



Cisco

C1-N7004-S2-R

Datasheet



Product Overview

- The Cisco Nexus 7000 Series, powered by Cisco's trusted brand, delivers a robust, modular switching platform for data center networks.
- Ideal for core, aggregation, and high-density deployments, it serves enterprises, service providers, and cloud operators that require reliable, scalable switching solutions.
- It offers scalable modular chassis, supporting 1/10/40/100 Gigabit Ethernet, and delivers a fabric architecture that exceeds 17 Tbps throughput.
- Continuous system operation is supported by real-time software upgrades and a resilient Cisco NX-OS, ensuring minimal disruption.
- Easy management and virtualized services help simplify network maintenance, boost system reliability, and improve overall operational efficiency.
- The Nexus 7000 platform brings unmatched scalability, serviceability, and availability to mission-critical environments, delivering long-term value for evolving infrastructure needs.

Product Highlights

- **Flexible Port Density:** Supports up to 96 x 1/10G, 12 x 40G, and 4 x 100G Ethernet ports to match small to medium data center needs.
- **Redundant Supervisor Slots:** Two dedicated supervisor slots ensure system high availability and enable non-stop operations in critical environments.
- **Advanced Cooling Efficiency:** Side-to-rear airflow design increases density, fits in a 7RU footprint, and maximizes rack space across deployments.
- **Modular Front Access:** All modules, including power supplies and fan trays, are accessible from the front, streamlining upgrades and maintenance.

Detailed Features



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Component	Specification
Usable Rack Space	7RU
Chassis Slot Configuration	2 supervisor, 2 I/O module slots
Power Supply Slots	4



Comprehensive Chassis Options

The Nexus 7000 Series features four chassis form factors: 18-slot, 10-slot, 9-slot, and 4-slot. Each offers tailored airflow and efficient cable management, fitting diverse deployment requirements from large-scale cores to compact operation zones.

Passive Mid-Plane Design

Using a passive mid-plane architecture, the chassis provides reliable and high-speed interconnects for all fabric and I/O modules. This approach increases system MTBF and secures long-lasting performance during hardware scaling or upgrades.

High-Performance Fabric Architecture

A fully distributed fabric architecture with up to five fabric modules works with the midplane to deliver up to 550 Gbps per slot. The 4-slot chassis can reach 1.92 Tbps forwarding capacity combining hardware and built-in fabric components.

Direct Data Interconnect

In the 4-slot chassis, the backplane facilitates direct connections between I/O modules and supervisor engines. Data transfer is handled by integrated crossbar fabric ASICs, reducing latency and boosting internal data plane resilience for demanding workloads.

Continuous Modular Upgradability

The midplane and backplane designs across the Nexus 7000 Series support seamless technology upgrades, allowing customers to adapt to new needs without replacing the core chassis or disrupting service.

Nonstop System Operation

NX-OS software provides real-time system upgrades, true in-service software upgrades (ISSU), and advanced supervisor redundancy (active/standby or active/active) to guarantee network continuity in mission-critical scenarios.

Investment Protection

Flexible support for module and technology upgrades ensures long-term capital protection, as organizations can scale and evolve infrastructure with minimal downtime and hardware replacement.

Simplified Management & Serviceability

Front access to all modulesincluding hot-swappable power and fan trayssimplifies field maintenance, enabling rapid module replacement, optimal airflow management, and predictable operational support.

Technical Specifications

Product Specifications

Feature	Value
Product Type	Modular Network Switch Bundle
Chassis	1 × N7004 (7RU Modular Chassis)
Supervisors	2 × SUP2 (high availability)
Power Supplies	Not included (purchase separately)
Ports	Modular (supports various line cards)
Layer	Layer 3 (full routing capabilities)
Switching Capacity	1.92 Tbps (non-blocking)
Forwarding Rate	720 Mpps (multilayer)
Supported Fabric Modules	Up to 5 × N7K-C7004-FAB-2 (full redundancy)
Supported I/O Modules	Various N7K-Mxxx series (10G/40G/100G)
Supervisor Redundancy	Active/Standby or Active/Active (ISSU support)
Power Supply Redundancy	N+1 or N+N (depends on configuration)



Feature	Value
Dimensions (W × D × H)	17.35 in × 15.75 in × 30.1 in (44.07 cm × 40.01 cm × 76.45 cm)
Width	17.35 in (44.07 cm)
Depth	15.75 in (40.01 cm)
Height	30.1 in (76.45 cm)
Rack Units (RU)	7RU
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Humidity	5% to 95% (non-condensing)
Airflow	Front-to-Back (hot-swappable fans)
Power Supply Options	AC: N7K-AC-6.0KW / N7K-AC-7.5KW; DC: N7K-DC-6.0KW
Power Consumption	2,000–6,000W (typical, based on modules)
Management Interfaces	CLI (Cisco NX-OS), SNMPv3, XML API, SSH/Telnet
Software Features	NX-OS (modular, Linux-based), VRF, OSPF, BGP, EIGRP, PIM, VXLAN, MPLS, QoS, ACLs, FCoE & SAN support
Support Options	Cisco TAC (24/7 technical assistance), Smart Net Total Care

Product Comparison

Feature	C1-N7004-S2-R	C1-N7004-S2E-R	C1-N7009-B2S2E-R
Chassis Slots	4 slots	4 slots	9 slots
Supervisor Modules	2 x SUP2 (high availability)	2 x SUP2E (enhanced availability)	2 x SUP2E (high availability)
Switching Capacity	1.92 Tbps	1.92 Tbps	8.8 Tbps
Forwarding Rate	720 Mpps	720 Mpps	3.84 Bpps
Max Port Density	96 x 1/10G, 12 x 40G, 4 x 100G	96 x 1/10G, 12 x 40G, 4 x 100G	336 x 1/10G, 48 x 40G, 18 x 100G
Rack Units	7RU	7RU	21RU
Power Supply Slots	4	4	5



Feature	C1-N7004-S2-R	C1-N7004-S2E-R	C1-N7009-B2S2E-R
Fabric Module Support	Up to 5	Up to 5	Up to 5
Supervisor Redundancy	Active/Standby or Active/Active	Active/Standby or Active/Active	Active/Standby or Active/Active
Management Interfaces	CLI, SNMPv3, API	CLI, SNMPv3, API	CLI, SNMPv3, API
Application Scenario	Small/medium data center or core	Small/medium data center or core	Large-scale data center/core with high density

Accessories

Category	Accessories
Included Accessories	- Mounting Kit - Console Cable - Documentation Kit
Optional Accessories	- N7K-M Series Line Card - Additional Power Supply - N7K-C7004-FAB-2 Fabric Module



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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_C78-437762.html