

# MS120 Switches

Cloud-managed access switches with 1G SFP uplinks, designed for small branch deployments



## CLOUD-MANAGED ACCESS SWITCHES

Cisco Meraki **MS120** switches provide Layer 2 access switching ideal for branch and campus deployments. The MS120 series features a variety of power options designed to meet the diverse needs of large enterprise networks.

Cisco Meraki switches are built from the ground up for cloud management without compromising any of the power and flexibility traditionally found in enterprise-class switches.

All Cisco Meraki switches are 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 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 to indicate power loss, downtime, excessive Layer 1 errors, and configurations changes
- Role-based administration and automatic, scheduled firmware upgrades over the cloud
- Regular feature updates and enhancements delivered on demand from the Meraki cloud

### Product Highlights

- Gigabit access switching with 24- and 48- port models and PoE+ support
- 4 x 1G SFP uplink interfaces on all models
- Non-blocking switch with up to 104 Gbps bandwidth support
- Fanless design on select models
- Lifetime hardware warranty and advanced replacement at no additional cost
- Up to 740 watt PoE budget with PoE+ support and dynamic power allocation for powering APs, phones, cameras, and other PoE-enabled devices
- 6 configurable QoS queues for converged voice, video, and data applications
- Low power consumption, quiet acoustic design, and shallow rack depth options, enabling flexible deployment in wiring closets as well as offices and classrooms

# Features

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

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## Branch & Campus Access

- PoE and PoE+ models available for device level powering
- Quality-of-Service (QoS) to prioritize mission critical traffic such as voice and video
- Voice VLAN support for simplified VoIP deployments
- CDP/LLDP with detailed neighbor discovery and visibility
- Port Mirroring support for monitoring network traffic at line rate
- IGMP Snooping to optimize network performance for multicast applications
- Link Aggregation Control Protocol (LACP) for high-capacity trunking

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## 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

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## Network Troubleshooting & Automation

- Virtual Stacking lets administrators configure thousands of ports across a network in one dashboard action 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

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## 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 for 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.

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## 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, Macs, iPads, Androids, and other devices. This unprecedented visibility allows optimizing of network resources and maintaining optimal network performance.

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## Unified Software Architecture

Meraki switches run the same 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, MS120 switches automatically connect to the Meraki cloud, download its 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.

### Troubleshooting

Packet capture [Run a packet capture on this port](#)

Cable test  Run a cable test on this port

**Warning:** This test will disrupt traffic to 100 or 10 Mbit devices.

Cycle port  Disable and re-enable this port

**Warning:** PoE powered devices will be temporarily powered down.

### 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 scale network deployments.

By providing a complete, powerful set of management functions over the cloud, Meraki 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.

## Staged, Scheduled & Automatic Firmware Updates

**Upgrade Status**   **Scheduling**

Default upgrade time: Saturday 12 AM PDT

Upgrade policy: The switches in this network are configured to run the latest available firmware. Last upgraded on Sunday, November 6, 2016 at 01:40

Try beta firmware: No

## Automatic Email Alerts

Enabled security alerts

Security policy	On failing compliance	On entering compliance	Grace period	Scope
Encrypted	<input type="checkbox"/>	<input type="checkbox"/>	15 minutes	with ANY of the following tags
MerakiSecure	<input type="checkbox"/>	<input type="checkbox"/>	30 minutes	All devices

# Designed for Reliability & Environmental Efficiency

The Meraki switch family was designed for reliable operation in network 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 on-site. 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 administrators manage up to thousands of ports in a single interface without having to physically connect stack members.
- 1GbE cable SFP ports with link aggregation provide long range connectivity to aggregation switches such as the MS410.
- Get alerts if any switch fails or goes offline, before users complain.

## Dimensions & Interfaces

Model	Physical Dimensions (H x W x D)*	Weight	Interface	Switching Capacity
MS120-24-HW	1.73 x 17.32 x 9.84" (4.40 x 44 x 25cm)	8.09 lb (3.67 kg)	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)</li> <li>• 4 x 1GbE SFP uplink</li> <li>• RJ45 Management port</li> </ul>	56 Gbps
MS120-24P-HW	1.72 x 17.32 x 9.84" (4.40 x 44 x 25cm)	9.26 lb (4.20 kg)	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)</li> <li>• 4 x 1GbE SFP uplink</li> <li>• RJ45 Management port</li> </ul>	56 Gbps
MS120-48-HW	1.72 x 17.32 x 9.84" (4.40 x 44 x 25cm)	8.97 lb (4.06 kg)	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)</li> <li>• 4 x 1GbE SFP uplink</li> <li>• RJ45 Management port</li> </ul>	104 Gbps
MS120-48LP-HW	1.72" x 17.32" x 13.38" (4.40 x 44 x 34cm)	12.70 lb (5.70 kg)	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)</li> <li>• 4 x 1GbE SFP uplink</li> <li>• RJ45 Management port</li> </ul>	104 Gbps
MS120-48FP-HW	1.72" x 17.32" x 13.38" (4.40 x 44 x 34cm)	12.70 lb (5.70 kg)	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)</li> <li>• 4 x 1GbE SFP uplink</li> <li>• RJ45 Management port</li> </ul>	104 Gbps

\*Depth includes all accessories

# Power Options & Specifications

Model	Idle / Full Load Power	Available PoE/PoE+ Power	Power Supply Configuration
MS120-24-HW	8 / 18 W	–	Fixed internal
MS120-24P-HW	28 / 425 W	370 W	Fixed internal
MS120-48-HW	16 / 36 W	–	Fixed internal
MS120-48LP-HW	37 / 477 W	370 W	Fixed internal
MS120-48FP-HW	37 / 908 W	740 W	Fixed internal

## What's Included

All Models	1 x Rack mounting screw kit
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Rack Mounting Kit

The Meraki MS family also supports SFP pluggable optics for high-speed connectivity. Full specifications and compatibility information is available in the Meraki Accessories datasheet: [https://meraki.cisco.com/lib/pdf/meraki\\_datasheet\\_sfp.pdf](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)

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

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 <sup>1</sup>

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

## 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.

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

## Layer 3

DHCP Relay

## Performance

Switching capacity: 56Gbps on 24-port models, 104Gbps on 48-port models

Forwarding rate: 41.67mpps on 24-port models, 77.38 mpps on 48-port models

Jumbo frame (9578 byte Ethernet frame)

Flow control

## Power

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

Power consumption: 8 - 908W

## Mounting

1U Rack-mountable with included rack mount hardware

2-post front mounting options available

Desktop-mountable with included feet

## Environment

Operating temperature: 0 °C to 45 °C

Humidity: 5 to 95% non-condensing

MS120-24, MS120-48 feature fanless operation

## Regulatory<sup>2</sup>

CSA-US (US, Canada)

FCC (USA)

IC (Canada)

CE (Europe)

RCM (Australia/New Zealand)

RoHS

## Warranty

Full lifetime hardware warranty with next-day advanced replacement included

## MTBF Ratings (in hours)

Model	MTBF (at 25c)
MS120-24-HW	707,873
MS120-24P-HW	453,906
MS120-48-HW	692,887
MS120-48LP-HW	660,538
MS120-48FP-HW	660,538

<sup>1</sup> Requires carrier-supported email to SMS gateway and/or Meraki Mobile app

<sup>2</sup> For international availability, please contact sales@meraki.com