NETGEAR®

ProSAFE® Intelligent Edge Managed Switches

Data Sheet

M4100 series

The NETGEAR® Intelligent Edge M4100 series consists of 12 fully managed switches, ranging from 8-port Fast Ethernet to 50-port Gigabit Ethernet. They are ideal for all organizations considering reliable, a ordable and simple access layer switching with CLI, advanced scripting capabilities and Layer 3 routing.

As a cost-e ective 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 f xed routes to the next hop towards the destination network are added to the routing table
- IPv4/IPv6 ingress tra f c f ltering (ACLs) and prioritization (QoS - Di f Serv)
- L3 routing is wire-speed in M4100 series hardware with 64 static routes (IPv4)

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)

Engineered for convergence

- Automatic multi-vendor Voice over IP prioritization based on SIP, H323 and SCCP protocols
- Voice VLAN for IP

Industry standard management

- Industry standard command line interface (CLI)
- Fully functional NETGEAR web interface (GUI)

Industry leading warranty

- NETGEAR M4100 series is backed by NETGEAR ProSAFE Lifetime Hardware Warranty †
- Also included ProSupport Lifetime 24x7 Advanced Technical Support*
- Also included 3-Year Next Business Day Onsite Hardware Replacement**

NETGEAR ProSAFE LIFETIME WARRANTY*

Lifetime Tech Support

NBD* 3-year on-site service

Hardware at a Glance

	FRONT						REAR					
Model Name	Form Factor	10/100 Base-T RJ45 ports	10/100/ 1000 Base-T RJ45 ports	100/ 1000X Fiber SFP ports	PoE 802.3af PoE+ 802.3at	Storage (image, confg)	Power Supply/ Powered by PoE	RPS (connec-tor)	PoE budget (PSU/ Pass through)	PoE budget (with EPS)	Man-age-ment console	Model number
M4100-D10-POE	Desktop	8	2	2 (shared)	8 PoE 802.3af	1 x USB	External/ No	-	66W	-	1 x RS232 DB9, 1 x Mini-USB (select-able)	FSM5210P
M4100-26-POE	Rack mount	24	2	2 (shared)	24 PoE 802.3af		Internal/ No	1 (RPS)	380W	-		FSM7226P
M4100-50-POE	Rack mount	48	2	2 (shared)	48 PoE 802.3af		Internal/ No	1 (RPS or EPS)	380W	Up to 740W (EPS)		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
M4100-12G-POE+	Rack mount	-	12	4 (shared)	12 PoE+ 802.3at		Internal/ No	1 (RPS)	380W	-		GSM7212P 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

M4100-D10-POE is a desktop 8 x 100Base-T PoE version, Layer 2+

- 2 Gigabit ports with 2 shared SFP
- External PSU, fanless
- 66W budget

M4100-26-POE is a 24 x 100Base-T PoE version, Layer 2+

- 2 Gigabit ports with 2 shared SFP
- Internal PSU with RPS
- 380W budget

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

Powered by PoE

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

M4100-12G-POE+ is a 12 x 1000Base-T PoE+ version, Layer 2+

- 4 shared SFP
- Internal PSU with RPS
- 380W 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

	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	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, QoQ, Private VLANs	LLDP-MED, RADIUS, 802.1X, timer	Yes (Port-based, Subnet, VLANs, Loopback)	all models

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:

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Modern access layer features highlights

Layer 3 hardware with L2+ software affordability	
M4100 series models are built upon L3 hardware platform while Layer 2+ so□ware package allows for better budget optimization	• 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+ so□ware package provides straight forward IP static routing capabilities for physical interfaces, VLANs and subnets	• Fast Ethernet 802.3af PoE: M4100-D10-POE (8 ports desktop); M4100-26-POE (24 ports); 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); M4100-12G-POE+ (12 ports); M4100-24G-POE+ (24 ports); M4100-50G-POE+ (48 ports) • At the edge of campus networks or in the server room, static routes are o□en 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 certifed power supplies for energy high e f ciency	
Green Ethernet with Energy E f cient Ethernet (EEE) defned by IEEE 802.3az Energy E f cient Ethernet Task Force	• M4100-D12G; M4100-26G; M4100-50G; M4100-26G-POE; M4100-50G-POE+
Green Ethernet with Energy Detect Mode (unused ports automatic power o□)	• M4100-D10-POE; M4100-26-POE; M4100-50-POE; M4100-D12G-POE+; M4100-12GF; M4100-12G-POE+; M4100-24G-POE+
Increased packet bu□ering with up to 12 Mb dynamically shared accross 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, o f ces, class rooms, sales foor in retail stores, etc...)	• For secure deployment in open areas , desktop versions come with a Wall Mount Kit with four brackets • M4100-D10-POE (FSM5210P) • M4100-D12G (GSM5212) • M4100-D12G-POE+ (GSM5212P) • As an option, a Rack Mount Kit is orderable (420-10043-01) *Installing M4100 desktop series on a Wall*

Modern access layer features highlights

Select desktop versions also come with a set of strong magnets for mounting on any metal surface	• M4100-D10-POE (FSM5210P) • M4100-D12G (GSM5212) *Installing M4100 desktop series using Magnets*
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 simplifes 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-D10-POE; M4100-26-POE; M4100-50-POE; M4100-26G-POE)	
IEEE 802.3at Power over Ethernet Plus (PoE+) provides up to 30W per port (M4100-D12G-POE+; M4100-12G-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 compatiblity 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 transitionning 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)	

Modern access layer features highlights

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
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, o□en 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 e f ciency: 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 so f ware distribution platforms are supported for central so f ware upgrades and con f guration f les 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 tra f c 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 con f guration
IGMP Snooping for IPv4, MLD Snooping for IPv6 and Querier mode facilitate fast receivers joins and leaves for multicast streams and ensure multicast tra f c 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 di□erent VLANs
Schedule enablement
Enterprise security
Tra f c control MAC Filter and Port Security help restrict the tra f c allowed into and out of specif ed ports or interfaces in the system in order to increase overall security and block MAC address f ooding issues
DHCP Snooping monitors DHCP tra f c between DHCP clients and DHCP servers to f lter 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 spoo f ng 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 tra f c elimination
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 in f uence 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	• 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 di□erent VLAN assignment policies (Voice VLAN versus data VLAN)
802.1x MAC Address Authentication Bypass (MAB) is an alternative method for non-Radius clients	• 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 a□er 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
Double VLANs (DVLAN - QoQ) pass tra f c 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 tra f c so the tra f c 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 across 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 ro'oseee, snoop/C01 1 Tf0 -1.1

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 a□ordable 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-e□ective 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 su f cient 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-feet 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 Microso□® 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 di□erent VLAN assignment policies (Voice VLAN versus data VLAN) - providing administrators with greater fexibility 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 to 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 o□ering high-end features that have so far been reserved only for enterprise-class o□erings available at double or triple the price point.

NETGEAR®

ProSAFE® Intelligent Edge Managed Switches

Data Sheet

M4100 series

RPS4000
RPS/EPS unit for up to 4 concurrent switches

Ordering information

- Americas, Europe: RPS4000-100NES
- Asia Pacific: RPS4000-100AJS
- Warranty: 5 years

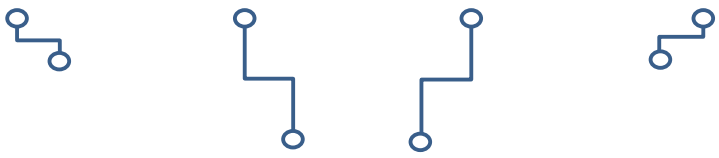
- RPS mode: provide power backup for up to four switches concurrently
  - With same level of protection as with four dedicated, “one-to-one” RPS units
- EPS mode: provide supplemental PoE power up to four switches concurrently
  - Up to 2,880W shared PoE+ budget
  - When in EPS mode, RPS4000 supersedes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

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
- 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 applications
  - Power slots can be bridged two by two for PoE switches EPS applications

Accessories

Number of APS1000W	1 POWER MODULE	2 POWER MODULES	3 POWER MODULES	4 POWER MODULES
RPS mode (Redundant Power Supply)	Up to 4 switches (non-PoE versions) M4100-26G or M4100-50G or M4100-12GF Complete protection 12V system power Or: Up to 4 switches (PoE versions) but only for 12V system power, not PoE M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+	2 switches (PoE versions) M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+ Complete protection 12V system power and -56V PoE power	3 switches (PoE versions) M4100-26-POE or M4100- 50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+ Complete protection 12V system power and -56V PoE power	4 switches (PoE versions) M4100-26-POE or M4100-50-POE M4100-12GF when PoE+ ports are used M4100-26G-POE or M4100-12G-POE+ M4100-24G-POE+ or M4100-50G-POE+ Complete protection 12V system power and -56V PoE power
EPS mode (External Power Supply)	720W PoE budget available (total) for up to 2 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+	1,440W PoE budget available (total) for up to 4 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+	2,160W PoE budget available (total) for up to 4 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+	2,880W PoE budget available (total) for up to 4 switches (PoE versions) M4100-50-POE or M4100-26G-POE M4100-24G-POE+ or M4100-50G-POE+
Example for PoE applications: (802.3af full power)	One M4100-50-POE providing 720W 46 ports full power 802.3af PoE	Two M4100-50-POE providing 720W each 96 ports full power 802.3af PoE	Three M4100-50-POE providing 720W each 138 ports full power 802.3af PoE	Four M4100-50-POE providing 720W each 192 ports full power 802.3af PoE
Example for PoE+ applications: (802.3at full power)	One M4100-24G-POE+ providing 720W 24 ports full power 802.3at PoE+	One M4100-50G-POE+ providing 1,440W 48 ports full power 802.3at PoE+	One M4100-24G-POE+ providing 720W One M4100-50G-POE+ providing 1,440W 72 ports full power 802.3at PoE+	Two M4100-50G-POE+ providing 1,440W each 96 ports full power 802.3at PoE+



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 seemless “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-D10-POE (FSM5210P)
  - 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 50/125µm	9/125µm
Gigabit SFP • Fits into M4100 series SFP interfaces (front)	AGM731F 1000Base-SX short range multimode LC duplex connector up to 275m (902 □) **AGM731F (1 unit)**	AGM731F 1000Base-SX short range multimode LC duplex connector up to 550m (1,804 □) **AGM731F (1 unit)**	AGM732F 1000Base-LX long range single mode LC duplex connector up to 10km (6.2 miles) **AGM732F (1 unit)**
Fast Ethernet SFP • Fits into M4100 series SFP interfaces (front)	AFM735 100Base-FX IEEE 802.3 LC duplex connector up to 2km (1.24 miles) **AFM735-10000S (1 unit)**	AFM735 100Base-FX IEEE 802.3 LC duplex connector up to 2km (1.24 miles) **AFM735-10000S (1 unit)**	

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

Model Name	Description	Model number
M4100-D10 POE	Desktop 8 ports Fast Ethernet PoE 802.3af, Layer 2+ software package	FSM5210P
M4100-26-POE	24 ports Fast Ethernet PoE 802.3af, Layer 2+ software package	FSM7226P
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
M4100-12G-POE+	12 ports Gigabit PoE+ 802.3at, Layer 2+ software package	GSM7212P 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-D10-POE	8	2	[illegible]		

Rear	Power Supply	RPS/EPS connector	Console port (selectable)	Physical security
M4100-D10-POE	External	-	Serial RS232 DB9, Mini-USB	1 Kensington Lock Slot
M4100-26-POE	Fixed, internal	1	Serial RS232 DB9, Mini-USB	
M4100-50-POE	Fixed, internal	1	Serial RS232 DB9, Mini-USB	
M4100-D12G	External	-	Serial RS232 DB9, Mini-USB	
M4100-D12G-POE+	Fixed, internal	-	Serial RS232 DB9	
M4100-12GF	Fixed, internal	1	Serial RS232 DB9	
M4100-12G-POE+	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-D10-POE	8 ports total	2 ports total
M4100-26-POE	24 ports total	2 ports total
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
M4100-12G-POE+	-	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				

Performance Summary		
Switching fabric		
M4100-D10-POE	5.6 Gbps	

Summarori ṛ ῃ̣̇ ̈H O O fabric Line Gbp Ă̤ 5.6erfori ṛ ῃ̣̇ O

M4100-D10- ´ Line 5.6&Line 5.6 w̄̈

M4100-D10-Ո c # ч Gb p Ă̤

Line 5.6

M4100-D10-j w̄̈ d̤ ṣ ⁱ ‗ ʎ̈ µ

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	
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-D10-POE	0 dB (fanless)	Fan speed control
M4100-26-POE	<37.3 dB	
M4100-50-POE	<38.9 dB	
M4100-D12G	0 dB (fanless)	
M4100-D12G-POE+	<19.8 dB below typical acoustic o f ce ambient	
M4100-12GF	<30 dB	
M4100-12G-POE+	<35.8 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-D10-POE	298 Btu/hr	
M4100-26-POE	1,558 Btu/hr	
M4100-50-POE	1,661 Btu/hr	
M4100-D12G	64 Btu/hr	
M4100-D12G-POE+	569 Btu/hr	
M4100-12GF	548 Btu/hr	
M4100-12G-POE+	1,543 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-D10-POE	579,985 hours (~66.2 years)	102,891 hours (~11.7 years)
M4100-26-POE	242,281 hours (~27.7 years)	75,395 hours (~8.6 years)
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)
M4100-12G-POE+	422,436 hours (~48.2 years)	108,016 hours (~12.3 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 IP subnet ARP IPX	Yes Yes Yes Yes	
Subnet based VLANs	Yes	
MAC based VLANs	Yes	
Voice VLAN	Yes	
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	

NETGEAR®

ProSAFE® Intelligent Edge Managed Switches

Data Sheet

M4100 series

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 Confg		
Queue Parms confgurable per-interface	Yes	
Drop Parms confgurable per-interface	Yes	
Interface Tra f c Shaping (for whole egress interface)	Yes	
Minimum Bandwidth	Yes	
Weighted Defcit Round Robin (WDRR) Support	Yes	
Maximum Queue Weight	127	
WRED Support	Yes	

IEEE Network Protocols			
IEEE 802.3 Ethernet	IEEE 802.3az Energy E f cient 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
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	
Draf-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 specifcation	RFC 3493 – Basic Socket Interface for IPv6
RFC 2461 – Neighbor Discovery	RFC 3542 – Advanced Sockets API for IPv6
RFC 2462 – Stateless Auto Confguration	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 – Defnition of Diferentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	RFC 3260 – New Terminology and Clarifcations for DifServ
RFC 2475 – An Architecture for Diferentiated Services	RFC 3289 – Management Information Base for the Diferentiated Services Architecture (read-only)
RFC 2597 – Assured Forwarding PHB Group	Private MIBs for full confguration of DifServ, 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 Defnitions	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; RSVA/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	
Flow based mirroring	Yes	
Cable Test utility	Yes	CLI, Web GUI
Traceroute feature	Yes	
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	
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 Tra f c 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 Number supported	Yes 256	
Number of log messages bu f ered	200	
Static f lter entries Unicast MAC and source port Multicast MAC and source port Multicast MAC and destination port (only)	 20 20 256	
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 DHCP snooping bindings	16K	
Number of DHCP snooping static entries	1024	
LLDP-MED number of remote nodes	48	
Port MAC Locking Dynamic addresses per port Static addresses per port	Yes 4096 48	
sFlow Number of samplers Number of pollers Number of receivers	 32 52 8	
Radius Max Authentication servers Max Accounting servers	 5 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 Total max leases	 16 1024	
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	
Number of Host Entries (ARP/NDP) IPv4 build Static v4 ARP Entries	 512 16	including 509 user confgurable entries
Number of ECMP Next Hops per Route	1	
ACL Limits Maximum Number of ACLs (any type) Maximum Number Confgurable Rules per List Maximum ACL Rules per Interface and Direction (IPv4/L2) Maximum ACL Rules per Interface and Direction (IPv6) Maximum ACL Rules (system-wide) Maximum ACL Logging Rules (system-wide)	 50 509 509 509 4K 32	
COS Device Characteristics Confgurable Queues per Port Confgurable 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 6 28 3 50 interfaces 32 192 64 768 2304 12	
AutoVoIP number		

M4100-26-POE	440 x 257 x 43.2 mm (17.32 x 10.12 x 1.7 in)	
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)	
M4100-12G-POE+	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-D10-POE	2.8 kg (6.1 lb)	
M4100-26-POE	4.13 kg (9.1 lb)	
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)	
M4100-12G-POE+	4.021 kg (8.86 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 tra f c, max PoE)		
M4100-D10-POE	87.30W max	
M4100-26-POE	456.29W max	
M4100-50-POE	486.64W max	
M4100-D12G	18.80W max	
M4100-D12G-POE+	166.60W max	
M4100-12GF	160.60W max	
M4100-12G-POE+	452W 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 Specifcations		
Operating: Temperature Humidity Altitude	 32° to 122°F (0° to 50°C) 90% maximum relative humidity, non-condensing 10,000 f (3,000 m) maximum	
Storage: Temperature Humidity Altitude	 – 4° to 158°F (–20° to 70°C) 95% maximum relative humidity, non-condensing 10,000 f (3,000 m) maximum	
Electromagnetic Emissions and Immunity		
Certifcations	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		
Certifcations	CE mark, commercial CSA certifed (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: *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* Technical Documentation online repository: http://www.downloads.netgear.com/docs/m4100/enu/202-11161-01/	
Rackmount models M4100-26-POE; M4100-50-POE M4100-12GF; M4100-12G-POE+; M4100-26G; M4100-50G M4100-26G-POE; M4100-24G-POE+; M4100-50G-POE+		Rack-mounting kit
Desktop models M4100-D10-POE; M4100-D12G; M4100-D12G-POE+		Wall-mounting kit

Desktop models M4100-D10-POE; 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 RPS4000-100NES /-100AJS 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 Warranty†		Included, lifetime
ProSupport Lifetime 24x7 Advanced Technical Support*		Included, lifetime
Next Business Day onsite hardware replacement support**		Included, 3 years
ProSupport Service Packs		
3-year Next Business Day hardware replacement contract		
≤ 26-port versions XPressHW, Category 2	PRR0332 service contract	M4100-D10-POE; M4100-26-POE; M4100-50-POE; M4100-D12G; M4100-D12G-POE+; M4100-12GF; M4100-12G-POE+; M4100-26G; M4100-26G-POE; M4100-24G-POE+
≥ 50-port versions XPressHW, Category 3	PRR0333 service contract	M4100-50G; M4100-50G-POE+
Packs Ordering Information		
M4100-D10-POE Americas, Europe Asia Pacifc China	Desktop 8 ports Fast Ethernet PoE 802.3af, Layer 2+ so□ware package FSM5210P-100NES FSM5210P-100AJS FSM5210P-100PRS	
M4100-26-POE Americas, Europe Asia Pacifc China	24 ports Fast Ethernet PoE 802.3af, Layer 2+ so□ware package FSM7226P -100NES FSM7226P -100AJS FSM7226P -100PRS	
M4100-50-POE Americas, Europe Asia Pacifc China	48 ports Fast Ethernet PoE 802.3af, Layer 2+ so□ware package FSM7250P-100NES FSM7250P-100AJS FSM7250P-100PRS	
M4100-D12G Americas, Europe Asia Pacifc China	Desktop 12 ports Gigabit, Layer 2+ so□ware package GSM5212-100NES GSM5212-100AJS GSM5212-100PRS	
M4100-D12G-POE+ Americas, Europe Asia Pacifc China	Desktop 12 ports Gigabit PoE+ 802.3at, Layer 2+ so□ware package GSM5212P-100NES GSM5212P-100AJS GSM5212P-100PRS	 V1H2 V1H2 V1H2
M4100-12GF Americas, Europe Asia Pacifc China	12 ports Gigabit Fiber, Layer 2+ so□ware package GSM7212F-100NES GSM7212F-100AJS GSM7212F-100PRS	 V1H2 V1H2 V1H2

M4100 series

M4100-12G-POE+	12 ports Gigabit PoE+ 802.3at, Layer 2+ so□ware package	
Americas, Europe	GSM7212P-100NES	V1H2
Asia Pacifc	GSM7212P-100AJS	V1H2
China	GSM7212P-100PRS	V1H2
M4100-26G	26 ports Gigabit, Layer 2+ so□ware package	
Americas	GSM7224-200NAS	V2H2
Europe	GSM7224-200EUS	V2H2
Asia Pacifc	GSM7224-200AJS	V2H2
China	GSM7224-200PRS	V2H2
M4100-50G	50 ports Gigabit, Layer 2+ so□ware package	
Americas	GSM7248-200NAS	V2H2
Europe	GSM7248-200EUS	V2H2
Asia Pacifc	GSM7248-200AJS	V2H2
China	GSM7248-200PRS	V2H2
M4100-26G-POE	24 ports Gigabit PoE 802.3af, Layer 2+ so□ware package	
Americas, Europe	GSM7226LP-100NES	
Asia Pacifc	GSM7226LP-100AJS	
China	GSM7226LP-100PRS	
M4100-24G-POE+	24 ports Gigabit PoE+ 802.3at, Layer 2+ so□ware package	
Americas, Europe	GSM7224P-100NES	V1H2
Asia Pacifc	GSM7224P-100AJS	V1H2
vChina	GSM7224P-100PRS	V1H2
M4100-50G-POE+	48 ports Gigabit PoE+ 802.3at, Layer 2+ so□ware package	
Americas, Europe	GSM7248P-100NES	
Asia Pacifc	GSM7248P-100AJS	
China	GSM7248P-100PRS	

† Lifetime warranty for product purchased a□er 05/01/2007. For product purchased before 05/01/2007, warranty is 5 years.

* 24x7 Lifetime Advanced Technical Support includes Remote Diagnostics performed by our technical experts for prompt resolution of technical issues.

** 3-year Next business day onsite hardware replacement support included: see http://onsite.netgear.com for coverage, availability and terms and conditions.

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