MS250 SERIES

Stackable access switches with 10G SFP+ uplinks, designed for the branch and campus

CLOUD MANAGED STACKABLE ACCESS SWITCHES

The Cisco Meraki **MS250** series switches provide reliable access switching ideal for deploying in branches and small campuses. With stacking capabilities and 10G SFP+ uplinks on every model, redundancy and performance are guaranteed. This family also supports redundant, field-replaceable power supplies for mission critical networks.

Cisco Meraki switches are built from the ground up to be easy to manage without compromising any of the power and flexibility traditionally found in enterprise-class switches.

The Meraki MS is managed through an elegant, intuitive cloud interface, rather than a cryptic command line. To bring up a Meraki switch, just plug it in; there's no need for complicated configuration files, or even direct physical access to the switch.

Meraki's centralized management gives administrators deep visibility into the network and how it's used. See which switches are near capacity across hundreds of sites. Find all configuration changes made by a certain person with instant search.

INDUSTRY LEADING CLOUD MANAGEMENT

Cloud management has a number of benefits that make it easier to build networks large and small:

- True zero-touch device provisioning.
- Virtual Stacking: manage up to thousands of ports from a single pane of glass.
- Application layer visibility with automatic operating system, client, and hostname fingerprinting.
- Powerful Live Tools such as packet capture and cable test to isolate and troubleshoot network issues.
- Alerts upon power loss, downtime, or configuration changes.
- Role-based administration and automatic, scheduled firmware upgrades over the web.
- Regular feature updates and enhancements delivered on demand from the Meraki cloud.

Product Highlights

- Gigabit access switching with 24- and 48- port models and optional PoE+ support
- 4 x 10G SFP+ uplink interfaces on all models
- Dual stacking interfaces with up to 80G of bandwidth
- Support for field replaceable, redundant power supplies
- Non-blocking switch backplane with up to 176 Gbps of switching capacity
- 6 configurable QoS queues for converged voice, video, and data applications
- Up to 740 watt PoE budget with PoE+ support and dynamic power allocation for powering APs, phones, cameras, and other PoE-enabled devices
- Low power consumption, quiet acoustic design, and shallow rack depth options, enabling flexible deployment in wiring closets as well as offices and classrooms
- Integrated mounting brackets for rack mounting
- Lifetime hardware warranty and advanced replacement at no additional cost

Features

Meraki switches include all of the traditional Ethernet features found in modern enterprise access switches, including:

Campus Access

- Physical stacking with support for up to 8 stack members for built-in redundancy and performance
- Static and dynamic routing support with DHCP relay and server capabilities
- Quality-of-Service (QoS) to prioritize mission critical traffic such as voice and video
- Voice VLAN support for simplified VoIP deployments
- CDP, LLDP advertisement and snooping, with detailed neighbor visibility
- Port Mirroring to monitor network traffic
- IGMP Snooping to optimize network performance for multicast applications
- Link Aggregation Control Protocol (LACP) for high-capacity trunking, with Multichassis (MLAG) support on stacked switches

Network Security

- IEEE 802.1X, MAB, and Hybrid authentication support for wired access control with RADIUS server monitoring
- Port security and MAC whitelisting
- Change of Authorization (CoA) and RADIUS accounting support
- DHCP snooping to prevent users from adding unauthorized DHCP servers on the network
- Rapid spanning tree, BPDU guard, root guard, loop guard, and other safeguards to help prevent misconfigurations and reduce convergence time
- Per port VLAN configuration
- Multiple administrative roles with sophisticated security policy management

Network Troubleshooting & Automation

- Virtual Stacking lets administators manage up to thousands of ports in a single interface without having to physically connect stack members
- Configuration templates for rapid, zero-touch provisioning and auditing of all sites
- Network Topology for automatic and interactive network mapping
- Remote cable testing, packet capture and client discovery
- Automatic and scheduled firmware upgrades for the complete network

Converged Voice, Video and Data Environments

The Meraki switch family is designed to unify data, voice, and video onto a single IP backbone. All Meraki switches support rich quality-of-service (QoS) functionality for prioritizing data, voice, and video traffic. The switches support eight class-of-service (CoS) queues on every port, enabling them to maintain end-to-end traffic prioritization.

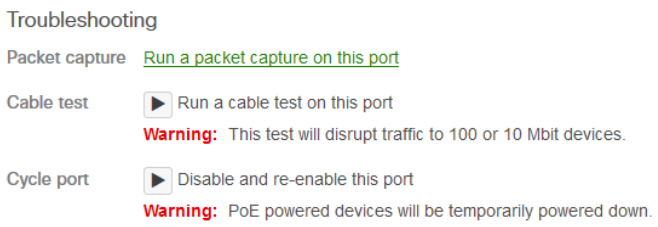
PoE models provide power VoIP telephones, IP security cameras, wireless access points (APs), and other IP devices. In addition, using CDP and LLDP, PoE power is intelligently budgeted to maximize the number of PoE clients supported. For the most power-hungry applications, support for Cisco UPoE is also available. The Meraki MC products work flawlessly with Meraki switches, and create a unique and powerful experience to installing, supporting and troubleshooting VoIP technology

Application Layer Visibility

Meraki is the only switch to include integrated Layer 7 fingerprinting. Identify hundreds of applications from business apps to BitTorrent and YouTube. User fingerprinting with Google-like search allows administrators to easily identify and control individual users, PCs, iMacs, iPads, Androids, and other devices. This unprecedented visibility allows optimizing of network resources and maintaining optimal network performance.

Unified Software Architecture

Meraki switches run the same Meraki operating system used by all of Meraki's products. The use of a common operating system allows Meraki to deliver a consistent experience across all product lines. When connected, MS250 switches automatically connect to the Meraki cloud, download configuration, and join the appropriate network. If new firmware is required, this is retrieved by the switch and updated automatically. This ensures the network is kept up-to-date with bug fixes, security updates, and new features.



Remote cable test in the Meraki dashboard

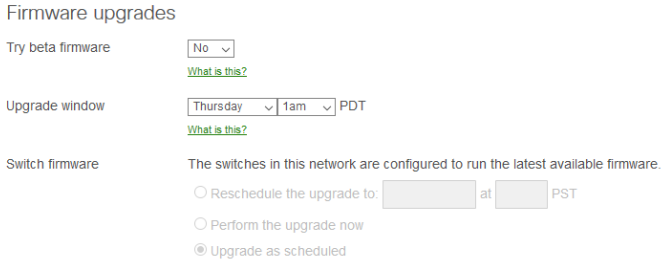
Simplified Management and Operations

Meraki's cloud managed architecture makes it simpler than ever to quickly provision and reconfigure switch ports with security, QoS, and other parameters. The Meraki dashboard provides unified policies, event logs, and monitoring, which make it easy to manage and grow large network deployments.

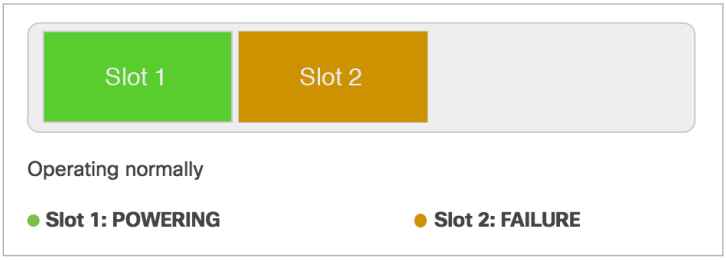
By providing a complete, powerful set of management functions over the web, Meraki's cloud-based management eliminates the need for proprietary command line configuration interfaces which require expensive and time consuming certifications. Meraki MS switches can be fully deployed and provisioned in minutes, without requiring any local configuration or staging. Additional or replacement switches can be sent to remote offices and installed by non-technical staff, saving thousands of dollars in time and travel expenses.

The Meraki MS family also includes several remote diagnostic features, from network connectivity and cable integrity tests to latency measurement tools. For deep client troubleshooting, administrators can even perform per-port remote pcap packet captures without any additional probes or hardware on site.

Scheduled & Automatic Firmware Updates



Redundant power supply monitoring & alerts



Designed for Reliability & Environmental Efficiency

The Meraki switch family was designed for reliable, long-lived operation in wiring closet environments, which may be prone to high temperatures and limited ventilation. By minimizing total component count and only using proven switching silicon, Meraki is able to deliver highly reliable products with exceptional mean time between failure (MTBF) ratings.

Each Meraki switch also operates with a split-plane architecture, where silicon-based switching and data forwarding are separated from software-based control and management. By decoupling the underlying switching logic from control, each unit is able to deliver wire-speed switching even when advanced software features such as Layer 7 host and OS fingerprinting are enabled.

Finally, the highly integrated designs of Meraki switches result in power and cooling savings in large deployment environments of 30-60% when compared with similar managed Gigabit switches.

DISTRIBUTED BRANCHES & REMOTE SITES

Meraki's cloud-based system makes it easy to manage a single switch, or thousands of distributed switches, from a single interface.

- Troubleshoot problems remotely, e.g., find which port has a bad cable attached.
- Add or replace switches without having to send a technician onsite. Switches automatically download their current configuration as soon as they are connected to the network.
- Receive email alerts or SMS messages whenever there's a problem at a remote site.

CAMPUS EDGE

MS switches are ideal for small and large scale campus deployments, where reliability, scalability, and managability are top priorities.

- Virtual Stacking lets administators manage up to thousands of ports in a single interface without having to physically connect stack members.
- 10GbE cable SFP+ ports with link aggregation provide high speed connectivity to aggregation switches such as the MS425.
- Get alerts if any switch fails or goes offline, before users complain.

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Dimensions & Interfaces

Model	Physical Dimensions (H x W x D)*	Weight	Interface	Switching Capacity	Stacking Bandwidth
MS250-24-HW	1.72 x 19.08 x 14.89” (4.38 x 48.46 x 37.8cm)	9.9 lb (4.5 kg)	• 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover) • 4 x SFP+ 10GbE uplink • 2 x stacking ports	128 Gbps	80G (dual interface)
MS250-24P-HW	1.72 x 19.08 x 14.89” (4.38 x 48.46 x 37.8cm)	10.59 lb (4.8 kg)	• 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover) • 4 x SFP+ 10GbE uplink • 2 x stacking ports	128 Gbps	80G (dual interface)
MS250-48-HW	1.72 x 19.08 x 18.82” (4.38 x 48.46 x 47.8cm)	11.56 lb (5.24 kg)	• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover) • 4 x SFP+ 10GbE uplink • 2 x stacking ports	176 Gbps	80G (dual interface)
MS250-48LP-HW	1.72 x 19.08 x 18.82” (4.38 x 48.46 x 47.8cm)	12.37 lb (5.61 kg)	• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover) • 4 x SFP+ 10GbE uplink • 2 x stacking ports	176 Gbps	80G (dual interface)
MS250-48FP-HW	1.72 x 19.08 x 20.42” (4.38 x 48.46 x 51.87cm)	12.83 lb (5.82 kg)	• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover) • 4 x SFP+ 10GbE uplink • 2 x stacking ports	176 Gbps	80G (dual interface)

*Depth includes accessories and FRUs (field-replaceable units) that ship with the product

Power Options & Specifications

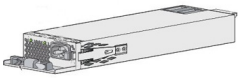
Model	Idle / Full Load Power	Available PoE+ Power	Power Supply Configuration	Supported Power Supply
MS250-24-HW	14 / 27 W	–	Hot-swappable	2 x 250W PSU*
MS250-24P-HW	15 / 434 W	370 W	Hot-swappable	2 x 640W PSU*
MS250-48-HW	24 / 44 W	–	Hot-swappable	2 x 250W PSU*
MS250-48LP-HW	46 / 480 W	370 W	Hot-swappable	2 x 640W PSU*
MS250-48FP-HW	25 / 874 W	740 W	Hot-swappable	2 x 1025W PSU*

* Single power supply (PSU) included. For redundancy, second PSU is sold separately

What's Included

MS250-24-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit
MS250-24P-HW	1 x Power Supply (MA-PWR-640WAC), Mounting screw kit
MS250-48-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit
MS250-48LP-HW	1 x Power Supply (MA-PWR-640WAC), Mounting screw kit
MS250-48FP-HW	1 x Power Supply (MA-PWR-1025WAC), Mounting screw kit

Rack Mounting Kit



Power Supply (PSU)

Optional Accessories

MS250 switches support 40G stacking cables in various lengths as well as replaceable power supplies (PSU):

Description	Model	Supported Models
250W Power Supply	MA-PWR-250WAC	MS250-24, MS250-48
640W Power Supply	MA-PWR-640WAC	MS250-24P, MS250-48LP
1025W Power Supply	MA-PWR-1025WAC	MS250-48FP
Meraki Stacking Cable, 0.5 Meter	MA-CBL-40G-50CM	All Models
Meraki Stacking Cable, 1 Meter	MA-CBL-40G-1M	All Models
Meraki Stacking Cable, 3 Meter	MA-CBL-40G-3M	All Models

The Meraki MS family also supports SFP/SFP+ pluggable optics for high-speed connectivity. Meraki offers a variety of Gigabit and 10 Gigabit accessories. Full specifications and compatibility information is available in the Meraki Accessories datasheet: https://meraki.cisco.com/lib/pdf/meraki_datasheet_sfp.pdf

Specifications

Management

Managed via the Web with the Meraki cloud management platform

Integrated with Meraki Wireless and complete portfolio of IT products and solutions

Zero-touch remote provisioning (no staging needed)

Detailed historical per-port and per-client usage statistics

DHCP, client, and hostname fingerprinting

SNMPd and SYSLOG support for integration with other network management solutions

Automatic firmware upgrades with scheduling control

Remote Diagnostics

Email, SMS and Mobile push notification alerts [1]

Cable testing and link failure detection with alerting

Live remote packet capture

Dynamic and interactive network discovery and topology

Combined event and configuration change logs with instant search

Stacking

Physical stacking of up to 8 switches with 80 Gbps stack bandwidth on all models

Virtual Stacking supports thousands of switch ports in a single logical stack for unified management, monitoring, and configuration

Ethernet Switching Capabilities

802.1p Quality of Service, 8 queues (w/ 6 configurable for DSCP-to-CoS mapping)

802.1Q VLAN and trunking support for up to 4,094 VLANs

802.1w, 802.1D Rapid Spanning Tree Protocol (RSTP, STP)

Broadcast storm control

802.1ab Link Layer Discovery Protocol (LLDP) and Cisco Discovery Protocol (CDP)

802.3ad Link aggregation with up to 8 ports per aggregate, Multichassis aggregates supported on stacked switches

Port mirroring

IGMP snooping for multicast filtering

MAC forwarding entries: 16K on 24-port models, 32K on 48-port models

Security

Integrated two-factor authentication for Dashboard management

Role-based access control (RBAC) with granular device and configuration control

Corporate wide password policy enforcement

IEEE 802.1X RADIUS and MAB, hybrid authentication and RADIUS server testing

Multi-Domain/Multi-Host/Multi Authentication

Port security: Sticky MAC, MAC whitelisting

DHCP snooping, detection and blocking, Dynamic ARP Inspection

STP Enhancements: BPDU guard, Root guard, Loop guard

IPv4 and IPv6 ACLs

[1] Requires carrier-supported email to SMS gateway and/or Meraki Mobile app

[2] OSPF and Warm Spare do not operate concurrently

Performance

Switching capacity: 128Gbps on 24-port models, 176Gbps on 48-port models

Forwarding rate: 95.24mpps on 24-port models, 127.98mpps on 48-port models

Jumbo frame support (9578 byte Ethernet frame)

Flow control support

Layer 3

Static routing, OSFPv2

Warm Spare (VRRP)[2]

DHCP Relay, DHCP Server

Power

Power input: 100 - 240 VAC, 47-63 Hz

Power consumption: 5-1655W

Mounting

1U rack-mountable with included rack mount hardware

2-post front mounting options available

Desktop-mountable with included feet

Environment

Operating temperature: -5°C to 50°C

Humidity: 5 to 95% non-condensing

Variable speed fans

Regulatory

CSA-US (US, Canada)

FCC (USA)

IC (Canada)

CE (Europe)

RCM (Australia/New Zealand)

RoHS

For international availability, please contact sales@meraki.com

Warranty

Full lifetime hardware warranty with next-day advanced replacement included

MTBF Rating

Model	MTBF (at 25c)
MS250-24-HW	633,811
MS250-24P-HW	403,717
MS250-48-HW	392,906
MS250-48LP-HW	339,906
MS250-48FP-HW	338,366