

Deployment Best Practices for Cloud-Managed Devices

Before powering on devices or connecting an uplink port to the LAN, ensure to follow the steps described in this section or watch this Cisco Meraki MS390 Setup Walkthrough video.

This video links to the MS390 setup, but the steps and information are the same as that of Cisco Catalyst 9000-M Series Switches.

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Configure Dashboard Network

To add devices to your Meraki dashboard network please refer to the *Creating a Dashboard Account and Organization* document.

Set the Network Firmware

Ensure that the switch network is set to the correct firmware version. Recommended versions are subject to change, and you can view the available version in the dashboard by navigating to Organization > Firmware Upgrades.

Refer to *Managing Firmware Upgrades* document for steps to set the network firmware to the desired version.

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.

Assign IP addresses

All switches must be assigned routable IP addresses. These IP addresses can be dynamically assigned through DHCP or statically assigned.

The Cisco Catalyst 9300 switches can support a total of 1000 VLANs per stand-alone switch or switch stack. VLAN IDs 1 to 1000 are configured by default; however, active VLANs can be changed through the local status page or dashboard.

When installing a switch, it is important to ensure that any DHCP services or IP address assignments used for management fall within the active VLAN range.

Note To use a VLAN that is outside the 1 to 1000 range on Catalyst Meraki C9300 switches, 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, and 3000-3100, every trunk interface on that switch must be configured with that allowed VLAN list or a subset of it.

To create an allowed VLAN list

1. Navigate to **Switch > Switch ports**
2. Search for the following:
   - Single switch: switch:"{name of switch}" is:trunk
   - Switch stack: stack:"{name of stack}" is:trunk
3. Select all trunks configured with the allowed VLANs in the range of 1 to1000.
4. Set the selected trunks to a new VLAN list with a new VLAN range.
5. Click Update.

Note When adding Cisco Catalyst C9300-M switches to a network, if you receive a "Validation failed: This switch is limited to 1000 VLANs" error , use the VLAN and Database features to configure active VLANs on the network.

Configure STP

Meraki-managed Cisco Catalyst 9300 Series Switches run a single instance of Multiple Spanning Tree Protocl (MSTP) out of the box. Refer to the *MS Best Practices* document before you start the deployment.

If you plan to deploy Meraki switches into an existing Catalyst network that runs PVST, PVST+, or Rapid-PVST, refer to this document for interoperability.

To migrate your existing Catalyst switches to MSTP, refer to *Configuring Spanning Tree on Meraki MS Switches* for more information.

Bootup Process and Firmware Upgrades

This section provides a detailed information on what to expect during the boot-up and firmware upgrade process.

The following image illustrates the various stages the switch will undergo during a firmware upgrade, which includes a system reboot. When a switch is powered-on, or rebooted from the Meraki dashboard, it only goes through the stages of the system bootup process. The illustration also displays status of the dashboard-connectivity and the local status page (LSP) availability in each of these stages.

The durations displayed in the illustration were measured using a 6-member stack of 48-port switches. The actual time required for system boot-up and configuration depends on the stack size, port density, and other user-defined configuration.

This table provides information about the status of the Blue beacon and system LEDs during the bootup process. For an detailed list of system states, refer to the LED Indicators in the Meraki-managed mode.

Stage	System status	Blue beacon LED	System LED
Firmware download and installation	Firmware download and upgrade in progress	Blue	Blinking green
System boot-up	Switch is powered on and is loading the bootstrap firmware	Off	Amber
System configuration	Switch is loading the operating system.	Off	Blinking green
	Setting up local management IP and cloud-connectivity requirements **Note** If the switch was not assigned a static management IP previously, it will try to obtain an IP address through DHCP at this stage.	Flashing blue	Toggling between green and amber, or blinking green
Connecting to the dashboard	Switch is fully operational and connected to the Meraki cloud	On/Blue	Green

Device reboot or reset precaution

Do not power down or reset the device during a firmware upgrade. Please refer to the table above or the section on LED Indicators in the Meraki-managed mode for details of the indicators for firmware upgrade.

Once the devices are upgraded to the latest version continue configuring other switch features/settings. For details refer to the MS documentation site.

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Troubleshootng

Use these steps to troubleshoot basic connectivity issues with your switch.

- Soft reset the switch by holding the factory reset button for 10 to 15 seconds (less than 20 seconds).
- Factory reset the switch by holding the factory reset button for more than 21 seconds.
- After a factory reset, the switch will download firmware, which may take time based on the speed of the internet connection. Expect 1GB of firmware per switch or stack.
- Switch the cables or test your cables on another device.

Refer to https://documentation.meraki.com/MS for additional information and troubleshooting tips.

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

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 the device serial number/Cloud ID and order information, and may be required for return shipping.

For additional warranty information, refer to https://meraki.cisco.com/support#process:warranty.

Support Information

Even after troubleshooting, if you are experiencing hardware issues, contact Cisco Meraki Support. Log into the dashboard and go to the Help option at the top of the page, open an email case or call using the contact information provided on the page.

If you encounter issues with device installation or require additional help, contact Cisco Meraki Support by logging into http://dashboard.meraki.com and open a case through 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 other installation guides, please refer to documentation.meraki.com.

Device Reboot Guidelines

Do not power down or reset the device during a firmware upgrade. Refer to the LED Indicators in the Meraki-managed mode section for details of the indicators for firmware upgrade.

After the devices are upgraded to the latest version, continue configuring other switch features or settings. For details, refer to the MS Switches documentation.

Troubleshooting

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

- Soft reset the switch by holding the factory reset button for 10 to 15 seconds (less than 20seconds).
- Factory reset the switch by holding the factory reset button for more than 21 seconds.
- After a factory reset, the switch will re-download its firmware. The download time depends on the speed of the internet connection. You can expect 1GB of firmware per switch or stack.
- Try switching the cables, or testing the cables on another device.

Refer to https://documentation.meraki.com/MS for additional information and troubleshooting tips.

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

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 the device serial number ir Cloud ID and order information, and may be required for return shipping.

Additional warranty information is available at: https://meraki.cisco.com/support#process:warranty

Additional Information

If you are experiencing hardware issues, contact Cisco Meraki Support by logging into dashboard and using the Help option at the top of the page. You can open a case through email or call using the contact information provided in the page.

If you face device installation issues or need additional help, contact Cisco Meraki Support by logging into dashboard.meraki.com and opening a case by visiting the Get Help section.

Ensure that you follow these guidelines when using a Cisco Meraki device.

- The equipment is intended for industrial or other commercial activities.

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- 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 or Installation Manual.

For additional information on Meraki hardware and for installation guides, refer to Cisco Catalyst 9000-M Deployment Guide.