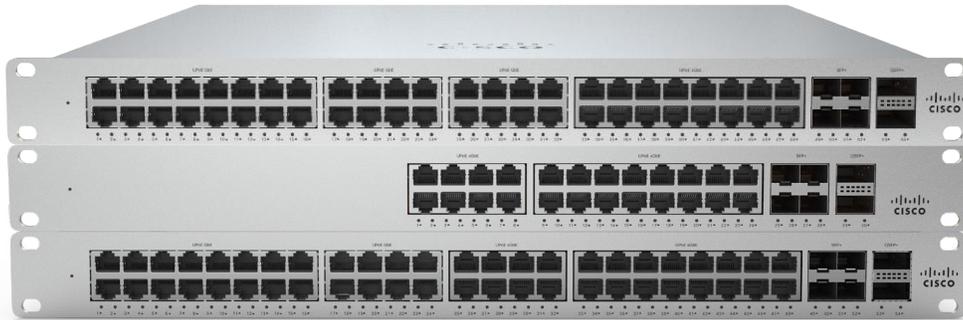


Meraki MS Series Switches

FAMILY DATASHEET



Overview

Cisco Meraki offers a broad range of switches, built from the ground up to be easy to manage without compromising any of the power and flexibility traditionally found in traditional enterprise-class switches.

Meraki access & aggregation switches are all managed through an elegant, intuitive cloud interface, freeing administrators to spend less time on configuration and more time on meeting business needs.

To set up a Meraki switch, just plug it in; there's no need for repetitive, command-based configuration, and switches can be up and running within minutes of connecting them to the network.

A powerful centralized management interface gives administrators deep visibility into the network and how it is used:

- Receive automatic email alerts for power loss, downtime, excessive Layer 1 errors, or configuration changes
- Utilize remote diagnostic tools such as packet capture to help isolate and troubleshoot network issues
- Stay protected with firmware upgrades and enhancements from the Meraki cloud

The Meraki dashboard provides unified policies, event logs, and monitoring, making it easy to manage network deployments without sacrificing functionality.

PRODUCT FAMILY HIGHLIGHTS

- Basic L2 and high-performance L3 switches with 1G/10G/40G uplinks, suitable for deployments of all sizes
- Range of enterprise switching options built on proven Cisco hardware technologies
- Integrated troubleshooting tools, logging, and alerting reduce operational costs
- True zero-touch configuration model that scales with an organization's needs and requirements
- Cloud management reduces cost, overhead, and time to resolution
- Industry-standard features allow for simple integration into existing and hybrid infrastructures
- Role-based administration and automatic, secure firmware updates delivered via the web
- Energy efficient design with low acoustics and fanless options

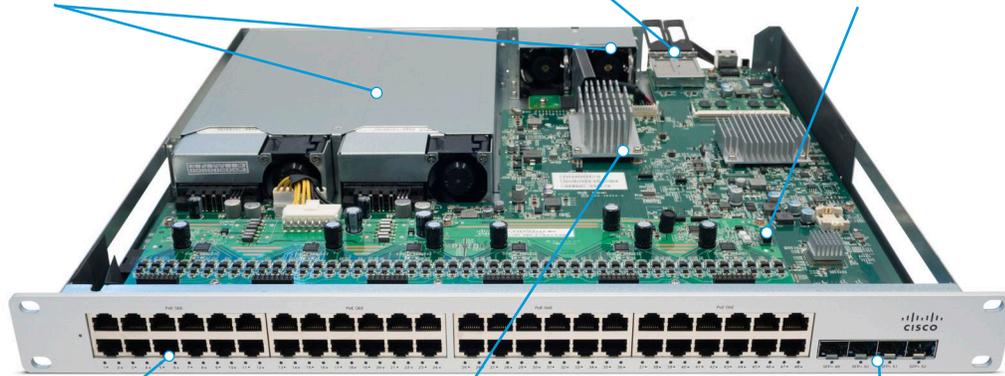
Inside the Meraki MS

MERAKI MS350-48FP SHOWN, VARIES BY MODEL

Energy Efficient Dual Power Supplies with Variable Speed Fans

Stacking connectors

High Reliability / MTBF
Extended Life Components



48x 1 GbE Ports with
802.3af/802.3at PoE/PoE+

Enhanced CPU / Memory
Meraki Cloud Management

Built-in 4 x 10 GbE SFP+ Uplink
Ports for Uplink Connectivity

ENTERPRISE-CLASS HARDWARE

Meraki switches feature high-end hardware and an exceptional feature set, including:

- 1G, 10G and 40G uplink ports for high-speed connectivity to aggregation layer switches or other upstream devices
- Multigigabit ports (MS350-24X and MS355 Series) provide up to 10Gbps on a single Ethernet cable, supporting the latest WiFi performance capabilities
- Wire-speed, non-blocking switch fabric (up to 800 Gbps) and 6 dedicated QoS queues for high-performance, converged voice, video, and data deployments
- Power efficient, quiet acoustic designs, and shallow rack depth options, enabling flexible deployment in wiring closets as well as offices and classrooms
- Fanless design on select models
- Power over Ethernet and PoE+, up to 30W per port
- Up to 740 watt PoE budget with PoE+ support for powering APs, cameras, and other PoE enabled devices (124W for 120-8 series), with UPoE available with the MS350-24X and MS355 series
- Lifetime hardware warranty and advanced replacement at no additional cost
- Field-replaceable, hot-swappable power supplies and fans on select models. RPS option for mission-critical applications

POWERFUL FEATURE SET FOR DEPLOYMENTS OF ALL TYPES

Meraki switches include all of the traditional Ethernet features found on the highest end products, including:

- 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 support for monitoring network traffic at line rate
- 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
- Rapid spanning tree, BPDU guard, root 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
- High-performance layer 3 routing capabilities on select models

Meraki Layer 2 Access Switching Portfolio

Series	MS120-8	MS120	MS210	MS225
				
Deployment type	Compact	Small Branch & Office	Branch & Small Campus	Branch & Small Campus
Interfaces	8 x 1G RJ45	24 / 48 x 1G RJ45	24 / 48 x 1G RJ45 ports	24 / 48 x 1G RJ45 ports
Uplinks	2 x 1G SFP	4 x 1G SFP	4 x 1G SFP ports	4 x 10G SFP+ ports
PoE capabilities	67W (LP model) 124W (FP model) PoE/PoE+ Support	370W (P, LP models) 740W (FP model) PoE/PoE+ Support	370W (P, LP models) 740W (FP models) PoE/PoE+ Support	370W (P, LP models) 740W (FP models) PoE/PoE+ Support
Power configuration	External PSU (non-PoE, LP model) Internal PSU (FP Model)	Internal	Internal Optional RPS	Internal Optional RPS
Stacking capabilities	Virtual only	Virtual only	Stacks with MS225 80 Gbps physical + virtual	Stacks with MS210 80 Gbps physical + virtual
Routing capabilities	DHCP Relay	DHCP Relay	Static only DHCP Relay	Static only DHCP Relay
Models	MS120-8-HW MS120-8LP-HW MS120-8FP-HW	MS120-24-HW MS120-24P-HW MS120-48-HW MS120-48LP-HW MS120-48FP-HW	MS210-24-HW MS210-24P-HW MS210-48-HW MS210-48LP-HW MS210-48FP-HW	MS225-24-HW MS225-24P-HW MS225-48-HW MS225-48LP-HW MS225-48FP-HW

Meraki Layer 3 Access Switching Portfolio

Series	MS250	MS350	MS355 X Series	MS355 X2 Series
				
Deployment type	Branch & Campus	Campus & Multigigabit	Campus & Multigigabit	High-Density Multigigabit
Interfaces	24 / 48 x 1G RJ45 ports	24 / 48 x 1G RJ45 ¹ ports (24X model) 16 x 1G RJ45 ¹ ports 8 x mGig ports	(24X model) 16 x 1G RJ45 ¹ ports 8 x mGig ports (48X model) 32 x 1G RJ45 ¹ ports 16 x mGig ports	(24X2 model) 24 x mGig ports (48X2 model) 24 x 1G RJ45 ¹ ports 24 x mGig ports
Uplinks	4 x 10G SFP+ ports	4 x 10G SFP+ ports	4 x 10G SFP+ OR 2 x 40G QSFP+	4 x 10G SFP+ OR 2 x 40G QSFP+
PoE capabilities	370W (P, LP models) 740W (FP models) PoE/PoE+ Support	370W (P, LP models) 740W (FP, 24X models) PoE/PoE+ Support UPoE Support (24X only)	740W (all models) PoE/PoE+/UPoE Support	740W (all models) PoE/PoE+/UPoE Support
Power configuration	Modular Power	Modular Power/Fans	Modular Power/Fans	Modular Power/Fans
Stacking capabilities	80 Gbps physical + virtual	160 Gbps physical + virtual	400 Gbps physical + virtual	400 Gbps physical + virtual
Routing capabilities	Static + Dynamic ² DHCP Server + Relay Warm spare (VRRP)	Static + Dynamic ² DHCP Server + Relay Warm spare (VRRP)	Static + Dynamic ² DHCP Server + Relay Warm spare (VRRP)	Static + Dynamic ² DHCP Server + Relay Warm spare (VRRP)
Models	MS250-24-HW MS250-24P-HW MS250-48-HW MS250-48LP-HW MS250-48FP-HW	MS350-24-HW MS350-24P-HW MS350-48-HW MS350-48LP-HW MS350-48FP-HW	MS355-24X-HW MS355-48X-HW	MS355-24X2-HW MS355-48X2-HW

¹Interfaces do not support half-duplex on the MS350

²Detailed routing specifications are available in series datasheets

Meraki Aggregation Switching Portfolio

Series	MS410	MS425	MS450
			
Deployment type	1G Fiber Aggregation	10G Fiber Aggregation	40G Fiber Aggregation
Interfaces	16 / 32 x 1G SFP	16 / 32 x 10G SFP+	12 x 40G QSFP+
Uplinks	2 x 10G SFP+ (MS410-16) 4 x 10G SFP+ (MS410-32)	2 x 40G QSFP+	2 x 100G QSFP28
Power configuration	Modular Power/Fans	Modular Power/Fans	Modular Power/Fans
Stacking capabilities	160 Gbps physical + virtual	Front-port 160 Gbps + virtual	400 Gbps physical + virtual
Routing capabilities	Static + Dynamic DHCP Server + Relay Warm spare (VRRP)	Static + Dynamic DHCP Server + Relay Warm spare (VRRP)	Static + Dynamic DHCP Server + Relay Warm spare (VRRP)
Models	MS410-16-HW MS410-32-HW	MS425-16-HW MS425-32-HW	MS450-12-HW

Lifetime Warranty with Next Day Advance Replacement

All Cisco Meraki MS switches include a limited lifetime hardware warranty that provides next-day advance hardware replacement. 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 meraki.cisco.com/support.

Features and Capabilities

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

INTELLIGENT CAMPUS & BRANCH SWITCHING

With built-in monitoring, troubleshooting and logging capabilities, Meraki switches provide a refreshing new approach to managing network infrastructure, regardless of deployment size.

Meraki's Virtual Stacking technology eliminates the need for configuration scripts and commands, empowering administrators to make changes quickly and securely on one or all the switches in a deployment at once.

Clients with high usage

5 clients used more than 100.00 GB
'FILESVR1', 'NAKIVOTRANSPORTSF' and 3 other clients

Usage stats

Total Data Transferred	Total Data Downloaded	Total Data Uploaded
3.93 TB	1.56 TB	2.37 TB

Intelligent anomaly detection flags potential network events

WIRED SECURITY WITHOUT COMPROMISE

Whether deployed in an office environment, hospital or retail store, Meraki switches make enforcing security policies a breeze. Set up multiple policies and enable them at the port-level, or apply them across the entire network in a few clicks.

Meraki switches also provide comprehensive security reporting, making it easy to proactively discover rogue DHCP servers and other malicious activity on the network.

Email alerts: Send an email if a new DHCP server is seen

Default DHCP server policy: Allow DHCP servers

Note: Switches with configured DHCP servers are always allowed.

Blocked DHCP servers: 02:31:3a:1c:c4:14

DHCP servers for the last day

Description	VLAN	Subnet	IP	Last seen	Recent packet	Policy
CORE_1 (interface CORP WIFI)	132	10.92.132.0/22	10.92.135.254	13 seconds	view packet	allowed
CORE_1 (interface)	46	172.16.46.0/23	172.16.47.254	1 second	view packet	allowed
SD-WAN Security 1	42	172.16.42.0/23	172.16.43.254	2 seconds	view packet	blocked

Rogue DHCP server detection across the entire network

TROUBLESHOOTING, THE WAY IT SHOULD BE

Drastically reduce time-to-resolution with a variety of powerful troubleshooting tools such as remote cable testing and packet captures that help isolate and troubleshoot network issues.

With Meraki's dynamic network topology, see how the entire network is interconnected, automatically.

Ensure the entire team receives alerts upon power loss, downtime, or configuration changes.

Select a tool: Cable test

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

12 Run cable test

Testing the cable attached to port 12

Port	Link	Length	Status	Pair 1	Pair 2	Pair 3	Pair 4
12	down	94.5 m	Failure	open	ok	ok	open

Remote cable test in the Meraki Dashboard

INDUSTRY LEADING CLOUD MANAGEMENT

Meraki's cloud management architecture delivers true zero-touch switch provisioning – configure switches before they arrive onsite, or use Meraki templates to standardize an entire fleet of switches, no matter what size.

With Virtual Stacking, IT admins can make configuration changes to hundreds of switch ports in seconds with the intuitive dashboard interface, enabling rapid and streamlined switch port management that would otherwise take weeks to complete.

Switch / Port*	Switch	Name	Type	VLAN	Status	Tags	POE	Access policy	CDP/LLDP
<input type="checkbox"/> CORE 1 / 16	CORE 1	Staging Port	access	110	<input type="checkbox"/>			Open	-
<input type="checkbox"/> CORE 1 / 17	CORE 1	To ALPHA-GW1	access	78	<input checked="" type="checkbox"/>			Open	sfo12.00a-gw1.cisco.com
<input type="checkbox"/> CORE 1 / 18	CORE 1	To ALPHA-GW2	access	78	<input checked="" type="checkbox"/>			Open	sfo12.00a-gw2.cisco.com
<input type="checkbox"/> Close 1.1.3/1	Close 1.1.3	Cisco Alpha	access	110, voice 110	<input checked="" type="checkbox"/>		disabled	Open	SEP58978D2E1674

Switch virtual stack for managing all switch ports at once

BUILT-IN APPLICATION LAYER VISIBILITY

Meraki switches include integrated Layer 7 visibility, to help IT admins 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, iPads, Androids, and other devices.

This unprecedented visibility allows optimizing of network resources and maintaining optimal network performance.

Clients: IT-Mac-Image-MBP-2

Status: currently connected

Switch / port: IDF 3.1.1 / 32 (topology)

Device type: Apple Windows 7/Vista

Usage for the last 2 hours: 69.1 MB (↓ 63.5 MB ↑ 5.6 MB)

Network: IPv4 address: 10.92.132.216 dynamic

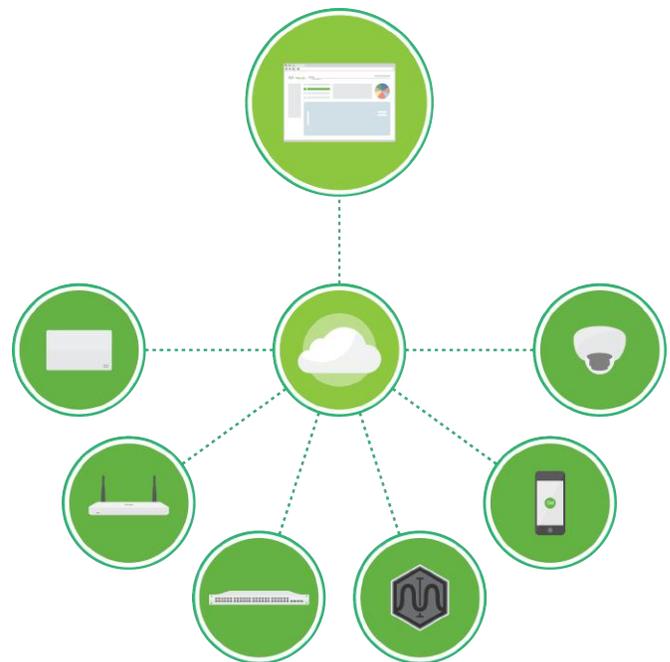
Ping: 80 ms

Granular network client visibility up to the application layer

BEYOND-THE-NETWORK SOFTWARE ARCHITECTURE

All Meraki products run the same operating system, which allows us to deliver a consistent user experience for network management.

When connected, new Meraki switches automatically reach out to the Meraki cloud and download the most current configuration. Future updates can be user-scheduled, ensuring the network is kept up-to-date with bug fixes, security updates, and new features.



Included In the Box

MS120-8 Series	Integrated mounting brackets, External PSU (non-PoE and LP models), Mounting screw kit, Getting started insert
MS120 Series	Mounting screw kit, Getting started insert
MS210 Series	Mounting screw kit, Getting started insert
MS225 Series	Mounting screw kit, Getting started insert
MS250 Series	Power Supply (1), System fans (2), Mounting screw kit, Getting started insert
MS350 Series	Stacking cable (1), Power supply (1), system fans (2), Mounting screw kit, Getting started insert
MS355 Series	Power Supply (1), 4-Post rack mount kit, Pre-Installed fans (3)
MS410 Series	Power Supply (1), System fans (2), Mounting screw kit, Getting started insert
MS425 Series	Power Supply (1), System fans (3), Mounting screw kit, Getting started insert
	Power Supply (1), 4-Post rack mount kit, Pre-Installed Fans (3)

Optional Accessories

DESCRIPTION	ACCESSORY	SUPPORTED MODELS
Power cable	MA-PWR-CORD-US MA-PWR-CORD-EU MA-PWR-CORD-UK MA-PWR-CORD-AU	All models
External Power Supply	DC 54V/1.67A, 90W, MA-PWR-90WAC DC 12V/2.5A, 30W, MA-PWR-30WAC	MS120-8, MS120-8-LP
250W Power Supply	MA-PWR-250WAC	MS250-24, MS250-48, MS350-24, MS350-48, MS410, MS425, MS450 models
640W Power Supply	MA-PWR-640WAC	MS250-24P, MS250-48LP, MS350-24P, MS350-48LP models
1025W Power Supply	MA-PWR-1025WAC	MS250-48FP, MS350-24X, MS350-48FP, MS355 models
Meraki Stacking Cable, 40G, 0.5 Meter	MA-CBL-40G-50CM	All MS210, MS225, MS250, MS350, MS410, MS425 models
Meraki Stacking Cable, 40G, 1 Meter	MA-CBL-40G-1M	All MS210, MS225, MS250, MS350, MS410, MS425 models
Meraki Stacking Cable, 40G, 3 Meter	MA-CBL-40G-3M	All MS210, MS225, MS250, MS350, MS410, MS425 models
Meraki Stacking Cable, 100G, 0.5 Meter	MA-CBL-100G-50CM	MS355 and MS450 models
Meraki Stacking Cable, 100G, 1 Meter	MA-CBL-100G-1M	MS355 and MS450 models
Meraki Stacking Cable, 100G, 3 Meter	MA-CBL-100G-3M	MS355 and MS450 models
16K System Fan	MA-FAN-16K	MS350-24, MS350-24P, MS350-48, MS350-48LP, MS350-48FP, MS410 models
18K System Fan	MA-FAN-18K	MS350-24X, MS355, MS425, MS450 models

Meraki MS switches support SFP/SFP+/QSFP+/QSFP28 optic accessories 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

Additional Resources

Meraki MS120-8 Compact Series Datasheet

https://meraki.cisco.com/lib/pdf/meraki_datasheet_ms120_compact.pdf

Meraki MS120 Series Datasheet

https://meraki.cisco.com/lib/pdf/meraki_datasheet_ms120.pdf

Meraki MS210 Series Datasheet

https://meraki.cisco.com/lib/pdf/meraki_datasheet_ms210.pdf

Meraki MS225 Series Datasheet

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Meraki MS250 Series Datasheet

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Meraki MS350 Series Datasheet

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Meraki MS355 Series Datasheet

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Meraki MS410 Series Datasheet

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Meraki MS425 Series Datasheet

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Meraki SFP & Stacking Accessories Datasheet

meraki.cisco.com/lib/pdf/meraki_datasheet_sfp.pdf

Cost Calculator

<https://meraki.cisco.com/buy/cost-calculator>