
MS390 Series Installation Guide

About this Guide

This guide provides instruction on how to install and configure your MS390 series switch. This guide also provides mounting instructions and limited troubleshooting procedures. For more switch installation guides, refer to the [switch installation guides section](#) on our documentation website.

Product Overview

Models

Model number	Description
MS390-24-HW	Stackable Layer-3 24-port Gbe switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-24P-HW	Stackable Layer-3 24-port Gbe POE+ switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-24U-HW	Stackable Layer-3 24-port Gbe UPOE switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-24UX-HW	Stackable Layer-3 24-port mGbe UPOE switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-48-HW	Stackable Layer-3 48-port Gbe switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-48P-HW	Stackable Layer-3 48-port Gbe POE+ switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-48U-HW	Stackable Layer-3 48-port Gbe UPOE switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans
MS390-48UX-HW	Stackable Layer-3 36-port 2.5Gbe and 12-port mGbe UPOE switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans

MS390-48UX2-HW

Stackable Layer-3 48-port 5Gbe UPOE switch with hot-swappable 10G/40G modular uplinks, hot-swappable power supplies and hot-swappable fans

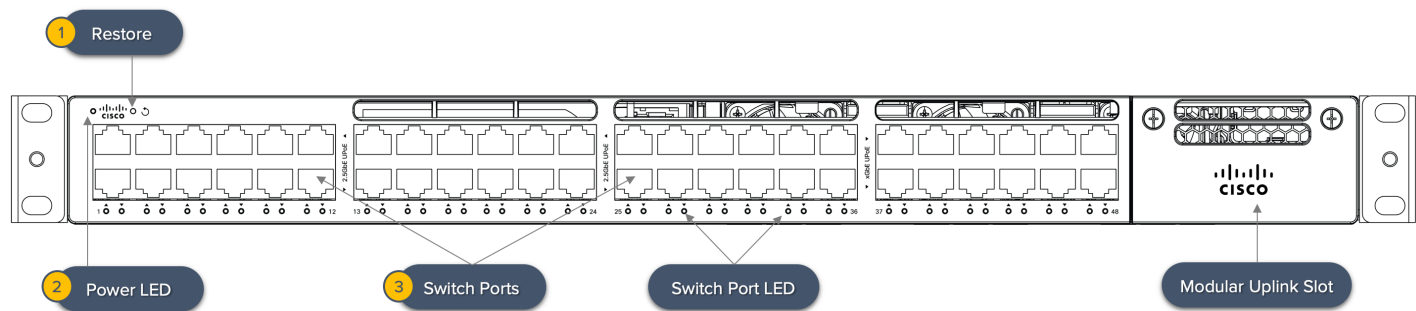
Technical Specifications

- Each model has 1 dedicated management interface
- Each model has two 120G stack ports
- Each of the model has modular uplinks where you can choose from 3 different options of 10G and 40G SFP+ and QSFP+ uplink modules
- Operating temperature for each of the model: -5°C to 45°C
- Storage and Transportation Temperature: -20°C - 70°C
- Humidity: 5 to 90%

Model	Interfaces	PoE/ UPoE Capabilities	Power Load (idle/max)	Available PoE	Hot Swap Power Supply
MS390-24-HW	24 x 1GbE RJ45	n/a	79.2 / 99 W	-	Yes, Dual
MS390-24P-HW	24 x 1GbE RJ45	PoE	84.1 / 554.4 W	445W	Yes, Dual
MS390-24U-HW	24 x 1GbE RJ45	UPoE	85.4 / 990.3 W	830W	Yes, Dual
MS390-24UX-HW	24 x mGbE RJ45	UPoE	162.7 / 809.9 W	560W	Yes, Dual
MS390-48-HW	48 x 1GbE RJ45	n/a	83.9 / 109.9 W	-	Yes, Dual
MS390-48P-HW	48 x 1GbE RJ45	PoE	92.6 / 555 W	437W	Yes, Dual
MS390-48U-HW	48 x 1GbE RJ45	UPoE	145 / 844.9 W	822W	Yes, Dual
MS390-48UX-HW	36 x 100M/1G/2.5G + 12 x 100M/1G/2.5G/5G/10G	UPoE	218.5 / 785.5 W	490W	Yes, Dual
MS390-48UX2-HW	48 x 100M/1G/2.5G/5G	UPoE	157.9 / 843.8 W	645W	Yes, Dual

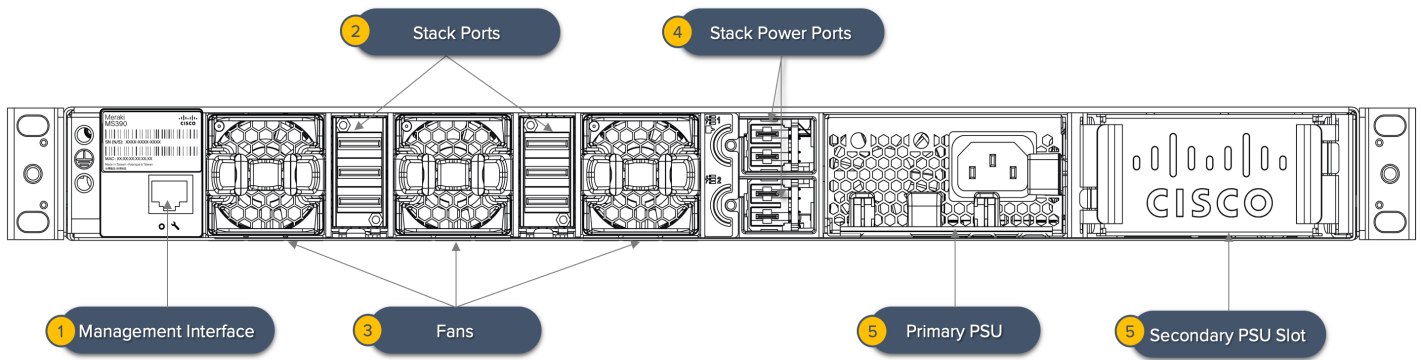
Product View and Physical Features

Front Panel Components



Item	Component	LED Status	Description
1	Restore	N/A	Restore button to clear switch IP and local configuration settings
2	Power LED	Solid amber	Switch is unable to connect to the Meraki cloud or it is in the initial stage of boot-up process
		Cycling through different colors	Management plane is initializing and the switch initiates communication to Meraki cloud
		Solid white	Switch is fully operational and connected to the Meraki cloud
		Flashing white	Firmware upgrade in process
		Off	Switch does not have power
3	Switch Ports	Off	No client connected
		Solid amber	10/100 Mbps (1 Gbps on SFP+)
		Solid green	1/2.5/5/10 Gbps (10 Gbps on SFP+)

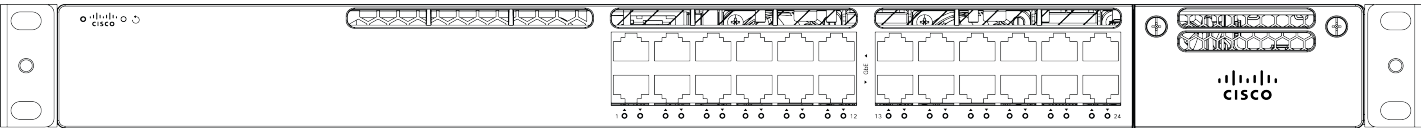
Back Panel Components



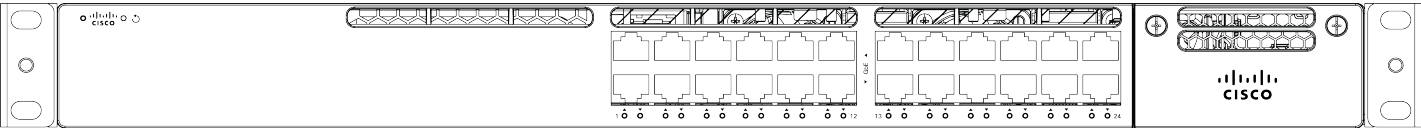
Item	Component	LED Status	Description
1	Management Interface	Green	Connected, used for easy access to the local status page
2	Stack Ports	N/A	Stack Cables are connected here
3	Redundant Fans	Green	Active and operational
4	StackPower Ports	N/A	StackPower cables are connected here
5	Power Supplies	Green	Active and functional power supplies

MS390 Series Front and Back Panel

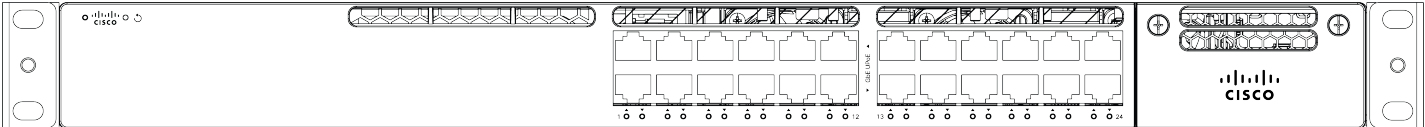
MS390-24 Series front panel



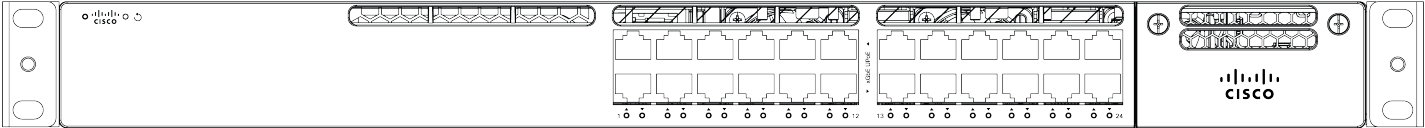
MS390-24P Series front panel



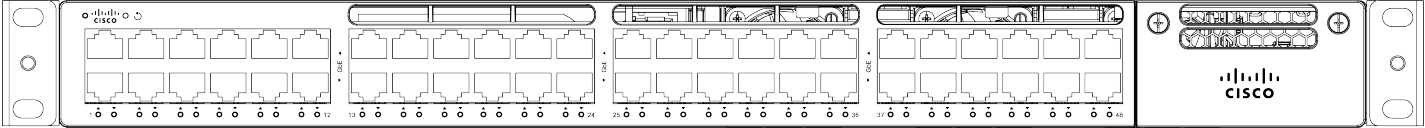
MS390-24U Series front panel



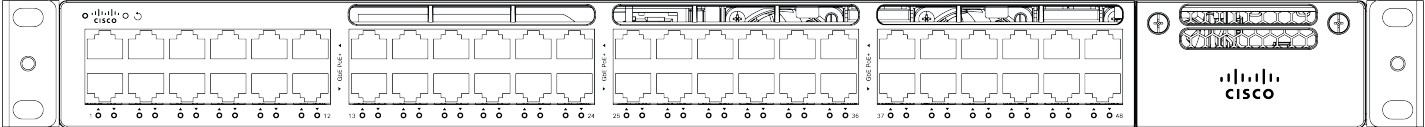
MS390-24UX Series front panel



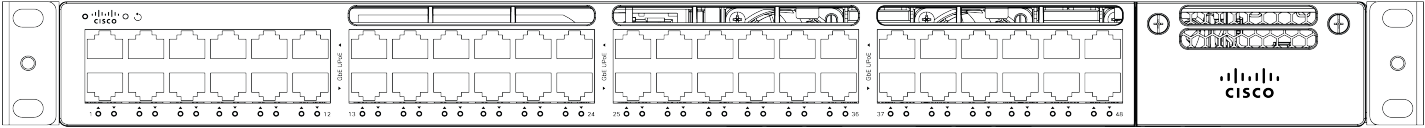
MS390-48 Series front panel



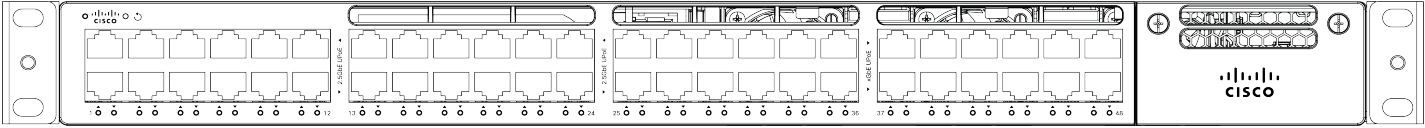
MS390-48P Series front panel



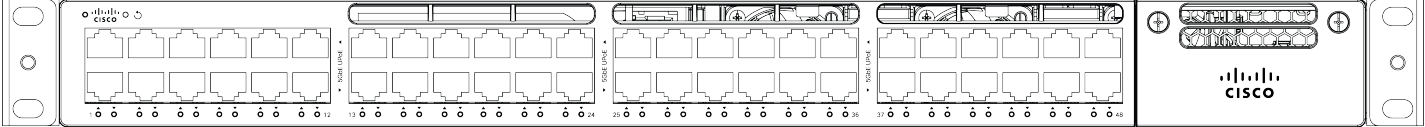
MS390-48U Series front panel



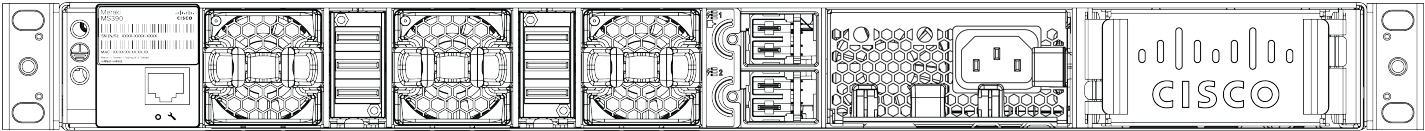
MS390-48UX Series front panel



MS390-48UX2 Series front panel



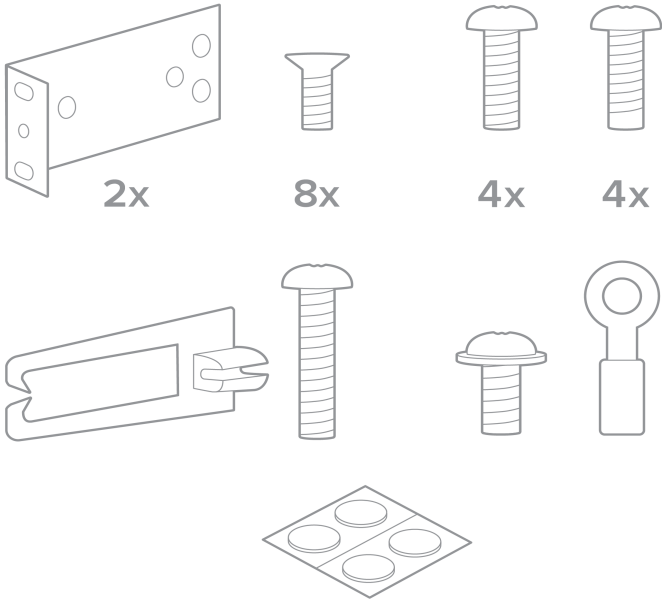
MS390 Series Back Panel



Factory Reset Button

If the button is pressed and held for at least 10 to 15 seconds and then released, the switch will reboot and be restored to its original factory settings by deleting all configuration information stored on the unit.

Package contents



In addition to the MS switch, the following are provided:

- 2 x (19 inch) Mounting brackets and screw kit that includes:
 - 8 x Flat-head screws
 - 4 x number-12 pan-head screws
 - 4 x number-10 pan-head screws
 - 1 x (4 x 20 mm) pan-head screw
 - 1 x Ground lug screw and ring terminal
 - 4 x Rubber mounting feet
- 1 x Default Power Supply Unit
- 3 Pre-installed Fans
- Cable guide
- Installation instruction pamphlet
- Regulatory Compliance and Safety Information handbook



Note: The MS390 does not include stacking cables. [Stacking cables](#) sold separately.

Safety and Warnings

These operations are to be taken with respect to all local laws. Please take the following into consideration for safe operation:

- Power off the unit before you begin. Read the installation instructions before connecting the system to the power source.
- Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.
- Read the mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.
- This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 15 A, 125 Vac, or 10A, 240 Vac.
- Please only power the device with the provided power cables to ensure regulatory compliance.

MS390 Deployment Best Practices

Before powering on devices or connecting an uplink port to the LAN, ensure to follow the steps outlined below or watch this [short video](#).

Configure your Dashboard Network

To add devices to your Meraki dashboard network please refer to the [Creating a Dashboard Account and Organization](#) document.

Check and Set Network Firmware

Ensure that the switch network is set to the correct firmware version. As of September 24th, 2021 MS 14.31 is the recommended version. Recommended versions are subject to change and are available in each dashboard by navigating to Organization > Firmware Upgrades

You can refer to [Managing Firmware Upgrades](#) for steps to set network firmware to the desired version.

Check and Configure Upstream 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 for your particular organization can be found under Help → Firewall info. The help button is located on the top right corner of any dashboard page. For more information refer to [Upstream Firewall Rules for Cloud Connectivity](#).

Stacking

For stacking please refer to this section [Stack Cabling Installation](#)

Assigning an IP Address

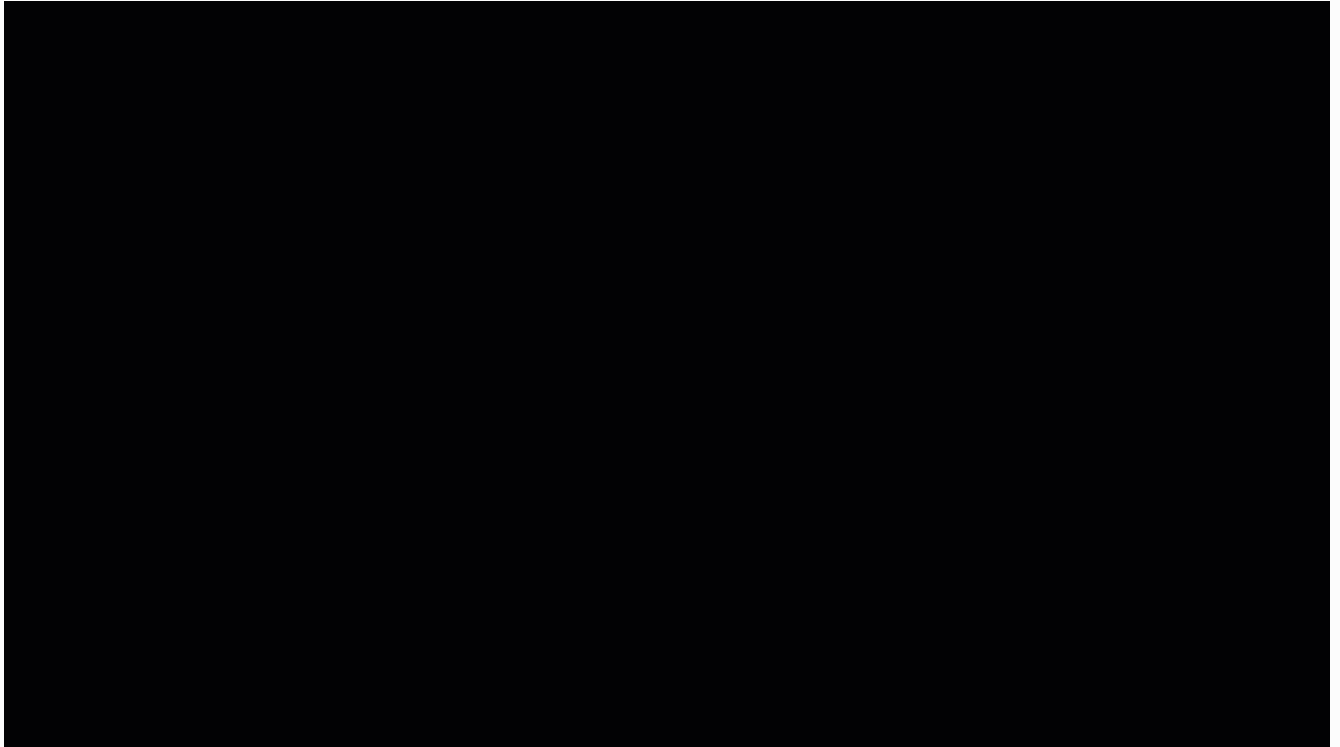
All switches must be assigned routable IP addresses. These IP addresses can be dynamically assigned via DHCP or statically assigned. MS390 switches can support a total count of 1000 VLANs per stand-alone switch or switch stack. VLAN ID 1-1000 are configured by default, however, the active VLANs can be changed via the local status page or dashboard. When installing an MS390, it is important to ensure that any DHCP services or IP address assignments used for management fall within the active VLAN range.



Note: To utilize any VLANs outside of 1-1000 on an MS390, the switch or switch stack must have ALL of its trunk interfaces set to an allowed vlan list that contains a total that is less than or equal to 1000 VLANs, including any of the module interfaces that are not in use. For example: If a switch needs to utilize VLANs **1,100-200,300-400,2100-2200,3000-3100**, **EVERY** trunk interface on that switch must be configured with that allowed VLAN list or a subset of it.

The easiest method to do this is to perform the following:

1. Navigate to **Switch > Switch ports**
2. in the search bar use the following search term depending on if it is a stack or a single switch:
 1. **switch:"{name of switch}" is:trunk**
 2. **stack:"{name of stack}" is:trunk**
3. Select all trunks configured with the allowed VLANs of 1-1000
4. set to new list including new range of VLANs. (example: 1,100-200,300-400,2100-2200,3000-3100)
5. Click Update



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 switch. Other features of the network, such as 802.1X authentication, may rely on the property that the switches have static IP addresses.

Please make sure that the DHCP server used for providing a management IP address to the switch has an available address pool that falls within the active VLAN range.

Static Assignment

Static IPs can be assigned using the local status page on each switch. For more information on how to configure static IP from the local status page refer to this [documentation](#).

Static IP via DHCP Reservations

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

Check upstream VLAN configuration

Ensure the upstream switch/router port is configured properly and there is no VLAN mismatch.

Check STP configuration

MS390 series switches run a single instance of MST out of the box. Please refer to this document for [interoperability](#).

Device reboot/ reset precaution

After powering on the unit or a device reboot, the power LED goes through the following cycle -

1. Solid amber
2. Cycle through different colors
3. Solid white if dashboard connectivity is successful or, remain solid amber if dashboard connectivity is unsuccessful. Different power LED colors and their interpretation are listed under this [section](#). It may take some time for a device to boot up so refer to the power LED indicators to understand what the switch is doing during boot up. Be patient and let the switch complete the whole boot-up process and connect to the Meraki cloud.

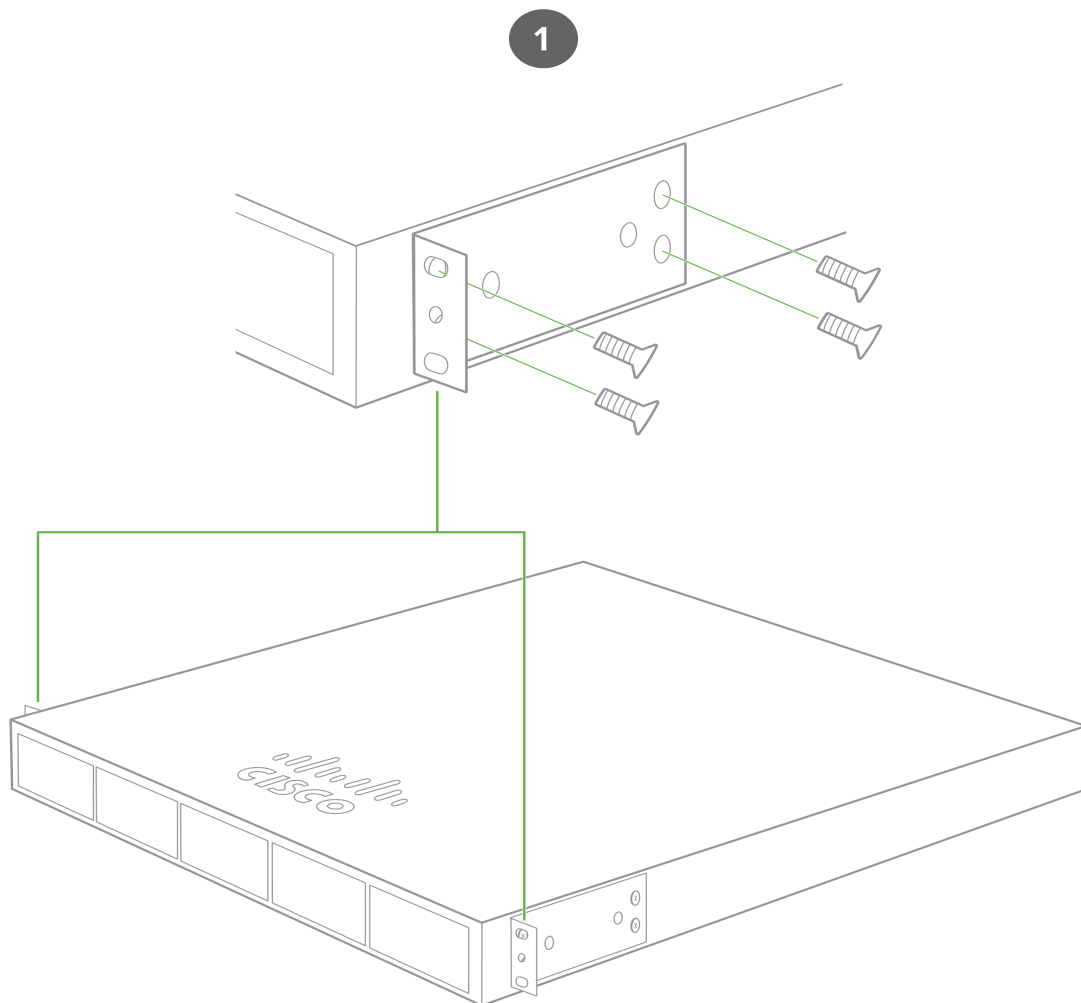
Do not power down or reset the device during a firmware upgrade. A device which has its power LED blinking white is indicating that it is going through a firmware upgrade.

Once the devices are upgraded to the latest version continue configuring other switch features/settings. For details refer to the [MS documentation](#)

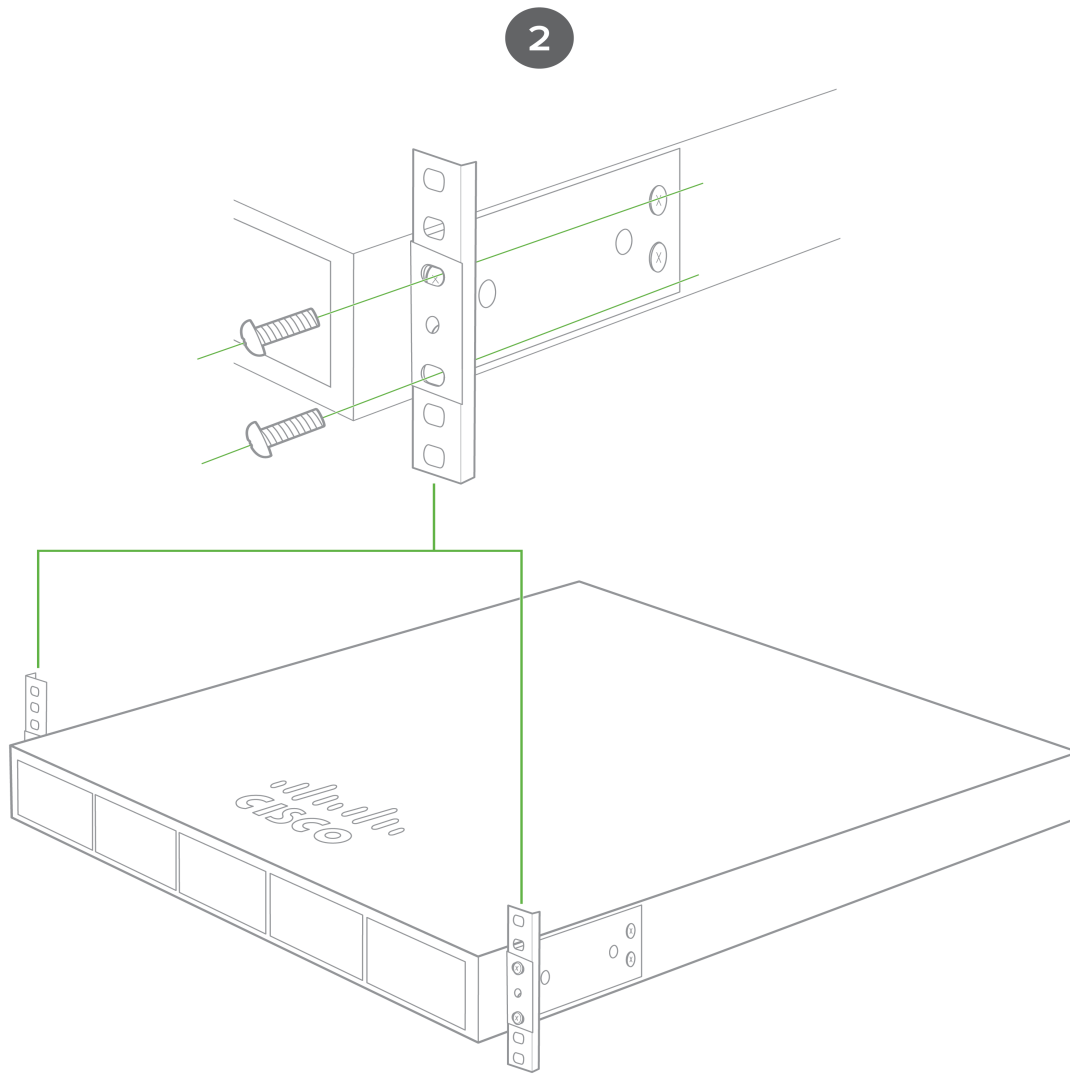
Installation Instructions

 Note: Each switch comes with a graphical instruction pamphlet within the box. This pamphlet contains detailed step by step guides and images to assist in the physical install of the switch.

1. Attach the rack mount bracket to both sides of the switch as shown below:

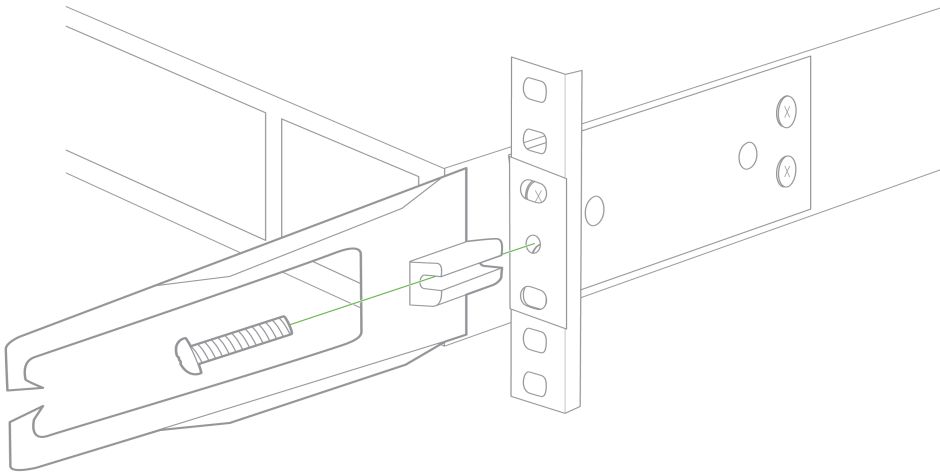


2. Align the rack mount brackets on the sides of the switch onto the rack.

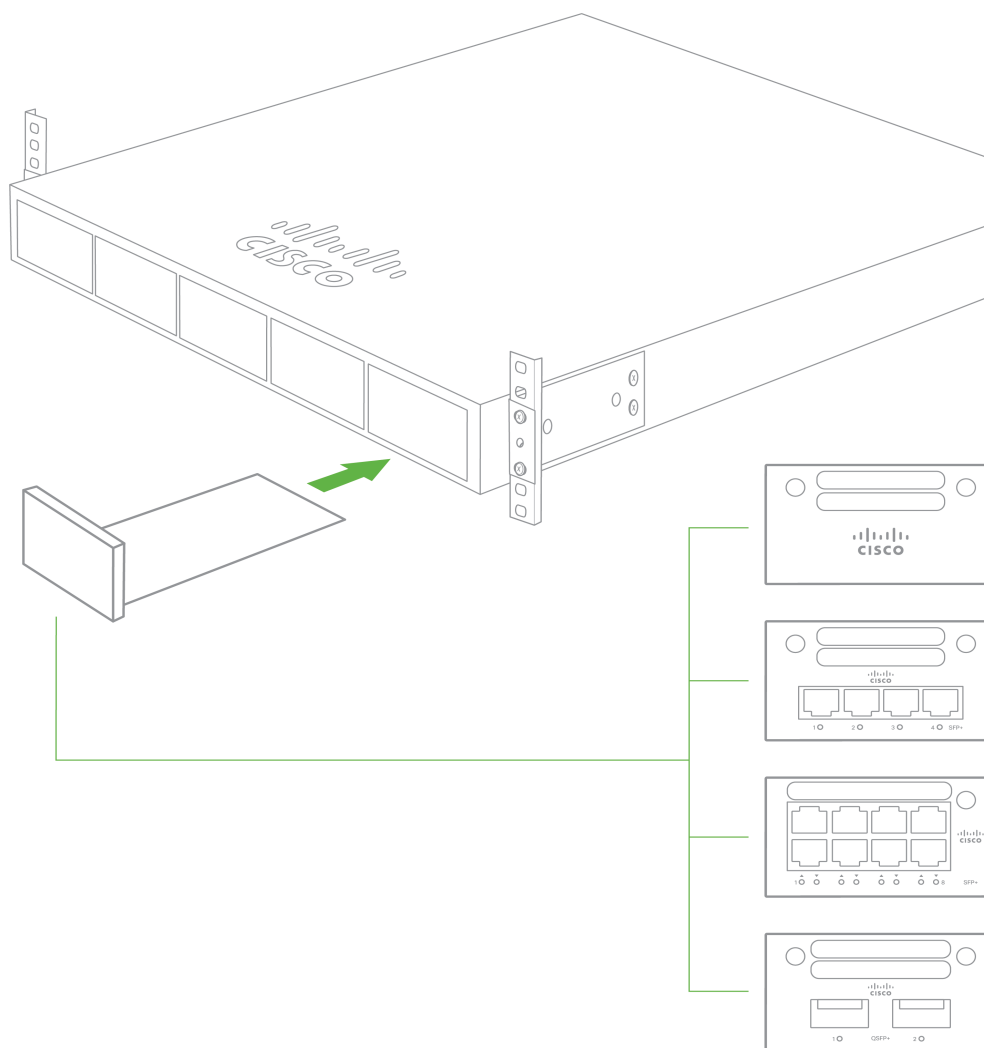


3. Secure and screw in the rack mount bracket on to the rack.

3



4. Insert the Uplink module.



Note: The MS390 10G and 40G SFP+ and QSFP+ uplink modules are hot-swappable.

Stack Cabling Installation

- Connect the cable to the stack port on the switch back panel (as shown in the back panel diagram). Align the connector and connect the stack cable to the stack port on the switch back panel and finger-tighten the screws (clockwise direction). Make sure the Cisco logo is on the top side of the connector.
- Connect the other end of the cable to the port on the other switch and finger-tighten the screws. Avoid over tightening the screws.



Please refer to these instructions [here](#) before stacking MS390 out of the box.

StackPower Cabling Installation

- StackPower on MS390 supports a ring topology of up to 4 switches.
- Connect the end of the cable with a green band to either StackPower port on the first switch (see back panel diagram to locate the StackPower ports). Align the connector correctly, and insert it into a StackPower port on the switch rear panel.
- Connect the end of the cable with the yellow band to another switch. Hand-tighten the captive screws to secure the StackPower cable connectors in place.
- StackPower feature doesn't need any dashboard configuration but is automatically enabled when the cables are installed.



IMPROVED

Physical Stacking

NEW

StackPower

Modular Power Supply

Basic Troubleshooting

The following steps can be used for troubleshooting basic connectivity issues with your switch.

- Factory reset the switch by holding the factory reset button for 10-15 seconds
- Try switching cables, or testing your cable on another device

Reference <https://documentation.meraki.com/MS> 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 and email case or calling using the contact information on that page.



Factory Resetting a Catalyst Stack (C9300/X/L & MS390)



When factory resetting a switch stack that is using a port-channel for an uplink may require extra steps to get re-connected. When you factory reset, all switch configuration is wiped including uplink port-channel/etherchannel configurations which could prevent the switch from finding a route to the internet.

Steps to remotely recover a switch in this state:

1. On the upstream switch, remove one member from the port-channel and configure it as a standard trunk port. There should be at least one other member still configured in the port-channel.
2. Make sure to port cycle(shut/no-shut) the excluded port after doing so.
3. The impacted stack will boot with factory config and use the excluded port for the uplink, pulling the latest configuration.
4. The stack will apply the configuration, re-enabling the port-channel on the impacted stack and recovering the switch in dashboard
5. Wait for the stack to connect to dashboard
6. Once the stack is connected, the upstream switch will shut the excluded port, since it now detects a mismatch on that port. Leaving the remaining port-channel member active
7. On the upstream switch, re-add the excluded member back to the port-channel

Warranty

MS Warranty coverage periods are as follows:

	Time Period	Comments
MS390 Series	Lifetime	-
MS Accessories	1 Year	The following are considered accessories: SFP Modules, twinax/SFP+ cables, stacking cables, all mounting kits and stands, interface modules, additional power cords, PoE injectors

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 online [Meraki Returns and Policy](#) section.

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 MS390 devices have been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. A digital device that is marketed for use in a residential environment notwithstanding use in commercial, business and industrial environments.

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**.