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 and Capabilities

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

**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

**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.

**Network Security**

- IEEE 802.1X, MAB, and Hybrid authentication support for wired access control with RADIUS server monitoring
- Port security and MAC whitelisting
- Multi-Domain/Multi-Host/Multi Authentication
- 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, UDLD and other safeguards to help prevent misconfigurations and reduce convergence time
- Per-port VLAN configuration
- Multiple administrative roles with sophisticated security policy management

**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.

**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.

**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

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.

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.
<table>
<thead>
<tr>
<th>Model</th>
<th>Physical Dimensions (H x W x D)*</th>
<th>Weight</th>
<th>Interface</th>
<th>Switching Capacity</th>
</tr>
</thead>
</table>
| MS120-24-HW | 1.73 x 17.32 x 9.84” (4.40 x 44 x 25cm) | 8.09 lb (3.67 kg) | • 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)  
• 4 x 1G SFP uplink  
• RJ45 Management port | 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) | • 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)  
• 4 x 1G SFP uplink  
• RJ45 Management port | 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) | • 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)  
• 4 x 1G SFP uplink  
• RJ45 Management port | 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) | • 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)  
• 4 x 1G SFP uplink  
• RJ45 Management port | 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) | • 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and crossover detection (auto-MDIX crossover)  
• 4 x 1G SFP uplink  
• RJ45 Management port | 104 Gbps |

*Depth includes all accessories
## Power Options & Specifications

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

## What’s Included

<table>
<thead>
<tr>
<th>All Models</th>
<th>1 x Rack mounting screw kit</th>
</tr>
</thead>
</table>

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
- 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
- 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
- STP Enhancements: BPDU guard, Root guard, Loop guard, UDLD
- 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
- 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)

<table>
<thead>
<tr>
<th>Model</th>
<th>MTBF (at 25c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS120-24-HW</td>
<td>707,873</td>
</tr>
<tr>
<td>MS120-24P-HW</td>
<td>453,906</td>
</tr>
<tr>
<td>MS120-48-HW</td>
<td>692,887</td>
</tr>
<tr>
<td>MS120-48LP-HW</td>
<td>660,538</td>
</tr>
<tr>
<td>MS120-48FP-HW</td>
<td>660,538</td>
</tr>
</tbody>
</table>

1 Requires carrier-supported email to SMS gateway and/or Meraki Mobile app
2 For international availability, please contact sales@meraki.com