

# MS350 Series

Stackable access switches with 10G SFP+ uplinks,  
designed for high-performance campus networks



## Cloud-managed stackable access switches

The Cisco Meraki **MS350 series** provides 10G SFP+ uplinks and high-performance access switching for large enterprise and campus networks. The switch includes optional PoE/PoE+ support, highly scalable Layer 3 routing and modular power/fans for mission-critical networks.

The family features the **MS350-24X** which includes 8 multigigabit (mGig) ports and UPoE support for high-performance 802.11ax/ac access points, servers, and work stations.

All Meraki switches are managed through an elegant, intuitive cloud-based interface, rather than cryptic command line.

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

## Industry-leading cloud management

Cloud management has a number of benefits that make it easier to build networks large and small:

- Automatic email alerts from power loss, downtime, excessive Layer 1 errors, 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

- Gigabit access switching with 24- and 48- port models and optional PoE+ support up to 740W
- Multigigabit access switch model with 24-ports and UPoE for 802.11ax/ac access points and other high bandwidth applications
- 4 x 10G SFP+ uplink interfaces on all models
- Dual stacking interfaces with up to 160 Gbps of bandwidth
- Support for field replaceable, redundant power supplies
- Non-blocking switch backplane with up to 272 Gbps of switching capacity
- 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
- Integrated mounting brackets for rack mounting
- Lifetime hardware warranty and advanced replacement at no additional cost

## Features and capabilities

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

### Powerful access switching

- High-bandwidth physical stacking with support for up to 8 stack members for built-in redundancy and performance
- Link Aggregation Control Protocol (LACP) for high-capacity trunking, with Multichassis (MLAG) support on stacked switches
- Static and dynamic routing support with DHCP relay and server capabilities
- Quality-of-Service (QoS) to prioritize mission critical traffic such as voice and video
- Voice VLAN support for simplified VoIP deployments
- CDP, LLDP advertisement and snooping, with detailed neighbor visibility and discovery
- Port Mirroring to monitor network traffic
- IGMP Snooping to optimize network performance for multicast applications

### Network security

- 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
- Multiple administrative roles with sophisticated security policy management

### Network troubleshooting & automation

- Virtual Stacking helps IT admins make configuration changes to hundreds of switch ports in seconds with our intuitive dashboard interface
- 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

### 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 to VoIP telephones, IP security cameras, wireless access points (APs), and other IP devices. Using CDP and LLDP, PoE power is intelligently budgeted to maximize the number of PoE clients supported. For the most power-hungry applications, support for UPoE support is also available with the MS350-24X.

### Application layer visibility

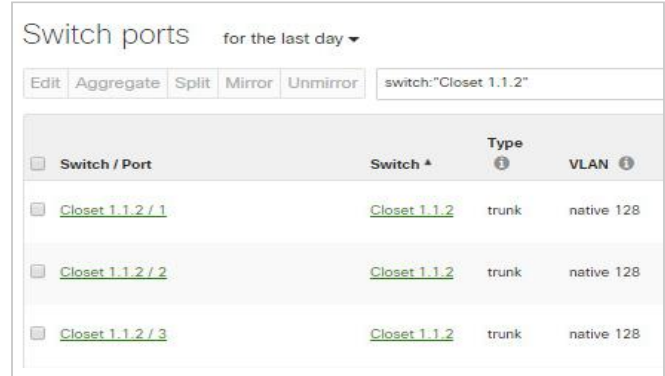
Meraki switches include integrated Layer 7 fingerprinting without the need to purchase additional modules or services. Identify hundreds of applications from business apps to BitTorrent and YouTube.

User fingerprinting allows administrators to easily identify individual users by device and tune network resources for optimum performance.

### Unified software architecture

Meraki switches run the same operating system used by all of our products. The use of a common operating system allows us to deliver a consistent experience across all product lines, from our security appliances to cameras.

When connected, new MS350 switches automatically reach out to the Meraki cloud and download the most current network configuration. Future updates can be user-scheduled. This ensures the network is kept up-to-date with bug fixes, security updates, and new features.



Virtual Stacking with Meraki

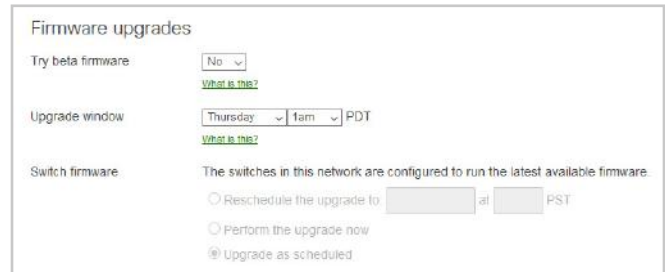
## Simplified management and operations

Meraki’s cloud-managed architecture makes it simpler than ever to quickly provision and configure 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 large network deployments.

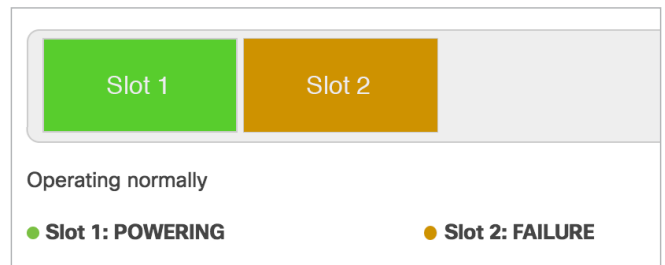
By providing a complete, robust set of management functions over the web, Meraki’s cloud-based management eliminates the need for proprietary command line configuration interfaces which require expensive and time-consuming certifications.

Meraki MS switches can be fully deployed and provisioned in minutes without local configuration or staging. New 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 includes several remote diagnostic features; including ping, traceroute, cable test, and latency measurement tools. For in-depth client troubleshooting, administrators can remotely perform port-level packet captures without additional hardware.



Scheduled & automatic firmware updates



Redundant power supply monitoring & alerts

## Designed for reliability & environmental efficiency

The Meraki switch family was designed for reliable, long-lived operation in wiring closet environments, which may be prone to high temperatures and limited ventilation.

Meraki is able to deliver highly reliable products with exceptional mean time between failure (MTBF) ratings by using proven switching silicon and by minimizing total component count.

Each 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.

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 switches.

### Campus edge

MS switches are ideal for small and large scale campus deployments, where reliability, scalability, and manageability are top priorities:

- Physical stacking for increased redundancy
- Warm spare failover for all stacking switches
- Get alerts if a switch fails or goes offline, before it impacts users

#### Configured stacks

<input type="checkbox"/> Stack Name	Stack Members
<input type="checkbox"/> 1.1 Access	<a href="#">Closet 1.1.1</a> <a href="#">Closet 1.1.2</a> <a href="#">Closet 1.1.4</a> <a href="#">Closet 1.1.3</a>
<input type="checkbox"/> 5.3 Wifi Stack	<a href="#">Closet 5.3.2</a> <a href="#">Closet 5.3.3</a>
<input type="checkbox"/> 5.3 Access	<a href="#">Closet 5.3.5</a> <a href="#">Closet 5.3.4</a>
<input type="checkbox"/> 4.1 Access Orange	<a href="#">Closet 4.1.15</a> <a href="#">Closet 4.1.16</a> <a href="#">Closet 4.1.14</a>

#### Managing and monitoring stacks in the dashboard

## Dimensions & interfaces

Model	Physical dimensions (H x W x D)*	Weight	Interface	Switching capacity	Stacking bandwidth
MS350-24-HW	1.74" x 19.08" x 20.4" (4.44 x 48.46 x 51.81cm)	12.37 lb (5.61 kg)	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and auto-MDIX<sup>3</sup></li> <li>• 4 x 1GbE SFP uplink</li> <li>• 2 x stacking ports</li> </ul>	128 Gbps	160 Gbps
MS350-24P-HW	1.74" x 19.08" x 20.4" (4.44 x 48.46 x 51.81cm)	13.14 lb (5.96 kg)	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and auto-MDIX<sup>3</sup></li> <li>• 4 x 1GbE SFP uplink</li> <li>• 2 x stacking ports</li> </ul>	128 Gbps	160 Gbps
MS350-24X-HW	1.74" x 19.08" x 23.4" (4.44 x 48.46 x 59.47cm)	14.48 lb (6.6 kg)	<ul style="list-style-type: none"> <li>• 16 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and auto-MDIX</li> <li>• 8 x 100M/1G/2.5G/5/10G Ethernet RJ45 with auto negotiation and auto-MDIX<sup>3</sup></li> <li>• 4 x SFP+ 10G uplink</li> <li>• 2 x stacking ports</li> </ul>	272 Gbps	160 Gbps
MS350-48-HW	1.74" x 19.08" x 20.4" (4.44 x 48.46 x 51.81cm)	12.85 lb (5.83 kg)	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and auto-MDIX*</li> <li>• 4 x SFP+ 10G uplink</li> <li>• 2 x stacking ports</li> </ul>	176 Gbps	160 Gbps
MS350-48LP-HW	1.74" x 19.08" x 20.4" (4.44 x 48.46 x 51.81cm)	13.82 lb (6.27 kg)	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T Ethernet RJ45 with with auto negotiation and auto-MDIX<sup>3</sup></li> <li>• 4 x SFP+ 10G uplink</li> <li>• 2 x stacking ports</li> </ul>	176 Gbps	160 Gbps
MS350-48FP-HW	1.74" x 19.08" x 22" (4.44 x 48.46 x 55.87cm)	14.26 lb (6.47 kg)	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T Ethernet RJ45 with auto negotiation and auto-MDIX<sup>3</sup></li> <li>• 4 x SFP+ 10G uplink</li> <li>• 2 x stacking ports</li> </ul>	176 Gbps	160 Gbps

<sup>1</sup> Depth includes accessories and FRUs (field-replaceable units) that ship with the product

<sup>2</sup> Weight includes base chassis only

<sup>3</sup> Note: Interfaces do not support 10M half-duplex

## Power options & specifications

Model	Idle / full (with combined power)	Redundant/combined power**	Power supply configuration	Optional redundant power supply
MS350-24-HW	56 / 66 W	–	Hot-swappable	2 x 250W PSU*
MS350-24P-HW	57 / 466 W	370/720 W	Hot-swappable	2 x 640W PSU*
MS350-24X-HW	215 / 867 W	740 / 1440 W	Hot-swappable	2 x 1025W PSU*
MS350-48-HW	56 / 63 W	–	Hot-swappable	2 x 250W PSU*
MS350-48LP-HW	63 / 478 W	370 / 740 W	Hot-swappable	2 x 640W PSU*
MS350-48FP-HW	69 / 888 W	740 / 1440 W	Hot-swappable	2 x 1025W PSU*

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

\*\* Combined power feature increases available PoE for devices connected to the switch and defaults to lower power for redundant mode in case of failure

## What's included

Model	Idle / full (with combined power)
MS350-24-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit, 1 x Stacking Cable (0.5m), 2 x Pre-Installed Fans
MS350-24P-HW	1 x Power Supply (MA-PWR-640WAC), Mounting screw kit, 1 x Stacking Cable (0.5m), 2 x Pre-Installed Fans
MS350-24X-HW	1 x Power Supply (MA-PWR-1025WAC), Mounting screw kit, 1 x Stacking Cable (0.5m), 2 x Pre-Installed Fans
MS350-48-HW	1 x Power Supply (MA-PWR-250WAC), Mounting screw kit, 1 x Stacking Cable (0.5m), 2 x Pre-Installed Fans
MS350-48LP-HW	1 x Power Supply (MA-PWR-640WAC), Mounting screw kit, 1 x Stacking Cable (0.5m), 2 x Pre-Installed Fans
MS350-48FP-HW	1 x Power Supply (MA-PWR-1025WAC), Mounting screw kit, 1 x Stacking Cable (0.5m), 2 x Pre-Installed Fans

## Optional accessories

MS350 switches support 40G stacking cables in various lengths as well as replaceable power supplies (PSU) and fans:

Description	Accessory	Supported Models
250W Power Supply	MA-PWR-250WAC	MS350-24, MS350-48
640W Power Supply	MA-PWR-640WAC	MS350-24P, MS350-48LP
1025W Power Supply	MA-PWR-1025WAC	MS350-24X, MS350-48FP
Meraki Stacking Cable, 0.5 Meter	MA-CBL-40G-50CM	All Models
Meraki Stacking Cable, 1 Meter	MA-CBL-40G-1M	All Models
Meraki Stacking Cable, 3 Meter	MA-CBL-40G-3M	All Models
16K System Fan	MA-FAN-16K	MS350-24, MS350-24P, MS350-48, MS350-48LP, MS350-48FP
18K System Fan	MA-FAN-18K	MS350-24X

The Meraki MS family also supports SFP/SFP pluggable optics for high-speed connectivity. Meraki offers a variety of Gigabit and 10 Gigabit accessories. 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)

# MS350 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<sup>1</sup>

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

Physically stack up to 8 switches with 80 Gbps of stacking bandwidth on all models

Virtual Stacking supports thousands of switch ports in a single logical stack for unified management, monitoring, and configuration

## 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

## Security

Integrated multi-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

Single-Host/Multi-Domain/Multi-Host/Multi Authentication

Port security: Sticky MAC, MAC whitelisting

DHCP snooping, detection and blocking, Dynamic ARP Inspection

IPv4 and IPv6 ACLs

<sup>1</sup> Requires carrier-supported email to SMS gateway and/or Meraki Mobile app

<sup>2</sup> For international availability, please contact [sales@meraki.com](mailto:sales@meraki.com)



# MS350 specifications

## Performance

Switching capacity: 128 Gbps on 24-port models, 176 Gbps on 48-port models, 272 Gbps on 24X

Forwarding rate: 95.24 mpps on 24-port models, 130.95 mpps on 48-port models, 202.38 mpps on 24X

Jumbo frame support (9600 byte Ethernet frame)

Flow control support

## Layer 3 capabilities

Static routing, OSPFv2 (with support for up to 16 ECMP Routes)

Multicast routing [PIM-ASM]

Warm Spare (VRRP)<sup>2</sup>

DHCP Server, DHCP Relay

## Power

Power input: 100 - 240 VAC, 47-63 Hz

Power consumption: 56 - 888W

## Mounting

1U Rack-mountable with included rack mount hardware

2-post front mounting options available

## Environment

Operating temperature: -5°C to 50°C

Humidity: 5 to 95% non-condensing

Variable speed fans

## Regulatory<sup>2</sup>

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 rating (in hours at 25°C)

MS350-24-HW	808,000 hrs
MS350-24P-HW	568,000 hrs
MS350-24X-HW	321,515 hrs
MS350-48-HW	588,000 hrs
MS350-48LP-HW	536,000 hrs
MS350-48FP-HW	518,000 hrs

<sup>1</sup> Requires carrier-supported email to SMS gateway and/or Meraki Mobile app

<sup>2</sup> For international availability, please contact sales@meraki.com, OSPF and Warm Spare do not operate concurrently