



Cisco Nexus 3100 Platform Switches: Powerful Top-of-Rack Solutions

Business Overview

Today's data centers demand flexible solutions based on the requirements of a particular industry segment and to drive towards lowering the total cost of ownership (TCO) for customers. At the same time, designing a flexible infrastructure to meet business objectives while increasing ROI is critical.

Top-of-rack (ToR) solutions enable rapid data center deployments with a flexible and efficient design. Whether the data center supports an enterprise public or private cloud, financial co-location, or Big Data, Cisco Nexus 3100 switches deliver a dense, high-performing, solution that offer:

- Agile and flexible data center designs
- Comprehensive data center specific features
- Advanced programmatic capabilities
- Efficient power usage

Cisco Nexus 3100 Platform

The Cisco Nexus® 3100 platform extends the leadership of the Cisco Nexus 3000 Series Switches by expanding the technology into general-purpose data centers in MSDC, commercial, midmarket, government, and education environments. These next-generation switches offer a balanced mix of performance, cost, simplicity, and an innovative feature set that complements Cisco's overall ToR solution set.

The Cisco Nexus 3172PQ Switch (Figure 1) is a 10-Gbps Enhanced Small Form-Factor Pluggable (SFP+)-based ToR switch with 48 SFP+ ports and 6 Enhanced Quad SFP+ (QSFP+) ports. Each SFP+ port can operate in 100-Mbps, 1-Gbps, or 10-Gbps mode, and each QSFP+ port can operate in native 40-Gbps or 4 x 10-Gbps mode. This switch is a true physical-layer-free (phy-less) switch that is optimized for low latency and low power consumption.

The Cisco Nexus 3132Q Switch (Figure 2) is a 40-Gbps QSFP-based switch with 32 Enhanced QSFP (QSFP+) ports. It also has 4 SFP+ ports that are internally multiplexed with the first QSFP port. Each QSFP+ port can operate in native 40-Gbps or 4 x 10-Gbps mode. This switch is a true phy-less switch that is optimized for low latency and low power consumption.

Figure 1. Cisco Nexus 3172PQ Switch



Figure 2. Cisco Nexus 3132Q Switch



Main Features of Cisco Nexus 3100 Platform

Cisco Nexus 3100 platform features include the following:

- Wire-rate Layer 2 and 3 switching on all ports in a compact one-rack-unit (1RU) form factor
 - The Cisco Nexus 3172PQ provides Layer 2 and 3 switching of up to 1.4 terabits per second (Tbps) and more than 950 million packets per second (mpps)
 - The Cisco Nexus 3132Q provides Layer 2 and 3 switching of up to 2.5 Tbps and more than 950 mpps
- High Availability
 - Virtual PortChannel (vPC) technology provides Layer 2 multipathing and enables fully utilized bisectonal bandwidth
 - 64-way equal-cost multipath (ECMP) routing that enables the use of Layer 3 fat-tree
 - In-Service Software Upgrade ISSU allows easy upgrading
 - Hot-swappable power-supply units (PSUs) and fans help eliminate downtime



- High performance
 - Delivers low nominal latency, which allows customers to implement high performance infrastructure for demanding workloads
- Purpose-built on Cisco® NX-OS Software operating system with comprehensive, proven innovations
 - Power-On Auto Provisioning (POAP) enables touchless bootup and configuration of the switch, drastically reducing provisioning time
 - Cisco Embedded Event Manager (EEM) and Python scripting
 - Advanced SDN capabilities including support for Open Flow and OnePK
 - Embedded Ethernet analyzer for monitoring and troubleshooting control-plane traffic
 - Support for the IEEE 1588 Precision Time Protocol (PTP) standard

Cisco Nexus 3172PQ Hardware Specifications

- 48 fixed 10 Gigabit Ethernet SFP+ ports (can operate at 100-Mbps, 1-Gbps, and 10-Gbps speeds)
- 6 fixed QSFP+ ports (each QSFP+ port can support 6 x 10 Gigabit Ethernet or 40 Gigabit Ethernet)
- Locator LED
- Dual redundant power supplies
- Redundant (3+1) and hot-swappable fans
- One 10/100/1000-Mbps management port
- One RS-232 serial console port
- One USB port

Cisco Nexus 3132Q Hardware Specifications

- 32 fixed 40 Gigabit Ethernet QSFP+ ports (each QSFP+ port can handle four 10 Gigabit Ethernet connections)
- Locator LED
- Dual redundant power supplies
- Redundant (3+1) fans
- One 10/100/1000-Mbps management port
- One RS-232 serial console port
- One USB port
- Locator LED

Comprehensive Feature Set with Cisco NX-OS

- VXLAN support for workload isolation and enhanced mobility
- Full-featured unicast protocols, including Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), and Routing Information Protocol (RIP)
- Multicast protocols, including Protocol-Independent Multicast sparse mode (PIM-SM), PIM source-specific mode (PIM-SSM), and Multicast Source Discovery Protocol (MSDP)
- Full support for access control lists (ACLs; port, VLAN, and routed) and quality of service (QoS; queuing and marking)
- Full support for troubleshooting tools such as Cisco Switched Port Analyzer (SPAN) and Ethernet analyzer
- Support for the IEEE 1588 standard
 - Time synchronization capability synchronizes internal clocks according to a network master clock
- Switch management by Cisco Data Center Network Manager (DCNM)
 - Cisco Prime Data Center Network Manager (DCNM) is a Cisco NX-OS management tool that automates provisioning processes, proactively monitors the LAN by detecting performance degradation, secures the network, and streamlines the diagnosis of dysfunctional network elements

For More Information

- Cisco Nexus 3172PQ Switch: <http://www.cisco.com/go/nexus3172>
- Cisco Nexus 3132Q Switch: <http://www.cisco.com/go/nexus3132>
- Cisco Nexus 3000 Series Switches: <http://www.cisco.com/go/nexus3000>
- Cisco NX-OS Software: <http://www.cisco.com/go/nxos>

