

Cisco

C1-N7706-B23S2E-R

Datasheet



Product Overview

- Cisco's Nexus 7000 Series forms the core of the Cisco Unified Fabric solution, optimized for data center reliability.
- This platform is ideal for mission-critical data centers serving enterprises, cloud operators, and managed service providers.
- The switch delivers over 83 Tbps switching capacity, offering up to 768 10G, 384 40G, or 192 100G Ethernet ports for high scalability.
- Advanced redundancy and multiple slot chassis offer exceptional availability and consistent high performance across deployments.
- The platform benefits from unified architecture, shared ASIC design, and mature NX-OS for operational uniformity and simplified upgrades.
- Designed for evolving requirements, it is the trusted choice for organizations building secure, cloud-scale data center networks.

Product Highlights

- **High-Density Port Support:** Up to 192 × 10GE, 96 × 40GE, or 48 × 100GE ports in a compact 9RU, addressing dense, high-bandwidth environments.
- **Redundant Supervisor Engines:** Two dedicated half-slot supervisors enable full redundancy, stateful failover, and seamless software upgrades.
- **Parallel Fabric Architecture:** Six fabric module slots and active channels allow the switch to achieve forwarding beyond 10.5 Tbps.
- **Efficient Cooling & Power Flexibility:** Front-to-back airflow, three hot-swappable fan trays, and up to four power supplies improve operation and future scalability.

Detailed Features



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Component	Specification
Rack Space	9RU
Module Slots	2 supervisors, 4 I/O modules
Fabric Module Slots	6



Versatile Chassis Form Factors

The Cisco Nexus 7000 Series is available as 18-slot, 10-slot, 9-slot, and 4-slot chassis, allowing flexible deployment scales. Each chassis is tailored for various density, airflow, and cable management practices, supporting growing network demands. Whether in a large core or compact edge, the series adapts to enterprise and cloud backbone requirements.

Passive Midplane Architecture

A core design concept throughout the Nexus 7000 Series is the use of a passive midplane. This midplane interconnects fabric and I/O modules using durable copper traces and physical connectors, ensuring direct, resilient data transfer without active circuitry. This approach boosts reliability and simplifies future upgrades, reducing disruption and increasing system longevity.

High-Performance Fabric Architecture

Nexus 7000 chassis leverage a distributed, scalable fabric composed of up to five modules, plus a robust midplane design. The 9-slot, 10-slot, and 18-slot versions can deliver slot bandwidths up to 550 Gbps, with forwarding capacities reaching 8.8 Tbps to 18.7 Tbps. The 4-slot variant integrates the fabric, supporting throughput up to 1.92 Tbps in a smaller system.

Future-Proof and Flexible Upgrades

With the separation of midplane and backplane designs, both hardware and technology upgrades are straightforward. Networks can evolve to support new requirements, high-speed modules, or emerging protocols, ensuring customer investment remains protected as network standards and use cases advance over time.

Energy-Efficient Operation

Cisco's power supply units operate at up to 90% efficiency, delivering more usable power while reducing waste heat. Fan modules dynamically adjust to ambient conditions, lowering energy consumption and cost. In partially filled chassis, fans power off unused rows, delivering optimal efficiency and environmental value.

Comprehensive Virtualization Support

The Nexus 7000 consolidates multiple systems using high-performance, dense switching, and robust virtualization tools. These capabilities enable device and service virtualization while maintaining non-stop reliability, as well as high performance and advanced availability.

Robust Layer 3 Features

With extensive support for industry-standard routing protocols and advanced crossbar ASIC technology, the Nexus 7000 ensures intelligent, high-throughput L3 forwarding, flexible resource allocation, and superior resilience at scale.

Reliable Data Center Consolidation

Featuring a combination of cable management and availability technologies, the Cisco Nexus 7000 Series is engineered for reliable, large-scale data center environments. The systems modularity and redundancy further ensure consistent operation as infrastructure needs expand.

Technical Specifications

Product Specifications

Feature	Value
Chassis Type	6-Slot Modular Switch (Nexus 7706)
Supervisor Modules	2 × SUP2E (Active/Standby)
Fabric Modules	6 × Fabric-3 Modules (Included)
Power Supplies	Not Included (Supports 3.5kW HV AC/DC)
Rack Units	9RU
10G Ports	192
40G Ports	96
100G Ports	48
System Forwarding Capacity	21 Tbps



Feature	Value
Max Local Switching Capacity	2.4 Tbps
Max Inter-Slot Switching Capacity	2.4 Tbps
Dimensions (H × W × D)	15.6 × 17.3 × 32 in. (39.62 × 43.9 × 81.3 cm)
Chassis Depth (with Cable Management)	38 in. (96.52 cm)
Operating Temperature	32 to 104°F (0 to 40°C)
Humidity	5% to 90% Noncondensing
Altitude	-500 to 13,123 ft. (Certified 0-6,500 ft.)
Heat Dissipation	Max 26,280 BTU/hr (Configuration-Dependent)
Seismic Rating	Zone 4 per GR-63
Floor Loading	92 lbs/sq.ft.
Minimum NX-OS Version	6.2.6 or Later
Network Management	Cisco DCNM
Programming Interfaces	XML, Python, OpenFlow, Cisco OnePK, TCL
Hot-Swap Components	Power Supplies, Fabric Modules, Fan Trays, Supervisor Engines
MIB Support	SNMPv3, v2c, v1
EMC Compliance	FCC Part 15 Class A, EN55022 Class A, VCCI Class A
Safety Compliance	UL/CSA/IEC/EN 60950-1
NEBS	SR-3580 Level 3 (Validation in Progress)
Options	Door Air Filter, Lockable Front Module Doors, Power Supply Center Cable Management

Product Comparison

Feature	C1-N7706-B23S2E-R	C1-N7009-B2S2E	Arista DCS-7280QR-C36-R
Chassis Slots	6 (2 supervisors, 4 I/O)	9 (supervisors + I/O)	1U fixed
10G Ports	192	288	32
40G Ports	96	144	36
100G Ports	48	48	0



Feature	C1-N7706-B23S2E-R	C1-N7009-B2S2E	Arista DCS-7280QR-C36-R
Switching Capacity	21 Tbps	30 Tbps	2.56 Tbps
Redundant Power	Supports up to 4	Supports up to 4	Dual AC/DC
Hot-Swap Components	Yes	Yes	Yes
Management	Cisco DCNM, XML, Python	Cisco DCNM, XML, Python	CLI, SNMP, REST API
Footprint	9RU	14RU	1RU
Application Scenario	Core/aggregation, modular	Core, modular, higher slot	Fixed data center leaf/spine

Accessories

Category	Accessories
Included Accessories	- Module Blanks - Fan Trays - Mounting Hardware
Optional Accessories	- Additional Power Supply - Supervisor Module - Air Filter/Front Door Kit



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References

[1] Cisco Systems. (2023). Cisco Nexus 7000 Series Switches Data Sheet. Retrieved from https://www.cisco.com/c/en/us/products/collateral/switches/nexus-7000-series-switches/data_sheet_c78-728187.html