



Cisco

C1-N5K-C5548UP-FA

Datasheet



Product Overview

- Cisco presents the C1-N5K-C5548UP-FA, a core switch in the Nexus 5500 series, optimized for modern data center environments.
- It is ideal for top-of-rack, middle-of-row, and end-of-row deployment, serving enterprises, integrators, and resellers globally.
- 32 × 10G SFP+ ports, 960 Gbps switching capacity, and hot-swappable redundancy provide high throughput, scalability, and service continuity.
- Advanced features like FCoE, Data Center Bridging, and unified fabric enable flexible and reliable data center networking.
- Easy cable management, modular power/fan design, and intuitive status indicators streamline operations and reduce maintenance complexity.
- The C1-N5K-C5548UP-FA delivers high-density connectivity, operational efficiency, and investment protection for growing enterprise data centers worldwide.

Product Highlights

- **High-Density 10G Access:** 32 × 10G SFP+ ports deliver ample capacity for data centers and flexible network expansion.
- **Unified Fabric Support:** FCoE and Ethernet features enable network consolidation and protect data center investments.
- **Intuitive Serviceability:** Front-access fan and power modules, plus visual status lights, enable simple operation and maintenance.
- **Lossless Ethernet & DCB:** DCB ensures low-latency, reliable packet delivery for demanding SAN/Ethernet convergence requirements.

Detailed Features



C1-N5K-C5548UP-FA

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Component	Specification
Ports	32 × 10G SFP+
Switching Capacity	960 Gbps
Redundancy	Dual hot-swappable power supplies
Fan Modules	2 hot-swappable fans
Form Factor	1RU



High-Density 10G Data Center Connectivity

With 32 × 10G SFP+ ports in a compact 1RU form factor, the C1-N5K-C5548UP-FA enables seamless high-speed connectivity for both rack and blade servers. This density meets evolving demands for bandwidth and ensures scalability in constrained rack spaces, helping enterprises upgrade or expand their data center network infrastructure without excessive overhead or future upgrade concerns.

Unified Network Fabric

The switch supports FCoE and unified Ethernet fabrics, allowing IT teams to consolidate storage and data traffic onto a single platform. This simplifies cabling, reduces hardware needs, and streamlines management, enabling efficient operations and significant cost savings over traditional, segmented network architectures. The FCoE feature future-proofs investments for organizations merging SAN and LAN environments.

Flexible Modular Expansion

C1-N5K-C5548UP-FA offers modular uplink expansion capabilities, supporting a range of interconnects including copper Twinax for short links and fiber optics for long runs. With field-replaceable modules, the switch adapts to diverse network needs, from traditional servers to cutting-edge virtualization, and minimizes downtime during upgrades or maintenance.

Lossless Ethernet & Data Center Bridging

Incorporated Data Center Bridging (DCB) standard ensures lossless Ethernet transmission, boosting network reliability for mission-critical applications. This is key for I/O consolidation and seamless SAN operations, handling multiple high-priority traffic flows simultaneously. DCB allows organizations to run sensitive applications over a robust, unified infrastructure.

Efficient Cooling and Power Design

Front-to-back or back-to-front airflow aligns with modern server cooling standards, ensuring optimal thermal management in dense deployments. Hot-swappable power and fan modules make maintenance easy and non-disruptive, contributing to high availability and minimizing downtime, which is crucial for mission-critical services.

Advanced Virtualization Capability

The series integrates virtual machine awareness, letting IT departments efficiently manage dynamic workloads and network segmentation. This automation and agility are essential for cloud-enabled data centers and flexible service provisioning, supporting growing virtualization trends without compromising on performance or security.

Comprehensive Layer 2/3 Switching & Management

With support for both Layer 2 and Layer 3 features under Cisco NX-OS, the switch delivers advanced routing, robust security, and multiple management interfaces. This ensures smooth integration with existing infrastructure and centralized management for distributed environments, supporting operators, integrators, and service providers.

Investment Protection & Long Lifecycle

Designed to meet current and future demands, the device offers robust hardware and a 51-year MTBF. This high reliability and continued Cisco support result in low total cost of ownership and maximize return on investment, making it a safe choice for long-term data center strategies.

Technical Specifications

Product Specifications

Feature	Value
Chassis Type	Cisco ONE Nexus 5548 UP Chassis
Form Factor	1RU
Rack Units	1
Total Ports	32
Ethernet Ports	32 × 10G SFP+
Uplink Options	Modular expansion (refer to Cisco documentation)
Switching Capacity	960 Gbps
Forwarding Rate	960 Gbps



Feature	Value
Layer Support	Layer 2 and Layer 3
Power Supplies	2 (redundant, hot-swappable)
Fans	2 (hot-swappable)
Power Consumption	450W (typical)
MTBF	452,000 hours (approx. 51.6 years)
CPU	2.1 GHz Dual-Core
DRAM	8 GB
Flash Memory	2 GB
Operating System	Cisco NX-OS
Management Interfaces	Console port (RJ-45), 1 × 1G management port (if applicable)
Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)
Humidity Range	10% to 90% (non-condensing)

Product Comparison

Feature	C1-N5K-C5548UP-FA	C1-N5672UP-4FEX-1G	C1-N7018
Port Count	32 × 10G SFP+	48 × 10G SFP+ and 6 × 40G QSFP+	Up to 768 × 10G (modular)
Switching Capacity	960 Gbps	1.44 Tbps	17.6 Tbps (max)
Form Factor	1RU	1RU	Modular chassis
Hot-Swappable Power	Yes (2)	Yes (2)	Yes (up to 4)
Fans	2 hot-swappable	3 hot-swappable	Up to 9 (redundant)
Layer Support	Layer 2 & 3	Layer 2 & 3	Layer 2 & 3
Management OS	Cisco NX-OS	Cisco NX-OS	Cisco NX-OS
Virtualization Features	VM-aware, FCoE	VM-aware, FCoE	Extensive vDC/VM awareness
Expansion Options	Modular uplink	Modular uplink	Multiple module slots



Accessories

Category	Accessories
Included Accessories	- AC Power Supply - Rack Mount Kit - Console Cable
Optional Accessories	- SFP+ Transceivers - Expansion Module



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References

[1] Cisco Systems. (2023). Cisco Nexus 5000 Series Switches Data Sheet. Retrieved from https://www.cisco.com/c/en/us/products/collateral/switches/nexus-5000-series-switches/data_sheet_c78-618603.html