

M4100 series



The NETGEAR® Intelligent Edge M4100 series consists of 9 fully managed switches, ranging from 12-port to 50-port Fast and Gigabit Ethernet. They are ideal for all organizations considering reliable, affordable and simple access layer switching with CLI, advanced scripting capabilities and Layer 3 routing.

As a cost-effective component of converged voice, video and data networking solutions, NETGEAR M4100 series delivers a secure edge in commercial buildings and campus LAN environments: PoE (802.3af) and PoE+ (802.3at) versions of M4100 series are perfect for Wireless access points, IP telephony and IP surveillance deployments.

Highlights

Layer 2+ with static routing

- M4100 series comes with Port-based/ VLAN-based/Subnet-based “static routing” Layer 2+ versions
- L3 fixed routes to the next hop towards the destination network are added to the routing table
- L3 routing is wire-speed in M4100 series hardware with 64 static routes (IPv4)

Engineered for convergence

- Automatic multi-vendor Voice over IP prioritization based on SIP, H323 and SCCP protocols
- Voice VLAN and LLDP-MED for automatic IP phones QoS and VLAN configuration
- Advanced classifier-based hardware for L2, L3, L4 security and prioritization
- Advanced Multicast filtering with IGMP and MLD snooping and querier modes

High-value performance and IPv6 ready

- 16K MAC addresses; up to 100Gbps switching fabric; 9K jumbo frames; Green Ethernet
- IPv4/IPv6 ingress traffic filtering (ACLs) and prioritization (QoS - DiffServ)

High availability and PoE/PoE+ full power capability

- Redundant power supply option for uninterruptible operation (RPS)
- External power supply option for PoE and PoE+ full power applications (EPS up to 1,440W)

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 M4100 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

Model Name	Form Factor	FRONT					Storage (image, config)	REAR					Model number
		10/100 Base-T RJ45 ports	10/100/1000 Base-T RJ45 ports	100/1000X Fiber SFP ports	PoE 802.3af PoE+ 802.3at	PoE budget (PSU/Pass through)		PoE budget (with EPS)	Management console				
M4100-50-POE	Rack mount	48	2	2 (shared)	48 PoE 802.3af	1 x USB	Internal/No	1 (RPS or EPS)	380W	Up to 740W (EPS)	1 x RS232 DB9, 1 x Mini-USB (selectable)	FSM7250P	
M4100-D12G	Desktop	-	12	2 (shared)	-		External/Yes	PD mode	-	-		GSM5212	
M4100-D12G-POE+	Desktop	-	12	4 (shared)	10 PoE+ 802.3at		Internal/Yes	PD mode	120W/25W	-		GSM5212P v1h2	
M4100-12GF	Rack mount	-	12	12 (shared)	4 PoE+ 802.3at		Internal/No	1 (RPS)	150W	-		GSM7212F v1h2	
M4100-26G	Rack mount	-	26	4 (shared)	-		Internal/No	1 (RPS)	-	-		GSM7224 v2h2	
M4100-50G	Rack mount	-	50	4 (shared)	-		Internal/No	1 (RPS)	-	-		GSM7248 v2h2	
M4100-26G-POE	Rack mount	-	26	4 (shared)	24 PoE 802.3af		Internal/No	1 (RPS or EPS)	192W	Up to 380W (EPS)		GSM7226LP	
M4100-24G-POE+	Rack mount	-	24	4 (shared)	24 PoE+ 802.3at		Internal/No	1 (RPS or EPS)	380W	Up to 720W (EPS)		GSM7224P v1h2	
M4100-50G-POE+	Rack mount	-	50	4 (shared)	48 PoE+ 802.3at		Internal/No	1 (RPS or EPS)	380W	Up to 1,440W (EPS)		GSM7248P	



Hardware at a Glance

Powered by PoE



M4100-50-POE is a 48 x 100Base-T PoE version, Layer 2+

- 2 Gigabit ports with 2 shared SFP
- Internal PSU with RPS/EPS
- 380W budget and up to 720W with EPS



M4100-D12G is a desktop 12 x 1000Base-T version, Layer 2+

- 2 shared SFP
- External PSU; fanless
- Can be powered by PoE+



M4100-12GF is a 12 x SFP version for aggregation, Layer 2+

- 12 shared 1000Base-T
- Internal PSU with RPS
- 4 ports PoE+ with 150W budget

PoE “passthrough” technology



M4100-D12G-POE+ is a desktop 12 x 1000Base-T version, Layer 2+

- 4 shared SFP; 2 ports PoE+ “in” and 10 ports PoE+ “out”
- Internal PSU with low acoustics; 120W budget
- Can be powered by PoE+ and redistribute 25W PoE budget



M4100-26G is a 26 x 1000Base-T version, Layer 2+

- 4 shared SFP
- Internal PSU with RPS



M4100-50G is a 50 x 1000Base-T version, Layer 2+

- 4 shared SFP
- Internal PSU with RPS



M4100-26G-POE is a 24 x 1000Base-T PoE version, Layer 2+

- 2 x 1000Base-T and 4 shared SFP
- Internal PSU with RPS/EPS
- 192W budget and up to 380W with EPS



M4100-24G-POE+ is a 24 x 1000Base-T PoE+ version, Layer 2+

- 4 shared SFP
- Internal PSU with RPS/EPS
- 380W budget and up to 720W with EPS



M4100-50G-POE+ is a 48 x 1000Base-T PoE+ version, Layer 2+

- 2 x 1000Base-T and 4 shared SFP
- Internal PSU with RPS/EPS
- 380W budget and up to 1,440W with EPS

Software at a Glance

LAYER 2+ PACKAGE									
Model Name	Management	IPv4/IPv6 ACL and QoS, DiffServ	IPv4/IPv6 Multicast Filtering	Auto-VoIP	Green Ethernet	VLANs	Convergence	IPv4 Unicast Static Routing	Model Number
M4100 series	Web GUI; HTTPs CLI; Telnet; SSH SNMP, MIBs RSPAN	L2, L3, L4, ingress 1 Kbps	IGMP and MLD Snooping, IGMP and MLD Querier, MVR	Yes	EEE (802.3az) or Energy Detect Mode	Static, Dynamic, Voice, MAC, Subnet, Protocol-based, QinQ, Private VLANs	LLDP-MED, RADIUS, 802.1X, timer	Yes (Port-based, Subnet, VLANs, Loopback)	all models

Performance at a Glance

TABLE SIZE										
Model Name	Packet buffer	CPU	ACLs	MAC address table ARP/NDP table VLANs DHCP server	Fabric	Latency	Static Routes IP interfaces	Multicast IGMP Group membership	sFlow	Model number
M4100 series all models	12 Mb	600Mhz 128M RAM 32M Flash	50 ACLs 512 rules (ingress)	16K MAC 512 ARP/NDP VLANs: 1K DHCP: 16 pools 1,024 max leases	Up to 100Gbps all models line-rate	1G <3.91 µs 100M <10.194 µs	64 static routes 64 IP interfaces IPv4	1K	32 samplers 52 pollers 8 receivers	all models



Product Brief

M4100 series

The Intelligent Edge M4100 series switches are NETGEAR fully managed switches for 100M/1G access layer in SMB, Small Enterprise and Campus networks. The M4100 series delivers the best combination of performance, security and convergence at a high-value price point—unlike competitive, entry-level “SMB” solutions. Redundant power supply options (RPS), full PoE+ external power supply options (EPS), Private VLANs, LLDP-MED and MVR take a scalable, future-proof approach to delivering network services for Wireless access points, IP phones and IP cameras infrastructures.

NETGEAR Intelligent Edge M4100 series key features:

- Broad portfolio of access layer solutions, ranging from 12 ports Fast Ethernet to 50 ports Gigabit Ethernet
- 802.3af PoE and 802.3at PoE+ best fit, ranging from 120W to 1,440W power budget per switch
- IPv4 routing in Layer 2+ package (L3 static routing) with IPv4/IPv6 ACLs and QoS
- High value L2/L3 tables with 16K MAC, 512 ARP/NDP, 9K jumbo frames, 1K VLANs, 64 static L3 routes
- Redundant power supply option for uninterruptible operation (RPS)
- External power supply option for PoE and PoE+ full-power applications (EPS)
- Green Ethernet compliance for maximum power efficiency

NETGEAR Intelligent Edge M4100 series software features:

- Automatic multi-vendor Voice over IP prioritization based on SIP, H323 and SCCP protocol detection
- Voice VLAN and LLDP-MED for automatic IP phones QoS and VLAN configuration
- IPv4/IPv6 Multicast filtering with IGMP and MLD snooping, Querier mode and MVR for simplified video deployments
- Advanced classifier-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP transport ports) inbound security and prioritization

NETGEAR Intelligent Edge M4100 series link aggregation and channeling features:

- Flexible Port-Channel/LAG (802.3ad) implementation for maximum compatibility, fault tolerance and load sharing with any type of Ethernet channeling
- Including static (selectable hashing algorithms) or dynamic LAGs (LACP)

NETGEAR Intelligent Edge M4100 series management features:

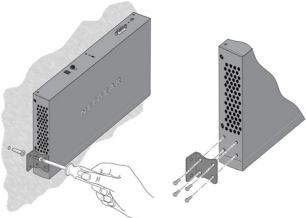

- DHCP/BootP innovative auto-installation including firmware and configuration file upload automation
- Industry standard SNMP, RMON, MIB, LLDP,AAA, sFlow and RSPAN implementation
- Selectable serial RS232 DB9 and Mini-USB port for management console
- Standard USB port for local storage, configuration 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 Intelligent Edge M4100 series warranty and support:

- NETGEAR ProSafe Lifetime Hardware Warranty*
- Included Lifetime Online Chat Technical Support
- Included Lifetime Next Business Day Hardware Replacement



Modern access layer features highlights

Layer 3 hardware with L2+ software affordability	
M4100 series models are built upon L3 hardware platform while Layer 2+ software package allows for better budget optimization	<ul style="list-style-type: none"> M4100 series uses latest generation silicon low-power 40-nanometer technology M4100 series L2 and L3 switching features (access control list, classification, filtering, IPv4 routing) are performed in hardware at interface line rate for voice, video, and data convergence
M4100 series Layer 2+ software package provides straight forward IP static routing capabilities for physical interfaces, VLANs and subnets	<ul style="list-style-type: none"> Fast Ethernet 802.3af PoE: M4100-50-POE (48 ports) Gigabit: M4100-D12G (12 ports desktop); M4100-12GF (12 ports Fiber); M4100-26G (26 ports); M4100-50G (50 ports) Gigabit 802.3af PoE: M4100-26G-POE (24 ports) Gigabit 802.3at PoE+: M4100-D12G-POE+ (12 ports desktop); M4100-24G-POE+ (24 ports); M4100-50G-POE+ (48 ports) At the edge of campus networks or in the server room, static routes are often preferred for simplicity (L3 fixed routes to the next hop towards the destination network are manually added to the routing table), without any impact on performance because L3 routing is wire-speed in M4100 series hardware
High-value switching performance	
16K MAC address table, 1K concurrent VLANs and 64 static routes for SMB and small enterprise access layers	
80 PLUS certified power supplies for energy high efficiency	
Green Ethernet with Energy Efficient Ethernet (EEE) defined by IEEE 802.3az Energy Efficient Ethernet Task Force	<ul style="list-style-type: none"> M4100-D12G; M4100-26G; M4100-50G; M4100-26G-POE; M4100-50G-POE+
Green Ethernet with Energy Detect Mode (unused ports automatic power off)	<ul style="list-style-type: none"> M4100-50-POE; M4100-D12G-POE+; M4100-12GF; M4100-24G-POE+
Increased packet buffering with up to 12 Mb dynamically shared across all interfaces for most intensive virtualization applications	
Low latency at all network speeds	
Jumbo frames support of up to 9Kb accelerating storage performance for backup and cloud applications	
Ease of deployment	
Placement outside the wiring closet (conference rooms, offices, class rooms, sales floor in retail stores, etc...)	<ul style="list-style-type: none"> For secure deployment in open areas, desktop versions come with a Wall Mount Kit with four brackets M4100-D12G (GSM5212) M4100-D12G-POE+ (GSM5212P) As an option, a Rack Mount Kit is orderable (420-10043-01) <div style="text-align: right;">  <p><i>Installing M4100 desktop series on a Wall</i></p> </div>
Select desktop versions also come with a set of strong magnets for mounting on any metal surface	<ul style="list-style-type: none"> M4100-D12G (GSM5212) <div style="text-align: right;">  <p><i>Installing M4100 desktop series using Magnets</i></p> </div>

Modern access layer features highlights

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
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 including "PoE Passthrough"
IEEE 802.3af Power over Ethernet (PoE) provides up to 15.4W per port (M4100-50-POE; M4100-26G-POE)
IEEE 802.3at Power over Ethernet Plus (PoE+) provides up to 30W per port (M4100-D12G-POE+; M4100-24G-POE+; M4100-50G-POE+)
Desktop versions can be powered by upstream PoE+ switch using their Port-1 (PD, PoE+ 30W): M4100-D12G and M4100-D12G-POE+
M4100-D12G-POE+ can even redistribute PoE power from the upstream PoE+ switch to VoIP phones or other devices in meeting rooms, retail sales floors or other challenging environments without outlet
Both IEEE 802.3at Layer 2 LLDP method and 802.3at 2-event classification methods are supported for compatibility with all PoE+ PD devices
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
100Mbps backward compatibility on all SFP ports
IPv6 support with multicasting (MLD for IPv6 filtering), ACLs and QoS
Tier 1 availability
Rapid Spanning Tree (RSTP) and Multiple Spanning Tree (MSTP) allow for rapid transitioning of the ports to the Forwarding state and the suppression of Topology Change Notification
IP address conflict detection performed by the embedded DHCP server prevents accidental IP address duplicates from perturbing the overall network stability
Power redundancy for higher availability when mission critical, including hot-swap PSUs and Fans
Ease of management and control
Dual firmware image and dual configuration file for transparent firmware updates/configuration changes with minimum service interruption
Flexible Port-Channel /LAG (802.3ad) 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 dynamic LAGs (highly tunable LACP Link Aggregation Control Protocol)
Port names feature allows for descriptive names on all interfaces and better clarity in real word admin daily tasks
Loopback interfaces management for routing protocols administration
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 GRVP 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

Modern access layer features highlights

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.	
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	
Remote mirroring (RSPAN) can transport packets captured on an interface on a source switch across the network to a destination on a possibly different destination switch	
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 for IPv4, MLD Snooping for IPv6 and Querier mode facilitate fast receivers joins and leaves for multicast streams and ensure multicast traffic only reaches interested receivers without the need of a Multicast router	
Multicast VLAN Registration (MVR) uses a dedicated Multicast VLAN to forward multicast streams and avoid duplication for clients in different VLANs	
Schedule enablement	
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	
IP source guard and Dynamic ARP Inspection 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	
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 topology 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	<ul style="list-style-type: none"> 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 data VLAN)

Modern access layer features highlights

<p>802.1x MAC Address Authentication Bypass (MAB) is an alternative method for non-Radius clients</p>	<ul style="list-style-type: none"> • 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 only after the dot1x authentication process times out, and only when clients don't respond to any of the EAPOL packets sent by the switch • 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
<p>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</p>	
<p>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 across switches in the same Layer 2 network</p>	<ul style="list-style-type: none"> • 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
<p>Secure Shell (SSH) and SNMPv3 (with or without MD5 or SHA authentication) ensure SNMP and Telnet sessions are secured</p>	
<p>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</p>	
<p>Superior quality of service</p>	
<p>Advanced classifier-based hardware implementation for Layer 2 (MAC), Layer 3 (IP) and Layer 4 (UDP/TCP transport ports) prioritization</p>	
<p>8 queues for priorities and various QoS policies based on 802.1p (CoS) and DiffServ can be applied to interfaces and VLANs</p>	
<p>Advanced rate limiting down to 1 Kbps granularity and minimum-guaranteed bandwidth can be associated with ACLs for best granularity</p>	
<p>Automatic Voice over IP prioritization with Auto-VoIP</p>	
<p>Advanced Layer 2+ routing package</p>	
<p>Static Routes/ECMP Static Routes for IPv4</p>	<ul style="list-style-type: none"> • Static and default routes are configurable with next IP address hops to any given destination • 64 static routes are configurable for IPv4 • 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)

Modern access layer features highlights

<p>Advanced Static Routing functions for administrative traffic control</p>	<ul style="list-style-type: none"> • 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
<p>In order to facilitate VLAN creation and VLAN routing using Web GUI, a VLAN Routing Wizard offers following automated capabilities</p>	<ul style="list-style-type: none"> • 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
<p>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</p>	<ul style="list-style-type: none"> • 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
<p>Flow Control</p>	
<p>802.3x Flow Control implementation per IEEE 802.3 Annex 31 B specifications with Symmetric flow control, Asymmetric flow control or No flow control</p>	<p>Asymmetric flow control allows the switch to respond to received PAUSE frames, but the ports cannot generate PAUSE frames</p> <p>Symmetric flow control allows the switch to both respond to, and generate MAC control PAUSE frames</p>
<p>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</p>	

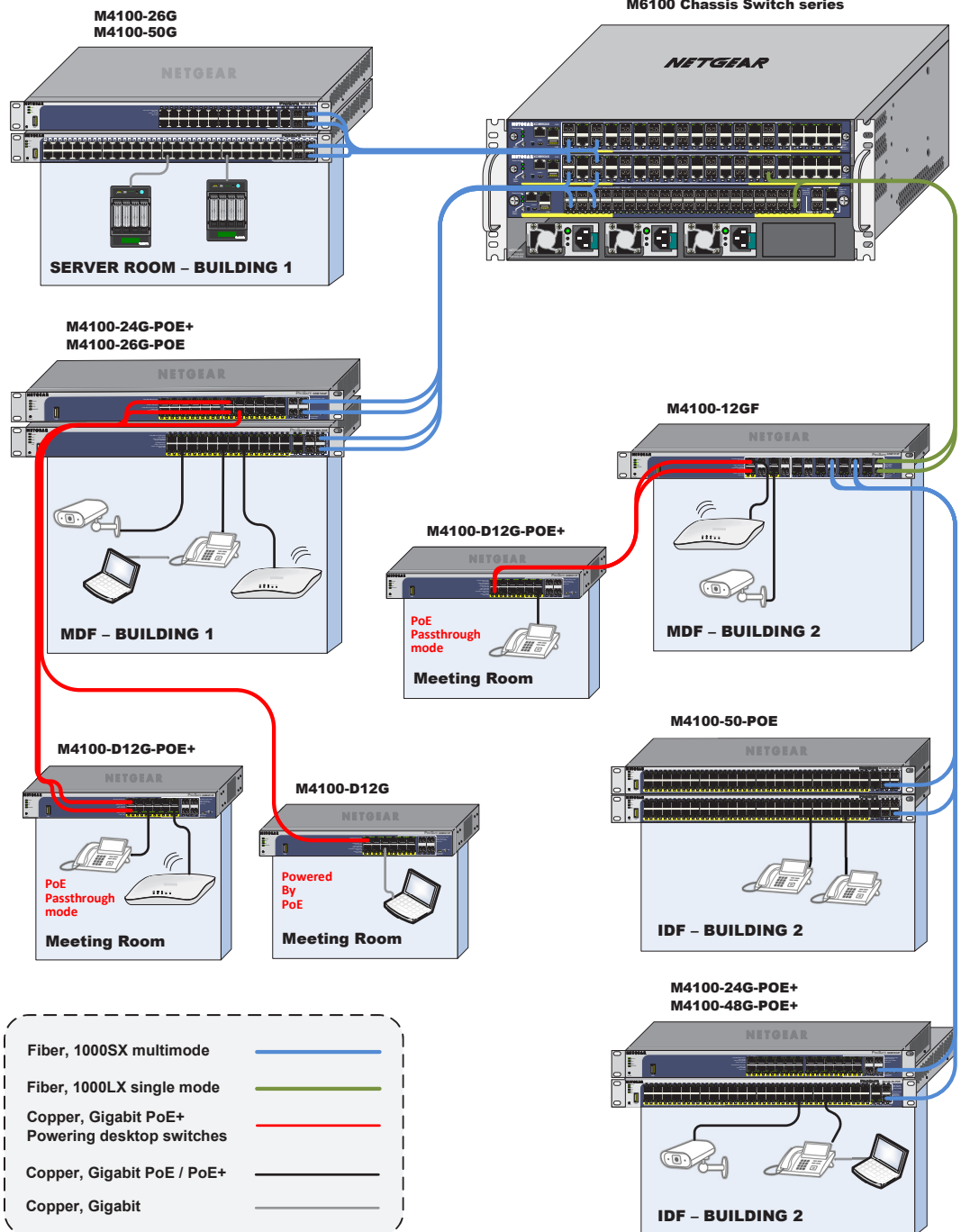


Target Application

Why M4100 series for the edge of small enterprise networks?

Because the M4100 series offers up to 3x better value:

- Combining superior resiliency and advanced security, NETGEAR Intelligent Edge managed switches feature comprehensive Layer 2, Lite Layer 3 and Layer 4 switching; including fiber aggregation capabilities. Unlike other 'cost conscious' products from competitors, the NETGEAR Intelligent Edge series has been designed from the ground up for organizations requiring intelligence at the network edge.
- Affordable and reliable, these access layer switches win as a proficient component of secure, converged voice, video and data networking solutions.



Three Reasons to Get Started Today with the NETGEAR M4100 series

1. Versatile, Protected and Expendable Power

The M4100 series are the first affordable managed switches with both redundant and external power supply capabilities – key for critical applications such as VoIP, IP surveillance and Wireless access points. PoE devices gobble increasing amounts of PoE power, yet existing SMB switching solutions from other vendors don't scale to full power. Although most servers in SMB networks have dual power supplies, switches in SMB networks have not – until now.

Select desktop switches in the M4100 series can be powered by PoE as a cost-effective solution when there is no existing electrical wiring or power outlets, as the switch can draw power directly from the wiring closet. The flexibility of a PoE switch is also convenient for meeting rooms and open spaces where visible electrical wiring is unsightly or impractical. One PoE+ downlink (30W) from the upstream switch is sufficient for the standard operation of the M4100-D12G and M4100-D12G-POE+ switches. This also increases resiliency for critical installations: the Power over Ethernet PD connection on these switches also doubles as a redundant power supply (RPS) should the switch be locally powered.

Innovative PoE passthrough technology even lets M4100-D12G-POE+ power local PoE PD devices – redistributing PoE budget from the upstream switch. Up to 25W of power can be available for local PD devices – extending the reach of PoE deployments beyond the 100-meter or 328-foot bar: the M4100-D12G-POE+ can function as a "PoE repeater" for powering remote IP cameras, Wireless access points, etc.

For all other rackmount Power over Ethernet models in the NETGEAR Intelligent Edge M4100 series, in addition to their built-in PSU providing more PoE power than competitive solutions at a similar price point, the NETGEAR Intelligent Edge M4100 series is the only one allowing for an additional PoE power "upgrade" via external power supply; immediately or at later times.

Short story, all rackmount switches in the NETGEAR M4100 series are either PoE Full Power capable already or PoE Full Power capable when drawing external power from the RPS4000. All 24-port and 48-port models can scale up to 802.3af PoE full power or 802.3at PoE+ full power simultaneously for all ports. This is real investment protection.

2. Security and Control

Enhanced security includes network access control and isolation for improved convergence of voice, video and data: dynamic 802.1x VLAN assignment mode, including Dynamic VLAN creation mode and Guest VLAN / Unauthenticated VLAN are supported for rigorous user and equipment policy enforcement from a RADIUS server. The RADIUS server can also be the Network Policy Server (NPS) in Microsoft® Windows Server™ 2008 or 2012, when in an Active Directory domain.

Up to 48 clients (802.1x) per port are supported, including the authentication of a user's domain, in order to facilitate convergent deployments. When IP phones connect PCs on their bridge, IP phones and PCs authenticate on the same switch port but under different VLAN assignment policies (Voice VLAN versus data VLAN) – providing administrators with greater flexibility during deployment and policy enforcement.

For 802.1x unaware clients, 802.1x MAC Address Authentication Bypass (MAB) is a great alternative: when 802.1x unaware clients try to connect, the switch sends their MAC addresses to the authentication server. When checked, the RADIUS server returns the access policy and VLAN assignment to the switch for each client.

Enhanced security also includes better network isolation with Private VLANs, providing Layer 2 isolation between ports that share the same broadcast domain. A VLAN broadcast domain can be partitioned into smaller point-to-multipoint subdomains across switches in the same Layer 2 network. This is useful for IP camera deployments, or in the DMZ when servers are not supposed to communicate with each other but need to communicate with a router. Private VLANs remove the need for more complex port-based VLANs with respective IP interface/subnets and associated L3 routing.

3. Reliability

Learn how the NETGEAR M4100 series delivers more for less: all models provide much longer MTBF (average lifetime) thanks to better/higher quality components and circuitry.

For instance, the desktop 8-port PoE Fast Ethernet M4100-D10-POE (FSM5210P) is predicted to have an average mean time between failure of 579,985 hours, or 66 years at an ambient standard 25°C temperature (77°F). The rackmount 24-port PoE Gigabit Ethernet M4100-26G-POE (GSM7226LP) is predicted to have an average mean time between failure of 437,199 hours, more than 49 years. This is nearly double the reliability of the closest competitive solutions in this price band.

Conclusion

The M4100 series delivers an unbeatable combination of performance, security and convergence for voice, video and data networking solutions.

Due to the wide adoption of virtualization, the convergence of voice, video, and data and the rapid proliferation of bandwidth-intensive applications, small and mid-sized businesses, hospitals and schools today have security, control and reliability needs similar to those of large enterprises. For approximately the same price as low-end solutions currently on the market aimed at SMBs, NETGEAR is offering high-end features that have so far been reserved only for enterprise-class offerings available at double or triple the price point.

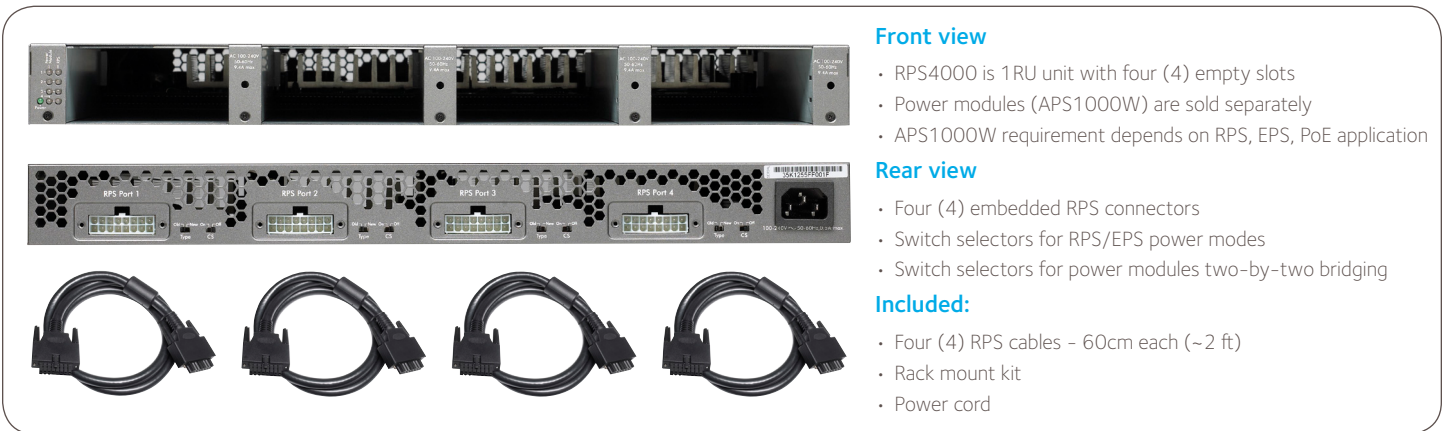
Accessories

RPS4000 RPS/EPS unit for up to 4 concurrent switches

Ordering information

- Americas, Europe: RPS4000-200NES
- Asia Pacific: RPS4000-200AJS
- Warranty: 5 years

- RPS mode: provide power backup for up to four switches concurrently
 - With same level of protection as with four dedicated, “one-to-one” RPS units
- EPS mode: provide supplemental PoE power up to four switches concurrently
 - Up to 2,880W shared PoE+ budget
 - When in EPS mode, RPS4000 supersedes each switch main PSU
 - Switch main PSU system power reverts to redundant power supply (RPS) function



Front view

- RPS4000 is 1RU unit with four (4) empty slots
- Power modules (APS1000W) are sold separately
- APS1000W requirement depends on RPS, EPS, PoE application

Rear view

- Four (4) embedded RPS connectors
- Switch selectors for RPS/EPS power modes
- Switch selectors for power modules two-by-two bridging

Included:

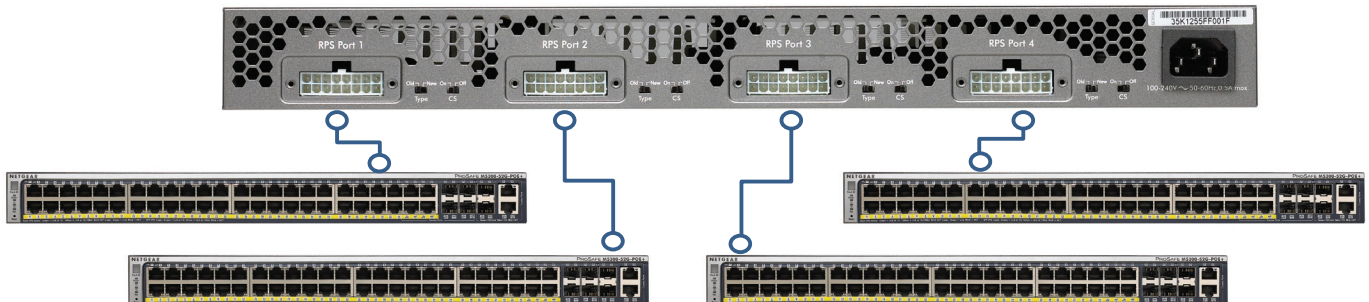
- Four (4) RPS cables – 60cm each (~2 ft)
- Rack mount kit
- Power cord

The RPS4000 RPS/EPS unit supports the following key features:

- The RPS4000 can be connected to a maximum of four switches (any combination of M5300 series switches is supported) using RPS switch connectors and RPS cables
- The RPS4000 provides protection against electrical issues such as high-voltage (input, output) or short circuits for maximum security
- The RPS4000 can accommodate up to four hot-swap APS1000W power modules
 - Either one, two, three or four APS1000W power modules are required, depending on RPS or EPS application (see combinations in “Number of APS1000W” table)
- In RPS mode with only one APS1000W power module, RPS4000 can protect up to four (4) non-PoE or PoE M4100 series switches
 - In case of a general switches power feed failure, powering all four switches simultaneously for 12V DC system power
 - RPS4000 takes over and delivers adequate power without any service interruption (continuous monitoring)
 - When the switch internal power is restored, the RPS4000 stops supplying power to the switch automatically, again without any service interruption
- In RPS mode with multiple APS1000W power module combinations, RPS4000 can protect up to four (4) PoE M4100 series switches
 - In case of a general switches power feed failure, powering all four switches simultaneously (12V DC system power and -56V DC PoE)
 - Same RPS functionality as with non-PoE switches including PoE power budget protection
- One-to-one mode (one APS1000W power module / one PoE M4100 switch) provides 720W PoE budget protection for each switch
- One APS1000W power module can be used for two (2) PoE M4100 series switches instead, providing 380W PoE budget protection for each switch
- In EPS mode with multiple APS1000W power module combinations, RPS4000 allows for various PoE 802.3af and 802.3at “full power” applications
 - Supports M4100-50-POE, M4100-26G-POE; M4100-24G-POE+ and M4100-50G-POE+
 - Superseding switches main PSU for PoE budget and switch powering
 - Delivering -56V DC for PoE power and 12V for switch power
 - Switch main PSU system acts as built-in RPS for both switch power and PoE budget protection
- In EPS mode, power slots can be organized into groups of two (Group 1 and Group 2) allowing for APS1000W power modules bridging
 - Two APS1000W power modules can be bridged and deliver 1,440W PoE budget to one 48-port switch M4100-50G-POE+
- Power slots can be configured for RPS or EPS mode
 - All four power slots can be combined together with only one APS1000W power module for four (4) 12V switches RPS application
 - Power slots can be utilized in one-to-one mode for PoE switches RPS or EPS applications
 - Power slots can be combined two by two for PoE switches RPS or EPS applications

Accessories

Number of APS1000W	1 POWER MODULE	2 POWER MODULES	3 POWER MODULES	4 POWER MODULES
RPS mode (Redundant Power Supply)	<p>Up to 4 switches (non-PoE versions)</p> <p>M4100-26G or M4100-50G or M4100-12GF</p> <p>Complete protection 12V system power</p> <p>Or:</p> <p>Up to 2 switches (PoE versions)</p> <p>M4100-50-POE or M4100-12GF</p> <p>M4100-26G-POE or M4100-24G-POE+</p> <p>or M4100-50G-POE+</p>	<p>Up to 4 switches (PoE versions)</p> <p>M4100-50-POE or M4100-12GF</p> <p>M4100-26G-POE or M4100-24G-POE+</p> <p>or M4100-50G-POE+</p> <p>Complete protection 12V system power and -56V PoE power</p>	<p>Up to 4 switches (PoE versions)</p> <p>M4100-50-POE or M4100-12GF</p> <p>M4100-26G-POE or M4100-24G-POE+</p> <p>or M4100-50G-POE+</p> <p>Complete protection 12V system power and -56V PoE power</p>	<p>4 switches (PoE versions)</p> <p>M4100-50-POE or M4100-12GF</p> <p>M4100-26G-POE or M4100-24G-POE+</p> <p>or M4100-50G-POE+</p> <p>Complete protection 12V system power and -56V PoE power</p>
EPS mode (External Power Supply)	<p>720W PoE budget available (total) for up to 2 switches (PoE versions)</p> <p>M4100-50-POE or M4100-26G-POE</p> <p>M4100-24G-POE+ or M4100-50G-POE+</p>	<p>1,440W PoE budget available (total) for up to 4 switches (PoE versions)</p> <p>M4100-50-POE or M4100-26G-POE</p> <p>M4100-24G-POE+ or M4100-50G-POE+</p>	<p>2,160W PoE budget available (total) for up to 4 switches (PoE versions)</p> <p>M4100-50-POE or M4100-26G-POE</p> <p>M4100-24G-POE+ or M4100-50G-POE+</p>	<p>2,880W PoE budget available (total) for up to 4 switches (PoE versions)</p> <p>M4100-50-POE or M4100-26G-POE</p> <p>M4100-24G-POE+ or M4100-50G-POE+</p>
Example for PoE applications: (802.3af full power)	<p>One M4100-50-POE providing 720W</p> <p>46 ports full power 802.3af PoE</p>	<p>Two M4100-50-POE providing 720W each</p> <p>96 ports full power 802.3af PoE</p>	<p>Three M4100-50-POE providing 720W each</p> <p>138 ports full power 802.3af PoE</p>	<p>Four M4100-50-POE providing 720W each</p> <p>192 ports full power 802.3af PoE</p>
Example for PoE+ applications: (802.3at full power)	<p>One M4100-24G-POE+ providing 720W</p> <p>24 ports full power 802.3at PoE+</p>	<p>One M4100-50G-POE+ providing 1,440W</p> <p>48 ports full power 802.3at PoE+</p>	<p>One M4100-24G-POE+ providing 720W</p> <p>One M4100-50G-POE+ providing 1,440W</p> <p>72 ports full power 802.3at PoE+</p>	<p>Two M4100-50G-POE+ providing 1,440W each</p> <p>96 ports full power 802.3at PoE+</p>



Accessories

APS1000W Power Module for RPS4000

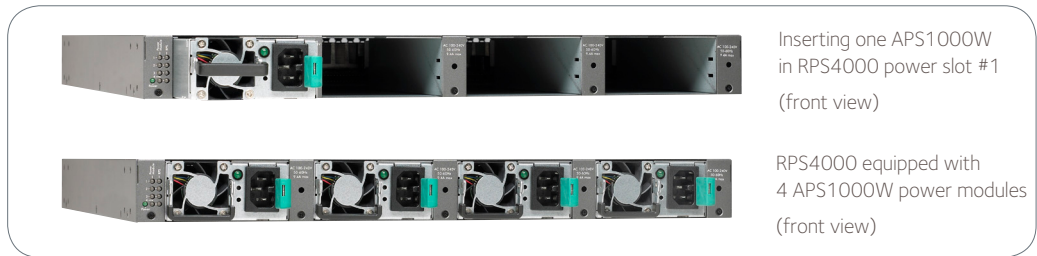
Ordering information

- Americas, Europe:
APS1000W-100NES
- Asia Pacific: APS1000W-100AJS
- Warranty: 5 years



Capacity:

- 110V–240V AC power input
- Up to 960W DC 12V output power for up to 4 switches (RPS)
- Up to 720W DC -56V PoE budget output power for up to 2 PoE switches (EPS)



Inserting one APS1000W in RPS4000 power slot #1 (front view)

RPS4000 equipped with 4 APS1000W power modules (front view)

RPS5412 RPS unit for 1 switch by Optimal Power®

Ordering information

- Americas: RPS5412-100NAS
- Europe: RPS5412-100EUS
- Asia Pacific: RPS5412-100AJS
- Warranty: 3 years



- Optimal Power® RPS unit certified by NETGEAR for M4100 series
- Includes the RPS cable for the switch RPS connector
- Provides seamless “one-to-one” redundant power to the Switch
- 56V DC power limited to 308W (maximum PoE budget)

420-10043-01 Rack mount kit for M4100 series desktop versions

Ordering information



- Worldwide: 420-10043-01
- Warranty: 5 years



- M4100 series desktop switches come with wall mount kit only
- This optional rack mount kit contains two brackets for standard 19” rack mount
- Compatible with:
 - M4100-D12G (GSM5212)
 - M4100-D12G-POE+ (GSM5212P)

Accessories

GBIC SFP Optics for M4100 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
<p>Gigabit SFP</p>  <p>• Fits into M4100 series SFP interfaces (front)</p>	<p>AGM731F</p> <p>1000Base-SX short range multimode LC duplex connector up to 275m (902 ft)</p> <p>AGM731F (1 unit)</p>	<p>AGM731F</p> <p>1000Base-SX short range multimode LC duplex connector OM3: up to 550m (1,804 ft) OM4: up to 1,000m (3,280 ft)</p> <p>AGM731F (1 unit)</p>	<p>AGM732F</p> <p>1000Base-LX long range single mode LC duplex connector up to 10km (6.2 miles)</p> <p>AGM732F (1 unit)</p>
<p>Fast Ethernet SFP</p>  <p>• Fits into M4100 series SFP interfaces (front)</p>	<p>AFM735</p> <p>100Base-FX IEEE 802.3 LC duplex connector up to 2km (1.24 miles)</p> <p>AFM735-10000S (1 unit)</p>	<p>AFM735</p> <p>100Base-FX IEEE 802.3 LC duplex connector up to 2km (1.24 miles)</p> <p>AFM735-10000S (1 unit)</p>	

Technical Specifications



- Requirements based on 10.x software release
- Layer 2+ package includes Layer 3 static routing

Model Name	Description	Model number
M4100-50-POE	48 ports Fast Ethernet PoE 802.3af, Layer 2+ software package	FSM7250P
M4100-D12G	Desktop 12 ports Gigabit, Layer 2+ software package	GSM5212
M4100-D12G-POE+	Desktop 12 ports Gigabit PoE+ 802.3at, Layer 2+ software package	GSM5212P v1h2
M4100-12GF	12 ports Gigabit Fiber, Layer 2+ software package	GSM7212F v1h2
M4100-26G	26 ports Gigabit, Layer 2+ software package	GSM7224 v2h2
M4100-50G	50 ports Gigabit, Layer 2+ software package	GSM7248 v2h2
M4100-26G-POE	24 ports Gigabit PoE 802.3af, Layer 2+ software package	GSM7226LP
M4100-24G-POE+	24 ports Gigabit PoE+ 802.3at, Layer 2+ software package	GSM7224P v1h2
M4100-50G-POE+	48 ports Gigabit PoE+ 802.3at, Layer 2+ software package	GSM7248P

TECHNICAL SPECIFICATIONS

PHYSICAL INTERFACES

Front	Auto-sensing RJ45 10/100	Auto-sensing RJ45 10/100/1000	Auto-sensing SFP ports 100/1000Base-X	Console port (selectable)	Storage Port
M4100-50-POE	48	2	2 (shared)	-	1 x USB Firmware, Configuration Files
M4100-D12G	-	12	2 (shared)	-	
M4100-D12G-POE+	-	12	4 (shared)	Mini-USB	
M4100-12GF	-	12	12 (shared)	Mini-USB	
M4100-26G	-	26	4 (shared)	-	
M4100-50G	-	50	4 (shared)	-	
M4100-26G-POE	-	26	4 (shared)	-	
M4100-24G-POE+	-	24	4 (shared)	Mini-USB	
M4100-50G-POE+	-	50	4 (shared)	-	
Rear	Power Supply	RPS/EPS connector	Console port (selectable)		Physical security
M4100-50-POE	Fixed, internal	1	Serial RS232 DB9, Mini-USB		1 Kensington Lock Slot
M4100-D12G	External	-	Serial RS232 DB9, Mini-USB		
M4100-D12G-POE+	Fixed, internal	-	Serial RS232 DB9		
M4100-12GF	Fixed, internal	1	Serial RS232 DB9		
M4100-26G	Fixed, internal	1	Serial RS232 DB9, Mini-USB		
M4100-50G	Fixed, internal	1	Serial RS232 DB9, Mini-USB		
M4100-26G-POE	Fixed, internal	1	Serial RS232 DB9, Mini-USB		
M4100-24G-POE+	Fixed, internal	1	Serial RS232 DB9		
M4100-50G-POE+	Fixed, internal	1	Serial RS232 DB9, Mini-USB		
Total Port Count	Fast Ethernet	Gigabit			
M4100-50-POE	48 ports total	2 ports total			
M4100-D12G	-	12 ports total			
M4100-D12G-POE+	-	12 ports total			
M4100-12GF	-	12 ports total			
M4100-26G	-	26 ports total			
M4100-50G	-	50 ports total			
M4100-26G-POE	-	26 ports total			
M4100-24G-POE+	-	24 ports total			
M4100-50G-POE+	-	50 ports total			

Power over Ethernet				
PSE Capacity	PoE ports 802.3af	PoE+ ports 802.3at	Internal PoE budget	PoE budget with EPS
M4100-50-POE	48	-	380W	740W with EPS (RPS4000)
M4100-D12G-POE+	-	10	120W when AC power	-
M4100-12GF	-	4	150W	-
M4100-26G-POE	24	-	192W	380W with EPS (RPS4000)
M4100-24G-POE+	-	24	380W	720W with EPS (RPS4000)
M4100-50G-POE+	-	48	380W	1,440W with EPS (RPS4000)
PD Capacity	Powered by PoE+		PoE "Passthrough" Technology	
M4100-D12G	Yes with one link PoE+ 30W (PD Port 1)			
M4100-D12G-POE+	Yes with one link PoE+ 30W (PD Port 1)		Yes when second link PoE+ 30W (PD Port 2): 25W PoE budget can be redistributed by Port 3-12	
Features Support				
IEEE 802.3af (up to 15.4W per port)	Yes (M4100-50-POE ; M4100-26G-POE)			
IEEE 802.3at (up to 30W per port)	Yes (M4100-D12G-POE+; M4100-12GF; M4100-24G-POE+; M4100-50G-POE+)			
IEEE 802.3at Layer 2 (LLDP) method	Yes (M4100-D12G-POE+; M4100-12GF; M4100-24G-POE+; M4100-50G-POE+)			
IEEE 802.3at 2-event classification	Yes (M4100-D12G-POE+; M4100-12GF; M4100-24G-POE+; M4100-50G-POE+)			
PoE timer / schedule (week, days, hours)	Yes for all 802.3af and 802.3at models		Convenient for Wireless Access Points schedules	
Processor/Memory				
Processor (CPU)	Broadcom BCM53003 @ 600MHz			
System memory (RAM)	128 MB			
Code storage (flash)	32 MB		Dual firmware image, dual configuration file	
Packet Buffer Memory				
All models	12 Mb		Dynamically shared across only used ports	

Performance Summary		
Switching fabric		
M4100-50-POE		13.6 Gbps
M4100-D12G		24 Gbps
M4100-D12G-POE+		24 Gbps
M4100-12GF		24 Gbps
M4100-26G		52 Gbps
M4100-50G		100 Gbps
M4100-26G-POE		52 Gbps
M4100-24G-POE+		48 Gbps
M4100-50G-POE+		100 Gbps
Throughput		
M4100-50-POE		10.119 Mpps
M4100-D12G		17.857 Mpps
M4100-D12G-POE+		17.857 Mpps
M4100-12GF		17.857 Mpps
M4100-26G		38.690 Mpps
M4100-50G		74.405 Mpps
M4100-26G-POE		38.690 Mpps
M4100-24G-POE+		35.714 Mpps
M4100-50G-POE+		74.405 Mpps
Green Ethernet		
Energy Efficient Ethernet (EEE)	IEEE 802.3az Energy Efficient Ethernet Task Force compliance (M4100-D12G; M4100-26G; M4100-50G; M4100-26G-POE; M4100-50G-POE+)	
Other Metrics		
Forwarding mode	Store-and-forward	
Latency (64-byte frames, 100 Mbps, Copper)	<10.194 µs	
Latency (64-byte frames, 1 Gbps, Copper)	<3.91 µs	
Addressing	48-bit MAC address	
Address database size	16,000 MAC addresses	
Number of VLANs	1,024 VLANs (802.1Q) simultaneously	
Number of multicast groups filtered (IGMP)	1K	
Number of Link Aggregation Groups (LAGs - 802.3ad)	12 LAGs with up to 8 ports per group	
Number of hardware queues for QoS	8 queues	

M4100 series

Number of static routes (IPv4)	64	
Number of IP interfaces (port or VLAN)	64	
Jumbo frame support	up to 9K packet size	
Acoustic noise (ANSI-S10.12) @ 25 °C ambient (77 °F)		
M4100-50-POE	<38.9 dB	
M4100-D12G	0 dB (fanless)	
M4100-D12G-POE+	<19.8 dB below typical acoustic office ambient	
M4100-12GF	<30 dB	
M4100-26G	<35.6 dB	
M4100-50G	<37.2dB	
M4100-26G-POE	<36.6 dB	
M4100-24G-POE+	<33.8 dB	
M4100-50G-POE+	<47.7 dB	
Heat Dissipation (BTU) (Maximum)		
M4100-50-POE	1,661 Btu/hr	
M4100-D12G	64 Btu/hr	
M4100-D12G-POE+	569 Btu/hr	
M4100-12GF	548 Btu/hr	
M4100-26G	108 Btu/hr	
M4100-50G	169 Btu/hr	
M4100-26G-POE	932 Btu/hr	
M4100-24G-POE+	1,820 Btu/hr	
M4100-50G-POE+	1,896 Btu/hr	
Mean Time Between Failures (MTBF)	@ 25 °C ambient (77 °F)	@ 55 °C ambient (131 °F)
M4100-50-POE	163,019 hours (~18.6 years)	49,668 hours (~5.7 years)
M4100-D12G	214,142 hours (~24.4 years)	67,633 hours (~7.7 years)
M4100-D12G-POE+	766,618 hours (~87.5 years)	99,094 hours (~11.3 years)
M4100-12GF	670,956 hours (~76.6 years)	190,562 hours (~21.8 years)
M4100-26G	702,785 hours (~80.2 years)	197,792 hours (~22.6 years)
M4100-50G	489,311 hours (~55.9 years)	152,639 hours (~17.4 years)
M4100-26G-POE	437,199 hours (~49.9 years)	117,763 hours (~13.4 years)
M4100-24G-POE+	394,619 hours (~45.0 years)	106,405 hours (~12.1 years)
M4100-50G-POE+	239,298 hours (~27.3 years)	65,978 hours (~7.5 years)

L2 Services - VLANs		
IEEE 802.1Q VLAN Tagging	Yes	Up to 1,024 VLANs - 802.1Q Tagging
Protocol Based VLANs	Yes	
IP subnet	Yes	
ARP	Yes	
IPX	Yes	
Static VLANs	Access Ports for 802.1Q unaware endpoints and Trunk Ports for switch-to-switch links with Native VLAN	
Subnet based VLANs	Yes	
MAC based VLANs	Yes	
Voice VLAN	Yes	
Private Edge VLAN	Yes	
Private VLAN	Yes	
IEEE 802.1x	Yes	IP phones and PCs can authenticate on the same port but under different VLAN assignment policies
Guest VLAN	Yes	
RADIUS based VLAN assignment via .1x	Yes	
RADIUS based Filter ID assignment via .1x	Yes	
MAC-based .1x	Yes	
Unauthenticated VLAN	Yes	
Double VLAN Tagging (QinQ)	Yes	
Enabling dvlan-tunnel makes interface	Yes	
Global ethertype (TPID)	Yes	
Interface ethertype (TPID)	Yes	
Customer ID using PVID	Yes	
GARP with GVRP/GMRP	Yes	Automatic registration for membership in VLANs or in multicast groups
MVR (Multicast VLAN registration)	Yes	
L2 Services - Availability		
IEEE 802.3ad - LAGs	Yes	Up to 12 LAGs and up to 8 physical ports per LAG
LACP	Yes	
Static LAGs	Yes	
LAG Hashing	Yes	
Storm Control	Yes	
IEEE 802.3x (Full Duplex and flow control)	Yes	Asymmetric and Symmetric Flow Control
Per port Flow Control	Yes	
IEEE 802.1D Spanning Tree Protocol	Yes	
IEEE 802.1w Rapid Spanning Tree	Yes	
IEEE 802.1s Multiple Spanning Tree	Yes	
STP Loop Guard	Yes	
STP Root Guard	Yes	
BPDU Guard	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	
IGMP Snooping Enable IGMP Snooping per VLAN Snooping Querier	Yes	
MLD Querier	Yes	
Multicast VLAN registration (MVR)	Yes	
L3 Services - DHCP		
DHCP IPv4 / DHCP IPv6 Client	Yes	
DHCP IPv4 Server	Yes	
DHCP Snooping IPv4	Yes	
DHCP Relay IPv4	Yes	
DHCP BootP IPv4	Yes	
Auto Install (DHCP options 66, 67, 150)	Yes	
L3 Services - IPv4 Routing		
Static Routing	Yes	
Port Based Routing	Yes	
VLAN Routing 802.3ad (LAG) for router ports	Yes Yes	
IP Helper Max IP Helper entries	Yes 512	
IP Source Guard	Yes	
ECMP	Yes	
Proxy ARP	Yes	
Multinetting	Yes	
ICMP redirect detection in hardware	Yes	
DNSv4	Yes	

Network Monitoring and Discovery Services			
ISDP (Industry Standard Discovery Protocol)		Yes	inter-operates 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	
Security			
Network Storm Protection, DoS			
Broadcast, Unicast, Multicast DoS Protection		Yes	
Denial of Service Protection (control plane)		Yes	Switch CPU protection
Denial of Service Protection (data plane)		Yes	Switch Traffic protection
DoS attacks	SIPDIP SMACDMAC FIRSTFRAG TCPFRAG TCPFLAG TCPPOINT	UDPPORT TCPFLAGSEQ TCPOFFSET TCPSYN TCPSYNFIN TCPFINURGPSH	L4PORT ICMPV4 ICMPV6 ICMPFRAG
ICMP throttling		Yes	Restrict ICMP, PING traffic for ICMP-based DoS attacks
Management			
Radius accounting		Yes	RFC 2565 and RFC 2866
TACACS+		Yes	
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 MAB Address Authentication Bypass (MAB)		Yes	Supplemental authentication mechanism for non-802.1x devices, based on their MAC address only
Port Security		Yes	
IP Source Guard		Yes	
DHCP Snooping		Yes	
Dynamic ARP Inspection		Yes	

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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	
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	Yes	
IEEE 802.1p COS	Yes	
802.3ad (LAG) for COS configuration	Yes	
WRED (Weighted Deficit Round Robin)	Yes	
Strict Priority queue technology	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	
QoS - ACL Feature Support		
ACL Support (include L3 IP and L4 TCP/UDP)	Yes	
MAC ACL Support	Yes	
IP Rule Match Fields		
Dest IP	Inbound	
Dest IPv6 IP	Inbound	
Dest 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	
Supports Masking	Inbound	

MAC Rule Match Fields		
COS	Inbound	
Dest MAC	Inbound	
Dest MAC Mask	Inbound	
Ethertype	Inbound	
Source MAC	Inbound	
Source MAC Mask	Inbound	
VLAN ID	Inbound	
VLAN ID2 (Secondary VLAN)	Yes	
Rules attributes		
Assign Queue	Inbound	
Logging -- deny rules	Inbound	
Mirror (to supported interface types only)	Inbound	
Redirect (to supported interface types only)	Inbound	
Interface		
Inbound direction	Yes	
Supports LAG interfaces	Yes	
Multiple ACLs per interface, inbound	Yes	
Mixed-type ACLs per interface, inbound	Yes	
Mixed L2/IPv4 ACLs per interface, inbound	Yes	
QoS - DiffServ Feature Support		
DiffServ Supported	Yes	
Class Type		
All	Yes	
Class Match Criteria		
COS	Inbound	
Dest IP (for Mask support see below)	Inbound	
Dest IPv6 IP	Inbound	
Dest L4 Port	Inbound	
Dest 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	
Supports Masking	Inbound	
Policy Attributes -- Inbound		
Assign Queue	Inbound	
Drop	Yes	
Mark COS	Yes	
Mark IP DSCP	Yes	
Mark IP Precedence	Yes	
Mirror (to supported interface types only)	Inbound	
Police Simple	Yes	
Police Color Aware Mode	Yes	

Service Interface			
Inbound Slot.Port configurable		Yes	
Inbound 'All' Ports configurable		Yes	
Supports LAG interfaces		Yes	
Mixed L2/IPv4 match criteria, inbound		Yes	
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		Yes	
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	
IEEE Network Protocols			
IEEE 802.3 Ethernet	IEEE 802.3az Energy Efficient Ethernet (select models)	IEEE 802.1s Multiple Spanning Tree (MSTP)	IEEE 802.1v Protocol-based VLAN
IEEE 802.3u 100BASE-T	IEEE 802.3ad Trunking (LACP)	IEEE 802.1w Rapid Spanning Tree (RSTP)	IEEE 802.1p Quality of Service
IEEE 802.3ab 1000BASE-T	IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)	IEEE 802.1X Radius network access control	IEEE 802.3x Flow control
IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX	IEEE 802.1D Spanning Tree (STP)	IEEE 802.1Q VLAN tagging	IEEE 802.3af/IEEE 802.3at
IETF RFC Standards and MIBs			
System Facilities			
RFC 768 – UDP	RFC 2131 – DHCP Client/Server		
RFC 783 – TFTP	RFC 2132 – DHCP options & BOOTP vendor extensions		
RFC 791 – IP	RFC 2030 – Simple Network Time Protocol (SNTP) Version 4 for IPv4, IPv6 and OSI		
RFC 792 – ICMP	RFC 2865 – RADIUS Client (both Switch and Management access)		
RFC 793 – TCP	RFC 2866 – RADIUS Accounting		
RFC 826 – Ethernet ARP	RFC 2868 – RADIUS Attributes for Tunnel Protocol support		

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RFC 894 – Transmission of IP datagrams over Ethernet networks	RFC 2869 – RADIUS Extensions
RFC 896 – Congestion control in IP/TCP Networks	RFC2869bis – RADIUS Support for Extensible Authentication Protocol (EAP)
RFC 951 – BOOTP	RFC 3164 – The BSD Syslog Protocol
RFC 1321 – Message-digest algorithm	RFC 3580 – 802.1X RADIUS usage guidelines (VLAN assignment via RADIUS, dynamic VLAN)
RFC 1534 – Interoperation between BOOTP and DHCP	
Switching MIB	
RFC 1213 – MIB-II	RFC 2620 – RADIUS Accounting MIB
RFC 1493 – Bridge MIB	RFC 2737 – Entity MIB version 2
RFC 1643 – Ethernet-like MIB	RFC 2819 – RMON Groups 1,2,3 & 9
RFC 2233 – The Interfaces Group MIB using SMI v2	IEEE 802.1X MIB (IEEE 802.1-PAE-MIB 2004 Revision)
RFC 2674 – VLAN MIB	IEEE 802.1AB – LLDP MIB
RFC 2613 – SMON MIB	ANSI/TIA 1057 – LLDP-MED MIB
RFC 2618 – RADIUS Authentication Client MIB	Private Enterprise MIBs supporting switching features
IPv4 Routing	
RFC 1027 – Using ARP to implement transparent subnet Gateways (Proxy ARP)	RFC 2131 – DHCP relay
RFC 1256 – ICMP Router Discovery Messages	RFC 3046 – DHCP Relay Agent Information option
RFC 1812 – Requirements for IP Version 4 routers	VLAN routing
IPv4 Routing MIB	
RFC 2096 – IP Forwarding Table MIB	Private enterprise MIB supporting routing features
Multicast	
RFC 1112 – Host extensions for IP Multicasting	RFC 2710 – Multicast Listener Discovery (MLD) for IPv6
RFC 2236 – Internet Group Management Protocol, Version 2	RFC 3376 – Internet Group Management Protocol, Version 3
RFC 2365 – Administratively Scoped IP Multicast	RFC 3810 – Multicast Listener Discovery Version 2 (MLDv2) for IPv6
Multicast MIB	
Draft-ietf-magma-mgmd-mib-05 Multicast Group Membership Discovery MIB	Private Enterprise MIB supporting Multicast features
IPv6 Routing	
RFC 1981 – Path MTU for IPv6	RFC 3484 – Default Address Selection for IPv6
RFC 2460 – IPv6 Protocol specification	RFC 3493 – Basic Socket Interface for IPv6
RFC 2461 – Neighbor Discovery	RFC 3542 – Advanced Sockets API for IPv6
RFC 2462 – Stateless Auto Configuration	RFC 3587 – IPv6 Global Unicast Address Format
RFC 2464 – IPv6 over Ethernet	RFC 3736 – Stateless DHCPv6

IPv6 Routing MIB	
RFC 2465 – IPv6 MIB	RFC 2466 – ICMPv6 MIB
QoS	
RFC 2474 – Definition of Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	RFC 3260 – New Terminology and Clarifications for DiffServ
RFC 2475 – An Architecture for Differentiated Services	RFC 3289 – Management Information Base for the Differentiated Services Architecture (read-only)
RFC 2597 – Assured Forwarding PHB Group	Private MIBs for full configuration of DiffServ, ACL and CoS functionality
RFC 3246 – An Expedited Forwarding PHB (Per-Hop Behavior)	
Management	
RFC 854 – Telnet	RFC 3412 – Message Processing & Dispatching
RFC 855 – Telnet Option	RFC 3413 – SNMP Applications
RFC 1155 – SMI v1	RFC 3414 – User-Based Security Model
RFC 1157 – SNMP	RFC 3415 – View-based Access Control Model
RFC 1212 – Concise MIB Definitions	RFC 3416 – Version 2 of SNMP Protocol Operations
RFC 1867 – HTML/2.0 Forms with file upload extensions	RFC 3417 – Transport Mappings
RFC 1901 – Community-based SNMP v2	RFC 3418 – Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
RFC 1908 – Coexistence between SNMP v1 & SNMP v2	SSL 3.0 and TLS 1.0 - RFC 2246 – The TLS Protocol, Version 1.0 - RFC 2818 – HTTP over TLS - RFC 2346 – AES Ciphersuites for Transport Layer Security
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	
RFC 2296 – Remote Variant Selection; RSVP/1.0 State Management “cookies” – draft-ietf-http-state-mgmt-05	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 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	

Management		
Password management	Yes	
Configurable Management VLAN	Yes	
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
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
IS-CLI Scripting	Yes	Industry standard CLI commands scripts for automation
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 * (port count + LAG + 10) 10 3 * (port count + LAG + 10) 3 * (port count + 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 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
Traceroute feature	Yes	
Outbound Telnet	Yes	

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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	
Syslog (RFC 3164)	Yes	
Persistent log supported	Yes	
User Admin Management		
User ID configuration	Yes	
Max number of configured users	6	
Support multiple READWRITE Users	Yes	
Max number of IAS users (internal user database)	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	
M4100 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	12 LAGs with up to 8 ports per group	

Maximum multiple spanning tree instances	32	
MAC based VLANs	Yes	
Number supported	256	
Number of log messages buffered	200	
Static filter entries	20	
Unicast MAC and source port	20	
Multicast MAC and source port	256	
Multicast MAC and destination port (only)		
Subnet based VLANs	Yes	
Number supported	128	
Protocol Based VLANs	Yes	
Max number of groups	128	
Max protocols	16	
Maximum Multicast MAC Addresses entries	1K	
Jumbo Frame Support	Yes	
Max Size Supported	9k	
Number of DHCP snooping bindings	16K	
Number of DHCP snooping static entries	1024	
LLDP-MED number of remote nodes	48	
Port MAC Locking	Yes	
Dynamic addresses per port	4096	
Static addresses per port	48	
sFlow		
Number of samplers	32	
Number of pollers	52	
Number of receivers	8	
Radius		
Max Authentication servers	5	
Max Accounting servers	1	
Number of routing interfaces (including port/vlan)	64	
Number of static routes (v4)	64	
Routing Heap size		
IPv4	256K	
DHCP Server		
Max number of pools	16	
Total max leases	1024	
DNS Client		
Concurrent requests	16	
Name server entries	8	
Search list entries	6	
Static host entries	64	
Cache entries	128	
Domain search list entries	32	
Number of Host Entries (ARP/NDP)		
IPv4 build	512	including 509 user configurable entries
Static v4 ARP Entries	16	
Number of ECMP Next Hops per Route	1	

ACL Limits		
Maximum Number of ACLs (any type)	50	
Maximum Number Configurable Rules per List	509	
Maximum ACL Rules per Interface and Direction (IPv4/L2)	509	
Maximum ACL Rules per Interface and Direction (IPv6)	509	
Maximum ACL Rules (system-wide)	4K	
Maximum ACL Logging Rules (system-wide)	32	
COS Device Characteristics		
Configurable Queues per Port	8 queues	
Configurable Drop Precedence Levels	3	
DiffServ Device Limits		
Number of Queues	8 queues	
Requires TLV to contain all policy instances combined	Yes	
Max Rules per Class	6	
Max Instances per Policy	28	
Max Attributes per Instance	3	
Max Service Interfaces	50 interfaces	
Max Table Entries		
Class Table	32	
Class Rule Table	192	
Policy Table	64	
Policy Instance Table	768	
Policy Attribute Table	2304	
Max Nested Class Chain Rule Count	12	
AutoVoIP number of voice calls	16	
LEDs		
Per port	Speed, Link, Activity, PoE	
Per device	Power, Fan, RPS or PD Mode, Max PoE	
Physical Specifications		
Dimensions (Width x Depth x Height)		
M4100-50-POE	440 x 310 x 43.2 mm (17.32 x 12.20 x 1.7 in)	
M4100-D12G	328 x 169 x 43.2 mm (12.91 x 6.65 x 1.7 in)	
M4100-D12G-POE+	331 x 208 x 43.2 mm (13.03 x 8.19 x 1.7 in)	
M4100-12GF	440 x 257 x 43.2 mm (17.3 x 10.12 x 1.7 in)	
M4100-26G	440 x 257 x 43.2 mm (17.3 x 10.12 x 1.7 in)	
M4100-50G	440 x 257 x 43.2 mm (17.3 x 10.12 x 1.7 in)	
M4100-26G-POE	440 x 257 x 43.2 mm (17.3 x 10.12 x 1.7 in)	
M4100-24G-POE+	440 x 257 x 43.2 mm (17.3 x 10.12 x 1.7 in)	
M4100-50G-POE+	440 x 310 x 43.2 mm (17.32 x 12.20 x 1.7 in)	

Weight		
M4100-50-POE		4.96 kg (10.9 lb)
M4100-D12G		1.33 kg (2.9 lb)
M4100-D12G-POE+		2.596 kg (5.73 lb)
M4100-12GF		3.665 kg (8.08 lb)
M4100-26G		3.24 kg (7.1 lb)
M4100-50G		3.63 kg (8.0 lb)
M4100-26G-POE		3.79 kg (8.36 lb)
M4100-24G-POE+		4.368 kg (9.63 lb)
M4100-50G-POE+		4.96 kg (10.9lb)
Power Consumption (all ports used, line-rate traffic, max PoE)		
M4100-50-POE		486.64W max
M4100-D12G		18.80W max
M4100-D12G-POE+		166.60W max
M4100-12GF		160.60W max
M4100-26G		31.60W max
M4100-50G		49.50W max
M4100-26G-POE		272.90W max
M4100-24G-POE+		533W max
M4100-50G-POE+		555.50W max
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 CB CCC	
Package Content		
All models	ProSAFE® M4100 series switch Power cord Rubber footpads for tabletop installation Rubber caps for the SFP sockets Mini-USB console cable with one Mini B connector and one type A connector Resource CD with links to online documentation: <i>USB drivers for the Mini-USB console; Switch MIB; ProSAFE M4100 Managed Switch Quick Installation Guide, ProSAFE M4100 Hardware Installation Guide; ProSAFE Managed Switch Command-Line Interface (CLI) User Manual; ProSAFE M4100 and M7100 Managed Switches Administration Manual</i> Technical Documentation online repository: http://www.downloads.netgear.com/docs/m4100/enu/202-11161-01/	
Rackmount models M4100-50-POE, M4100-12GF; M4100-26G; M4100-50G M4100-26G-POE; M4100-24G-POE+; M4100-50G-POE+		Rack-mounting kit
Desktop models M4100-D12G; M4100-D12G-POE+		Wall-mounting kit
Desktop models M4100-D12G		AC external power adapter magnetic mounting kit (set of magnets)
Optional Modules and Accessories		
All models: AFM735 AGM731F AGM732F	100Base-FX SFP GBIC (Multimode) 1000Base-SX SFP GBIC (Multimode) 1000Base-LX SFP GBIC (Single mode)	Ordering SKU: AFM735-10000S AGM731F AGM732F
All rackmount models: RPS5412 RPS4000 APS1000W	Optimal Power® Redundant Power Supply (one switch - RPS mode only) External/Redundant Power Supply (up to four switches - RPS or EPS mode) Power Module for RPS4000	RPS5412-100NAS /-100EUS /-100AJS RPS4000-200NES /-200AJS APS1000W-100NES /-100AJS
All desktop models: 420-10043-01	Rack mount kit for M4100 series desktop versions	420-10043-01
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	

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Supplemental support contracts		
PMB0332-10000S OnCall 24x7 3-year CAT 2	M4100-50-POE; M4100-D12G; M4100-D12G-POE+; M4100-12GF M4100-26G; M4100-26G-POE;	OnCall 24x7 extends the 90-day warranty entitled technical support (phone and email) for standard and advanced features to the length of the contract term
PMB0333-10000S OnCall 24x7 3-year CAT 3	M4100-50G; M4100-50G-POE+	
Packs Ordering Information		
M4100-50-POE Americas, Europe Asia Pacific China	48 ports Fast Ethernet PoE 802.3af, Layer 2+ software package FSM7250P-100NES FSM7250P-100AJS FSM7250P-100PRS	
M4100-D12G Americas, Europe Asia Pacific China	Desktop 12 ports Gigabit, Layer 2+ software package GSM5212-100NES GSM5212-100AJS GSM5212-100PRS	
M4100-D12G-POE+ Americas, Europe Asia Pacific China	Desktop 12 ports Gigabit PoE+ 802.3at, Layer 2+ software package GSM5212P-100NES GSM5212P-100AJS GSM5212P-100PRS	V1H2 V1H2 V1H2
M4100-12GF Americas, Europe Asia Pacific China	12 ports Gigabit Fiber, Layer 2+ software package GSM7212F-100NES GSM7212F-100AJS GSM7212F-100PRS	V1H2 V1H2 V1H2
M4100-26G Americas Europe Asia Pacific China	26 ports Gigabit, Layer 2+ software package GSM7224-200NAS GSM7224-200EUS GSM7224-200AJS GSM7224-200PRS	V2H2 V2H2 V2H2 V2H2
M4100-50G Americas Europe Asia Pacific China	50 ports Gigabit, Layer 2+ software package GSM7248-200NAS GSM7248-200EUS GSM7248-200AJS GSM7248-200PRS	V2H2 V2H2 V2H2 V2H2
M4100-26G-POE Americas, Europe Asia Pacific China	24 ports Gigabit PoE 802.3af, Layer 2+ software package GSM7226LP-100NES GSM7226LP-100AJS GSM7226LP-100PRS	
M4100-24G-POE+ Americas, Europe Asia Pacific vChina	24 ports Gigabit PoE+ 802.3at, Layer 2+ software package GSM7224P-100NES GSM7224P-100AJS GSM7224P-100PRS	V1H2 V1H2 V1H2
M4100-50G-POE+ Americas, Europe Asia Pacific China	48 ports Gigabit PoE+ 802.3at, Layer 2+ software package GSM7248P-100NES GSM7248P-100AJS GSM7248P-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.