

Hardware Lifecycle Network Switch - Official Technical Overview & Hardware Datasheet

PRODUCT OVERVIEW & MARKET POSITIONING

The Hardware Lifecycle Network Switch (Model HLS-9000 Series) represents a paradigm shift in infrastructure longevity, delivering a unified forwarding plane engineered for 10+ years of operational service. Designed for enterprise core, cloud provider edge, and carrier aggregation layers, the platform decouples software evolution from hardware obsolescence through modular line cards, field-replaceable fabric modules, and backward-compatible power systems.



HIGH-AVAILABILITY REDUNDANCY ARCHITECTURE

All active subsystems are fully redundant: dual supervisor modules (1:1 hitless

failover), N+1 switch fabric modules, and 3+1 power supply bays (AC/DC mixed operation). The chassis implements hardware-based fault detection sub-50 ms and ISSU (In-Service Software Upgrade) without traffic loss. Mean Time Between Failures (MTBF) exceeds 450,000 hours for the base chassis, validated via Telcordia SR-332.

PROTOCOL INTEROPERABILITY & LIFECYCLE MATURITY

Full Layer 2/3 feature parity: IPv4/IPv6 dynamic routing (OSPF, BGP, IS-IS, EIGRP), MPLS, LDP, RSVP-TE, EVPN, VXLAN, and segment routing (SR-MPLS, SRv6). The hardware supports open standards (IEEE 802.1, IETF RFC) and zero-touch provisioning (ZTP). Lifecycle assurance includes an extended hardware availability window of 10 years after end-of-sale, with guaranteed spares through 2034.

DETAILED PARAMETERS

Switching Fabric: Non-blocking Clos architecture, 6.4 Tbps (HLS-9004) to 25.6 Tbps (HLS-9018). Forwarding Rate: up to 8 Bpps (billion packets per second). MAC Address Table: 512,000 entries. IPv4 FIB: 2,000,000 routes. IPv6 FIB: 1,000,000 routes. Jumbo Frame Support: 9216 bytes. Latency (64-byte frame): sub-1 μ s cut-through. Buffer Memory: 32 GB shared.

Parameter	Specification
Form Factor	4RU / 8RU / 13RU Modular Chassis
Switching Capacity	6.4 Tbps (HLS-9004) to 25.6 Tbps (HLS-9018)
Power Supply	3+1 Redundant AC (100-240V) or DC (-48V)
Fabric Redundancy	N+1 hot-swappable fabric modules
Supervisor Redundancy	1:1 hitless failover
Forwarding Rate	Up to 8 Bpps
Operating Temperature	0°C to 45°C (standard), -5°C to 55°C (extended)
MTBF (Chassis)	450,000 hours (Telcordia SR-332)
Routing Entries	2M IPv4 / 1M IPv6
MACsec Support	IEEE 802.1AE, line-rate 128/256-bit

TARGET NETWORK TOPOLOGIES

- Spine-Leaf Clos fabrics for data center (ECMP up to 256-way).
- Provider Edge (PE) aggregation with MPLS/VPLS.
- Campus core with 802.1X and MACsec line-rate encryption.

- Metro Ethernet access rings with sub-50ms ITU-T G.8032 ERPS.

