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 sys-tem, client, and hostname visibility
- Zero-touch provisioning for rapid deployment across sites

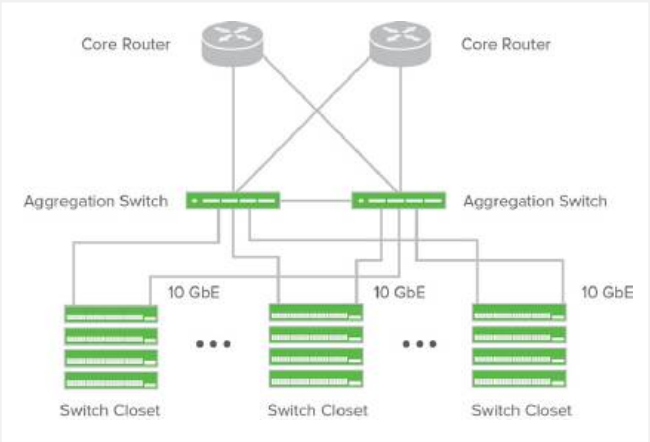
Product highlights

- Connect up to 12 MS355s for high-bandwidth aggregration 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 band-width
- 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:

- Flexible stacking; use any port of physically stack devices
- 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

Designed for a complete cloud-managed switch network



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 trunk-ing, 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

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

MS450 switch dimensions & interfaces

Model	Physical dimensions (H x W x D)*	Weight	Interface	Switching capacity	Stacking bandwidth
MS450-12	1.72" x 19.08" x 18.85" (4.37cm x 48.46cm x 47.88cm)	13.80 lb (6.26 kg)	• 12 x 40G QSFP+ Fiber • 2 x 100G QSFP28 Uplink • 2 x 100G QSFP28 stacking ports • RJ45 Management port	1.36 Tbps	400 Gbps

*Depth includes PSU

Power options & specifications

Model	Idle / Full load power	Power supply configuration	Supported power supply
MS450-12-HW	57 / 138 W	Hot-swappable	2 x 250W PSU*

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

What's included

Model	Description
MS450-12-HW	1 x Power Supply (MA-PWR-250WAC), 4-Post Rack Mount Kit, and 3 x Pre-Installed Fans



Optional accessories

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

Description	Accessory	Supported Models
250 W Power Supply	MA-PWR-250WAC	All Models
Meraki 100G Stacking Cable, 0.5 Meter	MA-CBL-100G-50CM	All Models
Meraki 100G Stacking Cable, 1 Meter	MA-CBL-100G-1M	All Models
Meraki 100G Stacking Cable, 3 Meter	MA-CBL-100G-3M	All Models
18K System Fan	MA-FAN-18K	All Models

MS450 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 160 Gbps stack bandwidth

Performance

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

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: 64K

Layer 3 capabilities

- Static routing, OSFPv2
- Multicast routing
- Warm Spare (VRRP) [2]
- DHCP Relay, DHCP Server

Power

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

[1] Requires carrier-supported email to SMS gateway

[2] OSPF and Warm Spare do not operate concurrently (stacking is recommended for gateway redundancy)

MS450 specifications

Interfaces

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

Environment

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

Regulatory

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

Warranty

Full lifetime hardware warranty with next-day advanced replacement included

MTBF rating (in hours at 25°C)

MS450-12	436,776 hrs