For **New password** and **Confirm password** specify the same new password. Passwords must be from 1 to 32 alphanumeric characters without special characters or spaces. Passwords are case sensitive. HP recommends that new passwords be at least six characters long.

Note: If you leave the password fields blank, no change is made.
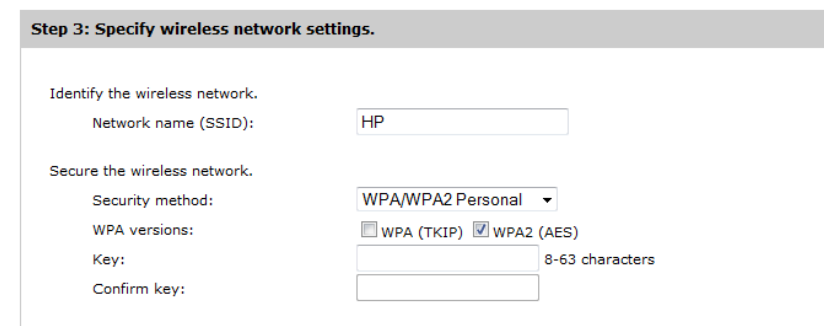
Step 2: Specify access point cluster settings

Up to 16 M220 APs can be grouped into a cluster to simplify configuration of multiple APs and to provide basic channel management within the cluster. For full clustering information, see the *M220 Configuration and Administration Guide*.

To set up this M220 as the first AP in a cluster, set **Clustering** to **Enabled**, specify a **Cluster name** (user defined but the identical name must be used for all members of the cluster), specify a **Cluster location** with whatever description you like, and set **Cluster IP version** to either **IPv4** or **IPv6**.

Then on each additional M220 to be added to this cluster, at initial power on select the *Quickly set up the M220* option: **Add to wireless network with existing AP cluster**, and specify the matching **Cluster name** and **Cluster IP version**.

Step 3: Specify wireless network settings

Identify the wireless network

Network name (SSID)

Specify a name to uniquely identify the wireless network. This name is broadcast, enabling users to select it from the network list presented on their device. The name is case-sensitive.

Secure the wireless network

Security method

Choose the method that will be used to protect wireless transmissions. Because this sample procedure is for *Basic wireless network,* only **WPA/WPA2 Personal** is available. Although included, **Disabled** is NOT recommended.

WPA versions

- **WPA2 (AES):** This WPA version is the most secure. It must be used for the pure 802.11n wireless modes **5 GHz IEEE 802.11n** and **2.4 GHz IEEE 802.11n**.

- **WPA (TKIP):** This version of WPA security is compatible with all wireless modes except the two pure 802.11n modes.

Key, Confirm key

Define the key that wireless users must provide to connect to the wireless network. Specify a key that is from 8 to 63 alphanumeric characters in length. HP recommends that the key be at least 20 characters long and contain a mix of letters and numbers.

Completing Quick Setup

When all settings for Steps 1 through 3 are complete, select **Save**. When prompted to confirm the update, select **OK**.

Note: If you configured a static IP address, you will now lose communication with the management tool until you change the IP address in your Web browser. If the IP address is on a subnet different than your computer (**192.168.1.x**), you must also configure your computer to use the new subnet.

D. Test the wireless network

For the purpose of this example, the network to which you connect the M220 must have a DHCP server and an Internet connection. Furthermore, the **Network name (SSID)** is assumed to be the default **HP**, and the Security method is **WPA2 (AES)**.

1. Disconnect your computer from the PoE switch or injector or the M220.

2. Power off the M220.

   - If using a power supply, disconnect it from the M220.
   - If using a PoE switch or injector, remove power and disconnect the Ethernet cable from the M220.

3. Connect the switch or the data in port of the injector to the network.

4. Reconnect and power on the M220.

   - If using a power supply, connect the M220 to the network and reconnect the M220 power supply.
   - If using a PoE switch or injector, reconnect the M220 to the PoE switch or the data and power out port of the injector and then power on the switch or injector.

5. Wait until the M220 Power LED stops blinking.

6. Enable the Wi-Fi wireless network interface of your computer or mobile device and verify that it is set to obtain an IP address automatically.

7. Connect your computer or mobile device to the new wireless network named **HP**, providing the WPA2 key you defined earlier when prompted.

8. Confirm that you can browse the Internet through the M220.

E. Perform additional configuration

The M220 management tool is now available wirelessly or wired at: **https://**<*IP address*>. For additional configuration information, see the online help and the *M220 Configuration and Administration Guide*.

HP websites

www.hp.com/networking/support

www.hp.com/networking

www.hp.com/support/manuals

www.hp.com

Specifications

Specification	Description
Regulatory model number	RSVLC-1103
Frequency range	2262–2412 MHz, 5180–5240 MHz, 5745–5825 MHz
	Actual operating frequencies depend on regulatory approval for the country of use.
Dimensions	19.35(w)x12.7(d)x3.81(h) cm, 7.62(w)x5(d)x1.5(h) inch
Weight	0.34 kg (0.75 lb)
Maximum power (power adapter)	5.28 W
Maximum power (PoE)	6.82 W
Antenna	Internal 2.4/5 GHz MIMO omni-directional (2)
Operating temperature	0°C to 40°C
Non-operating/storage temperature	-40°C to 70°C
Operating/non-operating relative humidity	5% to 95% @40°C, noncondensing/ 5% to 95% @65°C, noncondensing
Altitude	Up to 4600 m (15,000 ft)