N5K-C5672UP-16G Datasheet

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Overview

Cisco Nexus 5672UP-16G switch (N5K-C5672UP-16G) is a compact 1RU (1 Rack Unit), high-performance, low-latency 1/10/40-Gigabit Ethernet, Fibre Channel, and Fibre Channel over Ethernet (FCoE) switch. It runs the industry-leading Cisco NX-OS Software operating system, providing features and capabilities that are widely deployed.

### Quick Specs

Figure 1 shows the appearance of N5K-C5672UP-16G.

Table 1 shows the Quick Specs.

|	
Product Code	N5K-C5672UP-16G
Performance	Layer 2 and 3 hardware forwarding at 1.44 Tbps; 1071 mpps (64-byte packets)
Form factor	1-rack unit
Power Supplies	two 1+1 redundant, hot-swappable power supplies
Fan Modules	3
Airflow	supporting both port-side intake (red handle) and fan-side intake (blue handle) airflow options for flexible mounting
10 GE	48 ports
40 GE	6 true QSFP ports
Ports	48 fixed 1 Gigabit and 10 Gigabit Ethernet ports of which 24 ports can be unified ports (UP)
10 and 40 Gbps FCoE	Yes
Hardware VXLAN	Yes
NVGRE capable	Yes
Latency	1 microsecond
Physical (height x width x depth)	1.75 x 17.3 x 30 in. (4.4 x 43.9 x 76.2 cm)
Weight	32 lb (2 power supplies)

Product Details

Figure 2 shows the front panel of N5K-C5672UP-16G.
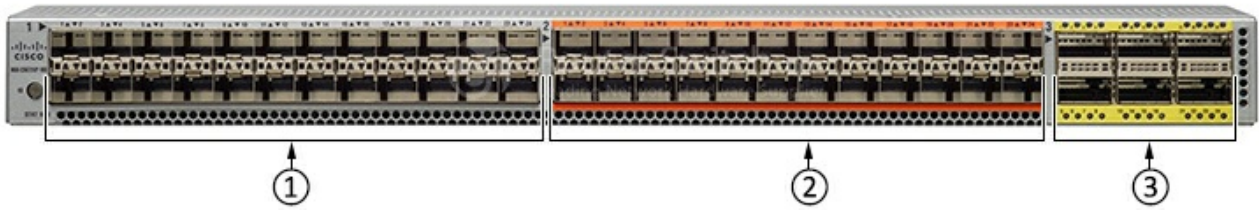
Note:

(1)	1/10G Ethernet SFP+ ports
(2)	24 x UP ports
(3)	6 x 40G QSFP ports

Figure 3 shows the back panel of N5K-C5672UP-16G.
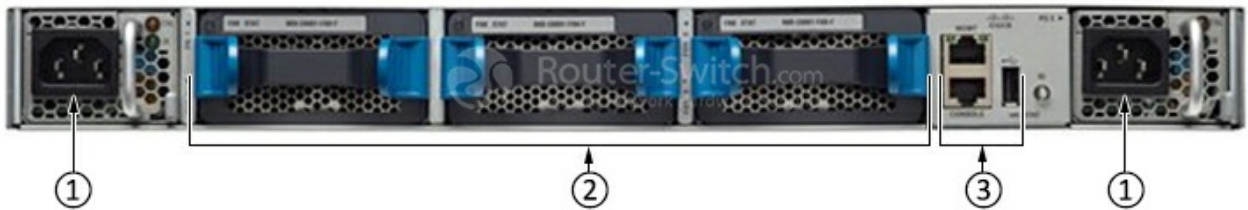
Note:

(1)	Power Supply 1+1 redundancy
(2)	Fan Module 2+1 redundancy
(3)	Mgmto/Console/USB

The Accessories

Table 2 shows the recommended elements for the N5K-C5672UP-16G.

Category	Model	Description
QSFP Transceiver and Optics	QSFP-40G-LR4	QSFP 40GBASE-LR4 OTN Transceiver, LC, 10KM
	QSFP-4SFP10G-CU5M	QSFP to 4xSFP10G Passive Copper Splitter Cable, 5m
SFP Transceiver and Optics	SFP-10G-SR	10GBASE-SR SFP Module
	SFP-H10GB-CU5M	10GBASE-CU SFP+ Cable 5 Meter

Compare to Similar Items

Table 3 shows the comparison of N5K-C5672UP-16G and N5K-C56128P.

Product Code	N5K-C5672UP-16G	N5K-C56128P
Form factor	1-rack unit	2-rack unit
Power Supplies	two 1+1 redundant, hot-swappable power supplies	four 2+2 redundant, hot-swappable power supplies
Airflow	supporting both port-side intake (red handle) and fan-side intake (blue handle) airflow options for flexible mounting	supporting both port-side intake (red handle) and fan-side intake (blue handle) airflow options.
Number of ports	Up to 1152 with FEX	1152 with FEX
10 GE	48 ports	Up to 96 wire-rate ports
40 GE	6 true QSFP ports	Up to 8 QSFP ports

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Specification

N5K-C5672UP-16G Specification	
Form factor	1-rack unit
Number of ports	Up to 1152 with FEX
10 GE	48 ports
40 GE	6 true QSFP ports
Unified ports	24 ports (Ethernet; FCoE; 2/4/8-gigabit FC)
10 and 40 Gbps FCoE	Yes
Hardware VXLAN	Yes
NVGRE capable	Yes
Latency	1 microsecond
Performance	● Layer 2 and 3 hardware forwarding at 1.44 Tbps; 1071 mpps (64-byte packets) ● Support for up to 256,000 combined entries of MAC addresses and Address Resolution Protocol (ARP) entries ● Low latency of approximately 1 microsecond using cut-through forwarding for predictable, consistent traffic latency regardless of packet size, traffic pattern, or features enabled on 10 and 40 Gigabit Ethernet interfaces ● 25-MB buffer per 12 x 10 Gigabit Ethernet SFP+ interfaces ● Line-rate traffic throughput on all ports in Layer 2 and 3 mode

Interfaces	● 48 fixed 1/10 Gigabit Ethernet SFP+ ports with 24 of the 48 ports being unified, and 6 fixed 40 Gigabit Ethernet QSFP+ ports with 10 and 40 Gigabit Ethernet FCoE support on all respective ports and 2/4/8-Gbps Fibre Channel on all the unified ports ● Expansion module: 24 SFP+ unified ports plus 2 x 40 Gigabit Ethernet QSFP+ ports ● Conversion of 40 Gigabit Ethernet ports to 10 Gigabit Ethernet interfaces through QSFP+ breakout cable ● Fabric extension through the Cisco Nexus 2200 and 2300 platforms
Layer 2 Features	● Layer 2 switch ports and VLAN trunks ● IEEE 802.1Q VLAN encapsulation ● Support for up to 4000 VLANs ● Support for up to 4000 access control list (ACL) entries ● Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible) ● Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances ● Spanning Tree PortFast ● Spanning Tree root guard ● Spanning Tree Bridge Assurance ● Cisco EtherChannel technology (up to 16 ports per EtherChannel) ● Cisco vPC technology ● vPC configuration synchronization ● vPC shutdown ● Link Aggregation Control Protocol (LACP): IEEE 802.3ad ● Advanced port-channel hashing based on Layer 2, 3, and 4 information ● Jumbo frames on all ports (up to 9216 bytes) ● Pause frames (IEEE 802.3x) ● Storm control (unicast, multicast, and broadcast) ● Private VLANs ● Private VLAN over trunks (isolated and promiscuous) ● Private VLANs over vPC and EtherChannels ● VLAN remapping ● FabricPath ● EvPC and vPC+ with FabricPath ● Adapter FEX ● Data Center VM-FEX ● Support for up to 24 fabric extenders (Layer 2) with each Cisco Nexus 5672UP, 5672UP-16G, and 56128P Switch ● RDMA over Converged Ethernet (RoCE) using Data Center Bridging (DCB) support (DCB Exchange [DCBX] no drop and priority flow control [PFC])

| Layer 3 Features | ● Layer 3 interfaces: Routed ports, switch virtual interface (SVI), port channels, subinterfaces, and port-channel subinterfaces
● Support for up to 32,000 IPv4 and 8000 IPv6 host prefixes
● Support for up to 8000 multicast routes (IPv4)
● Support for up to 8000 IGMP snooping groups
● Support for 4000 Virtual Routing and Forwarding (VRF) entries
● Support for up to 4096 VLANs
● Equal-Cost Multipathing (ECMP) up to 64 ways
● 4000 flexible ACL entries
● Routing protocols: Static, Routing Information Protocol Version 2 (RIPv2), Enhanced Interior Gateway Routing Protocol (EIGRP), Open Shortest Path First Version 2 (OSPFv2), Border Gateway Protocol (BGP), and Intermediate System-to-Intermediate System (IS-IS)
● IPv6 routing protocols: Static, OPFv3, BGPv6, and EIGRPv6
● IPv6 VRF-lite
● BFD support: OSPFv2, BGPv4, EIGRP, and VRF instances
● Policy-Based Routing (IPv4 and IPv6)
● Hot-Standby Router Protocol (HSRP) and Virtual Router Redundancy Protocol (VRRP)
● IP direct broadcast
● vPC+ routing protocol peering
● ACL: Routed ACL with Layer 3 and 4 options to match ingress and egress ACL
● Multicast: Protocol Independent Multicast Version 2 (PIMv2) sparse mode, Source-Specific Multicast (SSM), Bidir-PIM, Multicast Source Discovery Protocol (MSDP), IGMPv2 and v3, and Multicast VLAN Registration (MVR)
● VRF: VRF-lite (IP VPN); VRF-aware unicast; and BGP-, OSPF-, RIP-, and VRF-aware multicast
● Unicast Reverse-Path Forwarding (uRFP) with ACL; strict and loose modes
● Jumbo frame support (up to 9216 bytes)
● Support for up to 24 fabric extenders on each Cisco Nexus 5600 10-Gbps platform switch |
| Quality of Service (QoS) | ● Layer 2 IEEE 802.1p (class of service [CoS])
● 8 unicast queues and 8 multicast queues per port
● Per-port QoS configuration
● CoS trust
● Port-based CoS assignment
● Modular QoS CLI (MQC) compliance: IPv4 and IPv6
● ACL-based QoS classification (Layers 2, 3, and 4)
● Flexible TCAM carving
● MAC and ARP hardware carving
● MQC CoS marking
● Per-port virtual output queuing
● CoS-based egress queuing
● Egress strict-priority queuing
● Egress port-based scheduling: Deficit Weighted Round-Robin (DWRR)
● Control-Plane Policing (CoPP): IPv4 and IPv6 |

Security	● Ingress ACLs (standard and extended) on Ethernet and virtual Ethernet ports ● Standard and extended Layer 2 ACLs: MAC addresses, protocol type, etc. ● Standard and extended Layer 3 and 4 ACLs: IPv4 and IPv6, Internet Control Message Protocol (ICMP and ICMPv6), TCP, User Datagram Protocol (UDP), etc. ● Ingress policing ● VLAN-based ACLs (VACLs) ● Port-based ACLs (PACLs) ● Named ACLs ● Optimized ACL distribution ● ACLs on virtual terminals (vtys) ● ACL logging (IPv4 only) ● Dynamic Host Configuration Protocol (DHCP) snooping with Option 82 ● Dynamic ARP Inspection ● IP source guard ● DHCP relay (up to 32 destinations) ● Ethernet port security ● IPv6 RACL, PACL, and VACL ● iSCSI type-length-value (TLV)
High-Availability Features	● Cisco In-Service Software Upgrade (ISSU) for Layer 2 ● Hot-swappable field-replaceable power supplies and fan modules ● N+1 and N+N power redundancy ● N+1 fan module redundancy
Management	● 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 ● Port-based locator and beacon LEDs ● Configuration synchronization ● Configuration rollback ● Secure Shell Version 2 (SSHv2) ● Telnet ● Authentication, authorization, and accounting (AAA) ● AAA with RBAC ● RADIUS ● TACACS+ ● Syslog (8 servers) ● Embedded packet analyzer ● SNMPv1, v2, and v3 (IPv4 and IPv6) ● 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, PortChannel and VLAN ● ERSPAN ● Ingress and egress packet counters per interface ● Network Time Protocol (NTP) ● Cisco Generic Online Diagnostics (GOLD) ● Comprehensive bootup diagnostic tests ● Cisco Embedded Event Manager (EEM) ● Cisco Call Home ● Cisco Smart Call Home ● Default Interface ● Cisco Fabric Manager ● Cisco Prime DCNM ● CiscoWorks LAN Management Solution (LMS)
Data Center Bridging	● CEE- and IEEE-compliant PFC (per-priority Pause frame support: IEEE 802.1Qbb) ● PFC link distance support: 20 km ● CEE-compliant DCBX Protocol ● CEE- and IEEE-compliant enhanced transmission selection

FCoE Features (Require Storage Services License)	• T11 standards-compliant FCoE (Fibre Channel-BB-5) • T11 FCoE Initialization Protocol (FIP) (Fibre Channel-BB-5) • Any 10 or 40 Gigabit Ethernet port configurable as FCoE • SAN administration separate from LAN administration • Fibre Channel forwarding (FCF) • Fibre Channel enhanced port types: VE, VF and VNP • Direct attachment of FCoE targets • Fabric Device Management Interface (FDMI) • Fibre Channel ID (FCID) persistence • Distributed device alias services • In-order delivery • Port tracking • Cisco FCoE NPV technology • N-port identifier virtualization (NPIV) • Fabric services: Name server, registered state change notification (RSCN), login services, and name-server zoning • Per-VSAN fabric services • Cisco Fabric Services • Distributed device alias services • Host-to-switch and switch-to-switch Fibre Channel-SP authentication • Fabric Shortest Path First (FSPF) • Standard zoning • Enhanced zoning • Cisco Fabric Analyzer • Cisco DCNM-SAN • Storage Management Initiative Specification (SMI-S) • Boot from SAN over vPC and Enhanced vPC (EvPC) • FCP • VSAN trunking • Fabric Device Management Interface (FDMI) • Fibre Channel ID (FCID) persistence • Distributed device alias services • In-order delivery • Port tracking • Cisco NPV technology • Fabric binding for Fibre Channel • Port security • Fibre Channel traceroute • Fibre Channel ping • Fibre Channel debugging
SNMP MIBs	
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
Layer 3 MIBs	• UDP-MIB • TCP-MIB • OSPF-MIB • BGP4-MIB • CISCO-HSRP-MIB
Ethernet MIBs	• CISCO-VLAN-MEMBERSHIP-MIB • CISCO-Virtual-Interface-MIB • CISCO-VTP-MIB

Configuration MIBs	• ENTITY-MIB • IF-MIB • CISCO-ENTITY-EXT-MIB • CISCO-ENTITY-FRU-CONTROL-MIB • CISCO-ENTITY-SENSOR-MIB • CISCO-FLASH-MIB • CISCO-SYSTEM-MIB • CISCO-SYSTEM-EXT-MIB • CISCO-IP-IF-MIB • CISCO-IF-EXTENSION-MIB • CISCO-SERVER-INTERFACE-MIB • CISCO-NTP-MIB • CISCO-IMAGE-MIB • CISCO-IMAGE-CHECK-MIB • CISCO-IMAGE-UPGRADE-MIB • CISCO-CONFIG-COPY-MIB • CISCO-ENTITY-VENDORTYPE-OID-MIB • CISCO-BRIDGE-MIB
Monitoring MIBs	• DIFFSERV-DSCP-TC • NOTIFICATION-LOG-MIB • DIFFSERV-MIB • CISCO-CALLHOME-MIB • CISCO-SYSLOG-EXT-MIB • CISCO-PROCESS-MIB • RMON-MIB • CISCO-RMON-CONFIG-MIB • CISCO-HC-ALARM-MIB • LLDP-MIB
Security MIBs	• CISCO-AAA-SERVER-MIB • CISCO-AAA-SERVER-EXT-MIB • CISCO-COMMON-ROLES-MIB • CISCO-COMMON-MGMT-MIB • CISCO-RADIUS-MIB • CISCO-SECURE-SHELL-MIB • TCP/IP MIBs • INET-ADDRESS-MIB • TCP-MIB • CISCO-TCP-MIB • UDP-MIB • IP-MIB • CISCO-IP-PROTOCOL-FILTER-MIB • CISCO-DNS-CLIENT-MIB • CISCO-PORTSECURITY-MIB
Miscellaneous MIBs	• START-MIB • CISCO-LICENSE-MGR-MIB • CISCO-FEATURE-CONTROL-MIB • CISCO-CDP-MIB • CISCO-RF-MIB • CISCO-ETHERNET-FABRIC-EXTENDER-MIB • CISCO-BRIDGE-MIB • CISCO-FCOE-MIB • CISCO-PORTCHANNEL-MIB • CISCO-ZS-MIB
Standards	
Industry Standards	• IEEE 802.1D: Spanning Tree Protocol • IEEE 802.1p: CoS prioritization • IEEE 802.1Q: VLAN tagging • IEEE 802.1Qaz: Enhanced transmission selection • IEEE 802.1Qbb: Per-priority Pause • IEEE 802.1s: Multiple VLAN instances of Spanning Tree Protocol • IEEE 802.1w: Rapid reconfiguration of Spanning Tree Protocol • IEEE 802.3: Ethernet • IEEE 802.3ad: LACP with fast timers • IEEE 802.3ae: 10 Gigabit Ethernet • IEEE 802.3ba: 40 Gigabit Ethernet (Applies to 40G SR4, SR4-S, LR4, LR4-S, and CSR4 optics only) • SFF 8431 SFP+ CX1 support • RMON

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