



Cisco

C1-N7706-B23S2E

Datasheet

Product Overview

- The Cisco Nexus 7000 Series is Cisco's flagship modular switching platform for unified fabric in modern data centers.
- Designed for mission-critical enterprise data center and large cloud deployments, these switches serve carriers, government, and managed IT providers.
- With over 83 Tbps total switching, up to 768 ports at 10G, 384 ports at 40G, or 192 ports at 100G, it supports wide-scale, high-density networking.
- The platform features leading redundancy, hitless in-service upgrades, and industry-proven NX-OS software with continuous operation.
- Integrated system architecture and shared ASIC technology deliver consistent operational experience across Nexus 7000 and 7700 devices.
- Cisco Nexus 7700 adds reliability and simplicity to demanding data centers, delivering reliable scale and ease of management in global environments.

Product Highlights

- **High-Density Multi-Speed Ports:** Supports up to 192×1/10G, 96×40G, and 48×100G Ethernet ports for scalable deployments in a 9RU chassis.
- **Full Redundancy and ISSU:** Dual half-slot supervisor modules provide high availability, stateful switchover, and in-service software upgrades for nonstop operations.
- **Advanced Fabric Architecture:** Six fabric module slots deliver up to 10.5 Tbps for parallel data forwarding and low latency across each I/O and supervisor module.
- **Efficient Cooling and Maintenance:** Front-to-back airflow, variable-speed fans, hot-swap trays, and NEBS-compliant air filter enhance cooling, flexibility, and reliability.

Detailed Features



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Component	Specification
Rack Space	9RU
Slot Configuration	2 supervisor, 4 I/O module slots
Fabric Module Slots	6



Versatile Modular Chassis Options

The Cisco Nexus 7000 Series offers multiple chassis options (18-slot, 10-slot, 9-slot, 4-slot) for deployment flexibility in horizontal or vertical data center layouts. Enhanced cable management and tailored airflow patterns make them suitable for diverse infrastructure needs, from compact server closets to large-scale equipment rooms. This ensures easy scalability and efficient rack utilization for different scenarios, supporting both high-density aggregation and distribution.

Passive Midplane Architecture

All chassis in the Cisco Nexus 7000 Series use a passive midplane, delivering direct fabric and I/O module interconnection using copper traces. This approach eliminates active electronic components between modules, enhancing system reliability and reducing signal loss. The result is improved fault tolerance, with the midplane supporting robust crossbar switching and seamless integration as new modules or technologies are introduced.

High Bandwidth Distributed Fabric

A fully distributed fabric architecture allows up to five fabric modules working with the midplane to deliver up to 550 Gbps per slot. This enables the 9-slot, 10-slot, and 18-slot models to achieve up to 18.7 Tbps of total forwarding capacity. Such bandwidth ensures non-blocking performance for convergence, virtualization, and massive east-west data movement required by virtualized, multi-tenant, or hybrid cloud environments.

Future-Proof Upgradeability

With modular designs and swappable components, the series supports technology upgrades without large-scale replacement. Both midplane (9/10/18-slot) and backplane (4-slot) designs provide connector and trace layouts that accommodate new generations of I/O or fabric modules. This investment protection minimizes downtime during transitions and extends hardware lifecycle.

Highly Efficient Power Architecture

Cisco Nexus 7000 Series utilizes 90% efficient power supplies, significantly reducing energy waste and operational costs. Modular power options allow customized provisioning as loads change, optimizing energy use for different environments. This energy-efficient infrastructure makes these switches ideal for green data centers or locations with strict power budgets.

Adaptive Cooling System

Intelligent fan modules dynamically respond to thermal demands within the chassis, automatically reducing speed to save power when appropriate. In the 9-slot chassis, unused fan banks can be completely powered off to further cut unnecessary consumption. Hot-swappable fan trays allow maintenance without system interruption, supporting environments where uptime is critical.

Comprehensive Device Virtualization

Consolidation features such as device virtualization, high port density, and advanced reliability enable organizations to replace multiple underutilized switches. This not only increases operational efficiency but also simplifies management and reduces rack space and energy usage, ideal for rapidly growing or consolidating enterprises.

Reliability and Service Continuity

The Cisco Nexus 7000 Series is designed for nonstop operation, supporting full supervisor redundancy and rapid recovery capabilities. Features like stateful failover, In-Service Software Upgrade (ISSU), and robust passive midplane architecture safeguard mission-critical applications by minimizing risk and maximizing business uptime.

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 (Optional 3.5kW HV AC/DC Supported)
Rack Units	9RU
10G Ports	192
40G Ports	96



Feature	Value
100G Ports	48
System Forwarding Capacity	21 Tbps
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	C1-N7009-B2S2E-R	C1-N7710-B23S2E-R
Chassis Slots	6	9	10
10G Ethernet Ports	192	336	480
40G Ethernet Ports	96	48	96



Feature	C1-N7706-B23S2E	C1-N7009-B2S2E-R	C1-N7710-B23S2E-R
100G Ethernet Ports	48	24	48
Forwarding Capacity	21 Tbps	30 Tbps	42 Tbps
Power Supply Support	Up to 4 × 3.5kW HV AC/DC	Up to 6 × 3.5kW HV AC/DC	Up to 8 × 3.5kW HV AC/DC
Redundancy	Dual supervisors, Fabric redundancy	Dual supervisors, Fabric redundancy	Dual supervisors, Fabric redundancy
Dimensions (H × W × D)	15.6 × 17.3 × 32 in.	21 × 17.3 × 32 in.	24 × 17.3 × 32 in.
Network Management	Cisco DCNM	Cisco DCNM	Cisco DCNM
Hot-Swap Components	Yes	Yes	Yes
Application Scenario	Small to mid-size data centers	Medium data centers, higher density	Large-scale data centers, max scalability

Accessories

Category	Accessories
Included Accessories	- Supervisor Module (x2) - Fan Tray (x3) - Mounting Rails
Optional Accessories	- Door Air Filter - Power Supply (3.5kW HV AC/DC) - Lockable Front Module Doors



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References

[1] Cisco. (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