



CISCO CW9166I-MR Meraki Ultra-High Performance Access Points Installation Guide

[Home](#) » [Cisco](#) » CISCO CW9166I-MR Meraki Ultra-High Performance Access Points Installation Guide 



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Contents

- [1 CW9166I-MR Meraki Ultra-High Performance Access Points](#)
- [2 Scope of Document and Related Publications](#)
- [3 CW9166I-MR, CW91641-MR Overview](#)
- [4 Pre-Install Preparation](#)
- [5 Installation Instructions](#)
- [6 Troubleshooting](#)
- [7 Regulatory](#)
- [8 Documents / Resources](#)
- [9 Related Posts](#)

CW9166I-MR Meraki Ultra-High Performance Access Points

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Warranty

Meraki, Inc. provides a lifetime warranty on this product. Warranty details may be found at www.meraki.com/legal.

Scope of Document and Related Publications

The CW91661-MR, CW91641-MR Hardware Installation Guide describes the installation procedure for the CW91661-MR, CW91641-MR indoor access point. Additional reference documents are available online at www.meraki.com/library/product.

CW91661-MR, CW91641-MR Overview

The Meraki CW91661-MR, CW91641-MR is an enterprise-class, dual-concurrent 4x4 MIMO 802.11ac indoor access point designed for high-density deployments in offices, schools, hospitals and hotels. When connected to the Meraki Cloud Controller, the CW91661-MR, CW91641-MR enables the creation of ultra-high speed, reliable indoor wireless networks quickly, easily and cost-effectively.

2.1 Package Contents

The CW91661-MR, CW91641-MR package contains the following:

- CW91661-MR,
- CW91641-MR access point
- Mounting plate
- Drop ceiling mounting kit
- Wall screws
- Security screws
- Mounting Template

2.2 Understanding the CW91661-MR, CW91641-MR

CW91661-MR, CW91641-MR Operation Temperature: 32° F to 122° F (0 °C to 50 °C)

Your Meraki CW91661-MR, CW91641-MR has the following features:

- Kensington lock hard point
- Mount plate attachment slots (2x)
- Cable access bay
- Desk mount feet (4x) with M4*5mm pan-head screws
- CW91661-MR, CW91641-MR cable access bay
- Factory Reset Button
- Ethernet port Power supplied by PoE: 42.5-57Vdc, 0.847-0.631A or 42.5-57Vdc, 0.776-0.579A
- AC Adapter plug (sold separately) Power supplied by adapter 54Vdc, 0.92A

Your CW91661-MR, CW91641-MR mount plate has the following features:

- Access point mounting posts (2x)
- Various mounting holes

2.3 Security Features

The CW91661-MR, CW91641-MR features multiple options for physically securing the access point after

installation:

1. Security screw — The accessory kit includes screws that can be used to secure the access point to the mount plate. Engaging the security screw prevents accidental dislodging and theft.
2. Kensington lock — The access point contains a hard point that allows it to be secured to any nearby permanent structure using a standard Kensington lock.

2.4 Ethernet Ports

The CW91661-MR, CW91641-MR features an Ethernet RJ45 port that accepts 802.3af power (labeled “PoE”). This port should be used for uplink to your WAN connection.

2.5 Power Source Options

The CW91661-MR, CW91641-MR access point can be powered using either the Meraki AC Adapter or 802.3af PoE Injector (both sold separately) or a third-party 802.3af PoE switch.

2.6 Factory Reset Button

If the button is pressed and held for at least five seconds and then released, the CW91661-MR, CW91641-MR will reboot and be restored to its original factory settings by deleting all configuration information stored on the unit.

Pre-Install Preparation

You should complete the following steps before going on-site to perform an installation.

3.1 Configure Your Network in Dashboard

The following is a brief overview only of the steps required to add an CW91661-MR, CW91641-MR to your network. For detailed instructions about creating, configuring and managing Meraki wireless networks, refer to the Meraki Cloud Controller Manual (meraki.com/library/product).

1. Login to <http://dashboard.meraki.com>. If this is your first time, create a new account.
2. Find the network to which you plan to add your APs or create a new network.
3. Add your APs to your network. You will need your Meraki order number (found on your invoice if you ordered directly from Meraki) or the serial number of each AP, which looks like Qxxx-xxxx-xxxx, and is found on the bottom of the unit. You will also need your Enterprise Cloud Controller license key, which you should have received via email from shipping@meraki.com.
4. Go to the map/floor plan view and place each AP on the map by clicking and dragging it to the location where you plan to mount it.

3.2 Check and Upgrade Firmware

To ensure your CW91661-MR, CW91641-MR performs optimally immediately following installation, Meraki recommends that you facilitate a firmware upgrade prior to mounting your CW91661-MR, CW91641-MR.

1. Attach your CW91661-MR, CW91641-MR to power and a wired Internet connection. See p.19 of this Hardware Installation Guide for details.
2. The CW91661-MR, CW91641-MR will turn on and the Power LED will glow solid orange. If the unit does not require a firmware upgrade, the Power LED will turn white within thirty seconds.

* If the unit requires an upgrade, the Power LED will begin blinking orange until the upgrade is complete, at which point the Power LED will turn solid white. You should allow about an hour for the firmware upgrade to complete, depending on the speed of your internet connection.

3.3 Check and Configure Firewall Settings

If a firewall is in place, it must allow outgoing connections on particular ports to particular IP addresses. The most current list of outbound ports and IP addresses can be found here: <http://tinyurl.com/y79une3>

3.4 Assigning IP Addresses to CW91661-MR, CW91641-M Rs

All gateway CW91661-MR, CW91641-MRs (CW91661-MR, CW91641-M Rs with Ethernet connections to the LAN) must be assigned routable I P addresses. These IP addresses can be dynamically assigned via DHCP or statically assigned.

3.4.1 Dynamic Assignment

When using DHCP, the DHCP server should be configured to assign a static IP address for each MAC address belonging to a Meraki AP. Other features of the wireless network such as 802.1x authentication, may rely on the property that the APs have static IP addresses.

3.4.2 Static Assignment

Static I Ps are assigned using the local web server on each AP. The following procedure describes how to set the static IP:

1. Using a client machine (e.g. a laptop), connect to the AP either wirelessly (by associating to any SSID broadcast by the AP) or over a wired connection.

If using a wired connection, connect the client machine to the CW91661-MR, CW91641-MR either through a PoE switch or a Meraki PoE Injector. If using a PoE switch, plug an Ethernet cable into the CW91661-MR, CW91641-MR's Ethernet jack, and the other end into a PoE switch. Then connect the client machine over Ethernet cable to the PoE switch. If using a Meraki PoE Injector, connect the CW91661-MR, CW91641-MR to the "PoE" port of the Injector, and the client machine to the "LAN" port.

2. Using a web browser on the client machine, access the AP's built-in web server by browsing to <http://my.meraki.com>. Alternatively, browse to <http://10.128.128.128>.
3. Click on the "Static I P Configuration" tab. Log in. The default user name is "admin". The default password is the AP's serial number, with hyphens included
4. Configure the static IP address, net mask, gateway IP address and DNS servers that this AP will use on its wired connection. 5. If necessary, reconnect the AP to the LAN.

3.4.3 Static IP via DHCP Reservations

Instead of associating to each Meraki AP individually to configure static IP addresses, an administrator can assign static IP addresses on the upstream DHCP server. Through "DHCP reservations", I P addresses are "reserved" for the MAC addresses of the Meraki APs. Please consult the documentation for the DHCP server to configure DHCP reservations.

3.5 Collect Tools

You will need the following tools to perform an installation:



Phillips
screwdriver

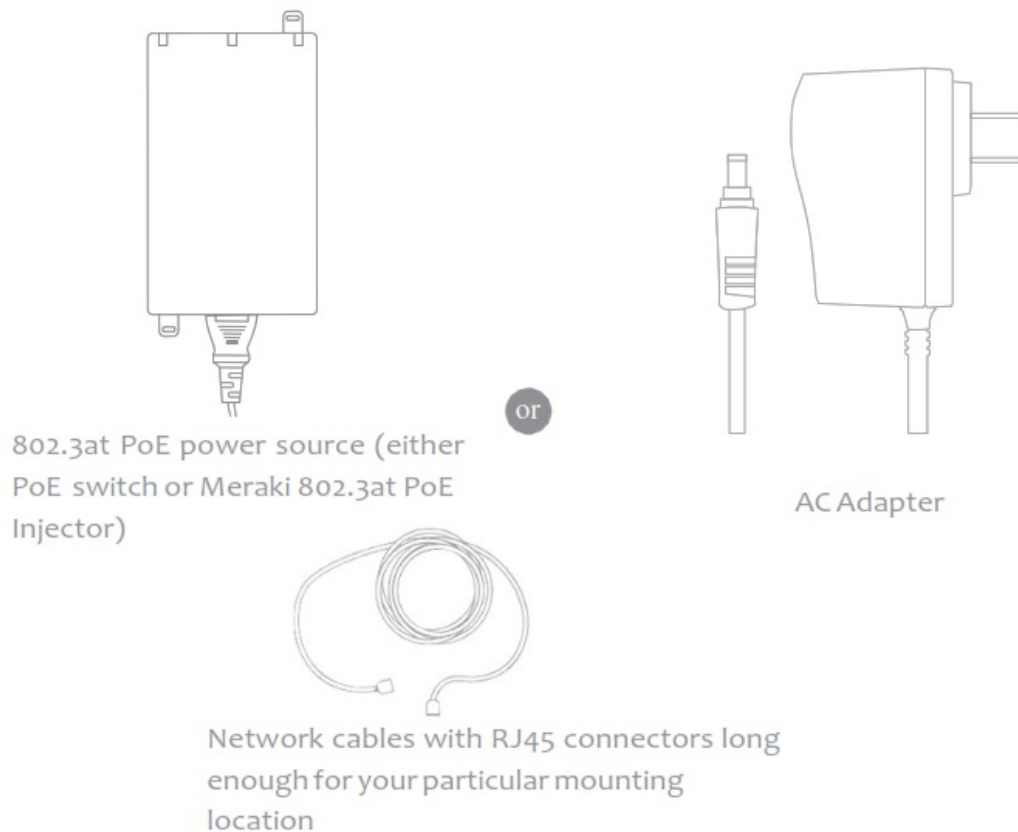


Hammer



Drill with 1/4"
(6.3mm) bits

3.6 Collect Additional Hardware for Installation



Installation Instructions

4.1 Choose Your Mounting Location

A good mounting location is important to getting the best performance out of your CW91661-MR, ONgi641-MR access point. Keep the following in mind:

1. The device should have unobstructed line of sight to most coverage areas. For example, if installing in an office filled with workspaces divided by mid-height cubicle walls, installing on the ceiling or high on a wall would be ideal.
2. Power over Ethernet supports a maximum cable length of 300 ft (91 m).
3. If being used in a mesh deployment, the CW91661-MR, CW91641-MR should have line of sight to at least two other Meraki devices. For more detailed instructions regarding access point location selection, reference the Meraki Network Design Guide (meraki.com/library/product).

4.2 Install the CW91661-MR, CW91641-MR

For most mounting scenarios, the CW91661-MR, CW91641-MR mount plate provides a quick, simple, and flexible means of mounting your device. The installation should be done in two steps. First, install the mount plate to your selected location. Then, attach the CW91661-MR, CW91641-MR to the mount plate.

!!! This equipment is only suitable for mounting at heights ≤ 2 m !!!

4.2.1 Attach the Mount Plate

The CW91661-MR, CW91641-MR mount plate can be used to install your access point in a wide range of scenarios: wall or solid ceiling, below a drop ceiling, on various electrical junction boxes, or above a drop ceiling (in the plenum).

The mount plate contains a variety of hole patterns that are customized for each installation scenario. The mounting template (included in box with mount plate) should be used to drill holes for wall mounts and also to identify the correct hole patterns in the mount plate that should be used for each type of mount.

The following images also show the hole patterns that should be used for each type of mount:

4.2.1.1 Wall or Solid Ceiling Mount Using Mount Plate

Using included screws, attach the mount plate to your mounting wall or ceiling.

It is recommended that the CW91661-MR, CW91641-MR be mounted to a wall or solid ceiling using the mount

plate for physical security reasons.

! If mounting your CW91661-MR to a wall, skip to “Power the CW91661-MR” on P. 20

4.2.1.2 Electrical Junction Box Mount Using Mount Plate

The CW91661-MR, CW91641-MR can be mounted to a 4" square cable junction box, a 3.5 or 4" round cable junction box, or various U.S. and European outlet boxes (mounting screws are not included).

Using appropriate mounting hardware for your specific type of junction box, attach the mount

4.2.2 Powerthe CW91661-MR, CW91641-MR

If mounting to an electrical junction box, feed the Ethernet cable through the cable access hole in the Mount Plate. If mounting to a wall or ceiling, the Ethernet cable will feed through the cable slot on bottom of the CW91661-MR, CW91641-MR.

4.2.2.1 Powering the CW91661-MR, CW91641-MR with the Meraki AC Adapter (sold separately)

1. Plug the power cord into the CW91661-MR, CW91641-MR and the other end into a wall outlet.
2. Plug an Ethernet cable that is connected to an active Ethernet connection into the Etho port on the CW91661-MR, CW91641-MR.

4.2.2.2 Poweringthe M.410-IVIR with the Meraki 802.3at Powerover Ethernet Injector(sold separately)

1. Plug the power cord into the PoE Injector and the other end into wall power.
2. Plug an Ethernet cable that is connected to an active Ethernet connection into the “IN” port on the injector.
3. Route Ethernet cable from the “OUT” port on the injector to the Etho port in the cable bay of the CW91661-MR, CW91641-MR.

4.2.2.3 Powering the CW91661-MR, CW91641-MR with an 802.3at Power over Ethernet Switch Route Ethernet cable from a port on an active 802.3at PoE switch to the Etho port in the bay of the CW91661-MR, CW91641-MR.

! The CW91661-MR is Gigabit Ethernet-capable. To maximize device performance, a **■** Gigabit-capable switch should be used.

4.2.3 MounttheCW91661-MR, CW91641-MR

4.2.3.2 Assemble CW91661-MR, CW91641-MR to the Mount Plate

(This section applies to wall and/or solid ceiling, drop ceiling or electrical junction box mount where you have already installed the mount plate.)

Insert the top latch on the mount plate into the top mount plate attachment slots on the back of the device. Rotate the bottom of the unit into the bottom mount plate attachment slot. The unit will click into place.

4.2.3.3 Desk or Shelf Mount

The CW91661-MR, CW91641-MR can be placed on a desk or shelf resting on the non-scratch rubber feet. The mount plate is not necessary for a desk or shelf mounting.

4.3 Secure the CW91661-MR, CW91641-MR

Depending on your mounting environment, you may want to secure the CW91661-MR, CW91641-MR to its mount location. Your CW91661-MR, CW91641-MR can be secured in several ways. If the CW91661-MR, CW91641-MR has been installed using the mount plate, it can be secured via security screw (Torx and Philips head security screws are included; choose one), and/or Kensington lock. If the mount plate was not used, the CW91661-MR, CW91641-MR can still be secured using a Kensington lock.

4.3.1 Security Screw

Install the security screw in the lower mount plate tab.

4.3.2 Kensington Lock

Attach a Kensington lock cable to the access point at the hard point on the side of the device. Attach the other end of the cable to a secure location, such as a pipe or building fixture.

4.4 Verify Device Functionality and Test Network Coverage

1. Check LEDs The LED should be solid white. If it is flashing orange, the firmware is automatically upgrading and the LED should turn green when the upgrade is completed (normally in under thirty minutes). Note: Your CW91661-MR, CW91641-MR must have an active route to the Internet to check and upgrade its firmware.
2. Verify access point connectivity Use any 802.11 client device to connect to the CW91661-MR, CW91641-MR and verify proper connectivity using the client's web browser.
3. Check network coverage Confirm that you have good signal strength throughout your coverage area. You can use the signal strength meter on a laptop, smart phone, or other wireless device.

Troubleshooting

Reference the Meraki knowledge base at http://meraki.com/support/knowledge_base for additional information and troubleshooting tips.

Regulatory

FCC Compliance Statement This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

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 correct the interference by one 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 which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by Meraki could void the user's authority to operate this equipment. This Transmitter must not be co-located or operation in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 41 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the USA is firmware-limited to channels 1 through 11.

FCC regulations restrict the operation of this device to indoor use only. The operation of this device 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.

Professional installation is required

If the device is going to be operated in the 5.15 – 5.25 GHz frequency range, then it is restricted to indoor environment only. This device meets all other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Industry Canada Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Industry Canada Caution

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

Industry Canada Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 27 cm between the radiator & your body.

Co-location Statement

The transmitter module may not be co-located with any other transmitter or antenna.

The Country Code Selection feature is disabled for products marketed in the US/Canada.

For product available in the USA/Canada market, only channel 1-1i can be operated. Selection of other channels is not possible.

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. Operation shall be limited to indoor use only.

Operation on oil platforms, cars, trains, boats and aircraft shall be prohibited except for on large aircraft flying above 10,000 ft.

EU & UK

The frequency and the maximum transmitted power in EU are listed below:

2412-2472MHz:XX.XX dBm

2402-2480MHz (BRJEDR): XX.XX dBm

2402-2480MHz (LE): XX.XX dBm

3180-3240MHz: XX.XX dBm

3260-3320MHz: XX.XX dBm


3300-3700: XX.XX dBm

5745-5823MHz: XX.XX dBm

5945-6423MHz: XX.XX dBm

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

CE: The device is restricted to indoor use only when operating in the 5945 to 6423MHz frequency range.

	AT	BE	BG	HR	CH	CY	CZ
	DE	DK	EE	FI	FR	EL	HU
	IE	IS	IT	LI	LV	LT	LU
	MT	NL	NO	PL	PT	RO	SK
	TR	SI	ES	SE	UK(NI)		

UK: The device is restricted to indoor use only when operating in the 5925 to 6423MHz frequency range.



UK

Hereby, Cisco Systems Inc. declares that the radio equipment type CW91661 series is in compliance with Directive 2014/33/EU. The full text of the EU declaration of conformity is available at the following internet address: <https://meraki.cisco.com/compliance/?sortby=most-recent>



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www.ciscosystems.com

Cisco Systems, Inc.

170 West Tasman Drive

San Jose, CA 95134 USA

Documents / Resources

 Cisco Meraki



Meraki
CW9166I-MR, CW9164I-MR
Access Points

[CISCO CW9166I-MR Meraki Ultra-High Performance Access Points](#) [pdf] Installation Guide 9160S2578, LDK-9160S2578, LDK9160S2578, CW9166I MR, CW9164I MR, CW9166I MR Meraki Ultra-High Performance Access Points, CW9166I MR, Meraki Ultra-High Performance Access Points, Ultra-High Performance Access Points, Performance Access Points, Access Points, Points

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