NETGEAR®

100GE-Enabled Managed Switches

M4500 series

Introducing two new, preconfigured M4500 100GE switches: M4500-32C and M4500-48XF8C. The trend of moving matrix switching into the Ethernet network is accelerating and a new class of switches has come to market. Combining the configurability of a matrix switch with the power and scalability of Ethernet, they support hundreds of AV over IP endpoints, at a price point dramatically lower than comparable matrix switches. The Layer 3 feature set includes static and dynamic routing with VRRP, OSPF, BGP, VRF-Lite and PIM. Removing the need for PIM routing, these new switches offer IGMP Plus and greatly simplify system architectures with the same well-known IGMP techniques across the entire AV over IP network while still operating at Layer 2. Installers opting to use M4500-48FXC switch in their installation will find that it is already preconfigured out of the box. It comes with 48 10G Fiber ports with 8 100G uplink ports with true AV and multicast Zero Touch network configuration. Connect AV over IP encoders and decoders, and power on the switch. It just works! Then use the M4500-32C switch to aggregate the edge switches for a complete set up in large projects up to 320x320 SDVoE (10Gb) devices in a single architecture.

Key features

- Cost effective 100G aggregation and 10G access layer for AV deployments and redundant spine & leaf topologies
- Zero Touch AV-over-IP with pre-configured L2 Multicast on all models (10G AV encoders and decoders) and SDVoE-ready
- Advanced Layer 3 feature set including IP Multinetting/CIDR, Static, PBR, VRRPv2, OSPFv3, PIM-SM, VxLAN, BGP4, VRF-Lite
- Optimized for "Spine and Leaf" redundant AV installations, with or without MLAG between spine switches
- Up to 320 TX / 320 RX (10 Gigabit) nodes all line rate with each other in a redundant spine and leaf architecture
- 2 power supply units (APS750W) and 6 redudant fan trays (AFT402) pre-installed for 1+1 power and 4+2 fan redundancy
- Ultra-low latency (spine 0.13µs @100G; leaf 0.119µs @10G) and scalable table size (32K MAC, 8K ARP, 4K VLANs, 32K routes)

Software

- Advanced classifier-based, time-based hardware implementation for L2 (MAC), L3 (IP) and L4 (UDP/TCP) security and prioritization
- Selectable Port-Channel / LAG (802.3ad - 802.1AX) L2/L3/L4 hashing for fault tolerance and load sharing with any Ethernet channeling
- Up to 64 Link Aggregation Groups (LAG, Port-Channel, LACP) with 32 ports per LAG and Multi-chassis Link Aggregation (MLAG)
- Comprehensive IPv4/IPv6 static and dynamic routing including IP Multinetting/CIDR, PBR, VRRPv2, OSPFv3, PIM-SM6, BGP4, VRF-Lite
- Enhanced IPv4/IPv6 multicast forwarding with IGMPv3/MLDv2 and IGMP Plus enhancement at the VLAN level
- IGMP Plus enhanced implementation for automatic multicast across a L2 network (igmp-plus <vlan-id> easy macro-command)
- High performance IPv4/IPv6 multicast routing with PIM-SM and PIM-SM6 associated with unicast static routes, or other L3 protocol
- Advanced IPv4/IPv6 security including malicious code detection, DHCP Snooping, IP Source Guard, and Control Plane Policing (CoPP)
- Priority-Based Flow Control (PFC), DCBX Bridging, Enhanced Transmission Selection (ETS) and VXLAN Gateway for server installations

Availability

- Two (2) redundant, modular power supplies are pre-installed contributing to business continuity management
- Six (6) hot-swappable fan trays are pre-installed for 4+2 fan redundancy
- Spine and leaf architecture with every leaf switch (10G/25G access) connecting to every spine switch (distributed 100G core)
- Up to 48 paths ECMP routing for load balancing and redundancy
- Link Dependency feature enables or disables ports based on the link state of different ports

Management

- Industry standard SNMP, RMON, MIB, LLDP, AAA, sFlow and RSPAN remote mirroring implementation
- Service port for out-of-band 1 Gigabit Ethernet management (OOB)
- Standard RS232 straight-through RJ45 for local management console (USB 2.0 to RS232 converter with PL203 chipset is advised)
- Non-Disruptive Configuration for applying a new configuration file without disrupting the operation of unchanged features
- Industry standard command line interface (CLI) only

NETGEAR Warranty

- M4500 series is backed by a NETGEAR ProSAFE® Limited Lifetime Hardware Warranty*
- Lifetime Next Business Day Hardware Replacement
- ProSUPPORT 24x7 Advanced Technical Support via phone for 90 days (Remote diagnostics performed by our technical experts for prompt resolution of technical issues. ProSUPPORT coverage can be extended by purchasing one, three, or five year contracts)
- ProSUPPORT Lifetime 24x7 Advanced Technical Support via chat.

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Hardware at a Glance

			FRONT		REAR		MANAGEMENT	
Model name	Form-Factor	Switching Fabric	25GBASE-X SFP28 ports	100GBASE-X QSFP28 ports	PSU	Fans	Out-of-band Console	Model number
M4500-32C	**Full width** 1-unit 1U rack mount	6.4 Tbps		**32 ports** 1x100G; 1x50G; 1x40G; 4x25G; 4x10G **1x100G default mode**	**Modular 2 bays** 2 PSU included (1+1 redundancy): 2 x APS750W	**Modular 6 slots** 6 Fans included (4+2 redundancy): 6 x ATF402 Front-to-back 64.0dB	Ethernet: Out-of-band 1G port (Front) Console: RJ45 RS232 (Front) Storage: USB (Front)	**CSM4532**
M4500-48XF8C	**Full width** 1-unit 1U rack mount	4 Tbps	**48 ports** 1x25G; 1x10G; 1x1G 1x10G default mode	**8 ports** 1x100G; 1x100G; 1x50G; 1x40G; 4x25G; 4x10G **1x100G default mode**	**Modular 2 bays** 2 PSU included (1+1 redundancy): 2 x APS750W	**Modular 6 slots** 6 Fans included (4+2 redundancy): 6 x ATF402 Front-to-back 68.0dB	Ethernet: Out-of-band 1G port (Front) Console: RJ45 RS232 (Front) Storage: USB (Front)	**XSM4556**

Front View

M4500-32C

M4500-48XF8C

Rear View

M4500-32C

M4500-48XF8C

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Software at a Glance

	LAYER 3 PACKAGE											
Model name	Management[1]	Usability Enhancements	IPv4/IPv6 ACL and QoS, DiffServ	IPv4/IPv6 Multicast Filtering	Spanning Tree	VLANs	Trunking Port Channel	IPv4/IPv6 Authentication Security	IPv4/IPv6 Static Routing	IPv4/IPv6 Dynamic Routing	Datacenter Features	Model number
M4500 series	Out-of-band; CLI; Telnet; SSH SNMP, MIBs RSPAN Radius Users, TACACS+	Link Dependency (Enable or Disable one or more ports based on the link state of one or more different ports) CLI scheduler (Schedule fully-qualified EXEC mode CLI commands to run once, at specified intervals, at specified calendar dates and times, or upon system startup)	Ingress/ egress 1 Kbps shaping rate limit	IGMP Plus for automatic IGMP IGMPv3 MLDv2 Snooping, Proxy SSM IGMPv1,v2 Querier (compatible v3) Control Packet Flooding	STP, MTP, RSTP IEEE 802.1Q-2005 BPDU Guard	Static, Dynamic Double VLAN mod (QinQ)	Static or Dynamic LACP (LACP automatically reverts to and from Static LAG) Seven (7) L2/ L3/L4 hashing algorithms Multi Chassis Link Aggregation Group (MLAG)	Successive Tiering (DOT1X; MAB) DHCP Snooping Dynamic ARP Inspection IP Source Guard	Port, Subnet, VLAN routing DHCP Relay Multicast static routes	IP Multinetting/ CIDR PBR VRRPv2, OSPFv3 PIM-SM/ SSM BGP4, VRF-Lite	PFC DCBX CoS Queuing and ETS VXLAN Gateway	**All models**

[1] CLI only

Performance at a Glance

	TABLE SIZE												
Model name	MAC ARP/ NDP	Routing / Switching Capacity	Through-put	Application Route Scaling	Packet Buffer	Latency	IP Multicast Forwarding Entries	CPU	Multicast IGMP Group member-ship	VLANs	Link Aggregation Port Channel	sFlow	Model number
M4500-32C	32K MAC 8K ARP 2.5K NDP	6.4 Tbps Line-rate	2 Bpps	Static routes: 128 IPv4 routes: 32K IPv6 routes: 24K IP IGMP/ MLD: 2,048 PIM-SM: 1536 PIM-SMv6: 512	256 Mb	64-byte frames <0.13µs 100G QSFP28 <0.417µs 50G QSFP28 <0.15µs 40G QSFP+ <0.125µs 4x25G breakout <0.766µs 4x10G breakout	2,048 IPv4 2.048 IPv6	x86 Intel Atom® Processor C3558 8GB DDR3/ ECC RAM 128GB SSD storage	4K IPv4 / IPv6	4K VLANs	64 groups (LAG) 802.3ad with LACP 32 members/ LAG 63 groups (MLAG) Multichassis LAG 32 members/ MLAG	sFlow v5 8 sessions 416 samplers 416 pollers 8 receivers	**CSM4532**
M4500-48XF8C	32K MAC 8K ARP 2.5K NDP	4 Tbps Line-rate	2 Bpps	Static routes: 128 IPv4 routes: 32K IPv6 routes: 24K IP IGMP/ MLD: 2,048 PIM-SM: 1536 PIM-SMv6: 512	256 Mb	64-byte frames <0.117µs 25G SFP28 <0.119µs 10G SFP+ <0.129µs 100G QSFP28 <0.129µs 50G QSFP28 <0.144µs 40G QSFP+							**XSM4556**

* This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and covers unmodified hardware, fans and internal power supplies – not software or external power supplies, and requires product registration at https://www.netgear.com/business/registration within 90 days of purchase; see https://www.netgear.com/about/warranty for details. Intended for indoor use only.