

N3K-C31108PC-V Datasheet

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Overview

N3K-C31108PC-V is the Nexus 31108PC-V, providing 48 SFP+ and 6 QSFP28 ports. The Cisco Nexus 3100-V switch platform 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.

Quick Specs

Table 1 shows the Quick Specs.

Product Code	N3K-C31108PC-V
Physical	<ul style="list-style-type: none">• 1RU fixed form factor• Cisco Nexus 31108PC-V<ul style="list-style-type: none">◦ 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.• Redundant fans (3+1)• 2 redundant power supplies• Management, console, and USB flash-memory ports
Performance	<ul style="list-style-type: none">• 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)
Physical dimensions (H x W x D)	1.72 x 17.3 x 22.3 in. (4.4 x 43.9 x 56.6 cm)
Weight	21.4 lb (9.7 kg)

Product Details

The Cisco Nexus 3100-V platform provides the following main 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 (bps) 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).
- 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 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
- Build simple, scalable and cost-effective network test access point (TAP) or Cisco Switched Port Analyzer (SPAN) aggregation for network traffic monitoring and analysis.

The Accessories

Table 2 shows the supported accessories.

Model	Description
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)
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]
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]
L-N3K-LAN1K9=	Nexus 3000 LAN Enterprise License, eDelivery

Compare to Similar Items

Table 3 shows the comparison.

Product Code	N3K-C3132Q-XL	N3K-C31108PC-V
Ports	32 QSFP+ ports; each supports native 40 Gigabit Ethernet and 4 x 10 Gigabit Ethernet modes	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
Physical dimensions (H x W x D)	1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)	1.72 x 17.3 x 22.3 in. (4.4 x 43.9 x 56.6 cm)
Weight	21.5 lb (9.3 kg)	21.4 lb (9.7 kg)

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Specification

N3K-C31108PC-V Specification

Physical	<ul style="list-style-type: none">• 1RU fixed form factor• Cisco Nexus 31108PC-V<ul style="list-style-type: none">◦ 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.• Redundant fans (3+1)• 2 redundant power supplies• Management, console, and USB flash-memory ports	
Performance	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• RSTP: 512• MSTP: 64
	Number of ACL entries	<ul style="list-style-type: none">• 16,000 ingress• 1000 egress
	Routing table	<ul style="list-style-type: none">• 16,000 prefixes and 16,000 host entries• 8000 multicast routes
	Number of EtherChannels	64 (with vPC)
	Number of ports per EtherChannel	32
	System memory	16 GB
	Buffer size	16 MB shared
	Boot flash	64 GB SSD (31108PC-V, 31108TC-V, and 31108TCV-32T)
Power	Number of power supplies	2
	Power supply types	<ul style="list-style-type: none">• AC (forward and reverse airflow)• NXA-PAC-650W-PE and NX-PAC-650W-PI (31108 models)• DC (forward and reverse airflow)• NXA-PDC-930W-PE and NX-PDC-930W-PI (31108 models)
	Typical operating power	<ul style="list-style-type: none">• Cisco Nexus 31108PC-V: 150W
	Maximum power	<ul style="list-style-type: none">• Cisco Nexus 31108PC-V: 360W
	AC PSUs <ul style="list-style-type: none">• Input voltage• Frequency• Efficiency	<ul style="list-style-type: none">• 100 to 240 VAC• 50 to 60 Hz• 89 to 91% at 220V
	DC PSUs <ul style="list-style-type: none">• Input voltage• Maximum current (PSU output – System input)• Efficiency	<ul style="list-style-type: none">• –40 to –72 VDC• 33A (400W unit), 78A (930W unit)• 85 to 88%
	Typical heat dissipation	<ul style="list-style-type: none">• Cisco Nexus 31108PC-V: 512 BTU/hr
	Maximum heat dissipation	<ul style="list-style-type: none">• Cisco Nexus 31108PC-V: 1228 BTU/hr

Cooling	<ul style="list-style-type: none"> • Forward and reverse airflow schemes: <ul style="list-style-type: none"> ◦ 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) <ul style="list-style-type: none"> • Fan speed: 40% duty cycle • Fan speed: 70% duty cycle • Fan speed: 100% duty cycle 	<ul style="list-style-type: none"> • 64.9 dBA • 69.3 dBA • 76.7 dBA
Environment	Dimensions (height x width x depth)	• Cisco Nexus 31108PC-V, 31108TC-V, and 31108TCV-32T: 1.72 x 17.3 x 22.3 in. (4.4 x 43.9 x 56.6 cm)
	Weight	• Cisco Nexus 31108PC-V: 21.4 lb (9.7 kg)
	Operating temperature	• 32 to 104°F (0 to 40°C)
	Storage temperature	• -40 to 158°F (-40 to 70°C)
	Operating relative humidity	<ul style="list-style-type: none"> • 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)

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Support and Resources

 [Cisco Nexus 3100-V Platform Switches Datasheet](#)

Transition Guide

 [Select and Upgrade Cisco Data Center Switch](#)

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