



# Cisco

# C1-N5696Q-12FEX-1G

## Datasheet



## Product Overview

- Cisco Nexus 5600 Series switches represent the latest generation in Cisco's high-performance data center platforms.
- They are ideal for large-scale enterprise applications and service providers looking to support cloud, virtualization, and unified data center requirements.
- With a 2RU form factor, this model features 12 × 1G fabric extender ports, supports up to 6 expansion modules, and delivers a 2.56 Tbps switching capacity.
- The platform offers true 10/40 GbE support, NVGRE/VXLAN network virtualization, large buffer capacity, and high programmability for modern workloads.
- Centralized management is enabled via Cisco NX-OS, simplifying deployment, maintenance, and operational oversight for complex environments.
- Nexus 5600 switches unlock efficient, scalable, and future-proof networking for virtualized, hybrid, and traditional data center deployments.

## Product Highlights

- **Optimized for Virtualization:** The Cisco Nexus 5600 switches are built to address high-density cloud and virtualization needs with robust performance and scalability.
- **Intelligent Chassis Design:** Hot-swappable power and fan modules, rear-facing ports, and efficient cable management reduce downtime and simplify operations.
- **Energy Efficient Architecture:** These switches maintain up to 90% power supply efficiency at low utilization, minimizing energy costs for data centers.
- **Advanced Monitoring Capability:** Supports up to 31 SPAN/ERSPAN sessions, enabling rich, non-disruptive traffic analysis for proactive network troubleshooting.

## Detailed Features



C1-N5696Q-12FEX-1G

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Component	Specification
Product Series	Cisco Nexus 5600
Ports	12 × 1G (FEX, with FETs included)
Form Factor	2RU
Expansion	Supports up to 6 expansion modules
Switching Capacity	2.56 Tbps



## Virtualization and Cloud Optimization

Cisco Nexus 5600 switches are designed to tackle rapidly increasing virtual machine and cloud workload demands. Their hardware and software work together to ensure high bandwidth, low latency, and seamless support for dynamic cloud deployments. This results in consistent application delivery and improved network efficiency for virtualized and hybrid environments in modern data centers.

## High Density and Resiliency

Engineered with modularity and serviceability in mind, Nexus 5600 switches provide rear-facing I/O ports and hot-swappable power and fan modules. These design choices reduce cable length, allow in-rack component replacement, and help align with data center hot/cold aisle airflow for optimal cooling and minimal maintenance disruption.

## Cutting-Edge Energy Efficiency

The power architecture of the Cisco Nexus 5600 family ensures sustained efficiency, achieving 90% power supply effectiveness even at 25% utilization. This capability helps organizations reduce operating expenses and carbon footprint while maintaining headroom for future workload scaling in demanding data centers.

## Ultra-Low Latency Networking

By leveraging cut-through switching technology, Nexus 5600 delivers approximately 1 microsecond latency regardless of packet size or features enabled. This ultra-low latency is critical for time-sensitive applications such as high-frequency trading, storage networking, or real-time analytics, ensuring minimal delay throughout the data plane.

## Advanced Traffic Visibility and Analysis

The switch enhances network monitoring with robust SPAN and ERSPAN support, allowing up to 31 concurrent sessions. These tools provide granular, non-disruptive traffic analysis and troubleshooting, improving operations and compliance in large network environments. Unused bandwidth can be dynamically allocated for monitoring, increasing efficiency.

## Dynamic Buffer Management

A flexible buffer architecture enables shared 25 MB buffers for groups of ports, and dedicated buffers for each 100G port. This design allows dynamic allocation in congestion events, preventing packet loss and maintaining high-quality service even under unpredictable traffic loads.

## Optimized Multicast and Protocol Support

Line-rate L2/L3 multicast throughput is achieved for all frame sizes, with hardware-based replication and 32,000 multicast routes. Advanced multicast protocols such as Bidir-PIM and IGMP snooping broaden application support, maximizing network efficiency for streaming or group-based data distribution.

## Comprehensive OS and Virtualization Integration

NX-OS provides an extensive feature set tailored for modern data centers, with automation, security, and scalable management. Integrated support for advanced protocols, NVGRE, and VXLAN ensures the Nexus 5600 is future-ready for evolving virtualization and cloud strategies, reducing operational complexity and risk.

# Technical Specifications

## Product Specifications

Feature	Value
Series	Cisco ONE
Product Type	Network Switch Chassis
Form Factor	2RU standalone
Fabric Extenders (FEX)	12 × 1G ports (with FETs included)
Expansion Capability	Supports up to 6 expansion modules
Forwarding Engine	Centralized architecture
Switching Capacity	2.56 Tbps
Forwarding Rate	1.2 Bpps
Management Protocols	CLI, SNMP v1/v2/v3, XML, NetFlow
Layer Support	Layer 2 & Layer 3



Feature	Value
VLAN Support	4,096 VLAN IDs
MAC Address Table	64,000 entries
Jumbo Frames	Supported (up to 9,216 bytes)
Power Supply	Dual redundant, hot-swappable
Cooling	Front-to-back airflow
Rack Units	2RU
Dimensions (H × W × D)	3.47 in × 17.3 in × 22.5 in (8.81 cm × 43.94 cm × 57.15 cm)
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

## Product Comparison

Feature	C1-N5696Q-12FEX-1G	C1-N5672UP4FEX10GT	C1-N5K-C5648Q
Form Factor	2RU standalone	1RU	2RU
Ports	12 × 1G (FEX)	48 × 10/100/1000M, 6 × 40G QSFP+, 4 × FEX module slots	48 × 10G SFP+, 4 × 40G QSFP+, 4 × FEX module slots
Expansion Capability	Supports up to 6 expansion modules	4 expansion modules	4 expansion modules
Switching Capacity	2.56 Tbps	1.44 Tbps	1.76 Tbps
Forwarding Rate	1.2 Bpps	1.07 Bpps	1.31 Bpps
Power Supply	Dual redundant, hot-swappable	Redundant, hot-swappable	Redundant, hot-swappable
Airflow	Front-to-back	Front-to-back or back-to-front	Front-to-back or back-to-front
Management	CLI, SNMP, XML, NetFlow	CLI, SNMP, XML, NetFlow	CLI, SNMP, XML, NetFlow
Jumbo Frames	Up to 9,216 bytes	Up to 9,216 bytes	Up to 9,216 bytes
Use Case	High-density FEX, cloud/DC core	High-density server access, aggregation	Data center access/aggregation



## Accessories

Category	Accessories
Included Accessories	<ul style="list-style-type: none"><li>- Power Cord</li><li>- Rack Mount Kit</li><li>- Console Cable</li></ul>
Optional Accessories	<ul style="list-style-type: none"><li>- Expansion Module</li><li>- SFP/SFP+ Transceivers</li><li>- Fan Module</li></ul>



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## References

[1] Cisco. (2023). Cisco Nexus 5600 Series Switches Datasheet. Retrieved from <https://www.cisco.com/c/en/us/products/collateral/switches/nexus-5624q-switch/datasheet-c78-733100.html>