

Wholesale Enterprise Switches - Official Technical Overview & Hardware Datasheet

PRODUCT OVERVIEW & MARKET POSITIONING

The Wholesale Enterprise Switches (WES) series represents a paradigm shift in high-density, cost-optimized Layer 2/Layer 3 networking infrastructure. Specifically engineered for volume procurement, managed service providers, and large-scale campus deployments, the WES portfolio delivers carrier-grade reliability without proprietary lock-in, enabling wholesale buyers to achieve sub-\$10-per-port economics while maintaining 99.999% availability.



ARCHITECTURE & CHASSIS DESIGN

The WES platform employs a fully non-blocking, distributed forwarding

architecture built around a merchant silicon switching fabric (Broadcom StrataXGS or equivalent). All chassis variants utilize a passive backplane with no active components, eliminating single points of failure. Front-to-rear airflow cooling supports standard 19-inch rack integration with hot-swappable fan trays (N+1 redundancy).

Key architectural differentiators:

- Shared packet buffer architecture with dynamic memory allocation
- Hardware-based VXLAN routing and bridging (up to 4K segments)
- Support for 10/25/40/50/100/400GbE interface densities
- Zero-touch provisioning (ZTP) via DHCP Option 66/67

HARDWARE FEATURES & FORWARDING PLANE

All WES models integrate a multicore x86 control plane CPU (1.8 GHz – 2.4 GHz) with 8 GB to 32 GB of onboard DDR4 RAM and dual M.2 SSD storage (hot-swap capable). The data plane delivers:

- Wire-rate forwarding on all ports simultaneously
- Hardware-based ACLs (TCAM: 8K – 64K entries)
- Jumbo frame support (9,216 bytes)
- Precision Time Protocol (PTP) boundary clock capability (IEEE 1588v2)

- MACsec (802.1AE) line-rate encryption on all high-speed ports
- Energy Efficient Ethernet (802.3az) per port

COMPLIANCE & STANDARDS CERTIFICATIONS

The WES series complies with global telecommunications and safety standards:

- Safety: IEC 62368-1, UL 60950-1, CSA C22.2
- EMC/EMI: FCC Part 15 Class A, EN 55032, EN 55035, VCCI
- Environmental: RoHS3, REACH, WEEE, China RoHS
- NEBS Level 3 (GR-63-CORE, GR-1089-CORE) for select ruggedized SKUs
- Energy Efficiency: ErP Lot 9, CEC Title 20, Energy Star 3.0

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	1RU / 2RU Rack-mountable Chassis
Switching Capacity	Up to 6.4 Tbps (non-blocking, full duplex)
Forwarding Rate	Up to 4.2 Bpps (64-byte packets)
MAC Address Table	256,000 entries
IPv4 Routing Table	128,000 routes (FIB)
IPv6 Routing Table	64,000 routes (FIB)

Power Supply	1+1 Redundant Hot-swap AC/DC (2000W AC or 1100W DC)
Typical Power Draw	180W (fully loaded 48-port 25GbE configuration)
Cooling	Front-to-rear, N+1 redundant fans (5 units, hot-swappable)
Dimensions (WxDxH)	442 x 508 x 44 mm (1RU) / 442 x 610 x 89 mm (2RU)
Weight (fully loaded)	8.5 kg (1RU) / 14.2 kg (2RU)
Management Interfaces	1x RJ45 Console, 1x 10/100/1000Base-T MGMT, 1x USB 3.0
Operating System	WES-OS (Linux-based, CLI/WebUI/Netconf/RESTCONF)
Max VLANs	4094 (802.1Q), 4000 VXLAN segments

OPERATIONAL SPECS MATRIX

Environmental Limits:

- Operating temperature: 0°C to 50°C (standard), -5°C to 55°C (extended)
- Storage temperature: -40°C to 85°C
- Operating humidity: 5% to 95% (non-condensing)

- Maximum altitude: 3,048 m (10,000 ft) operating

Acoustics: Maximum 55 dBA at 25°C ambient (Fan speed adaptive)

Mean Time Between Failures (MTBF):

- WES-4824: 340,000 hours (Telcordia SR-332, Issue 4)
- WES-4864: 275,000 hours (with redundant PSU)
- WES-4016: 420,000 hours (fanless SKU)



ORDERING OPTIONS & SKU GUIDE

Base Chassis SKUs:

- WES-4016-8M2C – 16-port 100GbE QSFP28, 2x 400GbE, fanless (1RU)
- WES-4824-48Y4C – 48x 25GbE SFP28, 4x 100GbE QSFP28, redundant fans

(1RU)

- WES-4864-64X – 64x 10GbE SFP+, dual hot-swap PSU (2RU)
- WES-4812-12Q – 12x 40GbE QSFP+, modular expansion slot (1RU)

Expansion Modules (hot-swappable):

- WES-EM-4CAGE – 4x 400GbE OSFP ports
- WES-EM-8Y – 8x 25GbE SFP28 ports
- WES-EM-2Q56 – 2x 56GbE QSFP-DD ports

Accessories:

- WES-PSU-AC2KW – 2000W AC power supply module
- WES-PSU-DC1KW – 1100W DC power supply (-48V)
- WES-FAN-4H – High-performance fan tray (4 units per chassis)
- WES-RMKIT-19 – 19-inch universal rack mount kit

Warranty: Limited Lifetime Hardware Warranty with Advanced Replacement

(NBD for EMEA/NA, 5-day for RoW).