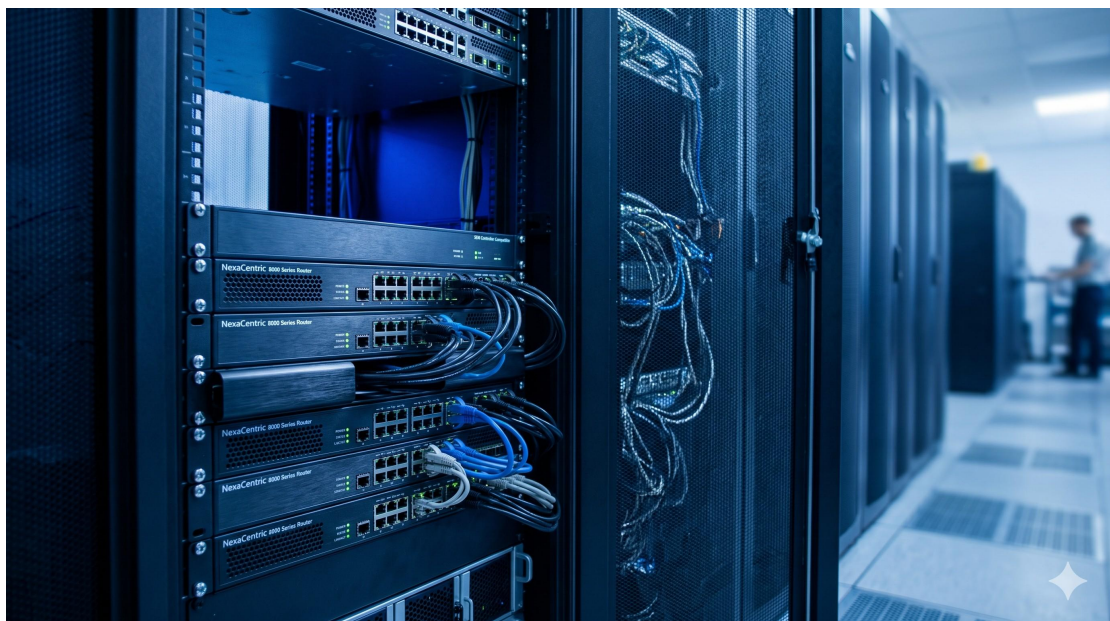


SDN Controller Compatible Routers - Official Technical Overview & Hardware Datasheet

PRODUCT OVERVIEW AND EXECUTIVE SUMMARY

The NexaCentric 8000 Series represents a paradigm shift in Wide Area Networking, engineered explicitly as a hardware-forwarding plane for Software-Defined Networking (SDN) architectures. These routers decouple the proprietary control plane from high-performance data forwarding, enabling full compatibility with open-standard SDN Controllers (OpenFlow 1.3+, NETCONF/YANG, and gRPC). Designed for the AI-driven transport era, the 8000 Series provides line-rate throughput, deep buffer telemetry, and real-time programmability.



ARCHITECTURE & CHASSIS DESIGN

The system is built upon a distributed, non-blocking CLOS fabric architecture. The central chassis supports a 2+1 redundant Fabric Card set and utilizes a 500 Gbps per-slot backplane. The hardware pipeline integrates a programmable P4-capable ASIC (NexaFlow-3), allowing operators to push forwarding behaviors directly from the controller without firmware upgrades. Key architectural tenets include: Flow-based load balancing, In-band Network Telemetry (INT) insertion, and hardware-native Segment Routing MPLS/SRv6.

HARDWARE FEATURES & PERFORMANCE ENVELOPE

- Centralized SDN Agent: Dual-core ARM Cortex-A72 control complex running a lightweight, controller-dominant OS.
- Interface Density: Up to 36 x 100G QSFP28 ports or 4 x 400G OSFP ports per 2RU slot.
- Forwarding Capacity: 3.2 Tbps per line card; 12.8 Tbps per chassis.
- Telemetry: Hardware timestamping at 1 nanosecond resolution for gNMI streaming.
- Security: MACsec 256 (802.1AE) on all front-panel ports.

COMPLIANCE & STANDARDS

- SDN Interoperability: ONF OpenFlow 1.3, OpenConfig YANG models, P4 Runtime 1.1.
- MPLS: LDP, RSVP-TE, Segment Routing (SR-MPLS, SRv6).
- L2/L3: 802.1Q, 802.1ad (Q-in-Q), OSPFv3, BGP-LS.
- Timing: SyncE, IEEE 1588v2 (PTP) Class C.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Form Factor	2RU Universal Chassis (7 slots)
Switching Capacity	12.8 Tbps (Non-blocking)
Power Supply	1+1 Hot-swappable AC/DC (3000W)
Processor Complex	Dual ARM Cortex-A72 @ 2.0 GHz
Packet Buffer	4 GB per line card (Distributed)
Forwarding Rate	9.6 Bpps (Billion packets per second)
Operating Temperature	0°C to 50°C (Standard) / -5°C to 65°C (Extended)

ORDERING OPTIONS & SKU MATRIX

Base Chassis: NXC-8K-7SLOT (7-slot universal backplane).

Line Cards:

- NXC-LC-36Q28 (36x100G QSFP28, 3.2 Tbps).

- NXC-LC-4O400 (4x400G OSFP, 3.2 Tbps).

Fabric Cards: NXC-FC-2T (2 Tbps per fabric, requires 2+1).

SDN Controller License: NXC-SDN-ENT (Full OpenFlow/P4 Runtime enablement).

Power Accessories: AC/DC PSU (3000W, 1+1 Redundant).



DEPLOYMENT ARCHITECTURE NOTE: For turnkey deployments, pair the NexaCentric 8000 with the OmniCore SDN Controller Suite (sold separately) to enable automated zero-touch provisioning (ZTP) and intent-based routing policies.