MS150 Datasheet

Overview

Cisco Meraki MS150 stackable switches provide Layer 2 access switching, ideal for branch and campus deployments. The MS150 series features a variety of options designed to meet the diverse needs of branch and campus deployments.

With 12 different models, the MS150 offers a combination of 1Gig and mGig ports supporting up to 740W of power, SFP+ uplinks, and backplane stacking. This line enables scalability to support the growing wired and wireless infrastructure deployments.



Features

- Managed via Cisco Meraki Dashboard
- Remote Packet Capture Tools via Meraki Dashboard
- Automatic Firmware upgrades
- SNMP/Syslog Integration
- IPv4/6 ACL support
- 802.1q VLAN tagging
- Broadcast Storm Control
- Adaptive Policy
- Dynamic ARP Inspection / DHCP Snooping
- 2x Dedicated Stack Ports providing 80G of Stacking bandwidth
- 802.1X Authentication
- 10/100/1000 Mbps RJ45
- 100M/1G/2.5G/5G mGbE RJ45
- 4x 10 Gbe SFP+ models available
- 802.3bt PoE up to 60W per port models available
- Perpetual PoE and Fast PoE
- Static routing

Configuration

The basic initial configuration of the MS150 is as simple as any other model of MS switch. The links below provide additional information and instructions relating

to each step in setting up the device and configuring it.

1. Claim the device to an Organization on the Meraki Dashboard
    a. Create a Dashboard Organization if it does not exist.
2. Add the device to a Dashboard Network
    a. Create a Network if it does not exist.
3. Physically connect the device to the local network
    a. Connect one of the RJ45 or SFP/SFP+ ports to existing infrastructure to provide a temporary uplink.
    b. Power on the device and let it check in to the Dashboard.
    c. If necessary, configure a Static IP through the Local Status Page to allow it to communicate with the Meraki Dashboard.
4. Allow the device to complete check-in and perform any initial firmware upgrades.
5. Finish configuring the device from the Meraki Dashboard
    a. Create a Switch Stack
    b. Manage local VLANs / Port configuration
    c. Configure Layer 3 Routing

MS150 Models

	24T-4G	24P-4G	24T-4X	24P-4X	24MP-4X
1Gbe RJ45	24	24	24	24	16
mGbe RJ45	-	-	-	-	8 x 5G*
1 Gbe SFP	4	4	-	-	-
10Gbe SFP+	-	-	4	4	4
Dedicated Mgmt Interface	1	1	1	1	1
PoE Type	-	802.3bt	-	802.3bt	802.3bt
PoE Port Budget	-	30W	-	30W	60W**
PoE Switch Budget	-	370W	-	370W	370W
Stacking Ports	2	2	2	2	2
Stacking Bandwidth	80Gbps	80Gbps	80Gbps	80Gbps	80Gbps
Switching Capacity	56 Gbps	56 Gbps	128 Gbps	128 Gbps	192Gbps
Layer 3 Routing	Static Routing	Static Routing	Static Routing	Static Routing	Static Routing
Power Input	100-240VAC	100-240VAC	100-240VAC	100-240VAC	100-240VAC

Power Load (idle/max)	13.7W/32.4W	22.9W/422.2W	13.7W/32.4W	22.9W/422.2W	43W/454W
Operating Temperature	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C
Storage and Transportation Temperature	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C
Humidity	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%
Mounting	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount
Power Supply	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal
Fan Operation	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal
Dimensions (h x w x d)	1.72 x 19 x 9.84in (4.4 x 48.2 x 25cm)	1.72 x 19 x 9.84in (4.4 x 48.2 x 25cm)	1.72 x 19 x 9.84in (4.4 x 48.2 x 25cm)	1.72 x 19 x 9.84in (4.4 x 48.2 x 25cm)	1.72 x 19 x 9.84in (4.4 x 48.2 x 25cm)
Weight	7.61 lb (3.45 kg)	7.94 lb (3.6 kg)	7.61 lb (3.45 kg)	7.94 lb (3.6 kg)	12.13 lb (5.5 kg)

	48T-4G	**48LP-4G**	**48FP-4G**	**48T-4X**	**48LP-4X**	**48FP-4X**	**48MP-4X**
1Gbe RJ45	48	48	48	48	48	48	32
mGbe RJ45	-	-	-	-	-	-	16 x 5G*
1Gbe SFP	4	4	4	-	-	-	-
10Gbe SFP+	-	-	-	4	4	4	4
Dedicated Mgmt Interface	1	1	1	1	1	1	1
PoE Type	-	802.3bt	802.3bt	-	802.3bt	802.3bt	802.3bt
PoE Port Budget	-	30W	30W	-	30W	30W	60W**
PoE Switch Budget	-	370W	740W	-	370W	740W	740W
Stacking Ports	2	2	2	2	2	2	2
Stacking Bandwidth	80Gbps	80Gbps	80Gbps	80Gbps	80Gbps	80Gbps	80Gbps
Switching Capacity	104Gbps	104Gbps	104Gbps	176 Gbps	176 Gbps	176Gbps	304Gbps

Layer 3 Routing	Static Routing	Static Routing	Static Routing	Static Routing	Static Routing	Static Routing	Static Routing
Power Input	100-240VAC	100-240VAC	100-240VAC	100-240VAC	100-240VAC	100-240VAC	100-240VAC
Power Load (idle/max)	23.1W/49.8W	36.2W/ 460.6W	44.6W/ 891.4W	23.1W/49.8W	36.2W/ 460.6W	44.6W/ 891.4W	76W/933W
Operating Temperature	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C	32°F - 113 °F 0°C - 45°C
Storage and Transportation Temperature	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C	-4°F - 158 °F -20°C - 70°C
Humidity	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%
Mounting	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount	Integrated 1U Rack Mount
Power Supply	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal
Fan Operation	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal	Fixed Internal
Dimensions (h x w x d)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)	1.72 x 19 x 13.38in (4.4 x 48.2 x 34cm)
Weight	11.24 lb (5.1 kg)	11.91 lb (5.4 kg)	11.94 lb (5.4 kg)	11.24 lb (5.1 kg)	11.91 lb (5.4 kg)	11.94 lb (5.4 kg)	12.59 lb (5.71 kg)

* mGig available on ports 17-24 for 24MP-4X and ports 33-48 for 48MP-4X models.

** PoE++ up to 60W available on ports 17-24 for 24MP-4X and ports 33-48 for 48MP-4X models.

Whats In the Box

Model	Included
MS150	MS150 switch, rack-mount screw kit

Region-specific power cords are not included in the box*. Order the appropriate power cord separately:

- MA-PWR-CORD-US
- MA-PWR-CORD-EU
- MA-PWR-CORD-UK
- MA-PWR-CORD-CN
- MA-PWR-CORD-IN
- MA-PWR-CORD-BR
- MA-PWR-CORD-TW

- MA-PWR-CORD-AU
- MA-PWR-CORD-AR
- MA-PWR-CORD-JP

1 MA-PWR-CORD-US is included automatically with US orders only

Accessories

Stacking Cables

The following stacking cables are supported

Stacking Models

- MS150-24T-4G, 24P-4G
- MS150-48T-4G, 48LP-4G, 48FP-4G
- MS150-24T-4X, 24P-4X
- MS150-48T-4X, 48LP-4X, 48FP-4X
- MS150-24MP-4X
- MS150-48MP-4X

Supported Modules

- MA-CBL-100G-50CM
- MA-CBL-100G-1M
- MA-CBL-100G-3M

SFP Modules

The following SFP/Fiber transceivers are supported

SFP Models

- MS150-24T-4G, 24P-4G
- MS150-48T-4G, 48LP-4G, 48FP-4G

Supported Modules

- MA-SFP-1GB-SX
- MA-SFP-1GB-LX10
- MA-SFP-1GB-TX

SFP+ Models

- MS150-24T-4X, 24P-4X
- MS150-48T-4X, 48LP-4X, 48FP-4X
- MS150-24MP-4X
- MS150-48MP-4X

Supported Modules

- MA-SFP-1GB-SX
- MA-SFP-1GB-LX10
- MA-SFP-1GB-TX
- MA-SFP-10GB-SR
- MA-SFP-10GB-LR
- MA-SFP-10GB-ER
- MA-SFP-10GB-ZR
- MA-CBL-TA-1M
- MA-CBL-TA-3M

* For more information about the SFP modules, refer the following Cisco Meraki datasheets:

- SFP and Stacking Accessories

Troubleshooting

The MS uses LEDs to inform the user of the device's status. When the device powers on, all the Internet LEDs flash twice. Additional functions are described below, from left to right.

Ports and Status Indicators

The MS uses LEDs to inform the user of the device's status. When the device powers on, all the Internet LEDs flash twice. Additional functions are described below, from left to right.

Front Panel Components

Function	LED Status	Meaning
Power	Solid orange	Switch is unable to connect to the Meraki cloud
	Flashing white	Firmware upgrade in process
	Solid white	Switch is fully operational and connected to the Meraki cloud
	Off	Switch does not have power
Restore	N/A	Restore button to clear switch IP and local configuration settings
Switch Ports	Off	No link is detected on this port
	Solid orange	10/100 Mbps (1 Gbps on SFP+)
	Solid green	Port is operating at full speed • 1GE on 1GE ports • 5GE on 5GE ports • 10GE on SFP+

In addition, there is a RESTORE button available on the front panel.

Insert a paperclip if a restore is required.

- A brief, momentary press: To delete a downloaded configuration and reboot.
- Press and hold for more than 10 sec: To force the unit into a full factory restore.

Back Panel Components

Function	LED Status	Meaning
Management Interface	Green	Connected, used for easy access to the local status page
Stack Ports	Green	QSFP28 stacking cable is connected
	Off	No link is detected on this port

Common Troubleshooting

My device is connected to the network but not checking in to the Meraki cloud or shows a solid Orange LED

Confirm that the device is powered on and has a valid IP address that is able to access the Internet. Use the Local Status Page to get more information about the connectivity status of the device such as if it can successfully reach the Local Gateway, Internet, and/or Meraki Cloud servers. If necessary, contact Meraki Support for additional assistance.

My Status LED is blinking WHITE

A blinking WHITE Status LED indicates that the device is in contact with the Dashboard Cloud servers and is performing a firmware update. This can sometimes take 20-45 minutes or more to complete depending on hardware and other factors.

My Status LED is blinking ORANGE

The device is not able to successfully communicate with the Dashboard Cloud servers or there may be a hardware issue with the device. Check the Local Status Page of the device to confirm the status and reach out to Meraki Support for further troubleshooting.

Event Log

The most common Event Log messages and their meaning are listed below.

Port STP change

Indicates the STP state of the port has changed, lists the relevant port number, previous, and new states. Typically accompanied by a 'Port status change' event.

Port status change

Indicates the link state of the port has changed, lists the relevant port number, old, and new state. Always accompanied by a 'Port STP change' event.

SFP module inserted/removed

Indicates that an SFP module was either inserted or removed, includes SFP module information for inserted events and always lists the relevant port number.

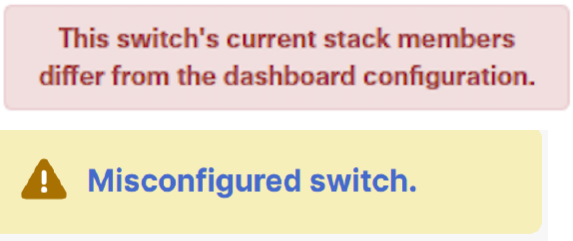
Common Stacking Alerts

View our dedicated Switch Stacking document for more detailed information about configuring a Switch Stack and common issues.

Ensure all stack members are configured on dashboard, online and connected via their stacking ports.

Note: If connected and configured correctly, the alert will disappear within up to 1 hour. If the error persists, please contact Cisco Meraki Technical Support for further troubleshooting.

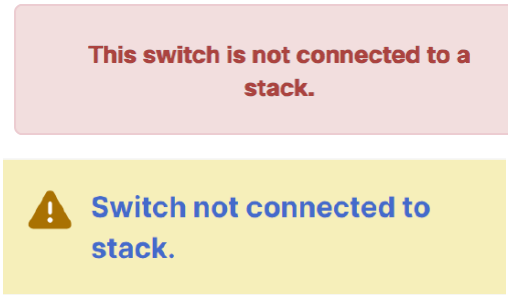
This switch's current stack members differ from the dashboard configuration/ Misconfigured Switch.



This can occur in the following scenarios:

- Stack members are configured on dashboard, but not all members are connected via their stacking ports.
- A stack member has failed or is powered off.

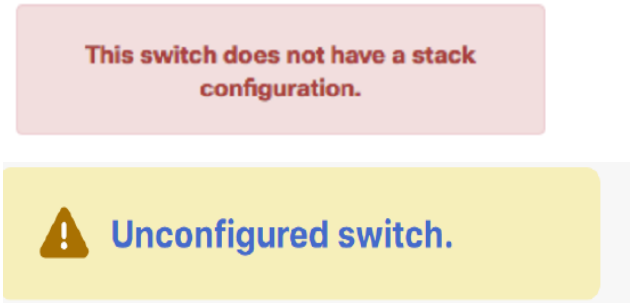
This switch is not connected to a stack/Switch not connected to stack.



This can occur in the following scenarios:

- The switch is configured on dashboard as a stack member, but is not connected to a stack.

This switch does not have a stack configuration/Unconfigured Switch.



This can occur in the following scenarios:

- The switch is physically connected as a stack, but not configured on dashboard as a stack member.

Licensing

MS150 license structure includes two feature tiers: Enterprise and Advanced. The Enterprise license is available in 1, 3, 5, 7, and 10 year terms. The Advanced License is available in the same terms. All MS150s in an organization must have Enterprise or Advanced licenses - they cannot be mixed.

Model	License	Description
MS150-24T-4G MS150-24P-4G MS150-24T-4X MS150-24P-4X MS150-24MP-4X	LIC-MS150-24-xY	MS150 24 ports Enterprise License and support
	LIC-MS150-24A-xY	MS150 24 ports Advance License and Support
MS150-48T-4G MS150-48LP-4G MS150-48FP-4G MS150-48T-4X MS150-48LP-4X MS150-48FP-4X MS150-48MP-4X	LIC-MS150-48-xY	MS150 48 ports Enterprise License and support
	LIC-MS150-48A-xY	MS150 48 ports Advance License and Support

In the Co-term licensing model (most existing Organizations), an Organization must either have all MS150 Enterprise or all MS150 Advanced licenses - they cannot be mixed. **Additonally, a co-term organization cannot mix enterprise and advanced licenses on any switches that have both enterprise and advanced licenses.**

For example, if an organization has existing MS390/C9300/MS130s with enterprise licenses, they cannot add MS150's with advanced licenses in that organization - they must be added with enterprise licenses.

If the organization has existing MS390/C9300/MS130s with advanced licenses, they cannot add MS150's with enterprise licenses in that organization - they must be added with advanced licenses.

In the Per-device licensing model, a mix of Enterprise and Advanced can be added to a single Organization, but certain features may require all devices in a Organization to have Advanced licenses, e.g. Adaptive Policy.

MS150 Advanced License only provides Adaptive policy as an additional feature.

For more information about the differences between the Advanced and Enterprise licenses see the below links:

- Meraki Co-Termination Licensing Overview
- MS Family Datasheet

The MS150 is also available as Subscription Licensing:

Model	License
MS150-24T-4G	
MS150-24P-4G	MS100 Medium
MS150-24T-4X	Essentials: LIC-MS-100-M-E
MS150-24P-4X	Advantage: LIC-MS-100-M-A
MS150-24MP-4X	
MS150-48T-4G	
MS150-48LP-4G	
MS150-48FP-4G	MS100 Large
MS150-48T-4X	Essentials: LIC-MS-100-L-E
MS150-48LP-4X	Advantage: LIC-MS-100-L-A
MS150-48FP-4X	
MS150-48MP-4X	

For more information on licensing, refer to Meraki Licensing Models article.

MTBF Rating

Model	MTBF at 25°C (in hours)
MS150-24T-4G	2,267,202
MS150-24P-4G	1,573,015
MS150-24T-4X	2,267,202
MS150-24P-4X	1,573,015
MS150-24MP-4X	1,420,309
MS150-48T-4G	1,609,874
MS150-48LP-4G	1,063,142
MS150-48FP-4G	1,029,618

MS150-48T-4X	1,609,874
MS150-48LP-4X	1,063,142
MS150-48FP-4X	1,029,618
MS150-48MP-4X	907,506