N5K-C5548UP-FA Datasheet

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Overview

N5K-C5548UP-FA is Nexus 5548 UP Chassis, including 32 fixed unified ports, Front-to-Back Airflow, 2 750W AC Power Supplies, Fan Trays, 1 Expansion Slot. Unified ports support traditional Ethernet, Fibre Channel (FC), and Fibre Channel over Ethernet (FCoE).

Quick Specs

**Figure 1 shows the appearance of Cisco Nexus 5548UP, N5K-C5548UP-FA is its chassis.**

Table 1 shows the Quick Specs of N5K-C5548UP-FA.

Product Code	N5K-C5548UP-FA
Product Type	Switch Chassis
Ethernet Technology	10 Gigabit Ethernet
Number of Total Expansion Slots	33
Expansion Slots	1
Expansion Slot Type	SFP+
Performance	Layer 2 hardware forwarding at 960 Gbps or 714.24 mpps; Layer 3 performance of up to 160 Gbps or 240 mpps
Form Factor	1RU
Fixed Ports	32 fixed unified ports
Power Supplies	2 x 750W AC Power Supplies
PoE (RJ-45) Port	No
Fan Modules	2
Airflow	Front-to-back (port-side exhaust) cooling．The Cisco Nexus 5548UP alternatively supports back-to-front (port-side intake) cooling (all fan and power supply modules in the same chassis must support the same direction of airflow)
Manageable	Yes
Physical (height x width x depth)	1.72 x 17.3 x 29.5 in. (4.4 x 43.9 x 74.9 cm)

| Weight（with two 1100W power supplies, 3 unified port expansion modules, and 4 fan modules）	35 lb (15.88 kg)

Product Details

Figure 2 shows the front panel of Cisco Nexus 5548UP. N5K-C5548UP-FA is its chassis.
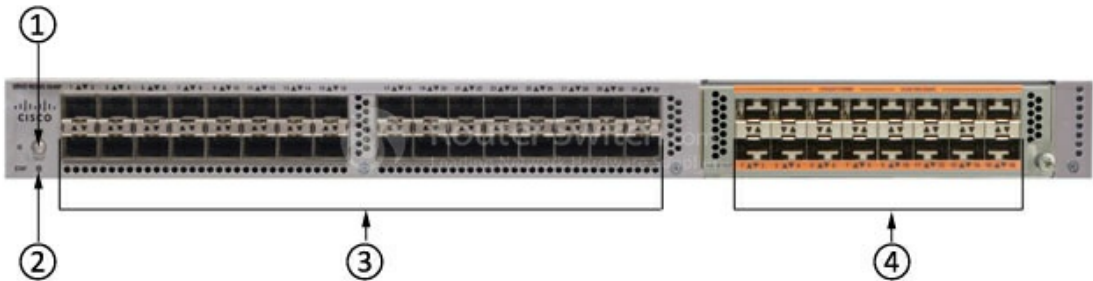
Note:

(1)	ID LED
(2)	Status LED
(3)	32 fixed unified ports Unified ports support traditional Ethernet, Fibre Channel (FC), and Fibre Channel over Ethernet (FCoE).
(4)	Expansion module

Figure 3 shows the back panel of Cisco Nexus 5548UP. N5K-C5548UP-FA is its chassis.
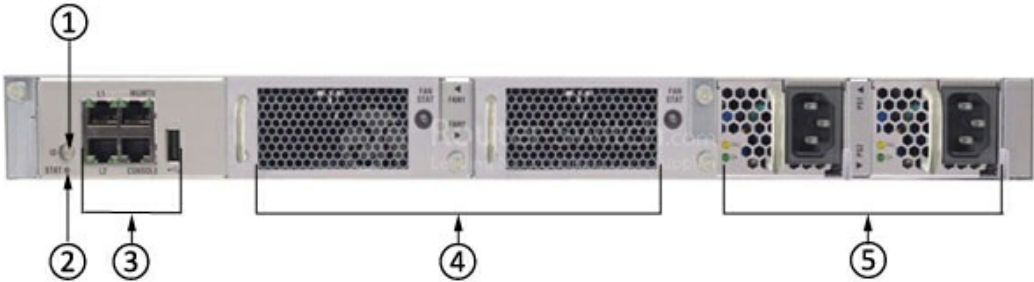
Note:

(1)	ID LED
(2)	Status LED
(3)	Management (10/100/1000) ports, console port, and USB port
(4)	Two fan modules
(5)	Two power supplies

The Accessories

Table 2 shows the recommended elements for the N5K-C5548UP-FA.

Category	Model	Description
Nexus 5500 Expansion Slot	N55-M16UP	Nexus 5500 Unified Ports Module 16p, Spare
Nexus 5500 L2 and L3 Options	N55-D160L3-V2	Nexus 5548 Layer 3 Daughter Card, Version 2
N5K Transceiver and Cable	SFP-H10GB-CU1M	10GBASE-CU SFP+ Cable 1 Meter
	SFP-H10GB-ACU7M	Cisco Direct-Attach Active Optical Cables with SFP+ Connectors, SFP-H10GB-ACU7M
License	N55-48P-SSK9	Nexus 5500 Storage License, 48 Ports

Compare to Similar Items

Table 3 shows the comparison of N5K-C5548UP-FA, N5K-C5596UP-FA and N5K-C5596T-FA.

Product Code	N5K-C5548UP-FA	N5K-C5596UP-FA	N5K-C5596T-FA
Form Factor	1RU	2RU	2RU
Fixed Ports	32 fixed unified ports	48 fixed unified ports	32x10GT/16xSFP+ Fixed Ports
Power Supplies	2 750W AC Power Supplies	2 1100W AC Power Supplies	2 1100W AC Power Supplies
Fan Modules	2	4	4
Expansion Slots	1	3	3
Airflow	Front-to-Back	Front-to-Back	Back-to-Front

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Specification

N5K-C5548UP-FA Specifications	
Performance	● Layer 2 hardware forwarding at 960 Gbps or 714.24 mpps; Layer 3 performance of up to 160 Gbps or 240 mpps ● MAC address table entries: 32,000 ● Low-latency cut-through design that provides predictable, consistent traffic latency regardless of packet size, traffic pattern, or enabled features on 10 Gigabit Ethernet interfaces ● Line-rate traffic throughput on all ports
Interfaces	● 32 fixed ports configurable as 1 and 10 Gigabit Ethernet and FCoE or 8/4/2/1-Gbps native Fibre Channel; additional interfaces through one expansion module ● Expansion modules ● 16-port 1 and 10 Gigabit Ethernet and FCoE module ● 8-port 8/4/2/1-Gbps Fibre Channel plus 8-port 1 and 10 Gigabit Ethernet and FCoE module ● Unified port module consisting of 16 ports configurable as 8/4/2/1-Gbps Fibre Channel or 1 and 10 Gigabit Ethernet and FCoE ● 4-port QSFP expansion module ● 12-port 10G BASE-T module (Cisco Nexus 5596T only) ● Layer 3 module (Cisco Nexus 5596UP and 5596T only; one per system) ● Layer 3 daughter card (Cisco Nexus 5548P and 5548UP only; one per system) ● Extension through the Cisco Nexus 2000 Series

Layer 2 Features	● Layer 2 switch ports and VLAN trunks ● IEEE 802.1Q VLAN encapsulation ● Support for up to 4096 VLANs ● 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 ● Enhanced vPC enable vPC between Cisco Nexus 5000 and 2000 Series as well as between Cisco Nexus 3000 Series and end host ● vPC configuration synchronization ● 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 ● Cisco FabricPath ● EvPC and vPC+ with FabricPath ● Cisco Adapter FEX ● Cisco Data Center VM FEX ● Support for up to 24 fabric extenders on each Cisco Nexus 5500 platform
Layer 3 Features	● Layer 3 interfaces: Routed ports on Cisco Nexus 5500 platform interfaces, switch virtual interface (SVI), port channels, subinterfaces, and port channel subinterfaces for a total of 4096 entries ● Support for up to 8000 prefixes and up to 16000 IPv4 and 8000 IPv6 host entries ● Support for up to 8000 multicast routes ● Support for up to 8000 IGMP groups ● Support for 1000 VRF entries ● Support for up to 4096 VLANs ● 16-way equal-cost multipathing (ECMP) ● 1664 ingress and 2048 egress access control list (ACL) entries ● Routing protocols: Static, Routing Information Protocol Version2 (RIPv2), Enhanced Interior Gateway Routing Protocol (EIGRP), Open Shortest Path First Version 2 (OSPFv2), and Border Gateway Protocol (BGP) ● IPv6 Routing Protocols: Static, Open Shortest Path First Version 3 (OPFv3), Border Gateway Protocol (BGPv6), Enhanced Interior Gateway Routing Protocol (EIGRPv6) ● IPv6 VRF Lite ● Hot-Standby Router Protocol (HSRP) and Virtual Router Redundancy Protocol (VRRP) ● 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), Multicast Source Discovery Protocol (MSDP), Internet Group Management Protocol Versions 2, and 3 (IGMP v2, and v3), and Multicast VLAN Registration (MVR) ● Virtual Route Forwarding (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 16 fabric extender on each Nexus 5500 with L3 modules ● RFC 896
QoS	● Layer 2 IEEE 802.1p (CoS) ● 8 hardware 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) ● MQC CoS marking ● Per-port virtual output queuing ● CoS-based egress queuing ● Egress strict-priority queuing ● Egress port-based scheduling: Weighted Round-Robin (WRR) ● Control Plan 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 to 4 ACLs: IPv4 and IPv6, Internet Control Message Protocol (ICMP and ICMPv6), TCP, User Datagram Protocol (UDP), etc. ● VLAN-based ACLs (VACLs) ● Port-based ACLs (PACLs) ● Named ACLs ● Optimized ACL distribution ● ACLs on virtual terminals (VTYs) ● ACL logging on management interface ● Dynamic Host Configuration Protocol (DHCP) snooping with Option 82 ● Dynamic Address Resolution Protocol (ARP) Inspection ● IP source guard ● DHCP relay ● Cisco CTS (Authentication and Policy download from ACS) ● Ethernet Port Security ● IPv6 RACL ● IPv6 PACL ● IPv6 VACL
High-Availability Features	● In-Service Software Upgrade (ISSU) for Layer 2 ● Hot-swappable field-replaceable power supplies, fan modules, and expansion modules ● 1:1 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 ● Locator and beacon LEDs on Cisco Nexus 2000 Series ● Port-based locator and beacon LEDs ● Configuration synchronization ● Module preprovisioning ● Configuration rollback ● Secure Shell Version 2 (SSHv2) ● Telnet ● AAA ● AAA with RBAC ● RADIUS ● TACACS+ ● Syslog (8 servers) ● Embedded packet analyzer ● SNMPv1, v2, and v3 (IPv4 & 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 ● Switched Port Analyzer (SPAN) on physical, port channel, VLAN, and Fibre Channel interfaces ● Encapsulated Remote SPAN (ERSPAN) ● Ingress and egress packet counters per interface ● Network Time Protocol (NTP) ● Cisco GOLD ● Comprehensive bootup diagnostic tests ● Call Home ● Smart Call Home ● Cisco Fabric Manager ● Cisco DCNM ● CiscoWorks LAN Management Solution (LMS)
Data Center Bridging	● CEE- and IEEE-compliant PFC (per-priority Pause frame support) ● PFC link distance support: 3000m ● CEE-compliant DCBX Protocol ● CEE- and IEEE-compliant Enhanced Transmission Selection

Fibre Channel and FCoE Features (Requires Storage Services License)	● T11 standards-compliant FCoE (FC-BB-5)
	● T11 FCoE Initialization Protocol (FIP) (FC-BB-5)
	● Any 10 Gigabit Ethernet port configurable as FCoE
	● SAN administration separate from LAN administration
	● FCP
	● Fibre Channel forwarding (FCF)
	● Fibre Channel standard port types: E, F, and NP
	● Fibre Channel enhanced port types: VE, TE, and VF
	● F-port trunking
	● F-port channeling
	● Direct attachment of FCoE and Fibre Channel targets
	● Up to 240 buffer credits per native Fibre Channel port
	● Up to 32 VSANs per switch
	● Fibre Channel (SAN) port channel
	● Native Interop Mode 1
	● Native Interop Mode 2
	● Native Interop Mode 3
	● Native Interop Mode 4
	● VSAN trunking
	● Fabric Device Management Interface (FDMI)
	● Fibre Channel ID (FCID) persistence
	● Distributed device alias services
	● In-order delivery
	● Port tracking
	● Cisco N-Port Virtualization (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
	● Diffie-Hellman Challenge Handshake Authentication Protocol (DH-CHAP) and Fibre Channel Security Protocol (FC-SP)
	● Distributed device alias services
	● Host-to-switch and switch-to-switch FC-SP authentication
	● Fabric Shortest Path First (FSPF)
	● Fabric binding for Fibre Channel
	● Standard zoning
	● Port security
	● Domain and port
	● Enhanced zoning
	● SAN port channels
	● Cisco Fabric Analyzer
	● Fibre Channel traceroute
	● Fibre Channel ping
	● Fibre Channel debugging
	● Cisco Fabric Manager support
	● Storage Management Initiative Specification (SMI-S)
	● Boot from SAN over VPC/EVPC
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

Fibre Channel MIBs	- CISCO-ST-TC - CISCO-FC-FE-MIB - CISCO-FCSP-MIB - CISCO-PORT-TRACK-MIB - CISCO-PSM-MIB - CISCO-FC-SPAN-MIB - CISCO-PORT-CHANNEL-MIB - CISCO-RSCN-MIB - CISCO-NS-MIB - CISCO-FCS-MIB - CISCO-DM-MIB - FIBRE-CHANNEL-FE-MIB - CISCO-FC-ROUTE-MIB - CISCO-FSPF-MIB - CISCO-ZS-MIB - CISCO-ZS-EXT-MIB - CISCO-VSAN-MIB - CISCO-CFS-MIB - CISCO-FCPING-MIB - CISCO-FCTRACEROUTE-MIB - CISCO-FDMI-MIB - CISCO-FC-DEVICE-ALIAS-MIB - CISCO-WWNMGR-MIB - FCMGMT-MIB - CISCO-VEDM-MIB - CISCO-FCOE-MIB
Ethernet MIBs	- CISCO-VLAN-MEMBERSHIP-MIB - CISCO-Virtual-Interface-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
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
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 ● SFF 8431 SFP+ CX1 support ● RMON ● IEEE 1588-2008: Precision Time Protocol (Boundary Clock)
Fibre Channel Standards	● FC-PH, Revision 4.3 (ANSI/INCITS 230-1994) ● FC-PH, Amendment 1 (ANSI/INCITS 230-1994/AM1 1996) ● FC-PH, Amendment 2 (ANSI/INCITS 230-1994/AM2-1999) ● FC-PH-2, Revision 7.4 (ANSI/INCITS 297-1997) ● FC-PH-3, Revision 9.4 (ANSI/INCITS 303-1998) ● FC-PI, Revision 13 (ANSI/INCITS 352-2002) ● FC-PI-2, Revision 10 (ANSI/INCITS 404-2006) ● FC-PI-4, Revision 7.0 ● FC-FS, Revision 1.9 (ANSI/INCITS 373-2003) ● FC-FS-2, Revision 0.91 ● FC-LS, Revision 1.2 ● FC-SW-2, Revision 5.3 (ANSI/INCITS 355-2001) ● FC-SW-3, Revision 6.6 (ANSI/INCITS 384-2004) ● FC-GS-3, Revision 7.01 (ANSI/INCITS 348-2001) ● FC-GS-4, Revision 7.91 (ANSI/INCITS 387-2004) ● FC-BB-5, Revision 2.0 for FCoE ● FCP, Revision 12 (ANSI/INCITS 269-1996) ● FCP-2, Revision 8 (ANSI/INCITS 350-2003) ● FCP-3, Revision 4 (ANSI/INCITS 416-2006) ● FC-MI, Revision 1.92 (INCITS TR-30-2002, except for FL-ports and Class 2) ● FC-MI-2, Revision 2.6 (INCITS TR-39-2005, except for FL-ports and Class 2) ● FC-SP, Revision 1.6 ● FC-DA, Revision 3.1 (INCITS TR-36-2004, except for FL-ports, SB-ports and Class 2) ● Class of Service: Class 3, Class F ● Fibre Channel standard port types: E and F ● Fibre Channel enhanced port types: SD and TE
Physical Specifications	
SFP+ Optics	Cisco Nexus 5500 platform supports 10 Gigabit Ethernet SFP+ copper Twinax cables for short distances and SFP+ optics (10GBASE-SR, 10GBASE-LR, 10GBASE-ER, GLC-ZX-SM and Cisco Nexus 2000 Series Fabric Extender Transceiver [FET-10G]) for longer distances. SFP+ has several advantages compared to other 10 Gigabit Ethernet connectivity options: ● Small 10 Gigabit Ethernet form factor ● Optical interoperability with XENPAK, X2, and XFP interface types ● Low power consumption ● Hot-swappable device ● Cisco Nexus 5500 platform products support 8-Gbps Fibre Channel-compatible SFP+ for native Fibre Channel connectivity options; 8-Gbps Fibre Channel-compatible short-reach and 10-km long-reach SFP transceiver modules operate at 8/4/2 Gbps and are supported in the 8-Gbps-capable native Fibre Channel ports on expansion modules and unified ports
Physical (height x width x depth)	1.72 x 17.3 x 29.5 in. (4.4 x 43.9 x 74.9 cm)
Operating temperature	32 to 104°F (0 to 40°C)
Nonoperating (storage) temperature	-40 to 158°F (-40 to 70°C)
Humidity	5 to 95% (noncondensing)

Altitude	0 to 10,000 ft (0 to 3000m)
Weight	35 lb (15.88 kg)

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