

# MS400 Series Aggregation Switches

Cloud-managed aggregate switches designed for enterprise and campus networks



## OVERVIEW

The Cisco Meraki MS400 Series brings powerful cloud-managed switching to the aggregation layer. This range of 1 and 10Gbps fiber aggregation switches adopts the benefits of the cloud: simplified management, reduced complexity, network wide visibility and control, and lower cost for campus deployments.

## EXPANDING CLOUD MANAGEMENT TO THE CAMPUS

Cisco Meraki aggregation switches extend Meraki’s cloud management to campus deployments. Just like our access switches, these aggregation 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.

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 pre-staging.

## INDUSTRY-LEADING CLOUD MANAGEMENT

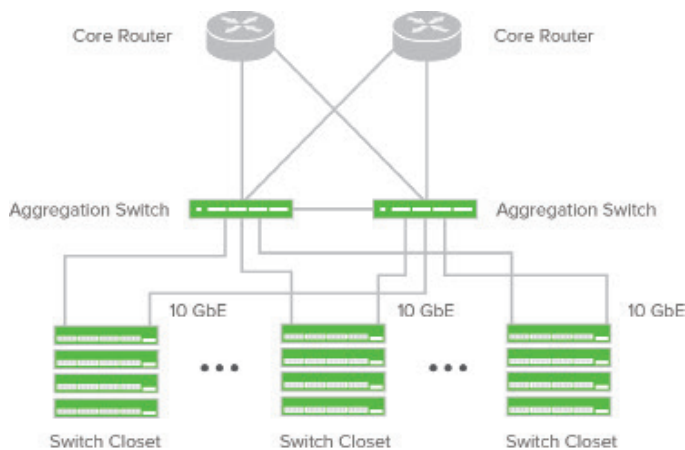
Cloud management has a number of benefits that make it easier to build campus networks:

- Centralized management that allows you to manage your entire Meraki network stack from campus aggregation to your access layer (wireless APs, switches, firewalls).
- Stack for high density fiber aggregation and manage up to tens of thousands of ports from a single pane of glass.
- Layer 7 OS, client, and hostname fingerprinting.
- E-mail and SMS (text) alerts upon power loss, downtime, or configuration changes.
- Role-based administration and automatic, scheduled firmware upgrades over the web.
- Regular feature updates and enhancements delivered on demand from the Meraki cloud.
- True zero-touch provisioning.

## 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
- Field-replaceable, hot-swappable 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:

- Quality-of-Service (QoS) to prioritize mission critical traffic such as voice and video
- IEEE 802.1X support for port based network access control
- MAC-based RADIUS auth and MAC whitelisting
- Voice VLAN support for simplified VoIP deployments
- Port Mirroring to monitor network traffic
- DHCP snooping to prevent users from adding unauthorized DHCP servers on the network
- IGMP Snooping to optimize network performance with multicast traffic
- Link Aggregation Control Protocol (LACP) for high-capacity trunking, stacking, and increased availability
- Broadcast storm protection, spanning tree, BPDU guard, root guard, and other safeguards to guard against misconfigurations and reduce convergence time
- Per port VLAN configuration
- Multiple administrative roles with sophisticated security policy management

## 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](http://www.meraki.cisco.com/support)

## MS400 FAMILY

Model	Physical Dimensions (H x W x D) (depth includes PSU)	Weight	Interface	Idle/Full Load Power	Switching Capacity
MS410-16-HW	19.1 x 20.3 x 1.7" (48.5 x 51.6 x 4.4 CM)	12.6 lbs (5.7 kg)	<ul style="list-style-type: none"> <li>• 16x 1 GbE SFP Fiber</li> <li>• 2x SFP+ for 10GbE uplink</li> <li>• 2x stacking ports</li> <li>• RJ45 Management port</li> </ul>	50/85 W	72 Gbps
MS410-32-HW	19.1 x 20.3 x 1.7" (48.5 x 51.6 x 4.4 CM)	12.6 lbs (5.7 kg)	<ul style="list-style-type: none"> <li>• 32x 1 GbE SFP Fiber</li> <li>• 4x SFP+ for 10GbE uplink</li> <li>• 2x stacking ports</li> <li>• RJ45 Management port</li> </ul>	50/85 W	144 Gbps
MS425-16-HW	19.1 x 20.3 x 1.7" (48.5 x 51.6 x 4.4 CM)	13.7lb (6.2kg)	<ul style="list-style-type: none"> <li>• 16x 10 GbE SFP+ Fiber</li> <li>• 2 x 40GbE QSFP+ uplink/stacking ports</li> <li>• RJ45 Management port</li> </ul>	98W/136 W	480 Gbps
MS425-32-HW	19.1 x 20.3 x 1.7" (48.5 x 51.6 x 4.4 CM)	13.82 lb (6.27 kg)	<ul style="list-style-type: none"> <li>• 32x 10GbE SFP+ Fiber</li> <li>• 2 x 40GbE QSFP+ uplink/stacking ports</li> <li>• RJ45 Management port</li> </ul>	98W/136 W	800 Gbps

## Power Options & Specifications

Model	Idle / Full Load Power	Power Supply Configuration	Supported Power Supply
MS410-16-HW	50 / 85 W	Hot-swappable	2 x 250W PSU*
MS410-32-HW	50 / 85 W	Hot-swappable	2 x 250W PSU*
MS425-16-HW	98 / 136 W	Hot-swappable	2 x 250W PSU*
MS425-32-HW	98 / 136 W	Hot-swappable	2 x 250W PSU*

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

## What's Included

Model	Description
MS410-16-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit, 2 x Pre-Installed Fans
MS410-32-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit, 2 x Pre-Installed Fans
MS425-16-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit, 3 x Pre-Installed Fans
MS425-32-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit, 3 x Pre-Installed Fans

## Optional Accessories / Optics

Meraki switches are modular in design, allowing for hot-swappable field replacements and a range of optics (no lock-out of third-party optics). Details of SFP-based modules can be found in the SFP Datasheet, available in the Meraki Library.

Description	Accessory	Supported Models
Meraki 40GbE Stacking / Uplink Cable, 0.5 Meter	MA-CBL-40G-50CM	MS410 and MS425
Meraki 40GbE Stacking / Uplink Cable, 1 Meter	MA-CBL-40G-1M	MS410 and MS425
Meraki 40GbE Stacking / Uplink Cable, 3 Meter	MA-CBL-40G-3M	MS410 and MS425
Field replaceable 16K rpm front-to-back fan	MA-FAN-16K	MS410
Field replaceable 18K rpm front-to-back fan	MA-FAN-18K	MS425
Field replaceable 250W power supply	MA-PWR-250WAC	MS410 and MS425

# 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

## 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 160Gbps stack bandwidth (MS410)
Flexible stacking on all interfaces and QSFP+/SFP+/SFP accessory types, up to 8 switches (MS425)

## Ethernet Switching Capabilities

802.1p Quality of Service prioritization
802.1Q VLAN tagging for up to 4094 VLANs
802.1D Spanning Tree Protocol (STP) and 802.1w Rapid Spanning Tree 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
IGMP snooping for multicast filtering
Cisco Discovery Protocol (CDP)
128K MAC Forwarding Table Capacity (96K on MS410)

## Layer 3 capabilities

Static routing
DHCP helper
DHCP server
Open shortest path first (OSPF v2)
Warm spare for L3 gateway redundancy <sup>2</sup>
Automatic DHCP failover in warm spare mode

<sup>1</sup> Requires carrier-supported email to SMS gateway

<sup>2</sup> OSPF and Warm Spare do not operate concurrently (stacking is recommended for gateway redundancy)

## Mounting

Rack-mountable with included rack mount hardware
Front-to-back airflow

## Performance

Non-blocking fabric
480/800Gbps switching capacity on the MS425-16/32
72/144 Gbps switching capacity on MS410-16/32
1.2 microsecond latency
Jumbo frame support (9578 ethernet frame)

## Interfaces on MS410

16 or 32 x 1GbE SFP + 2 or 4 x 10GbE SFP+ uplink ports, 2 x 40GbE stacking ports
1x RJ45 Management port

## Interfaces on MS425

16 or 32 x 10GbE SFP+/SFP, 2 x 40GbE uplink/stacking ports, supports flexible stacking on all interfaces
1x RJ45 Management port

## Power

Power input: 100 - 240 VAC, 47-63 Hz
Power consumption at idle: 50W (MS410), 98W (MS425)
Power consumption full load: 85W (MS410), 136W (MS425)

## Environment

Operating temp: 0C to 40C, Humidity: 5 to 95% non-condensing
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## Physical dimensions

Weight: 12.6lb (5.7kg) MS410-32, 14lb (6.35kg) MS425-32
Size (410): 19" (w) x 20.3" (d) x 1.8" (h) (48.5x 51.6x 4.5cm)
Size (425): 19" (w) x 19.17" (d) x 1.8" (h) (48.5x 48.7x 4.5cm)

## Regulatory

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

## MTBF

Model	MTBF
MS410-16	583,457 hrs
MS410-32	291,729 hrs
MS425-16	284,423 hrs
MS425-32	287,587 hrs