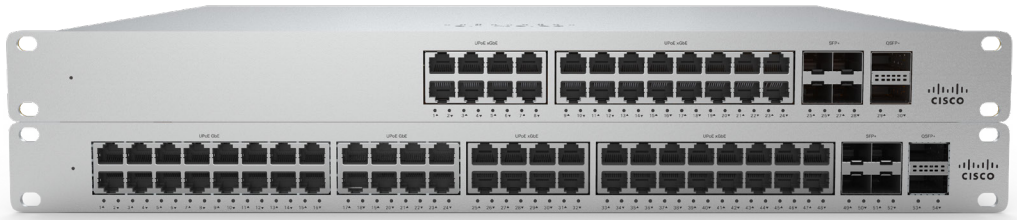
MS355 SERIES

Multi-Gigabit access switches with 40G uplinks, designed for high performance enterprise and campus networks



CLOUD-MANAGED STACKABLE MULTI-GIGABIT SWITCHES

The Cisco Meraki MS355 series provides full 10G multi-gigabit (mGig) access switching for demanding enterprise and campus environments.

The switch series features a high mGig port density for 802.11ax wireless access points, servers, and workstations. The family supports 40G or 10G uplinks, physical stacking, up to 60W of port power with UPoE, and field replaceable power supplies/fans.

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 platform gives administrators granular visibility into their network. The dashboard helps you keep track of every configuration change in your network with a detailed event and change logs.

INDUSTRY LEADING CLOUD MANAGEMENT

Cloud management has many 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

- Available models with up to 24 full 10G mGig ports for 802.11ax access points, servers, and workstations
- Multi-gigabit (mGig) ports support 100M/1/2.5/5/10G of bandwidth over copper cabling
- Access switching with up to 48 ports and 740W of UPoE support
- 40G or 10G uplink interfaces on all models
- Dual stacking interfaces with 400 Gbps of bandwidth
- Support for field replaceable, redundant power supplies
- Up to 688 Gbps of switching capacity
- 6 configurable QoS queues for converged voice, video, and data applications
- Integrated mounting brackets for rack mounting
- Lifetime hardware warranty and advanced replacement at no additional cost

Features and Capabilities

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 an 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.

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.

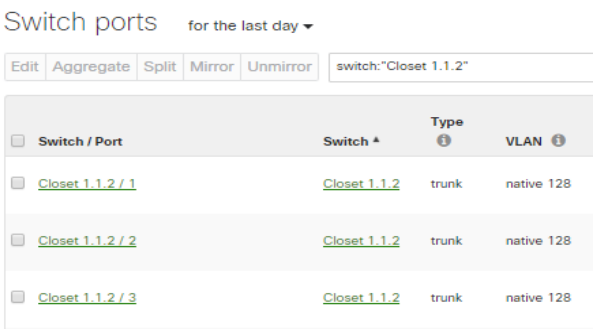
User fingerprinting allows administrators to quickly identify individual users by device and tune network resources for optimum performance.

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 MS355 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.

Virtual Stacking with Meraki



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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.

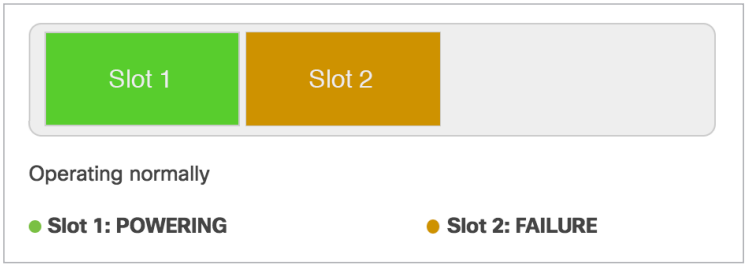
By providing a complete, robust set of management functions over the web, Meraki's cloud-based management eliminates the need for proprietary command line configuration interfaces which require expensive and time-consuming certifications.

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.

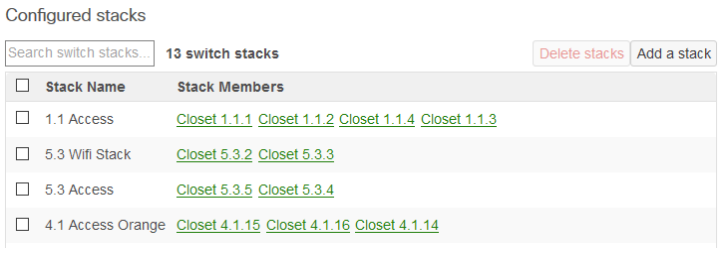
The highly integrated designs of Meraki switches result in power and cooling savings in large deployment environments of 30-60% when compared with similar managed switches.

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

Managing and monitoring stacks in the dashboard



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Dimensions & Interfaces

Model	Physical Dimensions (H x W x D) [1]	Weight [2]	Interface	Switching Capacity	Stacking Bandwidth
MS355-24X-HW	1.72” x 19.08” x 20.34” (4.37 x 48.46 x 51.66cm)	12.30 lb (5.58 kg)	• 8 x 100M/1G/2.5G/5/10G Ethernet RJ45 with auto negotiation and auto-MDIX[3] • 16 x 1G Ethernet RJ45 • 2 x 40G QSPF+ or 4 x 10G SFP+ uplinks • 2 x 100G QSFP28 stacking ports	352 Gbps	400 Gbps
MS355-48X-HW	1.72” x 19.08” x 20.34” (4.37 x 48.46 x 51.66cm)	13.00 lb (5.90 kg)	• 16 x 100M/1G/2.5G/5/10G Ethernet RJ45 with auto negotiation and auto-MDIX[3] • 32 x 1G Ethernet RJ45 • 2 x 40G QSPF+ or 4 x 10G SFP+ uplinks • 2 x 100G QSFP28 stacking ports	544 Gbps	400 Gbps
MS355-24X2-HW	1.72” x 19.08” x 20.34” (4.37 x 48.46 x 51.66cm)	12.08 lb (5.90 kg)	• 24 x 100M/1G/2.5G/5/10G Ethernet RJ45 with auto negotiation and auto-MDIX[3] • 2 x 40G QSPF+ or 4 x 10G SFP+ uplinks • 2 x 100G QSFP28 stacking ports	640 Gbps	400 Gbps
MS355-48X2-HW	1.72” x 19.08” x 20.34” (4.37 x 48.46 x 51.66cm)	13.14 lb (5.96 kg)	• 24 x 100M/1G/2.5G/5/10G Ethernet RJ45 with auto negotiation and auto-MDIX[3] • 24 x 1G Ethernet RJ45 • 2 x 40G QSPF+ or 4 x 10G SFP+ uplinks • 2 x 100G QSFP28 stacking ports	688 Gbps	400 Gbps

[1] Depth includes accessories and FRUs (field-replaceable units) that ship with the product
[2] Weight includes base chassis only
[3] Note: 10M full duplex is supported on non-mGig ports only

Power Options & Specifications

Model	Idle / Full (with Combined Power)	Redundant / Combined Power**	Power Supply Configuration	Supported Power Supply
MS355-24X-HW	110 / 1744W	740 / 1440 W	Hot-swappable	MA-PWR-1025WAC
MS355-48X-HW	145 / 1760 W	740 / 1480 W	Hot-swappable	MA-PWR-1025WAC
MS355-24X2-HW	147 / 1793 W	740 / 1440 W	Hot-swappable	MA-PWR-1025WAC
MS355-48X2-HW	168 / 1723 W	740 / 1480 W	Hot-swappable	MA-PWR-1025WAC

* 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

MS355-24X-HW	1 x Power Supply (MA-PWR-1025WAC), 4-Post Rack Mount Kit, 3 x Pre-Installed Fans
MS355-48X-HW	1 x Power Supply (MA-PWR-1025WAC), 4-Post Rack Mount Kit, 3 x Pre-Installed Fans
MS355-24X2-HW	1 x Power Supply (MA-PWR-1025WAC), 4-Post Rack Mount Kit, 3 x Pre-Installed Fans
MS355-48X2-HW	1 x Power Supply (MA-PWR-1025WAC), 4-Post Rack Mount Kit, 3 x Pre-Installed Fans

Optional Accessories

MS355 switches support 100G stacking cables in various lengths as well as replaceable power supplies (PSU) and fans:

Description	Accessory	Supported Models
1025 W Power Supply	MA-PWR-1025WAC	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

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

Physically stack up to 8 switches with 400 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: 32K

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

[1] Requires carrier-supported email to SMS gateway and/or Meraki Mobile app

[2] OSPF and Warm Spare do not operate concurrently

Performance

Switching Capacity:

MS355-24X: 352 Gbps, MS355-48X: 544 Gbps

MS355-24X2: 640 Gbps, MS355-48X2: 688 Gbps

Forwarding rate:

MS355-24X: 262 mpps, MS355-48X: 405 mpps

MS355-24X2: 476 mpps, MS355-48X2: 512 mpps

Jumbo frame support (9600 byte Ethernet frame)

Flow control support

Layer 3

Static routing, OSFPv2 (with support for up to 16 ECMP Routes)

Multicast routing [PIM-ASM]

Warm Spare (VRRP)[2]

DHCP Server, DHCP Relay

Power

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

Power consumption: 110 - 1793W

Mounting

1U rack-mountable

4 post rack mount support

Environment

Operating temperature: 0°C to 45°C

Humidity: 5 to 95% non-condensing

Variable speed fans

Regulatory For international availability, please contact sales@meraki.com

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)

Model	MTBF at 25°C
MS355-24X-HW	369,317
MS355-48X-HW	343,134
MS355-24X2-HW	341,154
MS355-48X2-HW	330,228