



**Cisco**  
**C1-N5624-B-24Q**  
**Datasheet**



## Product Overview

- Cisco's Nexus 5600 Series delivers a proven and reliable Ethernet switching platform, built for advanced data center requirements.
- It targets enterprise, service provider, and cloud data center environments needing secure, high-capacity, and dependable connectivity.
- Key hardware highlights: up to 24 × 40G QSFP+ ports, expandable to 36 × 40G or 144 × 10G, 1.92 Tbps switching capacity, and microsecond latency.
- Integrated 40G/10G, FCoE, and wire-speed Layer 2/3 features offer seamless server access, combined with hot-swappable modules for flexibility.
- NX-OS software brings advanced manageability, strong virtualization, and consistent operations across bare-metal and cloud deployments.
- This series enables scalable, robust, and efficient cloud or enterprise data centers, simplifying high-density workloads with consistent performance.

## Product Highlights

- **Virtualization and Cloud Ready:** Optimized for high-density virtualization, cloud, and big data deployments with outstanding throughput and scalability.
- **Resilient Data Center Operation:** Rear-access ports, hot-swappable modules, and flexible airflow ensure efficient, serviceable, and reliable operation.
- **High Energy Efficiency:** Over 90% efficiency power supplies at low loads and design for minimal footprint and cooling demands.
- **Advanced Monitoring & Buffering:** SPAN/ERSPAN for traffic visibility, dynamic packet buffer management, and up to 31 simultaneous monitoring sessions.

## Detailed Features



### C1-N5624-B-24Q

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Component	Specification
Base Ports	24 × 40G QSFP+ (up to 96 × 10G SFP+ breakout)
Expansion Slots	1 × Generic Expansion Module (adds 12 × 40G QSFP+)
Total Maximum Ports	36 × 40G (with GEM), 144 × 10G (breakout)
Switching Capacity	1.92 Tbps



## Optimized Virtualization Performance

The Cisco Nexus 5600 switches are engineered to deliver scalable, high-speed networking that easily accommodates demanding virtualized environments. The platform's dense 10G/40G support ensures that cloud workloads, server virtualization, and large-scale automation are efficiently handled without data bottlenecks, allowing seamless resource expansion as workloads grow.

## Flexible Dense Port Architecture

With up to 24 native 40G QSFP+ ports expandable to 36 (or 144 × 10G with breakout), these switches support both traditional and high-density modern data center aggregation. Its modular design allows for cost-effective scaling and investment protection as network traffic or server density increases.

## Low Latency, Cut-Through Switching

Engineered with support for cut-through switching, the Nexus 5600 platform delivers ~1 microsecond port-to-port latency. This ensures wire-speed performance for sensitive workloads, supporting businesses that need fast response, such as financial firms, research, and real-time applications, even when advanced features are active.

## Hot-Swappable Power & Cooling

The Nexus 5600 switches feature hot-swappable power and fan modules, all accessible from the front. This approach minimizes service disruption, simplifies maintenance and replacements, and supports flexible airflow options for either front-to-back or back-to-front cooling, matching modern data center thermal designs.

## Energy Efficiency Design

Power supplies in the Nexus 5600 can operate above 90% efficiency even at 25% load, lowering operational costs and carbon impact. With efficient power scaling, these switches help data centers meet green initiatives while maintaining robust performance at varying loads, making them suitable for sustainable operations.

## Intelligent Traffic Monitoring

Offering up to 31 simultaneous SPAN/ERSPAN sessions, the switches enable granular, non-disruptive traffic analysis. This helps rapid troubleshooting and deep traffic visibility, supporting both traditional and virtualized network monitoring strategies without compromising line-rate data throughput.

## Advanced Buffer Management

Each 40G port can access a dynamically shared 25-MB packet buffer, and each 100G port receives its own dedicated buffer. Flexible buffer allocation allows precise tuning in congestion scenarios and helps maintain service quality for bursty or unpredictable traffic in cloud and hybrid environments.

## Enhanced Multicast & Routing Features

Supporting line-rate multicast, large-scale IGMP tables, and advanced routing (IPv4/IPv6, OSPF, BGP, EIGRP), the platform ensures efficient delivery of multicast data in SDN, HPC, or media applications. Hardware-based multicast replication and comprehensive protocol support future-proof complex deployments.

# Technical Specifications

## Product Specifications

Feature	Value
Form Factor	1RU (Rack Unit)
Chassis Type	Fixed configuration with expansion module support
Primary Use	High-density 40G/10G ToR or MoR data center switching
Base Ports	24 × 40G QSFP+ (supports breakout to 96 × 10G SFP+ via cables)
Expansion Slots	1 × Generic Expansion Module (hot-swappable), supports additional 12 × 40G QSFP+ (N5600-M12Q module)
Total Maximum Ports	36 × 40G (with GEM), 144 × 10G (via breakout cables)
Switching Capacity	1.92 Tbps



Feature	Value
Forwarding Rate	1.428 Bpps (64-byte packets)
Latency	Approx. 1 $\mu$ s (cut-through switching)
Power Supplies	2 $\times$ Hot-swappable PSUs (1+1 redundant), NXA-PAC-1100W (AC), NXA-PHV-1100W (HV AC/DC)
Fan Modules	3 $\times$ Hot-swappable fans (2+1 redundant), airflow: front-to-back or back-to-front
Shared Packet Buffer	25 MB (dynamic allocation)
CPU	266 MHz
SDRAM	256 MB
Flash	64 MB
NX-OS Layer 2 Features	VLANs (4,000 max), STP (PVRST+, MSTP), Port Channels (LACP), vPC, FabricPath
NX-OS Layer 3 Features	Static, RIP, OSPF, EIGRP, BGP; IPv6: static, OSPFv3, BGPv6
Multicast Support	PIMv2, IGMPv2/v3, Bidir-PIM
FCoE/NPV Support	Requires N56-FNPV-SSK9 license
Included Licenses (Bundle)	Base NX-OS Software, LAN Enterprise (N56-LAN1K9), FCoE NPV (N56-FNPV-SSK9)
Dimensions (H $\times$ W $\times$ D)	1.75 $\times$ 17.3 $\times$ 30 in (4.4 $\times$ 43.9 $\times$ 76.2 cm)
Operating Temperature	0°C to 40°C (32°F to 104°F)
Operating Humidity	5% to 95% (non-condensing)
Chassis Bundle	C1-N5624-B-24Q (chassis, 2 PSUs, 3 fans, 1 GEM included)
Expansion Module Option	N5600-M12Q (12 $\times$ 40G QSFP+)
Power Supply Options	NXA-PAC-1100W (AC), NXA-PHV-1100W (HV AC/DC)
40G QSFP+ Optics	QSFP-40G-SR4 (MMF, 100 m), QSFP-40G-LR4 (SMF, 10 km), QSFP-H40G-CU1M (DAC, 1 m)
10G Breakout Cables	QSFP-4SFP10G-CU1M (4 $\times$ 10G DAC)



## Product Comparison

Feature	C1-N5624-B-24Q	R8S90A	Arista DCS-7280QR-C72-M#
Fixed Ports	24 × 40G QSFP+ (up to 96 × 10G SFP+ via breakout)	48 × 10/25/40/50/100G QSFP28	72 × 40G QSFP+
Expansion Capability	+12 × 40G QSFP+ via module (max 36 × 40G)	Not specified	Not specified
Switching Capacity	1.92 Tbps	6.4 Tbps	5.76 Tbps
Forwarding Rate	1.428 Bpps	4.76 Bpps	4.28 Bpps
Redundant PSU	2 (1+1), Hot-swappable	Yes	Yes
Latency	~1 μs (cut-through)	~3 μs	~3 μs
Management OS	NX-OS	ArubaOS-CX	EOS
Layer 3 Support	Static, RIP, OSPF, EIGRP, BGP, v6	Advanced L3, VRF, OSPF, BGP	Advanced L3, VRF
Fan Modules	3 hot-swappable, front-to-back/back-to-front	Redundant	Redundant
Application Scenario	Data center (ToR, MoR), virtualization/cloud	Data center, enterprise core	High-density data center spine/leaf

## Accessories

Category	Accessories
Included Accessories	<ul style="list-style-type: none"> <li>- 2 × Hot-swappable power supplies</li> <li>- 3 × Hot-swappable fans</li> <li>- 1 × Generic Expansion Module</li> </ul>
Optional Accessories	<ul style="list-style-type: none"> <li>- N5600-M12Q 12 × 40G QSFP+ Module</li> <li>- Supported QSFP/SFP+ transceivers</li> <li>- QSFP-4SFP10G-CU1M breakout cables</li> </ul>



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### UK Branch

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## References

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