Cisco Nexus 3100-V Platform Switches

Product Overview

The Cisco Nexus[1] ® 3100-V series is the latest addition to the industry's widely deployed Cisco Nexus 3100 platform. The Cisco Nexus 3100-V platform consists of high-density, low-power-consumption, and low-latency fixed-configuration data center switches with line-rate Layer 2 and 3 features that support enterprise applications, service provider hosting, high-performance computing (HPC), and cloud computing environments. These switches support a wide range of port speeds with flexible combinations of 1/10/40/100-Gbps connectivity with improved port density and scalability in compact 1-rack-unit (1RU) form factors.

The Cisco Nexus 3100-V platform runs the industry-leading Cisco® NX-OS Software operating system, which helps ensure continuous availability and sets the standard for mission-critical data center environments. The platform is designed for programmable fabric, which offers flexibility, mobility, and scalability for service providers and infrastructure-as-a-service (IaaS) and cloud providers; and for programmable networks, which automate configuration and management for customers who want to take advantage of the DevOps operating model and tool sets. It is well suited for data centers that require cost-effective, power-efficient, line-rate Layer 2 and 3 top-of-rack (ToR) switches. These switches also support forward and reverse airflow (port-side exhaust and port-side intake) schemes with AC and DC power inputs.

Features and Benefits

The Cisco Nexus 3100-V platform provides following benefits:

- High performance and scalability
  - The Cisco Nexus 3100-V platform provides wire-rate Layer 2 and 3 switching of up to 2.56 terabits per second (Tbps) and up to 1.4 billion packets per second (bpps) on all ports.
  - The Cisco Nexus 3100-V platform delivers ultra-low nominal latency (approximately 650 nanoseconds [ns]), which allows customers to implement high performance infrastructure for high-frequency-trading (HFT) workloads.
- Line-rate Virtual Extensible LAN (VXLAN) routing
  - VXLAN is designed to provide the same Ethernet Layer 2 network services as VLAN does today, but with greater extensibility and flexibility.
  - The Cisco Nexus 3100-V platform offers native line-rate VXLAN routing.
  - The Border Gateway Protocol (BGP) Ethernet Virtual Private Network (EVPN) control plane provides scalable multitenancy and host mobility (for more information, refer to the document "VXLAN Network with MP-BGP EVPN Control Plane

[1] Wire-rate on all ports for packets >200bytes

- Enhanced buffer for applications
  - The Cisco Nexus 3100-V platform offers 16 MB of shared buffer space.

    In today's data center, application teams require the network to be flexible and capable of handling the rapid growth of applications. The Cisco Nexus 3100-V platform provides deep shared buffers (16 MB) to absorb bursts of traffic and a wide variety of applications, such as multicast feeds, voice traffic, video traffic, and healthcare applications.
  - These deep buffers also provide flexibility to expand your network as your needs change. The shared buffers are also instrumental in situations in which one or more servers are consuming most of the bandwidth in highly oversubscribed environments.
- Higher ingress access control list (ACL) entries
  - The Cisco Nexus 3100-V platform offer 16,000 ACL entries and 1000 egress ACL entries.
  - The increased number of ingress ACL entries can be especially useful in today's data centers, particularly in virtualized environments.
- High availability
  - Virtual-port-channel (vPC) technology provides Layer 2 multipathing through the elimination of Spanning Tree Protocol. It also enables fully utilized bisectional bandwidth and simplified Layer 2 logical topologies without the need to change the existing management and deployment models.
  - The 64-way equal-cost multipath (ECMP) routing enables the use of Layer 3 fat-tree designs and allows organizations to prevent network bottlenecks, increase resiliency, and add capacity with little network disruption.
  - Advanced reboot capabilities[2] are included through In Service Software Upgrade (ISSU) and Fast Reboot capabilities.
  - Power-supply units (PSUs) and fans are hot swappable.
- Purpose-built on the NX-OS 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 enable automation and remote operations in the data center.
  - Advanced buffer monitoring reports real-time buffer use per port and per queue, which allows organizations to monitor traffic bursts and application traffic patterns.
  - Ethanalyzer is a built-in packet analyzer for monitoring and troubleshooting control-plane traffic and is based on the popular Wireshark open-source network protocol analyzer.
  - Precision Time Protocol (PTP; IEEE 1588) provides accurate clock synchronization and improved data correlation with network captures and system events.
  - Complete Layer 3 unicast and multicast routing protocol suites are supported, including Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Routing Information Protocol Version 2 (RIPv2), Protocol-Independent Multicast sparse mode (PIM-SM), Source-Specific Multicast (SSM), and Multicast Source Discovery Protocol (MSDP).
- Network traffic monitoring with Cisco Nexus Data Broker

[2] Not available at FCS

- Build simple, scalable and cost-effective network test access point (TAP) or Cisco Switched Port Analyzer (SPAN) aggregation for network traffic monitoring and analysis.

Models and Configuration

Table 1 summarizes the Cisco Nexus 3100-V platform switch models.

Table 1. Cisco Nexus 3100-V Platform Switches Summary

Model	Description
Cisco Nexus 3132Q-V Switch	32 x 40-Gbps QSFP+ ports (all ports are capable of 10 or 40 Gbps)
Cisco Nexus 31108PC-V Switch	48 x 10-Gbps SFP+ ports and 6 x QSFP28 ports (all QSFP ports can operate at 40 or 100 Gbps)
Cisco Nexus 31108TC-V Switch	48 x 10GBASE-T ports and 6 x QSFP28 ports (all QSFP ports can operate at 40 or 100 Gbps)

- The Cisco Nexus 3132Q-V (Figure 1) is a 40-Gbps Quad Small Form-Factor Pluggable (QSFP) 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 mode or 4 x 10-Gbps mode, with up to a maximum of 104 x 10-Gbps ports.

Figure 1. Cisco Nexus 3132Q-V Switch

- The Cisco Nexus 31108PC-V (Figure 2) is a 10-Gbps SFP+)–based ToR switch with 48 SFP+ ports and 6 QSFP28 ports. Each SFP+ port can operate in 100-Mbps, 1 Gbps, or 10-Gbps mode, and each QSFP28 port can operate in native 100-Gbps or 40-Gbps mode or 4 x 10-Gbps mode, offering flexible migration options. This switch is a true PHY-less switch that is optimized for low latency and low power consumption.

Figure 2. Cisco Nexus 31108PC-V Switch

- The Cisco Nexus 31108TC-V (Figure 3) is a 10GBASE-T switch with 48 10GBASE-T ports and 6 QSFP28 ports. This switch is well suited for customers who want to reuse existing copper cabling while migrating from 1-Gbps to 10-Gbps servers. QSFP28 port can operate in native 100-Gbps or 40-Gbps mode or 4 x 10-Gbps mode. The 48 ports support 100MBASE, 1GBASE, and 10GBASE-T, and the 6 QSFP ports support 10, 40, and 100 Gbps.

Figure 3. Cisco Nexus 31108TC-V Switch

Configurations

The Cisco Nexus 3100-V switches have the following configurations:

- Cisco Nexus 3132Q-V
  - 32 fixed 40 Gigabit Ethernet QSFP+ ports
  - 4 SFP+ ports, which are multiplexed internally with the first QSFP+ port

Note: There are 3 operating modes for this switch. Changing operating mode requires reboot.

Mode 1: the first 24 QSFP ports can be used at 40G or 4x10G breakout, the last 8 ports can be at 40G only.

Mode 2: the first 26 QSFP ports can be used in 4x10G breakout to achieve a maximum of 104 10G ports. The last 6 ports are not used.

Mode 3: the first 24 QSFP ports can be used at full line rate at any packet size. The last 8 ports are not used.

- Cisco Nexus 31108PC-V
  - 48 fixed 10 Gigabit Ethernet SFP+ ports (can operate at 100-Mbps, 1-Gbps, and 10-Gbps speeds)
  - 6 fixed QSFP28 ports (each QSFP28 port can support 40, 100, and 4 x 10 Gigabit Ethernet)

Note: The right-most QSFP ports can operate in 2 modes: 100/40G, or 40G/4x10G. Changing operating mode requires reboot.

- Cisco Nexus 31108TC-V
  - 48 fixed 10GBASE-T ports (can operate at 100-Mbps, 1-Gbps, and 10-Gbps speeds)
  - 6 fixed QSFP28 ports (each QSFP28 port can support 40, 100, and 4 x 10 Gigabit Ethernet)

Note: The right-most QSFP ports can operate in 2 modes 100/40G, or 40G/4x10G. Changing operating mode requires reboot.

- 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

Support for both forward (port-side exhaust) and reverse (port-side intake) airflow schemes is available.

Transceiver and Cabling Options

The Cisco Nexus 3100-V platform supports 100, 40, 10, and 1 Gigabit Ethernet optics. Please refer to the latest compatibility matrix for information about all supported optics:

- 100 Gigabit Ethernet compatibility matrix: http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/100GE_Tx_Matrix.html
- 40 Gigabit Ethernet compatibility matrix: http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/40GE_Tx_Matrix.html
- 10 Gigabit Ethernet compatibility matrix: http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/10GE_Tx_Matrix.html
- 1 Gigabit Ethernet compatibility matrix: http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/GE_Tx_Matrix.html

Cisco NX-OS Software

NX-OS is a data center–class operating system built with modularity, resiliency, and serviceability at its foundation. NX-OS helps ensure continuous availability and sets the standard for mission-critical data center environments. The self-healing and highly modular design of NX-OS makes zero-impact operations a reality and provides exceptional operation flexibility.

Focused on the requirements of the data center, NX-OS provides a robust and comprehensive feature set that meets the networking requirements of present and future data centers. With an XML interface and a command-line interface (CLI) like that of Cisco IOS® Software, NX-OS provides state-of-the-art implementations of relevant networking standards as well as a variety of true data center–class Cisco innovations.

Cisco NX-OS Software Benefits

Table 2 summarizes the benefits that NX-OS offers.

Table 2. Benefits of Cisco NX-OS Software

Feature	Benefit
Common software throughout the data center: NX-OS runs on all Cisco data center switch platforms (Cisco Nexus 7000, 6000, 5000, 4000, and 3000 Series Switches; Cisco Nexus 1000V Switches; and Cisco Nexus 2000 Series Fabric Extenders).	• Simplification of data center operating environment • End-to-end Cisco Nexus and NX-OS fabric • No retraining necessary for data center engineering and operations teams
Software compatibility: NX-OS interoperates with Cisco products running any variant of Cisco IOS Software and also with any networking OS that conforms to the networking standards listed as supported in this data sheet.	• Transparent operation with existing network infrastructure • Open standards • No compatibility concerns
Modular software design: NX-OS is designed to support distributed multithreaded processing. NX-OS modular processes are instantiated on demand, each in a separate protected memory space. Thus, processes are started and system resources allocated only when a feature is enabled. The modular processes are governed by a real-time preemptive scheduler that helps ensure timely processing of critical functions.	• Robust software • Fault tolerance • Increased scalability • Increased network availability

Feature	Benefit
Troubleshooting and diagnostics: NX-OS is built with unique serviceability functions to allow network operators to take early action based on network trends and events, enhancing network planning and improving network operations center (NOC) and vendor response times. Cisco Smart Call Home and Cisco Online Health Management System (OHMS) are some of the features that enhance the serviceability of NX-OS.	• Quick problem isolation and resolution • Continuous system monitoring and proactive notifications • Improved productivity of operations teams
Ease of management: NX-OS provides a programmatic XML interface based on the NETCONF industry standard. The NX-OS XML interface provides a consistent API for devices. NX-OS also provides support for Simple Network Management Protocol (SNMP) Versions 1, 2, and 3 MIBs.	• Rapid development and creation of tools for enhanced management • Comprehensive SNMP MIB support for efficient remote monitoring
Using the Cisco Nexus Data Broker software and Cisco Plug-in for OpenFlow agent, the Cisco Nexus 3100-V switches can be used to build a scalable, cost-effective, and programmable TAP or SPAN aggregation infrastructure. This approach replaces the traditional purpose-built matrix switches with these switches. You can interconnect these switches to build a multilayer topology for TAP or SPAN aggregation infrastructure.	• Scalable and cost effective • Robust traffic filtering capabilities • Traffic aggregation from multiple input ports across different switches • Traffic replication and forwarding to multiple monitoring tools
Role-based access control (RBAC): With RBAC, NX-OS enables administrators to limit access to switch operations by assigning roles to users. Administrators can customize access and restrict it to the users who require it.	• Effective access control mechanism based on user roles • Improved network device security • Reduction in network problems arising from human error

Cisco NX-OS Software Packages and Licensing for Cisco Nexus 3100-V Platform

The software packages available for the Cisco Nexus 3100-V platform offer flexibility and comprehensive feature sets while being consistent with the Cisco Nexus access switches. The default system software has comprehensive Layer 2 and base Layer 3 feature sets with extensive security and management features. To enable advanced Layer 3 IP routing functions, an additional license must be installed, as described in Table 3.

Table 3. Software Licensing for Cisco Nexus 3100-V Platform

Software Package	Features Supported
LAN Enterprise license (N3K-LAN1K9)	• Layer 3 features, including full OSPF, EIGRP, BGP, and VXLAN
Cisco Nexus Data Broker license (NDB-FX-SWT-K9)	• License for using the TAP and SPAN aggregation functions with Cisco Nexus Data Broker; only the Base license is needed for this feature
Cisco ONE Foundation for Networking	• Cisco ONE Foundation for Networking includes the following integrated products to help you deploy an architecturally flexible data center network • Cisco Enterprise Layer 3 Services (LAN) • Cisco Prime™ Infrastructure, Cisco Prime Data Center Network Manager (DCNM), and Cisco Energy Management (JouleX) • Cisco Intelligent Traffic Director** • Cisco Remote Integrated Service Engine (RISE)**

** Current SW does not support these features.

Cisco Data Center Network Manager

The Cisco Nexus 3100-V switches are supported in DCNM. DCNM is designed for the Cisco Nexus hardware platforms, which are enabled for NX-OS. DCNM is a Cisco management solution that increases overall data center infrastructure uptime and reliability, improving business continuity. Focused on the management requirements of the data center network, DCNM provides a robust framework and comprehensive feature set that can meet the routing, switching, and storage administration needs of present and future data centers. DCNM automates the provisioning process, proactively monitors the LAN by detecting performance degradation, secures the network, and simplifies the diagnosis of dysfunctional network elements.

Cisco Nexus Data Broker

The Cisco Nexus 3100-V switches can be used with Cisco Nexus Data Broker to build a scalable and cost-effective traffic monitoring infrastructure using network TAPs and SPAN. This approach replaces the traditional purpose-built matrix switches with one or more OpenFlow-enabled Cisco Nexus switches. You can interconnect these switches to build a scalable TAP or SPAN aggregation infrastructure. You also can combine TAP and SPAN sources to bring the copy of the production traffic to this TAP or SPAN aggregation infrastructure. In addition, you can distribute these sources and traffic monitoring and analysis tools across multiple Cisco Nexus switches. For more details, visit http://www.cisco.com/go/nexusdatabroker.

Product Specifications

Table 4 lists the specifications for the Cisco Nexus 3100-V switches, and Table 5 lists management standards and support.

Table 4. Specifications

Description	Specification	
Physical	• 1RU fixed form factor • Cisco Nexus 31108PC-V ◦ 48 SFP ports support 1 and 10 Gigabit Ethernet ◦ 6 QSFP28 ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each or 100 Gigabit Ethernet. • Cisco Nexus 31108TC-V ◦ 48 RJ-45 ports support 100 Mbps, 1 Gbps, and 10 Gbps ◦ 6 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each or 100 Gigabit Ethernet • Cisco Nexus 3132Q-V ◦ 32 QSFP 40 Gbps Ports. ◦ Each QSFP port supports 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet • Redundant fans (3+1) • 2 redundant power supplies • Management, console, and USB flash-memory ports	
Performance	• 2.56-Tbps switching capacity and forwarding rate of up to 1.4 bpps for 3132Q-V • 2.16-Tbps switching capacity and forwarding rate of up to 1.2 bpps for 31108PC-V and 31108TC-V • Line-rate traffic throughput (both Layer 2 and 3) on all ports • Configurable maximum transmission units (MTUs) of up to 9216 bytes (jumbo frames)	
Hardware tables and scalability	Number of MAC addresses	288,000
	Number of VLANS	4096
	Number of spanning-tree instances	• RSTP: 512 • MSTP: 64
	Number of ACL entries	• 16,000 ingress • 1000 egress
	Routing table	• 16,000 prefixes and 16,000 host entries* • 8000 multicast routes*

Description	Specification	
	Number of EtherChannels	64 (with vPC)
	Number of ports per EtherChannel	32
	System memory	16 GB
	Buffer size	16 MB shared
	Boot flash	16 GB eUSB (3132Q-V) 64 GB SSD (31108PC-V and 31108TC-V)
Power	Number of power supplies	2
	Power supply types	• AC (forward and reverse airflow) • N2200-PAC-400W and N2200-PAC-400W-B (3132 model) • NXA-PAC-650W-PE and NX-PAC-650W-PI (31108 models) • DC (forward and reverse airflow) • N2200-PDC-400W and N3K-PDC-350W-B (3132 model) • NXA-PDC-930W-PE and NX-PDC-930W-PI (31108 models)
	Typical operating power	• Cisco Nexus 31108PC-V: 150W • Cisco Nexus 31108TC-V: 260W • Cisco Nexus 3132Q-V: 170W
	Maximum power	• Cisco Nexus 31108PC-V: 360W • Cisco Nexus 31108TC-V: 470W • Cisco Nexus 3132Q-V: 290W
	AC PSUs • Input voltage • Frequency • Efficiency	 • 100 to 240 VAC • 50 to 60 Hz • 89 to 91% at 220V
	DC PSUs • Input voltage • Maximum current (PSU output – System input) • Efficiency	 • –40 to –72 VDC • 33A (400W unit), 78A (930W unit) • 85 to 88%
	Typical heat dissipation	• Cisco Nexus 3132Q-V: 580 BTU/hr • Cisco Nexus 31108PC-V: 512 BTU/hr • Cisco Nexus 31108TC-V: 887 BTU/hr
	Maximum heat dissipation	• Cisco Nexus 3132Q-V: 989 BTU/hr • Cisco Nexus 31108PC-V: 1228 BTU/hr • Cisco Nexus 31108TC-V: 1603 BTU/hr
Cooling	• Forward and reverse airflow schemes: ◦ Forward airflow: Port-side exhaust (air enters through fan tray and power supplies and exits through ports) ◦ Reverse airflow: Port-side intake (air enters through ports and exits through fan tray and power supplies) • Redundant fans • Hot swappable (must swap within 1 minute)	
Sound	Measured sound power (maximum) • Fan speed: 40% duty cycle • Fan speed: 70% duty cycle • Fan speed: 100% duty cycle	 • 64.9 dBA • 69.3 dBA • 76.7 dBA

Description	Specification	
Environment	Dimensions (height x width x depth)	• Cisco Nexus 3132Q-V: 1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm) • Cisco Nexus 31108PC-V and 31108TC-V: 1.72 x 17.3 x 22.3 in. (4.4 x 43.9 x 56.6 cm)
	Weight	• Cisco Nexus 3132Q-V: 18.8 lb (8.5 kg) • Cisco Nexus 31108PC-V: 21.4 lb (9.7 kg) • Cisco Nexus 31108TC-V: 22.0 lb (10 kg)
	Operating temperature	• 32 to 104°F (0 to 40°C)
	Storage temperature	• –40 to 158°F (–40 to 70°C)
	Operating relative humidity	• 10 to 85% noncondensing • Up to 5 days at maximum (85%) humidity • Recommend ASHRAE data center environment
	Storage relative humidity	• 5 to 95% noncondensing
	Altitude	• 0 to 10,000 ft (0 to 3000m)

* Please refer to the Cisco Nexus 3000 Series Verified Scalability Guide for scalability numbers validated for specific software releases: http://www.cisco.com/en/US/products/ps11541/products_installation_and_configuration_guides_list.html.

Software Features

Please refer to the latest release notes for a list of software features supported by the Cisco Nexus 3100-V platform: http://www.cisco.com/c/en/us/support/switches/nexus-3000-series-switches/products-release-notes-list.html.

Table 5. Management Standards and Support.

Description	Specification	
MIB Support	Generic MIBs • SNMPv2-SMI • CISCO-SMI • SNMPv2-TM • SNMPv2-TC • IANA-ADDRESS-FAMILY-NUMBERS-MIB • IANAifType-MIB • IANAiprouteprotocol-MIB • HCNUM-TC • CISCO-TC • SNMPv2-MIB • SNMP-COMMUNITY-MIB • SNMP-FRAMEWORK-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMP-USER-BASED-SM-MIB • SNMP-VIEW-BASED-ACM-MIB • CISCO-SNMP-VACM-EXT-MIB • MAU-MIB • CISCO-SWITCH-QOS-MIB • CISCO-CLASS-BASED-QOS-MIB Ethernet MIBs • CISCO-VLAN-MEMBERSHIP-MIB • LLDP-MIB • IP-MULTICAST-MIB Configuration MIBs • ENTITY-MIB • IF-MIB	Monitoring MIBs • NOTIFICATION-LOG-MIB • CISCO-SYSLOG-EXT-MIB • CISCO-PROCESS-MIB • RMON-MIB • CISCO-RMON-CONFIG-MIB • CISCO-HC-ALARM-MIB Security MIBs • CISCO-AAA-SERVER-MIB • CISCO-AAA-SERVER-EXT-MIB • CISCO-COMMON-ROLES-MIB • CISCO-COMMON-MGMT-MIB • CISCO-SECURE-SHELL-MIB Miscellaneous MIBs • CISCO-LICENSE-MGR-MIB • CISCO-FEATURE-CONTROL-MIB • CISCO-CDP-MIB • CISCO-RF-MIB Layer 3 and Routing MIBs • UDP-MIB • TCP-MIB • OSPF-MIB • BGP4-MIB • CISCO-HSRP-MIB

Description	Specification
	● CISCO-ENTITY-EXT-MIB ● CISCO-ENTITY-FRU-CONTROL-MIB ● CISCO-ENTITY-SENSOR-MIB ● CISCO-SYSTEM-MIB ● CISCO-SYSTEM-EXT-MIB ● CISCO-IP-IF-MIB ● CISCO-IF-EXTENSION-MIB ● CISCO-NTP-MIB ● CISCO-VTP-MIB ● CISCO-IMAGE-MIB ● CISCO-IMAGE-UPGRADE-MIB
Standards	● IEEE 802.1D: Spanning Tree Protocol ● IEEE 802.1p: CoS Prioritization ● IEEE 802.1Q: VLAN Tagging ● IEEE 802.1s: Multiple VLAN Instances of Spanning Tree Protocol ● IEEE 802.1w: Rapid Reconfiguration of Spanning Tree Protocol ● IEEE 802.3z: Gigabit Ethernet ● IEEE 802.3ad: Link Aggregation Control Protocol (LACP) ● IEEE 802.3ae: 10 Gigabit Ethernet (Cisco Nexus 3132Q-V, 31108PC-V) ● IEEE 802.3ba: 40 Gigabit Ethernet (Cisco Nexus 3132Q-V, 31108PC-V, 31108TC-V) ● IEEE 802.3bm: 100 Gigabit Ethernet (Cisco Nexus 31108PC-V, 31108TC-V) ● IEEE 802.3an:10GBASE-T (Cisco Nexus 31108TC-V) ● IEEE 802.1ab: LLDP ● IEEE 1588-2008: Precision Time Protocol (Boundary Clock)
RFC	BGP ● RFC 1997: BGP Communities Attribute ● RFC 2385: Protection of BGP Sessions with the TCP MD5 Signature Option ● RFC 2439: BGP Route Flap Damping ● RFC 2519: Framework for Interdomain Route Aggregation ● RFC 2545: Use of BGPv4 Multiprotocol Extensions ● RFC 2858: Multiprotocol Extensions for BGPv4 ● RFC 3065: Autonomous System Confederations for BGP ● RFC 3392: Capabilities Advertisement with BGPv4 ● RFC 4271: BGPv4 ● RFC 4273: BGPv4 MIB: Definitions of Managed Objects for BGPv4 ● RFC 4456: BGP Route Reflection ● RFC 4486: Subcodes for BGP Cease Notification Message ● RFC 4724: Graceful Restart Mechanism for BGP ● RFC 4893: BGP Support for 4-Octet AS Number Space OSPF ● RFC 2328: OSPF Version 2 ● 8431RFC 3101: OSPF Not-So-Stubby-Area (NSSA) Option ● RFC 3137: OSPF Stub Router Advertisement ● RFC 3509: Alternative Implementations of OSPF Area Border Routers ● RFC 3623: Graceful OSPF Restart ● RFC 4750: OSPF Version 2 MIB RIP ● RFC 1724: RIPv2 MIB Extension ● RFC 2082: RIPv2 MD5 Authentication ● RFC 2453: RIP Version 2 IP Services ● RFC 768: UDP ● RFC 783: Trivial File Transfer Protocol (TFTP) ● RFC 791: IP ● RFC 792: ICMP ● RFC 793: TCP

Description	Specification
	• RFC 826: ARP • RFC 854: Telnet • RFC 959: FTP • RFC 1027: Proxy ARP • RFC 1305: Network Time Protocol (NTP) Version 3 • RFC 1519: Classless Interdomain Routing (CIDR) • RFC 1542: BootP Relay • RFC 1591: Domain Name System (DNS) Client • RFC 1812: IPv4 Routers • RFC 2131: DHCP Helper • RFC 2338: VRRP IP Multicast • RFC 2236: IGMPv2 • RFC 3376: IGMPv3 • RFC 3446: Anycast Rendezvous Point Mechanism Using PIM and MSDP • RFC 3569: Overview of SSM • RFC 3618: MSDP • RFC 4601: PIM-SM: Protocol Specification (Revised) • RFC 4607: SSM for IP • RFC 4610: Anycast-RP using PIM • RFC 5132: IP Multicast MIB

Software Features

Please refer to the latest release notes for a list of software features supported by the Cisco Nexus 3100-V platform: http://www.cisco.com/c/en/us/support/switches/nexus-3000-series-switches/products-release-notes-list.html.

Software Requirements

The Cisco Nexus 3100-V platform is supported by Cisco NX-OS Software Release NXOS-703I2.2 and later. NX-OS interoperates with any networking OS, including Cisco IOS Software, that conforms to the networking standards mentioned in this data sheet.

Regulatory Standards Compliance

Table 6 summarizes regulatory standards compliance for the Cisco Nexus 3100-V Series.

Table 6. Regulatory Standards Compliance: Safety and EMC

Specification	Description
Regulatory compliance	• Products should comply with CE Markings per directives 2004/108/EC and 2006/95/EC.
Safety	• UL 60950-1 Second Edition • CAN/CSA-C22.2 No. 60950-1 Second Edition • EN 60950-1 Second Edition • IEC 60950-1 Second Edition • AS/NZS 60950-1 • GB4943
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A

Specification	Description
EMC: Immunity	• EN55024 • CISPR24 • EN300386 • KN24

Ordering Information

Table 7 provides ordering information for the Cisco Nexus 3100-V platform.

Table 7. Ordering Information

Part Number	Description
Chassis	
N3K-C31108PC-V	Nexus 31108PC-V, 48 SFP+ and 6 QSFP28 ports
N3K-C31108TC-V	Nexus 31108TC-V, 48 10GBase-T RJ-45 and 6 QSFP28 ports
N3K-C3132Q-V	Nexus 3132Q-V, 32 QSFP+ ports
NXA-FAN-30CFM-F	Nexus 2K/3K single fan, Forward airflow (port side exhaust)
NXA-FAN-30CFM-B	Nexus 2K/3K single fan, Reversed airflow (port side intake)
N2200-PAC-400W	N2K/3K 400W AC Power Supply, Forward airflow (port side exhaust) [Used only with 3132Q-V]
N2200-PAC-400W-B	N2K/3K 400W AC Power Supply, Reversed airflow (port side intake) [Used only with 3132Q-V]
NXA-PAC-650W-PI	Nexus 9000 650W AC PS, Port-side Intake [Use with Nexus 31108PC-V or 31108TC-V]
NXA-PAC-650W-PE	Nexus 9000 650W AC PS, Port-side Exhaust [Use with Nexus 31108PC-V or 31108TC-V]
N2200-PDC-400W	N2K/3K 400W DC Power Supply, Forward airflow (port side exhaust) [Used only with 3132Q-V]
N3K-PDC-350W-B	N3K Series 350W DC Power Supply, Reversed airflow (port side intake) [Used only with 3132Q-V]
NXA-PDC-930W-PE	Nexus 9000 930W DC PS, Port-side Exhaust [Use with Nexus 31108PC-V or 31108TC-V]
NXA-PDC-930W-PI	Nexus 9000 930W AC PS, Port-side Intake [Use with Nexus 31108PC-V or 31108TC-V]
Software Licenses	
N3K-LAN1K9	Nexus 3000 Layer 3 LAN Enterprise License
NDB-FX-SWT-K9	License for Tap/SPAN aggregation using Cisco Nexus Data Broker
Spares	
NXA-FAN-30CFM-F=	Nexus 2K/3K single fan, Forward airflow (port side exhaust), Spare
NXA-FAN-30CFM-B=	Nexus 2K/3K single fan, Reversed airflow (port side intake), Spare
N2200-PAC-400W=	N2K/3K 400W AC Power Supply, Forward airflow (port side exhaust), Spare
N2200-PAC-400W-B=	N2K/3K 400W AC Power Supply, Reversed airflow (port side intake), Spare
N2200-PDC-400W=	N2K/3K 400W DC Power Supply, Forward airflow (port side exhaust), Spare
NXA-PAC-650W-PI	Nexus 9000 650W AC PS, Port-side Intake Spare
NXA-PAC-650W-PE	Nexus 9000 650W AC PS, Port-side Exhaust Spare
N3K-PDC-350W-B=	N3K Series 350W DC Power Supply, Reversed airflow (port side intake), Spare
NXA-PDC-930W-PE	Nexus 9000 930W DC PS, Port-side Exhaust, Spare
NXA-PDC-930W-PI	Nexus 9000 930W DC PS, Port-side Intake, Spare
N3K-C3064-ACC-KIT=	Nexus 3064PQ Accessory Kit

Warranty

The Cisco Nexus 3100-V platform switches have a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a return materials authorization (RMA).

Service and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco Nexus 3000 Series Switches in your data center. The innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operation efficiency and improve your data center network. Cisco Advanced Services use an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet™ Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service capability, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 3000 Series Switches. Spanning the entire network lifecycle, Cisco Services help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

Cisco Capital Financing to Help You Achieve Your Objectives

Cisco Capital® financing can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce capital expenditures (CapEx), accelerate your growth, and optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And you have just one predictable payment. Cisco Capital financing is available in more than 100 countries. Learn more.

For More Information

For more information about Cisco Nexus 3000 Series Switches, please visit http://www.cisco.com/go/nexus3000. For more information about Cisco Nexus Data Broker, please visit http://www.cisco.com/go/nexusdatabroker.

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San Jose, CA

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