
Z4/Z4C Series Hardware Installation Guide

About this Guide

This guide provides instructions on how to install and configure your Z4/Z4C series device. This guide also provides mounting instructions and limited troubleshooting procedures. For more Z-series device installation guides, refer to the Z-series [installation guides section](#) on our documentation website.

Product Overview

The Cisco Meraki Z-Series teleworker gateway is an enterprise class firewall, VPN gateway and router. Each model offers wireless connectivity, five gigabit ethernet ports, including a built-in PoE-enabled port for VoIP phones and other powered devices. Each model is designed to securely extend the power of Meraki cloud managed networking to almost any location. With a built-in LTE modem, the Z4C simplifies any deployment that requires a backup cellular uplink, or is positioned in a remote location.



Features

- Managed via Cisco Meraki Dashboard
- Automatic Firmware upgrades
- Automatic WAN Failover to Cellular Uplink
- L3/L7 Stateful Firewall
- 1:1 and 1:Many NAT
- Configurable VLANs / DHCP support
- Static Routing
- Client VPN endpoint

- Meraki AutoVPN and L2TP/IPSec VPN endpoint
- Custom Traffic Shaping
- Historical Client Usage statistics
- Netflow support
- Syslog integration
- Remote Packet Capture tools

Context and Comparisons

	<u>Z4</u>	<u>Z4C</u>
Max Stateful Firewall Throughput in NAT mode	500 Mbps	500 Mbps
Max VPN Throughput	250 Mbps	250 Mbps
Backup Cellular Uplink	N/A	Built-in CAT12 LTE Modem
PoE Capabilities	Yes, 1x GbE RJ45 LAN Ports (802.3at)	Yes, 1x GbE RJ45 LAN Ports (802.3at)
WiFi	Dual-band 2x2 WiFi 6	Dual-band 2x2 WiFi 6
Recommended LAN Clients	Up to 15	Up to 15

Physical Specifications

	Z4	Z4C
RJ45 WAN Interfaces	1x Dedicated GbE RJ45	1x Dedicated GbE RJ45
Cellular WAN Interfaces	N/A	Built-in Cellular Uplink
LAN Interfaces - Dedicated	4x Dedicated GbE RJ45	4x Dedicated GbE RJ45

Wireless Radio Information	WiFi 6 2x2 MU-MIMO	WiFi 6 2x2 MU-MIMO
Antennas	2 x 2 MU-MIMO with two spatial streams	2 x 2 MU-MIMO with two spatial streams
Maximum Wireless Data Rate	1.5 Gbps*	1.5 Gbps*
Mount Type	Desktop / Wall Mount	Desktop / Wall Mount
Dimensions	6.83 x 4.41 x 1.04 in /	7.9 x 4.41 x 1.04 in /
(h x d x w)	173.4 x 112 x 26.3 mm	200 x 112 x 26 mm
Weight	0.85 lbs / 0.386 kg	1.1 lbs / 0.487 kg
Power Supply	50W (54 V / 0.92 A)	50W (54 V / 0.92 A)
Power Load (max)	42W	46W
Operating Temperature	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C
Storage and Transportation Temperature	-4°F - 158°F -20°C - 70°C	-4°F - 158°F -20°C - 70° C
Humidity	5% to 95%	5% to 95%



* Refers to maximum over-the-air data frame rate capability of the radio chipset, and may exceed data rates allowed by IEEE 802.11ax operation.

Cellular Interface

Cellular Bands

LTE	1, 2, 3, 4, 5, 7, 8, 12, 13, 14, 17, 18, 19, 20, 25, 26, 28, 29, 30, 38, 39, 40, 41, 42, 43, 48, 66, 71
Certified Certifications	PTCRB (US), GCF (EU), FCC (US)

Certification AT&T (US), T-Mobile (US), Verizon Wireless (US), AT&T FirstNet (US)

Tested Carriers AT&T (US), T-Mobile (US), Verizon (US), Optus (Australia), O2 (Germany), Vodafone (EU), Telstra (Australia), Bell (Canada), EE (UK), Swisscom, Deutsche Telekom (Germany), Telia (SE), Movistar (ES), Orange (EU)

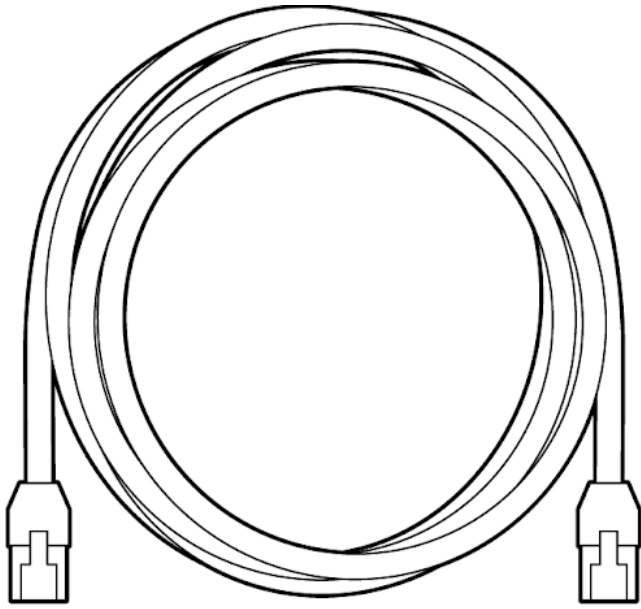
Carrier compatibility is generally based on having compatible bands on the modem. In the open market, carriers may only require regulatory domain certifications and open market certifications, like the PTCRB and GCF, to be compatible for their network. Sometimes carriers will require additional testing before a device can be used on their network. The section Tested Carriers is based on Meraki device certifications being approved by those specific carriers. A carrier being listed above means that they have officially certified the Meraki product for their cellular network. There may be many unlisted carriers that could be functionally compatible with Meraki devices. The list of tested certified carriers is based on the carrier validating Meraki per their network parameter requirements. If a carrier you are looking to use is not listed above, it could be that they do not require additional compliance testing for their network.

Accessories

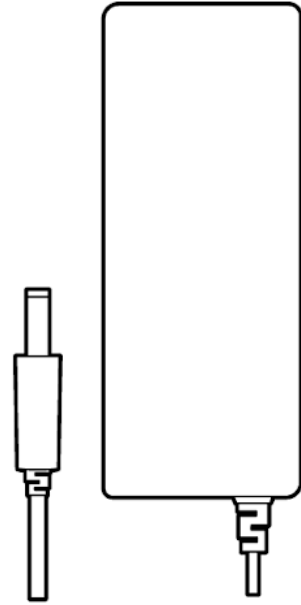
Accessory	Description
MA-PWR-50WAC	1x 50W Power Adapter (Z4/Z4C)
MA-PWR-CORD-US	1x AC Power Cable, US plug
MA-PWR-CORD-EU	1x AC Power Cable, EU plug
MA-PWR-CORD-UK	1x AC Power Cable, UK plug
MA-PWR-CORD-AU	1x AC Power Cable, AU plug

Product View and Physical Features

Package Contents



1x



1x

In addition to the Z4/Z4C device, the following are provided:

Z4

Power Adapter (No Power Cable)

1x CAT5e Ethernet Cables

Z4C

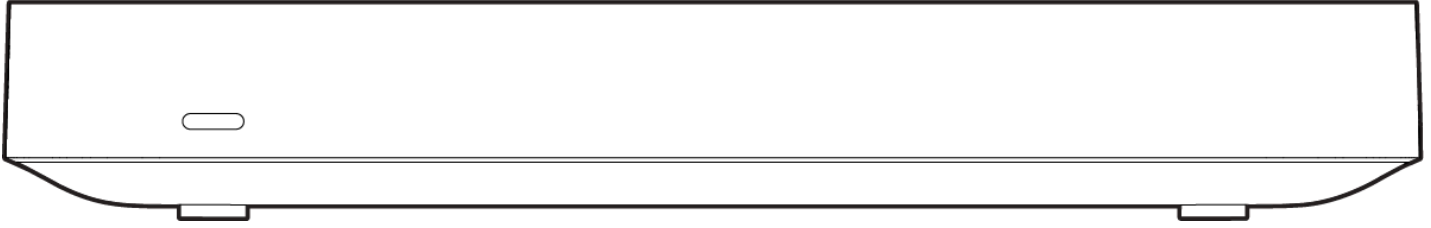
Power Adapter (No Power Cable)

1x CAT5e Ethernet Cables

SIM ejector tool

Front Panel

Z4



Z4C



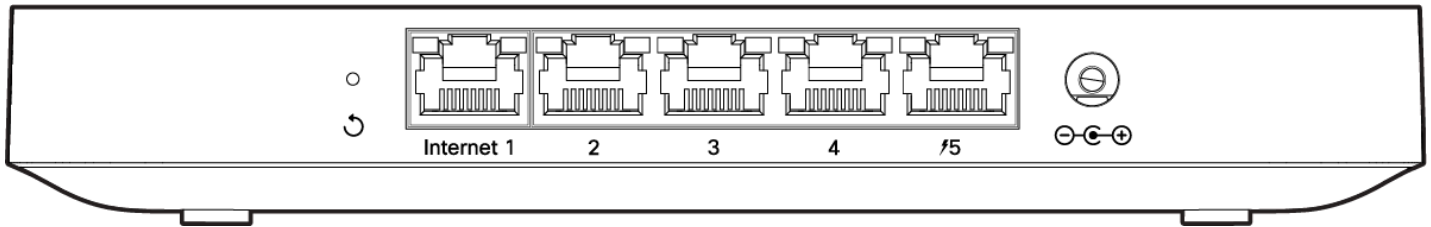
Status Indicator

The Z4C uses a single LED to inform the user of the device's status.

LED Status	Meaning
Solid orange	Power is applied but the appliance is not connected to the Meraki Dashboard
Rainbow Colors	The appliance is attempting to connect to Meraki Dashboard
Flashing White	Firmware upgrade in progress
Solid White	Fully operational/connected, uplink actively using wired WAN
Solid Purple (Z4C only)	Fully operational/connected, uplink actively using cellular failover

Back Panel

Z4



Additional functions on the back panel are described below, from left to right.

Reset button	<p>Insert a paper clip if a reset is required.</p> <ul style="list-style-type: none"> • Press for 1 second to delete a downloaded configuration and reboot. • Press and hold for more than 10 seconds to force a full factory reset.
WAN / Internet port	[Far left Ethernet port] This port provides connectivity to the WAN.
LAN ports	<p>These 4 ports provide connectivity to computers, printers, access points, or Ethernet switches.</p> <p>A steady green LED indicates bidirectional connectivity, and flashing green indicates traffic.</p>

PoE+ Port

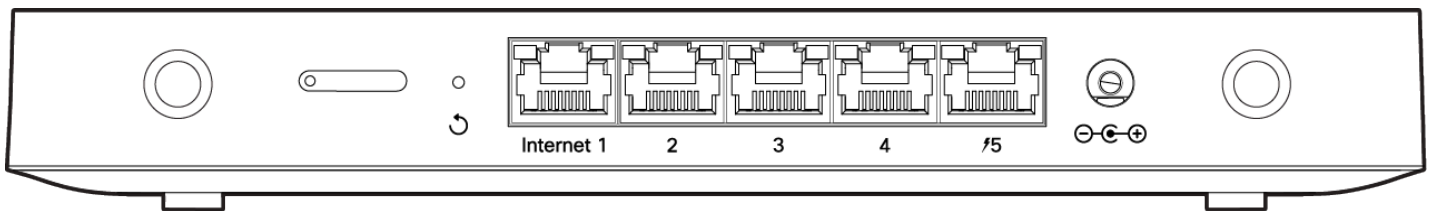
[Far right Ethernet port] One of the LAN port provides PoE+ for connectivity to computers, printers, access points, or Ethernet switches, up to 30W of PoE power.

A steady green LED indicates bidirectional connectivity, and flashing green indicates traffic.

Power input

Designed for use only with the unit's power supply.

Z4C



Additional functions on the back panel are described below, from left to right.

SIM Card Slot

Active, [supported](#) SIM cards can be inserted into this slot to enable cellular capabilities.

Insert a paper clip if a reset is required.

Reset button

- Press for 1 second to delete a downloaded configuration and reboot.
- Press and hold for more than 10 seconds to force a full factory reset.

WAN / Internet port

This port provides connectivity to the WAN.

LAN ports

These 4 ports provide connectivity to computers, printers, access points, or Ethernet switches.

A steady green LED indicates bidirectional connectivity, and flashing green indicates traffic.

PoE+ Port

One of the LAN port provides PoE+ for connectivity to computers, printers, access points, or Ethernet switches, up to 30W of PoE power.

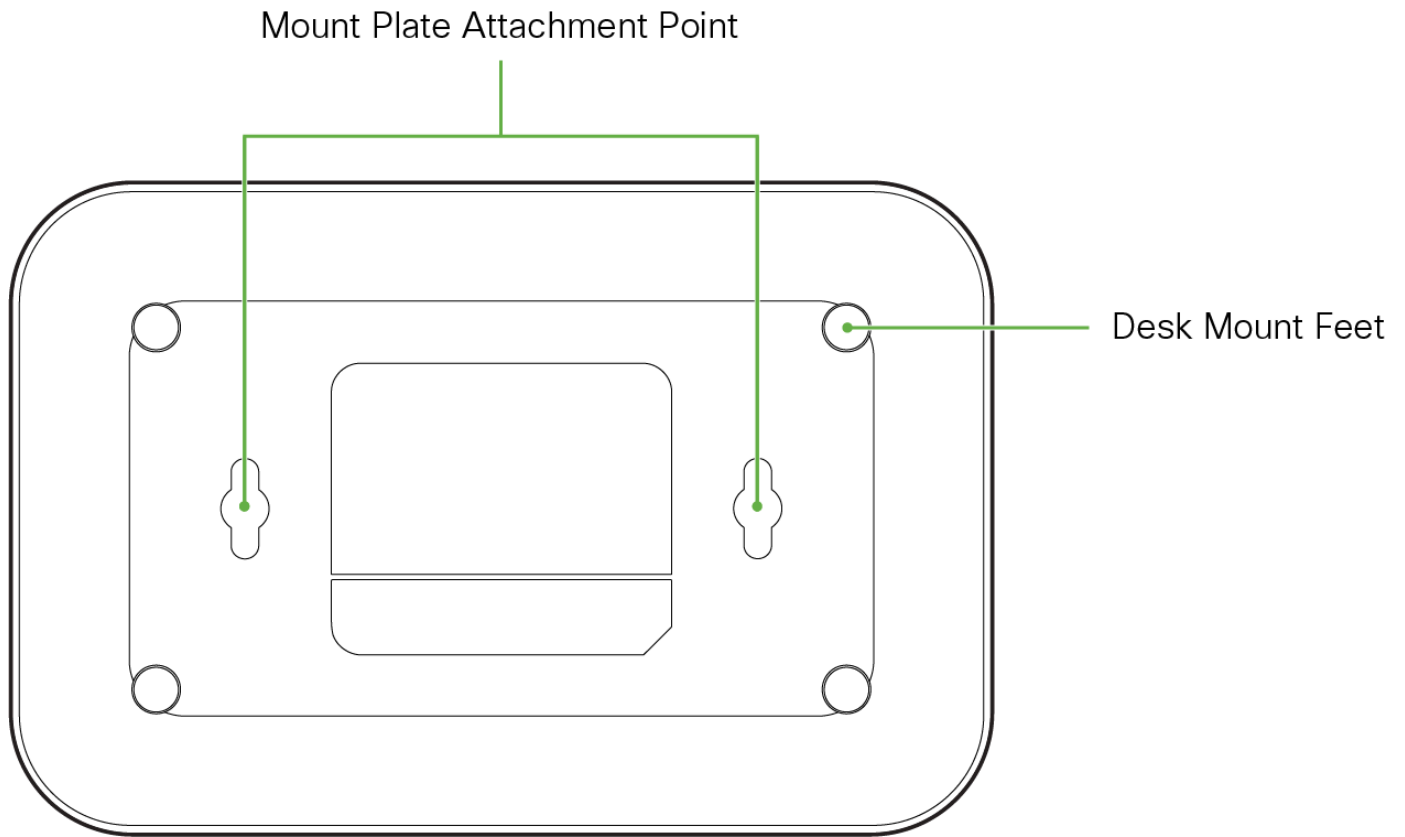
A steady green LED indicates bidirectional connectivity, and flashing green indicates traffic.

Power input

Designed for use only with the unit's power supply.

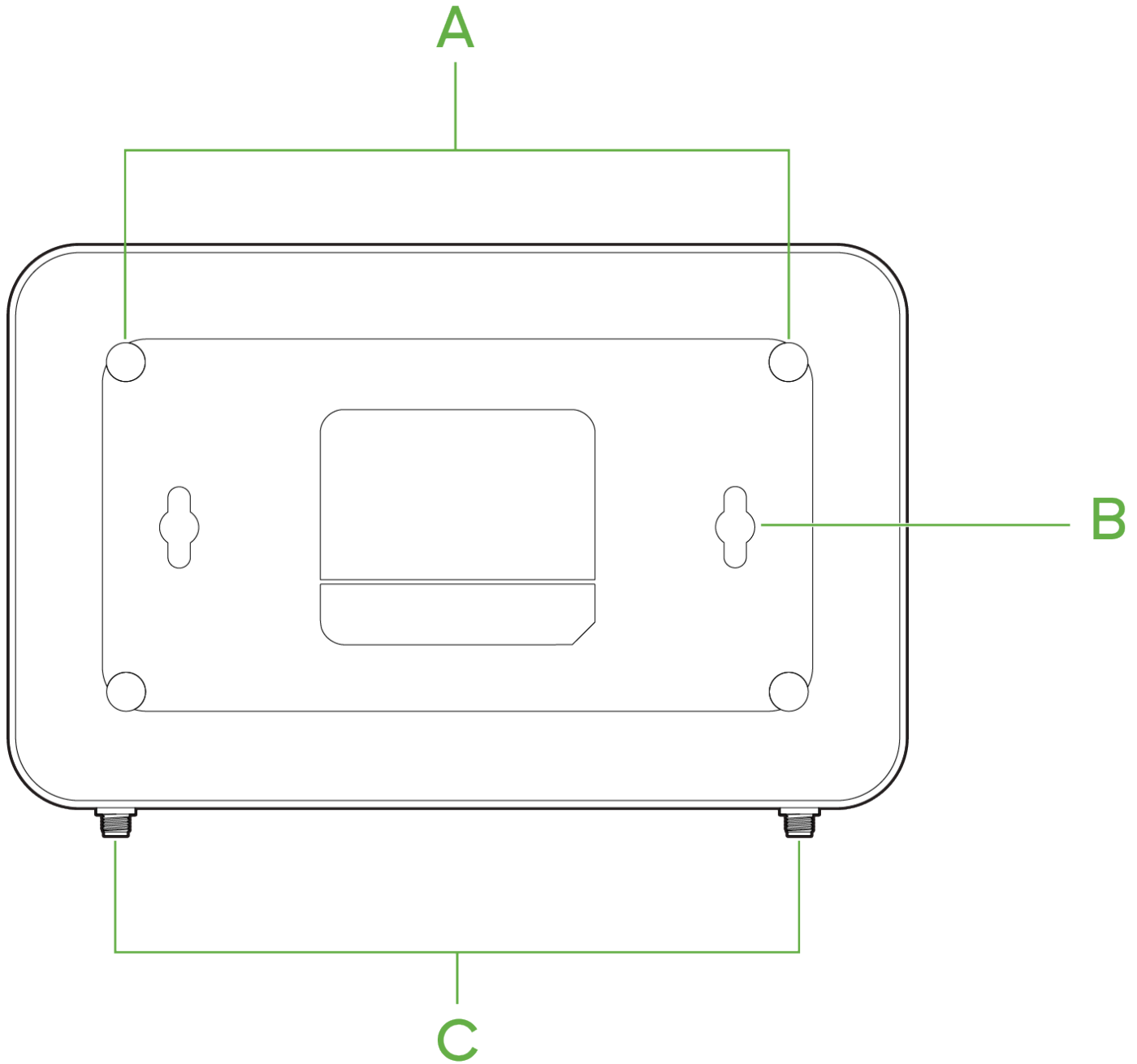
Bottom Panel

Z4



Please note that the serial number is located on the product label on the bottom panel of the Z4

Z4C



Please note that the serial number is located on the product label on the bottom panel of the Z4C

Pre-install Preparation

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

Configure your Dashboard Network

The following is a brief overview only of the steps required to add an Z4/Z4C to your network. For detailed instructions about creating, configuring and managing Meraki networks, refer to our [Managing Dashboard Networks](#) document. Additional resources can also be found via: [documentation.meraki.com](#).

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 Z4/Z4C or create a new network.
3. Add your Z4/Z4C to your network. You will need your Meraki order number (found on your invoice) or the serial number of each Z4/Z4C, which looks like Qxxx-xxxx-xxxx, and is found on the bottom of the unit. You will also need your Enterprise license key, which you should have received via email.
4. Go to the map / floor plan view and place each Z4/Z4C on the map by clicking and dragging it to the location where you plan to mount it.

Check and Set Firmware

To ensure your Z4/Z4C performs optimally immediately following installation, it is recommended that you facilitate a firmware upgrade prior to mounting your Z4/Z4C.

1. Attach your Z4/Z4C to power and a wired Internet connection.
2. The Z4/Z4C will turn on and the power LED will glow solid orange.
3. If the unit requires an upgrade, the power LED will begin blinking white until the upgrade is complete, at which point the LED will turn solid white. You should allow at least a few minutes for the firmware upgrade to complete, depending on the speed of your internet connection.

Check and Configure Upstream Firewall Settings

If an upstream firewall is already in place, it must allow outgoing connections on particular ports to particular IP addresses. The most current list of outbound ports and IP addresses for your particular organization can be found [on the firewall configuration page in your dashboard](#).

Installation Instructions

Mounting Hardware

Wall screws and anchors will allow you to mount the gateway on a drywall surface, either vertically or horizontally. The distance between the holes you drill should be 5-1/8 inches (13 cm).

- For mounting on drywall, use a 1/4-in drill bit, then insert the plastic and screw assemblies.
- For mounting on wood or a similar surface, use only the screws.

- Allow the heads of the screws to stick out far enough to be inserted securely into the back of the appliance.

Connecting to WAN

All Meraki Z4/Z4C devices must have an IP address. This section describes how to configure your local area network before you deploy it. A local management web service, running on the appliance, is accessed through a browser running on a client PC. This web service is used for configuring and monitoring basic ISP/WAN connectivity.

Setting up a Static IP Address

Do the following to configure basic connectivity and other networking parameters:

1. Using a client machine such as a laptop, connect to one of the **LAN** ports of the Z4/Z4C.
2. Using a browser on the client machine, access the appliance's built-in web service by browsing to <http://setup.meraki.com>. (You do not have to be connected to the Internet to reach this address)
3. Click **Uplink configuration** under the **Local status** tab. The default credentials use the device serial number as the username, with a blank password field.
4. Choose **Static** for the **IP Assignment option**.
5. Enter the IP address, subnet mask, default gateway IP and DNS server information.

Setting up a DHCP IP Address

By default all Z4/Z4C devices are configured to DHCP from upstream WAN / ISP servers. Simply plug the Z4/Z4C's WAN / Internet port to your upstream circuit and wait a few minutes for the unit to negotiate a DHCP address.

When the WAN connection is fully enabled, Internet LED 1 will turn green.

Setting up Cellular Failover

The Z4C has an embedded LTE module for cellular failover connections. The following section will walk through first-time set-up of an Z4C with an internet connection as a primary connection and cellular as failover.

To set up the cellular failover connection, follow the steps below:

1. Power off the Z4C. Swapping/installing SIM cards while the Z4C is powered on may cause unexpected behavior or error.
2. Open the SIM tray using the SIM card removal tool included in the box
3. Insert a nano SIM card (4FF size) and close the SIM tray

4. Connect the uplink for the Z4C device via a wired connection to connect to the Meraki cloud
5. Power on the Z4C and wait for the Z4C to show as online in the Meraki dashboard
6. Check with the carrier of choice if an APN needs to be configured. If so, do that from the Meraki Dashboard under **Teleworker Gateway > Monitor > Appliance Status > Uplink** tab
7. Navigate to **Teleworker Gateway > Monitor > Appliance Status > Uplink** tab and next to **Status**, select the edit (pencil) button and then select **Enabled**. When the cellular uplink is successfully connected, you will be able to see the status on the left hand side of the **Appliance Status** page and in the **Uplink** tab. The connection will say **Ready** when it is successfully connected
8. Test the cellular failover connection by unplugging the wired connection or by using the traceroute tool under **Teleworker Gateway > Monitor > Appliance Status** in the Tools tab
9. If, after following the steps above, the SIM card is not detected, please confirm with your carrier that the SIM card is active and has data. You will need the ICCID of the SIM card and IMEI of the device to get troubleshooting help from the carrier
10. Please contact the Meraki Support team if the cellular connection is still not being recognized after following the steps above

Additional Settings

Please note that all these settings below are accessible only via the local management console.

Setting VLANs

If your WAN uplink is on a trunk port, choose **VLAN tagging > Use VLAN tagging** and enter the appropriate value for **VLAN ID** for your network.

Setting PPPoE

PPPoE authentication may be required if you are connecting a Z4/Z4C device to a DSL circuit. You need to know your authentication option and credentials (supplied by your ISP) in order to complete these steps.

- Choose **Connection Type > PPPoE**.
- Select your **Authentication** option.
- If you select **Use authentication**, enter appropriate values for **Username** and **Password**.

Web Proxy Settings

These settings take effect if the Z4/Z4C device has to fall back to using HTTP to contact the Cloud Controller. By default, web proxy is disabled. To enable web proxy, do the following:

- Choose **Web proxy > Yes**.
- Enter values as appropriate for **Hostname or IP** and **Port**.
- If you require authentication, choose **Authentication > Use authentication**, and enter appropriate values for **Username** and **Password**.

To apply all configuration settings to the appliance, be sure to click **Save Settings** at the bottom of the page.

Configuring Physical Link Settings

To configure physical link settings on the Ethernet ports, click **Local status > Ethernet configuration**. You can enable half duplex, full duplex, and autonegotiation, as well as set 10- or 100-Mbps data rates.

Basic Troubleshooting

The following steps can be used for troubleshooting basic connectivity issues with your Z4/Z4C.

- Reset the Z4/Z4C
- Factory reset the Z4/Z4C by holding the factory reset button for 5 seconds
- Try switching cables, or testing your cable on another device

Reference <https://documentation.meraki.com/> for additional information and troubleshooting tips.

If you are still experiencing hardware issues, please contact Cisco Meraki support by logging in to dashboard and using the **Help** option near the top of the page, then opening an email case or calling using the contact information on that page.

Warranty

Z-series Warranty coverage periods are as follows:

Z-series (e.g. Z4/C)	Lifetime
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Z-series Accessories	1 Year
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The following are considered accessories:

SFP Modules, all mounting kits and stands, interface modules, additional power cords

Note: The above table is a general guideline for warranty terms and is not final. Warranty terms are subject to printed warranty information on the relevant online Meraki data sheets.

If your Cisco Meraki device fails and the problem cannot be resolved by troubleshooting, contact support to address the issue. Once support determines that the device is in a failed state, they can process an RMA and send out a replacement device free of charge. In most circumstances, the RMA will include a pre-paid shipping label so the faulty equipment can be returned.

 In order to initiate a hardware replacement for non-functioning hardware that is under warranty, you must have access to the original packaging the hardware was shipped in. The original hardware packaging includes device serial number and order information, and may be required for return shipping.

Meraki Z4/Z4C devices have 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.

Additional warranty information can be found on: <https://meraki.cisco.com/support#process:warranty>

Support and Additional Information

If issues are encountered with device installation or additional help is required, **contact Meraki Support** by logging in to **dashboard.meraki.com** and opening a case by visiting the **Get Help** section.

- The equipment is intended for industrial or other commercial activities.
- The equipment is used in areas without exposure to harmful and dangerous production factors, unless otherwise specified in the operational documentation and/or on the equipment labeling.
- The equipment is not for domestic use. The equipment is intended for operation without the constant presence of maintenance personnel.
- The equipment is subject to installation and maintenance by specialists with the appropriate qualifications, sufficient specialized knowledge, and skills.
- Rules and conditions for the sale of equipment are determined by the terms of contracts concluded by Cisco or authorized Cisco partners with equipment buyers.
- Disposal of a technical device at the end of its service life should be carried out in accordance with the requirements of all state regulations and laws.
- Do not throw in the device with household waste. The technical equipment is subject to storage and disposal in accordance with the organization's disposal procedure.
- The equipment should be stored in its original packaging in a room protected from atmospheric precipitation. The permissible temperature and humidity ranges during storage are specified in the Operation (Installation) Manual.
- Transportation of equipment should be carried out in the original packaging in covered vehicles by any means of transport. The temperature and humidity during transportation must comply with the permissible established ranges of temperature and humidity during storage (in the off state) specified in the Operation Manual (Installation).

For additional information on Meraki hardware and for other installation guides, please refer to **documentation.meraki.com**.