NETGEAR®

ProSAFE® M6100 Chassis Series

Chassis Standards Redefined



M6100 series

The new ProSAFE M6100 Chassis series is set to revolutionize how SMBs deploy high performance, highly resilient, fully redundant and future proof switched networks from the Core to the Edge – without hurting or exhausting IT budgets. The NETGEAR® LAN Access and Aggregation Chassis M6100 series delivers L2/L3/L4 and IPv4/IPv6 rich services for enterprise edge and SMB core deployments, as well as 1G/10G mixed infrastructures in server rooms. Innovative distributed fabric provides non-stop forwarding resiliency and world-class availability – including passive backplane, hitless failover, redundant fabric and redundant management – without having to pay the exorbitant acquisition and maintenance costs associated by other networking vendors in this class.





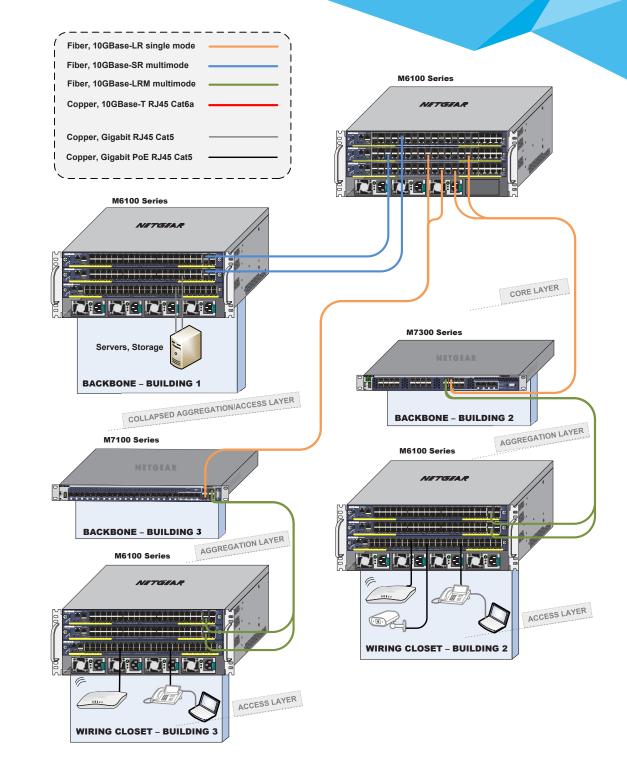


Chassis Standards Redefined

NETGEAR M6100 Chassis Series will be instrumental in helping organizations to consolidate and rationalize their switched infrastructure from the access layer to the core of their network. As a truly flexible platform, it delivers unrivalled capabilities to meet the needs in either – without exhausting IT budgets.

Its versatility makes it appealing as an "all-in-one" story to challenge traditional chassis vendors offering multiple, but confusing options and complexity.

The real competitive advantage comes from also being able to simultaneously add more capacity and capability to midsize networks that can easily and quickly adjust to changing business needs.



Get started today with NETGEAR M6100 series



Offering the densest Gigabit and 10G port solution in a 4U footprint, the M6100 is a fully distributed fabric, passive backplane solution with full management and power redundancy – as standard. UPOE capability extends its potential and delivers true investment protection to leverage today and tomorrow's evolving powered devices.

• An ideal platform for virtualized, convergence and surveillance environment

-Designed for use at the center of a small to mid-sized organization, or as an aggregated or access solution in a larger campus or mid-sized enterprise branch network, the application scenarios for the M6100 are both wide and diverse. For those who require a resilient Gigabit connectivity option to the desktop or 10G for virtualized server and storage needs through to large IP camera surveillance environments, the M6100 provides the markets fastest backplane speeds with hitless failover to deliver enterprise grade service levels excellence for SMBs.

• All the hallmarks of a chassis with associated benefits but at fixed stackable price points

- -Integrated supervisor blades NO need for separate or spare supervisor blades. Slot 1 is the primary supervisor with slot 2 the default back-up supervisor
- -PoE/PoE+/UPOE flexibility NO separate PoE blades required. Simply add PoE daughter cards to any Gigabit blade to introduce PoE as and when required
- -480Gbps inter-module backplane performance NO performance compromise. With up to 10 x performance of fixed stackable solutions with similar port counts, value performance ratios are unrivalled
- Distributed fabric, passive backplane NO single point of failure with management and power backup and distributed link aggregation across multiple chassis arrangements
- -L2/L3/L4 routing as standard NO additional licensing costs or annual maintenance contracts to inflate prices and jeopardise sales

Class leading support services as standard

- All M6100 Chassis series products come with Lifetime Warranty, Lifetime Next Business Day and Lifetime Technical online support included - at no extra cost.







M6100 Series Features

The M6100 switch series consists of Gigabit access layer and 10 Gigabit distribution layer switches in the NETGEAR modular chassis switch product line. The M6100 switch series offers high-quality, high-density chassis alternative to stackable switches in campus LAN and midsize organizations demanding networks. With more than 1.4 Tbps switching and routing capacity, passive backplane, management and fabric nonstop forwarding redundancy, the M6100 series delivers world-class resiliency and scalability. Ultimately, operating software and system management features take the complexity out of delivering L2/L3/L4 rich services for enterprise edge and SMB core deployments.

NETGEAR M6100 series key features:

- Proficient access layer in campus LAN networks, and competent distribution or core layer for midsize organizations networks
- Advanced Layer 2, Layer 3 and Layer 4 feature set no license required including PBR, BGP, DCBX, PFC, ETS and FCoE FIP
- Innovative distributed fabric, with nonstop forwarding and hitless failover redundancy between supervisory I/O modules
- Up to 144 (Gigabit) ports, or 72 (10 Gigabit) ports, or a combination of both in dense form factor models
- PoE+ (30 watts per port) and UPOE (60 watts per port) modular, flexible implementation
- Ultra-low latency and scalable table size with 32K MAC, 8K ARP/NDP, 4K VLANs, 12K routes

NETGEAR M6100 series PoE features:

- Any Gigabit copper blade can receive PoE+ or UPOE daughter cards for easy upgrade/ downgrade and best investment protection
- Up to 3,000W PoE budget is provided by internal power supplies when 6,000W are available with additional 1U power shelf
- All set for rapid proliferation of PoE/PoE+ devices, such as IP telephony endpoints, 802.11n / 802.11ac access points and IP security cameras
- Future-proof 60W UPOE power delivered to next-gen VDI clients or physical security devices; UPOE is backward compatible with PoE/PoE+

NETGEAR M6100 series software features:

- Advanced classifier-based, time-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP transport ports) security and prioritization
- Voice VLAN with SIP, H323 and SCCP protocols detection and LLDP-MED IP phones automatic QoS and VLAN configuration
- Efficient authentication tiering with successive DOT1X, MAB and Captive Portal methods for streamlined BYOD
- Best-in-class IPv4/IPv6 static and dynamic routing including Proxy ARP, OSPF, BGP, Policy-based routing and automatic 6-to-4 tunneling
- $\cdot \ \, \text{Enhanced IPv4/IPv6 multicast forwarding with IGMPv3/MLDv2 Querier and Control Packet} \\ \ \, \text{Flooding protection} \\$

NETGEAR M6100 series resiliency and availability features:

- Passive backplane, distributed redundant fabric and redundant management provide hitless, nonstop forwarding failover protection for always-on availability
- Redundant N+1 power protection contributes to business continuity management
- Distributed Link Aggregation across all I/O blades allows for multi-resiliency and advanced load balancing capabilities
- Multi Chassis Link Aggregation (MLAG) between two M6100 switches overcomes limitations
 of Spanning Tree, increasing bandwidth while preserving redundancy
- Per VLAN Spanning Tree and Per VLAN Rapid Spanning Tree (PVSTP/PVRSTP) offer interoperability with PVST+ infrastructures

NETGEAR M6100 series management features:

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

NETGEAR M6100 series warranty and support:

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

Hardware at a Glance

		F	RONT		REAR		SIZE	
Model name	Form-Factor	I/O Slots	PSU Bay	Fan Tray	External PSU Bay	Height	Depth	Model number
M6100-3S	Chassis	3 open line-card slots	4 power supply slots (N+1)	1 fan tray slot (front-to-back)	Connectors RPS/EPS	4U height	17.39 in (44.16 cm)	XCM8903
			of 144 RJ45 10/100/1000 po	1+1 redundancy with hitless failove rts or 120 SFP 100/1000 ports, 7 BASE-X ports, or a combination.	er and non-stop forwarding. 2 RJ45 10GBASE-T ports or 48 SFP+	6.93 in (17.59 cm)		

Model name	Form-Factor	10/100/1000 BASE-T RJ45 ports	100/1000X Fiber SFP ports	100/1000/10G BASE-T RJ45 ports	1000/10GBase-X Fiber SFP+ ports	POE+ or UPOE upgradeable	Out-of-band Management (Ethernet)	Management Console (Serial)	Storage (image, config,log files)	Model number
XCM8948	I/O Blade	48	-	-	-	Yes		1 x RJ45 RS232 (straight-through wiring) 1 x Mini-USB	1 x USB	XCM8948
XCM8944	I/O Blade	40	-	2	2 (independent)	Yes	1 x RJ45 Ethernet OOB			XCM8944
XCM8944F	I/O Blade	-	40	2	2 (independent)	-	10/100/1000			XCM8944F
XCM8924X	I/O Blade	-	-	24	16 (shared with 10GBASE-T)	-	(service port)			XCM8924X

		ACCESSORIES	
Model name	Form-Factor		Model number
XCM89P	Daughter Card	Add PoE+ 802.3at functionality to XCM8948 and XCM8944 blades (1 daughter card per blade required; up to 30W per 1G RJ45 port; backward compatible with PoE)	XCM89P
XCM89UP	Daughter Card	Add UPOE functionality to XCM8948 and XCM8944 blades (1 daughter card per blade required; up to 60W per 1G RJ45 port; backward compatible with PoE+/PoE)	XCM89UP
APS1000W	Power Supply	PSU 1,000W AC (up to four PSUs in M6100-3S chassis; up to four more PSUs in RPS4000v2 external power supply bay)	APS1000W
AFT603	Fan Tray	Fan Tray for M6100-3S chassis (front-to-back cooling principle; one fan tray per chassis required)	AFT603
RPS4000v2	External PSU Bay	Additional 1U power shelf(RPS/EPS unit with four open power supply slots)	RPS4000v2

		POWER OVER ETHERNET										
	110V AC in					220V / 230V / 240V AC in						
Examples of configuration	1 x daug	M8944 hter card XCM89UP	1 x XCM8944 1 x XCM8948 2 x daughter cards XCM89P or XCM89UP		1 x XCM8944 2 x XCM8948 3 x daughter cards XCM89P or XCM89UP		1 x XCM8944 1 x daughter card XCM89P / XCM89UP		1 x XCM8944 1 x XCM8948 2 x daughter cards XCM89P or XCM89UP		1 x XCM8944 2 x XCM8948 3 x daughter cards XCM89P or XCM89UP	
(Watts)	PoE Budget N/N+1	40 ports PoE+ or UPOE	PoE Budget N/N+1	88 ports PoE+ or UPOE	PoE Budget N/N+1	136 ports PoE+ or UPOE	PoE Budget N/N+1	40 ports PoE+ or UPOE	PoE Budget N/N+1	88 ports PoE+ or UPOE	PoE Budget N/N+1	136 ports PoE+ or UPOE
4U height - 1 x PSU	570W/ -	14.2W per port	510W/ -	5.7W per port	450W/ -	3.3W per port	840W/ -	21W per port	780W/ -	8.8W per port	720W/ -	5.2W per port
4U height - 2 x PSU	1050W/570W	26.2W per port	990W/510W	11.2W per port	930W/450W	6.8W per port	1470W/840W	36.7W per port	1410W/780W	16W per port	1350W/720W	9.9W per port
4U height - 3 x PSU	1610W/1050W	40.2W per port	1550W/990W	17.6W per port	1490W/930W	10.9W per port	2240W/1470W	56W per port	2180W/1410W	24.7W per port	2120W/1350W	15.5W per port
4U height - 4 x PSU	2170W/1610W	54.2W per port	2110W/1550W	23.9W per port	2050W/1490W	15W per port	3010W/2240W	60W per port	2950W/2180W	33.5W per port	2890W/2120W	21.2W per port
5U height – 5 x PSU	2730W/2170W	60W per port	2670W/2110W	30.3W per port	2610W/2050W	19.1W per port	3780W/3010W	60W per port	3720W/2950W	42.2W per port	3660W/2890W	26.9W per port
5U height - 6 x PSU	3290W/2730W	60W per port	3230W/2670W	36.7W per port	3170W/2610W	23.3W per port	4550W/3780W	60W per port	4490W/3720W	51W per port	4430W/3660W	32.5W per port
5U height - 7 x PSU	3850W/3290W	60W per port	3790W/3230W	43W per port	3730W/3170W	27.4W per port	5320W/4550W	60W per port	5260W/4490W	59.7W per port	5200W/4430W	38.2W per port
5U height - 8 x PSU	4410W/3850W	60W per port	4350W/3790W	49.4W per port	4290W/3730W	31.5W per port	6090W/5320W	60W per port	6030W/5260W	60W per port	5970W/5200W	43.8W per port

Software at a Glance

	LAYER 3 PACKAGE											
Model Name	Management	IPv4/IPv6 ACL and QoS, DiffServ	IPv4/IPv6 Multicast Filtering	IPv4/IPv6 Policing and Convergence	Spanning Tree Green Ethernet	VLANs	Trunking Port Channel	IPv4/IPv6 Authentication Security	IPv4/IPv6 Static Routing	IPv4/IPv6 Dynamic Routing	Datacenter Features*	Model Number
M6100-3S	Out-of-band; Web GUI; HTTPs CLI; Telnet; SSH SNMP, MIBs RSPAN	Ingress/egress 1 Kbps shaping Time-based Single Rate Policing	IGMPv3 MLDv2 Snooping + Querier Control Packet Flooding	Auto-VoIP Auto-iSCSI Policy-based routing (PBR) LLDP-MED	STP, MTP, RSTP PV(R)STP* BPDU/ STRG Root Guard EEE (802.3az)	Static, Dynamic, Voice, MAC GVRP/ GMRP QinQ, Private VLANs	Distributed LAG across all I/O slots MLAG across two chassis switches	Successive Tiering (DOT1X; MAB; Captive Portal) DHCP Snooping IP Source Guard	Port, Subnet, VLAN routing, DHCP Relay; Multicast static routes; Stateful DHCPv6 Server	IPv4: RIP, VRRP IPv4/IPv6: OSPF, BGP*, Proxy ARP, PIM-SM PIM-DM, 6-to-4 tunnels	DCBX (802.1Qaz) Priority Flow Control (PFC)Enhanced Trans- mission Selection (ETS) FCoE FIP Snooping	XCM8903

^{*} CLI only

Performance at a Glance

	TABLE SIZE											
Model Name	Passive Backplane	Fabric Speed	Routing/Switching Capacity	Throughput	High Availability	Packet Buffer CPU Latency	MAC; ARP/NDP VLANs ; DHCP	Application Route Scaling	Multicast IGMP Group Membership	IP Multicast Forwarding Entries	sFlow	Model number
M6100-3S	Each Slot provides 2 x 40G access to the backplane 80G half-duplex 160G full-duplex per slot	480 Gbps Inter-Module Distributed Fabric	1.4 Tbps Intra-Module Each Line-Card provides local line-rate capacity	357 Mpps Inter-Module 1,071 Mpps Intra-Module	Dual Supervisory Modules Fabric and Man- agement Nonstop Forwarding Failover (NSF)	1G/10G Blades: 32Mb/72Mb Packet Buffer CPU 800 Mhz 1GB RAM 64MB Flash Latency 3.7µs 10G RJ45 1.5µs 10G SFP+	32K MAC 8K ARP/NDP ARP: 1.2kpps 4K VLANs DHCP: 4K leases in 256 pools	Static: 512 RIP: 512 OSPF and BGP: 12,000 routes	2K IPv4 2K IPv6	1.5K IPv4 512 IPv6	32 samplers 52 pollers 8 receivers	XCM8903

Each Line Card provides line-rate switching and routing capacity. Each Slot provides 2 x 40G channels (80G half-duplex/160G full-duplex) access to passive backplane.

M6100-3S (XCM8903) 3-Slot 4U Base Chassis

Ordering information

- · Not orderable as a separate SKU
- Base chassis comes with M6100 starter kits
- · Warranty: Lifetime

• 3 open line-card slots

- 4 power supply slots (8 slots with additional 1U power shelf with RPS4000v2)
- Strict passive backplane requirements
- 4U height (6.93 in; 17.59 cm) and 17.39 in depth (44.16 cm)



FRONT: Base chassis with blade and PSU blank pannels



FRONT: Base chassis without blank panels



BACK: Base chassis without fan tray

XCM8948 I/O Blade Ordering information · Worldwide: XCM8948-10000S · Warranty: Lifetime	48-port 10/100/1000BASE-T RJ45 PoE, PoE+ and UPOE available as an option with XCM89P or XCM89UP daughter card
XCM8944 I/O Blade Ordering information · Worldwide: XCM8944-10000S · Warranty: Lifetime	 40-port 10/100/1000BASE-T RJ45 2-port 100/1000/10GBASE-T RJ45 (independent) 2-port 1000BASE-X/10GBASE-X SFP+ (independent) PoE, PoE+ and UPOE available as an option with XCM89P or XCM89UP daughter card
XCM8944F I/O Blade Ordering information · Worldwide: XCM8944F-10000S · Warranty: Lifetime	 40-port 100BASE-X/1000BASE-X SFP 2-port 100/1000/10GBASE-T RJ45 (independent) 2-port 1000BASE-X/10GBASE-X SFP+ (independent)
XCM8924X I/O Blade Ordering information · Worldwide: XCM8924X-10000S · Warranty: Lifetime	24-port 100/1000/10GBASE-T RJ45 16-port 1000BASE-X/10GBASE-X SFP+ (shared with 16 first 10GBASE-T ports)

XCM89P • Adds PoE (802.3af) and PoE+ (802.3at) functionality to XCM8948 or XCM8944 blade **Daughter Card** · One daughter card per blade Ordering information • Worldwide: XCM89P-10000S · Warranty: Lifetime XCM89UP • Adds PoE (802.3af), PoE+ (802.3at) and UPOE functionality to XCM8948 or XCM8944 blade Daughter Card · One daughter card per blade Ordering information Worldwide: XCM89UP-10000S · Warranty: Lifetime **APS1000W** · C15 connector **Power Supply Unit** · Capacity: - 110V-240V AC power input – Up to 640W output power at 110V AC Ordering information - Up to 910W output power at 220V AC Americas, Europe: APS1000W-100NES Asia Pacific: APS1000W-100AJS · C15 connector • Warranty: 5 years • Front-to-back cooling principle **AFT603 Fan Tray** Ordering information · Worldwide: AFT603-10000S • Warranty: 5 years

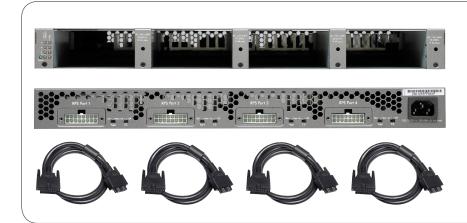
RPS4000v2 Additional 1U Power Shelf

Ordering information

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



- EPS mode: provide 4 additional PSU slots to M6100-3S chassis
 - M6100-3S power management system can use the four additional APS1000W PSUs transparently



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

M6100-44G3-POE+ (XCM8903SK) Starter Kit

Ordering information

· Worldwide: XCM8903SK-10000S



• Starter kit components ship in their individual packaging:

- M6100-3S Base chassis (XCM8903)
- 1 blade 40x1G + 4x10G (XCM8944)
- 1 PoE+ daughter card (XCM89P)
- 1 power supply unit (APS1000W)
- 1 fan tray front to back (AFT603)
- 2 blank panels for open blade slots
- 3 blank panels for empty PSU slots
- Handles for rack-mount kit
- Rack-mount kit for 2-post racks
- Sliding rails kit for 4-post racks



M6100-44GF3 (XCM8903SF) Starter Kit

Ordering information

· Worldwide: XCM8903SF-10000S



• Starter kit components ship in their individual packaging:

- M6100-3S Base chassis (XCM8903)
- 1 blade 40xSFP + 4x10G (XCM8944F) 3 blank panels for empty PSU slots
- 1 power supply unit (APS1000W)
- 1 fan tray front to back (AFT603)
- 2 blank panels for open blade slots
- Handles for rack-mount kit
- Rack-mount kit for 2-post racks



M6100-24X3 (XCM8903SX) Starter Kit

Ordering information

· Worldwide: XCM8903SX-10000S



• Starter kit components ship in their individual packaging:

- M6100-3S Base chassis (XCM8903)
- 1 blade 24x10GBASE-T and 16 shared SFP+ (XCM8924X)
- 1 power supply unit (APS1000W)
- 1 fan tray front to back (AFT603)
- 2 blank panels for open blade slots
- 3 blank panels for empty PSU slots
- Handles for rack-mount kit
- Rack-mount kit for 2-post racks
- Sliding rails kit for 4-post racks



Accessories

GBIC SFP and SFP+ Optics for M6100 series

Ordering information	Multimo	de Fiber (MMF)	Single mode Fiber (SMF)
Worldwide: see table belowWarranty: 5 years	OM1 or OM2 62.5/125µm	OM3 or OM4 50/125μm	9/125µm
10 Gigabit SFP+	AXM763	AXM763	AXM762
	10GBase-LRM long reach multimode 802.3aq - LC duplex connector	10GBase-LRM long reach multimode 802.3aq - LC duplex connector	10GBase-LR long reach single mode LC duplex connector
3	up to 220m (722 ft)	up to 260m (853 ft)	up to 10km (6.2 miles)
	AXM763-10000S (1 unit)	AXM763-10000S (1 unit)	AXM762-10000S (1 unit) AXM762P10-10000S (pack of 10 units)
		AXM761	AXM764
Fits into XCM8944, XCM8944F SFP+ interfaces		10GBase-SR short reach multimode LC duplex connector	10GBase-LR LITE single mode LC duplex connector
Fits into XCM2924X SFP+ interfaces		OM3: up to 300m (984 ft) OM4: up to 550m (1,804 ft)	up to 2km (1.2 mile)
		AXM761-10000S (1 unit) AXM761P10-10000S (pack of 10 units)	AXM764-10000S (1 unit)
Gigabit SFP	AGM731F	AGM731F	AGM732F
WITGHA	1000Base-SX short range multimode LC duplex connector	1000Base-SX short range multimode LC duplex connector	1000Base-LX long range single mode LC duplex connector
Sales in Francisco	up to 275m (902 ft)	OM3: up to 550m (1,804 ft)	up to 10km (6.2 miles)
	AGM731F (1 unit)	OM4: up to 1,000m (3,280 ft)	AGM732F (1 unit)
Fits into XCM8944F SFP interfaces		AGM731F (1 unit)	
• Fits into XCM8944, XCM8944F SFP+ interfaces			
Fits into XCM2924X SFP+ interfaces			
Fast Ethernet SFP	AFM735	AFM735	
	100Base-FX IEEE 802.3	100Base-FX IEEE 802.3	
E. M. C. S.	LC duplex connector	LC duplex connector	
	up to 2km (1.24 miles)	up to 2km (1.24 miles)	
Fits into XCM8944F SFP interfaces	AFM735-10000S (1 unit)	AFM735-10000S (1 unit)	

AGM734 1000Base-T Gigabit RJ45 SFP

Ordering information

- · Worldwide: AGM734-10000S
- · Warranty: 5 years



- 1 port Gigabit RJ45 for XCM8944F blade (SFP ports)
- Supports only 1000Mbps full-duplex mode
- Up to 100m (328 ft) with Cat5 RJ45 or better
- $\boldsymbol{\cdot}$ Conveniently adds copper connectivity density to M5300–28GF3 fiber switch

Direct Attach Cables for M6100 series

Ordering information	SFP+ to SFP+						
Worldwide: see table below Warranty: 5 years	1 meter (3.3 ft)	3 meters (9.8 ft)					
• Fits into XCM8944, XCM8944F SFP+ interfaces • Fits into XCM2924X SFP+ interfaces	AXC761 10GSFP+ Cu (passive) SFP+ connectors on both end AXC761-10000S (1 unit)	AXC763 10GSFP+ Cu (passive) SFP+ connectors on both end AXC763-10000S (1 unit)					





* 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.