



Cisco Nexus 9000 Series NX-OS Release Notes, Release 10.4(1)F

Introduction

The Cisco Nexus 9000 Series NX-OS Release Notes document describes the features, issues, and exceptions of Cisco NX-OS Release 10.4(1)F software for use on Cisco Nexus 9000 Series switches.

Note: The documentation set for this product strives to use bias-free language. For the purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on RFP documentation, or language that is used by a referenced third-party product.

Changes to this document:

Date	Description
August 18, 2023	Cisco NX-OS Release 10.4(1)F became available.

New and Enhanced Software Features

New Features		
Product Impact	Feature	Description
Security	VXLAN EVPN First Hop Security (IPv4)	<p>In the earlier releases, DHCP-snooping and associated security features such as Dynamic ARP Inspection (DAI) and IP Source Guard (IPSG) were restricted to a single switch. With Cisco NX-OS Release 10.4(1)F, these features are supported on the entire VXLAN fabric. This allows a host that is authenticated on one VTEP to move to another VTEP through a trusted interface.</p> <p>See Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).</p>
	Radius over DTLS Support	<p>Datagram Transport Layer Security (DTLS) protocol is now used to transport RADIUS datagrams over a secure channel using UDP.</p> <p>See Cisco Nexus 9000 NX-OS Security Configuration Guide, Release 10.4(x).</p>
Ease of Use	Port-channel load-balance command for MPLS tagged traffic	<p>The port-channel load-balance command for MPLS tagged traffic feature allows you to configure MPLS load-balancing as an option in the existing port-channel load-balance command. This feature provides for optimal load-balancing over port channel.</p> <p>See Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x), and the Cisco Nexus 9000 Series NX-OS Label Switching Configuration Guide, Release 10.4(x).</p>
	Support to redirect/deny all packets using ePBR policy	<p>From Cisco NX-OS Release 10.4(1)F, ePBR Layer 2 provides configuration options to redirect or deny all control traffic that match the ePBR policy to the service devices or service chain, without being consumed or intercepted.</p> <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x), and Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.4(x).</p>
	Split Loopback for VXLAN Multi-Site BGW Deployment	<p>The PIP interface now advertises orphan host route (using type 2 routes) with PIP as next hop before the hold-down timer expires. This avoids traffic loss for the orphan host and optimizes vPC convergence.</p> <p>See Cisco Nexus 9000 NX-OS VXLAN Configuration Guide, Release 10.4(x).</p>

New Features		
Product Impact	Feature	Description
Feature Set	VXLAN QoS Outer Header Policy for Layer 2	<p>Cisco NX-OS Release 10.4(1)F provides the default-vxlan-in-tnl-dscp-policy template in QoS policy-map type. This template matches the outer DSCP of the VXLAN packet and re-writes Class of Service (CoS) in the decapsulated ethernet packet on the egress VTEP.</p> <p>See Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).</p>
	Support ARP response for out-of-subnet	<p>With Cisco NX-OS Release 10.4(1)F, you can enable or disable the ARP out-of-subnet packet transaction on the connected host using the ip arp outside-subnet command. This command is available in both global and interface modes.</p> <p>See Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 10.4(x).</p>
	ePBR out-of-service	<p>This feature provides the ability to temporarily remove (shut down) an endpoint from service when a user-defined failure threshold is reached. The endpoints can be placed out-of-service by the following ways:</p> <ul style="list-style-type: none"> • Administrative out-of-service or • Auto out-of-service <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x).</p>
	Deduplication	<p>With Cisco NX-OS Release 10.4(1)F, the deduplication feature allows you to remove duplicate copies of the traffic flow when used with Nexus Data Broker (NDB) switches.</p> <p>See Cisco Nexus 9000 Series NX-OS System Management Configuration Guide.</p>
	Egress NetFlow	<p>Egress NetFlow identifies packet flows for outgoing IP packets and provides statistics based on these packet flows. The egress NetFlow uses ingress pipeline and ingress TCAM carving egr-netflow to record flow information egressing out of the switch.</p> <p>See Cisco Nexus 9000 Series NX-OS System Management Configuration Guide</p>

The enhanced features listed below are existing features introduced in earlier releases, but enhanced to support new platforms in Cisco NX-OS Release 10.4(1)F.

Enhanced Features		
Product Impact	Feature	Description
Licensing	Licensing support for Cisco N9K-C9804, N9K-C9348GC-FX3, N9K-C9348GC-FX3PH, and N9K-C9332D-H2R	<p>Smart Licensing using Policy is now supported on the following switches: N9K-C9804, N9K-C9348GC-FX3, N9K-C9348GC-FX3PH, and N9K-C9332D-H2R.</p> <p>See Cisco Nexus 9000 and 3000 Series NX-OS Smart Licensing Using Policy User Guide.</p>
Ease of Setup/Deployment	Support for default boot mode change to LXC	<p>From Cisco NX-OS Release 10.4(1)F, only the LXC mode is supported on Cisco Nexus 9300-FX and 9300-FX2 switches, which allows you to perform enhanced non-disruptive ISSU with minimal downtime.</p> <p>See Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 10.4(x).</p>
	Support for Enhanced ISSU on N9K-C9408	Enhanced ISSU is now supported on Cisco N9K-C9408 platform switch.

Enhanced Features		
Product Impact	Feature	Description
		See Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 10.4(x).
Security	Keychain support for OSPFv3	<p>A new option to enable keychain is provided for OSPFv3 encryption and authentication commands.</p> <p>See Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 10.4(x), and Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference for Release 10.4x.</p>
	Certification based authentication on MACsec	<p>With Cisco NX-OS Release 10.4(1)F, along with the existing pre-shared key option used for 802.1X port-based authentication, you also have the option to carry out authentication using the Extensible Authentication Protocol - Transport Layer Security (EAP-TLS) support, that is, certificate-based authentication on uplink ports where MACsec is required.</p> <p>See Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.4(x).</p>
	Secure POAP - CA group bundle	<p>This release allows you to use Root-CA bundles instead of single .pem certificate for Secure POAP.</p> <p>See Cisco Nexus 9000 NX-OS Fundamentals Configuration Guide, Release 10.4(x).</p>
Ease of Use	User mask position load-balance configuration options	<p>The ePBR load balance command is enhanced to include a new option, mask-position. With this option, you can choose the bits used for load balancing in user-defined ACL for IPv4 or IPv6 matches.</p> <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x).</p>
	Minimal disruptive fail-action for ePBR Layer 2	<p>The ePBR Layer 2 fail-action feature is optimized to modify only the access control entries that are currently affected by the failure of the node.</p> <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x).</p>
Feature Set	Classify and rewrite packets based on outer DSCP at the egress VTEP	<p>The tunnel keyword is added to the match dscp command to match the outer DSCP value on the egress VTEP using an ingress service policy.</p> <p>See Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).</p>
	Support for port operators in ACLs	<p>Cisco NX-OS Release 10.4(1)F provides ePBR Layer 3 policies, ePBR Layer 2 policies, and ITD services support Layer 4 port operators in match access-lists. This allows the Layer-4 port ranges and other port operations in the match access-list rules to be used for filtering traffic in the bucket access-lists.</p> <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x), and Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Configuration Guide, Release 10.4(x).</p>
	Set outer DSCP for VXLAN encapsulated packets at ingress VTEP	<p>With this release, the tunnel keyword is added to the match dscp command to set the outer DSCP fields on the ingress VTEP.</p> <p>See Cisco Nexus 9000 Series NX-OS VXLAN Configuration</p>

Enhanced Features

Product Impact	Feature	Description
		Guide, Release 10.4(x).
	VTEP co-existence with single-active ESI	<p>In the earlier releases, Cisco Nexus devices co-existed in a VXLAN fabric with switches that support ESI multi-homing in All-active mode but not in Single-active mode. With this release, Cisco Nexus Cloud Scale devices can coexist with switches that support ESI multi-homing in both All-active mode and ESI Single-Active mode.</p> <p>See Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.4(x).</p>
	BGP isolation mode to withdraw aggregate address routes	<p>With Cisco NX-OS Release 10.4(1)F, you can configure isolation on route-map for the switches which are in maintenance mode. You can choose to either partially, completely, or customize the isolation.</p> <p>See Cisco Nexus 9000 NX-OS Unicast Configuration Guide, Release 10.4(x).</p>
	Support for load-balancing/redirection to nodes over tunnels	<p>ePBR and ITD support redirection or load-balancing on Layer 3 endpoints reachable over IP-IP and GRE tunnel interfaces.</p> <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x) and Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Configuration Guide, Release 10.4(x).</p>
	Support tunnel interfaces	<p>With this release, ePBR and ITD support IPv4 and IPv6 policies on tunnel interfaces.</p> <p>See Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.4(x) and Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Configuration Guide, Release 10.4(x).</p>
	SNMP OID for EPLD version	<p>This NX-OS release enables you to view the EPLD firmware version using SNMP.</p> <p>See Cisco Nexus 9000 NX-OS System Management Configuration Guide, Release 10.4(x).</p>
	Tunnel enhancements	<p>Only IPv4 tunnel is supported on GRE, and IPv6 traffic can be encapsulated within GRE IPv4.</p> <p>See Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x).</p>
	LACP enhancements	<p>This NX-OS Release supports LACP Layer 3 port-channel using default timer on Cisco Nexus 9800 Series Switches.</p> <p>See Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x).</p>
	Auto-collect enhancements	<p>This enhancement allows you to auto-collect protocol flap events for BGP, OSPF, ISIS, and BFD components.</p> <p>See Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.4(x).</p>
	Logging 2.0 enhancements	<p>The default bloggerd auto-collect now supports components such as cfs, ethport, feature-mgr, icam, interface manager, lACP, m2rib, mfdm, nbm, ngoam, nve, portchannel, qos, sla_responder,sla_sender, sla_twamp, smm, spm, sysmgr, and vpc.</p> <p>See Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.3(x).</p>
	PTP Class C support for G.8275.1	PTP Class C support for G.8275.1 Telecom profile is

Enhanced Features		
Product Impact	Feature	Description
	Telecom profile on N9K-C9408	supported on Cisco Nexus C9408 switches. See Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.4(x).
	PTP Media profile and Class C support for G.8275.1 Telecom profile on the N9K-C9332D-H2R	PTP Media profile and Class C support for G.8275.1 Telecom profile are now supported on N9K-C9332D-H2R switches. See Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.4(x).
	Support for HA on N9K-C9808	Dual-Supervisors support for High Availability is now provided on Cisco Nexus 9808 switches. See Cisco Nexus 9000 Series NX-OS High Availability and Redundancy Guide, Release 10.4(x).
	Breakout (4x25 and 4x10G) options on the Cisco Nexus 9800 36-port QSFP-DD 400G line card	NX-OS now supports breakout (4x10G and 4x25G) ports is provided on N9K-X9836DM-A line card with Cisco Nexus 9800 platform switches. See Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4(x). For more information about Cisco Optics-to-device compatibility, see Transceiver Module (TMG) Compatibility Matrix .
Scalability	Scale enhancements	For Cisco NX-OS Release 10.4(1)F Scale Enhancements, See Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 10.4(1)F.
Programmability	OpenConfig model version upgrades	The OpenConfig models are upgraded to the respective latest versions for the following components: QoS, ISIS, BGP, RPM, VRRP, OSPF, BFD, ACL, if-aggregate, LLDP, LACP, interfaces, VLAN, relay-agent, aft-network-instance, if-IP, telemetry, messages, local-routing, network-instance, network-instance-policy, platform, platform-port, platform-linecard, system, if-ethernet, spanning-tree, openconfig-network-instance-l2, FIB, and gNMI. See Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.4(x).

Hardware Features

New Hardware Features

The following new hardware features are introduced in Cisco NX-OS Release 10.4(1)F.

N9K-C9804

The Cisco Nexus 9804 (**N9K-C9804**) is a 10-RU switch that supports distributed forwarding across multiple field replaceable units (FRUs).

Cisco Nexus 9804 switches support the following line cards:

- N9K-X9836DM-A
- N9K-X98900CD-A

For details on Cisco Nexus 9804 Switch, see [Cisco Nexus 9804 NX-OS Mode Switch Hardware Installation Guide](#).

N9K-X98900CD-A line card

Line card for Cisco Nexus 9804 and 9808 switches.

The N9K-X98900CD-A line card is a 48-port combo 100GE/400GE line card with the following port configuration:

- 14x 400GE QSFP-DD
- 18x 100GE QSFP-28
- 16x 100GE QSFP-28 MACSEC (Support for MACsec will be provided in a future software release.)

Note: N9K-X98900CD-A does not support any type of Breakout options and only Native 40G, 100G and 400G Transceivers are supported in the current release, 10.4(1)F.

For details on Cisco Nexus N9K-X98900CD-A line card, see [Cisco Nexus 9808 NX-OS Mode Switch Hardware Installation Guide](#) and [Cisco Nexus 9804 NX-OS Mode Switch Hardware Installation Guide](#).

N9K-C9348GC-FX3

The Cisco Nexus 9348GC-FX3 switch (N9K-C9348GC-FX3) is a 1-RU fixed-port, L2/L3 switch, designed for deployment in data centers. This switch has 48 10/100/1000M copper RJ45 downlink ports, 4 10-/25G SFP28 uplink ports, and 2 40-/100G QSFP28 uplink ports.

This switch includes the following user-replaceable components:

- Fan modules (three) with the following airflow choices:
 - Port-side intake airflow with burgundy coloring (NXA-SFAN-30CFM-PI)
 - Port-side exhaust airflow with blue coloring (NXA-SFAN-30CFM-PE)
- Power supply modules (two—one for operations and one for redundancy [1+1]) with the following choices (do not mix AC and DC power sources and do not mix airflow directions):
 - 350W AC power supply with port-side intake airflow (burgundy coloring) (NXA-PAC-350W-PI2)
 - 350W AC power supply with port-side exhaust airflow (blue coloring) (NXA-PAC-350W-PE2)

For details on Cisco Nexus 9348GC-FX3 Switch, see [Cisco Nexus 9348GC-FX3 NX-OS Mode Switch Hardware Installation Guide](#).

N9K-C9348GC-FX3PH

The Cisco Nexus 9348GC-FX3PH switch (N9K-C9348GC-FX3PH) is a 1-RU fixed-port, L2/L3 switch, designed for deployment in data centers. This switch has 40 10M/100M/1G copper RJ45 downlink ports that support PoE/PoE+/PoE++ and 8 10M/100M half-duplex copper RJ45 downlink ports that support PoE/PoE+/PoE++, 4 10-/25G SFP28 uplink ports, and 2 40-/100G QSFP28 uplink ports.

This switch includes the following user-replaceable components:

- Fan modules (three) with the following airflow choices:
 - Port-side intake airflow with burgundy coloring (NXA-SFAN-30CFM-PI)
 - Port-side exhaust airflow with blue coloring (NXA-SFAN-30CFM-PE)

- Power supply modules (two—one for operations and one for redundancy [1+1]) with the following choices (do not mix AC and DC power sources and do not mix airflow directions):
 - 350W AC power supply with port-side intake airflow (burgundy coloring) (NXA-PAC-350W-PI2)
 - 350W AC power supply with port-side exhaust airflow (blue coloring) (NXA-PAC-350W-PE2)
 - 1900W AC power supply with port-side intake airflow (burgundy coloring) (NXA-PAC-1900W-PI)
 - 1900W AC power supply with port-side exhaust airflow (blue coloring) (NXA-PAC-1900W-PE)

For details on Cisco Nexus 9348GC-FX3PH Switch, see [Cisco Nexus 9348GC-FX3PH NX-OS Mode Switch Hardware Installation Guide](#).

N9K-C9332D-H2R

The Cisco Nexus 9332D-H2R switch (N9K-C9332D-H2R) is a 1-rack unit (RU), fixed-port switch designed for deployment in data centers.

This switch includes the following ports:

- 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)
- USB port

This switch includes the following user-replaceable components:

- Fan modules (6) with the following airflow choices:
 - Port-side intake fan module with burgundy coloring (NXA-SFAN-35CFM-PI)
- Power supply modules
 - 2000W port-side intake AC power supply with burgundy coloring (NXA-PAC-2KW-PI)
 - 2000W port-side intake DC power supply with burgundy coloring (NXA-PDC-2KW-PI)
 - 2000W port-side intake HVDC power supply with burgundy coloring (NXA-PHV-2KW-PI)

For details on Cisco Nexus 9332D-H2R Switch, see [Cisco Nexus 9332D-H2R NX-OS Mode Switch Hardware Installation Guide](#).

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

The QDD-400G-ZR-S and QDD-400G-ZRP-S pluggable Digital Coherent Optic (DCO) transceivers combined with routers optimized for 400G port bandwidth, offer customers highest performance capacity and longer reach with low power and low cost. For details about *Configuring 400G Digital Coherent Optics*, see [Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.4\(x\)](#).

Enhanced Hardware Features

N9K-C9332D-GX2B

The Cisco Nexus C9332D-GX2B switch (N9K-C9332D-GX2B) now supports port-side exhaust using the following user-replaceable components:

- Fan modules (6) with the following airflow choices:
 - Port-side exhaust fan module with blue coloring (NXA-SFAN-35CFM-PE)
 - Port-side intake fan module with burgundy coloring (NXA-SFAN-35CFM-PI)
- Power supply modules (two—One for operations and one for redundancy [1+1]) with the following choices:
 - 1500W port-side exhaust AC power supply with blue coloring (NXA-PAC-1500W-PE)
 - 1500W port-side intake AC power supply with burgundy coloring (NXA-PAC-1500W-PI)

For details on Cisco Nexus C9332D-GX2B switch, see [Cisco Nexus C9332D-GX2B NX-OS Mode Switch Hardware Installation Guide](#).

For details about transceivers and cables that are supported on a switch, see the [Transceiver Module \(TMG\) Compatibility Matrix](#).

Unsupported Hardware

From Cisco NX-OS Release 10.4(1)F, the following hardware are not supported.

- N9K-C93180YC-EXU
- N9K-C93108TC-EX (includes N9K-C93108TC-EX-1G and N9K-C93108TC-EX++)
- N9K-C93108TC-EX-24
- N9K-C93180YC-EX
- N9K-C93180YC-EX-24

Unsupported Features on N9K-C92348GC

Beginning with Cisco NX-OS Release 10.1(1), the following features are not supported on N9K-C92348GC:

- VXLAN
- SW/HW Telemetry
- NetFlow/Analytics
- iCAM
- PTP
- NX-SDK
- DME, Device YANG, OpenConfig YANG, gRPC, NETCONF, and RESTCONF

Note: NXAPI CLI and XML Agent (NETCONF over SSH) are supported on this platform.

Release Image

In Cisco NX-OS Release 10.4(1)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.10.4.1.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.10.4.1.F.bin) is supported on Cisco Nexus 9000 -R and -R2 series modular switches.

The 32-bit image is no longer supported.

Open Issues

Bug ID	Description
CSCvw16064	<p>Headline: NX-OS to be conformed with RFC 5424 (NILVALUE for STRUCTURED-DATA and MSGID fields)</p> <p>Symptoms: In all Cisco NX-OS versions, the implementation of syslog does not follow RFC 5424 leading to following problems:</p> <ul style="list-style-type: none">• Adding NILVALUE for STRUCTURED-DATA field as we don't have structured data currently in syslog messages. RFC 5424:6.3. STRUCTURED-DATA In case of zero structured data elements, the STRUCTURED-DATA field MUST contain the NILVALUE.• Adding NILVALUE for MSGID in syslog header as this must be there if no data is available for MSGID. For the rest fields like APP-NAME, PROCID NILVALUE is not mandatory. <p>Workarounds: None</p>
CSCwf51439	<p>Headline: VXLAN: BUM Traffic Loop when PIM BiDir and Fabric Peering are used together.</p> <p>Symptoms: Any Broadcast Unknown Unicast Multicast (BUM) packet will be looped between the 2 switches in vPC Fabric Peering until interface's bandwidth is exhausted, which will result in loss of connectivity to all the devices to the downstream VTEP as well as other VTEPs connected to the same SPINE.</p> <p>Workarounds: Remove PIM BiDir and use PIM ASM or Ingress replication.</p>
CSCwh17302	<p>Headline: HMM /32 vrf leaking is not working with maximum-paths mixed.</p> <p>Symptoms: The following symptoms occur:</p> <p>Trying to leak a /32 prefix from source VRF-A to target VRF-B on a pair of Nexus 9000 switches Source-vrf views the /32 prefix locally from HMM Target VRF does not leak the /32 prefix When searching for the /32 prefix on the RIB only less specific route is leaked (less specific prefix is coming redistribute-direct of SVI subnet where /32 is attached)</p> <p>Workarounds: Perform any one of the following options:</p> <p>Option 1: Clearing the less specific prefix on the target vrf resolves the problem Option2: Remove <maximum-paths mixed> from the source VRF.</p>
CSCwh22483	<p>Headline: Cisco Nexus 9000 is not encapsulating properly MACsec traffic into VXLAN.</p> <p>Symptoms: In a scenario where a MACsec packet's size exceeds 344-byte and needs to be sent over a VXLAN fabric, it is encapsulated. However, the information contained in the Total Length field in the IP header is not properly set. This behavior is also seen for the Length field in the UDP datagram header.</p> <p>Workarounds: None.</p>
CSCwh01493	<p>Headline: Cisco Nexus 9300-FX3/GX random-detect threshold burst-optimized is causing packet drop.</p> <p>Symptoms: The random-detect threshold burst-optimized command configured under class type queuing c-out-8q-q-default is causing drops on the interface where this service policy is applied.</p>

Bug ID	Description
	The random-detect threshold burst-optimized ecn configuration causes the same issue. Workarounds: Remove the random-detect threshold burst-optimized configuration.
CSCwh02830	Headline: Manual power cycle required while upgrading NX-OS N9K-C9500 switch with SUP A+ HW rev 1.0. Symptoms: While upgrading the N9K-9500 switch, the following symptoms occur: Nexus 9500 chassis with single or dual SUP A+ HW rev 1.0 Upgrade of Sup or SC EPLD (Just NXOS upgrade will not trigger this issue.) After the reload, the active SUP module does not boot up and gets stuck with no console output and a continuously blinking amber STS LED. Workarounds: The workaround is as follows: 1. Physically re-seat the module (cold power-cycle). 2. Remove all power to the chassis to allow the SUP module to power up again.
CSCwh19743	Headline: Nexus 9000 - flowcontrol send on configured on Port-channel after removing FEX HIF member ports. Symptoms: The flowcontrol send on configuration is added automatically to Port-channel. A flowcontrol configuration added in this way cannot be modified. Workarounds: Perform the no interface port-channel X command to manually remove the port-channel interface, and then recreate the port-channel.

Resolved Issues

Bug ID	Description
CSCwe06759	Headline: Memory leak at FEX unit. Symptoms: When LACP based port-channels are configured between servers and FEX front-panel ports, memory leak takes place, resulting in memory depletion over a period of time. This causes the FEX device to start reloading, and it appears offline on the parent switch. After FEX is up, it appears online on the parent switch. This sequence can repeat whenever FEX reloads. When the FEX device reloads, loss of ingress traffic is noticed. Workarounds: None
CSCwe20605	Headline: Encrypted tunnel (VXLAN Cloudsec) traffic is getting dropped on Cisco Nexus 9300-FX3 switch. Symptoms: After upgrading Cisco Nexus 9300-FX3 switch to Cisco NX-OS Release10.3(2)F image, few or all encrypted tunnel traffic is dropped. VXLAN Cloudsec or tunnel encryption statistics do not update. Workarounds: The workaround is as follows: 1. Remove tunnel-encryption from DCI uplinks. 2. Copy running-config startup-config. 3. Reload the switch. 4. Post reload, configure tunnel-encryption on DCI uplinks.
CSCwe43450	Headline: Kernel panic due to Fatal Module Error after ND ISSU on N9K-C9348GC-FXP switch. Symptoms: After ND-ISSU, an unexpected reload due to kernel panic is noticed in N9K-C9348GX-FXP switches. This symptom can be verified by running either the show logging onboard internal reset-reason command or the show system reset-reason command. The output shows Reset Requested due to Fatal Module Error.

Bug ID	Description
	Workarounds: Use disruptive or normal upgrade procedure.
CSCwe50502	<p>Headline: Cisco Nexus 9000 Unexpected Reload due to Watchdog with High ktah_nl_asic_isr Interrupts.</p> <p>Symptoms: A Nexus 9000 switch running Cisco NX-OS Release 9.3(9) may reload unexpectedly with the reason - Watchdog Timeout - due to a high amount of ktah_nl_asic_isr hardware interrupt events seen in a kernel panic log.</p> <p>Workarounds: None.</p>
CSCwf11514	<p>Headline: Cisco Nexus 9000-R - Inner DSCP rewritten to Outer DSCP on DECAP for MPLS Traffic.</p> <p>Symptoms: The last three bits of the DSCP field are set to zero. For example, a packet that ingresses with DSCP 18 (010010) egresses with DSCP 16 (010000).</p> <p>Workarounds: Removing mpls ip from the ingress interface can mitigate this issue.</p>
CSCwf20782	<p>Headline: Nexus 9000 - N2K HIF interface configurations erased while upgrading to Cisco NX-OS Release 10.2(4).</p> <p>Symptoms: While upgrading Nexus 9000 disruptively from Cisco NX-OS Release 9.3(11) to 10.2(4), configurations on all N2K HIF interfaces are partially erased resulting in loss of traffic. Interfaces are in inactive status, as switchport access vlan x is missing from the HIF interfaces.</p> <p>Workarounds: Default the affected interfaces and reconfigure.</p>
CSCwf21754	<p>Headline: After the reload ascii command, VRF ID always points to default when traffic flow is through the SVI interface.</p> <p>Symptoms: When the Cisco Nexus 9500 switch is reloaded with the reload ascii command, the netflow export sends ingressVRF-id as default VRF-id(1).</p> <p>Workarounds: Reload the switch.</p>
CSCwf24420	<p>Headline: Need to disable PIE feature and command from Cisco Nexus 9808 switches.</p> <p>Symptoms: PIE commands do not show right output for fan, power supply, and optics.</p> <p>Workarounds: None.</p>
CSCwf32021	<p>Headline: PTP process crash.</p> <p>Symptoms: When PTP profile mode is 8275.1 on Cisco 9300-FX3 platform, PTP process crashes.</p> <p>Workarounds: Disable PTP with the no feature ptp command.</p>
CSCwf42887	<p>Headline: On Cisco Nexus 9300-FX3 switches, VXLAN storm-control policer fabric bandwidth does not update after fabric link flap.</p> <p>Symptoms: On Cisco Nexus 9300-FX3 switches, when VXLAN multisite uses evpn storm-control, flapping fabric link does not lead to VXLAN storm-control policer fabric bandwidth update.</p> <p>Workarounds: Reset the policer using the shut/no-shut multi-site loopback command. Then disable evpn storm-control.</p>
CSCwf57648	<p>Headline: Nexus 9500 -R modules incorrect outer DMAC after initialization.</p> <p>Symptoms: Nexus 9500 with -R line cards to perform an MPLS to VXLAN handoff. The Nexus 9500 that acts as the PE device adds an incorrect DMAC to the outer VXLAN header, which is causing the downstream VXLAN leaf to drop the packet.</p> <p>Workarounds: If the switch is found to be in this state a reload ascii command will fix the mis-programming.</p>
CSCwf67373	<p>Headline: The copy r s command is aborted after ND-ISSU from older releases to Cisco NX-OS Release 10.2(1)F and beyond with FEX.</p> <p>Symptoms: The copy r s command is aborted after ND-ISSU from older releases to Cisco NX-OS Release 10.2(1)F and beyond with FEX.</p> <p>The layer for FEX ports is inconsistent between DME and backend. The DME has Layer 2 for FEX ports. When the DME tries to configure VLANs, the vlan_mgr rejects the configuration in the backend as it is Layer 3 in the backend. The correct layer is Layer 3. When nxapi retries in a continuous loop, the copy r s command gets aborted.</p>

Bug ID	Description
	Workarounds: To recover the switch, configure switchport/no switchport on all the affected interfaces.
CSCwf69556	<p>Headline: Nexus 9000: Interface description includes string "%n" or "%ln" crashes Service port-profile.</p> <p>Symptoms: An error occurs when we put the string %n or %ln as interface description.</p> <p>Workarounds: Do not use %n or %ln string in interface description.</p>
CSCwf75862	<p>Headline: Bi-dir traffic received on DF winner interface is dropped towards the RPF (RP).</p> <p>Symptoms: The symptoms are as follows:</p> <ol style="list-style-type: none"> 1. Bi-dir traffic received on DF winner interface is dropped towards the RPF (RP). 2. All consistency checkers are clean. 3. Elam summary shows forward. 4. Elam detail shows RPF failure. <p>Workarounds: None.</p>
CSCwf79132	<p>Headline: After ISSU upgrade performed with maintenance mode SVIs stay down.</p> <p>Symptoms: On Cisco Nexus 9000, all SVIs remain down after exiting maintenance mode post ISSU upgrade.</p> <p>Workarounds: To restore the SVIs, reboot the switch.</p>
CSCwf84373	<p>Headline: Admin shut the mgmt0 interface, other end port remains up/flapping.</p> <p>Symptoms: When interface mgmt0 is connected through SFP directly, the following symptoms are seen:</p> <ol style="list-style-type: none"> 1. Admin shut the mgmt0 interface. 2. The port at the other end starts flapping (up/down). 3. Add media-type sfp under mgmt0. 4. No more flaps on the other end, but it still shows as up, while mgmt0 is admin down. <p>Workarounds: None.</p>

Device Hardware

The following tables list the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 10.4(1)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	4-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 (1 st Generation)
N9K-C9804-FAN-A	Cisco Nexus 9800 4-slot chassis fan tray (1 st Generation)

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	7.1-RU modular switch with slots for up to 4 Line Cards in addition to two supervisors, 2 system controllers, 3 to 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 to 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 to 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	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
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	Quantity
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
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 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	Nexus 9500 4-slot chassis 400G cloud scale fan tray power connector	1	2
N9K-C9508-FAN-PWR	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
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-rack unit (RU) 8-slot LEM-based 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

Note: N9K-C9400-SW-GX2A Sup card ports 2xSFP Eth10/1-2 are not supported in Cisco NX-OS Release 10.3(2)F, 10.3(3)F, and 10.4(1)F.

Table 18. Cisco Nexus 9200 and 9300 Switches

Cisco Nexus Switch	Description
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.
N9K-C9348GC-FX3	1-RU fixed-port switch 48 10/100/1000M copper RJ45 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 RJ45 downlink ports that support PoE/PoE+/PoE++ and 8 10M/100M copper RJ45 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

Cisco Nexus Switch	Description
	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 to 64 support MACsec encryption. Ports 65 and 66 support 1/10 Gigabit speeds.
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 (1RU) spine switch with 32p 400/100-Gbps QSFP-DD ports and 2p 1/10 SFP+ ports.
N9k-9348D-GX2A	48p 40/100/400-Gigabit QSFP-DD ports and 2p 1/10G/10G SFP+ ports
N9k-9364D-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.
N9K-C93216TC-FX2	2-RU switch with 96 100M/1G/10G RJ45 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*	Nexus 9300 with 48p 100M/1 G, 4p 10/25 G SFP+ and 2p 100 G QSFP
N9K-C92348GC-X	The Cisco Nexus 92348GC-X switch (N9K-C92348GC-X) is a 1RU 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 2 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.

*Note: 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".

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	9332D-H2R
NXA-SFAN-35CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	6	9332D-GX2B
NXA-SFAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	6	9332D-GX2B

Product ID	Description	Quantity	Cisco Nexus Switches
NXA-FAN-160CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	9364C ^[1] 93360YC-FX2
NXA-FAN-160CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	3	9364C ^[1] 93360YC-FX2
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 ^[1] 93180YC-FX ^[1] 9348GC-FXP ^[1]
NXA-FAN-30CFM-F	Fan module with port-side exhaust airflow (blue coloring)	3	93108TC-FX ^[1] 93180YC-FX ^[1] 9348GC-FXP
NXA-FAN-35CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	4	92300YC ^[1] 9332C ^[1] 93180YC-FX3S ^[2] 93180YC-FX3 93108TC-FX3P 93180YC-FX3H
		6	9336C-FX2-E 9316D-GX 93600CD-GX
NXA-FAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	4	92300YC ^[1] 9332C ^[1] 93180YC-FX3S ^[2] 93180YC-FX3 93108TC-FX3P 93180YC-FX3H
		6	9316D-GX 93600CD-GX
		6	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-PAC-350W-PE2	350-W AC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FX3 9348GC-FX3PH
NXA-PAC-350W-PI2	350-W AC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FX3 9348GC-FX3PH
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
NXA-PAC-1500W-PE	1500-W AC power supply with port-side exhaust	2	9332D-GX2B

¹ For specific fan speeds see the Overview section of the Hardware Installation Guide.

² 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.

Product ID	Description	Quantity	Cisco Nexus Switches
	airflow (blue coloring)		
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
NXA-PAC-500W-PI	500-W AC power supply with port-side intake airflow (burgundy coloring)	2	93180YC-FX
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
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
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
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
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
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

Product ID	Description	Quantity	Cisco Nexus Switches
NXA-PDC-1100W-PI	1100-W DC power supply with port-side intake airflow (burgundy coloring)	2	9336C-FX2-E 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
NXA-PDC-2KW-PI	2000-W DC power supply with port-side intake airflow (burgundy coloring)	2	9364C-GX 9332D-H2R
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:

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-X9736C-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(1)F supports the 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](#).

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-API REST SDK User Guide and API Reference
<ul style="list-style-type: none"> Cisco NX-OS Licensing Guide Cisco Nexus 9000 and 3000 Series NX-OS Switch License Navigator Cisco Nexus Smart Licensing Using Policy User Guide 	<p>Note: When you downgrade from Cisco NX-OS Release 10.4(1)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.</p>
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(1)
ftp://ftp.cisco.com/pub/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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