Cisco Nexus 7000 Series Switches

Build a Next-Generation Network

The Cisco Nexus® 7000 Series Switches are the foundation of the Cisco® Unified Fabric solution. Designed to meet the requirements of mission-critical data centers, these switches deliver exceptional availability, outstanding scalability, and the proven and comprehensive Cisco NX-OS Software data center switching feature set.

The Cisco Nexus 7700 Switches are the latest extension to the Nexus 7000 Series of modular switches. With more than 83 terabits per second (Tbps) of overall switching capacity, the Cisco Nexus 7700 delivers the highest capacity 10, 40 and 100 Gigabit Ethernet (GbE) ports in the industry, with up to 768 native 10-Gbps ports, 384 40-Gbps ports and 192 100-Gbps ports.

Both the Cisco Nexus 7700 switches and the Cisco Nexus 7000 switches share the same common system architecture, ASIC technology and comprehensive Cisco NX-OS Software feature set. The Cisco Nexus 7000 Series Switches are extremely versatile and designed to meet the requirements of the different parts of next-generation data centers.

Is Your Network Ready?

Today, data centers sit at the core of IT infrastructure and therefore are a competitive asset to how they can deliver service and value back to the business. But, is your network ready to help your business transform? Cisco Nexus 7000 Series Switches enable IT organizations to build a network infrastructure that delivers scalability, performance and high availability across all types of applications. Cisco Nexus 7000 Series Switches allows flexibility by unifying many network roles and features so businesses can reduce Capex with device consolidation across Core, Aggregation, Spine, Leaf, DCI, and SAN. These switches are capable of supporting a broad range of innovative features such as Cisco FabricPath with segment ID for scalable multi-tenancy designs, and features like OTV, MPLS and VPLS for highly resilient DCI deployments; support for VXLAN and LISP for private and public clouds.

Product Overview

Figure 1 shows the Cisco Nexus 7000 Series switches

Table 1. Cisco Nexus 7000 Series Models

	Cisco Nexus 7000				Cisco Nexus 7700		
	N7K-C7004	N7K-C7009	N7K-C7010	N7K-C7018	N77-C7718	N77-C7710	N77-C7706
Module Slots	2	7	8	16	16	8	4
Airflow	Side to Rear	Side to Side	Front to Back	Side to Side	Front to Back		
Port Density	96x10GbE 12x40GE 4x100GE	336x10GbE 84x40GE 14x100GE	384x10GbE 96x40GE 16x100GE	768x10GbE 192x40GE 28x100GE	768x10GbE 384x40GE 192x100GE	384x10GbE 192x40GE 96x100GE	192x10GbE 96x40GE 48x100GE
Designed For	• Broadest Options for 10/40/100G • Continued Investment for install base				• 40/100G Optimized • Optimized Environmentals		
Consistent Software, ASICs and Operations Flexibility of choices with Investment Protection							

Cisco NX-OS Software

Cisco NX-OS is a highly-evolved operating system that delivers the performance, reliability, and lifecycle expected in the data center. Cisco NX-OS is designed to scale with current and future multiprocessor hardware platforms and offers easy portability across a variety of platforms with feature consistency. It facilitates the integration of new innovations and evolving standards to deliver long-term feature extensibility. Cisco NX-OS delivers highly secure, continuous operations with failure detection, fault isolation, self-healing features, and hitless In-Service Software Upgrade (ISSU) that helps reduce maintenance disruptions.

Cisco Nexus 7000 Series Features

- Scalability
  - **10-Gbps Density:** The Cisco Nexus 7000 Series enables the highest-density of native 10 Gigabit Ethernet system in the industry, with up to 768 wire-rate 10 Gigabit Ethernet ports.
  - **40/100-Gbps Density:** The Cisco Nexus 7700 Switches are designed for the highest 40/100Gbps density in the industry, with 384 40 Gigabit Ethernet ports and 192 100 Gigabit Ethernet ports.
- **Availability & Reliability:** Cisco NX-OS enables the Nexus 7000 Series to provide continuous system operations, permitting maintenance, upgrades, and software certification without service interruption. The combination of process modularity, hitless In Service Software Upgrade (ISSU) capability, nonstop-forwarding (NSF), automatic graceful restart, and stateful process restart reduces the effects of software upgrades on data plane forwarding.
- **Network Consolidation:** Certified with FIPS 140-2 and Common Criteria, the NX-OS Virtual Device Context feature (VDC) enhances virtualization by enabling customers to partition a physical Nexus 7000 switch resources by creating multiple logical switch contexts. VDCs deliver true segmentation of network traffic, context-level fault isolation, and management through the creation of independent hardware and software partitions. With Cisco Nexus 7000 SUP2E, up to eight VDCs are supported.
- **Network Convergence:** The combination of the Cisco Nexus 7000 Series F-Series I/O module and FCoE enables network consolidation and greater utilization of previously separate LAN and SAN infrastructure and cabling, reducing by up to 50 percent the number of adapters and cables required and eliminating redundant switches. In addition, the Cisco Nexus 7000 Series supports standards-based multihop FCoE topologies that help enable end-to-end access to core converged fabric.
- **L4-L7 Services:** The Network Analysis Module (NAM-NX1) is an integrated service module for Cisco Nexus 7000 Switches, which permits detailed visibility for effective management of business applications such as Citrix products, Oracle Business Intelligence, and Microsoft SQL Server. This module also extends network visibility to virtualization and overlay technologies such as OTV, LISP, and Virtual Extensible LAN (VXLAN).
- Workload mobility
  - **OTV:** Cisco OTV is an industry-first technology that extends Layer 2 networks over Layer 3 networks across multiple sites or any transport. Cisco OTV allows customers to deploy Cisco DCI between sites without the need to change or reconfigure their existing network designs.
  - **LISP:** The revolutionary new Cisco LISP routing architecture adds scalability and agility to virtualized and cloud-computing environments. Take advantage of LISP for load balancing across data centers based on resource availability and cost. The combination of OTV and LISP technologies provide true active-active data center and disaster recovery.
- **Scalable multi-tenant segmentation for virtualized environments:** The Cisco Nexus 7000 Series supports several technologies like FabricPath with Segment-ID or VXLAN that provide secure segmentation for millions of tenants, while scaling in a robust fashion to an extended network fabric.
- **Ready for software-defined networking (SDN):** The Cisco Nexus 7000 Series Switches are SDN ready, with a flexible architecture and API framework that allows developers to create and support SDN agents such as Netconf and OpenFlow. The Cisco Nexus 7000 Series provides programmatic APIs such as Cisco One Platform Kit (onePK), Python, and Quantum to work in conjunction with applications that make the networks responsive and agile.

For More Information

For more information about the Cisco Nexus 7000 Series, visit http://www.cisco.com/go/nexus7000

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