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Overview

The Cisco Nexus 3172PQ switch is a dense, high-performance Layer 2 and 3 10 and 40-Gbps switch that is a member of the Cisco Nexus 3100 switches. The Cisco Nexus 3172PQ is well suited for data centers that require a cost-effective, power-efficient line-rate Layer 2 and 3 top-of-rack (ToR) switch.

Quick Specification

Product Code	N3K-C3172PQ-10GE
Performance	1.4-Tbps switching capacity Forwarding rate of up to 1 bpps Line-rate traffic throughput (both Layer 2 and 3) on all ports Configurable maximum transmission units (MTUs) of up to 9216 bytes (jumbo frames)
System Memory	4 GB
Number of power supplies	2
Typical operating power	143 W
Dimension (height x width x depth)	1.72 x 17.3 x 17 in. (4.4 x 43.9 x 43.2 cm)
Net Weight	18.6 lb (8.4 kg)



Product Details:

The Front Panel:



The Accessories

Modules and Cables:

Models	Description
SFP-H10GB-CU1M	10GBASE-CU SFP+ Cable 1 Meter
SFP-H10GB-ACU7M	Active Twinax cable assembly, 7m
SFP-H10GB-CU1-5M	10GBASE-CU SFP+ Cable 1.5 Meter
SFP-10G-LR	10GBASE-LR SFP Module
SFP-10G-SR	10GBASE-SR SFP Module

Compare to Similar Items

Product Code	N3K-C3172PQ-10GE	N3K-C3172TQ-XL
Virtual extensible LAN (VXLAN) capable	Bridging	Bridging
Openflow support	Yes	Yes
Enclosure Type	1 RU	1 RU
Switching Capacity	1.4-Tbps	1.4-Tbps

Interface-type	48 SFP+ and 6 QSFP+	48 RJ-45 and 6 Quad Small Form-Factor Pluggable Plus (QSFP+)
Maximum 1 Gigabit Ethernet (GE) ports	48	48
Maximum 10 GE ports	72	72
Maximum 40 GE ports	6	6

Get more information:

Do you have any question about the N3K-C3172PQ-10GE?

Contact us now via e-mail: info@hi-network.com

Specific Data Sheet:

Type	N3K-C3172PQ-10GE
Physical	<p>1RU fixed form factor</p> <p>72 x 10 Gigabit Ethernet ports (48 SFP+ and 6 QSFP+)</p> <p>48 SFP ports support 1 and 10 Gigabit Ethernet</p> <p>6 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each</p> <p>Redundant fans (3+1)</p> <p>2 redundant power supplies</p> <p>Management, console, and USB flash-memory ports</p>
Performance	<p>1.4-Tbps switching capacity</p> <p>Forwarding rate of up to 1 bpps</p> <p>Line-rate traffic throughput (both Layer 2 and 3) on all ports</p> <p>Configurable maximum transmission units (MTUs) of up to 9216 bytes (jumbo frames)</p>
MAC addresses	288,000
Number of VLANs	4096
Spanning-tree instances	<p>RSTP: 512</p> <p>MSTP: 64</p>
ACL entries	<p>4000 ingress</p> <p>1000 egress</p>
Routing table	<p>16,000 prefixes and 16,000 host entries</p> <p>8000 multicast routes</p>
Number of EtherChannels	64 (with vPC)
Number of ports per EtherChannel	32
System memory	4 GB
Buffer size	12 MB shared
Boot flash memory	16 GB
Number of power supplies	2
Power supply types	<p>AC (forward and reversed airflow)</p> <p>- N2200-PAC-400W and N2200-PAC-400W-B (PQ models)</p> <p>- NXA-PAC-500W and NX-PAC-500W-B (TQ models)</p>

N3K-C3172PQ-10GE Datasheet



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	<p>DC (forward and reversed airflow)</p> <ul style="list-style-type: none"> - N2200-PDC-400W and N3K-PDC-350W-B (PQ models) - NXA-PDC-500W and NX-PDC-500W-B (TQ models)
Typical operating power	143W
Maximum power	440W
AC PSUs	
Input voltage	100 to 240 VAC
Frequency	50 to 60 Hz
Efficiency	89 to 91% at 220V
DC PSUs	
Input voltage	-40 to -72 VDC
Maximum current	33A (400W unit), 42A (500W unit)
Efficiency	85 to 88%
Cooling	<p>Forward and reversed airflow schemes</p> <p>Forward airflow: Port-side exhaust (air enters through fan-tray and power supplies and exits through ports)</p> <p>Reversed airflow: Port-side intake (air enters through ports and exits through fan tray and power supplies)</p> <p>Single fan tray with redundant fans</p> <p>Hot swappable (must swap within 1 minute)</p>
Measured sound power (maximum)	
Fan speed: 40% duty cycle	64.9 dBA
Fan speed: 60% duty cycle	69.3 dBA
Fan speed: 100% duty cycle	76.7 dBA
Dimensions (height x width x depth)	1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)
Weight	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	<p>10 to 85% noncondensing</p> <p>Up to 5 days at maximum (85%) humidity</p> <p>Recommend ASHRAE data center environment</p>
Storage relative humidity	5 to 95% noncondensing
Altitude	0 to 10,000 ft (0 to 3000m)
Regulatory compliance	Products should comply with CE Markings per directives 2004/108/EC and 2006/95/EC.
Safety	<p>UL 60950-1 Second Edition</p> <p>CAN/CSA-C22.2 No. 60950-1 Second Edition</p> <p>EN 60950-1 Second Edition</p> <p>IEC 60950-1 Second Edition</p> <p>AS/NZS 60950-1</p> <p>GB4943</p>
EMC: Emissions	<p>47CFR Part 15 (CFR 47) Class A</p> <p>AS/NZS CISPR22 Class A</p> <p>CISPR22 Class A</p> <p>EN55022 Class A</p> <p>ICES003 Class A</p>





	<p>VCCI Class A</p> <p>EN61000-3-2</p> <p>EN61000-3-3</p> <p>KN22 Class A</p> <p>CNS13438 Class A</p>		
<p>EMC: Immunity</p>	<p>EN55024</p> <p>CISPR24</p> <p>EN300386</p> <p>KN24</p>		
<p>RoHS</p>	<p>RoHS 5 compliant except for lead press-fit connectors</p>		
<p>MIB Support</p>	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Generic MIBs</p> <ul style="list-style-type: none"> • 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 <p>Ethernet MIBs</p> <ul style="list-style-type: none"> • CISCO-VLAN-MEMBERSHIP- MIB • LLDP-MIB • IP-MULTICAST-MIB <p>Configuration MIBs</p> <ul style="list-style-type: none"> • ENTITY-MIB • IF-MIB • CISCO-ENTITY-EXT-MIB • CISCO-ENTITY-FRU-CONTROL-MIB • CISCO-ENTITY-SENSOR-MIB • CISCO-SYSTEM-MIB • CISCO-SYSTEM-EXT-MIB • CISCO-IP-IF-MIB </td> <td style="vertical-align: top; padding-left: 20px;"> <p>Monitoring MIBs</p> <ul style="list-style-type: none"> • NOTIFICATION-LOG-MIB • CISCO-SYSLOG-EXT-MIB • CISCO-PROCESS-MIB • RMON-MIB • CISCO-RMON-CONFIG-MIB • CISCO-HC-ALARM-MIB <p>Security MIBs</p> <ul style="list-style-type: none"> • CISCO-AAA-SERVER-MIB • CISCO-AAA-SERVER-EXT-MIB • CISCO-COMMON-ROLES-MIB • CISCO-COMMON-MGMT-MIB • CISCO-SECURE-SHELL-MIB <p>Miscellaneous MIBs</p> <ul style="list-style-type: none"> • CISCO-LICENSE-MGR-MIB • CISCO-FEATURE-CONTROL-MIB • CISCO-CDP-MIB • CISCO-RF-MIB <p>Layer 3 and Routing MIBs</p> <ul style="list-style-type: none"> • UDP-MIB • TCP-MIB • OSPF-MIB • BGP4-MIB • CISCO-HSRP-MIB </td> </tr> </table>	<p>Generic MIBs</p> <ul style="list-style-type: none"> • 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 <p>Ethernet MIBs</p> <ul style="list-style-type: none"> • CISCO-VLAN-MEMBERSHIP- MIB • LLDP-MIB • IP-MULTICAST-MIB <p>Configuration MIBs</p> <ul style="list-style-type: none"> • ENTITY-MIB • IF-MIB • CISCO-ENTITY-EXT-MIB • CISCO-ENTITY-FRU-CONTROL-MIB • CISCO-ENTITY-SENSOR-MIB • CISCO-SYSTEM-MIB • CISCO-SYSTEM-EXT-MIB • CISCO-IP-IF-MIB 	<p>Monitoring MIBs</p> <ul style="list-style-type: none"> • NOTIFICATION-LOG-MIB • CISCO-SYSLOG-EXT-MIB • CISCO-PROCESS-MIB • RMON-MIB • CISCO-RMON-CONFIG-MIB • CISCO-HC-ALARM-MIB <p>Security MIBs</p> <ul style="list-style-type: none"> • CISCO-AAA-SERVER-MIB • CISCO-AAA-SERVER-EXT-MIB • CISCO-COMMON-ROLES-MIB • CISCO-COMMON-MGMT-MIB • CISCO-SECURE-SHELL-MIB <p>Miscellaneous MIBs</p> <ul style="list-style-type: none"> • CISCO-LICENSE-MGR-MIB • CISCO-FEATURE-CONTROL-MIB • CISCO-CDP-MIB • CISCO-RF-MIB <p>Layer 3 and Routing MIBs</p> <ul style="list-style-type: none"> • UDP-MIB • TCP-MIB • OSPF-MIB • BGP4-MIB • CISCO-HSRP-MIB
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	<ul style="list-style-type: none"> ● CISCO-IF-EXTENSION-MIB ● CISCO-NTP-MIB ● CISCO-VTP-MIB ● CISCO-IMAGE-MIB ● CISCO-IMAGE-UPGRADE-MIB
Standards	<p>IEEE 802.1D: Spanning Tree Protocol</p> <ul style="list-style-type: none"> ● 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 3064-X) ● IEEE 802.3ba: 40 Gigabit Ethernet ● IEEE 802.3an: 10GBASE-T (Cisco Nexus 3064-T) ● IEEE 802.1ab: LLDP ● IEEE 1588-2008: Precision Time Protocol (Boundary Clock)
RFC	<p>BGP</p> <ul style="list-style-type: none"> ● 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 <p>OSPF</p> <ul style="list-style-type: none"> ● RFC 2328: OSPF Version 2 ● 8431 RFC 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 <p>RIP</p> <ul style="list-style-type: none"> ● RFC 1724: RIPv2 MIB Extension ● RFC 2082: RIPv2 MD5 Authentication ● RFC 2453: RIP Version 2 <p>IP Services</p> <ul style="list-style-type: none"> ● RFC 768: UDP ● RFC 783: Trivial File Transfer Protocol (TFTP)





	<ul style="list-style-type: none"> • RFC 791: IP • RFC 792: ICMP • RFC 793: TCP • 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 <p>IP Multicast</p> <ul style="list-style-type: none"> • 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
<p>Layer 2</p>	<p>Layer 2 switch ports and VLAN trunks</p> <ul style="list-style-type: none"> • IEEE 802.1Q VLAN encapsulation • Support for up to 4096 VLANs • Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible) • MSTP (IEEE 802.1s): 64 instances • Spanning Tree PortFast • Spanning Tree Root Guard • Spanning Tree Bridge Assurance • Cisco EtherChannel technology (up to 32 ports per EtherChannel) • LACP: IEEE 802.3ad • Advanced port-channel hashing based on Layer 2, 3, and 4 information • vPC • Jumbo frames on all ports (up to 9216 bytes) • Storm control (unicast, multicast, and broadcast) • Private VLANs • NvGRE entropy • Resilient hashing
<p>Layer 3</p>	<p>Layer 3 interfaces: Routed ports on interfaces, switch virtual interfaces (SVIs), port channels, and subinterfaces (total: 1024)</p> <ul style="list-style-type: none"> • 64-way ECMP • 4000 ingress and 1000 egress ACL entries





	<ul style="list-style-type: none"> • IPv6 routing: Static, OSPFv3, and BGPv6 • Routing protocols: Static, RIPv2, EIGRP, OSPF, and BGP • Bidirectional Flow Detection (BFD) for BGP, OSPF, and IPv4 static routes • HSRP and VRRP • ACL: Routed ACL with Layer 3 and 4 options to match ingress and egress ACLs • VRF: VRF-lite (IP VPN), VRF-aware unicast (BGP, OSPF, and RIP), and VRF-aware multicast • Unicast Reverse-Path Forwarding (uRPF) with ACL; strict and loose modes • Jumbo frame support (up to 9216 bytes) • Generic Routing Encapsulation (GRE) tunneling • Advanced BGP features including BGP add-path for eBGP and iBGP, remove-private-as enhancements and eBGP next hop unchanged • IP-in-IP Tunnel support
<p>Multicast</p>	<p>Multicast: PIMv2, PIM-SM, and PIM-SSM</p> <ul style="list-style-type: none"> • Bootstrap router (BSR), Auto-RP, and Static RP • MSDP and Anycast RP • Internet Group Management Protocol (IGMP) Versions 2 and 3
<p>Quality of Service (QoS)</p>	<p>Layer 2 IEEE 802.1p (class of service [CoS])</p> <ul style="list-style-type: none"> • 8 hardware queues per port • Per-port QoS configuration • CoS trust • Port-based CoS assignment • Modular QoS CLI (MQC) compliance • ACL-based QoS classification (Layers 2, 3, and 4) • MQC CoS marking • Differentiated services code point (DSCP) marking • Weighted Random Early Detection (WRED) • CoS-based egress queuing • Egress strict-priority queuing • Egress port-based scheduling: Weighted Round-Robin (WRR) • Explicit Congestion Notification (ECN) • Configurable ECN marking per port • Priority Flow Control (with 3 no-drop queues and 1 default queue with strict priority scheduling between queues) • Policy Based Routing (PBR)
<p>Security</p>	<p>Ingress ACLs (standard and extended) on Ethernet</p> <ul style="list-style-type: none"> • Standard and extended Layer 3 and 4 ACLs include IPv4, Internet Control Message Protocol (ICMP), TCP, and User Datagram Protocol (UDP) • VLAN-based ACLs (VACLs) • Port-based ACLs (PACLs) • Named ACLs • ACLs on virtual terminals (vtys) • DHCP snooping with Option 82 • Port number in DHCP Option 82 • DHCP relay





	<ul style="list-style-type: none"> • Dynamic Address Resolution Protocol (ARP) inspection • Configurable CoPP • SPAN with ACL filtering
Cisco Nexus Data Broker	<p>Topology support for TAP and SPAN aggregation</p> <ul style="list-style-type: none"> • Support for QinQ to tag input source TAP and SPAN ports • Configuration of symmetric hashing to load-balance traffic to multiple tools • Traffic filtering based on Layer 1 through Layer 4 header information • Traffic replication and forwarding to multiple monitoring tools • Robust RBAC • Northbound representational state transfer (REST) API for all programmability support
Management	<p>POAP</p> <ul style="list-style-type: none"> • Python scripting • Cisco EEM • Switch management using 10/100/1000-Mbps management or console ports • CLI-based console to provide detailed out-of-band management • In-band switch management • Locator and beacon LEDs • Configuration rollback • SSHv2 • Secure Copy (SCP) server • Telnet • AAA • AAA with RBAC • RADIUS • TACACS+ • Syslog • Syslog generation on system resources (for example, FIB tables) • Embedded packet analyzer • SNMP v1, v2, and v3 • Enhanced SNMP MIB support • XML (NETCONF) support • Remote monitoring (RMON) • Advanced Encryption Standard (AES) for management traffic • Unified username and passwords across CLI and SNMP • Microsoft Challenge Handshake Authentication Protocol (MS-CHAP) • Digital certificates for management between switch and RADIUS server • Cisco Discovery Protocol Versions 1 and 2 • RBAC • SPAN on physical layer, port channel, and VLAN • Tunable buffer allocation for SPAN • Encapsulated Remote SPAN (ERSPAN) • Ingress and egress packet counters per interface • PTP (IEEE 1588) boundary clock • Network Time Protocol (NTP) • Cisco OHMS • Comprehensive bootup diagnostic tests





- Cisco Call Home
- Cisco DCNM
- Advanced buffer utilization monitoring
- sFlow

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