Cisco Nexus 9000 Series NX-OS Release Notes, Release 10.3(1)F

Introduction

This document describes the features, issues, and exceptions of Cisco NX-OS Release 10.3(1)F software for use on Cisco Nexus 9000 Series switches.

The new Cisco NX-OS Software Release and Image-naming Convention information is available here – Cisco NX-OS Software Strategy and Lifecycle Guide.

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.

The following table lists the changes to this document:

Date	Description
April 25, 2024	Added CSCwh50989 to the Open Issues section.
May 05, 2023	Added PTP in Unsupported Features on N9K-C92348GC section
April 09, 2023	Added caveat CSCwe67205 in Open Issues table.
January 25, 2023	Updated the Unsupported Features in the N9K-C92348GC section.
August 19, 2022	Cisco NX-OS Release 10.3(1)F became available.

New and Enhanced Software Features

New Features	
Feature	**Description**
Cisco Application Framework (CAF)	Beginning with Cisco NX-OS Release 10.3(1)F, Cisco Application Hosting Framework is integrated into NX-OS.
	The Cisco NX-OS Application Hosting Framework provides manageability and networking models for running a guest application. The virtualization infrastructure allows an administrator to define a logical interface that specifies the connectivity between the host and the guest. Cisco NX-OS maps the logical interface into a Virtual Network Interface Card (vNIC) that the guest application uses.
	The Cisco application-hosting framework is an NX-OS Python process that manages virtualized and container applications that run on devices.
	Application hosting provides the following services:
	• Launches designated applications in containers.
	• Checks available resources (memory, CPU, and storage), and allocates and manages them.
	• Provides support for console logging.
	• Provides access to services through REST APIs.
	• Provides a CLI endpoint.
	• Provides an application-hosting infrastructure referred to as Cisco Application Framework (CAF).
	• Helps set up platform-specific networking (packet-path) through a special application bridge

New Features	
Feature	**Description**
	interface.
	For more information, refer Cisco Nexus 9000 Series NX-OS Programmability Guide and Cisco Nexus 3000 and 9000 NX-API References, Release 10.3(x).
Flow visibility in Nexus Dashboard Insights and NetFlow	In the earlier releases, NetFlow and Analytics were mutually exclusive features, and the users could only use the standard V9 export from CPU for NetFlow. Beginning with Cisco NX-OS Release 10.3(1)F, both NetFlow and Analytics can co-exist and use the standard V9 export from CPU. Using this mixed mode feature results in decreased processing load on the collectors.
	For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.3(x).

The enhanced features listed below are existing features introduced in earlier releases but enhanced to support new platforms in Cisco NX-OS Release 10.3(1)F.

Enhanced Features	
Feature	**Description**
Support for new OpenConfig paths	Added support for a new set of operational state OpenConfig paths for applications on Cisco Nexus 9000 Series switches.
	For more information, refer Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.3(x).
ITD NAT support on non-default VRF	Added support for ITD NAT with VRF configuration on Cisco Nexus 9300-GX platform switches.
	For more information, refer to Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.3(x) and Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Configuration Guide, Release 10.3(x).
TRM support for new L3VNI mode	Added TRM support for the new L3VNI mode on Cisco Nexus 9300-X Cloud Scale Switches.
	For more information, refer Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.3(x).
ePBR L2 support	Added support for ePBR L2 and provider VLAN tagging on Cisco Nexus 9300-GX platform switches.
	For more information, refer Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide and Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.3(x).
ND Suppression support	Added support for ND suppression to reduce the Neighbor Solicitation (NS) traffic across the overlay.
	For more information, refer Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.3(x).
VXLAN overlay with NBM underlay	Added support for coexistence of NBM and VXLAN, however, in different VRFs.
	For more information, refer Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.3(x).
Check for password restrictions	Check for consecutive characters (keyboard and alphabets) in passwords is provided on

Enhanced Features	
Feature	**Description**
	Cisco Nexus 9000 Series switches.
	For more information, refer Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.3(x).
Type-9 scrypt encryption support	Type 8 and type 9 password hash is supported on Cisco Nexus 9000 Series switches.
	For more information, refer Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.3(x).
RadSec support	RadSec support is provided on Cisco Nexus 9000 Series switches to secure the communication among the RADIUS/TCP peers on the transport layer.
	For more information, refer Cisco Nexus 9000 Series NX-OS Security Configuration Guide, Release 10.3(x).
Flex stats for TRM - underlay and overlay mroutes	Added support for enabling or disabling of flex stats counters in a VxLAN TRM on Cisco Nexus 9300-X Cloud Scale Switches.
	For more information, refer Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.3(x).
Layer-2 ePBR multimatch support	Added support for multiple matches in the same ePBR L2 policy on trunk interfaces.
	For more information, refer Cisco Nexus 9000 Series NX-OS ePBR Configuration Guide, Release 10.3(x).
Command to run Hardware Statistics	Added a new command to collect hardware statistics from all the slots.
	For more information, see Cisco Nexus 9000 Series NX-OS Troubleshooting Guide, Release 10.3(x).
Commands to run statistics on all modules	Added new commands to display statistics from all the modules.
	For more information, see Cisco Nexus 9000 Series NX-OS Troubleshooting Guide, Release 10.3(x).
VPC Support for IPFM Endpoints	This feature allows NBM to provide support for VPC (Endpoint Deployment Optimization).
	For more information, see Cisco Nexus 9000 Series NX-OS IP Fabric for Media Solution Guide, Release 10.3(x).
BGP Auto Fabric Enhancements	Added support for the following: - UCMP Load Balancing — balances the traffic load and administers control over the routing behavior - BGP Interface Range Peering — allows BGP to provision a group of interfaces by specifying the interface range - BGP Interface Peering with Multiple Instances — allows BGP to enable the maximum-peers command under the neighbor interface mode and to control the number of instances that are brought up from an interface. For more information, see Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 10.3(x).
Proactive Consistency Checker enhancement	Proactive Consistency Checker is supported on Cisco Nexus 9504 and 9508 platform switches.
	For more information, see Cisco Nexus 9000 Series NX-OS Troubleshooting Guide, Release 10.3(x).

Enhanced Features

Feature	Description
BGP Large Community	This feature adds support to define large communities that are 12 bytes in size and provides the flexibility to classify BGP routes. For more information, see Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 10.3(x)
Accounting Log support	Accounting Log support is provided for NETCONF agent, RESTCONF agent, and gNMI. For more information, refer Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.3(x).
gNOI Factory-Reset Services	This feature adds a factory reset operation to gNOI, which erases all persistent storage on the specified module. For more information, refer Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 10.3(x).
ITD NAT enhancement	Provided NAT scale support for 2048 entries of 2K NAT translations on Cisco Nexus 9300-GX platform switches. For more information, see Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Configuration Guide, Release 10.3(x)
Support enhanced Maintenance mode	In a binary reload scenario, when the system is switched to maintenance mode, the interface is shut until the system boots up completely and declares system readiness. For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.3(x).
IPv6 destination support	Added support for IPv6 collector. However, the source IP address and the collector IP address must belong to the same address family. For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.3(x).
DSCP Based SR-TE Flow Steering	This feature allows source routing of packets that are matched using the following capabilities and steered into an SRTE path: • DSCP fields in the IPv4/IPv6 header • The existing filtering capability, that is, the ACL filters in the IP/IPv6 access list For more information, see Cisco Nexus 9000 Series NX-OS Label Switching Configuration Guide, Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, and Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 10.3(1)F.
FCoE-NPV with FX3 FEX	Added support for N9K-C93180YC-FX3 FEX. For more information, see Cisco Nexus 9000 Series NX-OS FC-NPV and FCoE-NPV Configuration Guide, Release 10.3(x) and Cisco Nexus 2000 Series NX-OS Fabric Extender Configuration Guide for Cisco Nexus 9000 Series Switches, Release 10.3(x).
Logging 2.0 Enhancements	Beginning with Cisco NX-OS Release 10.3(1)F, the default autocollect is not supported with system switchover. On system switchover, re-run the bloggerd autocollect commands on the new active supervisor to enable autocollect for respective components. For more information, see Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.3(x).
Scale Enhancements	For Cisco NX-OS Release 10.3(1)F Scale Enhancements, see Cisco Nexus 9000 Series

Enhanced Features	
Feature	**Description**
	NX-OS Verified Scalability Guide, Release 10.3(1)F.

Hardware Features

The following hardware is supported in Cisco NX-OS Release 10.3(1)F:

- Cisco Nexus 9800 Series modular switch (N9K-C9808)

  ◦ This is a 16-RU switch that supports distributed forwarding across multiple field replaceable units (FRUs).

  ◦ This switch has a new chassis that supports very high port density 400-Gigabit Ethernet line cards, which can support the next-generation applications.

  ◦ This switch supports N9K-X9836DM-A line card and QSFP56-DD / QSFP28 / QSFP+ transceivers.

  ◦ This switch can scale from 57 Tbps to 115 Tbps with a combination of various first-generation line cards and fabric modules. Each line card slot in the chassis can support line cards that offer 400GE or 100GE or 10/25/50GE ports.

Note: Two supervisors can be inserted on the switches, but the supervisor on slot28 will be placed in the loader-prompt.

For more details on Cisco Nexus 9808 Switches, see Cisco Nexus 9808 NX-OS Mode Switch Hardware Installation Guide.

For details on transceivers and cables that are supported by a switch, see the Transceiver Module (TMG) Compatibility Matrix.

Cisco Nexus 9808 Modular Switches — Supported Features

Cisco Nexus 9808 modular switches support the following:

- 400G, 100G, 40G , 4x100 Breakouts , 10G via CVR-QSFP-SFP10G
- MACsec
- L3, Loopback, and Subinterfaces
- Consistency Checker – Interfaces, Multicast, Unicast, ACL
- Hashing based on source/destination IP and L4 port number
- Single-hop BFD on routed port, routed-sub interface, and breakout port
- Ethanalyzer
- Multicast L3 for IPv4
- IGMP host proxy
- PIM
- MSDP

- IP Fabric for Media

- CoPP

- DHCP relay, POAP and PTP

- RACL (Ingress-IPv4/IPv6 and Egress-IPv4/IPv6) with statistics

- QOS classification (ACL), QOS – Queuing and scheduling, Queuing Statistics

- AAA, RADIUS , TACACS+

- LDAP, UDLD, DHCP, LLDP (Multi Neighbor and Port-channel)

- SNMP (MIBs – 400G Optic MIB, Switch MIB, Datapath MIBs, Interface MIB)

- Generic Online Diagnostics (GOLD) – health monitoring and non-disruptive diagnostics of FabricConnectivityTest and FabricReachabilityTest).

- sFlow

- PTP Media Profile and One-Step Mode

- CDP

- SPAN, ERSPAN

- Multi VRF

- IPv4 and IPv6 dynamic routing

- OSPFv2, OSPFv3, EIGRP, Basic BGP, and Advanced BGP

- Route leak between VRFs

- 64-way ECMP

- L3 Consistency Checker is supported

- VXLAN EVPN is supported only as transit

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 10.3(1)F, the following two 64-bit images are supported:

- The 64-bit Cisco NX-OS image filename that begins with "nxos64-cs" (for example, nxos64-cs.10.3.1.F.bin). This image is supported on all Cisco Nexus 9000 series fixed platforms and Cisco Nexus 9800 platform switches.

- The 64-bit Cisco NX-OS image filename that begins with "nxos64-msll" (for example, nxos64-msll.10.3.1.F.bin). This image 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
CSCwc56079	Headline: High PTP correction on -R line cards on 2 PTP GMs failover Symptoms: On the Cisco Nexus 9000 fabric, high PTP correction is seen on -R-Series based line cards on Nexus 9500 (more than ~600 ns) during PTP GM fail over with different GM ID. Workarounds: None
CSCwa76388	Headline: Cisco Nexus 9000 TOR/EOR -R platforms add hardware counters in show tech module all Symptoms: Enhancement of show tech to collect additional hardware counters Workarounds: None
CSCwc45694	Headline: TapAgg- GX: vlan tag is missing on captured packets with reload ascii Symptoms: On GX series switch after ASCII reload, vlan tag is missing on the egress interface when TapAgg is configured to redirect traffic. Workarounds: Remove and reapply "mode tap-aggregation" config under the interface.
CSCwc02916	Headline: N9K-X9600 LCs: L3VNI add deletion causes traffic drop Symptoms: Traffic Decap fails with VNI=0, could not derive VSI to lookup RIF Workarounds: Remove and add VLAN to VNI.

Bug ID	Description
CSCwb91169	**Headline:** Configuration replace (CR) operation not working, while changing configs under "set community" or "set large-community" **Symptoms:** Configuration replace (CR) operation fails while trying to delete a community under route-map. **Workarounds:** 1. Manually remove the offending configurations - 'no set community 2:200'. (Performing/not performing CR after this will have the same no-op effect) OR 2. Manually remove all 'set community' configurations by running 'no set community' under route-map first, then perform CR with target file that contains 'set community 1:10'. OR 3. Two-stage CR: a. First, CR with target file that does not have any set community command. This will wipe all set community configs from running. (Can be achieved by deleting all 'set community' strings from required target-file) b. Next, CR with target file that contains 'set community 1:10'
CSCwc63772	**Headline:** NF records are not parsed correctly after parameter "match ipv6 destination address" is removed **Symptoms:** When the configuration of a record changes it generates new templates that must be used for all future record exports. In this defect, records were still being exported using old templates. **Workarounds:** Remove and reapply the IPv4/IPv6 monitors under the interfaces affected. Do this for each unique monitor.
CSCwc76568	**Headline:** Arp-suppression vlan suspended post ND-suppression enable and reload **Symptoms:** For ND Suppression VACL to work, increase the SUP TCAM size to 768 or above using the hardware access-list tcam region sup-tcam 768 command. This needs a reload if the previous SUP TCAM Size is < 768. However, if the System is already configured at 768 or above, no reload is needed. In no reload case - Vxlan vni vlans may get suspended in a vPC deployment. **Workarounds:** Reload the peer that was not reloaded after enabling ND suppression.
CSCwb63451	**Headline:** Upgrade to 10.3(1)F fails from older NXOS releases. **Symptoms:** Upgrade will fail from older releases [Any code before 9.3(10) and any 10.x code before 10.2(3)F] to 10.3(1)F or later. This impacts PIDs that boot with the 'cs' image. This will be seen for install all upgrades as well as boot variable change. **Workarounds:** There are two work-arounds options available: 1. Apply available SMU for releases 9.3(9) and earlier or 10.2(2)F and earlier. Then upgrade directly to 10.3(1)F or later. OR 2. Perform a multi-step upgrade - First upgrade to fixed release 9.3(10) and later 9.3(x) code or 10.2(3)F and later 10.2(x). Then upgrade to 10.3(1)F and later.
CSCwe02448	**Headline:** Cisco N9K-C9808 - Fan Modules and Line Cards shut down due to Fans or PSUs not coming up. **Symptoms:** After completing NX-OS bootup, Fabric Modules and Line Cards are shut down due to multiple fans or power supplies not coming up. **Workarounds:** You can avoid this issue by upgrading NX-OS to Cisco NX-OS Release 10.3(2)F.

Bug ID	Description
CSCwe67205	Headline: Credit Loss Recovery is not triggered for FC interface with no transmit credits. Symptom: A Fibre Channel interface that stays at 0 transmit credits is not recovered by the Credit Loss Recovery agent. Workaround: If the interface has **switchport ignore bit-errors** configured, then remove it with the **no switchport ignore bit-errors** interface configuration command.
CSCwh50989	Headline: Custom COPP causing transit traffic to be punted to the CPU on Nexus 9300-GX2 Symptom: When custom-COPP policy contains ACL rules which match on Layer 4 destination or source port, transit traffic also hits the COPP and the packets are copied to CPU. This causes duplication of traffic as CPU also routes the copied packets to the destination. Workaround: Custom COPP policy using src/dst match mitigates punt for transit traffic.

Resolved Issues

Bug ID	Description
CSCwc14617	Headline: SNMP Query for ARP/IPv6 ND results in missing entries Symptoms: snmpwalk against mib 1.3.6.1.2.1.4.35.1.4 with IPv6 interface results in some entries not being returned. Issue is most noticeable when there is an IPv6 interface without IPv4. All ARP and IPv6 ND entries after this entry are lost. Workarounds: None
CSCvj74453	Headline: vsh crash @ command_dispatcher_c::chmode(char const*, char const*, tlv_ptrs_c& Symptoms: The vsh process may crash when enabling/disabling a feature on one vsh session and running commands related to that feature via another vsh session. Workarounds: None
CSCvt43029	Headline: DME: Tacacs type-6 key is not reflected on DME. Hence, config out-of-sync between CLI/DME Symptoms: In CLI, tacacs shared key is converted from type-7 to type-6, which is expected. But, in DME still maintains tacacs shared key as " type-7. Hence, config out-of-sync between CLI/DME. Workarounds: None
CSCvy09360	Headline: N9K | 10.1(1) | Radius process crashes with FIPS enabled Symptoms: Radius driven authentication causes process crashes. Workarounds: Disable Radius when FIPs is enabled.
CSCvy48931	Headline: Leaf to leaf traffic is getting dropped when storm control is configured & DCI links are down Symptoms: Leaf to Leaf traffic will be blocked when NVE storm control is configured. Workarounds: Disable EVPN broadcast storm control
CSCvz75894	Headline: N9500-R/N3600-R hardware application counters may get corrupted Symptoms: N9500-R/N3600-R running 9.3(x) version of converged code may experience hardware counter corruption causing specific application counters to show incorrect information. Workarounds: Reload will clear the issue but it can resurface

CSCwb08528	Headline: Mac learned on orphan port not getting sync with peer switch over Peer-Link
	Symptoms: Server's MAC Address learned on Leaf1's orphan port was not getting synced across peer-link on Leaf2 causing teaming issue at the server end.
	Workarounds: Put the ports in fex-fabric mode and move it back to mode trunk or reload the switch.
CSCwb11701	Headline: N9K: One or more VRF stuck in "Delete Holddown" due to BGP RNH route cleanup issue
	Symptoms: One or more VRF stuck in "Delete Holddown" because RNHs are not deleted`show bgp internal af vrf`L3VM down MTS drop pending : YesCleanup skip reason : RNH pendingAlso, one or more routes in BGP event-history is stuck trying to resolve RNH roughly every 100ms:`show bgp event-history events`2022 Feb 14 07:59:52.546118: E_DEBUG bgp [32680]: RNH: Request needs to be retried for rnh 0.0.0.0/0 flags 0x06 not added (urib), suspending2022 Feb 14 07:59:52.439910: E_DEBUG bgp [32680]: RNH: Request needs to be retried for rnh 0.0.0.0/0 flags 0x06 not added (urib), suspending2022 Feb 14 07:59:52.339621: E_DEBUG bgp [32680]: RNH: Request needs to be retried for rnh 0.0.0.0/0 flags 0x06 not added (urib), suspending
	Workarounds: The tested workaround is to delete ALL stale or missing VRF under bgp via "no vrf NAME" where NAME should be replaced by every missing VRF
CSCwb43500	Headline: PFSTAT crash @memmove_avx_unaligned_erms
	Symptoms: "pfstat" process crash observed
	Workarounds: None
CSCwb66026	Headline: mac acl containing multicast mac cannot be applied to the port
	Symptoms: When attempting to apply a MAC ACL to an L2 port which is matching on a reserved multicast mac address, you will see an error on the configuration attempt, as well as a syslog reporting the issue.
	Workarounds: None
CSCwb79329	Headline: VRF state remain in? Admin Down Pending? after the shutdown of the vrf
	Symptoms: After shutting down the VRF it will get stuck in admin down pending
	Workarounds: Reload the device
CSCwc03573	Headline: Nexus reload at OSPF update
	Symptoms: Nexus C93180YC-FX has OSPF sessions flaps. OSPF process crashes while doing name-lookup and
	Workarounds: This crash occurs when name-server is slow or unreachable and along with this network (OSPF adjacency) is not stable. Workaround is to remove "name-lookup" command from OSPF configurations.
CSCwc08911	Headline: N9k:: dot1dBasePortIfIndex (.1.3.6.1.2.1.17.1.4.1.2) OID not properly initiated on device reload
	Symptoms: The OID dot1dBasePortIfIndex (.1.3.6.1.2.1.17.1.4.1.2) not available on Cisco Nexus 9000 series switch
	Workarounds: A. (config)# no snmp-server load-mib dot1dbridgesnmpB. Try killing the snmpd process: "run bash sudo killall snmpd" (requires "feature bash-shell")
CSCwc10388	Headline: N9k running 7.0(3)I7(x) allows SNMPv3 Noauth security level configuration
	Symptoms: N9k with 7.0(3)I7(x) allows user to configure snmp-server host with SNMPv3 'noauthnopriv' security level even though it is not supported in NX-OS. This configuration remains if upgraded to 9.3(x) as well. However, 9.3(x) does not allow the configuration and gives an error that the 'security level is not set'.N9k(config)# show run snmp!Command: show running-config snmp!Running configuration last done at: Mon Jun 6 19:00:12 2022!Time: Mon Jun 6 19:04:45 2022version 7.0(3)I7(7) Bios:version 05.44 snmp-server user admin network-admin auth md5 ! priv ! localizedkeysnmp-server host 192.168.1.1 traps version 3 noauth cisco123 <<<<<<<<<<<

	Workarounds: None
CSCwc14383	Headline: on EOR incorrect standby sup status result patch installer failed
	Symptoms: Patch install operations may fail on N9K-9500
	Workarounds: reinsert secondary sup to device
CSCwc24060	Headline: Cisco Nexus 9000: Inner tag removed when traffic is crossing vPC peer-link
	Symptoms: Dot1q tunneled traffic has its inner tag removed/stripped when crossing the Peer-link of the vPC pair.
	Workarounds: disabling and enabling the "system dot1q-tunnel transit vlan <vlan-id>" (for the provider VLANs) seems to solve the forwarding issue.
CSCwc30146	Headline: ipv6 packet does not include L3 header when calculating MTU.
	Symptoms: ipv6 packet does not include L3 header when calculating MTU, which caused some packets crossed MTU got transferred with default MTU setting (1500) on N9K.
	Workarounds: None
CSCwc35610	Headline: PSU actual input and output power are "0" after upgrade to Cisco NX-OS Release 9.3(9)
	Symptoms: Output of "show environment power" command has the actual input and output as "0". Though box will be working fine. No Power failure alert in logging
	Workarounds: None
CSCwc53897	Headline: Nexus 9808: show consistency-checker port-state fails for LineCard for 10G Transceivers
	Symptoms: show consistency-checker port-state module 'x' can fail if the Line card has 10G Transceivers with QSA plugged in.
	Workarounds: Run show consistency-checker port-state interface ethernet on individual ports excluding the ports that have QSA+10G.
CSCwc18443	Headline: Nexus 9808: FABRIC-POWER-DOWN Policy need work in parity with Nexus 9000 EOR
	Symptoms: Fabric links between N9K-C9808-FM-A and N9K-X9836DM-A won't be brought down even if below Fabric Link Policy is hit:
	Workarounds: None
CSCwc60222	Headline: Nexus 9000 PIM - Non-BSRs loop Bootstrap Messages if BSR Listen is not configured.
	Symptoms: On Nexus devices where PIM BSR is configured with "BSR Forward" but not with "BSR Listen", no reverse path forward (RPF) of the Bootstrap Messages (BSM) is performed. As a result the BSMs will be endlessly be sent back on all interfaces, even on interfaces that fail RPF, causing a storm of Bootstrap messages.
	Workarounds: Configure "BSR Listen Forward".
CSCwc22299	Headline: SNMP core while upgrading from Cisco NX-OS Release 10.2(1) to 10.2(3) in EOR with DHCP configurations
	Symptoms: While upgrading from Cisco NX-OS Release 10.2(1) to 10.2(3) with DHCP relay and Snooping, snmpd core and DUT is continuously reloading and sometimes Kernel panic also happens.
	Workarounds: None

Device Hardware

The following tables list the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 10.3(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 two supervisors, 8 fabric modules, 4 fan trays, and 3 power trays.

Table 2. Cisco Nexus 9800 Series Line Cards

Product ID	Description
N9K-X9836DM-A	Cisco Nexus 9800 QSFP line card (maximum of 8 line cards)

Table 3. Cisco Nexus 9800 Series Fabric Modules

Product ID	Description
N9K-C9808-FM-A	Cisco Nexus 9808 fabric module with maximum of 8 modules (7 fabric modules + 1 fabric module for redundancy)

Table 4. Cisco Nexus 9800 Supervisor Module

Product ID	Description	Quantity
N9K-C9800-SUP-A	Cisco Nexus 9800 Platform Supervisor Module	2

Table 5. Cisco Nexus 9800 Fans and Fan Trays

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

Table 6. Cisco Nexus 9800 Power Supplies

Product ID	Description	Quantity	Cisco Nexus Switches
NXK-HV6.3KW20A-A	Cisco Nexus 9800 6,300W 20A AC and HV Power Supply	9 (3 per tray)	Cisco Nexus 9808

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.

Product ID	Description
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 400-Gigabit Ethernet QSFP 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 9200 and 9300 Switches

Cisco Nexus Switch	Description
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.

Cisco Nexus Switch	Description
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 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-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.
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

Cisco Nexus Switch	Description
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.
N9K-C93180YC-EX	1-RU Top-of-Rack switch with 48 10-/25-Gigabit SFP28 fiber ports and 6 40-/100-Gigabit QSFP28 ports
N9K-C93180YC-EX-24	1-RU 24 1/10/25-Gigabit front panel ports and 6-port 40/100 Gigabit QSFP28 spine-facing ports
N9K-C93108TC-EX	1-RU Top-of-Rack switch with 48 10GBASE-T (copper) ports and 6 40-/100-Gigabit QSFP28 ports
N9K-C93108TC-EX-24	1-RU 24 1/10GBASE-T (copper) front panel ports and 6 40/100-Gigabit QSFP28 spine facing ports.

*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 18.   Cisco Nexus 9200 and 9300 Fans and Fan Trays

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-EX 93108TC-FX [1] 93180YC-EX 93180YC-FX [1] 9348GC-FXP [1]
NXA-FAN-30CFM-F	Fan module with port-side exhaust airflow (blue coloring)	3	93108TC-EX 93108TC-FX [1] 93180YC-EX 93180YC-FX [1] 9348GC-FXP

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

Product ID	Description	Quantity	Cisco Nexus Switches
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
		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
		6	9316D-GX 93600CD-GX
	Fan module with port-side exhaust airflow (blue coloring)	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 19.   Cisco Nexus 9200 and 9300 Power Supplies

Product ID	Description	Quantity	Cisco Nexus Switches
NXA-PAC-500W-PE	500-W AC power supply with port-side exhaust airflow (blue coloring)	2	93108TC-EX 93180YC-EX 93180YC-FX
NXA-PAC-500W-PI	500-W AC power supply with port-side intake airflow (burgundy coloring)	2	93108TC-EX 93180YC-EX 93180YC-FX
NXA-PAC-650W-PE	650-W power supply with port-side exhaust (blue coloring)	2	92300YC 93180YC-FX3S 93108TC-EX 93180YC-EX

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[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
			93180YC-FX3
NXA-PAC-650W-PI	650-W power supply with port-side intake (burgundy coloring)	2	92300YC 93180YC-FX3S 93108TC-EX 93180YC-EX 93180YC-FX3
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-EX 93108TC-FX 93360YC-FX2 93180YC-FX3S 93180YC-EX 93180YC-FX 9364C
NXA-PDC-930W-PE	930-W DC power supply with port-side exhaust airflow (blue coloring)	2	93108TC-EX 93180YC-EX 93360YC-FX2 93180YC-FX3S 93180YC-FX

Product ID	Description	Quantity	Cisco Nexus Switches
			9364C
NXA-PDC-930W-PI	930-W DC power supply with port-side intake airflow (burgundy coloring)	2	93108TC-EX 93180YC-EX 93360YC-FX2 93180YC-FX3S 93180YC-FX 9364C
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
UCSC-PSU-930WDC	930-W DC power supply with port-side intake (green coloring)	2	93108TC-EX 93180YC-EX
UCS-PSU-6332-DC	930-W DC power supply with port-side exhaust (gray coloring)	2	93108TC-EX 93180YC-EX
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
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
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 20.   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 21.   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 22.   Cisco Nexus 9500 R2-Series Line Cards

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

Optics

To determine which transceivers and cables are supported by a switch, see the [Transceiver Module (TMG) Compatibility Matrix](#). To see the transceiver specifications and installation information, see the [Install and Upgrade Guides](#).

Cisco Nexus Dashboard Insights

Cisco NX-OS Release 10.3(1)F supports the Nexus Dashboard Insights on Cisco Nexus 9200, 9300-EX, 9300-FX, 9300-FX2, and 9300-FX3 platform switches and 9500 platform switches with -EX/FX/GX line cards. For more information, 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 10.2(x). For information about an In Service Software Upgrade (ISSU), see the [Cisco NX-OS ISSU Support Matrix](#).

Related Content

Document	Description
[Cisco Nexus 9000 Series Switches](#)	Cisco Nexus 9000 Series documentation
[Cisco Nexus 9000 and 3000 Series NX-OS Switch License Navigator](#)	Cisco Nexus 9000 and 3000 Series NX-OS Switch License Navigator
[Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 10.3(x)](#)	Cisco Nexus 9000 Series Software Upgrade and Downgrade Guide
[Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes, Release 10.3(1)](#)	Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes
[Cisco Nexus NX-API Reference](#)	Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference
[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 NX-OS Licensing Guide](#)	Licensing Information

When you downgrade from Cisco NX-OS Release 10.3(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.

For more information, see the [Cisco NX-OS Licensing Guide](#).

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