



Cisco

C1-N7009-B2S2E

Datasheet



Product Overview

- The Cisco Nexus 7000 Series defines a new standard in modular data center switches, featuring advanced scale and operational agility.
- Ideal for data centers, large enterprise campus cores, and service providers, it meets the needs of customers seeking mission-critical reliability.
- Each chassis offers up to 17 Tbps fabric capacity, supports 1/10/40/100 GE, and leverages Cisco NX-OS for exceptional uptime and flexibility.
- Redundant supervisor, fan, and power design ensures uninterrupted operation and investment protection.
- Centralized management and hot-swappable modules enable easy expansion and ongoing serviceability, reducing operational complexity.
- The Nexus 7000 empowers organizations with scalable architecture, unified fabric, and uncompromising performance for future-ready networks.

Product Highlights

- **High-Density Modular Chassis:** Supports up to 336 × 1/10GE, 42 × 40GE, and 14 × 100GE ports, covering large campus core and data centers.
- **Redundant Supervisors:** Two dedicated supervisor slots deliver full hardware redundancy, ensuring system reliability and availability.
- **Optimized Airflow Design:** Side-to-side airflow and 14RU compact footprint allow stacking of up to three chassis in a standard 42RU rack.
- **Hot-Swappable Accessibility:** Front access to modules and rear access to power and fans enable quick, efficient maintenance or upgrades.

Detailed Features



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Component	Specification
Module Slots	9 (2 supervisors, 7 I/O modules)

Comprehensive Chassis Options

Cisco Nexus 7000 Series is available in four form factors: 18-slot, 10-slot, 9-slot, and 4-slot, ensuring flexible choices for network expansion and deployment needs. This enables customers to select the optimal chassis configuration for their specific data center or campus environment, balancing scale and footprint requirements.

Passive Mid-Plane Design

All Nexus 7000 chassis utilize a passive mid-plane design, providing robust connectivity through dedicated copper traces linking I/O and fabric modules. This architecture minimizes points of failure, supports hot-swappable modules, and enhances long-term reliability, ensuring uninterrupted service for critical operations.

Advanced Crossbar Fabric Switching

Switching within the chassis is performed via crossbar fabric ASICs in both I/O and fabric modules, enabling non-blocking high-speed data transfer. In the 7004 chassis, direct ASIC interconnection provides efficient data flows, sustaining high performance as network demand grows.

Scalable Forwarding Capacity

Up to five fabric modules and the advanced midplane support 550 Gbps per slot, with total forwarding capacity reaching 8.8 Tbps, 9.9 Tbps, or 18.7 Tbps, depending on the chassis type. The 4-slot model offers up to 1.92 Tbps, providing scalable throughput for evolving high-bandwidth applications.

Optimized Cooling and Cable Management

Each chassis features integrated cable management and optimized airflow designs, tailored per form factor. Side-to-side or front-to-back airflow maintains ideal temperatures and high system density, with redundancy in fans ensuring uptime even during component replacement.

Flexible Technology Upgrades

The mid-plane and backplane designs enable seamless technology upgrades. As requirements evolve, new generations of modules and fabric cards can be integrated without major infrastructure changes, maximizing investment protection.

Non-Stop Operation with NX-OS

Operating on Cisco NX-OS, the infrastructure delivers feature-rich, high-availability services. Sophisticated management and maintenance tools allow for in-service upgrades, granular monitoring, and automated recovery, resulting in reduced downtime and operational simplicity.

Future-Proof Investment

With full support for evolving standards, advanced virtualization, and pervasive services, the Nexus 7000 Series secures long-term value for mission-critical data center and enterprise backbone deployments.

Technical Specifications

Product Specifications

Feature	Value
Chassis	9-slot modular (included)
Included Components	1 × SUP2E supervisor module, 5 × FAB2 fabric modules
Power Supplies	Not included
Form Factor	Rack-mountable (14RU)
Total Slots	9 slots (1 SUP2E, 5 FAB2, 3 I/O modules available)
Maximum System Throughput	Up to 15 Tbps
Packet Forwarding Rate	Up to 720 Mpps
Power Redundancy	Supported (with additional PSUs)
Cooling Mechanism	Fan modules (included)
Dimensions (W × D × H)	17.3 in × 15.4 in × 36.5 in (43.9 cm × 39.1 cm × 92.7 cm)



Feature	Value
Operating Temperature	32°F to 104°F (0°C to 40°C)
Min Operating Temperature	32°F (0°C)
Max Operating Temperature	104°F (40°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Min Storage Temperature	-40°F (-40°C)
Max Storage Temperature	158°F (70°C)
Operating Relative Humidity	5% to 90% non-condensing
Min Operating RH	5% non-condensing
Max Operating RH	90% non-condensing
Storage Relative Humidity	5% to 95% non-condensing
Min Storage RH	5% non-condensing
Max Storage RH	95% non-condensing
Network Management	Cisco Prime
Software Compatibility	Cisco NX-OS

Product Comparison

Feature	C1-N7009-B2S2E	C1-N7004-S2E-R	C1-N9K-C9508-B2
Form Factor	9-slot modular chassis	4-slot modular chassis	8-slot modular chassis
Rack Space	14RU	7RU	13RU
Module Slots	2 supervisors, 7 I/O, 5 fabric	2 supervisors, 2 I/O	2 supervisors, 6 I/O
Fabric Throughput	Up to 15 Tbps	Up to 1.92 Tbps	Up to 172.8 Tbps
Ethernet Port Density	336 × 1/10GE, 42 × 40GE, 14 × 100GE	96 × 1/10GE, 12 × 40GE, 4 × 100GE	Up to 256 × 100GE
Supervisor Redundancy	Yes (2 slots)	Yes (2 slots)	Yes (2 slots)
Airflow Direction	Side-to-side	Side-to-back	Front-to-back
Power Supply Slots	2	2	3
Management Software	Cisco NX-OS	Cisco NX-OS	Cisco NX-OS



Accessories

Category	Accessories
Included Accessories	- Supervisor module (SUP2E) - Fabric modules (FAB2) - Fan modules
Optional Accessories	- Power Supplies - I/O Modules - SFP+ / QSFP+ Transceivers



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References

[1] Cisco. (2023). Nexus 7000 Series Switches Datasheet. Retrieved from https://www.cisco.com/c/en/us/products/collateral/switches/nexus-7000-series-switches/Data_Sheet_C78-437762.html