



Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)I7(5a)

This document describes the features, caveats, and limitations of Cisco NX-OS Release 7.0(3)I7(5a) software for use on the following switches:

- Cisco Nexus 9000 Series
- Cisco Nexus 31128PQ
- Cisco Nexus 3164Q
- Cisco Nexus 3232C
- Cisco Nexus 3264Q

Use this document with documents listed in *Related Documentation*.

[Table 1](#) shows the online change history of this document.

Table 1 Online History Change

Date	Description
September 29, 2020	Upgrade and Downgrade section revised.
January 24, 2020	Added CSCvc95008 to Known Behaviors .
November 15, 2019	Updated Limitations section for breakout issue.
September 23, 2019	Added N9K-C9516-FM-E2 to Table 2 . Added N9K-X9732C-FX in Table 4 .
September 16, 2019	Removed N9K-C9516-FM-E2 from Table 4 .
July 21, 2019	Updated Limitations and Table 3 .
April 23, 2019	Updated Transceiver Module Group URL.
January 2, 2019	Updated the Upgrade Instructions regarding BGP EVPN into OSPF.
December 5, 2018	Removed CSCvk16980 from Open Caveats .
October 30, 2018	Added CSCvm96774 to Open Caveats .
October 14, 2018	Created the release notes for Release 7.0(3)I7(5a).

Introduction

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Introduction

Cisco NX-OS software is a data center-class operating system designed for performance, resiliency, scalability, manageability, and programmability at its foundation. The Cisco NX-OS software provides a robust and comprehensive feature set that meets the requirements of virtualization and automation in mission-critical data center environments. The modular design of the Cisco NX-OS operating system makes zero-impact operations a reality and enables exceptional operational flexibility.

System Requirements

This section includes the following sections:

- Supported Device Hardware
- Supported Optics
- Supported FEX Modules

Supported Device Hardware

The following tables list the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 7.0(3)I7(5a) supports. For additional information about the supported hardware, see the *Hardware Installation Guide* for your Cisco Nexus 9000 Series device.

- [Table 2](#) lists the Cisco Nexus 9000 Series fabric modules
- [Table 3](#) lists the Cisco Nexus 9000 Series fans and fan trays
- [Table 4](#) lists the Cisco Nexus 9500 Series line cards
- [Table 5](#) lists the Cisco Nexus 9000 Series power supplies
- [Table 6](#) lists the Cisco Nexus 9500 Series supervisor modules
- [Table 7](#) lists the Cisco Nexus 9000 Series switches
- [Table 8](#) lists the Cisco Nexus 9000 Series uplink modules
- [Table 9](#) lists the Cisco Nexus 9500 Series System Controller
- [Table 10](#) lists the 3232C and 3264Q switch hardware
- [Table 11](#) lists the Cisco Nexus 3164Q switch hardware
- [Table 12](#) lists the Cisco Nexus 31128PQ switch hardware

Table 2 Cisco Nexus 9000 Series Fabric Modules

Product ID	Hardware	Quantity for Maximum Bandwidth
N9K-C9504-FM	Cisco Nexus 9504 40-Gigabit fabric module	3 to 6 depending on line cards

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N9K-C9504-FM-E	100-Gigabit -E fabric module (for the Cisco Nexus 9504 chassis) that supports the 100-Gigabit (-EX) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4 5 when using the N9K-X9736C-FX line card.
N9K-C9504-FM-S	100-Gb -S fabric module (for the Cisco Nexus 9504 chassis) that supports the 100-Gigabit (-S) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4
N9K-C9508-FM	Cisco Nexus 9508 Series 40-Gigabit fabric module	3-6 depending on the line cards
N9K-C9508-FM-E	100-Gigabit -E fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-EX) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4 5 when using the N9K-X9736C-FX line card.
N9K-C9508-FM-S	100-Gigabit -S fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-S) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4
N9K-C9508-FM-Z	Fabric blank with Fan Tray Power Connector module used in place of a fabric module that has been removed from fabric slots 22, 24, or 26 during lab verification test.	1
N9K-C9516-FM	Cisco Nexus 9500 Series 40-Gigabit fabric module	3-6 depending on the line cards
N9K-C9516-FM-E	100-Gb -E fabric module (for the Cisco Nexus 9516 chassis that supports the 100-Gb (-EX) line cards. When used, there must be four of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4 5 when using the N9K-X9736C-FX line card.
N9K-C9516-FM-E2	16-slot fabric module for -E line cards.	4 - N9K-X97160YC-EX 4 - N9K-X9732C-EX 4 - (plus 1 for redundancy) - N9K-X9732C-FX 4 - N9K-X9736C-EX 5 - N9K-X9736C-FX 5 - N9K-X9736Q-FX 4 - N9K-X9788TC-FX
N9K-C9516-FM-Z	Fabric blank with Fan Tray Power Connector module used in place of a fabric module that has been removed from fabric slots 22, 24, or 26 during lab verification test.	1

Table 3 Cisco Nexus 9000 Series Fans and Fan Trays

Product ID	Description	Quantity	Cisco Nexus Switches
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System Requirements

N9K-C9300-FAN1	Fan 1 module with port-side intake airflow (burgundy coloring)	3	9396PX (early versions)
N9K-C9300-FAN1-B	Fan 1 module with port-side exhaust airflow (blue coloring)	3	9396PX (early versions)
N9K-C9300-FAN2	Fan 2 module with port-side intake airflow (burgundy coloring)	3	93128TX 9396PX 9396TX
N9K-C9300-FAN2-B	Fan 2 module with port-side exhaust airflow (blue coloring)	3	93128TX 9396PX 9396TX
N9K-C9300-FAN3	Fan 3 module with port-side intake airflow (burgundy coloring)	3	92304QC 93120TX 9272Q ¹
N9K-C9300-FAN3-B	Fan 3 module with port-side exhaust airflow (blue coloring)	3	92304QC 93120TX 9272Q ¹
N9K-C9504-FAN	Fan tray for 4-slot modular chassis	3	9504
N9K-C9508-FAN	Fan tray for 8-slot modular chassis	3	9508
N9K-C9516-FAN	Fan tray for 16-slot modular chassis	3	9516
NXA-FAN-160CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	9364C ¹
NXA-FAN-160CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	3	9364C ¹
NXA-FAN-30CFM-B	Fan module with port-side intake airflow (burgundy coloring)	3	92160YC-X 9332PQ 9236C ¹ 9348GC- 93108TC- FXP EX 9372PX 93108TC- 9372PX-E FX ¹ 9372TX 93180LC- 9372TX-E EX ¹ 93180YC- EX 93180YC- FX ¹
NXA-FAN-30CFM-F	Fan module with port-side exhaust airflow (blue coloring)	3	92160YC-X 9332PQ 9236C ¹ 9348GC- 93108TC- FXP EX 9372PX 93108TC- 9372PX-E FX ¹ 9372TX 93180LC- 9372TX-E EX ¹ 93180YC- EX 93180YC- FX ¹
NXA-FAN-35CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	4	92300YC ¹
NXA-FAN-35CFM-PI	Fan module with port-side intake airflow (burgundy coloring)	4	92300YC ¹
NXA-FAN-65CFM-PE	Fan module with port-side exhaust airflow (blue coloring)	3	93240YC- 9336C-FX2 ¹ FX2 ¹

NXA-FAN-65CFM-PI	Fan module with port-side exhaust airflow (burgundy coloring)	3	93240YC-FX2 ¹	9336C-FX2 ¹
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¹For specific fan speeds see the Overview section of the Hardware Installation Guide.

Table 4 Cisco Nexus 9500 Series Line Cards

Product ID	Description	Maximum Quantity			Supporting Fabric Modules
		Cisco Nexus 9504	Cisco Nexus 9508	Cisco Nexus 9516	
N9K-X9408PC-CFP2	Line card with 8 100-Gigabit CFP2 ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9432C-S	Line card with 32 100-Gigabit QSFP28 ports	4	8	16	N9K-C9504-FM-S N9K-C9508-FM-S --
N9K-X9432PQ	Line card with 32 40-Gigabit QSFP+ ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9464PX	Line card with 48 1/10-Gigabit SFP+ ports and 4 40-Gigabit QSFP+ uplink ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9464TX	Line card with 48 10GBASE-T (copper) ports and 4 40-Gigabit QSFP+ ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9464TX2	Line card with 48 10GBASE-T (copper) ports and 4 40-Gigabit QSFP+ ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9536PQ	Line card with 36 40-Gigabit ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9564PX	Line card with 48 1-/10-Gigabit SFP+ ports and 4 40-Gigabit QSFP+ ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9564TX	Line card with 48 1-/10GBASE-T (copper) ports and 4 40-Gigabit QSFP+ ports	4	8	16	N9K-C9504-FM N9K-C9508-FM N9K-C9516-FM
N9K-X9636PQ	Line card with 36 40-Gigabit QSFP+ ports	4	8	16	N9K-C9504-FM N9K-C9508-FM --
N9K-X9732C-EX	Line card with 32 40-/100-Gigabit QSFP28 ports	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E
N9K-X9732C-FX	Line card with 32 100 Gigabit Ethernet. Each QSFP28 supports 1x100-, 2x50-, 1x40-, 4x25-, 4x10-, and 1x1/10-Gigabit Ethernet. .	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E N9K-C9516-FM-E2
N9K-X9736C-EX	Line card with 36 40-/100-Gigabit QSFP28 ports	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E

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N9K-X9736C-FX	Line card with 36 1-/10-/40-/50-/100-Gigabit QSFP28 ports	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E
N9K-X9788TC-FX	Line card with 48 1-/10-G BASE-T (copper) and 4 100-Gigabit QSFP28 ports	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E
N9K-X97160YC-EX	Line card with 48 10-/25-Gigabit SFP28 ports and 4 40-/100-Gigabit QSFP28 ports	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E

Table 5 Cisco Nexus 9000 Series Power Supplies

Product ID	Description	Quantity	Cisco Nexus Switches	
N9K-PAC-650W	650-W AC power supply with port-side intake (burgundy coloring)	2	9332PQ 9372PX 9372PX-E 9372TX	9372TX-E 9396PX 9396TX
N9K-PAC-650W-B	650-W AC power supply with port-side exhaust (blue coloring)	2	9332PQ 9372PX 9372PX-E 9372TX	9372TX-E 9396PX 9396TX
N9K-PAC-1200W	1200-W AC power supply with port-side intake airflow (burgundy coloring)	2	93120TX	
N9K-PAC-1200W-B	1200-W AC power supply with port-side exhaust airflow (blue coloring)	2	93120TX	
N9K-PAC-3000W-B	3000-W AC power supply	Up to 4 Up to 8 Up to 10	9504 9508 9516	
N9K-PDC-3000W-B	3000-W DC power supply	Up to 4 Up to 8 Up to 10	9504 9508 9516	
N9K-PUV-1200W	3000-W Universal AC/DC power supply with bidirectional airflow (white coloring)	2	92160YC-X 9236C 92300YC 92304QC 9272Q 93108TC-EX 93108TC-FX	93120TX 93128TX 93180LC-EX EX 93180YC-EX EX 93180YC-FX 93180YC-FX 9364C
N9K-PUV-3000W-B	3000-W Universal AC/DC power supply	Up to 4 Up to 8 Up to 10	9504 9508 9516	
NXA-PAC-350W-PE	350-W AC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FXP	
NXA-PAC-350W-PI	350-W AC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FXP	
NXA-PAC-500W-PE	500-W AC power supply with port-side exhaust airflow (blue coloring)	2	93108TC-EX 93180LC-EX	93180YC-EX EX
NXA-PAC-500W-PI	500-W AC power supply with port-side intake airflow (burgundy coloring)	2	93108TC-EX 93180LC-EX	93180YC-EX EX

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NXA-PAC-650W-PE	650-W power supply with port-side exhaust (blue coloring)	2	92160YC-X 9236C 92300YC	92304QC 93108TC-EX 93180YC-EX
NXA-PAC-650W-PI	650-W power supply with port-side intake (burgundy coloring)	2	92160YC-X 9236C 92300YC	92304QC 93108TC-EX 93180YC-EX
NXA-PAC-1100W-PE	1100-W AC power supply with port-side exhaust airflow (blue coloring)	2	9348GC-FXP	
NXA-PAC-1100W-PI	1100-W AC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FXP	
NXA-PAC-1100W-PE2	1100-W AC power supply with port-side exhaust airflow (blue coloring)	2	93240YC-FX2	9336C-FX2
NXA-PAC-1100W-PI2	1100-W AC power supply with port-side intake airflow (burgundy coloring)	2	93240YC-FX2	9336C-FX2
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-1200W-PE	1200-W AC power supply with port-side intake airflow (burgundy coloring)	2	9272Q	9364C
NXA-PAC-1200W-PI	1200-W AC power supply with port-side exhaust airflow (blue coloring)	2	9272Q	9364C
NXA-PDC-930W-PE	930-W DC power supply with port-side exhaust airflow (blue coloring)	2	93108TC-FX 93180LC-EX	93180YC-FX 9364C
NXA-PDC-930W-PI	930-W DC power supply with port-side intake airflow (burgundy coloring)	2	93108TC-FX 93180LC-EX	93180YC-FX 9364C
UCS-PSU-6332-DC	930-W DC power supply with port-side exhaust (gray coloring)	2	92160YC-X 9236C 92304QC 9272Q 93108TC-EX 93120TX 93128TX 93180YC-EX	9332PQ 9372PX 9372PX-E 9372TX 9372TX-E 9396PX 9396TX
UCSC-PSU-930WDC	930-W DC power supply with port-side intake (green coloring)	2	92160YC-X 9236C 92304QC 9272Q 93108TC-EX 93120TX 93128TX 93180YC-EX	9332PQ 9372PX 9372PX-E 9372TX 9372TX-E 9396PX 9396TX

System Requirements

Table 6 Cisco Nexus 9500 Series 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

Table 7 Cisco Nexus 9000 Series Switches

Cisco Nexus Switch	Description
N9K-C92160YC-X	1-RU Top-of-Rack switch with 48 10-/25-Gigabit SFP+ ports and 6 40-Gigabit QSFP+ ports (4 of these ports support 100-Gigabit QSFP28 optics).
N9K-C92300YC	1.5-RU Top-of-Rack switch with 48 10-/25-Gigabit SFP28 ports and 18 fixed 40-/100-Gigabit QSFP28 ports.
N9K-C92304QC	2-RU Top-of-Rack switch with 56 40-Gigabit Ethernet QSFP+ ports (16 of these ports support 4x10 breakout cables) and 8 100-Gigabit QSFP28 ports.
N9K-C9236C	1-RU Top-of-Rack switch with 36 40-/100-Gigabit QSFP28 ports (144 10-/25-Gigabit ports when using breakout cables)
N9K-C9272Q	2-RU Top-of-Rack switch with 72 40-Gigabit Ethernet QSFP+ ports (35 of these ports also support 4x10 breakout cables for 140 10-Gigabit ports)
N9K-C9336C-FX2	1-RU switch with 36 40-/100-Gb Ethernet QSFP28 ports.
N9K-C9364C	2-RU Top-of-Rack switch with 64 40-/100-Gigabit QSFP28 ports and 2 1-/10-Gigabit SFP+ 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-FX	1-RU Top-of-Rack switch with 48 100M/1/10GBASE-T (copper) ports and 6 40-/100-Gigabit QSFP28 ports
N9K-C93120TX	2-RU Top-of-Rack switch with 96 1/10GBASE-T (copper) ports and 6 40-Gigabit QSFP+ ports
N9K-C93128TX	3-RU Top-of-Rack switch with 96 1/10GBASE-T (copper) ports and an uplink module up to 8 40-Gigabit QSFP+ ports
N9K-C93180LC-EX	1-RU Top-of-Rack switch with 24 40-/50-Gigabit QSFP+ downlink ports and 6 40/100-Gigabit uplink ports. You can configure 18 downlink ports as 100-Gigabit QSFP28 ports or as 10-Gigabit SFP+ ports (using breakout cables)
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-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-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-C9332PQ	1-RU switch with 32 40-Gigabit Ethernet QSFP+ ports (26 ports support 4x10 breakout cables and 6 ports support QSFP-to-SFP adapters)
N9K-C9348GC-FXP	Nexus 9300 with 48p 100M/1 G, 4p 10/25 G SFP+ and 2p 100 G QSFP
N9K-C9372PX	1-RU Top-of-Rack switch with 48 1-/10-Gigabit SFP+ ports and 6 40-Gigabit QSFP+ ports
N9K-C9372PX-E	An enhanced version of the Cisco Nexus 9372PX-E switch.
N9K-C9372TX	1-RU Top-of-Rack switch with 48 1-/10GBASE-T (copper) ports and 6 40-Gigabit QSFP+ ports
N9K-C9372TX-E	An enhanced version of the Cisco Nexus 9372TX-E switch.

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N9K-C9396PX	2-RU Top-of-Rack switch with 48 1-/10-Gigabit Ethernet SFP+ ports and an uplink module with up to 12 40-Gigabit QSFP+ ports
N9K-C9396TX	2-RU Top-of-Rack switch with 48 1/10GBASE-T (copper) ports and an uplink module with up to 12 40-Gigabit QSFP+ ports
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 9000 Series Uplink Modules

Product ID	Hardware
N9K-M4PC-CFP2	Cisco Nexus 9300 uplink module with 4 100-Gigabit Ethernet CFP2 ports. For the Cisco Nexus 93128TX switch, only two of the ports are active. For the Cisco Nexus 9396PX and 9396TX switches, all four ports are active.
N9K-M6PQ	Cisco Nexus 9300 uplink module with 6 40-Gigabit Ethernet QSFP+ ports for the Cisco Nexus 9396PX, 9396TX, and 93128TX switches.
N9K-M6PQ-E	An enhanced version of the Cisco Nexus N9K-M6PQ uplink module.
N9K-M12PQ	Cisco Nexus 9300 uplink module with 12 40-Gigabit Ethernet QSPF+ ports.

Table 9 Cisco Nexus 9500 Series System Controller

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

Table 10 Cisco Nexus 3232C and 3264Q Switch Hardware

Product ID	Hardware	Quantity
N3K-C3232C	Cisco Nexus 3232C, 32 x 40-Gb/100-Gb 2 x 10-Gb SFP+, 1-RU switch	1
N3K-C3264Q	Cisco Nexus 3264Q, 64 x 40-Gb 2 x 10-Gb SFP+, 2-RU switch	1

Table 11 Cisco Nexus 3164Q Switch Hardware

Product ID	Hardware	Quantity
N3K-C3164Q-40GE	Cisco Nexus 3164Q, 64 x 40-Gb SFP+, 2-RU switch	1

Table 12 Cisco Nexus 31128PQ Switch Hardware

Product ID	Hardware	Quantity
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N3K-C31128PQ-10GE	Nexus 31128PQ, 96 x 10 Gb-SFP+, 8 x 10-Gb QSFP+, 2-RU switch	1
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Supported Optics

To determine which transceivers and cables are supported by this switch, see [Transceiver Module \(TMG\) Compatibility Matrix](#).

To see the transceiver specifications and installation information, see <https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-installation-guides-list.html>.

Supported FEX Modules

For more information, see the [Cisco Nexus 9000 Series Switch FEX Support](#) page.

Note the following:

- Cisco Nexus 9300 platform switches do not support FEXs on uplink modules (ALE).
- Beginning with Cisco NX-OS Release 7.0(3)I7(3), the Cisco Nexus N9K-C93180YC-FX supports N2K-C2232PP and N2K-C2248TP FEX models in NX-OS mode. In this mode, the N9K-C93180YC-FX supports straight-through FEX, but it does not support dual-homed FEX. Active-Active FEX and straight-through FEX are not supported on Cisco N9K-C9348GC-FXP, N9K-C93180TC-FX, N9K-C9336C-FX2, and N9K-C93240YC-FX2 switches in Cisco NX-OS Release 7.0(3)I7(3).
- For FEX HIF port channels, enable the STP port type edge using the spanning tree port type edge [trunk] command.
- The Cisco Nexus 2248PQ, 2348TQ, and 2348UPQ FEXs support connections to the Cisco Nexus 9300 or 9500 platform switches by using supported breakout cables to connect a QSFP+ uplink on the FEX and an SFP+ link on the parent switch (4x10 G links).

Note: For Cisco Nexus 9500 platform switches, 4x10-Gb breakout for FEX connectivity is not supported.

New and Changed Information

This section lists the following topics:

- New Hardware Features in Cisco NX-OS Release 7.0(3)I7(5a)
- New Software Features in Cisco NX-OS Release 7.0(3)I7(5a)

New Hardware Features in Cisco NX-OS Release 7.0(3)I7(5a)

Cisco NX-OS Release 7.0(3)I7(5a) does not include any new hardware.

New Software Features in Cisco NX-OS Release 7.0(3)I7(5a)

Cisco NX-OS Release 7.0(3)I7(5a) does not include new software features.

Caveats

This section includes the following topics:

- Resolved Caveats—Cisco NX-OS Release 7.0(3)I7(5a)
- Open Caveats—Cisco NX-OS Release 7.0(3)I7(5a)
- Known Behaviors—Cisco NX-OS Release 7.0(3)I7(5a)

Resolved Caveats—Cisco NX-OS Release 7.0(3)I7(5a)

The following table lists the Resolved Caveats in Cisco NX-OS Release 7.0(3)I7(5a). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 13 Resolved Caveats in Cisco NX-OS Release 7.0(3)I7(5a)

Bug ID	Description
CSCvk30831	BIOS upgrade may fail during install all
CSCvm14263	Stale adjacency IPv6 packet loss
CSCvm14443	ARP Refresh Packets are not send out on vPC portchannels after a TCN
CSCvm16921	N9K reload due to sysmgr failed to re-register with heartbeat klm
CSCvm20551	VXLAN PBR not working after upgrade to 7.0(3)I7(5)
CSCvm41215	LACP don't handle out of sync PDU when local LACP is not down and in sync
CSCvm44958	Missing ACL in running config when applying via file or POAP to startup configurations and re-loading
CSCvm47406	Flapping one port causes RDMA traffic drop on a different port on N9K-FX2 switches
CSCvm65959	N9K-C93180YC-EX's E1/43-44 interface counters stop increasing
CSCvm70012	link debounce time 0 disables link debounce link-up feature
CSCvm70086	Slow Memory leak observed in Aclmgr process with flapping erspan source interface
CSCvm73962	N9336 may experience sporadic high PTP correction
CSCvm78543	Internal CRC log also matches cut-through CRC errors

Open Caveats—Cisco NX-OS Release 7.0(3)I7(5a)

The following table lists the open caveats in the Cisco NX-OS Release 7.0(3)I7(5a). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 14 Open Caveats in Cisco NX-OS Release 7.0(3)I7(5a)

Bug ID	Description
CSCvf76134	Multicast-heavy:traffic for /64 IPv6 LPM do not work in N9300-EX post ISSU(7.0(3)I6(1)->7.0(3)I7(2))
CSCvg65669	After reload license is not checked out despite having " port-license acquire" cli under port.

CSCvh95282	Need to resolve of leak on trunk_member utilization/entries on Nexus 9000
CSCvi77567	Configuring "feature nv overlay" breaks sub-interface multicast forwarding across FM-E modules
CSCvj27056	ARP Frame May Be Sourced from BIA SVI MAC with Anycast GW configured
CSCvj52053	NGMVPN and MRIB entries not cleaned up if Data/IGMP Traffic stopped after triggers
CSCvm01300	SG not programming the OIF from IGMPv3 SSM group after clear ip mroute data-created
CSCvm11061	TRM-Scale: After Stopping Traffic 2 S,G on BL is not getting deleted & readded
CSCvm15216	N9K: Mpls L3EVPN :: BGP I2vpn evpn session between PE down after SSO
CSCvm15745	TRM L3:(*,G) entries dont age out on BL with External RP.
CSCvm96774	Link down/failure logged in syslog but interface is up from show port-channel on N92160

Known Behaviors—Cisco NX-OS Release 7.0(3)I7(5a)

The following known behaviors are in this release.

Table 4 Known Behaviors in Cisco NX-OS Release 7.0(3)I7(5a)

Bug ID	Description
CSCvc95008	On Cisco Nexus 9300-EX, 9348GC-FXP, 93108TC-FX, 93180YC-FX, 9336C-FX2, and 93240YC-FX2 switches, when 802.1q EtherType has changed on an interface, the EtherType of all interfaces on the same slice will be changed to the configured value. This change is not persistent after a reload of the switch and will revert to the EtherType value of the last port on the slice.

- In the NX-API sandbox, whenever XML or JSON output is generated for the show run command or the show startup command, the output contains additional characters.

For example,

```
</nf:source>      <=====nf: is extra
```

```
<namespace> : extra characters are seen with XML and JSON from NX-API.
```

```
=====
```

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 7.x](#).

For information about an In Service Software Upgrade (ISSU), see the [Cisco NX-OS ISSU Support](#) application.

Note: Upgrading from Cisco NX-OS 7.0(3)I1(2), 7.0(3)I1(3), or 7.0(3)I1(3a) requires installing a patch for Cisco Nexus 9500 platform switches only. For more information on the upgrade patch, see [Upgrade Patch Instructions](#).

Limitations

This section lists limitations related to Cisco NX-OS Release 7.0(3)I7(5a).

- When you upgrade a Cisco Nexus 9000 device to Cisco NX-OS Release 7.0(3)I7(5a), if a QSFP port is configured with the manual breakout command and is using a QSA, the configuration of the interface Ethernet 1/50/1 is no longer supported and will need to be removed. To restore the configuration, you must manually configure the interface Ethernet 1/50 on the device.
- Due to the design of airflow, back-to-front fans requires fan speed to be run at full speed all the time. You might also see fan speeds increase from 40% to 70% post-upgrade. This applies to the following PIDs: N9K-C9272Q, N9K-C9236C, N9K-C93180YC-FX, N9K-C93180TC-FX, N9K-C9364C, N3K-C36180YC-R, N9K-C9336C-FX2, N9K-C9332C. This change is made as of cisco NX-OS Release 7.0(3)I7(3). If your PID is not listed, please contact Cisco TAC for additional verification.
- The following features are not supported on the Cisco Nexus 9364C switch.
 - 100 G port cannot support breakout (HW limitation)
 - FEX
 - Tetration (HW limitation)
- If the speed group is configured, the default interface command displays the following error:

```
Error: default interface is not supported as speed-group is configured
```
- Line rate cannot be sustained across all 36 ports on the 9736C-EX line card.
- Ingress DROP_ACL_DROP is seen with Cisco Nexus 9272Q, 9236C, and 92160YC-X switches on an ASIC during congestion. However, these drops do not impact the performance of the switch.
- Resilient hashing (port-channel load-balancing resiliency) and VXLAN configurations are not compatible with VTEPs using ALE uplink ports. Please note that resilient hashing is disabled by default.
- hardware profile front portmode command is not supported on the Cisco Nexus 9000 Series switches.
- PortLoopback and BootupPortLoopback tests are not supported.
- FEXs configured with 100/full-duplex speed, without explicitly configuring the neighboring device with 100/full-duplex speed, will not pass data packet traffic properly. This occurs with or without the link appearing to be “up.”
 - no speed-Auto negotiates and advertises all speeds (only full duplex).
 - speed 100-Does not auto negotiate; pause cannot be advertised. The peer must be set to not auto negotiate (only 100 Mbps full duplex is supported).
 - speed 1000-Auto negotiates and advertises pause (advertises only for 1000 Mbps full duplex).
- The following switches support QSFP+ with the QSFP to SFP/SFP+ adapter (40 Gb to 10 Gb):
 - N9K-C93120TX

Limitations

- N9K-C93128TX
- N9K-C9332PQ
- N9K-C9372PX
- N9K-C9372PX-E
- N9K-C9372TX
- N9K-C9396PX
- N9K-C93108TC-EX
- N9K-C93180YC-EX
- N9K-C93180YC-FX

- ---

Note: The Cisco Nexus 9300 platforms support for the QSFP+ breakout has the following limitations:
- Only 10 Gb can be supported using the QSFP-to-SFP Adapter on 40-Gb uplink ports on Cisco Nexus 9300 platform switches in NX-OS.
- 1 Gb with QSFP-to-SFP Adapter is not supported.
- For the Cisco Nexus 9332PQ switch, all ports except 13-14 and 27-32 can support breakout.
- All ports in the QSFP-to-SFP Adapter speed group must operate at the same speed (see the configuration guide).

- ---

The following switches support the breakout cable (40 Gb ports to 4x10-Gb ports):
- N9K-C9332PQ
- N9K-X9436PQ
- N9K-X9536PQ
- N9K-C93180LC-EX—last four ports are breakout capable (10x4, 24x4, 50x2)
- N9K-C93180YC-EX
- N9K-C93108TC-EX
- N9K-X9732C-EX line card
- N9K-X9732C-FX line card
- N9K-X97160YC-EX

- Limitations for ALE (Application Link Engine) uplink ports are listed at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/ale_ports/b_Limitations_for_ALE_Uplink_Ports_on_Cisco_Nexus_9000_Series_Switches.html

Guidelines and Limitations for Fabric Extenders

This section lists configuration guidelines and limitations for the Cisco Nexus 2000 Series Fabric Extenders:

- Post-routed flood is not supported.
- The configuration is purged when:
 - Straight-through FEXs are converted to dual-homed
 - Dual-homed FEXs are converted to Straight-through.
- Conversion from dual-homed FEX to straight-through or straight-through to dual-homed FEX requires a reload of the parent switch.

There are two cases for dual-home to straight-through conversion:

- While the FEX is online: the FEX goes down as a dual-homed FEX on conversion and comes back up a straight-through FEX. The configuration is purged on bringup.
- While the FEX is offline: the FEX goes down as a dual-homed FEX, then the `no vpc id` command is entered on the fabric port channel. No configuration purge takes place. In this scenario, default the configuration on FEX interfaces while toggling the mode from active-active to straight-through.

For more information, see the [Cisco Nexus 2000 Series NX-OS Fabric Extender Configuration Guide for Cisco Nexus 9000 Series Switches, Release 7.x](#).

Unsupported Features

Notes regarding unsupported features:

- [Cisco Nexus 3232C and 3264Q Switches](#)
- [Cisco Nexus 9200, 9300-EX, and 9300-FX Platform Switches](#)
- [Cisco Nexus 9408 Line Card and 9300 Series Switches](#)
- [Cisco Nexus 9732C-EX Line Card](#)
- [FEX](#)
- [Other Unsupported Features](#)

Cisco Nexus 3232C and 3264Q Switches

The following features are not supported for the Cisco Nexus 3232C and 3264Q switches:

- 3264Q and 3232C platforms do not support the PXE boot of the NX-OS image from the loader.
- Automatic negotiation support for 25-Gb and 50-Gb ports on the Cisco Nexus 3232C switch
- Cisco Nexus 2000 Series Fabric Extenders (FEX)
- Cisco NX-OS to ACI conversion (The Cisco Nexus 3232C and 3264Q switches operate only in Cisco NX-OS mode.)

Unsupported Features

- DCBXP
- Designated router delay
- DHCP subnet broadcast is not supported
- Due to a Poodle vulnerability, SSLv3 is no longer supported
- FCoE NPV
- Intelligent Traffic Director (ITD)
- Enhanced ISSU. NOTE: Check the appropriate guide to determine which platforms support Enhanced ISSU.
- MLD
- NetFlow
- PIM6
- Policy-based routing (PBR)
- Port loopback tests
- Resilient hashing
- SPAN on CPU as destination
- Virtual port channel (vPC) peering between Cisco Nexus 3232C or 3264Q switches and Cisco Nexus 9300 platform switches or between Cisco Nexus 3232C or 3264Q switches and Cisco Nexus 3100 Series switches
- VXLAN IGMP snooping

Cisco Nexus 9200, 9300-EX, and 9300-FX Platform Switches

The following features are not supported for the Cisco Nexus 9200 platform switches and the Cisco Nexus 93108TC-EX and 93180YC-EX switches:

- 64-bit ALPM routing mode
- Cisco Nexus 9272PQ and Cisco Nexus 92160YC platforms do not support the PXE boot of the NXOS image from the loader.
- ACL filters to span subinterface traffic on the parent interface
- Egress port ACLs
- Egress QoS policer is supported on the Cisco Nexus 9300-EX and 9300-FX platform switches. It is not supported on the Cisco Nexus 9200 platform switch. The only policer action supported is drop. Remark action is not supported on egress policer.
- FEX (supported for Cisco Nexus 9300-EX platform switches but not for Cisco Nexus 9200 platform switches.)
- GRE v4 payload over v6 tunnels
- IP length-based matches
- IP-in-IP on Cisco Nexus 92160 switch

Unsupported Features

- ISSU enhanced is not supported on the Cisco Nexus 9300-FX platform switch.
- Layer 2 Q-in-Q is supported only on Cisco Nexus 9300-EX platform switches (93108TC-EX and 93180YC-EX) and Cisco Nexus 9500 platform switches with the X9732C-EX line card.
- MTU (Multi Transmission Unit) checks for packets received with an MPLS header
- NetFlow is not supported on Cisco Nexus 9200 platform switches. It is supported on Cisco Nexus 9300-EX and 9300-FX platform switches.
- Packet-based statistics for traffic storm control (only byte-based statistics are supported)
- PVLANS (supported on Cisco Nexus 9300 and 9300-EX platform switches but not on Cisco Nexus 9200 platform switches)
- Q-in-VNI is not supported on Cisco Nexus 9200 platform switches. Beginning with Cisco NX-OS Release 7.0(3)I5(1), Q-in-VNI is supported on Cisco Nexus 9300-EX platform switches.
- Q-in-Q for VXLAN is not supported on Cisco Nexus 9200 and 9300-EX platform switches
- Q-in-VNI is not supported on Cisco Nexus 9200 platform switches (supported on Cisco Nexus 9300-EX platform switches)
- Resilient hashing for ECMP on the Cisco Nexus 9200 platform switches.
- Resilient hashing for port-channel
- Rx SPAN for multicast if the SPAN source and destination are on the same slice and no forwarding interface is on the slice
- SVI uplinks with Q-in-VNI are not supported with Cisco Nexus 9300-EX platform switches
- Traffic storm control for copy-to-CPU packets
- Traffic storm control with unknown multicast traffic
- Tx SPAN for multicast, unknown multicast, and broadcast traffic
- VACL redirects for TAP aggregation

Cisco Nexus 9500 Platform N9K-X9408PC-CFP2 Line Card and 9300 Platform Switches

The following features are not supported for the Cisco Nexus 9500 platform N9K-X9408PC-CFP2 line card and Cisco Nexus 9300 platform switches with generic expansion modules (N9K-M4PC-CFP2):

- 802.3x
- Breakout ports
- FEX (this applies to the N9K-X9408PC-CFP2 and -EX switches, not all Cisco Nexus 9300 platform switches)
- MCT (Multichassis EtherChannel Trunk)
- NetFlow

Unsupported Features

- Only support 40G flows
- Port-channel (No LACP)
- PFC/LLFC
- PTP (Precision Time Protocol)
- PVLAN (supported on Cisco Nexus 9300 platform switches)
- Shaping support on 100g port is limited
- SPAN destination/ERSPAN destination IP
- Storm Control
- vPC
- VXLAN access port.

N9K-X9732C-EX Line Card

The following features are not supported for Cisco Nexus 9508 switches with an N9K-X9732C-EX line card:

- FEX
- IPv6 support for policy-based routing
- LPM dual-host mode
- SPAN port-channel destinations

FEX

- Cisco Nexus 9300 platform switches do not support FEX on uplink modules (ALE).
- FEX is supported only on the Cisco Nexus 9332PQ, 9372PX, 9372PX-E, 9396PX, 93180YC-EX, and 9500 platform switches (FEX is not supported on the N9K-X9732C-EX line card, and Cisco Nexus 9200 platforms).
- FEX vPC is not supported between any model of FEX and the Cisco Nexus 9500 platform switches as the parent switches.
- IPSG (IP Source Guard) is not supported on FEX ports.
- VTEP connected to FEX host interface ports is not supported.
- FEX Layer 3 is not supported on the Cisco Nexus 2348TQ-E fabric.

Other Unsupported Features

The following lists other features not supported in the current release:

- IPSG is not supported on the following:
 - The last six 40-Gb physical ports on the Cisco Nexus 9372PX, 9372TX, and 9332PQ switches

- All 40G physical ports on the Cisco Nexus 9396PX, 9396TX, and 93128TX switches

Related Documentation

The entire Cisco Nexus 9000 Series NX-OS documentation set is available at the following URL:

<https://www.cisco.com/c/en/us/support/switches/nexus-9000-series-switches/tsd-products-support-series-home.html>

The Cisco Nexus 3164Q Switch - Read Me First is available at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus3164/sw/6x/readme/b_Cisco_Nexus_3164Q_Switch_Read_Me_First.html

The Cisco Nexus 31128PQ Switch - Read Me First is available at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus31128/sw/readme/b_Cisco_Nexus_31128PQ_Switch_Read_Me_First.html

The Cisco Nexus 3232C/3264Q Switch - Read Me First is available at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus3232and3264/sw/7x/readme/b_Cisco_Nexus_3232C_and_3264Q_Switch_Read_Me_First.html

The Cisco Nexus 3000 and 9000 Series NX-API REST SDK User Guide and API Reference is available at the following URL:

<https://developer.cisco.com/site/nx-os/docs/n3k-n9k-api-ref/>

The Cisco NX-OS Supported MIBs URL:

<ftp://ftp.cisco.com/pub/mibs/supportlists/nexus9000/Nexus9000MIBSupportList.html>

The *Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes, Release 7.0(3)I7(3)* is available at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/epld_rn/guide/nxos_n9K_epldRN_703i73.html

NOTE: This version applies to Release 7.0(3)I7(5a).

New Documentation

The *Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 7.0(3)I7(5a)* is available at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/7-x/scalability/guide_703i75/b_Cisco_Nexus_9000_Series_NX-OS_Verified_Scalability_Guide_703i75.html

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<https://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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