



Cisco

C1-N9K-C93180YC-FX

Datasheet



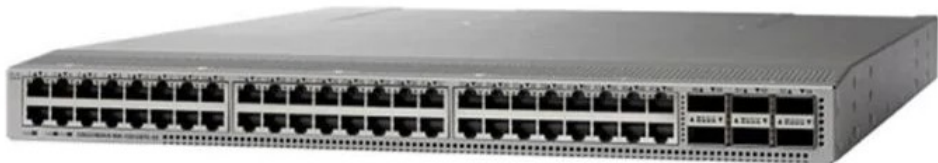
Product Overview

- Cisco's Nexus 9300-EX Series, including the C1-N9K-C93180YC-FX, defines next-generation data center switching for scalable, high-performance environments.
- It is ideal for cloud service providers, enterprises, and institutions moving to high-density, cost-effective cloud-scale deployments seeking reliability and flexible manageability.
- Supporting 24 × 10/25G SFP28 server ports and 6 × 40/100G QSFP28 uplinks, this switch delivers impressive bandwidth, large buffer memory, and advanced Layer 2/3 scalability.
- Distinct features like seamless speed migration and support for both traditional NX-OS and Cisco ACI policy-based operation highlight its versatility and innovation.
- Simplified deployment and centralized management with automation drive operational efficiency for IT professionals and integrators.
- Businesses benefit from higher performance, smooth infrastructure upgrades, and investment protection—making this switch a solid foundation for evolving data center networks.

Product Highlights

- **Architectural Flexibility:** Offers advanced SDN support including Cisco ACI and industry standards-based VXLAN EVPN for scalable, programmable data centers.
- **Extensive Programmability:** Includes Power On Auto Provisioning, DevOps integrations, and comprehensive APIs for full automation and open management.
- **Intelligent Buffer Management:** Utilizes Ciscos unique technology to optimize performance under congestion, ensuring fair bandwidth for all flows.
- **High Availability and Resilience:** Features vPC, hardware redundancy, and advanced reboot, delivering maximum network uptime and simplified Layer 2 designs.

Detailed Features



C1-N9K-C93180YC-FX

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Component	Specification
Downlink Ports	24 × 10/25G SFP28
Uplink Ports	6 × 40/100G QSFP28
Layer Support	Layer 2 & Layer 3
Management	NX-OS/ACI, CLI, API
Form Factor	1RU Fixed Switch



High Density 10/25G and 40/100G Connectivity

The C1-N9K-C93180YC-FX provides a flexible port configuration with 24 × 10/25G SFP28 and 6 × 40/100G QSFP28 uplinks, supporting seamless migration for expanding modern data centers that require massive bandwidth. This architecture is ideal for environments transitioning from 1G/10G to 25G servers and scaling up aggregation layers.

Programmable Cloud-Scale Architecture

Built on Cisco's Cloud Scale ASICs, the switch ensures high throughput, low latency, and programmable infrastructure. This architectural approach empowers network administrators to dynamically manage flows and automate operations, while optimizing performance for modern cloud and virtualization workloads.

Advanced Layer 2/Layer 3 Feature Set

The platform supports a broad suite of Layer 2/3 protocols including BGP, OSPF, VRF, VXLAN, and EVPN. This comprehensive protocol compatibility enables scalable design for both traditional and large-scale IP fabric data centers, supporting unicast and multicast at high efficiency.

Comprehensive Network Automation

Supporting Power On Auto Provisioning and deep DevOps integrations with Ansible, Chef, and Puppet, the switch simplifies configuration, reduces human error, and accelerates initial deployments. Centralized APIs allow for further extensibility and third-party management tool integration.

Intelligent Buffer and Traffic Management

Cisco's advanced buffer management technologies, such as Approximate Fair Dropping and Dynamic Packet Prioritization, efficiently allocate buffer resources between short and long-lived flows, minimizing latency and optimizing throughput even under heavy congestion.

High Availability Hardware Design

The switch incorporates critical redundancy including hot-swappable PSUs/fans and Virtual Port-Channel (vPC) capabilities. This supports simplified Layer 2 network topologies and maximizes uptime for mission-critical services.

Unified NX-OS and ACI Operation

A single platform supports both NX-OS and Cisco ACI policy-based management, ensuring investment protection and enabling organizations to transition smoothly between network architectures without forklift upgrades.

Real-Time Telemetry and Assurance

Embedded telemetry exports flow, context, and packet data every 100 ms directly from ASICs. When combined with Cisco Tetration Analytics and Network Assurance Engine, this provides real-time visibility, deep security compliance, and proactive operational assurance for large-scale environments.

Technical Specifications

Product Specifications

Feature	Value
Model	C1-N9K-C93180YC-FX
Brand	Cisco
Port Configuration	24 × 10/25G SFP28 ports; 6 × 40/100G QSFP28 uplink ports
Total Port Count	48
Downlink Speeds	1/10/25 Gbps
LPM Routes	1,792,000
IP Host Entries	1,792,000
MAC Addresses	512,000
Multicast Routes	128,000
IGMP Snooping Groups	8,000 (max 32,000)



Feature	Value
ACL Capacity (Ingress)	5,000 (single-slice)
ACL Capacity (Egress)	2,000 (single-slice)
VLANs	4,096 (127 reserved)
VRF Instances	1,000 (max 16,000)
Port Channels	512 (32 links max per channel)
ECMP Paths	64
CPU Cores	4
System Memory	24 GB
SSD	64 GB
System Buffer	40 MB
Power Supply Options	500W AC; 930W DC; 1200W HVAC/HVDC
Typical Power Consumption	260W (AC/DC)
Maximum Power Consumption	425W (AC/DC)
Fans	4 (hot-swappable)
Airflow	Port-side intake & exhaust
Dimensions	1.72 × 17.3 × 22.5 in (4.4 × 43.9 × 57.1 cm)
MTBF	238,470 hours
Management Ports	1 × RJ-45 (L1/L2 ports unused)
USB Ports	1
RS-232 Serial Ports	1
SPAN Sessions	4 active
Operating Temperature (Min)	32°F (0°C)
Operating Temperature (Max)	104°F (40°C)
Storage Temperature (Min)	-40°F (-40°C)
Storage Temperature (Max)	158°F (70°C)
Humidity	5% to 95% non-condensing
Altitude	0-13,123 ft (0-4,000 m)
Minimum NX-OS Version	9.3(2)
Minimum ACI Image	14.2.1
RoHS Compliance	Yes



Feature	Value
Safety Standards	UL 60950-1, EN 60950-1
EMC Standards	CE, FCC, VCCI Class A

Product Comparison

Feature	C1-N9K-C93180YC-FX	C9300L-48UXG2Q-10E	C1-N5K-C5672UP
Ports	24 × 10/25G SFP28, 6 × 40/100G QSFP28	48 × 1G/10G/5G/2.5G/100M Ethernet, 2 × 40G QSFP+	48 × 10G SFP+, 6 × 40G QSFP+
Total Port Count	48	48 (Data), 2 (Uplink)	54
Downlink Speeds	1/10/25 Gbps	1/2.5/5/10 Gbps	10 Gbps
Uplink Speeds	40/100 Gbps	40 Gbps	40 Gbps
LPM Route Scale	1,792,000	128,000	32,000
Typical Power Consumption	260W	220W	320W
OS/Software Support	NX-OS/ACI	IOS XE	NX-OS
Buffer Technology	Intelligent Buffer Management	Standard queues	Dynamic Buffer Allocation
Redundancy	Hot-swappable PSU & Fans	Redundant PSU (optional)	Redundant PSU & Fans
Layer 3 Protocols	Full (BGP, OSPF, VXLAN EVPN)	OSPF, RIP, EIGRP	OSPF, BGP, RIP
Target Environment	Modern, large-scale DC	Campus/Branch Aggregation	Data Center ToR

Accessories

Category	Accessories
Included Accessories	- Power Supply Module - Rack Mount Kit - Console Cable
Optional Accessories	- SFP28 Transceiver - QSFP28 Transceiver - Redundant Fan Module



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References

[1] Cisco Systems. (2023). Cisco Nexus 9000 Series Switches Datasheet. Retrieved from <https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/datasheet-c78-742283.html>