NETGEAR®

ProSAFE® Intelligent Edge Managed Switches

Data Sheet

M4200 series

The NETGEAR® M4200 Switch Series delivers a unique, effective solution for Wave 2 802.11ac deployments. The M4200 is the first 8x2.5G Multi-Gigabit switch with full PoE+ provision on all ports and 2x10G line-rate aggregation to the wiring closet. Plenum rated, slim design and mounting accessories allow for access point placement optimization and cabling efficiency even in nontraditional networking environments. L3 feature set includes static routing and RIP dynamic routing. The NETGEAR M4200 is ready for the future, with Software-defined Network (SDN) and OpenFlow 1.3 enabled for your network.

NETGEAR Intelligent Edge Switch solutions combine latest advances in hardware and software engineering for higher flexibility, lower complexity and stronger investment protection, at a high-value price point.

Highlights

Multi- Gigagit Ethernet

- The ProSAFE® M4200-10MG-PoE+ comes with NBASE-T compliant 1G/2.5G/5G ports and 8 x 2.5G/ 2 x 10G wire speed aggregation
- That is, a purely line-rate access layer for 802.11ac wireless access points with PoE+ full provisioning, and ready for Wave2 3x3 and 4x4 installations

Higher flexibility

- Plenum design with Easy Mount options whether it's directly on a wall, attached to a rectangular or round pole, or mounted in a standard 19-inch rack
- Secure placement above drop-down ceilings, in air passageways and where other switches will not go, vertical or horizontal, flat or perpendicular

Lower complexity

- Entire feature set including L2 switching (multi-tiered access control, auto-VoIP, auto-iSCSI) and L3 routing (static or RIP) is available without a license
- DHCP/BootP innovative auto-installation including firmware and configuration file upload automation

Investment protection

- Multi-Gigabit NBASE-T enables 2.5X to 5X faster speeds up to 100m on legacy Cat5e/Cat6 cables while providing 100M and 1G backward compatibility
- Even if an organization is not ready for SDN, OpenFlow support offers future-ready design for maximum investment protection

Secure services

- With successive tiering, the Authentication Manager allows for authentication methods per port for a tiered authentication based on configured time-outs
- With BYOD, tiered Dot1x -> MAB -> Captive Portal authentication is powerful and simple to implement with strict policies

Industry standard management

- Industry standard command line interface (CLI), functional NETGEAR web interface (GUI), SNMP, sFlow and RSPAN
- Single-pane-of-glass NMS300 management platform with centralized firmware updates and mass-configuration support

Industry leading warranty

- NETGEAR M4200 series is covered under NETGEAR ProSAFE Lifetime Hardware Warranty*
- 90 days of Technical Support via phone and email, Lifetime Technical Support through online chat and Lifetime Next Business Day hardware replacement

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Hardware at a Glance

			FRONT				SIDE	MANAGEMENT	
Model name	Form-Factor	Switching Fabric	100/1000/2.5G BASE-T RJ45 ports	100/1000/2.5G/5G BASE-T RJ45 ports	1000/10GBASE-X SFP+ ports	PSU	Fans	Out-of-band Console	Model number
M4200-10MG-PoE+	**Full width** 1-unit 1U rack mount 3.9 in (10 cm) deep	90 Gbps	**6 ports PoE+** 100M; 1G; 2.5G	**2 ports PoE+** 100M; 1G; 2.5G; 5G	**2 ports** 1G; 10G	**Internal**	**Fixed** Side-to-side 28.9dB Low acoustics	Ethernet: Out-of-band 1G port (Front) Console: RJ45 RS232 (Front) Console: Mini-USB (Front) Storage: USB (Front)	**GSM4210P**
			240W PoE budget 8-port Multigigabit and PoE+ full provisioning						

Software at a Glance

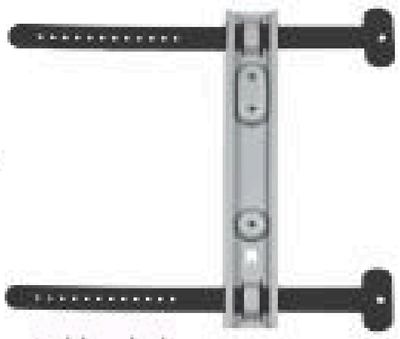
	LAYER 3 PACKAGE											
Model name	Manage-ment	Usability Enhance-ments	IPv4/IPv6 ACL and QoS, DiffServ	IPv4/IPv6 Multicast filtering	IPv4 / IPv6 Policing and Conver-gence	Spanning Tree Green Ethernet	VLANs	Trunking Port Channel	IPv4/IPv6 Authentica-tion Security	IPv4/IPv6 Static Routing	IPv4 Dynamic Routing	Model number
M4200-10MG-PoE+	Out-of-band; Web GUI; HTTPs; CLI; Telnet; SSH SNMP, MIBs RSPAN Radius Users, TACACS+	Link Dependency (Enable or Disable one or more ports based on the link state of one or more different ports) Syslog and Packet Captures can be sent to USB storage	Ingress 1 Kbps shaping Time-based Single Rate Policing	IGMPv3 MLDv2 Snooping IGMPv1 y 2 and MLDv1 Snooping Querier Control Packet Flooding	Auto-VoIP Auto-iSCSI LLDP-MED	STP, MTP, RSTP PV(R)STP[1] BPDU/STRG Root Guard EEE (802.3az)	Static, Dynamic, Voice, MAC GVRP/GMRP QinQ, Private VLANs	Static or Dynamic LACP Seven (7) L2/L3/L4 hashing algorithms	Successive Tiering (DOT1X; MAB; Captive Portal) DHCP Snooping IPv4: Dynamic ARP Inspection	IPv4/IPv6 Port, Sub-net, VLAN routing DHCPv4 Relay; DHCPv4 Server	IPv4: RIP	**GSM4210P**

[1] CLI only

Performance at a Glance

	TABLE SIZE											
Model name	MAC ARP/ NDP	Routing / Switching Capacity	Through-put	Application Route Scaling	Packet Buffer	Latency	ACLs	Multicast IGMP Group member-ship	CPU	VLANs	DHCP	sFlow	Model number
M4200-10MG-PoE+	16K MAC 1K ARP/ NDP	90 Gbps Line-rate	66.9 Mpps	Static: 32v4/32v6 RIP: 32	16Mb	64-byte frames: <2.8µs 1G RJ45 <7.2µs 2.5G RJ45 <5.7µs 5G RJ45 <0.9µs 10G SFP+	50 ACLs 512 rules per list 16K ACL rules (Ingress)	1K IPv4 1K IPv6	CPU 800 Mhz 1GB RAM 256MB Flash	1K VLANs	DHCP Server: 2K leases IPv4: 256 pools	10 samplers 10 pollers 8 receivers	**GSM4210P**

Rack-mounting kit



Rubber belts

Hose clamps

Mount for attachment to a wall, round or rectangular pole

M4200-10MG-PoE+

Rack-mounting kit

Power cord strap and lock

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Product Brief

The ProSAFE® M4200-10MG-PoE+ Managed Switch was designed from the ground up to optimize the installation of Wave 2 11ac access points. Includes eight full power PoE+ and multi-speed 1G, 2.5G ports for 100 meter cable runs, combined with two 10G uplinks for a fully non-blocking deployment of eight Wave 2 11ac access points. NETGEAR Multigigabit Ethernet is compatible with most major wireless and switching vendors managed solutions, and the only one with 8x2.5G to the AP and 2x10G line-rate aggregation to the wiring closet. Plenum rated, slim design and mounting accessories allow for access point placement optimization and cabling efficiency.

NETGEAR M4200 series key features:

- Eight full power PoE+ and multi-speed 1G, 2.5G ports combined with two 10G SFP+ uplinks
- Allow for a fully non-blocking deployment of eight Wave 2 11ac access points, with 240W PoE budget
- Two of these multi-speed 1G, 2.5G PoE+ ports also support 5G
- NBASE-T compliant Multigigabit Ethernet (basis for the upcoming IEEE 802.3bz standard)
- 2.5X to 5X faster speeds up to 100m on legacy Cat5e/Cat6 cables - yet providing 100M and 1G backward compatibility
- Whisper quiet 28.9dB acoustics when operating at 25°C (77°F), well below normal offices ambient background noise
- Secure placement above drop-down ceilings, in air passageways and where other switches will not go, vertical or horizontal, flat or perpendicular
- Easy Mount options whether it's directly on a wall, attached to a rectangular or round pole, or mounted in a standard 19-inch rack
- Low latency and scalable table size with 16K MAC, 1K ARP/NDP, 1K VLANs, 32 routes (IPv4) and 32 routes (IPv6)
- SDN-Ready OpenFlow 1.3 support for maximum investment protection

NETGEAR M4200 series software features:

- Advanced classifier-based, time-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP transport ports) security and prioritization
- Selectable Port-Channel / LAG (802.3ad - 802.1AX) L2/L3/L4 hashing for fault tolerance and load sharing with any type of Ethernet channeling
- Voice VLAN with SIP, H323 and SCCP protocols detection and LLDP-MED IP phones automatic QoS and VLAN configuration
- Efficient authentication tiering with successive DOT1X, MAB and Captive Portal methods for streamlined BYOD
- Comprehensive IPv4/IPv6 static and IPv4 dynamic routing including RIP
- Layer 2 multicast forwarding with IGMPv3/MLDv2 Snooping and IGMPv2/MLDv1 Snooping Querier
- Advanced security including malicious code detection, DHCP Snooping, Dynamic ARP Inspection and DoS attacks mitigation
- Innovative multi-vendor Auto-iSCSI capabilities

NETGEAR M4200 series resiliency and availability features:

- Link Dependancy new feature enables or disables ports based on the link state of different ports
- Per VLAN Spanning Tree and Per VLAN Rapid Spanning Tree (PVSTP/PVRSTP) offer interoperability with PVST+ infrastructures

NETGEAR M4200 series management features:

- DHCP/BootP innovative auto-installation including firmware and configuration file upload automation
- Industry standard SNMP, RMON, MIB, LLDP, AAA, sFlow and RSPAN remote mirroring implementation
- Service port for out-of-band Ethernet management (OOB)
- Standard RS232 straight-through serial RJ45 and Mini-USB ports for local management console
- Standard USB port for local storage, logs, configuration or image files
- Dual firmware image and configuration file for updates with minimum service interruption
- Industry standard command line interface (CLI) for IT admins used to other vendors commands
- Fully functional Web console (GUI) for IT admins who prefer an easy to use graphical interface
- Single-pane-of-glass NMS300 management platform with mass-configuration support

NETGEAR M4200 series warranty and support:

- NETGEAR ProSAFE Lifetime Hardware Warranty*
- Included Lifetime Technical Support
- Included Lifetime Next Business Day Hardware Replacement

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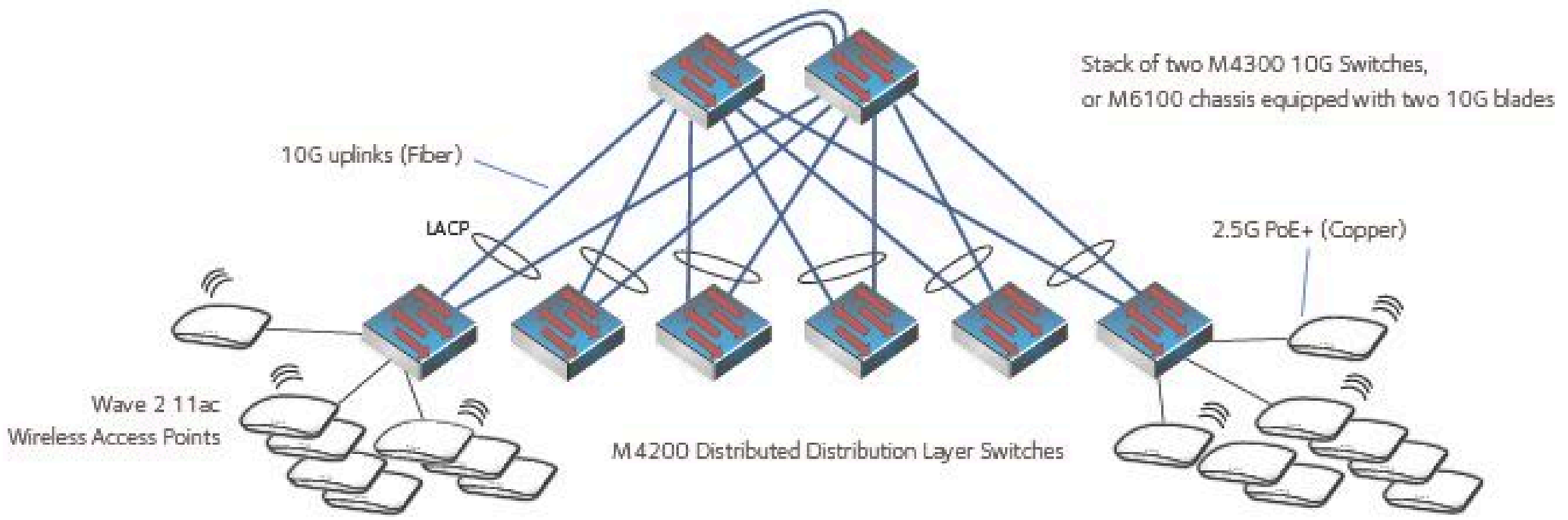
Features highlights

8-port Multi-Gigabit switch with full PoE+ provision on all ports	
NBASE-T (basis for the upcoming IEEE 802.3bz standard) enables 2.5X to 5X faster speeds up to 100m on legacy Cat5e/Cat6 cables	• 8-port PoE+ Multi-Gigabit Ethernet 1G/2.5G BASE-T with 8 x 30W = 240 Watts full power • Including two of these ports with 5G BASE-T capability • Zero cost cabling plant investment required • Full 1000BASE-T backward compatibility • 2-port 10G SFP+ uplinks for 8x2.5G to the Wave 2 11ac Access Points and 2x10G line-rate aggregation to the wiring closet • Non blocking 90Gbps fabric for (6 x 2.5G) + (2 x 5G) + (2 x 10G) full duplex operation
L2, L3 and L4 switching features (access control list, classification, filtering, IPv4/IPv6 static routing, IPv4 dynamic routing) are performed in hardware at interface line rate for voice, video, and data convergence	

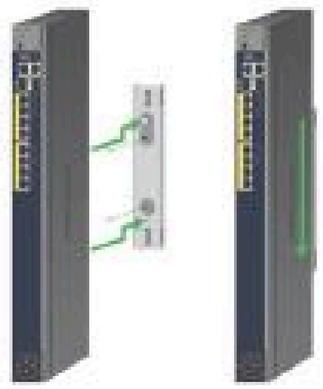
Example of redundant, wire speed 8x2.5G 2x10G wireless access layer topology:



Unrivalled flexibility
Easy Mount allows for standard rack mounting as well as plenum mounting on rectangular and round poles, or walls
Secure placement above drop-down ceilings, in air passageways and where other switches will not go, vertical or horizontal, flat or perpendicular
Ships with four self-adhesive rubber footpads for installation on a flat surface (cushion against shock and vibrations; ventilation space between stacked switches)
For walls and poles, the switch ships with a mount to which you can click-attach the back or the bottom of the switch (flat or perpendicular)
The mount provides a locking tab and the switch comes with a power cord locker for additional peace of mind in nontraditional networking environments
Whisper quiet 28.9dB acoustics when operating at 25°C (77°F), well below normal offices ambient background noise

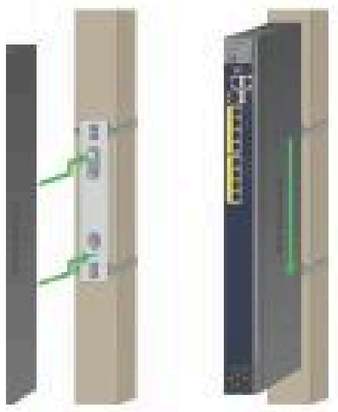
Standard Rack Mounting

Attaching the Switch to a Wall



Attaching the Switch to a Round Pole

Attaching the Switch to a Rectangular Pole



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Power Cord Lock and Strap

Mount for Attachment Outside the Rack

Both the switch back panel and bottom panel contain mounting holes to allow for attachment

10cm Hose Clamps for Round Poles

Rubber Belts for Rectangular Poles

Best value switching performance
16K MAC address table, 1K concurrent VLANs and 32 (IPv4) 32 (IPv6) Layer 3 route table size for the access layer
Each switch provides line-rate local switching and routing capacity
80 PLUS certified power supplies for energy high efficiency
16 Mb packet buffer dynamically shared for intensive applications
Low latency at all network speeds, including 2.5 Gigabit, 5 Gigabit copper and 10 Gigabit fiber interfaces
Jumbo frames support of up to 9Kb accelerating storage performance for backup and cloud applications

iSCSI Flow Acceleration and Automatic Protection/QoS for virtualization and server room networks containing iSCSI initiators and iSCSI targets	• Detecting the establishment and termination of iSCSI sessions and connections by snooping packets used in the iSCSI protocol • Maintaining a database of currently active iSCSI sessions and connections to store data, including classifier rules for desired QoS treatment • Installing and removing classifier rule sets as needed for the iSCSI session traffic • Monitoring activity in the iSCSI sessions to allow for aging out session entries if the session termination packets are not received • Avoiding session interruptions during times of congestion that would otherwise cause iSCSI packets to be dropped
SDN-ready, M4200 OpenFlow feature enables the switch to be managed by a centralized OpenFlow Controller using the OpenFlow protocol	• Support of a single-table OpenFlow 1.3 data forwarding path • The OpenFlow feature can be administratively enabled and disabled at any time • The administrator can allow the switch to automatically assign an IP address to the OpenFlow feature or to specifically select which address should be used • The administrator can also direct the OpenFlow feature to always use the service port (out-of-band management port) • The Controller IP addresses are specified manually through the switch user interface • The list of OpenFlow Controllers and the controller connection options are stored in the Controller Table • The OpenFlow component in M4200 software uses this information to set up and maintain SSL connections with the OpenFlow Controllers • M4200 implements a subset of the OpenFlow 1.0.0 protocol and a subset of the OpenFlow 1.3 • It also implements enhancements to the OpenFlow protocol to optimize it for the Data Center environment and to make it compatible with Open vSwitch

Access layer availability
Link Aggregation, also called Port Channeling or Port Trunking, offers powerful network redundancy and load balancing in aggregation to a dual network core
Rapid Spanning Tree (RSTP) and Multiple Spanning Tree (MSTP) allow for rapid transitionning of the ports to the Forwarding state and the suppression of Topology Change Notification

NETGEAR PVSTP implementation (CLI only) follows the same rules than other vendor's Per VLAN STP for strict interoperability	• Including industry-standard PVST+ interoperability • PVSTP is similar to the MSTP protocol as defined by IEEE 802.1s, the main difference being PVSTP runs one instance per VLAN • In other words, each configured VLAN runs an independent instance of PVSTP • FastUplink feature immediately moves an alternate port with lowest cost to forwarding state when the root port goes down to reduce recovery time • FastBackbone feature selects new indirect port when an indirect port fails
NETGEAR PVRSTP implementation (CLI only) follows the same rules than other vendor's Per VLAN RSTP for strict interoperability	• Including industry-standard RPVST+ interoperability • PVRSTP is similar to the RSTP protocol as defined by IEEE 802.1w, the main difference being PVRSTP runs one instance per VLAN • In other words, each configured VLAN runs an independent instance of PVRSTP • Each PVRSTP instance elects a root bridge independent of the other • Hence there are as many Root Bridges in the region as there are VLANs configured • Per VLAN RSTP has in built support for FastUplink and FastBackbone
IP address conflict detection performed by embedded DHCP servers prevents accidental IP address duplicates from perturbing the overall network stability	
Ease of deployment	
Automatic configuration with DHCP and BootP Auto Install eases large deployments with a scalable configuration files management capability, mapping IP addresses and host names and providing individual configuration files to multiple switches as soon as they are initialized on the network	
Both the Switch Serial Number and Switch primary MAC address are reported by a simple "show" command in the CLI - facilitating discovery and remote configuration operations	
M4200 DHCP L2 Relay agents eliminate the need to have a DHCP server on each physical network or subnet	• DHCP Relay agents process DHCP messages and generate new DHCP messages • Supports DHCP Relay Option 82 circuit-id and remote-id for VLANs • DHCP Relay agents are typically IP routing-aware devices and can be referred to as Layer 3 relay agents
Automatic Voice over IP prioritization with Auto-VoIP simplifies most complex multi-vendor IP telephones deployments either based on protocols (SIP, H323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address; providing the best class of service to VoIP streams (both data and signaling) over other ordinary traffic by classifying traffic, and enabling correct egress queue configuration	
An associated Voice VLAN can be easily configured with Auto-VoIP for further traffic isolation	
When deployed IP phones are LLDP-MED compliant, the Voice VLAN will use LLDP-MED to pass on the VLAN ID, 802.1P priority and DSCP values to the IP phones, accelerating convergent deployments	
Versatile connectivity	
8-port PoE+ full power and NBASE-T compliant, 1G / 2.5G including two of these ports with 5G ability	
All 8-port NBASE-T are backward compatible with standard Gigabit Ethernet (1000BASE-T) and Fast Ethernet (100BASE-T) speeds	
IEEE 802.3at Power over Ethernet Plus (PoE+) provides up to 30W power per port using 2 pairs while offering backward compatibity with 802.3af	• IEEE 802.3at Layer 2 LLDP method and 802.3at PoE+ 2-event classification method fully supported for compatibility with most PoE+ PD devices
2-port 10G SFP+ uplinks for 8x2.5G to the Wave 2 11ac Access Points and 2x10G line-rate aggregation to the wiring closet	
Automatic MDIX and Auto-negotiation on all ports select the right transmission modes (half or full duplex) as well as data transmission for crossover or straight-through cables dynamically for the admin	
Link Dependancy feature enables or disables one or more ports based on the link state of one or more different ports	
IPv6 support with multicasting (MLD for IPv6 filtering), static IPv6 routes (unicast), ACLs and QoS	

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Ease of management and granular control	
Dual firmware image and dual configuration file for transparent firmware updates / configuration changes with minimum service interruption	
Flexible Port-Channel/LAG (802.3ad - 802.1AX) implementation for maximum compatibility, fault tolerance and load sharing with any type of Ethernet channeling from other vendors switch, server or storage devices conforming to IEEE 802.3ad - including static (selectable hashing algorithms) - or to IEEE 802.1AX with dynamic LAGs or port-channel (highly tunable LACP Link Aggregation Control Protocol)	
Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD detect and avoid unidirectional links automatically, in order to prevent forwarding anomalies in a Layer 2 communication channel in which a bi-directional link stops passing traffic in one direction	
Port names feature allows for descriptive names on all interfaces and better clarity in real word admin daily tasks	
SDM (System Data Management, or switch database) templates allow for granular system resources distribution depending on IPv4 or IPv6 applications	• ARP Entries (the maximum number of entries in the IPv4 Address Resolution Protocol ARP cache for routing interfaces) • IPv4 Unicast Routes (the maximum number of IPv4 unicast forwarding table entries) • IPv6 NDP Entries (the maximum number of IPv6 Neighbor Discovery Protocol NDP cache entries) • IPv6 Unicast Routes (the maximum number of IPv6 unicast forwarding table entries) • ECMP Next Hops (the maximum number of next hops that can be installed in the IPv4 and IPv6 unicast forwarding tables)
Private VLANs and local Proxy ARP help reduce broadcast with added security	
Management VLAN ID is user selectable for best convenience	
Industry-standard VLAN management in the command line interface (CLI) for all common operations such as VLAN creation; VLAN names; VLAN "make static" for dynamically created VLAN by GVRP registration; VLAN trunking; VLAN participation as well as VLAN ID (PVID) and VLAN tagging for one interface, a group of interfaces or all interfaces at once	
Simplified VLAN configuration with industry -standard Access Ports for 802.1Q unaware endpoints and Trunk Ports for switch-to-switch links with Native VLAN	
System defaults automatically set per-port broadcast, multicast, and unicast storm control for typical, robust protection against DoS attacks and faulty clients which can, with BYOD, often create network and performance issues	
IP Telephony administration is simplified with consistent Voice VLAN capabilities per the industry standards and automatic functions associated	
Comprehensive set of "system utilities" and "Clear" commands help troubleshoot connectivity issues and restore various configurations to their factory defaults for maximum admin efficiency: traceroute (to discover the routes that packets actually take when traveling on a hop-by-hop basis and with a synchronous response when initiated from the CLI), clear dynamically learned MAC addresses, counters, IGMP snooping table entries from the Multicast forwarding database etc...	
Syslog and Packet Captures can be sent to USB storage for rapid network troubleshooting	
Replaceable factory-default configuration file for predictable network reset in distributed branch offices without IT personnel	
All major centralized software distribution platforms are supported for central software upgrades and configuration files management (HTTP, TFTP), including in highly secured versions (HTTPS, SFTP, SCP)	
Simple Network Time Protocol (SNTP) can be used to synchronize network resources and for adaptation of NTP, and can provide synchronized network timestamp either in broadcast or unicast mode (SNTP client implemented over UDP - port 123)	
Embedded RMON (4 groups) and sFlow agents permit external network traffic analysis	
Engineered for convergence	
Audio (Voice over IP) and Video (multicasting) comprehensive switching, filtering, routing and prioritization	
Auto-VoIP, Voice VLAN and LLDP-MED support for IP phones QoS and VLAN configuration	
IGMP Snooping and Proxy for IPv4, MLD Snooping and Proxy for IPv6, and Querier mode facilitate fast receivers joins and leaves for multicast streams and ensure multicast traffic only reaches interested receivers everywhere in a Layer 2 or a Layer 3 network, including source-specific (SSM) and any-source (ASM) multicast	
Multicast VLAN Registration (MVR) uses a dedicated Multicast VLAN to forward multicast streams and avoid duplication for clients in different VLANs	
PoE power management and schedule enablement	

Layer 3 routing package	
Static Routes/ECMP Static Routes for IPv4 and IPv6	• Static and default routes are configurable with next IP address hops to any given destination • Permitting additional routes creates several options for the network administrator • The admin can configure multiple next hops to a given destination, intending for the router to load share across the next hops • The admin distinguishes static routes by specifying a route preference value: a lower preference value is a more preferred static route • A less preferred static route is used if the more preferred static route is unusable (down link, or next hop cannot be resolved to a MAC address) • Preference option allows admin to control the preference of individual static routes relative to routes learned from other sources (such as OSPF) since a static route will be preferred over a dynamic route when routes from different sources have the same preference
Advanced Static Routing functions for administrative traffic control	• Static Reject Routes are configurable to control the traffic destined to a particular network so that it is not forwarded through the router • Such traffic is discarded and the ICMP destination unreachable message is sent back to the source • Static reject routes can be typically used to prevent routing loops • Default routes are configurable as a preference option
In order to facilitate VLAN creation and VLAN routing using Web GUI, a VLAN Routing Wizard offers following automated capabilities:	• Create a VLAN and generate a unique name for VLAN • Add selected ports to the newly created VLAN and remove selected ports from the default VLAN • Create a LAG, add selected ports to a LAG, then add this LAG to the newly created VLAN • Enable tagging on selected ports if the port is in another VLAN • Disable tagging if a selected port does not exist in another VLAN • Exclude ports that are not selected from the VLAN • Enable routing on the VLAN using the IP address and subnet mask entered as logical routing interface
DHCP Relay Agents relay DHCP requests from any routed interface, including VLANs, when DHCP server doesn't reside on the same IP network or subnet	• The agent relays requests from a subnet without a DHCP server to a server or next-hop agent on another subnet • Unlike a router which switches IP packets transparently, a DHCP relay agent processes DHCP messages and generates new DHCP messages • Supports DHCP Relay Option 82 circuit-id and remote-id for VLANs • Multiple Helper IPs feature allows to configure a DHCP relay agent with multiple DHCP server addresses per routing interface and to use different server addresses for client packets arriving on different interfaces on the relay agent server addresses for client packets arriving on different interfaces on the relay agent
Support of Routing Information Protocol (RIPv2) as a distance vector protocol specified in RFC 2453 for IPv4	• Each route is characterized by the number of gateways, or hops, a packet must traverse to reach its intended destination • Categorized as an interior gateway protocol, RIP operates within the scope of an autonomous system
IP Multinetting allows to configure more than one IP address on a network interface (other vendors may call it IP Aliasing or Secondary Addressing)	
ICMP Throttling feature adds configuration options for the transmission of various types of ICMP messages	• ICMP Redirects can be used by a malicious sender to perform man-in-the-middle attacks, or divert packets to a malicious monitor, or to cause Denial of Service (DoS) by blackholing the packets • ICMP Echo Requests and other messages can be used to probe for vulnerable hosts or routers • Rate limiting ICMP error messages protects the local router and the network from sending a large number of messages that take CPU and bandwidth
Enterprise security	
Traffic control MAC Filter and Port Security help restrict the traffic allowed into and out of specified ports or interfaces in the system in order to increase overall security and block MAC address flooding issues	
DHCP Snooping monitors DHCP traffic between DHCP clients and DHCP servers to filter harmful DHCP message and builds a bindings database of (MAC address, IP address, VLAN ID, port) tuples that are considered authorized in order to prevent DHCP server spoofing attacks	
Dynamic ARP Inspection (IPv4) use the DHCP snooping bindings database per port and per VLAN to drop incoming packets that do not match any binding and to enforce source IP / MAC addresses for malicious users traffic elimination	

Time-based Layer 2 / Layer 3-v4 / Layer 3-v6 / Layer 4 Access Control Lists (ACLs) can be binded to ports, Layer 2 interfaces, VLANs and LAGs (Link Aggregation Groups or Port channel) for fast unauthorized data prevention and right granularity	
For in-band switch management, management ACLs on CPU interface (Control Plane ACLs) are used to define the IP/MAC or protocol through which management access is allowed for increased HTTP/HTTPS or Telnet/SSH management security	
Out-of-band management is available via dedicated service port (1G RJ45 OOB) when in-band management can be prohibited via management ACLs	
Bridge protocol data unit (BPDU) Guard allows the network administrator to enforce the Spanning Tree (STP) domain borders and keep the active topology consistent and predictable – unauthorized devices or switches behind the edge ports that have BPDU enabled will not be able to influence the overall STP by creating loops	
Spanning Tree Root Guard (STRG) enforces the Layer 2 network topology by preventing rogue root bridges potential issues when for instance, unauthorized or unexpected new equipment in the network may accidentally become a root bridge for a given VLAN	
Dynamic 802.1x VLAN assignment mode, including Dynamic VLAN creation mode and Guest VLAN / Unauthenticated VLAN are supported for rigorous user and equipment RADIUS policy server enforcement	• Up to 48 clients (802.1x) per port are supported, including the authentication of the users domain, in order to facilitate convergent deployments. For instance when IP phones connect PCs on their bridge, IP phones and PCs can authenticate on the same switch port but under different VLAN assignment policies (Voice VLAN versus other Production VLANs)
802.1x MAC Address Authentication Bypass (MAB) is a supplemental authentication mechanism that lets non-802.1x devices bypass the traditional 802.1x process altogether, letting them authenticate to the network using their client MAC address as an identifier	• A list of authorized MAC addresses of client NICs is maintained on the RADIUS server for MAB purpose • MAB can be configured on a per-port basis on the switch • MAB initiates after unsuccesful dot1x authentication process (configurable time out), when clients don't respond to any of EAPOL packets • When 802.1X unaware clients try to connect, the switch sends the MAC address of each client to the authentication server • The RADIUS server checks the MAC address of the client NIC against the list of authorized addresses • The RADIUS server returns the access policy and VLAN assignment to the switch for each client
With Successive Tiering, the Authentication Manager allows for authentication methods per port for a Tiered Authentication based on configured time-outs	• By default, configuration authentication methods are tried in this order: Dot1x, then MAB, then Captive Portal (web authentication) • With BYOD, such Tiered Authentication is powerful and simple to implement with strict policies – For instance, when a client is connecting, M4200 tries to authencate the user/client using the three methods above, the one after the other • The admin can restrict the configuration such that no other method is allowed to follow the captive portal method, for instance
Double VLANs (DVLAN - QinQ) pass traffic from one customer domain to another through the "metro core" in a multi-tenancy environment: customer VLAN IDs are preserved and a service provider VLAN ID is added to the traffic so the traffic can pass the metro core in a simple, secure manner	
Private VLANs (with Primary VLAN, Isolated VLAN, Community VLAN, Promiscuous port, Host port, Trunks) provide Layer 2 isolation between ports that share the same broadcast domain, allowing a VLAN broadcast domain to be partitioned into smaller point-to-multipoint subdomains accross switches in the same Layer 2 network	• Private VLANs are useful in DMZ when servers are not supposed to communicate with each other but need to communicate with a router • They remove the need for more complex port-based VLANs with respective IP interface/subnets and associated L3 routing • Another Private VLANs typical application are carrier-class deployments when users shouldn't see, snoop or attack other users' traffic
Secure Shell (SSH) and SNMPv3 (with or without MD5 or SHA authentication) ensure SNMP and Telnet sessions are secured	
TACACS+ and RADIUS enhanced administrator management provides strict "Login" and "Enable" authentication enforcement for the switch configuration, based on latest industry standards: exec authorization using TACACS+ or RADIUS; command authorization using TACACS+ and RADIUS Server; user exec accounting for HTTP and HTTPS using TACACS+ or RADIUS; and authentication based on user domain in addition to user ID and password	
Superior quality of service	
Advanced classifier-based hardware implementation for Layer 2 (MAC), Layer 3 (IP) and Layer 4 (UDP/ TCP transport ports) prioritization	
8 queues for priorities and various QoS policies based on 802.1p (CoS) and DiffServ can be applied to interfaces and VLANs	
Advanced rate limiting down to 1 Kbps granularity and mininum-guaranteed bandwidth can be associated with ACLs for best granularity	

Single Rate Policing feature enables support for Single Rate Policer as defined by RFC 2697	• Committed Information Rate (average allowable rate for the class) • Committed Burst Size (maximum amount of contiguous packets for the class) • Excessive Burst Size (additional burst size for the class with credits refill at a slower rate than committed burst size) • DiffServ feature applied to class maps
Automatic Voice over IP prioritization with protocol-based (SIP, H323 and SCCP) or OUI-based Auto-VoIP up to 144 simultaneous voice calls	
iSCSI Flow Acceleration and automatic protection / QoS with Auto-iSCSI	
Flow Control	
802.3x Flow Control implementation per IEEE 802.3 Annex 31B specifications with Symmetric flow control, Asymmetric flow control or No flow control	• Asymmetric flow control allows the switch to respond to received PAUSE frames, but the ports cannot generate PAUSE frames • Symmetric flow control allows the switch to both respond to, and generate MAC control PAUSE frames
Allows traffic from one device to be throttled for a specified period of time: a device that wishes to inhibit transmission of data frames from another device on the LAN transmits a PAUSE frame	• A device that wishes to inhibit transmission of data frames from another device on the LAN transmits a PAUSE frame
UDLD Support	
UDLD implementation detects unidirectional links physical ports (UDLD must be enabled on both sides of the link in order to detect an unidirectional link)	• UDLD protocol operates by exchanging packets containing information about neighboring devices • The purpose is to detect and avoid unidirectional link forwarding anomalies in a Layer 2 communication channel
Both "normal-mode" and "aggressive-mode" are supported for perfect compatibility with other vendors implementations, including port "D-Disable" triggering cases in both modes	

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M4200 series

Target Application

Wave 2 11ac Access Point deployment

M4200 is the world's first Multigigabit Ethernet switch with eight full power PoE+ and multi-speed 1G, 2.5G ports combined with two 10G uplinks for a fully non-blocking deployment of eight Wave 2 11ac access points from any vendor.

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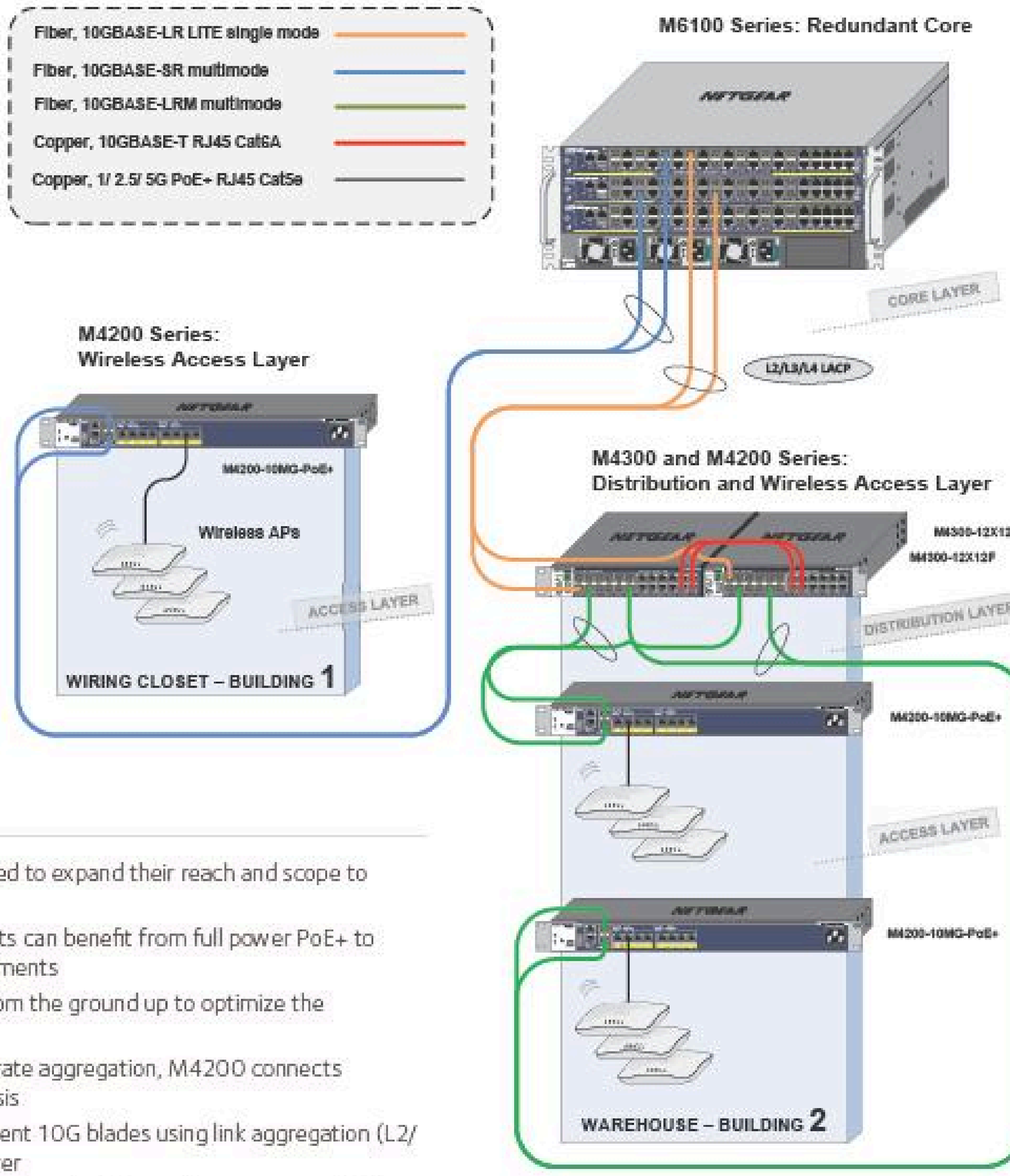

Building 1: Wireless Access Layer

- With Wave 2 802.11ac, wired networks need to expand their reach and scope to support speeds greater than 1 Gigabit
- In addition, power-constrained environments can benefit from full power PoE+ to support access points in a range of environments
- The M4200-10MG-PoE+ was designed from the ground up to optimize the installation of Wave 2 11ac access points
- With 8 x 2.5G to the APs and 2 x 10G line rate aggregation, M4200 connects redundantly directly to a M6100 core chassis
- The two SFP+ uplinks connect to two different 10G blades using link aggregation (L2/L3/L4 LACP) with load-balancing and failover
- M6100 management unit hitless failover and nonstop forwarding ensure no single point of failure
- Using LACP in aggregation to this redundant core, M4200 allows for wire-speed wireless access layer, with PoE+ full provisioning

Building 2: M4300 and M4200 Distribution and Wireless Access Layer

- In this warehouse, two half-width M4300 10GbE models are paired in a single rack space for redundant distribution layer
- Compared with a single aggregation switch, such two-unit horizontal stacking is cost-effective yet highly efficient for HA
- Management unit hitless failover and nonstop forwarding ensures no single point of failure for M4200 access switches
- Every M4200 can connect to both redundant distribution switches using link aggregation (L2/L3/L4 LACP) with load-balancing and failover
- When too far from the wiring closet, M4200 distant switches are securely mounted on poles across the warehouse
- This redundant topology allows for wire-speed 8x2.5G wireless access layer, with PoE+ full provisioning

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M4200 series

Components

M4200-10MG-PoE+
Multigigabit Ethernet Managed Switch

Ordering information

Americas, Europe: GSM4210P-100NES

Asia Pacific: GSM4210P-100AJS

Warranty: Lifetime ProSAFE Hardware Warranty

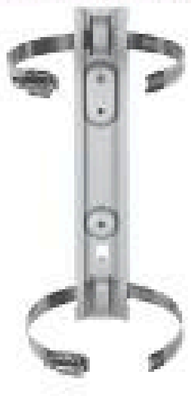
- 8-port PoE+ 1G / 2.5G (RJ45) including 2-port with 5Gbps
- NBASE-T compliant
- 2-port 10GBASE-X (SFP+)
- Non blocking 90Gbps fabric for (6 x 2.5G) + (2 x 5G) + (2 x 10G) full duplex operation
- 240W PoE budget (30W per port across 8 ports)
- Out-of-band 1G Ethernet management port
- Mini-USB and RJ45 RS232 console ports and USB storage port
- L3 feature set with static routing and RIP v1/v2 dynamic routing
- Easy Mount for standard rack mounting as well as plenum mounting on poles or walls
- Whisper quiet acoustics (28.9dB @25°C / 77°F)

Both the switch back panel and bottom panel contain mounting holes to allow for attachment

19-inch Rack-Mount Kit

Mount for Attachment Outside the Rack

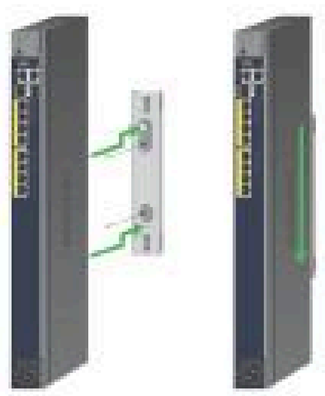
10cm Hose Clamps for Round Poles



Rubber Belts for Rectangular Poles

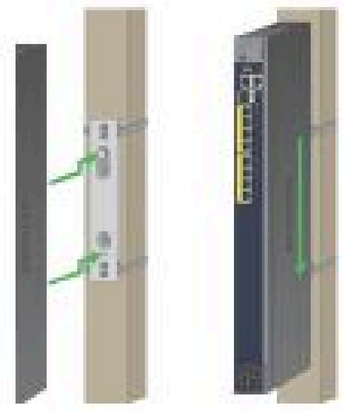
Standard Rack Mounting

Attaching the Switch to a Wall



Attaching the Switch to a Round Pole

Attaching the Switch to a Rectangular Pole



Accessories

GBIC SFP and SFP+ Optics for M4200 series

ORDERING INFORMATION WORLDWIDE: SEE TABLE BELOW WARRANTY: 5 YEARS	Multimode Fiber (MMF)		Single mode Fiber (SMF)
	OM1 or OM2 62.5/125µm	OM3 or OM4 50/125µm	9/125µm
10 Gigabit SFP+  • Fits into M4200 models SFP+ interfaces	**AXM763** 10GBase-LRM long reach multimode 802.3aq - LC duplex connector up to 220m (722 ft) **AXM763-10000S (1 unit)**	**AXM763** 10GBase-LRM long reach multimode 802.3aq - LC duplex connector up to 260m (853 ft) **AXM763-10000S (1 unit)** **AXM761** 10GBase-SR short reach multimode LC duplex connector OM3: up to 300m (984 ft) OM4: up to 550m (1,804 ft) **AXM761-10000S (1 unit)** **AXM761P10-10000S** **(pack of 10 units)**	**AXM762** 10GBase-LR long reach single mode LC duplex connector up to 10km (6.2 miles) **AXM762-10000S (1 unit)** **AXM762P10-10000S** **(pack of 10 units)** **AXM764** 10GBase-LR LITE single mode LC duplex connector up to 2km (1.2 mile) **AXM764-10000S (1 unit)**
Gigabit SFP  • Fits into M4200 models SFP+ interfaces	**AGM731F** 1000Base-SX short range multimode LC duplex connector up to 275m (902 ft) **AGM731F (1 unit)**	**AGM731F** 1000Base-SX short range multimode LC duplex connector OM3: up to 550m (1,804 ft) OM4: up to 1,000m (3,280 ft) **AGM731F (1 unit)**	**AGM732F** 1000Base-LX long range single mode LC duplex connector up to 10km (6.2 miles) **AGM732F (1 unit)**

AGM734
1000Base-T Gigabit RJ45 SFP

ORDERING INFORMATION
- WORLDWIDE: AGM734-10000S
- WARRANTY: 5 YEARS

- Fits into M4200 models SFP+ interfaces
- 1 port Gigabit RJ45
- Supports only 1000Mbps full-duplex mode
- Up to 100m (328 ft) with Cat5 RJ45 or better
- Conveniently adds copper connectivity to M4200 fiber interfaces

Direct Attach Cables for M4200 series	SFP+ to SFP+	
	1 meter (3.3 ft)	3 meters (9.8 ft)
10 Gigabit DAC  • Fits into M4200 models SFP+ interfaces	**AXC761** 10GSFP+ Cu (passive) SFP+ connectors on both end **AXC761-10000S (1 unit)**	**AXC763** 10GSFP+ Cu (passive) SFP+ connectors on both end **AXC763-10000S (1 unit)**

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M4200 series

Technical Specifications

Requirements based on 12.0 software release

Model Name	Description	Model number
M4200-10MG-PoE+	Full Power PoE+ 8x 2.5G and 2x10G Aggregation Switch	GSM4210P

PHYSICAL INTERFACES			
Gigabit and 10 Gigabit Ethernet Ports	Auto-sensing RJ45 100/1000/2.5G BASE-T	Auto-sensing RJ45 100/1000/2.5G/5G BASE-T	Auto-sensing SFP+ ports 1000/10GBASE-X
M4200-10MG-PoE+	6	2	2
Management Ports	Console ports	Service port (Out-of-band Ethernet)	Storage port
M4200-10MG-PoE+	Serial RS232 RJ45 (front) ; Mini-USB (front)	1 x RJ45 10/100/1000BASE-T (front)	1 x USB (front)
Power Supply	Built-in PSU		
M4200-10MG-PoE+	1 (front, power cord strap and lock)		
Fans	Fixed fans		
M4200-10MG-PoE+	side-to-side airflow		
POWER OVER ETHERNET			
PSE Capacity	PoE+ ports		
M4200-10MG-PoE+	8		
PoE Budget	PoE Budget @ 110V-220V AC in		
M4200-10MG-PoE+	240 Watts (8 x 30W full power)		
Features Support			
IEEE 802.3af (up to 15.4W per port)	Yes		
IEEE 802.3at (up to 30W per port)	Yes		
IEEE 802.3at Layer 2 (LLDP) method	Yes		
IEEE 802.3at 2-event classification	Yes		
PoE timer / schedule (week, days, hours)	Yes		
PROCESSOR / MEMORY			
Processor (CPU)	Integrated 800Mhz CPU in switching silicon		
System memory (RAM)	1 GB		
Code storage (flash)	256 MB	Dual firmware image, dual configuration file	
Packet Buffer Memory	16 Mb	Dynamically shared across only used ports	
PERFORMANCE SUMMARY			
Switching fabric			
M4200-10MG-PoE+	90 Gbps	Line-rate (non blocking fabric)	
Throughput			
M4200-10MG-PoE+	66.9 Mpps		

Latency - 10G Fiber	64-byte frames	512-byte frames	1024-byte frames	1518-byte frames
M4200-10MG-PoE+	0.849µs	0.838µs	0.838µs	0.835µs
Latency - 5G Copper	64-byte frames	512-byte frames	1024-byte frames	1518-byte frames
M4200-10MG-PoE+	5.697µs	6.94µs	8.578µs	10.16µs
Latency - 2.5G Copper	64-byte frames	512-byte frames	1024-byte frames	1518-byte frames
M4200-10MG-PoE+	7.174µs	8.573µs	10.214µs	11.78µs
Latency - 1G Fiber	64-byte frames	512-byte frames	1024-byte frames	1518-byte frames
M4200-10MG-PoE+	2.775µs	2.756µs	2.741µs	2.712µs
Latency - 1G Copper	64-byte frames	512-byte frames	1024-byte frames	1518-byte frames
M4200-10MG-PoE+	2.784µs	2.764µs	2.748µs	2.769µs
Green Ethernet				
Energy Efficient Ethernet (EEE)	IEEE 802.3az Energy Efficient Ethernet Task Force compliance		Deactivated by default	
Other Metrics				
Forwarding mode	Store-and-forward			
Addressing	48-bit MAC address			
Address database size	16K MAC addresses			
Number of VLANs	4,093 VLANs (802.1Q) simultaneously			
Number of multicast groups filtered (IGMP)	2K total (1,024 IPv4 and 1,024 IPv6)			
Number of Link Aggregation Groups (LAGs)	5 LAGs with up to 8 ports per group		802.3ad/802.1AX-2008	
Number of hardware queues for QoS	8 queues			
Number of routes IPv4 IPv6	 32 IPv4 Unicast Routes 32 IPv6 Unicast Routes			
Number of static routes IPv4 IPv6	 32 32			
RIP application route scaling IPv4	 32			
Number of IP interfaces (port or VLAN)	64			
Jumbo frame support	up to 9KB packet size			
Acoustic noise (ANSI-S10.12)	@ 25 °C ambient (77 °F)			
M4200-10MG-PoE+	28.9 dB		Fan speed control	
Heat Dissipation (BTU)				
M4200-10MG-PoE+	1,067.62 BTU/hr			
Mean Time Between Failures (MTBF)	@ 25 °C ambient (77 °F)		@ 50 °C ambient (122 °F)	
M4200-10MG-PoE+	753,324 hours (~85.99 years)		172,083 hours (~19.6 years)	
L2 SERVICES - VLANS				
IEEE 802.1Q VLAN Tagging	Yes		Up to 4,093 VLANs - 802.1Q Tagging	
Protocol Based VLANs IP subnet ARP IPX	 Yes Yes Yes			
Subnet based VLANs	Yes			
MAC based VLANs	Yes			
Voice VLAN	Yes		Based on phones OUI bytes (internal database, or user-maintained) or protocols (SIP, H323 and SCCP)	

Private Edge VLAN	Yes	
Private VLAN	Yes	
IEEE 802.1x Guest VLAN RADIUS based VLAN assignment via .1x RADIUS based Filter ID assignment via .1x MAC-based .1x Unauthenticated VLAN	Yes Yes Yes Yes Yes Yes	IP phones and PCs can authenticate on the same port but under different VLAN assignment policies
Double VLAN Tagging (QoQ) Enabling dvlan-tunnel makes interface Global ethertype (TPID) Interface ethertype (TPID) Customer ID using PVID	Yes Yes Yes Yes Yes	
GARP with GVRP/GMRP	Yes	Automatic registration for membership in VLANs or in multicast groups
Multiple Registration Protocol (MRP)	Yes	Can replace GARP functionality
Multicast VLAN Registration Protocol (MVRP)	Yes	Can replace GVRP functionality
MVR (Multicast VLAN registration)	Yes	
L2 SERVICES – AVAILABILITY		
IEEE 802.3ad - LAGs LACP Static LAGs Local Preference per LAG	Yes Yes Yes Yes	Up to 5 LAGs and up to 8 ports per group
LAG Hashing	Yes	
LAG Member Port Flaps Tracking	Yes	
LAG Local Preference	Yes	Known unicast traffic egresses only out of local blade LAG interface members
Storm Control	Yes	
IEEE 802.3x (Full Duplex and flow control) Per port Flow Control	Yes Yes	Asymmetric and Symmetric Flow Control
UDLD Support (Unidirectional Link Detection) Normal-Mode Aggressive-Mode	Yes Yes Yes	
Link Dependency	Yes	Allow the link status of specified ports to be dependent on the link status of other ports
IEEE 802.1D Spanning Tree Protocol	Yes	
IEEE 802.1w Rapid Spanning Tree	Yes	
IEEE 802.1s Multiple Spanning Tree	Yes	
Per VLAN STP (PVSTP) with FastUplink and FastBackbone	Yes (CLI only)	PVST+ interoperability
Per VLAN Rapid STP (PVRSTP)	Yes (CLI only)	RPVST+ interoperability
STP Loop Guard	Yes	
STP Root Guard	Yes	
BPDU Guard	Yes	
STP BPDU Filtering	Yes	
STP BPDU Flooding	Yes	
L2 SERVICES – MULTICAST FILTERING		
IGMPv2 Snooping Support	Yes	
IGMPv3 Snooping Support	Yes	
MLDv1 Snooping Support	Yes	

MLDv2 Snooping Support	Yes	
Expedited Leave function	Yes	
Static L2 Multicast Filtering	Yes	
Enable IGMP / MLD Snooping per VLAN	Yes	
IGMPv1/v2 Snooping Querier	Yes	
MLDv1 Snooping Querier	Yes	
MGMD Snooping Control Packet Flooding Flooding to mRouter Ports Remove Flood-All-Unregistered Option	 Yes Yes Yes	
Multicast VLAN registration (MVR)	Yes	
L3 SERVICES – DHCP		
DHCP IPv4 / DHCP IPv6 Client	Yes	
DHCP IPv4 Server	Yes	
DHCP Snooping IPv4	Yes	
BootP Relay IPv4	Yes	
DHCP Relay IPv4	Yes	
DHCP Relay Option 82 circuit-id and remote-id for VLANs	Yes	
Multiple Helper IPs	Yes	
Auto Install (DHCP options 66, 67, 150 and 55, 125)	Yes	
L3 SERVICES – ROUTING		
Static Routing / ECMP Static Routing Multiple next hops to a given destination Load sharing, Redundancy Default routes Static Reject routes	IPv4/IPv6 Yes Yes Yes Yes	
Port Based Routing	Yes	
VLAN Routing 802.3ad (LAG) for router ports	Yes Yes	
RIP RIPv1/RIPv2	IPv4 Yes	
IP Multinetting	Yes	
ICMP throttling	Yes	
Router Discovery Protocol	Yes	
DNS Client	IPv4/IPv6	
IP Helper Max IP Helper entries	Yes 512	
Proxy ARP	IPv4/IPv6	
ICMP ICMP redirect detection in hardware	IPv4/IPv6 Yes	
NETWORK MONITORING AND DISCOVERY SERVICES		
ISDP (Industry Standard Discovery Protocol)	Yes	Can interoperate with devices running CDP
802.1ab LLDP	Yes	
802.1ab LLDP – MED	Yes	
SNMP	V1, V2, V3	
RMON 1,2,3,9	Yes	
sFlow	Yes	

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M4200 series

SECURITY				
Network Storm Protection, DoS				
Broadcast, Unicast, Multicast DoS Protection Denial of Service Protection (control plane) Denial of Service Protection (data plane)	Yes Yes Yes		Switch CPU protection Switch Traffic protection	
DoS Attacks Protection	SIPDIP SMACDMAC FIRSTFRAG TCPFRAG TCPFLAG TCPPORT	UDPPORT TCPFLAGSEQ TCPOFFSET TCPSYN TCPSYNFIN TCPFINURGPSH	L4PORT ICMP ICMPV4 ICMPV6 ICMPFRAG PINGFLOOD	SYNACK
CPU Rate Limiting	Yes	Applied to IPv4 and IPv6 multicast packets with unknown L3 addresses when IP routing/multicast enabled		
ICMP throttling	Yes	Restrict ICMP, PING traffic for ICMP-based DoS attacks		
Management				
Management ACL (MACAL) Max Rules	Yes 64	Protects management CPU access through the LAN (in band management)		
Out of band Management	Yes	In-band management can be shut down entirely when out-of-band management network		
Radius accounting	Yes	RFC 2565 and RFC 2866		
TACACS+	Yes			
Malicious Code Detection	Yes	Software image files and Configuration files with digital signatures		
Network Traffic				
Access Control Lists (ACLs)	L2 / L3 / L4		MAC, IPv4, IPv6, TCP, UDP	
Time-based ACLs	Yes			
Protocol-based ACLs	Yes			
ACL over VLANs	Yes			
Dynamic ACLs	Yes			
IEEE 802.1x Radius Port Access Authentication	Yes	Up to 48 clients (802.1x) per port are supported, including the authentication of the users domain		
802.1x MAC Address Authentication Bypass (MAB)	Yes	Supplemental authentication mechanism for non-802.1x devices, based on their MAC address only		
Network Authentication Successive Tiering	Yes	Dot1x -> MAP -> Captive Portal successive authentication methods based on configured time-outs		
Port Security	Yes			
DHCP Snooping	Yes IPv4/IPv6			
Dynamic ARP Inspection	Yes IPv4			
IPv6 RA Guard Stateless Mode	Yes			
MAC Filtering	Yes			
Port MAC Locking	Yes			
Private Edge VLAN	Yes	A protected port doesn't forward any traffic (unicast, multicast, or broadcast) to any other protected port - same switch		
Private VLANs	Yes	Scales Private Edge VLANs by providing Layer 2 isolation between ports across switches in same Layer 2 network		

QUALITY OF SERVICE (QOS) - SUMMARY	
Access Lists	Yes
L2 MAC, L3 IP and L4 Port ACLs	Yes
Ingress	Yes
Egress	No
Time-based	Yes
802.3ad (LAG) for ACL assignment	Yes
Binding ACLs to VLANs	Yes
ACL Logging	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes
Edge Node applicability	Yes
Interior Node applicability	Yes
802.3ad (LAG) for service interface	Yes
Support for IPv6 fields	Yes
Ingress/ Egress	Ingress only
IEEE 802.1p COS	Yes
802.3ad (LAG) for COS configuration	Yes
WRED (Weighted Deficit Round Robin)	Yes
Strict Priority queue technology	Yes
Single Rate Policing	Yes (CLI only)
Committed Information Rate	Yes
Committed Burst Size	Yes
Excessive Burst Size	Yes
DiffServ feature applied to class maps	Yes
Auto-VoIP	Yes, based on protocols (SIP, H323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address
iSCSI Flow Acceleration	Yes
Dot1p Marking	Yes
IP DSCP Marking	Yes
QOS - ACL FEATURE SUPPORT	
ACL Support (general, includes IP ACLs)	Yes
MAC ACL Support	Yes
IP Rule Match Fields:	
Destination IP	Inbound
Destination IPv6 IP	Inbound
Destination L4 Port	Inbound
Every Packet	Inbound
IP DSCP	Inbound
IP Precedence	Inbound
IP TOS	Inbound
Protocol	Inbound
Source IP (for Mask support see below)	Inbound
Source IPv6 IP	Inbound
L3 IPv6 Flow Label	Inbound
Source L4 Port	Inbound
TCP Flag	No
Supports Masking	Inbound
MAC Rule Match Fields	
COS	Inbound
Destination MAC	Inbound
Destination MAC Mask	Inbound
Ethertype	Inbound
Source MAC	Inbound
Source MAC Mask	Inbound
VLAN ID	Inbound

Rules attributes	
Assign Queue	Inbound
Logging -- deny rules	Inbound
Mirror (to supported interface types only)	Inbound
Redirect (to supported interface types only)	Inbound
Rate Limiting -- permit rules	Inbound
Interface	
Inbound direction	Yes
Outbound direction	Yes
Supports LAG interfaces	Yes
Supports Control-plane interface	No
Multiple ACLs per interface, dir	Yes
Mixed-type ACLs per interface, dir	Yes
Mixed L2/IPv4 ACLs per interface, inbound	No
Mixed IPv4/IPv6 ACLs per interface, inbound	No
Mixed IPv4/IPv6 ACLs per interface, outbound	No
QOS - DIFFSERV FEATURE SUPPORT	
DiffServ Supported	Yes
Class Type	
All	Yes
Class Match Criteria	
COS	Inbound
COS2 (Secondary COS)	No
Destination IP (for Mask support see below)	Inbound
Destination IPv6 IP	Inbound
Destination L4 Port	Inbound
Destination MAC (for Mask support see below)	Inbound
Ethertype	Inbound
Every Packet	Inbound
IP DSCP	Inbound
IP Precedence	Inbound
IP TOS (for Mask support see below)	Inbound
Protocol	Inbound
Reference Class	Inbound
Source IP (for Mask support see below)	Inbound
Source IPv6 IP	Inbound
L3 IPv6 Flow Label	Inbound
Source L4 Port	Inbound
Source MAC (for Mask support see below)	Inbound
VLAN ID (Source VID)	Inbound
VLAN ID2 (Secondary VLAN) (Source VID)	No
Supports Masking	Inbound
Policy	
Out Class Unrestricted	Yes
Policy Attributes -- Inbound	
Assign Queue	Yes
Drop	Yes
Mark COS	Yes
Mark COS-AS-COS2	No
Mark COS2 (Secondary COS)	No
Mark IP DSCP	Yes
Mark IP Precedence	Yes
Mirror (to supported interface types only)	Yes
Police Simple	Yes
Police Single-Rate	No
Police Two-Rate	Yes
Police Color Aware Mode	Yes
Redirect (to supported interface types only)	Yes

Policy Attributes -- Outbound	No
Drop	No
Mark COS	No
Mark IP DSCP	No
Mark IP Precedence	No
Mirror (to supported interface types only)	No
Police Simple	No
Police Single-Rate	No
Police Two-Rate	No
Police Color Aware Mode	No
Redirect (to supported interface types only)	No
Service Interface	
Inbound Slot.Port configurable	Yes
Inbound 'All' Ports configurable	Yes
Outbound Slot.Port configurable	No
Outbound 'All' Ports configurable	No
Supports LAG interfaces	Yes
Mixed L2/IPv4 match criteria, inbound	No
Mixed IPv4/IPv6 match criteria, inbound	No
Mixed IPv4/IPv6 match criteria, outbound	No
PHB Support	
EF	Yes
AF4x	Yes
AF3x	Yes
AF2x	Yes
AF1x	Yes
CS	Yes
Statistics -- Policy Instance	
Offered	packets
Discarded	packets
QOS - COS FEATURE SUPPORT	
COS Support	Yes
Supports LAG interfaces	Yes
COS Mapping Config	
Configurable per-interface	Yes
IP DSCP Mapping	Yes
COS Queue Config	
Queue Parms configurable per-interface	Yes
Drop Parms configurable per-interface	Yes
Interface Traffic Shaping (for whole egress interface)	Yes
Minimum Bandwidth	Yes
Weighted Deficit Round Robin (WDRR) Support	Yes
Maximum Queue Weight	127
WRED Support	Yes

FUNCTIONAL SUMMARY - IETF RFC STANDARDS AND IEEE NETWORK PROTOCOLS	
Core Management	
RFC 854 — Telnet	RFC 3414 — User-Based Security Model
RFC 855 — Telnet option specifications	RFC 3415 — View-based Access Control Model
RFC 1155 — SMI v1	RFC 3416 — Version 2 of SNMP Protocol Operations
RFC 1157 — SNMP	RFC 3417 — Transport Mappings
RFC 1212 — Concise MIB definitions	RFC 3418 — Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
RFC 1867 — HTML/2.0 forms with file upload extensions	Configurable Management VLAN

RFC 1901 — Community-based SNMP v2	SSL 3.0 and TLS 1.0 – RFC 2246 — The TLS protocol, version 1.0 – RFC 2346 — AES cipher suites for Transport layer security – RFC 2818 — HTTP over TLS
RFC 1908 — Coexistence between SNMP v1 and SNMP v2	
RFC 2068 — HTTP/1.1 protocol as updated by draft-ietf-http-v11-spec-rev-03	
RFC 2271 — SNMP framework MIB	
RFC 2295 — Transparent content negotiation	SSH 1.5 and 2.0 – RFC 4253 — SSH transport layer protocol – RFC 4252 — SSH authentication protocol – RFC 4254 — SSH connection protocol – RFC 4251 — SSH protocol architecture – RFC 4716 — SECSH public key file format – RFC 4419 — Diffie-Hellman group exchange for the SSH transport layer protocol
RFC 2296 — Remote variant selection; RSVA/1.0 state management cookies — draft-ietf-http-state-mgmt-05	
RFC 2576 — Coexistence between SNMP v1, v2, and v3	
RFC 2578 — SMI v2	
RFC 2579 — Textual conventions for SMI v2	
RFC 2580 — Conformance statements for SMI v2	
RFC 3410 — Introduction and Applicability Statements for Internet Standard Management Framework	
RFC 3411 — An Architecture for Describing SNMP Management Frameworks	HTML 4.0 specification, December 1997
RFC 3412 — Message Processing & Dispatching	Java Script™ 1.3
RFC 3413 — SNMP Applications	
Advanced Management	
Industry-standard CLI with the following features: – Scripting capability – Command completion – Context-sensitive help	Optional user password encryption Multisession Telnet server Auto Image Upgrade
Core Switching	
IEEE 802.1AB — Link level discovery protocol	IEEE 802.3ac — VLAN tagging
IEEE 802.1D — Spanning tree	IEEE 802.3ad — Link aggregation
IEEE 802.1p — Ethernet priority with user provisioning and mapping	IEEE 802.3ae — 10 GbE
IEEE 802.1Q — Virtual LANs w/ port-based VLANs	IEEE 802.3af — Power over Ethernet
IEEE 802.1S — Multiple spanning tree compatibility	IEEE 802.3at — Power over Ethernet Plus
IEEE 802.1v — Protocol-based VLANs	IEEE 802.3x — Flow control
IEEE 802.1W — Rapid spanning tree	ANSI/TIA-1057 — LLDP-MED
iEEE 802.1AB — LLDP	GARP — Generic Attribute Registration Protocol: clause 12, 802.1D-2004
IEEE 802.1X — Port-based authentication	GMRP — Dynamic L2 multicast registration: clause 10, 802.1D-2004
IEEE 802.3 — 10Base-T	GVRP — Dynamic VLAN registration: clause 11.2, 802.1Q-2003
IEEE 802.3u — 100Base-T	RFC 4541 — IGMP snooping and MLD snooping
IEEE 802.3ab — 1000Base-T	RFC 5171 — UniDirectional Link Detection (UDLD) Protocol
Additional Layer 2 Functionality	
Broadcast storm recovery	IGMP and MLD snooping querier
Double VLAN/VMAN tagging	Port MAC locking
DHCP Snooping	MAC-based VLANs
Dynamic ARP inspection	IP source guard
Independent VLAN Learning (IVL) support	IP subnet-based VLANs
IPv6 classification APIs	Voice VLANs
Jumbo Ethernet frames	Protected ports
Port mirroring	IGMP snooping

Static MAC filtering	Green Ethernet power savings mode
System Facilities	
Event and error logging facility	RFC 2030 — Simple Network Time Protocol (SNTP) V4 for IPv4, IPv6, and OSI
Runtime and configuration download capability	RFC 2131 — DHCP Client/Server
PING utility	RFC 2132 — DHCP options and BOOTP vendor extensions
XMODEM	RFC 2865 — RADIUS client
RFC 768 — UDP	RFC 2866 — RADIUS accounting
RFC 783 — TFTP	RFC 2868 — RADIUS attributes for tunnel protocol support
RFC 791 — IP	RFC 2869 — RADIUS extensions
RFC 792 — ICMP	RFC 28869bis — RADIUS support for Extensible Authentication Protocol (EAP)
RFC 793 — TCP	RFC 5176 — RADIUS Change of Auth
RFC 826 — ARP	RFC 3164 — The BSD syslog protocol with RFC 5424 update
RFC 951 — BOOTP	RFC 3580 — 802.1X RADIUS usage guidelines
RFC 1321 — Message digest algorithm	Power Source Equipment (PSE) IEEE 802.af Powered Ethernet (DTE Power via MDI) standard
RFC 1534 — Interoperability between BOOTP and DHCP	IEEE Draft P802.1AS/D6.7 — IEEE 802.1AS Time Synchronization Protocol
Core Routing	
RFC 826 — Ethernet ARP	RFC 3021 — Using 31-Bit Prefixes on Point-to-Point Links
RFC 894 — Transmission of IP datagrams over Ethernet networks	RFC 3046 — DHCP/ BOOTP relay
RFC 896 — Congestion control in IP/TCP networks	VLAN routing
RFC 1027 — Using ARP to implement transparent subnet gateways (Proxy ARP)	
RFC 1256 — ICMP router discovery messages	
RFC 1321 — Message digest algorithm	
RFC 1519 — CIDR	
RFC 1812 — Requirements for IPv4 routers	
RFC 2082 — RIP-2 MD5 authentication	
RFC 2131 — DHCP relay	
RFC 2453 — RIP v2	
Quality of Service - DiffServ	
RFC 2474 — Definition of the differentiated services field (DS Field) in IPv4/IPv6 headers	RFC 3246 — An expedited forwarding PHB (Per-Hop Behavior)
RFC 2475 — An architecture for differentiated services	RFC 3260 — New terminology and clarifications for DiffServ
RFC 2597 — Assured forwarding PHB group	
Quality of Service - Access Control Lists (ACLs)	
Permit/deny actions for inbound or outbound IP traffic classification based on: – Type of service (ToS) or differentiated services (DS) DSCP field – Source IP address – Destination IP address – TCP/UDP source port – TCP/UDP destination port – IPv6 flow label – IP protocol number	Permit/deny actions for inbound or outbound Layer 2 traffic classification based on: – Source MAC address – Destination MAC address – EtherType – VLAN identifier value or range (outer and/or inner VLAN tag) – 802.1p user priority (outer and/or inner VLAN tag) Optional rule attributes: – Assign matching traffic flow to a specific queue – Redirect or mirror (flow-based mirroring) matching traffic flow to a specific port – Generate trap log entries containing rule hit counts

Quality of Service - Class of Service (CoS)	
Direct user configuration of the following: – IP DSCP to traffic class mapping – IP precedence to traffic class mapping – Interface trust mode: 802.1p, IP Precedence, IP DSCP, or untrusted – Interface traffic shaping rate – Minimum and maximum bandwidth per queue – Strict priority versus weighted (WRR/WDRR/WFQ) scheduling per queue – Tail drop versus Weighted Random Early Detection (WRED) queue depth management	Auto VoIP
Core Multicast	
RFC 1112 — Host extensions for IP multicasting	Draft-ietf-idmr-dvmrp-v3-10 — DVMRP
RFC 2236 — IGMP v2	Draft-ietf-magma-igmp-proxy-06.txt — IGMP/MLD-based multicast forwarding (IGMP/MLD proxying)
RFC 2710 — MLDv1	Draft-ietf-magma-igmpv3-and-routing-05.txt — IGMPv3 and multicast routing protocol interaction
RFC 2365 — Administratively scoped boundaries	Static RP configuration
RFC 3376 — IGMPv3	
RFC3810 — MLDv2	
Core IPv6 Routing	
RFC 1981 — Path MTU for IPv6	RFC 3513 — Addressing architecture for IPv6
RFC 2373 — IPv6 addressing	RFC 3542 — Advanced sockets API for IPv6
RFC 2460 — IPv6 protocol specification	RFC 3587 — IPv6 global unicast address format
RFC 2461 — Neighbor discovery	RFC 4291 — Addressing architecture for IPv6
RFC 2462 — Stateless autoconfiguration	RFC 4443 — Internet Control Message Protocol (ICMPv6) for the IPv6 Specification
RFC 2464 — IPv6 over Ethernet	RFC 6164 — Using 127-Bit IPv6 Prefixes on Inter-Router Links
RFC 2711 — IPv6 router alert	RFC 6583 — Operational Neighbor Discovery Problems
RFC 3056— Connection of IPv6 Domains via IPv4 Clouds	
RFC 3315 —Dynamic Host Configuration Protocol for IPv6 (DHCPv6)	
RFC 3484 — Default address selection for IPv6	
RFC 3493 — Basic socket interface for IPv6	
SUPPORTED MIBS	
Base Package MIBs	MIBs can be downloaded here: http://support.netgear.com/for_business/default.aspx
ANSI/TIA-1057 — LLDP-EXT-MED-MIB	RFC 2674 — Q-BRIDGE-MIB
DIFFSERV DSCP TC (Draft — no RFC)	RFC 2677 — IANA Address Family Numbers MIB
DNS-RESOLVER-MIB (IETF DNS Working Group)	RFC 2819 — RMON MIB
DNS-SERVER-MIB (IETF DNS Working Group)	RFC 2925 — DISMAN-PING-MIB and DISMAN-TRACEROUTE-MIB
GreenEthernet Private MIB	RFC 3273 — RMON MIB for High Capacity Networks
IANA-ADDRESS-FAMILY-NUMBERS-MIB (IANA (3/2002)	RFC 3411 — SNMP Management Frameworks MIB
IEEE 802.1AB-2004 — LLDP MIB	RFC 3411 — SNMP-FRAMEWORK-MIB
IEEE 802.1AB-2005 — LLDP-EXT-DOT3-MIB	RFC 3412 — SNMP-MPD-MIB
POWER ETHERNET MIB (Draft — no RFC)	RFC 3413 — SNMP-NOTIFICATION-MIB
RFC 1155 — SMI-MIB	RFC 3413 — SNMP-PROXY-MIB (initial revision published as RFC 2273)
RFC 1450 — SNMPV2-MIB	RFC 3413 — SNMP-TARGET-MIB (initial revision published as RFC 2273)
RFC 2273 — SNMP Notification MIB, SNMP Target MIB	RFC 3414 — User-based Security Model for SNMPv3 MIB
RFC 2392 — IANA RTPROTO-MIB	RFC 3415 — View-based Access Control Model for SNMP MIB
RFC 2572 — SNMP Message Processing and Dispatching MIB	RFC 3417 — SNMPV2-TM

RFC 2574 — User-based Security Model for SNMPv3 MIB	RFC 3418 — SNMPv2 MIB
RFC 2575 — View-based Access Control Model for SNMP MIB	RFC 3434 — RMON MIB Extensions for High Capacity Alarms
RFC 2576 — SNMP Community MIB	RFC 3584 — SNMP Community MIB
RFC 2578 — SNMPV2-SMI	RFC 3621 — POWER-ETHERNET-MIB
RFC 2579 — SNMPV2-TC	SNMP-RESEARCH-MIB— SNMP research MIB definitions
RFC 2580— SNMPV2-CONF	SR-AGENT-INFO-MIB— SNMP research MIB definitions
RFC 2613 — SMON-MIB	USM-TARGET-TAG-MIB — SNMP research MIB definitions
Switching Package MIBs	
RFC 1213 — MIB-II	RFC 2011 — SNMPv2 Management Information Base
ANSI/TIA 1057 — LLDP-MED MIB	RFC 2213 — Integrated Services MIB
FASTPATH Enterprise MIBs supporting switching features	RFC 2233 — IF-MIB
FASTPATH-MMRP-MIB — MMRP private MIB for IEEE 802.1Q devices	RFC 2233 — The Interfaces Group MIB using SMIv2
FASTPATH-MSRP-MIB — MSRP private MIB for IEEE 802.1Q devices	RFC 2674 — VLAN and Ethernet Priority MIB (P-Bridge MIB)
FASTPATH-MVRP-MIB — MVRP private MIB for IEEE 802.1Q devices	RFC 2737 — Entity MIB (Version 2)
IANAifType-MIB — IANAifType Textual Convention	RFC 2819 — RMON Groups 1,2,3, & 9
IEEE 802.1AB — LLDP MIB	RFC 2863 — Interfaces Group MIB
IEEE 802.3AD MIB (IEEE8021-AD-MIB)	RFC 3291 — INET Address MIB
IEEE Draft P802.1AS/D7.0 (IEEE8021-AS-MIB)	RFC 3291 — Textual Conventions for Internet Network Addresses
IEEE LAG-MIB — Link Aggregation module for managing IEEE 802.3ad	RFC 3621 — Power Ethernet MIB
LLDP-EXT-DOT3-MIB (part of IEEE Std 802.1AB)	RFC 3635 — Etherlike MIB
LLDP-MIB (part of IEEE Std 802.1AB)	RFC 3636 — IEEE 802.3 Medium Attachment Units (MAUs) MIB
Private MIB for 802.1Qat, 802.1Qav Configuration	RFC 4022 — Management Information Base for the Transmission Control Protocol (TCP)
RFC 1493 — Bridge MIB	RFC 4113 — Management Information Base for the User Datagram Protocol (UDP)
RFC 1643 — Definitions of managed objects for the Ethernet-like interface types	RFC 4444 — IS-IS MIB
Routing Package MIBs	
FASTPATH Enterprise MIBs supporting routing features	RFC 2096 — IP Forwarding Table MIB
IANA-Address-Family-Numbers-MIB	RFC 2668 — IEEE 802.3 Medium Attachment Units (MAUs) MIB
RFC 1724 — RIP v2 MIB Extension	
RFC 2096 — IP Forwarding Table MIB	
IPv6 Management MIBs	
RFC 3419 — TRANSPORT-ADDRESS-MIB	IPv6-MIB (draft)
IPv6-ICMP-MIB (draft)	
IPv6 Routing MIBs	
RFC 2465 — IPv6 MIB	RFC 2466 — ICMPv6 MIB
QoS Package MIB	
RFC 3289 — DIFFSERV-MIB & DIFFSERV-DCSP-TC MIBs	Private MIBs for full configuration of DiffServ, ACL, and CoS functionality
Security MIB	
RFC 2618 — RADIUS Authentication Client MIB	IEEE8021-PAE-MIB — The Port Access Entity module for managing IEEE 802.1X
RFC 2620 — RADIUS Accounting MIB	IEEE 802.1X MIB (IEEE 8021-PAE-MIB 2004 Revision)

Multicast Package MIBs		
draft-ietf-idmr-dvmrp-mib-11.txt — DVMRP MIB draft-ietf-magma-mgmd-mib-05.txt —Multicast Group Membership Discovery MIB (both IGMP and MLD) FASTPATH Enterprise MIBs supporting multicast features		
MANAGEMENT		
Password management	Yes	
Configurable Management VLAN	Yes	
Out-of-band Management	Yes	In-band management can be shut down using Management ACLs when separate management network
Auto Install (BOOTP and DHCP options 66, 67, 150 and 55, 125)	Yes	Scalable deployment process (firmware, config)
Admin access control via Radius and TACACS+	Yes	Policies, Enable
Industry standard CLI (IS-CLI)	Yes	Command Line interface
CLI commands logged to a Syslog server	Yes	
Web-based graphical user interface (GUI)	Yes	Fully functional GUI (exceptions are noted below:)
Features without Web GUI support PV(R)STP Authorization List Control Plane ACL UDLD QoS Policy for Single Rate DHCPv6 Snooping eMail Alerting MMRP	 CLI only CLI only CLI only CLI only CLI only CLI only CLI only CLI only	
Telnet	Yes	
IPv6 management	Yes	
Dual Software (firmware) image	Yes	Allows non disruptive firmware upgrade process
Dual Configuration file	Yes	Text-based (CLI commands) configuration file
Non disruptive Config Management	Yes	Provides synchronized network timestamp either in broadcast or unicast mode
IS-CLI Scripting	Yes	
Port descriptions	Yes	
SNTP client over UDP port 123	Yes	Provides synchronized network timestamp either in broadcast or unicast mode
XMODEM	Yes	
SNMP v1/v2	Yes	
SNMP v3 with multiple IP addresses	Yes	
RMON 1,2,3,9 Max History entries Max buckets per History entry Max Alarm entries Max Event entries Max Log entries per Event entry	Yes 3 * (number of ports in the chassis + LAG + 10) 10 3 * (number of ports in the chassis + LAG + 10) 3 * (number of ports in the chassis + LAG + 10) 10	
Port Mirroring Number of monitor sessions Tx/Rx Many to One Port Mirroring LAG supported as source ports Max source ports in a session	Yes 1 (multiple sessions are configurable) Yes Yes Yes Total switch port count	

Remote Port Mirroring (RSPAN)	Yes When a particular session is enabled, any traffic entering or leaving the source ports of that session is copied (mirrored) onto a Remote Switched Port Analyzer (RSPAN) VLAN	
Flow based mirroring	Yes	
Cable Test utility	Yes	CLI, Web GUI
Outbound Telnet	Yes	
SSH SSH Session Configuration	v1/v2 Yes	Secure Shell
SSL/HTTPS and TLS v1.0 for web-based access	Yes	
File transfers (uploads, downloads)	TFTP/HTTP	
Secured protocols for file transfers	SCP/SFTP/HTTPS	
HTTP Max Sessions	16	
SSL/HTTPS Max Sessions	16	
HTTP Download (firmware)	Yes	
Email Alerting	Yes (CLI only)	
Syslog (RFC 3164) (RFC 5424)	Yes, forwarding messages via UDP using the Syslog protocol to one or more collectors or relays	
Persistent log supported	Yes	
OpenFlow 1.3	Supports a single-table OpenFlow 1.3 data forwading path	
USER ADMIN MANAGEMENT		
User ID configuration Max number of configured users Support multiple READWRITE Users Max number of IAS users (internal user database)	Yes 6 Yes 100	
Authentication login lists	Yes	
Authentication Enable lists	Yes	
Authentication HTTP lists	Yes	
Authentication HTTPS lists	Yes	
Authentication Dot1x lists	Yes	
Accounting Exec lists	Yes	
Accounting Commands lists	Yes	
Login History	50	
M4200 SERIES – PLATFORM CONSTANTS		
Maximum number of remote Telnet connections	5	
Maximum number of remote SSH connections	5	
Number of MAC Addresses	16K	
Number of VLANs	1K	
VLAN ID Range	1 - 4093	
Number of 802.1p Traffic Classes	8 classes	
IEEE 802.1x Number of .1x clients per port	48	
Number of LAGs	5 LAGs with up to 8 ports per group	
Maximum multiple spanning tree instances (MSTP)	32	
Maximum per VLAN spanning tree instances (PVST)	32	
MAC based VLANS Number supported	Yes 256	
Number of network buffers	246	

Number of log messages buffered	200	
Static filter entries Unicast MAC and source port Multicast MAC and source port Multicast MAC and destination port (only)	 20 20 2048	
Subnet based VLANs Number supported	Yes 128	
Protocol Based VLANs Max number of groups Max protocols	Yes 128 16	
Maximum Multicast MAC Addresses entries	1K	
Jumbo Frame Support Max Size Supported	Yes 9k	
Number of IP Source Guard stations	250	
Number of DHCP snooping bindings	8K	
Number of DHCPv6 snooping bindings	8K	
Number of DHCP snooping static entries	1024	
LLDP-MED number of remote nodes LLDP Remote Management address buffers LLDP Unknown TLV address buffers LLDP Organizationally Defined Large TLV buffers LLDP Organizationally Defined Small TLV buffers	20 20 100 100 120	
Port MAC Locking Dynamic addresses per port Static addresses per port	Yes 4096 48	
sFlow Number of samplers Number of pollers Number of receivers	 10 10 8	
Radius Max Authentication servers Max Accounting servers	 32 32	
Number of Routes (v4/v6) IPv4 only SDM build IPv4/IPv6 SDM build IPv4 routes IPv6 routes RIP application route scaling	 64 64 64 32	SDM (System Data Management, or switch database)
Number of routing interfaces (including port/vlan)	64	
Number of static routes (v4/v6)	32/32	
DHCP Server Max number of pools Total max leases	 256 2K	
DNS Client Concurrent requests Name server entries Seach list entries Static host entries Cache entries Domain search list entries	 16 8 6 64 128 32	

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Data Sheet

M4200 series

Number of Host Entries (ARP/ NDP) IPv4 only SDM build IPv4/IPv6 SDM build (v4/v6) Static v4 ARP Entries	1,152 768 / 384 128	SDM (System Data Management, or switch database)
IGMPv3 / MLDv2 Snooping Limits IGMPv3/MLDv2 HW entries when Switching only	32/16	
IP Multicast IGMP Group Memberships per system	1K IPv4 1K IPv6	
ACL Limits Maximum Number of ACLs (any type) Maximum Number Configurable Rules per List Maximum ACL Rules per Interface and Direction Maximum ACL Rules per Interface and Direction (IPv6) Maximum ACL Rules (system-wide) Maximum ACL Logging Rules (system-wide)	 100 512 ingress / 0 egress 512 ingress / 0 egress 256 ingress / 0 egress 16K 128	
COS Device Characteristics Configurable Queues per Port Configurable Drop Precedence Levels	 8 queues 3	
DiffServ Device Limits Number of Queues Requires TLV to contain all policy instances combined Max Rules per Class Max Instances per Policy Max Attributes per Instance Max Service Interfaces Max Table Entries Class Table Class Rule Table Policy Table Policy Instance Table Policy Attribute Table Max Nested Class Chain Rule Count	 8 queues Yes 13 28 3 116 32 416 64 1,792 5,376 26	
AutoVoIP number of voice calls	20	
iSCSI Flow Acceleration Max Monitored TCP Ports/IP Addresses Max Sessions Max Connections	 16 192 192	
OpenFlow 1.3 Number of max OpenFlow access rules Number of max OpenFlow forwarding rules	 1,024 1,792	
LEDS		
Per port	Speed, Link, Activity	
Per device	Power, Fan	
PHYSICAL SPECIFICATIONS		
Dimensions M4200-10MG-PoE+	 Width: 17.32 inches (44 cm); Height: 1U - 1.73 inches (4.4 cm); Depth: 3.94 inches (10 cm)	
Weight M4200-10MG-PoE+	 4.52 lb (2.05 kg)	
POWER CONSUMPTION		
Worst case, all ports used, line-rate traffic M4200-10MG-PoE+	 281.6W max	

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M4200 series

ENVIRONMENTAL SPECIFICATIONS	
Operating: Temperature Humidity Altitude	 32° to 122°F (0° to 50°C) 90% maximum relative humidity, non-condensing 10,000 ft (3,000 m) maximum
Storage: Temperature Humidity Altitude	 – 4° to 158°F (–20° to 70°C) 95% maximum relative humidity, non-condensing 10,000 ft (3,000 m) maximum
ELECTROMAGNETIC EMISSIONS AND IMMUNITY	
Certifications	CE mark, commercial FCC Part 15 Class A VCCI Class A Class A EN 55022 (CISPR 22) Class A Class A C-Tick EN 50082-1 EN 55024
SAFETY	
Certifications	CE mark, commercial CSA certified (CSA 22.2 #950) UL listed (UL 1950)/cUL IEC 950/EN 60950
PACKAGE CONTENT	
M4200-10MG-PoE+ (GSM4210P)	M4200-10MG-PoE+ Switch Power cord(s) RJ45 straight-through wiring serial console cable to DB9 Mini-USB console cable Rubber caps for the SFP+ sockets Rack-mounting kit 1 x Mount for attachment to a wall, round pole, or rectangular pole 2 x Rubber belts 2 x Hose clamps 1 x Power cord strap and lock Rubber footpads for tabletop installation Installation guide Resource CD with the following manuals and software: - Software setup manual - CLI manual - Software administration guide - Hardware installation guide - The driver for use with the Mini-USB console cable

OPTIONAL MODULES		
AGM731F	1000BASE-SX SFP GBIC (Multimode)	**AGM731F**
AGM732F	1000BASE-LX SFP GBIC (Single mode)	**AGM732F**
AGM734	1000BASE-T RJ45 SFP GBIC	**AGM734-10000S**
AXC761	10GSFP+ Cu (passive) SFP+ to SFP+ Direct Attach Cable 1m	**AXC761-10000S**
AXC763	10GSFP+ Cu (passive) SFP+ to SFP+ Direct Attach Cable 3m	**AXC763-10000S**
AXM761	10GBASE-SR SFP+ GBIC (OM3/OM4 Multimode)	**AXM761-10000S**
AXM761 (Pack of 10 units)	10GBASE-SR SFP+ GBIC (OM3/OM4 Multimode)	**AXM761P10-10000S**
AXM762	10GBASE-LR SFP+ GBIC (Single mode)	**AXM762-10000S**
AXM762 (Pack of 10 units)	10GBASE-LR SFP+ GBIC (Single mode)	**AXM762P10-10000S**
AXM763	10GBASE-LRM SFP+ GBIC (Long Reach Multimode for OM1/OM2, also compatible with OM3/OM4)	**AXM763-10000S**
AXM764	10GBASE-LR LITE SFP+ GBIC (Single mode)	**AXM764-10000S**

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M4200 series

WARRANTY AND SUPPORT	
ProSAFE Lifetime Hardware Warranty*	Included, lifetime
90 days of Technical Support via phone and email*	Included, 90 days after purchase
Lifetime Technical Support through online chat*	Included, lifetime
Lifetime Next Business Day hardware replacement*	Included, lifetime
PROSUPPORT SERVICE PACKS	
Installation contracts	
PSB0304-10000S	Remote Installation Setup and Configuration Service Contract
PSP1104-10000S	Onsite Installation Setup and Configuration Service Contract
Supplemental support contracts	
PMP3132-10000S	OnSite NBD Replacement 3-year CAT 2
PMB0332-10000S	OnCall 24x7 3-year CAT 2
PMB0352-10000S	OnCall 24x7 5-year CAT 2
ORDERING INFORMATION	
M4200-10MG-PoE+	
Americas, Europe	GSM4210P-100NES
Asia Pacific	GSM4210P-100AJS
China	GSM4210P-100PRS

* This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller and modifications to product may void the warranty; covers hardware, fans and internal power supplies - not software or external power supplies See http://www.netgear.com/about/warranty/ for details. Lifetime technical support includes basic phone support for 90 days from purchase date and lifetime online chat support when purchased from a NETGEAR authorized reseller.

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