MS450 Aggregation Switch

40G fiber aggregation switch with 100G uplinks, designed for data-intense networks

HIGH-BANDWIDTH AGGREGATION SWITCHING

The Cisco Meraki MS450 brings powerful high-bandwidth switching to the aggregation layer. The 40G fiber aggregation switch with 100G uplinks adopts the benefits of the cloud with simplified management, reduced complexity, and network-wide visibility.

EXPANDING CLOUD MANAGEMENT TO THE CAMPUS

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

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. The dashboard helps you keep track of every configuration change in your network with detailed event and change logs.

INDUSTRY-LEADING CLOUD MANAGEMENT

Cloud management has a number of benefits that make it easier to build campus networks:

• Automatic email alerts from power loss, downtime, 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

• Connect up to 12 MS355s for high-bandwidth aggregation layer switching
• Connect to core or data center switches with 2 x 100G QSFP28 uplinks
• Stack up to eight switches for high-availability deployments
• Dual stacking interfaces with up to 400 Gbps of bandwidth

• Non-blocking switch backplane with up to 1.36 Tbps of switching capacity
• Support for field replaceable, redundant power supplies
• Integrated mounting brackets for rack mounting
• Lifetime hardware warranty and advanced replacement at no additional cost
Meraki switches feature high-end hardware features, including:

- Compact, 1RU design for space-constrained environments
- Terabit performance with non-blocking architecture
- Field-replaceable, hot-swappable power supplies/fans
- Front-to-back cooling
- Dedicated management port
- Low power consumption and shallow rack depth, which enable flexible deployment
- Stacking option for building redundant architectures

Full Enterprise Feature Set

Meraki switches include all of the traditional Ethernet features found in the enterprise:

- 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, Voice VLAN support for simplified VoIP deployments
- Port Mirroring to monitor network traffic
- IGMP Snooping to optimize network performance for multicast applications
- Multiple administrative roles with sophisticated security policy management
- Link Aggregation Control Protocol (LACP) for high-capacity trunking, with Multichassis (MLAG) support on stacked switches
- Quality-of-Service (QoS) to prioritize mission-critical traffic such as voice and video
- CDP, LLDP advertisement and snooping, with detailed neighbor visibility and discovery

Designed for a Complete Cloud-Managed Switch Network

Lifetime Warranty with Next-day Advanced Replacement

Cisco Meraki MS switches include a limited lifetime hardware warranty that provides next-day advance hardware switch replacement as long as the original purchaser owns the product. Meraki's simplified software and support licensing model also combines all software upgrades, centralized systems management and phone support under a single, easy-to-understand model.

For complete details, please visit www.meraki.cisco.com/support.
Dimensions & Interfaces

<table>
<thead>
<tr>
<th>Model</th>
<th>Physical Dimensions (H x W x D) (depth includes PSU)</th>
<th>Weight</th>
<th>Interface</th>
<th>Switching Capacity</th>
<th>Stacking Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS450-12</td>
<td>1.72” x 19.08” x 18.85” (4.37cm x 48.46cm x 47.88cm)</td>
<td>13.80 lb (6.26 kg)</td>
<td>• 12 x 40G QSFP+ Fiber • 2 x 100G QSFP28 Uplink • 2 x 100G QSFP28 stacking ports • RJ45 Management port</td>
<td>1.36 Tbps</td>
<td>400 Gbps</td>
</tr>
</tbody>
</table>

Power Options & Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Idle / Full Load Power</th>
<th>Power Supply Configuration</th>
<th>Supported Power Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS450-12-HW</td>
<td>57 / 138 W</td>
<td>Hot-swappable</td>
<td>2 x 250W PSU*</td>
</tr>
</tbody>
</table>

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

What’s Included

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS450-12-HW</td>
<td>1 x Power Supply (MA-PWR-250WAC), 4-Post Rack Mount Kit, and 3 x Pre-Installed Fans</td>
</tr>
</tbody>
</table>

Optional Accessories

MS450 switches support 100G stacking cables in various lengths as well as replaceable power supplies (PSU) and fans:

<table>
<thead>
<tr>
<th>Description</th>
<th>Accessory</th>
<th>Supported Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 W Power Supply</td>
<td>MA-PWR-250WAC</td>
<td>All Models</td>
</tr>
<tr>
<td>Meraki 100G Stacking Cable, 0.5 Meter</td>
<td>MA-CBL-100G-50CM</td>
<td>All Models</td>
</tr>
<tr>
<td>Meraki 100G Stacking Cable, 1 Meter</td>
<td>MA-CBL-100G-1M</td>
<td>All Models</td>
</tr>
<tr>
<td>Meraki 100G Stacking Cable, 3 Meter</td>
<td>MA-CBL-100G-3M</td>
<td>All Models</td>
</tr>
<tr>
<td>18K System Fan</td>
<td>MA-FAN-18K</td>
<td>All Models</td>
</tr>
</tbody>
</table>

The Meraki MS family also supports pluggable optics for high-speed connectivity. Meraki offers a variety of 1G/10G/40G/100G 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
Virtual Stacking supports thousands of switch ports in a single logical stack for unified management, monitoring, and configuration
Physical stacking of up to 8 switches with 400 Gbps stack bandwidth (MS450)

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
802.1x, 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: 64K

Layer 3 capabilities
Static routing, OSPFv2
Multicast routing
Warm Spare (VRRP) ²
DHCP Relay, DHCP Server

Mounting
1U rack-mountable
4-Post Rack Mount kit

Performance
Non-blocking fabric
Switching Capacity, MS450: 1.36 Tbps
Forwarding rate: 654.76 mpps
Jumbo frame support (9578 bytes of MTU)

Interfaces
1x RJ45 Management port
12x 40G QSFP+, 2 x 100G QSFP28 uplinks
2x 100G QSFP28 stacking ports

Power
Power input: 100 - 240 VAC, 47-63 Hz
Power consumption: 57-138 W

Environment
Operating temp: 0°C to 45°C, Humidity: 5 to 95% non-condensing

Regulatory
CSA (US)
IC (Canada)
CE (Europe)
C-Tick (Australia/New Zealand)
RoHS

MTBF Rating (in hours)

<table>
<thead>
<tr>
<th>Model</th>
<th>MTBF at 25°C</th>
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<tbody>
<tr>
<td>MS450-12</td>
<td>436,776 hrs</td>
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</table>

¹ Requires carrier-supported email to SMS gateway
² OSPF and Warm Spare do not operate concurrently (stacking is recommended for gateway redundancy)