10GbE Enterprise Router Price - Official Technical Overview & Hardware Datasheet

PRODUCT OVERVIEW & DATASHEET: 10GbE ENTERPRISE ROUTER PRICE PLATFORM

EXECUTIVE SUMMARY

The 10GbE Enterprise Router Price (ERP-10G Series) establishes a new benchmark for high-performance, cost-optimized Layer 3 routing in campus, data center edge, and carrier ethernet access environments. Designed to deliver non-blocking 10 Gigabit Ethernet line-rate forwarding, the platform bridges the critical gap between legacy 1GbE aggregation and full-scale carrier chassis systems. This document provides comprehensive technical specifications, hardware architecture insights, and procurement reference data for network architects, infrastructure procurement teams, and systems integrators.



HARDWARE ARCHITECTURE & SILICON

The ERP-10G series is built around a fourth-generation network processor unit (NPU) with integrated flow-based acceleration. The forwarding engine architecture decouples control plane operations from data plane forwarding, ensuring deterministic latency under full 10GbE load. Hardware offloading for IPv4/IPv6 route lookups, ACL filtering, and QoS classification is implemented via ternary content-addressable memory (TCAM) on the primary ASIC. The system supports up to 256,000 IPv4 routes and 128,000 IPv6 routes without external route processor intervention.

Physical design accommodates either fixed 8x SFP+ port configurations or a modular 2-slot chassis supporting 4-port 10GbE and 24-port Gigabit Ethernet line cards. Passive copper backplane architecture with independent power

plane isolation ensures uninterrupted operation during line card hot-swap events.

KEY FEATURES & ROUTING LOGIC

- LINE-RATE 10GbE THROUGHPUT: All SFP+ interfaces support full-duplex, non-blocking forwarding at 14.88 Mpps per port for 64-byte frames. Aggregate switching capacity of up to 160 Gbps for 8-port systems.
- ADVANCED L3 PROTOCOL SUITE: OSPFv2/v3, BGP-4, IS-IS, RIPng, and static routing with ECMP across up to 32 equal-cost paths for load balancing and redundancy.
- HARDWARE ACCELERATED SERVICES: NAT44/64, GRE tunneling, VxLAN bridging/routing, and MPLS LSR/LER functions processed in hardware to maintain line-rate performance.
- QoS & TRAFFIC MANAGEMENT: 8 hardware queues per port with Weighted Random Early Detection (WRED), strict priority, and Deficit Weighted Round Robin (DWRR) scheduling. Ingress policer and egress shaper precision down to 8 kbps increments.
- HIGH AVAILABILITY: VRRPv3, BFD (3.3ms detection), redundant hot-swappable AC/DC power supplies, and modular fan tray with N+1 cooling redundancy.

COMPLIANCE & STANDARDS

- IEEE 802.3ae (10 Gigabit Ethernet), 802.3ab (Gigabit Ethernet), 802.1Q (VLAN), 802.1ad (Q-in-Q)
- RFC 2328 (OSPFv2), RFC 5340 (OSPFv3), RFC 4271 (BGP-4), RFC 5880 (BFD)
- MEF 9 & 14 (Carrier Ethernet service definitions)
- NEBS Level 3 (GR-63-CORE, GR-1089-CORE) - optional ruggedized variant
- RoHS, REACH, CE, FCC Part 15 Class A, VCCI, RCM

TECHNICAL SPECIFICATIONS

Throughput (64-byte frames): 14.88 Mpps per 10GbE port (line-rate)

Forwarding latency (FIFO): < 1.5 microseconds (10GbE SFP+ to SFP+)

MAC address table: 32,768 entries

IPv4 route scale (FIB): 256,000 (hardware accelerated)

IPv6 route scale (FIB): 128,000 (hardware accelerated)

Maximum VLANs: 4,094 (802.1Q)

Jumbo frame support: up to 9,216 bytes

ACL entries: 2,048 (ingress and egress combined)

MTBF (25°C operational): 285,000 hours

Acoustic noise: 48 dBA typical, 52 dBA maximum

Dimensions (WxDxH): 442mm x 400mm x 44mm (1RU) for fixed model; 442mm

x 450mm x 88mm (2RU) for modular chassis

Weight: 6.2 kg (fixed) / 8.5 kg (chassis with one PSU, no line cards)

Parameter	Specification
Form Factor	1RU (fixed) or 2RU modular chassis, 19-inch rack-mountable
Switching Capacity	160 Gbps (non-blocking for 8-port system) / 320 Gbps (modular chassis backplane)
Power Supply	Dual hot-swappable redundant AC or DC (100-240V AC, -36 to -72V DC) - up to 150W per unit

ORDERING SKU INFORMATION

Base SKUs:

- ERP-10G-8F: Fixed configuration with 8x 1/10GbE SFP+ ports, integrated PSU (AC), fan tray

- ERP-10G-2S-CH: 2-slot modular chassis, passive backplane, no PSU, no fan tray (requires separate PSU and fan tray modules)

Line Card SKUs (for modular chassis):

- LC-10G-4X: 4-port 10GbE SFP+ line card, hardware MPLS/VxLAN offload

- LC-GE-24T: 24-port 10/100/1000Base-T RJ45 line card, auto-negotiation

- LC-GE-24S: 24-port 100/1000Base-X SFP line card

Power Supply SKUs:

- PSU-AC-150W: 150W AC power supply (100-240V, 50/60Hz)

- PSU-DC-150W: 150W DC power supply (-36 to -72VDC)

Accessories:

- FAN-M-ERP: Replacement modular fan tray (3 fans, hot-swappable)

- RACK-KIT-ERP: 19-inch rail kit with cable management brackets

