



Cisco

C1-N3K-C3172TQ

Datasheet



Product Overview

- Cisco enhances modern data centers with its Nexus 3000 series, positioning the C1-N3K-C3172TQ as a high-performance, compact switch.
- Designed for enterprise, cloud, and service provider environments, it meets the needs of core and edge deployments with future-ready capacity.
- Key specs include 48 × 10/100/1000BASE-T RJ45 ports, 6 × 40G QSFP+ uplinks, 1.44 Tbps switching, and ultra-low sub-microsecond latency.
- With flexible QSFP+ breakout options and advanced protocol support, the switch offers scalability and streamlined upgrades.
- Effortless deployment and management are achieved with CLI, SNMP, RESTCONF, and robust redundancy, minimizing downtime and OPEX.
- The C1-N3K-C3172TQ drives efficient, high-throughput connectivity for data-driven organizations seeking reliability, performance, and growth.

Product Highlights

- **High Port Density:** 48 copper RJ45 ports and 6 QSFP+ uplinks provide flexibility for aggregation and fast server connectivity in dense environments.
- **Ultra-low Latency Performance:** Achieve less than 1 microsecond of latency, supporting delay-sensitive applications like financial trading and real-time analytics.
- **Advanced Protocol Support:** Native support for BGP, OSPF, VXLAN, PIM, and IGMP simplifies complex Layer 2/3 networking and multi-tenant deployments.
- **Redundant Design:** Dual hot-swappable power supplies and fans ensure high availability and minimize service interruption risks during maintenance.

Detailed Features



C1-N3K-C3172TQ

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Component	Specification
Fixed Ports	48 × 10/100/1000BASE-T (RJ45), 6 × QSFP+ (40G) (breakout capable to 4×10G)
Switching Capacity	1.44 Tbps
Forwarding Rate	1.08 Bpps
Latency	<1 µsec (64-byte packets)



High-Density, Flexible Connectivity

With 48 × 10/100/1000BASE-T RJ45 ports and 6 × QSFP+ (40G) uplinks capable of 4×10G breakout, the C1-N3K-C3172TQ supports both copper and fiber requirements in evolving data centers. This flexible port density ensures maximum scalability for server racks, aggregation, and virtualized clustering scenarios.

Wire-Speed Non-Blocking Architecture

The switch delivers up to 1.44 Tbps switching capacity and 1.08 Bpps forwarding rate. Its wire-speed, non-blocking design enables consistent performance even at maximum load, which is vital in bandwidth-intensive environments such as cloud, virtualization, and large-scale enterprise data centers.

Ultra-Low Latency Switching

The C1-N3K-C3172TQ is engineered for ultra-low latency (<1 µsec for 64-byte packets), supporting latency-sensitive applications including financial services, real-time analytics, and high-frequency trading. This ensures responsive network performance and minimized transaction times.

Comprehensive Protocol Support

Support for advanced Layer 2/3 protocols, including BGP, OSPF, VXLAN, PIM, and IGMP, allows seamless integration with multi-tenant architectures and large-scale routing. The switch meets complex enterprise network design needs while enabling software-defined networking and network virtualization.

Robust Redundancy and Resiliency

Dual 930W hot-swappable AC/DC power supplies with N+1 redundancy and front-to-back airflow with redundant fans offer increased reliability. These features reduce risk of power and cooling failures, safeguarding mission-critical systems.

Simplified Management

Multiple management options are available: CLI for advanced configuration, SNMPv3 for monitoring, and RESTCONF/NETCONF for automation. Administrators can choose the management interface that best fits their workflow, streamlining network operations and troubleshooting.

Large-Scale Network Support

A MAC address table of 128,000 entries and 4,096 VLANs ensure the switch can support large, highly segmented enterprise environments. This capability supports extensive device growth and complex traffic isolation demands.

High Availability and Durability

With a mean time between failures (MTBF) of 836,380 hours, rugged metal construction, and rich operating environment tolerances (temperature, humidity, altitude), the switch is purpose-built for 24/7 enterprise deployment demands and long-term value.

Technical Specifications

Product Specifications

Feature	Value
Chassis	1RU fixed-configuration switch
Port Configuration	48 × 10/100/1000BASE-T (RJ45) ports
Port Configuration	6 × QSFP+ (40G) ports (breakout capable to 4×10G)
Switching Capacity	1.44 Tbps
Forwarding Rate	1.08 Bpps
Latency	<1 µsec (64-byte packets)
Jumbo Frames	Up to 9216 bytes
Packet Buffer	12 MB shared
Copper Ports	48 × 1G/10G RJ45
Fiber Uplinks	6 × QSFP+ (40G)
Management Ports	1 × RJ45 Console



Feature	Value
Management Ports	1 × 10/100/1000 Management
Flash Memory	4 GB
SDRAM	8 GB
CPU	Quad-core 1.7 GHz
Power Supplies	Dual 930W AC/DC (hot-swappable, N+1 redundant)
Cooling	Front-to-back airflow with redundant fans
Max Power Draw	350W (typical)
MAC Address Table	128,000 entries
VLANs	4,096
ECMP Routes	64-way
Dimensions (H × W × D)	1.75 in (4.45 cm) × 17.3 in (43.94 cm) × 21.1 in (53.59 cm)
Operating Temperature	32°F to 104°F (0°C to 40°C)
Humidity	5% to 95% non-condensing
Altitude	0–10,000 ft (0–3,000 m)
NX-OS Version	7.0(3)I7(1) or later
Supported Protocols	BGP, OSPF, VXLAN, PIM, IGMP
Management	CLI, SNMPv3, RESTCONF, NETCONF
MTBF	836,380 hours

Product Comparison

Feature	C1-N3K-C3172TQ	C9300-48UB-A	C9300L-48PF-4X-10E
Fixed Ports	48 × 10/100/1000BASE-T (RJ45), 6 × 40G QSFP+	48 × UPOE+ (Multigigabit), 4 × 10G SFP+	48 × PoE+, 4 × 10G SFP+
Switching Capacity	1.44 Tbps	880 Gbps	216 Gbps
Forwarding Rate	1.08 Bpps	660 Mpps	161 Mpps
PoE Capability	Not supported	UPOE+/Per port 60W	PoE+ / Per port 30W
Redundant Power	Dual hot-swappable PSUs	Dual hot-swappable PSUs	Dual fixed power supplies



Feature	C1-N3K-C3172TQ	C9300-48UB-A	C9300L-48PF-4X-10E
Layer 3 Routing	BGP, OSPF, VXLAN, PIM, IGMP	OSPF, EIGRP, BGP, VRF	OSPF, EIGRP, BGP, VRF
Management	CLI, SNMPv3, RESTCONF, NETCONF	CLI, SNMP, Web UI	CLI, SNMP, Web UI
MTBF	836,380 hours	765,780 hours	765,780 hours
Application Scenario	High-density 1G/40G aggregation	Campus core/distribution, high PoE	Access with full PoE+ and 10G uplink

Accessories

Category	Accessories
Included Accessories	- Dual 930W Power Supply - Rack Mount Kit - Console Cable
Optional Accessories	- SFP+ Transceiver Modules - QSFP+ Breakout Cable - Redundant Fan Module



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