Cisco Nexus 9000 Series NX-OS Release Notes

Release 10.4(3)F

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Introduction

This document describes the features, issues, and limitations of Cisco NX-OS software Release 10.4(3)F for use on the Cisco Nexus 9000 Series switches.

Date	Description
September 17, 2024	Added support N9K-C9348GC-FXP for the following power supplies in the table Cisco Nexus 9200 and 9300 Power Supplies. • NXA-PAC-350W-PE • NXA-PAC-350W-PI
August 15, 2024	Added the defect to CSCwj89973 to Open Issues section
March 28, 2024	Release 10.4(3)F became available.

Software Features

New Software Features

Product Impact	Feature	Description
Feature Set	VXLAN EVPN Traffic Engineering	Beginning with Cisco NX-OS release 10.4(3)F, the VXLAN EVPN Traffic Engineering - Multi-Site Egress Load-Balancing feature has been added to improve traffic steering and better utilize inter-DC links across multiple sites. For more information, see Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).
	Multisite Anycast Border Gateway Support	Beginning with Cisco NX-OS Release 10.4(3)F, the VXLAN Multisite Anycast BGW is supported on the Cisco Nexus 9808 and Nexus 9804 switches with Cisco Nexus X9836DM-A and X98900CD-A line cards. For more information, see Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).
	Multi-Site support with IPv6 Multicast Underlay in Fabric and IPv6 DCI IR	Beginning with Cisco NX-OS Release 10.4(3)F, the VXLAN EVPN and TRM Multi-site is supported with IPv6 Protocol-Independent Multicast (PIMv6) Any-Source Multicast (ASM) on the fabric side and Ingress Replication (IPv6) on the DCI side. For more information, see Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).

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Product Impact	Feature	Description
	Sample-based subscription and updates support for RIB native path	In earlier releases, only one type of subscription, event subscription, was supported. Starting with the current release, a periodic subscription is also supported. In other words, in earlier releases, the sample interval was only 0 and so, only the initial snapshot and subsequent updates were sent. With the new feature, two query conditions are introduced: • data=ephemeral – Sends route information at the configured intervals (sample interval 0 or configured) to the destination. • updates-only – Sends route information for the subsequent updates to the destination. For more information, see the Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.4(x).
	OSPFv3-MO support for NX-OS	Beginning with Cisco NX-OS Release 10.4(3)F, querying of OSPFv3 YANG models is introduced to automate and streamline the management and monitoring of OSPFv3, allowing for more efficient and error-resistant configuration, as well as enhanced visibility into the network operation. For more information, see the Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference, Release 10.4(x).
	Flexible PTP over IPv6 multicast	From Cisco NX-OS Release 10.4(3)F, new global and interface commands are introduced to set the transmit and receive scope for PTP over IPv6 multicast configuration. For more information, see the Cisco Nexus 9000 Series NX-OS System Management Configuration Guide.
	Config Replace support for polymorphic commands	From Cisco NX-OS Release 10.4(3)F, you can also use polymorphic commands in candidate config to perform configuration replace. For more information, see the Cisco Nexus 9000 Series NX-OS System Management Configuration Guide.
	Partial diff support for polymorphic commands	From Cisco NX-OS Release 10.4(3)F, you can also use polymorphic commands in candidate config to perform partial diff. For more information, see the Cisco Nexus 9000 Series NX-OS System Management Configuration Guide.
	Layer 3 Port Channel BFD Support on 9800 switches	From Cisco NX-OS Release 10.4(3)F, BFD is supported on Layer 3 port channel on Cisco Nexus 9800 switches. For more information, see Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide and Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 10.4(3)F.

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Product Impact	Feature	Description
	Micro-segmentation using VXLAN Group Policy Option	Beginning with Cisco NX-OS Release 10.4(3)F, a new security policy enforcement feature with Group Policy Option (GPO) is introduced for VXLAN fabrics which will enable creation of isolated, granular groups within a network. This feature allows you to: • Apply security polices using micro-segmentation. • Define application centric policies. Micro-segmentation using GPO provides more flexibility and reduces the complexity as compared to the traditional network security functions, such as, firewalls, VLANs, and general-purpose access control lists (ACLs).
	NETCONF With-Defaults, including explicit capabilities	Beginning with Cisco NX-OS Release 10.4(3)F, you can use NETCONF explicit mode to see the configurations that are explicitly done by the customers. For more information, see Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.4(x).
	QKD integration with SKIP on MACsec	Beginning with Cisco NX-OS Release 10.4(3)F, Cisco Nexus 9000 series switches support the Secure Key Integration Protocol (SKIP) protocol. By using Quantum Key Distribution (QKD) devices, the SKIP protocol allows switches to establish a connection with external quantum devices and exchange MACsec encryption keys between them. For more information, see Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.4(x).
	4x10, 4x25, 4x100 breakout support	Beginning with Cisco NX-OS Release 10.4(3)F the breakout (4x10G, 4x25G, and 4x100G) ports support is provided on Cisco Nexus X98900CD-A switch. 2x200 Breakout is also supported with X98900CD-A and X9836DM-A. 4x25 breakout is only supported with None MACsec ports of X98900CD-A. For more information, see Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x).
	SR-MPLS support on Nexus 9800	Beginning with Cisco NX-OS Release 10.4(3)F, you can configure Layer 3 VPN and Layer 3 EVPN for segment routing on Cisco Nexus X98900CD-A and X9836DM-A line cards with 9808 and 9804 switches. For more information, see Cisco Nexus 9000 Series NX-OS Label Switching Configuration Guide Release 10.4(x).
Performance and Scalability	Memory optimization for ND ISSU	Beginning with Cisco NX-OS Release 10.4(3)F, after the system reaches a stable state and adequate SSD space is accessible, the RPMs are transferred from memory to persistent storage. For more information, see the Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide.

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Product Impact	Feature	Description
Security	TLS v1.3	Beginning with Cisco NX-OS Release 10.4(3)F, support for TLS version 1.3 is added on Cisco Nexus 9000 Series Switches. For more information, see the Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.4(x).
	X.509 certificate based SSH Authorization using TACACS	Beginning with Cisco NX-OS Release 10.4(3)F, authorization of X.509 certificates for SSH using a TACACS+ server can be configured using the **aaa authorization ssh-certificate default group** command.

Enhanced Software Features

The enhanced features that are listed below are existing features that are introduced in earlier releases, but enhanced to support new platforms in Cisco NX-OS Release 10.4(3)F.

Product Impact	Feature	Description
Diagnostics and Serviceability	RESTCONF RFC 8040	Beginning with Cisco NX-OS Release 10.4(3)F, the following items in RFC 8040 are supported: • 3.2 RESTCONF Media Types • 4.2 HEAD • For TLS, v1.3 is supported, and the supported version is v1.2. For more information, see the Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.4(x).
Feature Set	VXLAN PIM BIDIR Underlay Support	Beginning with Cisco NX-OS Release 10.4(3)F, PIM Bidir is also supported on Cisco Nexus 9300-FX3/GX/GX2/H1/H2R platforms, and 9500 switches with 9700-GX line cards. For more information, see Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).
	TRMv4 Multi-Site anycast Underlay in Fabric and IR over DCI	Beginning with Cisco NX-OS Release 10.4(3)F, support for TRM Multi-Site Anycast BGW is added on the Cisco Nexus 9808/9804 switches with Cisco Nexus X9836DM-A and X98900CD-A line cards. For more information, see Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).
	PTP over Macsec	Beginning with Cisco NX-OS Release 10.4(3)F, PTP Telecom Profile over MACsec is supported on Cisco Nexus 9300-H2R/H1 platform switches. For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.4(x).
	NGOAM for Cisco Nexus 9800 switches	Beginning with Release 10.4(3)F, NGOAM ping, traceroute, and pathtrace supported is added on Cisco Nexus 9800 switches. For more information, see the Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).

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Product Impact	Feature	Description
	Disable default action in EEM	Beginning with Cisco NX-OS Release 10.4(3)F, a new command is introduced to disable a system policy under any overridden policy. For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.4(x).
	Event notifications	Beginning with Cisco NX-OS Release 10.4(3)F, OpenConfig path openconfig-system:system/processes supports On-change gnmi subscriptions also. For more information, see Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.4(x).
	Single hop BFD	Beginning with Cisco NX-OS Release 10.4(3)F, single hop BFD is supported on Cisco Nexus 9808 and 9804 L3 port-interfaces and subinterfaces. For more information, see Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x).
	Re-enable DME	Beginning with Cisco NX-OS Release 10.4(3)F, model-driven programmability is supported with limited features on 92348GC-X. For more information, see the Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.4(x) and Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 10.4(3)F.
	Remove POAP skip option	Beginning with Cisco NX-OS Release 10.4(3)F, for the security enhancements, the skip option is disabled. You must enter a valid password to access the box irrespective of whether the POAP process has been stopped or not. For more information, see Cisco Nexus 9000 Series NX-OS Fundamentals Configuration Guide, Release 10.4(x).
	Unified Configuration Difference	Beginning with Cisco NX-OS Release 10.4(3)F, the **show diff running-config** command on Cisco Nexus switches includes a '**merged**' option, which allows merging of subcommand details, instead of replacing them. For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.4(x).
Performance and Scalability	Show tech infra - performance and debuggability improvements	Beginning with Cisco NX-OS 10.4(3)F, support is added to view the blocked-commands file. This command complements show tech-support command and helps in debugging. For more information, see Cisco Nexus 9000 Series NX-OS Fundamentals Configuration Guide, Release 10.4(x).
	PTP scale enhancement on Cisco Nexus 9800 Series Switches	Beginning with Cisco NX-OS Release 10.4(3)F, the supported Precision Time Protocol (PTP) scale is 1000 on Cisco Nexus 9808 switches.

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Product Impact	Feature	Description
Software Reliability	Interface counters at 1 second intervals in OpenConfig model	Beginning with Cisco NX-OS Release 10.4(3)F, OpenConfig interface clients gNMI and Telemetry can fetch the physical interface counters every 1 second from the following Cisco Nexus platform switches: • N9K-C93108TC-FX • N9K-C93180YC-FX • N9K-C9348GC-FXP • N9K-C9348GC-FX3 • N9K-C9348GC-FX3PH • N9K-C9358GY-FXP • N9K-C93216TC-FX2 • N9K-C93240YC-FX2 • N9K-C93360YC-FX2 • N9K-C9336C-FX2 • N9K-C9336C-FX2-E • N9K-C93240YC-FX2-Z • N9K-C93108TC-FX3 • N9K-C93108TC-FX3P • N9K-C93180YC-FX3 • N9K-C93180YC-FX3S • N9K-X9732C-FX • N9K-X9736C-FX • N9K-X9736Q-FX • N9K-X9788TC-FX For more information, see Cisco Nexus OpenConfig YANG Reference, Release 10.4(x).

Hardware Features

New Hardware Features

N9K-C9364C-H1

The Cisco Nexus 9364C-H1 switch (N9K-C9364C-H1) is a 2-RU fixed-port, spine and leaf, L2/L3 switch, which is designed for deployment in data centers. This switch has 64 100G QSFP28 and 2 10G SFP+ ports.

This switch includes the following user-replaceable components:

- Fan modules (4) with the following airflow choices:
  - Port-side intake airflow with red coloring (NXA-SFAN-160CFM2-PI)
  - Port-side exhaust airflow with blue coloring (NXA-SFAN-160CFM2-PE)
- Power supply modules (two—One for operations and one for redundancy [1+1]) with the following choices (a mix of AC and DC power sources is only supported for hot swapping purposes, with a time limit of 15 minutes, but do not mix airflow directions):
  - 1400-W AC power supply with port-side intake airflow (red coloring) (NXA-PAC-1400W-PI)

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- 1400-W AC power supply with port-side exhaust airflow (blue coloring) (NXA-PAC-1400W-PE)
- 2000-W DC power supply with port-side intake airflow (red coloring) (NXA-PDC-2KW-PI)
- 2000-W DC power supply with port-side exhaust airflow (blue coloring) (NXA-PDC-2KW-PE)
- 2000-W HVDC power supply with port-side intake airflow (red coloring) (NXA-PHV-2KW-PI)

For details on the Cisco Nexus N9K-C9364C-H1 Switch, see the Cisco Nexus NX-OS Mode Switch Hardware Installation Guide.

Enhanced Hardware Features

N9K-X9400-22L

The N9K-X9400-22L line card is supported on Cisco Nexus 9408 (N9K-C9408) with 22 10G/25G/50G ports.

Note: 50G ports are not supported with NX-OS Release 10.4(3)F.

Optics

Beginning with Cisco NX-OS Release 10.4(3)F, the following optics are supported on Cisco Nexus 98900CD-A line card:

- QDD-4X100G-FR-S
- QDD-4X100G-LR-S

Beginning with Cisco NX-OS Release 10.4(3)F, QDD-2X100-LR4-S is supported on Cisco Nexus 9300-GX/GX2 Platform Switches.

Beginning with Cisco NX-OS Release 10.4(3)F, the following optics are supported on Cisco Nexus C93400LD-H1 and C9332D-H2R switches:

- QDD-400G-ZRP-S
- QDD-400G-ZR-S

Beginning with Cisco NX-OS Release 10.4(3)F, the following optics are supported on Cisco Nexus X9716D-GX line card:

- QDD-4X100G-LR-S
- QDD-400G-LR4-S

For more information, see Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x) and Cisco Optics-to-Device Compatibility Matrix.

Unsupported Features on N9K-C92348GC

The following features are not supported on N9K-C92348GC in Cisco NX-OS Release 10.4(3)F.

- EIGRP
- RIP
- Intersight
- MPLS
- Segment Routing
- VXLAN

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Release Image

In Cisco NX-OS Release 10.4(3)F, the following two 64-bit images are supported:

- The 64-bit Cisco NX-OS image filename with “nxos64-cs” as the prefix (for example, nxos64-cs.10.4.3.F.bin) is supported on all Cisco Nexus 9000 series switches except Cisco Nexus 9500 -R and -R2 switches and cards.
- The 64-bit Cisco NX-OS image filename with " nxos64-msll” as the prefix (for example, nxos64-msll.10.4.3.F.bin) is supported on Cisco Nexus 9000 Series -R and -R2 modular switches.

Note: The 32-bit image is no longer supported.

Open Issues

Click the bug ID to access the Bug Search Tool and see additional information about the bug.

Bug ID	Headline
CSCwj27732	vxlan bgw ECT value is not preserved
CSCwj28749	All traffic stops when ports with speed 2.5G/5G are oversubscribed
CSCwj33847	Configuring Auto Neg on 25G 2.5M turns off fec, expected fec to be in fc-fec
CSCwj34088	gRPC gNMI On-Change Telemetry Subscription for Sub-Interfaces not working
CSCwj34400	Corrupted packets output from sending interface on store-forward mode
CSCwj42890	Netflow for subinterfaces not working on version 9.3.6 on N9K-C9504 with FX linecards
CSCwj45146	SSH login triggers TACACS " temporary failure in name resolution" after upgrade
CSCwj48097	The throughput displayed by `show policy-map interface ethernet x/y` outputs as " n/a bps" in Nexus 9000
CSCwj48162	Incorrect behaviour with AFD+ ECN - system actively dropping flows with AFQ alg
CSCwj89973	N9K NX-OS 10.4(3) vman crash after upgrade, due to third-party transceiver being inserted

Resolved Issues

Click the bug ID to access the Bug Search Tool and see additional information about the bug.

Bug ID	Headline
CSCvc85027	bfd-app should not be spawned in production nodes
CSCwi74242	More vlans are being consumed on outer_bd on NX-OS 10.2(x) versions
CSCwi19209	Logging level for " authpriv" showing differences when applied on different switches
CSCwi20813	CSUSD Hap Reset on Nexus 9k When Adding Interface Breakout Config with N9K-X9400-16W Linecard

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Bug ID	Headline
CSCwi63762	BGP metric in `show ip bgp` abnormally changed after upgrade
CSCwi66795	Inconsistency between show interface int-id counters details all and NXAPI-REST output
CSCwi87506	Multicast (S,G) traffic dropped (hitting sg-rpf-failure exception)
CSCwi90274	Nexus 9000 FX3/GX Multicast MAC ACL hardware programming mistake, causes drop all ip traffic
CSCwi90883	Fabric Module reload due to ipfib process
CSCwi92006	All interfaces shown input/output rate as 0pps on N9K FX2 platform
CSCwi96031	Multicast load-balancing may not work with 'ip multicast multipath s-g-hash next-hop-based' config
CSCwj01605	Wrong dot1q private-vlan tag after LACP update
CSCwj01675	Special character '\" used as switch username cause nxapi calls to fail
CSCwj10938	Deleting interface vlan might cause MTU mis-programming on interfaces configured with high MTU
CSCwj15659	QKD: space between key and value
CSCwj41923	Locking Dynamic MAC Learning without configuring feature
CSCwi95405	VPC attached multicast receivers cannot subscribe to some multicast groups

General/Known Issues

Click the bug ID to access the Bug Search Tool and see additional information about the bug.

Bug ID	Description
CSCwh34732	H2R PID: Kernel panic during ND ISSU from 10.4(1)
CSCwi95977	DME CC failure for mutiisite virtual rmac
CSCwi95768	Loopback Ping is not working after enabling MPLS LDP at Interface
CSCwh36396	Third Party 40G SWDM4 transceiver may take between 40-60 secs to link up
CSCwh88451	URIB crashed on urib_chlist_segv_handler after restarting bgp and urib together
CSCwi57646	ESG_SGACL: Source of MAC detail is not seen in json output of MAC table
CSCwi87175	slight drop in L2 multicast performance in pualaner switch
CSCwi24238	With NDFC/auto-config, VPC peer-link stays down on disable 'feature tunnel-encryption'
CSCvt37624	'The BGP instance is not in expected state' after quick bgp unconfig / reconfig with 700K ipv4 pfx
CSCwi22304	TTL is not decremented for decap L3 VPN traffic on Mando .

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Bug ID	Description
CSCwh44244	DME inconsistency in sys/mplsta-[eth1/7/1] object after some CLI sequence

Device Hardware

The following tables list the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 10.4(3)F supports. For additional information about the supported hardware, see the Hardware Installation Guide for your Cisco Nexus 9000 Series device.

Table 1. Cisco Nexus 9800 Switches

Product ID	Description
N9K-C9808	16-RU modular switch with slots for up to 8 Line Cards in addition to 2 supervisors, 8 fabric modules, 4 fan trays, and 3 power trays.
N9K-C9804	10-RU modular switch with slots for up to 4 Line Cards in addition to 2 supervisors, 8 fabric modules, 4 fan trays, and 2 power trays.

Table 2. Cisco Nexus 9800 Series Line Cards

Product ID	Description
N9K-X9836DM-A	Cisco Nexus 9800 36-port 400G QSFP-DD Line Card with MACsec.
N9K-X98900CD-A	Cisco Nexus 9800 14-port 400G QSFP-DD + 34-port 100G QSFP28 Line Card.

Table 3. Cisco Nexus 9800 Series Fabric Modules

Product ID	Description
N9K-C9808-FM-A	Cisco Nexus 9800 Fabric Module for 8-slot Chassis
N9K-C9804-FM-A	Cisco Nexus 9800 Fabric Module for 4-slot Chassis

Table 4. Cisco Nexus 9800 Supervisor Module

Product ID	Description
N9K-C9800-SUP-A	Cisco Nexus 9800 Platform Supervisor Module

Table 5. Cisco Nexus 9800 Fans and Fan Trays

Product ID	Description
N9K-C9808-FAN-A	Cisco Nexus 9800 8-slot chassis fan tray (1st Generation)
N9K-C9804-FAN-A	Cisco Nexus 9800 4-slot chassis fan tray (1st Generation)

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Table 6. Cisco Nexus 9800 Power Supplies

Product ID	Description
NXK-HV6.3KW20A-A	Cisco Nexus 9800 6,300W 20A AC and HV Power Supply

Table 7. Cisco Nexus 9500 Switches

Product ID	Description
N9K-C9504	7-RU modular switch with slots for up to 4 Line Cards in addition to two supervisors, 2 system controllers, 3-6 fabric modules, 3 fan trays, and up to 4 power supplies.
N9K-C9508	13-RU modular switch with slots for up to 8 Line Cards in addition to two supervisors, 2 system controllers, 3-6 fabric modules, 3 fan trays, and up to 8 power supplies.
N9K-C9516	21-RU modular switch with slots for up to 16 Line Cards in addition to two supervisors, 2 system controllers, 3-6 fabric modules, 3 fan trays, and up to 10 power supplies.

Table 8. Cisco Nexus 9500 Cloud Scale Line Cards

Product ID	Description	Maximum Quantity		
		Cisco Nexus 9504	Cisco Nexus 9508	Cisco Nexus 9516
N9K-X9716D-GX	Cisco Nexus 9500 16-port 400G QSFP-DD Line Card	4	8	N/A
N9K-X9736C-FX	Cisco Nexus 9500 36-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8	16
N9K-X9788TC-FX	Cisco Nexus 9500 48-port 1/10-G BASE-T Ethernet and 4-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8	16
N9K-X97160YC-EX	Cisco Nexus 9500 48-port 10/25-Gigabit Ethernet SFP28 and 4-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8	16
N9K-X9732C-FX	Cisco Nexus 9500 32-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8	16
N9K-X9732C-EX	Cisco Nexus 9500 32-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8	16
N9K-X9736C-EX	Cisco Nexus 9500 36-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8	16

Table 9. Cisco Nexus 9500 R-Series Line Cards

Product ID	Description (try)	Maximum Quantity	
		Cisco Nexus 9504	Cisco Nexus 9508
N9K-X9636C-R	Cisco Nexus 9500 36-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8

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Product ID	Description (try)	Maximum Quantity	
		Cisco Nexus 9504	Cisco Nexus 9508
N9K-X9636C-RX	Cisco Nexus 9500 36-port 40/100 Gigabit Ethernet QSFP28 Line Card	4	8
N9K-X9636Q-R	Cisco Nexus 9500 36-port 40-Gigabit Ethernet QSFP Line Card	4	8
N9K-X96136YC-R	Cisco Nexus 9500 16-port 1/10 Gigabit, 32-port 10/25 Gigabit, and 4-port 40/100 Gigabit Ethernet Line Card	4	8
N9K-X9624D-R2	Cisco Nexus 9500 24-port 400-Gigabit QDD Line Card	Not supported	8

Table 10. Cisco Nexus 9500 Cloud Scale Fabric Modules

Product ID	Description	Minimum	Maximum
N9K-C9504-FM-E	Cisco Nexus 9504 100-Gigabit cloud scale fabric module	4	5
N9K-C9504-FM-G	Cisco Nexus 9500 4-slot 1.6Tbps cloud scale fabric module	4	5
N9K-C9508-FM-E	Cisco Nexus 9508 100-Gigabit cloud scale fabric module	4	5
N9K-C9508-FM-E2	Cisco Nexus 9508 100-Gigabit cloud scale fabric module	4	5
N9K-C9508-FM-G	Cisco Nexus 9500 8-slot 1.6Tbps cloud-scale fabric module	4	5
N9K-C9516-FM-E2	Cisco Nexus 9516 100-Gigabit cloud scale fabric module	4	5

Table 11. Cisco Nexus 9500 R-Series Fabric Modules

Product ID	Description	Minimum	Maximum
N9K-C9504-FM-R	Cisco Nexus 9504 100-Gigabit R-Series fabric module	4	6
N9K-C9508-FM-R	Cisco Nexus 9508 100-Gigabit R-Series fabric module	4	6
N9K-C9508-FM-R2	Cisco Nexus 9508 400-Gigabit R-Series fabric module	4	6

Table 12. Cisco Nexus 9500 Supervisor Modules

Supervisor	Description	Maximum
N9K-SUP-A	1.8-GHz supervisor module with 4 cores, 4 threads, and 16 GB of memory	2
N9K-SUP-A+	1.8-GHz supervisor module with 4 cores, 8 threads, and 16 GB of memory	2

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Supervisor	Description	Maximum
N9K-SUP-B	2.2-GHz supervisor module with 6 cores, 12 threads, and 24 GB of memory	2
N9K-SUP-B+	1.9-GHz supervisor module with 6 cores, 12 threads, and 32 GB of memory	2

Note: N9K-SUP-A and N9K-SUP-A+ are not supported on Cisco Nexus 9504 and 9508 switches with -R and -R2 Line Cards.

Table 13. Cisco Nexus 9500 System Controller

Product ID	Description	Quantity
N9K-SC-A	Cisco Nexus 9500 Platform System Controller Module	2

Table 14. Cisco Nexus 9500 Fans and Fan Trays

Product ID	Description	Quantity
N9K-C9504-FAN	Fan tray for 4-slot modular chassis	3
N9K-C9504-FAN2	Fan tray that supports the Cisco N9K-C9504-FM-G fabric module	3
N9K-C9508-FAN	Fan tray for 8-slot modular chassis	3
N9K-C9508-FAN2	Fan tray that supports the Cisco N9K-C9508-FM-G fabric module	3
N9K-C9516-FAN	Fan tray for 16-slot modular chassis	3

Table 15. Cisco Nexus 9500 Fabric Module Blanks with Power Connector

Product ID	Description	Minimum	Maximum
N9K-C9504-FAN-PWR	Cisco Nexus 9500 4-slot chassis 400G cloud scale fan tray power connector	1	2
N9K-C9508-FAN-PWR	Cisco Nexus 9500 4-slot chassis 400G cloud scale fan tray power connector	1	2

Table 16. Cisco Nexus 9500 Power Supplies

Product ID	Description	Quantity	Cisco Nexus Switches
N9K-PAC-3000W-B	3-KW AC power supply	Up to 4 Up to 8 Up to 10	Cisco Nexus 9504 Cisco Nexus 9508 Cisco Nexus 9516
N9K-PDC-3000W-B	3-KW DC power supply	Up to 4 Up to 8 Up to 10	Cisco Nexus 9504 Cisco Nexus 9508 Cisco Nexus 9516

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Product ID	Description	Quantity	Cisco Nexus Switches
N9K-PUV-3000W-B	3-KW Universal AC/DC power supply	Up to 4 Up to 8 Up to 10	Cisco Nexus 9504 Cisco Nexus 9508 Cisco Nexus 9516
N9K-PUV2-3000W-B	3.15-KW Dual Input Universal AC/DC Power Supply	Up to 4 Up to 8 Up to 10	Cisco Nexus 9504 Cisco Nexus 9508 Cisco Nexus 9516

Table 17. Cisco Nexus 9400 Switches

Product ID	Description
N9K-C9408	4-RU, 8-slot centralized modular chassis switch, which is configurable with up to 128 200-Gigabit QSFP56 (256 100 Gigabit by breakout) ports or 64 400-Gigabit ports.
N9K-C9400-SUP-A	Cisco Nexus 9400 Supervisor Card
N9K-C9400-SW-GX2A	Cisco Nexus 9400 25.6Tbps Switch Card
N9K-X9400-8D	Cisco Nexus 9400 8p 400G QSFP-DD LEM
N9K-X9400-16W	Cisco Nexus 9400 16p 200G QSFP56 LEM
N9K-X9400-22L	Cisco Nexus 9400 LEM with 22 10G/25G/50G ports.

Table 18. Cisco Nexus 9200 and 9300 Switches

Cisco Nexus Switch	Description
N9K-C92348GC-X	The Cisco Nexus 92348GC-X switch (N9K-C92348GC-X) is a 1-RU switch that supports 696 Gbps of bandwidth and over 250 mpps. The 1GBASE-T downlink ports on the 92348GC-X can be configured to work as 100 Mbps, 1-Gbps ports. The 4 ports of SFP28 can be configured as 1/10/25-Gbps and the two-ports of QSFP28 can be configured as 40- and 100-Gbps ports. The Cisco Nexus 92348GC-X is ideal for Big Data customers that require a Gigabit Ethernet ToR switch with local switching.
N9K-C93400LD-H1	1-RU fixed-port, L2/L3 switch with 48 50G SFP56 ports and 4 400G QSFP-DD uplink ports.
N9K-C93108TC-FX3	1 RU fixed-port switch Forty-eight 100M/1G/10GBASE-T ports (ports 1-48), Six 40/100-Gigabit ports QSFP28 (ports 49-54), Two management ports (one 10/100/1000BASE-T port and one SFP port), One console port (RS-232), and one USB port.
N9K-C9332D-H2R	1-RU fixed-port switch with 400-Gigabit QSFP-DD ports (32), 10-Gigabit SFP+ ports (2), Management ports (one 10/100/1000BASE-T port and one SFP port), console port (RS-232), and USB port.

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Cisco Nexus Switch	Description
N9K-C9348GC-FX3	1 RU fixed-port switch 48 10/100/1000M copper RJ-45 downlink ports, 4 10-/25G SFP28 uplink ports, and 2 40-/100G QSFP28 uplink ports.
N9K-C9348GC-FX3PH	1-RU fixed-port switch 40 10M/100M/1G copper RJ-45 downlink ports that support PoE/PoE+/PoE++ and 8 10M/100M copper RJ-45 downlink ports that support PoE/PoE+/PoE++, 4 10-/25G SFP28 uplink ports, and 2 40-/100G QSFP28 uplink ports.
N9K-C93180YC-FX3H	1-RU fixed-port switch with 24 100M/1/10/25-Gigabit Ethernet SFP28 ports (ports 1–24), 6 10/25/40/50/100-Gigabit QSFP28 ports (ports 49–54), One management port (one 10/100/1000BASE-T port), and One console port (RS-232)
N9K-C9316D-GX	1-RU switch with 16x400/100/40-Gbps ports.
N9K-C9364C-GX	2-RU fixed-port switch with 64 100-Gigabit SFP28 ports.
N9K-C93600CD-GX	1-RU fixed-port switch with 28 10/40/100-Gigabit QSFP28 ports (ports 1–28), 8 10/40/100/400-Gigabit QSFP-DD ports (ports 29–36)
N9K-C9364C	2-RU Top-of-Rack switch with 64 40-/100-Gigabit QSFP28 ports and 2 1-/10-Gigabit SFP+ ports. • Ports 1 to 64 support 40/100-Gigabit speeds. • Ports 49–64 support MACsec encryption. • Ports 651–64and66 support 1/10 Gigabit speeds.
N9K-C9364C-H1	2-RU fixed-port switch with 64 100G SFP28 ports.
N9K-C9332C	1-RU fixed switch with 32 40/100-Gigabit QSFP28 ports and 2 fixed 1/10-Gigabit SFP+ ports.
N9K-C9332D-GX2B	1-Rack-unit (1-RU) spine switch with 32p 400/100-Gbps QSFP-DD ports and 2p 1/10 SFP+ ports.
N9K-C9348D-GX2A	48p 40/100/400-Gigabit QSFP-DD ports and 2p 1/10G/10G SFP+ ports
N9K-C9364D-GX2A	64p 400/100-Gigabit QSFP-DD ports and 2p 1/10 SFP+ ports
N9K-C93180YC-FX3	48 1/10/25 Gigabit Ethernet SFP28 ports (ports 1–48) 6 10/25/40/50/100-Gigabit QSFP28 ports (ports 49–54)
N9K-C93180YC-FX3S	48 1/10/25 Gigabit Ethernet SFP28 ports (ports 1–48) 6 10/25/40/50/100-Gigabit QSFP28 ports (ports 49–54)
N9K-C9336C-FX2-E	1-RU switch with 36 40-/100-Gb QSFP28 ports
N9K-C9336C-FX2	1-RU switch with 36 40-/100-Gb Ethernet QSFP28 ports
N9K-C93360YC-FX2	2-RU switch with 96 10-/25-Gigabit SFP28 ports and 12 40/100-Gigabit QSFP28 ports
N9K-C93240YC-FX2	1.2-RU Top-of-Rack switch with 48 10-/25-Gigabit SFP28 fiber ports and 12 40-/100-Gigabit Ethernet QSFP28 ports.

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Cisco Nexus Switch	Description
N9K-C93216TC-FX2	2-RU switch with 96 100M/1G/10G RJ-45 ports, 12 40/100-Gigabit QSFP28 ports, 2 management ports (one RJ-45 and one SFP port), 1 console port, and 1 USB port.
N9K-C93180YC-FX	1-RU Top-of-Rack switch with 10-/25-/32-Gigabit Ethernet/FC ports and 6 40-/100-Gigabit QSFP28 ports. You can configure the 48 ports as 1/10/25-Gigabit Ethernet ports or as FCoE ports or as 8-/16-/32-Gigabit Fibre Channel ports.
N9K-C93180YC-FX-24	1 RU 24 1/10/25-Gigabit Ethernet SFP28 front panel ports and 6 fixed 40/100-Gigabit Ethernet QSFP28 spine-facing ports. The SFP28 ports support 1-, 10-, and 25-Gigabit Ethernet connections and 8-, 16-, and 32-Gigabit Fibre Channel connections.
N9K-C93108TC-FX	1-RU Top-of-Rack switch with 48 100M/1/10GBASE-T (copper) ports and 6 40-/100-Gigabit QSFP28 ports
N9K-C93108TC-FX-24	1 RU 24 1/10GBASE-T (copper) front panel ports and 6 fixed 40/100-Gigabit Ethernet QSFP28 spine-facing ports.
N9K-C93108TC-FX3P	1-RU fixed-port switch with 48 100M/1/2.5/5/10GBASE-T ports and 6 40-/100-Gigabit QSFP28 ports
N9K-C9348GC-FXP [1]	Cisco Nexus 9300 with 48p 100M/1 G, 4p 10/25 G SFP+ and 2p 100 G QSFP

Table 19. Cisco Nexus 9200 and 9300 Fans and Fan Trays

Product ID	Description	Quantity	Cisco Nexus Switches
NXA-SFAN-30CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	9348GC-FX3
NXA-SFAN-30CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	3	9348GC-FX3
NXA-SFAN-30CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	9348GC-FX3PH
NXA-SFAN-30CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	3	9348GC-FX3PH
NXA-SFAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	6 5 4	9332D-H2R 93400LD-H1 93108TC-FX3

[1] For N9K-C9348GC-FXP the PSU SPROM is not readable when the PSU is not connected. The model displays as "UNKNOWN" and status of the module displays as "shutdown".

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Product ID	Description	Quantity	Cisco Nexus Switches
NXA-SFAN-35CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	6 5 4	9332D-GX2B 93400LD-H1 93108TC-FX3
NXA-SFAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	6	9332D-GX2B
NXA-FAN-160CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	9364C [2] 93360YC-FX2
NXA-FAN-160CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	3	9364C Error! Reference source not found.[1]Error! Reference source not found.**Error! Reference source not found.Error! Reference source not found.Error! Reference source not found.** 93360YC-FX2**Error! Reference source not found.Error! Reference source not found.**
NXA-FAN-160CFM2-PE	Fan module with port-side exhaust airflow (blue coloring)	4	9364C-GX
NXA-FAN-160CFM2-PI	Fan module with port-side intake airflow (burgundy coloring)	4	9364C-GX
NXA-FAN-30CFM-B	Fan module with port-side intake airflow (burgundy coloring)	3	93108TC-FX Error! Reference source not found.[1] 93180YC-FX Error! Reference source not found.[1] 9348GC-FXP Error! Reference source not found.[1]
NXA-FAN-30CFM-F	Fan module with port-side exhaust airflow (blue coloring)	3	93108TC-FX Error! Reference source not found.[1] 93180YC-FX Error! Reference source not found.[1] 9348GC-FXP

[2] For specific fan speeds see the Overview Section of the Hardware Installation Guide.

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Product ID	Description	Quantity	Cisco Nexus Switches
NXA-FAN-35CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	4 6	92300YC Error! Reference source not found.[1] 9332C Error! Reference source not found.[1] 93180YC-FX3S [3] 93180YC-FX3 93108TC-FX3P 93180YC-FX3H 9336C-FX2-E 9316D-GX 93600CD-GX
NXA-FAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring) Fan module with port-side exhaust airflow (blue coloring)	4 6 6	92300YC [1] 9332C [1] 93180YC-FX3S [2] 93180YC-FX3 93108TC-FX3P 93180YC-FX3H 9316D-GX 93600CD-GX 9336C-FX2-E
NXA-FAN-65CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	93240YC-FX2 [1] 9336C-FX2 [1]
NXA-FAN-65CFM-PI	Fan module with port-side exhaust airflow (burgundy coloring)	3	93240YC-FX2 9336C-FX2 [1]

Table 20. Cisco Nexus 9200 and 9300 Power Supplies

Product ID	Description	Quantity	Cisco Nexus Switches
NXA-PDC-715W-PI	715-W DC power supply with port-side intake airflow (blue coloring)	2	93108TC-FX3P
NXA-PDC-440W-PE	440-W DC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FX3 9348GC-FX3PH
NXA-PDC-440W-PI	440-W DC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FX3 9348GC-FX3PH

[3] This switch runs with +1 redundancy mode so that if one fan fails, the switch can sustain operation. But if a second fan fails, this switch is not designed to sustain operation. Hence before waiting for the major threshold temperature to be hit, the switch will power down due to entering the fan policy trigger command.

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Product ID	Description	Quantity	Cisco Nexus Switches
NXA-PHV-350W-PE	350-W AC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FX3 9348GC-FX3PH
NXA-PHV-350W-PI	350-W AC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FX3 9348GC-FX3PH
NXA-PAC-350W-PE2	350-W AC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FX3 9348GC-FX3PH 9348GC-FXP
NXA-PAC-350W-PI2	350-W AC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FX3 9348GC-FX3PH 9348GC-FXP
NXA-PAC-1900W-PE	1900-W AC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FX3 9348GC-FX3PH
NXA-PAC-1900W-PI	1900-W AC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FX3 9348GC-FX3PH
NXA-PHV-2KW-PI	2000-W HVDC power supply with port-side intake airflow (burgundy coloring)	2	9332D-H2R 93400LD-H1
NXA-PAC-1500W-PE	1500-W AC power supply with port-side exhaust airflow (blue coloring)	2	9332D-GX2B
NXA-PAC-1500W-PI	1500-W AC power supply with port-side intake airflow (burgundy coloring)	2	9332D-GX2B
NXA-PAC-500W-PE	500-W AC power supply with port-side exhaust airflow (blue coloring)	2	93180YC-FX 93108TC-FX3
NXA-PAC-500W-PI	500-W AC power supply with port-side intake airflow (burgundy coloring)	2	93180YC-FX 93108TC-FX3
NXA-PAC-650W-PE	650-W AC power supply with port-side exhaust (blue coloring)	2	92300YC 93180YC-FX3S 93180YC-FX3 93180YC-FX3H
NXA-PAC-650W-PI	650-W AC power supply with port-side intake (burgundy coloring)	2	92300YC 93180YC-FX3S 93180YC-FX3 93180YC-FX3H
NXA-PAC-750W-PE	750-W AC power supply with port-side exhaust airflow (blue coloring) 1	2	9336C-FX2 9336C-FX2-E 9332C 93240YC-FX2
NXA-PAC-750W-PI	750-W AC power supply with port-side intake airflow (burgundy coloring) 1	2	9336C-FX2 9336C-FX2-E 9332C 93240YC-FX2

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Product ID	Description	Quantity	Cisco Nexus Switches
NXA-PAC-1100W-PE2	1100-W AC power supply with port-side exhaust airflow (blue coloring)	2	93240YC-FX2 9332C 9316D-GX 9336C-FX2 9336C-FX2-E 93600CD-GX
NXA-PAC-1100W-PI2	1100-W AC power supply with port-side intake airflow (burgundy coloring)	2	93240YC-FX2 9332C 9316D-GX 9336C-FX2 9336C-FX2-E 93600CD-GX
NXA-PAC-1100W-PI	Cisco Nexus 9000 PoE 1100W AC PS, port-side intake	2	93108TC-FX3P
NXA-PAC-1100W-PE	Cisco Nexus 9000 PoE 1100W AC PS, port-side exhaust	2	93108TC-FX3P
NXA-PAC-1900W-PI	Cisco Nexus 9000 PoE 1900W AC PS, port-side intake	2	93108TC-FX3P
NXA-PAC-1200W-PE	1200-W AC power supply with port-side exhaust airflow (blue coloring)	2	93360YC-FX2 9364C
NXA-PAC-1200W-PI	1200-W AC power supply with port-side intake airflow (burgundy coloring)	2	93360YC-FX2 9364C
NXA-PAC-1400W-PE	1400-W AC power supply with port-side exhaust airflow (blue coloring)	2	93400LD-H1
NXA-PAC-1400W-PI	1400-W AC power supply with port-side intake airflow (burgundy coloring)	2	93400LD-H1
N9K-PUV-1200W	1200-W Universal AC/DC power supply with bidirectional airflow (white coloring)	2	92300YC 93108TC-FX 93360YC-FX2 93180YC-FX3S 93180YC-FX 9364C 93108TC-FX3
NXA-PDC-930W-PE	930-W DC power supply with port-side exhaust airflow (blue coloring)	2	93360YC-FX2 93180YC-FX3S 93180YC-FX 9364C 93180YC-FX3H 93108TC-FX3
NXA-PDC-930W-PI	930-W DC power supply with port-side intake airflow (burgundy coloring)	2	93360YC-FX2 93180YC-FX3S 93180YC-FX 9364C 93180YC-FX3H 93108TC-FX3

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Product ID	Description	Quantity	Cisco Nexus Switches
NXA-PDC-1100W-PE	1100-W DC power supply with port-side exhaust airflow (blue coloring)	2	93240YC-FX2 93600CD-GX 9316D-GX 9332C 9336C-FX2 9336C-FX2-E
NXA-PDC-1100W-PI	1100-W DC power supply with port-side intake airflow (burgundy coloring)	2	93240YC-FX2 93600CD-GX 9316D-GX 9332C 9336C-FX2 9336C-FX2-E
NXA-PHV-1100W-PE	1100-W AC power supply with port-side exhaust airflow (blue coloring)	2	93240YC-FX2 9336C-FX2
NXA-PHV-1100W-PI	1100-W AC power supply with port-side intake airflow (burgundy coloring)	2	93240YC-FX2 9336C-FX2
NXA-PAC-2KW-PE	2000-W AC power supply with port-side exhaust airflow (blue coloring)	2	9364C-GX
NXA-PAC-2KW-PI	2000-W AC power supply with port-side intake airflow (burgundy coloring)	2	9364C-GX 9332D-H2R
NXA-PDC-2KW-PE	2000-W DC power supply with port-side exhaust airflow (blue coloring	2	9364C-GX 93400LD-H1
NXA-PDC-2KW-PI	2000-W DC power supply with port-side intake airflow (burgundy coloring)	2	9364C-GX 9332D-H2R 93400LD-H1
N2200-PAC-400W	400-W AC power supply with port-side exhaust airflow (blue coloring)	2	92348GC-X
N2200-PAC-400W-B	400-W AC power supply with port-side intake airflow (burgundy coloring)	2	92348GC-X
N2200-PDC-350W-B	350-W DC power supply with port-side intake airflow	2	92348GC-X
N2200-PDC-400W	400-W DC power supply with port-side exhaust airflow (blue coloring)	2	92348GC-X

Compatibility Information

Fabric Module and Line Card compatibility details are listed below:

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Table 21. Cisco Nexus 9500 Cloud Scale Line Cards

Product ID	N9K-C9504-FM-G	N9K-C9508-FM-G	N9K-C9504-FM-E	N9K-C9508-FM-E	N9K-C9508-FM-E2	N9K-C9516-FM-E2
N9K-X9716D-GX	4	4	No	No	No	No
N9K-X9736C-FX	5	5	5	5	5	5
N9K-X97160YC-EX	4	4	4	4	4	4
N9K-X9788TC-FX	4	4	4	4	4	4
N9K-X9732C-EX	4	4	4	4	4	4
N9K-X9732C-FX	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)

Table 22. Cisco Nexus 9500 R-Series Line Cards

Product ID	N9K-C9504-FM-R	N9K-C9508-FM-R
N9K-X9636C-RX	6	6
N9K-X9636Q-R	4 6 (n+2 redundancy)	4 6 (n+2 redundancy)
N9K-X9636C-R	5 6 (n+1 redundancy)	5 6 (n+1 redundancy)
N9K-X96136YC-R	6	6

Table 23. Cisco Nexus 9500 R2-Series Line Cards

Product ID	N9K-C9508-FM-R2
N9K-X9624D-R2	6

Optics

For information about transceivers and cables supported on a switch, see the Transceiver Module (TMG) Compatibility Matrix. For the transceiver specifications and installation information, see the Install and Upgrade Guides.

Cisco Nexus Dashboard Insights for Data Center

Cisco NX-OS Release 10.4(3)F supports the Cisco Nexus Dashboard Insights on Cisco Nexus 9300-FX, 9300-FX2, 9300-FX3, 9300-GX, 9300-GX2, 9400, and 9800 platform switches and 9500 platform switches with -EX/FX/GX Line Cards. See the Cisco Nexus Insights documentation.

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Upgrade and Downgrade

To perform a software upgrade or downgrade, follow the instructions in the Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 10.4(x). For information about an In Service Software Upgrade (ISSU), see the Cisco NX-OS ISSU Support Matrix.

Related Content

Document Title	Description
Cisco Nexus 9000 Series Switches	Cisco Nexus 9000 Series Switches documentation
Cisco NX-OS Software Strategy and Lifecycle Guide	Cisco NX-OS Software Release and Image-naming Convention
Cisco Nexus 3000 and 9000 Series NXAPI REST SDK User Guide and API Reference	Cisco Nexus 3000 and 9000 Series NX-NX-API REST SDK User Guide and API Reference | • Cisco NX-OS Licensing Guide • Cisco Nexus 9000 and 3000 Series NX-OS Switch License Navigator • Cisco Nexus Smart Licensing Using Policy User Guide	Licensing Information **Note:** When you downgrade from Cisco NX-OS Release 10.4(3)F to an earlier release, the features that use the ACI+NX-OS Essentials, Advantage, and add-on licenses or the Hardware Streaming Telemetry license continue to work in honor mode in the downgraded version. In addition, the output of the show license usage command continues to include entries for these unsupported licenses.
Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide	Cisco Nexus 9000 Series Software Upgrade and Downgrade Guide, Release 10.4(x)
Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes	Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes, Release 10.4(3)F
https://cisco.github.io/cisco-mibs/supportlists/nexus9000/Nexus9000MIBSupportList.html	Cisco NX-OS Supported MIBs
Cisco Nexus 9000 Series Switch FEX Support Matrix	Supported FEX modules
Cisco Nexus 9000 Series Hardware Installation Guides	Cisco Nexus 9000 Series Hardware Installation Guides

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