Cisco Nexus 9000 Series NX-OS Release Notes, Release 10.1(2)

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Introduction

This document describes the features, issues, and exceptions of Cisco NX-OS Release 10.1(2) 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.

The following table lists the changes to this document.

Date	Description
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 on N9K-C92348GC section.
May 10, 2021	Cisco NX-OS Release 10.1(2) became available.

New and Enhanced Software Features

New Features	
Feature	**Description**
SRTE Flow-Based Traffic Steering	Added support for SRTE Flow-Based Traffic Steering on Cisco Nexus 9000-FX,FX2, FX3, GX, and Cisco Nexus 9300 series platform switches. For more information see, *Cisco Nexus 9000 Series NX-OS Label Switching Configuration Guide, Release 10.1(x)*.
VXLAN Port Multi-VLAN	With Port Multi-VLAN Mapping feature you can map multiple VLANs on a trunk interface to a single global VLAN/VNI. For more information, see the *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.1(x).*
Two-Stage Configuration Commit	With two-stage configuration commit, when you run a command in an interactive session, it is executed and changes in configurations are stored in a staging database. These changes don't affect the running configuration until you run the commit command. This two-stage process creates a target configuration session, where you can make, edit, and verify configuration changes before committing them to the running state of the switch. For more information see, Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 10.1(x).

The enhanced features listed below are existing features introduced in earlier releases but enhanced to support new platforms in Cisco NX-OS Release 10.1(2).

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Enhanced Features	
Feature	**Description**
Storm Control Two-Level Threshold and Logging Support for BUM Traffic	Added support for two-level threshold, actions, and system log for Cisco Nexus N9300-FX and N9300-FX2 series platform switches. For more information, see the Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration Guide, Release 10.1(x).
iBGP PE-CE	Enabled RFC 6368 support for EVPN-VxLANv4 and EVPN-VxLANv6. For more information, see the Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 10.1(x).
TRM Multi-Site with vPC BGW	Added TRM with Multi-Site support for both Anycast Border Gateway and vPC Border. Gateway. For more information, see the Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.1(x).
ITD Subsecond Convergence	Introduced the ability of subsecond convergence for ITD node failure events. For more information, see the Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Configuration Guide, Release 10.1(x).
SRTE OAM Monitoring	MPLS OAM monitoring allows the switch on which one or more SRTE policies are configured to proactively detect if the active path or paths of an SRTE policy have failed. If the paths in the currently active preference have all failed, SRTE will consider that preference down and so make the next highest preference on the policy active, if there is such a preference, or otherwise mark the policy as down. For more information see, Cisco Nexus 9000 Series NX-OS Label Switching Configuration Guide, Release 10.1(x).
Micro-burst Monitoring	Microburst Monitoring: Added support for N9K-C9336C-FX2-E switches. For more information, see the Cisco Nexus 9000 Series NX-OS Quality of Service Configuration Guide, Release 10.1(x).
uRPF	Added support for Cisco Nexus 9500 series switches with EX/FX linecards. For more information, see the Cisco Nexus 9000 Series NX-OS Security Guide, Release 10.1(x).
uRPF Support for IPv4 and IPv6	Added support for Nexus 9300-GX/GX2 series switches. For more information, see the Cisco Nexus 9000 Series NX-OS Security Guide, Release 10.1(x).
VXLAN Flood and Learn	Added support for Cisco Nexus N9K-X9716D-GX line card. For more information on this feature, see the Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 10.1(x).
sFlow	Added support for Cisco Nexus N9K-C9508-FM-G module with the Cisco Nexus N9K-X9716D-GX line card.
Auto-Negotiation	Added support for Cisco Nexus N9K-C93600CD-GX, N9K-C9316D-GX and N9K-C9364C-GX platform switches. For more information, see the Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 10.1(x).
RS-FEC support	Added support for Cisco Nexus N9K-X97160YC-EX for 25G links. For more information, see the Cisco Nexus 9000 Series NX-OS Interfaces

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Enhanced Features	
Feature	**Description**
	Configuration Guide, Release 10.1(x).

New Hardware Features

The following new hardware are introduced in Cisco NX-OS Release 10.1(2):

- N9K-X9624D-R2
  - Line card with 24 400G QSFP-DD ports (only to be used with 8-slot chassis)
- N9K-C9508-FM-R2
  - Fabric module for 400G line card (only to be used with 8-slot chassis)

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

Cisco Nexus 9000 Series switches require 32-bit or 64-bit NX-OS image depending on the Cisco Nexus 9000 platforms.

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Open Issues

Bug ID	Description
CSCvx83036	Headline: ECMP load-sharing not working w/ sRC/DST change but same labels with " mpls load-share label-ip" Symptoms: MPLS label traffic is not load-shared between ECMP member links based on inner header SRC/DST IP. When MPLS label is kept same and the IP variant is tested, load sharing does not happen between ECMP members. If outer header MPLS label changes, load sharing happens correctly Workarounds: If outer header MPLS Label changes load sharing will happen correctly. No work-around for IP variant load sharing
CSCvx84871	Headline: Config-replace using gNMI does not replace VNIs to range VNIs and range to sub-range VNIs Symptoms: JSON based config-replace cannot correctly replace VNI configurations for overlapping ranges. Workarounds: CLI based config-replace can be used to replace overlapping VNI configurations.
CSCvx86007	Headline: Intermittent Link Flaps observed with QSFP-100G-PSM4 Symptoms: Repeating flaps are seen on the links between Jericho linecard and Tahoe linecard, using CISCO-LUXTERA QSFP-100G-PSM4 rev B or C. The links recovers from the flap shortly and is stable for some time afterwards. Workarounds: NA

CSCvx98206	Headline: BUM traffic drop after NVE flap on vpc primary post SSO
	
	Symptoms: Vxlan BUM traffic drop on decapsulation on uplink interface on EOR with EX, FX and GX series of linecards
	
	Workarounds: Admin flap of the NVE interface after MRIB convergence state is set to " Done"
	
	1) Execute " show routing multicast internal convergence vrf default" and ensure convergence state is " Done" .
	
	2) Execute the following commands:
	
	`interface nve1`
	`  shut`
	`# Wait for approximately 120 secs for all decap routes to be withdrawn from the fib`
	`interface nve1`
	`  no shut`

CSCvy11305	Headline: Single-strand UDE link failure in link flap Symptoms: Additional link flap observed before link comes up when UDE feature enabled with single strand connection Workarounds: Issue not observed with double strand connection

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Bug ID	Description
CSCvx75097	Headline: PVmap traffic loss seen with trigger Xconnect vlan removal/adddition Symptoms: When XConnect configuration is inconsistent between vPC VTEP peers while configuration is in progress and not yet complete, it causes STP churn and traffic issues on unrelated vlans. The issue is seen only under below circumstances VPC boxes are running in MST mode. Xconnect configuration is inconsistent between VPC peers. Xconnect access ports are up. After the configuration is completed/corrected on both sides of the VPC peers, the STP and traffic issues goes away. Workarounds: Keep the Xconnect ports in shut state on all VTEPs during configuring/unconfiguring Xconnect on the associated vlans. This is to make sure that switch does not receive customer STP BPDUs causing STP churn on unrelated vlan.
CSCvx77167	Headline: Xconnect vlan deletion/bringup via DME fails Symptoms: Configuring Xconnect along with vlan create and vn-segment mapping in a single request message via REST, does not enable xconnect. Workarounds: User can configure Xconnect in a separate REST message. Vlan create and vn-segment can be configured together in a single request.

CSCvx80321	Headline: 10gx4 CLI breakout port not able to send DHCP Request & DHCPv6 NA & RA during POAP
	
	Symptoms: POAP v4 or POAP v4 may not be able to complete DHCP transaction.
	
	This is seen on the PID :- N9K-X9624D-R2 Line card
	
	POAP v4 will print below logs :
	
	`2021 May 11 06:11:55 switch %$ VDC-1 %$ %POAP-2-POAP_INFO: Recieved DHCP offer from server ip - 192.168.1.10`
	
	`2021 May 11 06:13:04 switch %$ VDC-1 %$ %POAP-2-POAP_FAILURE: [FGE18480P4B-74:26:AC:FD:DE:FF] - POAP DHCP discover phase failed`
	
	Workarounds: Below are few workarounds.
	
	1. Flap the port on intermediate switch.
	
	2. Directly connect the port to DHCP server.
	
	3. Use a hardware breakout cable.
	
	4. Avoid using software (cli) breakout.
	
	5. Use Management port for POAP.
	
	6. Use ipv6 POAP.
	
	7. User any other port which doesn't require software breakout.

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.

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Resolved Issues

Bug ID	Description
CSCvx97566	Headline: multicast traffic does not pass nexus 9300 when "layer-2 multicast lookup mac" is configured Symptoms: Multicast traffic does not pass through the switch Workarounds: remove below configuration command `layer-2 multicast lookup mac`
CSCvy02009	Headline: RFC6368: NXOS BGP does not push AS_PATH in ATTR_SET Symptoms: In VXLAN-EVPN topology with iBGP PE-CE configured on VTEPs, a non NXOS VTEP complains while performing "pop path attributes" explained in RFC6368 due to AS_PATH being absent in the ATTR_SET attribute. Workarounds: None.
CSCvy18252	Headline: Thurn - nvram re-init may cause system crash during boot Symptoms: nvram re-init during boot can result in PCIE uncorrectable errors and subsequent system reload for N9K-C92348GC. Workarounds: The issue will resolve itself following 2 system reloads.
CSCvy03375	Headline: Supporting RS FEC on N9K-X97160YC-EX Symptoms: When connecting a Nexus 9500 N9K-X97160YC-EX linecard to a Catalyst 9000 switch while utilizing a SFP-10/25G-LR-S transceiver, FEC auto negotiations fails and the link does not come up. This is seen at 25Gbe speeds and does not impact 10G speed if statically set. Workarounds: The port will come up if the speed is set to 10Gbe statically in the port configurations. This disables the need for FEC.
CSCvw82041	Headline: [J:256]: MACs are not unfreezing from l2rib after MAC-Move stopped Symptoms: Few mac???s (10-20) out of 10K mac???s are stuck in "permanently frozen" state in L2RIB even after duplicate hosts are removed. Workarounds: clear mac address-table dynamic address

CSCvy05856	Headline: After adding invalid upgrade RPMS, installation of actual RPM fails
	Symptoms: The installation of upgrade RPM fails with the below error
	`install add bgp-3.0.0.0.rpm activate`
	`Adding the patch (/bgp-3.0.0.0.rpm)`
	`[####################] 100%`
	`Install operation 393 completed successfully at Mon Apr 19 15:25:52 2021`
	`Activating the patch (/bgp-3.0.0.0.rpm)`
	`Unable to find the location of added package`
	Workarounds: Ensure that name of upgrade RPM is not changed while copying the RPM to the device

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Known Issues

Bug ID	Description
CSCvx41580	Headline: N9K-C93600CD-GX: Ports 1-24 : 40G/100G Copper has higher Link up time with Auto-Negotiation enabled Symptoms: N9K-C93600CD-GX: Ports 1-24 : 40G/100G Copper has higher Link up time with Auto-Negotiation enabled N9K-C9364C-GX : Ports 1-64: 40G/100G Copper has higher Link up time with Auto-Negotiation enabled Workarounds: There is no workaround. 40G and 100G Copper Links with Auto-Negoatiation enabled may take upto 28s to link up.

Device Hardware

The following tables list the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 10.1(2) supports. For additional information about the supported hardware, see the Hardware Installation Guide for your Cisco Nexus 9000 Series device.

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Table 1. 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 2. Cisco Nexus 9500 Cloud Scale Line Cards

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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 3. 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 4. 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	4	5

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Product ID	Description	Minimum	Maximum
	fabric module		
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 5. 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 6. 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 7. Cisco Nexus 9500 System Controller

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

Table 8. Cisco Nexus 9500 Fans and Fan Trays

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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 9. 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 10. 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 11. 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.

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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-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.

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Cisco Nexus Switch	Description
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.

Table 12. 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
NXA-FAN-35CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	4 6	92300YC [1] 9332C [1] 93180YC-FX3S [2] 93180YC-FX3 93108TC-FX3P 9336C-FX2-E 9316D-GX 93600CD-GX

[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.

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Product ID	Description	Quantity	Cisco Nexus Switches
NXA-FAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring) Fan module with port-side exhaust airflow (blue coloring)	4 6 6	92300YC [1] 9332C [1] 93180YC-FX3S [2] 93180YC-FX3 93108TC-FX3P 9316D-GX 93600CD-GX 9336C-FX2-E
NXA-FAN-65CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	93240YC-FX2 [1] 9336C-FX2 [1]
NXA-FAN-65CFM-PI	Fan module with port-side exhaust airflow (burgundy coloring)	3	93240YC-FX2 9336C-FX2 [1]

Table 13. 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 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

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Product ID	Description	Quantity	Cisco Nexus Switches
			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 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

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Product ID	Description	Quantity	Cisco Nexus Switches
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 14. 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

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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-X9732C-EX	No	No	4	4	4	4
N9K-X9736C-EX	No	No	4	4	4	4
N9K-X9732C-FX	No	No	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)	4 5 (n+1 redundancy)

Table 15. 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 16. 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 Network Insights

Cisco NX-OS Release 10.1(2) supports the Cisco Network Insights Advisor (NIA) and Cisco Network Insights for Resources (NIR) on Cisco Nexus 9200, 9300-EX, and 9300-FX platform switches and 9500 platform switches with -EX/FX line cards. For more information, see the Cisco Network 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 10.1(x). For information about an In Service Software Upgrade (ISSU), see the Cisco NX-OS ISSU Support Matrix.

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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 10.1(x)	Cisco Nexus 9000 Series Software Upgrade and Downgrade Guide
Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes, Release 10.1(2)	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 10.1(2) 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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