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 provides 10G SFP+ uplinks for medium-size enterprises and campus networks. The switch includes optional PoE/PoE+ support, Layer 3 routing, and modular power for mission-critical networks.

Our 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.

All Meraki switches are managed through an elegant, intuitive cloud-based interface, rather than cryptic command line.

To bring up a Meraki switch, simply plug it in. Meraki switches do not require CLI for switch configuration or port management.

Meraki's centralized management gives administrators granular visibility into their network. Our dashboard helps you keep track of every configuration change in your network with our detailed event and change logs.

INDUSTRY LEADING CLOUD MANAGEMENT

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

- Automatic email alerts from power loss, downtime, excessive Layer 1 errors, or configuration changes
- Powerful remote diagnostic tools such as packet capture to help isolate and troubleshoot network issues
- Role-based administration
- Firmware upgrades and enhancements from the Meraki cloud
- Virtual Stacking enables switch port configuration changes on the dashboard interface without the need to physically stack switches
- Incredible network transparency with application, operating system, client, and hostname visibility
- Zero-touch provisioning for rapid deployment across sites

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 80 Gbps 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 and Capabilities

Meraki switches include every feature you need to configure your network with the ease of cloud-management, including;

Access Switching

- High-bandwidth physical stacking with support for up to 8 stack members for built-in redundancy and performance
- Link Aggregation Control Protocol (LACP) for high-capacity trunking, with Multichassis (MLAG) support on stacked switches
- 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 and discovery
- Port Mirroring to monitor network traffic
- IGMP Snooping to optimize network performance for multicast applications

Network Security

- IEEE 802.1X, MAB, and Hybrid authentication support for wired access control with RADIUS server monitoring
- ACL support (IPv4 & IPv6) and MAC whitelisting
- Single-Host/Multi-Domain/Multi-Host/Multi Authentication
- Change of Authorization (CoA) and RADIUS accounting support
- DHCP snooping to protect against rogue DHCP servers on the network
- Dynamic ARP Inspection to prevent man-in-the-middle attacks
- 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 helps IT admins make configuration changes to hundreds of switch ports in seconds with our intuitive dashboard interface
- 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 to VoIP telephones, IP security cameras, wireless access points (APs), and other IP devices. Using CDP and LLDP, PoE power is intelligently budgeted to maximize the number of PoE clients supported.

Application Layer Visibility

Meraki switches include integrated Layer 7 fingerprinting without the need to purchase additional modules or services. Identify hundreds of applications from business apps to BitTorrent and YouTube.

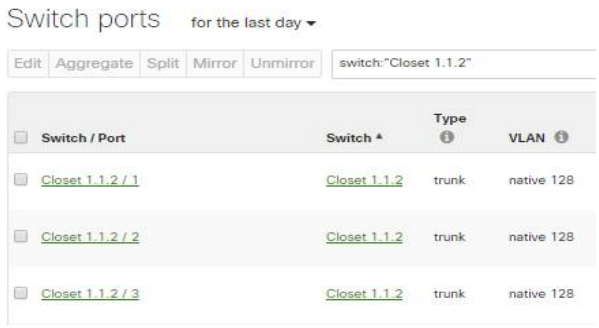
User fingerprinting allows administrators to quickly identify individual users by device and tune network resources for optimum performance.

Unified Software Architecture

Meraki switches run the same operating system used by all of our products. The use of a common operating system allows us to deliver a consistent experience across all product lines, from our security appliances to cameras.

When connected, new MS250 switches automatically reach out to the Meraki cloud and download the most current network configuration. Future updates can be user-scheduled. This ensures the network is kept up-to-date with bug fixes, security updates, and new features.

Virtual Stacking with Meraki



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Simplified Management and Operations

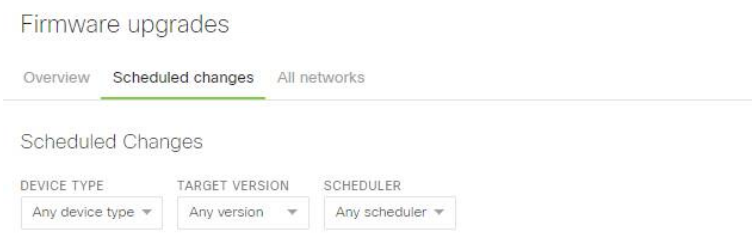
Meraki's cloud-managed architecture makes it simpler than ever to quickly provision and configure switch ports with security, QoS, and other parameters. The Meraki dashboard provides unified policies, event logs, and monitoring, which make it easy to manage and grow large network deployments.

By providing a complete, robust 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 local configuration or staging. New 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 includes several remote diagnostic features; including ping, traceroute, cable test, and latency measurement tools. For in-depth client troubleshooting, administrators can remotely perform port-level packet captures without additional hardware.

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.

Meraki is able to deliver highly reliable products with exceptional mean time between failure (MTBF) ratings by using proven switching silicon and by minimizing total component count.

Each 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.

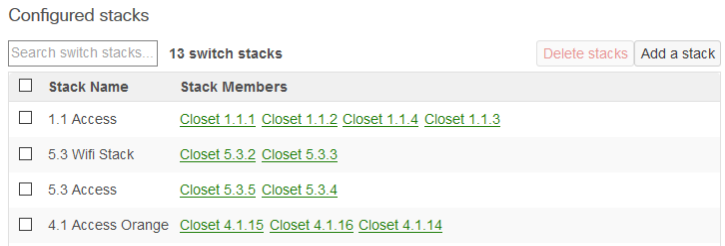
The highly integrated designs of Meraki switches result in power and cooling savings in large deployment environments of 30-60% when compared with similar managed switches.

CAMPUS EDGE

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

- Physical stacking for increased redundancy
- Warm spare failover for all stacking switches
- Get alerts if a switch fails or goes offline, before it impacts users

Managing and monitoring stacks in the dashboard



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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+ 10G uplink • 2 x stacking ports	128 Gbps	80 Gbps
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+ 10G uplink • 2 x stacking ports	128 Gbps	80 Gbps
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+ 10G uplink • 2 x stacking ports	176 Gbps	80 Gbps
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+ 10G uplink • 2 x stacking ports	176 Gbps	80 Gbps
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+ 10G uplink • 2 x stacking ports	176 Gbps	80 Gbps

*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
Operating System, device, and hostname fingerprinting
SNMP 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]
Ping, traceroute, cable testing, and link failure detection with alerting
Remote packet capture
Dynamic and interactive network discovery and topology
Combined event and configuration change logs with instant search

Stacking
Physically stack up to 8 switches with 80 Gbps of stacking 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)
STP Enhancements: BPDU guard, Root guard, Loop guard, UDLD
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 multi-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
Single-Host/Multi-Domain/Multi-Host/Multi Authentication
Port security: Sticky MAC, MAC whitelisting
DHCP snooping, detection and blocking, Dynamic ARP Inspection
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