The MSM410 is a Wi-Fi Alliance authorized Wi-Fi CERTIFIED 802.11a/b/g and 802.11n draft 2.0 product. Draft 2.0 refers to the version of the not-yet-ratified IEEE 802.11n standard used in Wi-Fi Alliance testing as of June 2007. The Wi-Fi CERTIFIED Logo is a certification mark of the Wi-Fi Alliance.

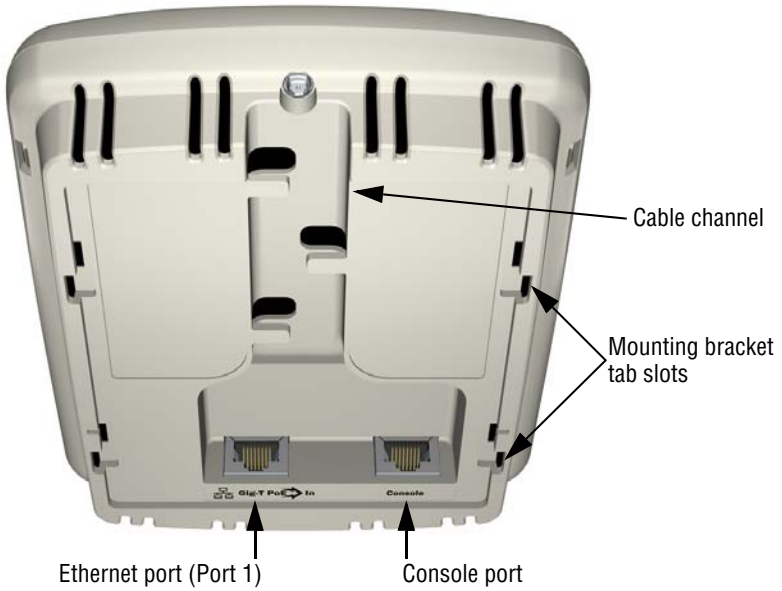
ProCurve Networking

MSM410 Access Point Quickstart

This Quickstart shows you how to get started using the MSM410 Access Point (US J9426A, WW J9427A).

After reading this Quickstart, you can visit www.procurve.com/manuals and download documents of particular interest such as the *MSM3xx / MSM4xx Access Points Management and Configuration Guide* and *the MSM7xx Controllers Management and Configuration Guide*.

Hardware overview



Package contents

MSM410 with detachable mounting bracket and two mounting screws with wall anchors.

Ports

- **Ethernet port:** Auto-sensing 10/100/1000 BaseT Ethernet port with RJ-45 connector. The port supports Power over Ethernet (PoE) 802.3af.
- **Console port:** Standard console (serial) port with an RJ-45 connector. For details, see the MSM410 console port description in the *MSM3xx / MSM4xx Access Points Management and Configuration Guide*

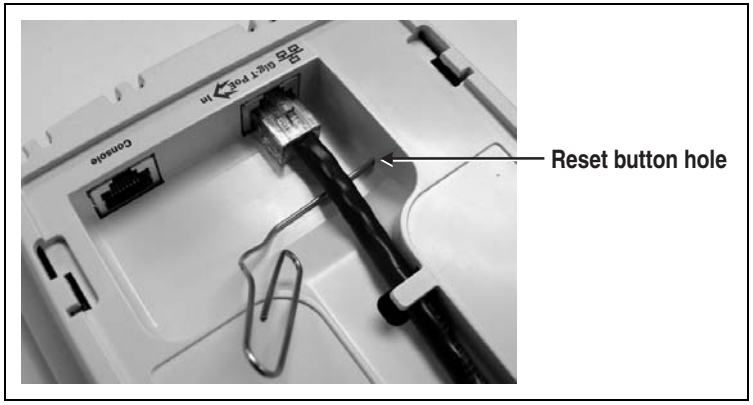
Warning: **Never connect the Console port to an Ethernet switch or PoE power source. This may damage the MSM410. Connect it only to other serial ports via an RJ-45 to DB-9 adapter or equivalent.**

Radios and antennas

The MSM410 contains an integrated single 802.11n Draft 2 compliant radio with an internal three-element, dual-band, MIMO antenna.

Reset button

The Reset button is accessible via a hole on the bottom of the MSM410 as identified below. Insert a paper clip under the cable and into the reset button hole at the precise angle shown. Press and quickly release the button to reset the MSM410. To reset the MSM410 to factory defaults, press the button until the status lights blink three times, then release.



Note: Following a reset to factory defaults, the MSM410 starts up in controlled mode.

About controlled mode and autonomous mode

The MSM410 can operate in one of two modes: controlled (the default) or autonomous. Switching modes resets all configuration settings to factory defaults.

- **Controlled mode:** To become operational, the MSM410 must establish a management tunnel with an MSM7xx Controller. The controller manages the MSM410 and provides all configuration settings. Discovery of the controller is automatic if default settings are used on the MSM410 and the controller, and both devices are on the same subnet. See *Working with controlled APs* in the *MSM7xx Controllers Management and Configuration Guide.*
- **Autonomous mode:** Once switched to autonomous mode, the MSM410 operates as a stand-alone AP. An autonomous MSM410 is configured and managed via its web-based management tool as described in *Initial configuration (autonomous mode)* on page 4.

Status light behavior in controlled mode

During startup/discovery in controlled mode, the MSM410 status lights provide the following information:

Status light behavior	Description
Power light blinks once every two seconds.	The MSM410 is starting up.
Power light blinks once per second.	The MSM410 is looking for an IP address, or building the list of VLANs on which to perform discovery. The management tool will also respond before discovery.
Power, Ethernet, and Radio lights blink in sequence from left to right.	The MSM410 has obtained an IP address and is attempting to discover a controller.
Power light is on. Ethernet and Radio lights blink alternately.	The MSM410 has found a controller and is attempting to establish a secure management tunnel with it.
Power and Ethernet lights blink alternately and quickly. Radio light is off.	The MSM410 has received a discovery reply from two or more controllers with the same priority setting. It is unable to connect with either controller until the conflict is resolved.
Power and Radio lights blink slowly.	The MSM410 is attempting to establish a local mesh link to a master node.
Power and Ethernet lights blink slowly.	The MSM410 is attempting to establish wired connectivity.

Once the discovery process is complete, and the MSM410 has established a secure management tunnel to a controller, the Power light remains on and the Ethernet and Radio lights blink to indicate the presence of traffic.

Status light behavior in autonomous mode

In autonomous mode, the status lights provide the following information:

Light	State	Description
Power	Off	The MSM410 has no power.
	Blinking	The MSM410 is starting up. If the Power light continues to blink after several minutes, it indicates that the software failed to load. Reset or power cycle the MSM410. If this condition persists, contact HP ProCurve Customer Care.
	On	The MSM410 is fully operational.
Ethernet	Off	The port is not connected or there is no activity.
	Blinking	The port is transmitting or receiving data.
Radio	Blinking	The radio is transmitting or receiving data.

Important information to read before installing

Warning: PROFESSIONAL INSTALLATION REQUIRED

Prior to installing or using the MSM410, consult with a professional installer trained in RF installation and knowledgeable in local regulations including building and wiring codes, safety, channel, power, indoor/outdoor restrictions, and license requirements for the intended country. It is the responsibility of the end user to ensure that installation and use comply with local safety and radio regulations.

Cabling: You must use the appropriate cables, and where applicable, surge protection, for your given region. For compliance with EN55022 Class-B emissions requirements use shielded Ethernet cables. Cables with large boots may not insert into the RJ-45 connectors properly. It is recommended that you do not use such cables.

Country of use: In some regions, you are prompted to select the country of use during setup. Once the country has been set, the MSM410 will automatically limit the available wireless channels, ensuring compliant operation in the selected country. Entering the incorrect country may result in illegal operation and may cause harmful interference to other systems.

Plenum installation: The MSM410 and appropriate cabling can be installed in a plenum (UL2043 rating). The MSM410 should be installed with its top surface facing the floor (similar orientation as in a ceiling installation). However, it is left to a qualified installer to determine how to install/secure the MSM410 in a plenum in an appropriate and safe manner. Plenum-rated cables and attachment hardware must be used.

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 MSM410 is powered-on when connected to a PoE power source.
- The MSM410 and all interconnected equipment must be installed indoors within the same building (except for outdoor models / antennas), including all PoE-powered network connections as described by Environment A of the IEEE 802.3af standard.

Powering the MSM410

The MSM410 can be powered by:

- A 10/100 or 10/100/1000 PoE-enabled switch. Various PoE-enabled switches are available from HP ProCurve.
- An HP ProCurve PoE 1-Port Power Injector (J9407A).

Caution: If the MSM410 will be powered by a user-supplied PoE power injector, use only a gigabit-compatible power injector. PoE injectors designed for 10/100 networks only are NOT compatible with the MSM410.

Installation

The MSM410 can be mounted on a wall or a suspended ceiling. In either case, the first step is to mount the bracket, and the second step is to attach the MSM410 to the bracket.

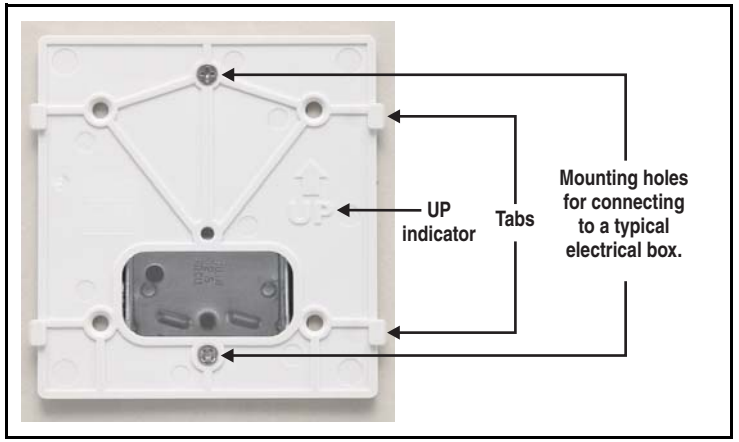
A. Mount the bracket

Mounting directly on a wall

1. Respecting the **UP** indicator on the bracket, hold the bracket against the wall at the desired position. Mark two holes for the screws (wall anchors) and one hole in the cutout area of the bracket for the Ethernet cable.
2. Drill two holes for the wall anchors, typically 3/16 inch (4.7 mm) in diameter.
3. Drill a hole for the Ethernet cable. Alternatively, you can feed the Ethernet cable from above and through the MSM410 cable channel.
4. Insert the anchors and tap them flush with the wall surface.
5. Pull the Ethernet cable through the hole in the wall and the hole in the bracket.
6. Screw the bracket to the wall.

Mounting on a wall-mounted electrical box

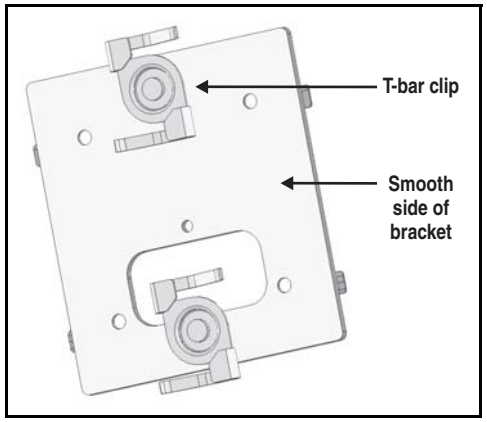
1. Disconnect power and take any other needed security precautions.
2. Remove the electrical box cover and any contents.
3. Pull the Ethernet cable down into the box and then through the hole in the bracket.
4. Hold the bracket against the box respecting the **UP** indicator, and attach the bracket to the box using appropriate countersunk screws.



Mounting on a suspended ceiling

The MSM410 can be mounted on a suspended ceiling with user-supplied T-bar clips or the equivalent. Use a clip stud size of #8-32 (3.5 mm) with a maximum length of 7/16 inch (11mm).

1. Attach two T-bar clips (not supplied) to the bracket as illustrated. The clips must be attached to the smooth outer side of the bracket.
2. Attach the bracket to the suspended ceiling T-bar at the desired mounting position.
3. Once the bracket is firmly attached to the T-bar, cut a hole in the ceiling through the bracket opening for the Ethernet cable.
4. Pull the Ethernet cable through the hole in the bracket.



B. Attach the MSM410 to the bracket

1. Connect the Ethernet cable to the MSM410 Ethernet port. Push excess cable back into the hole.
2. Position the MSM410 against the bracket so that the bracket tabs fit into the tab slots on the back of the MSM410. Push the MSM410 against the bracket and then pull down firmly so that it snaps onto the bracket.
3. Verify that the MSM410 is firmly anchored before letting go of it.
4. Optionally, secure the MSM410 to an immovable object with a Kensington-type cable lock using the hole below the status lights.

Installing in a plenum

See *Plenum installation* under *Important information to read before installing* on page 3.

Initial configuration (autonomous mode)

This procedure describes how to switch a factory-default MSM410 to autonomous mode and then perform its initial configuration that enables you to establish a wireless connection through the MSM410 to the Internet.

Note: For controlled mode configuration, instead see *Working with controlled APs* in the *MSM7xx Controllers Management and Configuration Guide*.

In autonomous mode, the MSM410 is managed via its web-based management tool using at least Microsoft Internet Explorer 7.0 or Mozilla Firefox 2.0.

Caution: Wireless Security

For initial-configuration convenience, a factory-default MSM410 that has been switched to autonomous mode has all wireless security options disabled. It is strongly recommended that after performing this procedure, you enable a wireless security option to properly safeguard the wireless network from intruders. See *Wireless protection* in the *MSM3xx / MSM4xx Access Points Management and Configuration Guide*.

Note: Do not power on the MSM410 until directed.

A. Configure your computer

1. Disconnect your computer LAN port and configure it 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**. For example to do this in Windows XP, use **Control Panel > Network Connections > Local Area Connection > Properties > Internet Protocol (TCP/IP) > Properties**.
2. Disable any wireless connection.
3. Use a standard Ethernet cable to connect your computer to an unused factory-default PoE switch or the **Data In** port of a PoE injector.

B. Switch the MSM410 to autonomous mode

Note: A factory-default MSM410 is assumed.

1. To power on the MSM410, connect an Ethernet cable from the MSM410 Ethernet port to the PoE switch or injector. Initially the Power light will blink once every two seconds. Wait until it begins blinking once per second before proceeding to the next step.
2. In a web browser, enter the address: **https://192.168.1.1**.
3. At the security certificate prompt proceed as follows: In Microsoft Internet Explorer 7, select **Continue to this website**. In Firefox 2, select **Accept this certificate temporarily for this session** and **OK**.

   To eliminate the security warning, you need to replace the default certificate that is installed on the MSM410. See *About certificate warnings* in the *MSM3xx / MSM4xx Access Points Management and Configuration Guide*.
4. On the Login page, specify **admin** for **Username** and **Password** and then select **Login**. The MSM410 management tool home page opens.
5. Select **Switch to Autonomous Mode** and confirm the change. The MSM410 restarts in autonomous mode.

   Note: To avoid a delay after switching modes, clear the ARP (address resolution protocol) cache on your computer. In Windows for example, from the **Windows Start** menu, select **Run** and enter "`arp -d`" (without the quotes). Select **OK**.

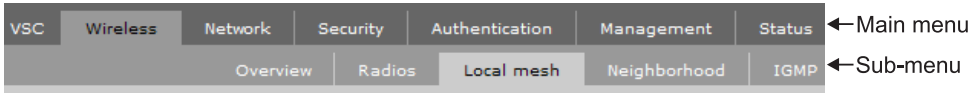
C. Log in

1. Wait until the Power light stops blinking and remains on.

2. On the Login page, specify **admin** for **Username** and **Password** and then select **Login**.
3. On the License Agreement page, read the agreement and select **Accept License Agreement**.
4. On the Registration page, register now if desired. You can register later by selecting **Service Controller >> Maintenance > Registration**.
5. If a **Country** prompt appears, select the country in which the MSM410 will operate.

   Caution: The correct country must be selected. See *Country of use* on page 3.
6. At the password prompt it is recommended that you change the default password and select **Save**. Passwords must be at least six characters long and include four different characters.

The management tool is organized with menus and sub-menus. Instructions for making menu selections, such as "select **Wireless > Local mesh**" instruct you to select the **Wireless** menu and then the **Local mesh** sub-menu, as follows:



D. Reserve an IP address for the MSM410

By default the MSM410 operates as a DHCP client on the Ethernet port. If there is a DHCP server on the network, the MSM410 will automatically receive a new IP address and will no longer have the default address of 192.168.1.1. It is suggested that you either pre-configure the DHCP server for the MSM410 or use a static IP address as follows:

- Pre-configure the DHCP server to assign a specific IP address to the MSM410. To do this you need to specify the MSM410 MAC address and a reserved IP address on the DHCP server. The MSM410 MAC address is printed on the MSM410 label identified as **Wireless Base MAC**, or listed on the management tool **Home** or **Login** page as **Wireless MAC address**.

OR

- Assign a static IP address to the MSM410. The address must be on the same subnet as the network to which the MSM410 will connect.

  1. Select **Network > Ports** > **Bridge port.**
  2. Select **Static** and then **Configure**. Configure settings as follows:
     - **IP address:** Set an address that is on the same subnet as the network to which the MSM410 will connect once installed. Respect any DHCP server-mandated static address ranges.
     - **Mask:** Set the corresponding mask for the IP address.
     - **Default gateway:** Set the IP address of the gateway on the network.
  3. Select **Save**.

E. Test the wireless network

1. Disconnect the MSM410 from your computer and use a standard Ethernet cable to connect it to the network via a PoE switch or injector. For the purposes of this installation procedure, the network must have a DHCP server and an Internet connection. Broadband routers typically include a DHCP server.
2. Enable the wireless network interface on your computer, and verify that it is set to obtain an IP address automatically.

   For example, to do this in Windows XP, use **Control Panel > Network Connections > Local Area Connection > Properties > Internet Protocol (TCP/IP) > Properties,** and make sure that **Obtain an IP address automatically** and **Obtain a DNS server address automatically** are both checked.

   Note: It is recommended that the wireless interface on your computer be set to operate as a Wi-Fi Alliance Certified 802.11n draft 2.0 client. Windows XP users may have to install a patch available from Microsoft.
3. Connect to the wireless network. By default the MSM410 creates a wireless network named *HP ProCurve.* For example, from the Windows XP Start menu, select **Settings > Network Connections > Wireless Network Connections.** Select *HP ProCurve* and then **Connect**.
4. Confirm that you can browse the Internet using the wireless network.

F. Performing additional configuration

Configure your computer LAN port and connect it to the same network as the MSM410. Re-launch the MSM410 management tool at **https://*<IP address>*** where ***<IP address>*** is one of:

- The IP address reserved on the DHCP server in step D above.
- The IP address corresponding to the MSM410 MAC address in the DHCP server log.
- The static IP address assigned to the MSM410 in step D above.

Note: See the Caution regarding WIRELESS SECURITY on page 4.

Enabling access to other resources

By default, the MSM410 only permits traffic that is addressed to the default gateway on the network (which enables you to connect to the Internet). To enable access to other resources:

1. Select **VSC > Profiles** and then select the **HP ProCurve** profile.
2. On the **Add/Edit Virtual Service Community** page clear the **Wireless security filters** checkbox.
3. Select **Save**.

Notice

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

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