Cisco Nexus 9000 Series NX-OS Release Notes, Release 9.2(1)

This document describes the features, caveats, and limitations of Cisco NX-OS Release 9.2(1) software for use on the following switches:

- Cisco Nexus 9000 Series
- Cisco Nexus 31128PQ
- Cisco Nexus 3164Q
- Cisco Nexus 3232C
- Cisco Nexus 3264C-E
- 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
January 26, 2020	Added CSCvc95008 to Known Behaviors.
November 15, 2019	Updated Limitations section for breakout issue.
October 6, 2019	Updated Transceiver Module Group URL.
August 1, 2019	Added CSCvj18403 to Resolved Caveats.
July 19, 2019	Added fan speed note to Limitations, and Table 3.
April 23, 2019	Updated Transceiver Module Group URL.
January 4, 2019	Updated Supporting Fabric Modules for the N9K-X9736C-FX with N9K-C9508-FM-E2.
January 3, 2019	Updated Upgrade Instructions.
December 17, 2018	Added CSCvn68232 to Open Caveats.
December 14, 2018	Added Licensing Information.
November 7, 2018	Updated the Introduction.
October 30, 2018	Added CSCvm96774 to Open Caveats.

Date	Description
October 9, 2018	Updated the Upgrade Instructions for Enhanced ISSU.
September 27, 2018	Updated System Management Features in the New and Changed Information.
September 19, 2018	Updated the Upgrade Instructions regarding upgrades from Release 7.0(3)I2(2b).
August 14, 2018	■ Updated New and Changed Information for NX-API and OpenConfig YANG. ■ Updated Upgrade Instructions for releases prior to 7.0(3)I2(3).
August 10, 2018	Updated the Upgrade Instructions for 7.0(3)I2(2x).
August 3, 2018	Updated the Transceiver Matrix link.
July 25, 2018	Added N9K-X97160YC-EX, N9K-X9788TC-FX, with N9K-C9508-FM-E2 and N9K-C9516-FM-E2 in Line Cards table. Added CSCuy08187 to Open Caveats.
July 21, 2018	Removed support for NetFlow CE for Cisco Nexus 9200 platform switches.
July 20.2018	Added N9K-C9508-FM-R to the Fabric Modules table.
July 18, 2018	Created the release notes for Release 9.2(1).

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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.

The Cisco Nexus 3000 Series switches, which includes Cisco Nexus 3100, 3200, 3400-S, 3500, and 3600 platform switches, and Cisco Nexus 9300 and 9500 platform switches run on the same binary image, also called the “unified” image.

Cisco NX-OS Release 9.2(1) is the first release that adopts unified version numbering. As more platforms have been added, there is no need to have a “platform” designator as used in the past.

An example of a previous release number is: 7.0(3)I7(4). In this format, the ‘I’ is the platform designator.

Moving forward for the previously identified platforms, we will be adopting the simplified 3-letter versioning scheme. For example, a release with X.Y(Z) would mean:

X – Unified release major

Y – Major / Minor release

Z – Maintenance release (MR)

Where the Z = 1 is always the first FCS release of a Major/Minor release.

Note: In order to accommodate upgrade compatibility from an older software version that is expecting a platform designator, when the install all command is entered or the show install all impact command is entered, the version string appears as 9.2(1)I9(1). The “I9(1)” portion of the string can be safely ignored. It will later appear as 9.2(1).

Licensing Information

Temporary licenses with an expiry date are available for evaluation and lab use purposes. They are strictly not allowed to be used in production. Please use a permanent or subscription license that has been purchased through Cisco for production purposes.

For more information, see the Cisco NX-OS Licensing Guide.

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 9.2(1) 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
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 FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	4 5 when using the N9K-X9736C-FX line card
N9K-C9504-FM-R	100-Gigabit -R fabric module (for the Cisco Nexus 9504 chassis) that supports the 100-Gigabit (-R) line cards. When used, there must be 4 of these fabric modules installed in fabric slots FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	4 to 6 depending on line cards
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 FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	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 FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	4 5 when using the N9K-X9736C-FX line card.
N9K-C9508-FM-E2	100-Gigabit –E2 fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-EX, -FX) line cards. When used, there must be 4 of these fabric modules installed in fabric slots FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	4 5 when using the N9K-X9736C-FX line card.
N9K-C9508-FM-R	100-Gigabit -R fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-R) line cards. When used, there must be 4 of these fabric modules installed in fabric slots FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	4
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 FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	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 FM 1, FM 3, and FM 5.	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 FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	4 5 when using the N9K-X9736C-FX line card.
N9K-C9516-FM-E2	100-Gb –E2 fabric module (for the Cisco Nexus 9516 chassis that supports the 100-Gb (-EX, -FX) line cards. When used, there must be four of these fabric modules installed in fabric slots FM 1, FM 2, FM 3, FM 4, FM 5, and FM 6.	3-6 depending on the line cards
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 FM 1, FM 3, and FM 5.	1

Table 3 Cisco Nexus 9000 Series Fans and Fan Trays

Product ID	Description	Quantity	Cisco Nexus Switches
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

Product ID	Description	Quantity	Cisco Nexus Switches	
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 9272Q[1]	93120TX
N9K-C9300-FAN3-B	Fan 3 module with port-side exhaust airflow (blue coloring)	3	92304QC 9272Q[1]	93120TX
N9K-C9504-FAN	Fan tray for 4-slot modular chassis	3	C9504	
N9K-C9508-FAN	Fan tray for 8-slot modular chassis	3	C9508	
N9K-C9516-FAN	Fan tray for 16-slot modular chassis	3	C9516	
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 9236C[1] 93108TC-EX 93108TC-FX[1] 93180LC-EX[1] 93180YC-EX 93180YC-FX[1]	9332PQ 9348GC-FXP 9372PX 9372PX-E 9372TX 9372TX-E
NXA-FAN-30CFM-F	Fan module with port-side exhaust airflow (blue coloring)	3	92160YC-X 9236[1]C 93108TC-EX 93108TC-FX[1] 93180LC-EX[1] 93180YC-EX 93180YC-FX[1]	9332PQ 9348GC-FXP 9372PX 9372PX-E 9372TX 9372TX-E
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-FX2[1]	9336C-FX2[1]
NXA-FAN-65CFM-PI	Fan module with port-side exhaust airflow (burgundy coloring)	3	93240YC-FX2[1]	9336C-FX2[1]

[1] For 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	N/A	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-X9636C-R	Line card with 36 100-Gigabit Ethernet QSFP28 ports	4	8	N/A	N9K-C9504-FM-R N9K-C9508-FM-R
N9K-X9636C-RX	Line card with 36 100-Gigabit Ethernet QSFP28 ports	4	8	N/A	N9K-C9504-FM-R N9K-C9508-FM-R
N9K-X9636PQ	Line card with 36 40-Gigabit QSFP+ ports	4	8	N/A	N9K-C9504-FM N9K-C9508-FM --
N9K-X9636Q-R	Line card with 36 40-Gigabit Ethernet QSFP28 ports	4	8	N/A	N9K-C9504-FM-R N9K-C9508-FM-R
N9K-X96136YC-R	Line card with 16x1/10-Gigabit Ethernet SPF ports, 32x10/25 Gigabit, and 4x40/100-Gigabit Ethernet QSFP ports	4	8	N/A	N9K-C9504-FM-R N9K-C9508-FM-R
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 QSFP28 ports	4	8	16	N9K-C9504-FM-E N9K-C9508-FM-E N9K-C9516-FM-E, 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-C9508-FM-E2 N9K-C9516-FM-E
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-C9508-FM-E2 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-C9508-FM-E2 N9K-C9516-FM-E N9K-C9516-FM-E2
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-C9508-FM-E2 N9K-C9516-FM-E N9K-C9516-FM-E2

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	C9504 C9508 C9516	
N9K-PDC-3000W-B	3000-W DC power supply	Up to 4 Up to 8 Up to 10	C9504 C9508 C9516	
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 93180YC-EX 93180YC-FX 9364C

N9K-PUV-3000W-B	3000-W Universal AC/DC power supply	Up to 4 Up to 8 Up to 10	C9504 C9508 C9516	
N9K-PUV2-3000W-B	3.15-kW Dual Input Universal AC/DC Power Supply	Up to 4 Up to 8 Up to 10	C9504 C9508 C9516	
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
NXA-PAC-500W-PI	500-W AC power supply with port-side intake airflow (burgundy coloring)	2	93108TC-EX 93180LC-EX	93180YC-EX
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 exhaust airflow (blue coloring)	2	9272Q	9364C
NXA-PAC-1200W-PI	1200-W AC power supply with port-side intake airflow (burgundy coloring)	2	9272Q	9364C
NXA-PDC-440W-PI	440-W DC power supply with port-side intake airflow (burgundy coloring)	2	9348GC-FXP	
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
NXA-PDC-1100W-PE	1100-W DC power supply with port-side exhaust airflow (blue coloring)	2	93240YC-FX	

NXA-PHV-1100W-PE	1100-W DC power supply with port-side exhaust airflow (blue coloring)	2	93240YC-FX
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

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. - Ports 1 to 48 support 40/100-Gigabit speeds. - Ports 49 to 64 support 10 (only with QSA)/40/100-Gigabit speeds and are colored green to indicate hardware support for MACsec encryption.
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.
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-C3264C-E	Cisco Nexus 3264C-E 64 x 100-Gb QSFP28 2 x 10-Gb SFP+, 2-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
N3K-C31128PQ-10GE	Nexus 31128PQ, 96 x 10 Gb-SFP+, 8 x 10-Gb QSFP+, 2-RU switch	1

Supported Optics

To determine which transceivers and cables are supported by this switch, see the 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

Full FEX module support has been added for the following switches:

- N9K-C9336C-FX2
- N9K-C93108TC-FX
- N9K-C93180YC-FX
- N9K-C93240YC-FX2

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 9.2(1), dual-homed FEX support is added to Cisco Nexus 93180YC-FX, and 93108TC-FX switches in addition to straight-through FEX support.
- Beginning with Cisco NX-OS Release 9.2(1), straight-through FEX support is added to Cisco Nexus 93240YC-R and 9336C-FX2 switches.
- Active-Active FEX and straight-through FEX are not supported on the Cisco Nexus 9348GC-FXP switch.
- 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 9.2(1)
- New Software Features in Cisco NX-OS Release 9.2(1)

New Hardware Features in Cisco NX-OS Release 9.2(1)

Cisco NX-OS Release 9.2(1) supports the following new hardware:

- The Cisco Nexus 3264C-E (N3K-C3264C-E) is a 2 rack unit (RU) switch with 64 100-Gigabit QSFP28 and 2 10-Gigabit SFP+ ports. This switch supports both port-side exhaust and port-side intake airflow schemes. The switch requires one power supply for operation, but it can have a second power supply for redundancy.
- The Cisco Nexus 9504-FM-R (N9K-C9504-FM-R) is a 100-Gigabit -R fabric module (for the Cisco Nexus 9504 chassis) that supports the 100-Gigabit (-R) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.
- The Cisco Nexus 9508-FM-E2 (N9K-C9508-FM-E2) is a 100-Gigabit –E2 fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-EX, -FX) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.
- The Cisco Nexus 9516-FM-E2 (N9K-C9516-FX-E2) is a 100-Gb –E2 fabric module (for the Cisco Nexus 9516 chassis that supports the 100-Gb (-EX, -FX) line cards. When used, there must be four of these fabric modules installed in fabric slots 22, 23, 24, and 26.
- The Cisco Nexus 96136YC-R line card (N9K-X96136YC-R) with 52-port 16x1/10-Gigabit, 32x10/25 Gigabit Ethernet SPF, and 4x40/100-Gigabit Ethernet QSFP.
- The Cisco Nexus 9732C-FX line card (N9K-X9732C-FX) with 32 100-Gigabit QSFP28 ports.

New Software Features in Cisco NX-OS Release 9.2(1)

Cisco NX-OS Release 9.2(1) supports the following new software features:

Catena Features

- Bypass and Drop Mode—Provides the ability to skip a Cisco Nexus device in your configured chain without changing the topology or existing configuration.
- Failsafe—Allows users the option to add a default VLAN group, port group and chain for an instance, and generate the backend configuration accordingly.
- Reverse Configuration—Introduces a CLI solution to define the egress interface in the reverse direction for each segment of the chain based on port number or IP address.

For more information, see the Cisco Nexus 9000 Series NX-OS Catena Configuration Guide, Release 9.2(x).

FCoE Features

- FC Uplinks—Support added for Cisco Nexus 93180YC-FX switches.
- Host Pinning—All hosts on a FEX are pinned to the same NP link for the Cisco Nexus 93180YC-FX switch.

For more information, see the Cisco Nexus 2000 Series NX-OS Fabric Extender Configuration Guide for Cisco Nexus 9000 Series Switches, Release 9.2(x).

FEX Features

- FCoE over FEX—Support added on N9K-C93180YC-FX switches in both straight-through and dual-homed mode with N2K-C2348UPQ, N2K-C2232PP, N2K-B22IBM-P and N2K-B22HP-P FEX models. Support added on Cisco Nexus 9300-FX platform switches.
- NetFlow for FEX Layer-3 Ports—Support added on Cisco Nexus 9300-EX and 9300-FX platform switches.
- ST-FEX and AA-FEX Modes—Support added on Cisco Nexus 93108TC-FX and Cisco Nexus 93180YC-FX switches.
- ST-FEX Mode—Support added on Cisco Nexus 9336C-FX2 and Cisco Nexus 93240YC-FX2 switches.

For more information, see the Cisco Nexus 2000 Series NX-OS Fabric Extender Configuration Guide for Cisco Nexus 9000 Series Switches, Release 9.2(x).

iCAM Features

- Scale Monitoring—Provides the ability to verify, detect, and predict your environment against Cisco verified scale numbers.
- Platform Support—Added support for Cisco Nexus 3164Q, 9300, and 9500 platform switches.

For more information, see the Cisco Nexus 9000 Series NX-OS iCAM Configuration Guide, Release 9.2(x).

Intelligent Traffic Director (ITD) Features

- ITD—Support added for the Cisco Nexus C9364C, C9336C-FX2, C93240YC-FX2 switches (for IPv4 & IPv6).

For more information, see the Cisco Nexus 9000 Series NX-OS Intelligent Traffic Director Guide, Release 9.2(x).

Interface Features

- Auto Negotiation for 25G—Support added for auto negotiation on native 25G ports on Cisco Nexus N9K-X97160YC-EX, N9K-C93180YC-FX, N9K-C93240YC-FX2 and N9K-C93240YC-FX2-Z switches.

- BFD Multihop—Support added for Cisco Nexus 9300-EX, 9300-FX, 9300-FX2, 9300-FXP, 9500-EX, and 9500-FX platform switches in compliance with RFC5883 for IPv4. IPv6 is not supported.
- GTP load-sharing—Added support for Cisco Nexus 9364C, 93180YC-FX, 93108TC-FX, and 9348GC-FXP switches.
- IP Dampening—Support added for IP event dampening on Cisco Nexus 9300-EX, 9300-FX, 9300-FX2, 9300-FXP, 9500-EX, and 9500-FX platform switches.
- IP TCP MSS—Support added for IP TCP MSS. The IP TCP Maximum Segment Size (MSS) feature enables a switch to set a maximum segment size for all TCP connections that originate from or terminate at a Cisco Nexus 9000 Series Switches.
- Optics Scale—Support added for the Cisco Nexus 9508 switch with N9K-X96136YC-R line cards support 1 Gb speed on all 48 ports.
- QSFP-40/100-SRBD (also known as QSFP-100G40G-BIDI) comes up in the speed of 100-G and interoperates with other QSFP-40/100-SRBD at either 100-G or 40-G speed and with QSFP-40G-SR-BD at 40-G speed on Cisco Nexus 9500 platform switches with N9K-X9636C-RX line card. See transceiver compatibility documents for both 40-G and 100-G for future module support additions.
- TCP Aware NAT—Beginning with Cisco NX-OS Release 9.2(1) support is now added for TCP-aware NAT. It enables NAT flow entries to follow the state of TCP sessions and get created and deleted accordingly.

For more information, see the Cisco Nexus 9000 Series NX-OS Interfaces Configuration Guide, Release 9.2(x).

IP SLAs Features

- TWAMP Responder—Support added for IP SLA TWAMP responder on a Cisco device measuring IP performance between the Cisco device and a non-Cisco TWAMP control device.

For more information, see the Cisco Nexus 9000 Series NX-OS IP SLAs Configuration Guide, Release 9.2(x).

Label Switching Features

- The following features have been added:
  - Segment routing with traffic engineering (on-demand next hop) with XTC integration
  - Segment routing with OSPFv2 SID (Prefix/Node SID only for /32 FEC)
  - IS-IS distribute link-state
  - Layer 3 EVPN and Layer 3 VPN Stitching/interworking. Supported on Cisco Nexus 9300, 9300-FX and 9500 platform switches with 9700-FX line cards.
  - Improved MPLS label scale and MPLS ECMP adjacency
- The following features are supported on the Cisco Nexus 9364C switch:
  - Segment routing with BGP LU and IS-IS (Node SID/Prefix SID)
  - Layer 3 EVPN over segment routing
  - Egress peer engineering
  - MPLS label stack imposition
  - MPLS OAM

For more information, see the Cisco Nexus 9000 Series NX-OS Label Switching Configuration Guide, Release 9.2(x).

Layer 2 Features

- VEPA/Reflective Relay—Support added for switching option reflective relay on the Cisco Nexus 93180TC-FX and 93180YC-FX switches.

For more information, see the Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration Guide, Release 9.2(x).

Multicast Routing Features

- Multicast Network Load Balancing (NLB)—Support added for the ability to distribute client requests across a set of servers. This feature is supported on the Cisco Nexus 9300-EX, 9300-FX, 9300-FX2 platform switches. This feature is not supported on Cisco Nexus 9500 platform switches with 9508-FM-2 or 9516-FM-E2 line cards.
- MVR knob—Support added to disable forwarding IGMP queries.

For more information, see the Cisco Nexus 9000 Series NX-OS Multicast Routing Configuration Guide, Release 9.2(x).

N9000V Features

- Software Upgrade as Disruptive ISSU—Added support configuring disruptive ISSU process.
- VXLAN EVPN Multi-Site—Added support for configuring VXLAN EVPN Multi-Site on Cisco Nexus 9000v switches.

For more information, see the Cisco Nexus 9000v Guide.

NX-API Features

- NX-API REST Data Paths—See the *New and Changed* Information section of the *Cisco Nexus 3000 and 9000 Series NX-API REST User Guide and API Reference* for a detailed list of the updates.
- Expanded Support for NX-API CLI— See the *Cisco Nexus 3500 Series NX-API CLI Reference* for examples of show commands supported for NX-API CLI.
- Expanded Support for NX-API CLI—See the Cisco Nexus 9000 Series NX-API CLI Reference, Release 9.x for examples of show commands supported for NX-API CLI.
- Cisco NX-OS Release 9.2(1) supports the following commands for NX-API:
  - show bfd addrmap [application <appid> discriminator <discr> address-type <addrtype> address <addr>]\
- The NX-API feature is enabled by default on HTTPS port 443 and HTTP port 80 is disabled.

For more information, see the Cisco Nexus 9000 Series NX-API CLI Reference.

OpenConfig YANG Feature

- OpenConfig YANG—Support added for the OpenConfig YANG data modeling language. See the *Cisco Nexus OpenConfig YANG Reference* for examples of configuring and retrieving state data.

Programmability Features

- Ansible 2.5—Support is added for Ansible 2.5.
- Docker Containers—Support added for using Docker within the Cisco NX-OS on a switch.
- gRPC—Support added for gRPC chunking as a part of telemetry.

- Guest Shell–Guest Shell is running in a separate namespace, which allows the host system to be even better protected from activities within the Guest Shell. The user and the group ID mapping done for the user namespace may require more attention to the file permission settings while sharing files (on bootflash) between the host system and the guest shell.
- Hardware Telemetry–Support added for hardware telemetry where the Streaming Statistics Export (SSX) module reads statistics from the ASIC.
- Puppet–Support added for EVPN Multi-Site types and Tenant Routed Multicast types.
- Streaming Telemetry–Support added for streaming telemetry to IPv6 destinations.
- Streaming of YANG–Support added for the streaming of YANG models as part of telemetry. Both device YANG and the open-config YANG model are supported.

For more information, see the Cisco Nexus 9000 Series NX-OS Programmability Guide, Release 9.2(x).

Security Features

- 802.1x–Support added to multiple authentication, dynamic VLAN, and MAB authentication.
- MACsec–Support added for the Cisco Nexus 93180YC-FX and 93108TC-FX switches.
- SSH–Added support for ECDSA, added the show rekey command and the ability to change the default SSHv2 port.
- Unicast RPF– Support added for Cisco Nexus 9300-EX platform switches (for IPv4 only) and on Cisco Nexus 9300-FX/FX2 platform switches (for IPv4 and IPv6).

For more information, see the Cisco Nexus 9000 Series Security Configuration Guide, Release 9.2(x).

Smart Channel Features

- Smart Channel–Support added for the Cisco Nexus 93018TC-EX switch.

For more information, see the Cisco Nexus 9000 Series NX-OS Smart Channel Configuration Guide, Release 9.2(x).

Software Upgrade/Downgrade Features

- Optionality: Added support for modular package management. Cisco NX-OS software now provides the flexibility to add, remove, and upgrade features selectively without changing the base Cisco NX-OS software.
- vPC topology: Added the upgrade and downgrade procedure for switches in a vPC topology.

For more information, see the Cisco Nexus 9000 Series NX-OS Upgrade and Downgrade Guide, Release 9.2(x)

System Management Features

- IEEE DCBXP TLV–Support added for IEEE 802.1Qaz mode type-length-values (TLVs) on Cisco Nexus 9000 Series switches.
- LLDP–Introduced the show qos dcbxp interface command.
- MIBs–SNMP MIB support has been added for the following:
  - cseTcamUsageTable in CISCO-SWITCH-ENGINE-MIB
  - cefcFanTable in CISCO-ENTITY-FRU-CONTROL-MIB
  - cmnMacMoveNotification in CISCO-MAC-NOTIFICATION-MIB

- SNMP—Enhanced CISCO-ENTITY-EXT-MIB to support ceExtNVRAMSizeOverflow, ceExtHCNVRAMSize, ceExtNVRAMUsedOverflow, and ceExtHCNVRAMUsed.
- System Message Logging—Added support to send syslog messages to remote logging servers over a secure TLS transport connection.

For more information, see the *Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 9.2(x).*

Unicast Routing Features

- Weighted ECMP—Added support for Cisco Nexus 9332PQ, 9396PX, and 9396TX switches.

For more information, see the Cisco Nexus 9000 Series NX-OS Unicast Routing Configuration Guide, Release 9.2(x).

VXLAN Features

- PIM BiDir—Support added for VXLAN underlay with and without vPC support.
- Private VLANs with VXLAN— Support added for configuring a vn-segment to a PVLAN.
- Proportional Multipath for VNF—Enables advertising of all the available next hops to a given network destination.
- Sampled Flow Export—Support added for Sampled Flow (sFlow) export over VXLAN.
- TRM with vPC—Supports multicast forwarding between sender/receiver in L3-cloud and send/receive in a VXLAN fabric.
- VXLAN CLI Simplification—Support added for the reduction of CLI commands.
- VXLAN Cross Connect—Support for point-to-point tunneling of data and control packets from one VTEP to another.
- VXLAN Multi-Site with vPC—Support added for border gateways to allow local connectivity of endpoints and the enablement of bridging and routing functions for those endpoints on the border gateways.
- VXLAN EVPN with vPC—Support added for the Cisco Nexus 9508 with 9636C-RX and 96136YC-R line cards.

For more information, see the *Cisco Nexus 9000 Series NX-OS VXLAN Configuration Guide, Release 9.2(x)*

Caveats

This section includes the following topics:

- Resolved Caveats—Cisco NX-OS Release 9.2(1)
- Open Caveats—Cisco NX-OS Release 9.2(1)
- Known Behaviors—Cisco NX-OS Release 9.2(1)

Resolved Caveats–Cisco NX-OS Release 9.2(1)

The following table lists the Resolved Caveats in Cisco NX-OS Release 9.2(1). 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 9.2(1)

Bug ID	Description
CSCvf92051	MVR knob to disable forwarding of IGMP queries
CSCvg15512	Evaluate Red Hat Linux CVE-2017-1000253 Vulnerability
CSCvg21203	1G copper GLC-TE XCVR LED state is GREEN when link is not connected
CSCvg43189	Packet tracer does not work on N9K
CSCvg65387	N9000 SG-hash next-hop-based LB configuration missing after reload
CSCvh32392	Evaluation of n9k-standalone-sw for CPU Side-Channel Information Disclos
CSCvh62721	Logs for breakout interfaces seen on a non-breakout port with no breakout configs
CSCvh65245	100 GbE interface doesn't stop debounce timer after insert cable
CSCvh68385	Show hardware internal errors improvements - show tech support
CSCvh87784	Kernel loadable module for additional info on panic and Mammoth Signal Integrity PEX settings
CSCvh90381	N9k -EX all interface counters stop incrementing
CSCvi04426	Kernel panic triggered reload due to fast software PSU back-to-back access
CSCvi11173	PSU: Total Power Available for additional modules displays Negative value
CSCvi24118	DP:"sh inventory" and "sh env f d" NXA-FAN160CFM-F should be NXA-FAN160CFM-PE
CSCvi33006	N95R: 7.0(3)F3.x is join/leave dealy is slower than 7.0(3)F2.x
CSCvi49426	(s,g) not timing out at decap even after data traffic stops.
CSCvi49600	On SC reload the P40 reloads
CSCvi52911	icam stats : iCam stats only obtained in the ingress direction
CSCvi54421	Packet drops on N9K when LACP peer delayed LACP PDU with C bit 1
CSCvi74138	With logging level nbm changed to 7, when creating a new SVI, the device is stuck in infinite reboot
CSCvi80799	"no feature nv overlay" doesn't clean up all state in FM-E's
CSCvj03194	Tunneling BFD packets on VXLAN is NOT working for T2 platforms
CSCvj07743	Telnet stuck when Vlan SVI configured as nat inside and physical interface as nat outside
CSCvj14692	Redirected IP packet not forwarded to destination
CSCvj16981	XLATE entry missing with > 1 FEX with same commmunity VLAN host
CSCvj17717	Nexus 9K interface with MACsec enabled stuck in Auth Pending when connected to the vendor device
CSCvj17763	N9K to continue session w/ primary key on primary keychain when a peer is cfg'd with mis-matched key
CSCvj18403	ssh session not rejected with port 22, on default vrf when the server is with non default ssh port
CSCvj23487	Account for cable type to choose FEC mode for 25G ports
CSCvj26076	Elaborate and comprehensive status for each key configured under a keychain (primary and fallback)
CSCvj28815	n9k LDAP fails to associate correct role when using search-map userprofile attribute "mem-berOf"
CSCvj33668	lcnd_tah_inband_decap:3072:Recv invalid src_mod:0,pi:0,svp:0,vp_based_lkup:0 - kernel
CSCvj39292	orib process still exists after disable relevant feature
CSCvj43550	Dummy PIM neighbor 0.0.0.0 created after creating (S,G) entry when nbm is enabled
CSCvj44902	nginx_f process core using NXAPI to remove large EVPN configuration
CSCvj45450	After ISSU unable to communicate with single vlan
CSCvj54806	OBFL no partitions mounted on eMMC device

Bug ID	Description
CSCvj61179	RACL CC doesn't catch label misprogramming on bdstatetable on Cisco ASIC based switches
CSCvj62004	packets lost at the moment of fex online
CSCvj66408	SNMP trap not send on power supply failed/recovered on FEX
CSCvj77420	Generate syslog for repeated 2B Parity Error in MMU table
CSCvj81868	same_if_uc Drop for ERSPAN Pk When Egress-Intf Is L2 and Same As Original Packet In-gress
CSCvj87211	N9K-C93108TC-FX: Link flap or down must occur only on eth1/54 using QSFP-100G-AOC1M
CSCvj87438	[N9K] Match Statements within route-map do not function as AND for table-map
CSCvj94247	Nexus 9K fatal module reload.
CSCvj94409	When POAP is done, Maintenance mode profile config lost if switch reload
CSCvj98984	Unable to make changes via config sync after upgrade
CSCvk06881	interface stuck inactive after SFP plugge in

Open Caveats–Cisco NX-OS Release 9.2(1)

The following table lists the open caveats in the Cisco NX-OS Release 9.2(1). 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 9.2(1)

Bug ID	Description
CSCuy08187	If EPLD is not latest, terminate non-disruptive ISSU
CSCuz98451	OTM URIB Assert Error on Boot
CSCvb57299	Hardcoding the Cisco Nexus 9500 Series line card module speed to 100 causes the duplex full port to go down.
CSCvb82259	Cisco Nexus 3000 Series switches take more than 10 secs to populate the S,G entry.
CSCvd06973	PVLAN: Secondary VLAN traffic will not hit ACL on primary VLAN's SVI.
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))
CSCvg06224	VRRP3 fails when enabled as part of CR
CSCvg65669	After reload license is not checked out despite having "port-license acquire" cli under port.
CSCvg71109	configure replace fails if macsec policy is associated with an interface
CSCvg72851	On upgrading w/ ascii replay, no bfd echo command missing from few SVI
CSCvh15975	After uninstalling feature-set mpls, the configuration replace feature fails.
CSCvi52063	[NBM] CR fails for host-policy cli
CSCvj52053	NGMVPN and MRIB entries not cleaned up if Data/IGMP Traffic stopped after triggers
CSCvj63603	OC ACL: delete ipv4 ace with hop-limit configs fails
CSCvj81662	After range of vlan delete/add, NGOAM session for couple of vlans down-BGP IMET route missing

CSCvk04599	After vlan delete, see NGOAM state not cleaned up for few deleted vlans
CSCvk06735	Delete the *, G policy, OIF is not removed immediately (removed afer 3 IGMP joins).
CSCvk07938	NGOAM-dot1qtunnelport down - Error-disabled without any reason
CSCvk09517	Anycast prefix with label advertised diff areas is not seen as labelled prefix
CSCvk18949	cevQSFPUnknown for QSFP-40/100-SRBD in entPhysicalVendorType in entPhysicalTable ENTITY-MIB
CSCvk40699	L2 VNI in delete pending state after L2 vni unconfig and reconfig
CSCvm96774	Link down/failure logged in syslog but interface is up from show port-channel on N92160
CSCvn68232	Syncing images to standby failed during disruptive upgrade

Known Behaviors–Cisco NX-OS Release 9.2(1)

The following known behaviors are in this release:

Table 4 Known Behaviors in Cisco NX-OS Release 9.2(1)

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.

Behavior Changes for Cisco Nexus 9504 and 9508 Switches with -R Line Cards

Interface Behavior Changes

- The output format for the exec command CLI show vpc orphan-ports has changed from the 7.0(3)F3(4) release to the 9.2(1) release.

Programmability Behavior Changes

- Release 9.2(1) brings in a new kernel and new processes.
- Interface counter statistics are grouped together in the XML/JSON output. The output for the show interface-counters command in JSON format has changed/
- NX-API does not support insecure HTTP by default.
- NX-API does not support weak TLSv1 protocol by default.

Security Behavior Changes

- Stronger ciphers are used in this release.

- A new command, no service password-recovery is supported.
- Only one version out of v4 and v6 versions of the uRPF command can be configured on an interface. If one version is configured, all the mode changes must be done by the same version. The other version is blocked on that interface. Cisco Nexus 9300-EX, 9300-FX, and 9300-FX2 platform switches do not have this limitation and you can configure v4 and v6 version of urpf cmd individually.

General Known Behaviors

- 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.

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Upgrade Instructions

To perform a software upgrade, follow the installation instructions in the *Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide, Release 9.2(x)*.

Note:

You can perform a standard In-Service Software Upgrade (ISSU) from the following release to Cisco NX-OS Release 9.2(1):

- 7.0(3)I7(4)

Note: Enhanced ISSU to Cisco NX-OS Release 9.2(1) is not supported as there are kernel fixes that cannot take effect without reloading the underlying kernel.

- When upgrading from Cisco NX-OS Releases 7.0(3)I4(8), 7.0(3)I5(3), and 7.0(3)I6(1) to Cisco NX-OS Release 9.2(1) results in a disruptive upgrade. If syncing images to standby SUP failed during the disruptive upgrade from Cisco NX-OS Releases 7.0(3)I4(8), 7.0(3)I5(3,) or 7.0(3)I6(1) to 9.2(1), you should manually copy the image to the standby SUP and perform the disruptive upgrade.
- When upgrading to Cisco NX-OS Release to 9.2(1) from any release prior to 7.0(3)I2(3) an intermediate upgrade to 7.0(3)I4(x), 7.0(3)I5(x), 7.0(3)I6(x), or 7.0(3)I7(x) is required. We recommend using Cisco NX-OS Release 7.0(3)I4(8) or 7.0(3)I7(4) as the interim release to aid in a smooth migration. For further details, please refer to CSCvk66763.
- When upgrading from Cisco NX-OS Release 7.0(3)I6(1) or 7.0(3)I7(1) to Cisco NX-OS Release 9.2(1), if the Cisco Nexus 9000 Series switches are running vPC and they are connected to an IOS-based switch via Layer 2 vPC, there is a likelihood that the Layer 2 port channel on the IOS side will become error disabled. The workaround is to disable the spanning-tree etherchannel guard misconfig command on the IOS switch before starting the upgrade process. Once both the Cisco Nexus 9000 Series switches are upgraded, you can re-enable the command. For more information, see defect CSCvg05807.

- If you are upgrading from Cisco NX-OS Release 7.0(3)I5(2) to Cisco NX-OS Release 9.2(1) using the install all command, BIOS will not be upgraded due to CSCve24965. When the upgrade to Cisco NX-OS Release 9.2(1) is complete, use the install all command again to complete the BIOS upgrade, if applicable.
- An upgrade performed via the install all command for Cisco NX-OS Release 7.0(3)I2(2b) to Release 9.2(1) might result in the VLANs being unable to be added to the existing FEX HIF trunk ports. To recover from this, the following steps should be performed after all FEXs have come online and the HIFs are operationally up:
  1. Enter the copy run bootflash:fex_config_restore.cfg command at the prompt.
  2. Enter the copy bootflash:fex_config_restore.cfg running-config echo-commands command at the prompt.
- In Cisco NX-OS Release 7.0(3)I6(1) and earlier, performing an ASCII replay or running the copy file run command on a FEX HIF configuration requires manually reapplying the FEX configuration after the FEX comes back up.
- When upgrading to Cisco NX-OS Release 9.2(1) from 7.0(3)I2(x) or before and running EVPN VXLAN configuration, an intermediate upgrade to 7.0(3)I4(x) or 7.0(3)I5(x) or 7.0(3)I6(x) is required. For further details, please refer to CSCvh02777.
- Before enabling the FHS on the interface, we recommend that you carve the ifacl TCAM region on Cisco Nexus 9300 and 9500 platform switches. If you carved the ifacl TCAM region in a previous release, you must reload the system after upgrading to Cisco NX-OS Release 9.2(1). Uploading the system will create the required match qualifiers for the FHS TCAM region, ifacl.
- Before enabling the FHS, we recommend that you carve the ing-redirect TCAM region on Cisco Nexus 9200 and 9300-EX platform switches. If you carved the ing-redirect TCAM region in a previous release, you must reload the system after upgrading to Cisco NX-OS Release 9.2(1). Uploading the system will create the required match qualifiers for the FHS TCAM region, ing-redirect.
- An error occurs when you try to perform an ISSU if you changed the reserved VLAN without entering the copy running-config save-config and reload commands.
- During an ISSU, there is a drop for all traffic to and from 100 Mb ports 65-66 on the Cisco Nexus 92304QC switch.
- The install all command is the recommended method for software upgrades and downgrades because it performs configuration compatibility checks and BIOS upgrades automatically. In contrast, changing the boot variables and reloading the device bypasses these checks and the BIOS upgrade and therefore it is not recommended.
- Upgrading from Cisco NX-OS Release 7.0(3)I1(2), Release 7.0(3)I1(3), or Release 7.0(3)I1(3a) requires installing a patch for Cisco Nexus 9500 platform switches only. For more information on the upgrade patch, see Patch Upgrade Instructions.
- When upgrading to Cisco NX-OS Release 9.2(1), Guest Shell automatically upgrades from 1.0 to 2.0. In the process, the contents of the guest shell 1.0 root filesystem are lost. To keep from losing important content, copy any needed files to /bootflash or an off-box location before upgrading to Cisco NX-OS Release 9.2(1).
- An ISSU can be performed only from a Cisco NX-OS Release 7.0(3)I4(1) to a later image.
- While performing an ISSU, VRRP and VRRPv3 displays the following messages:
  - If VRRPv3 is enabled:

```
2015 Dec 29 20:41:44 MDP-N9K-6 %$ VDC-1 %$ %USER-0-SYSTEM_MSG: ISSU ERROR: Service
"vrrpv3" has sent the following message: Feature vrrpv3 is configured. User can change
vrrpv3 timers to 120 seconds or fine tune these timers based on upgrade time on all Vrrp
Peers to avoid Vrrp State transitions. – sysmgr
```

- If VRRP is enabled:

```
2015 Dec 29 20:45:10 MDP-N9K-6 %$ VDC-1 %$ %USER-0-SYSTEM_MSG: ISSU ERROR: Service "vrrp-
eng" has sent the following message: Feature vrrp is configured. User can change vrrp
timers to 120 seconds or fine tune these timers based on upgrade time on all Vrrp Peers to
avoid Vrrp State transitions. – sysmgr
```

- Guest Shell is disabled during an ISSU and reactivated after the upgrade. Any application running in the Guest Shell will be affected.
- If you have ITD probes configured, you need to disable the ITD service (using the shutdown command) before upgrading to Cisco NX-OS Release 9.2(1). After the upgrade, enter the feature sla sender command to enable IP SLA for ITD probes and then the no shutdown command to re-enable the ITD service. (If you upgrade without shutting down the service, you can enter the feature sla sender command after the upgrade.)

For additional information, see the Cisco NX-OS ISSU Support application.

Upgrade Paths to Release 9.2(1) from 7.0(3)F3(x) Releases

The following are the upgrade paths from previous 7.0(3)F3(x) releases:

- Release 7.0(3)F3(3) -> Release 7.0(3)F3(4) -> Release 9.2(1)
- Release 7.0(3)F3(3c) -> Release 9.2(1)
- Release 7.0(3)F3(4) -> Release 9.2(1)

Patch Upgrade Instructions

- Upgrading from Cisco NX-OS Release 7.0(3)I1(2), 7.0(3)I1(3), or 7.0(3)I1(3a) requires installing a patch and then upgrading using the install all command. Failing to follow this requirement requires console access to recover.
- Upgrading from Cisco NX-OS Release 7.0(3)1(2), 7.0(3)I1(3), or 7.0(3)I1(3a) to 9.2(1) requires a patch for modular switches. A patch is available for each respective release. Please see the respective links below.
- When upgrading from Cisco NX-OS Release 7.0(3)I1(1) or earlier, including all variants of 6.1(2) based releases, a patch is not required. You can upgrade directly using the install all command.

Note: The patch is only for upgrading. After the upgrade, the patch is automatically removed. If you decide not to upgrade after installing the patch, do not deactivate it. Deactivating the patch may cause a bios_daemon crash.

Cisco NX-OS Release 7.0(3)I1(2) Upgrade Patch

https://software.cisco.com/download/special/release.html?config=ea82d4567eeb829ad4f32ae29c627cfc

Cisco NX-OS Release 7.0(3)I1(3) Upgrade Patch

https://software.cisco.com/download/special/release.html?config=e3e68dd1e8db9633978e080b9b715df8

Cisco NX-OS Release 7.0(3)I1(3a) Upgrade Patch

https://software.cisco.com/download/special/release.html?config=0f2015eebc7ea0d606441171b4a3baf2

To upgrade with the patch:

1. Add the patch.
2. Install the patch.
3. Commit the patch.
4. Upgrade using the install all command.

The following table is an example of a patch upgrade:

```
switch(config)# install add bootflash:n9000-dk9.7.0.3.I1.2.CSCuy16604.bin
Install operation 16 completed successfully at Thu Mar  3 04:24:13 2016
switch(config)# install add bootflash:n9000-dk9.7.0.3.I1.2.CSCuy16606.bin
Install operation 17 completed successfully at Thu Mar  3 04:24:43 2016

switch(config)# install activate n9000-dk9.7.0.3.I1.2.CSCuy16604.bin
Install operation 18 completed successfully at Thu Mar  3 04:28:38 2016
switch (config)# install activate n9000-dk9.7.0.3.I1.2.CSCuy16606.bin
Install operation 19 completed successfully at Thu Mar  3 04:29:08 2016

switch(config)# install commit n9000-dk9.7.0.3.I1.2.CSCuy16604.bin
Install operation 20 completed successfully at Thu Mar  3 04:30:38 2016
switch (config)# install commit n9000-dk9.7.0.3.I1.2.CSCuy16606.bin
Install operation 21 completed successfully at Thu Mar  3 04:31:16 2016

switch (config)# install all nxos bootflash:Nxos.9.2.1.bin
Installer will perform compatibility check first. Please wait.
uri is: /Nxos.9.2.1.bin
Installer is forced disruptive

Verifying image bootflash:/Nxos.9.2.1.bin for boot variable "nxos".
[####################] 100% -- SUCCESS

Verifying image type.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "bios" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS
```

```
Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "nxos" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.9.2.1.bin.
[####################] 100% -- SUCCESS

Performing module support checks.
[####################] 100% -- SUCCESS

Notifying services about system upgrade.
[####################] 100% -- SUCCESS
```

Compatibility check is done:

Module	bootable	Impact	Install-type	Reason
1	yes	disruptive	reset	Incompatible image
6	yes	disruptive	reset	Incompatible image
8	yes	disruptive	reset	Incompatible image
9	yes	disruptive	reset	Incompatible image
10	yes	disruptive	reset	Incompatible image
11	yes	disruptive	reset	Incompatible image
14	yes	disruptive	reset	Incompatible image
15	yes	disruptive	reset	Incompatible image
16	yes	disruptive	reset	Incompatible image
21	yes	disruptive	reset	Incompatible image
22	yes	disruptive	reset	Incompatible image
23	yes	disruptive	reset	Incompatible image
24	yes	disruptive	reset	Incompatible image
25	yes	disruptive	reset	Incompatible image
26	yes	disruptive	reset	Incompatible image
27	yes	disruptive	reset	Incompatible image
28	yes	disruptive	reset	Incompatible image
29	yes	disruptive	reset	Incompatible image
30	yes	disruptive	reset	Incompatible image

Images will be upgraded according to following table:

Module	Image	Running-Version(pri:alt)	New-Version	Upg-Required
1	lcn9k	7.0(3)I1(2)	9.2(1)	yes
1	bios	v01.42(00:v01.42(00	v01.48(00	yes
6	lcn9k	7.0(3)I1(2)	9.2(1)	yes
6	bios	v01.48(00:v01.48(00	v01.48(00	no
8	lcn9k	7.0(3)I1(2)	9.2(1)	yes
8	bios	v01.48(00:v01.29(00	v01.48(00	no
9	lcn9k	7.0(3)I1(2)	9.2(1)	yes
9	bios	v01.48(00:v01.35(00	v01.48(00	no
10	lcn9k	7.0(3)I1(2)	9.2(1)	yes
10	bios	v01.48(00:v01.42(00	v01.48(00	no
11	lcn9k	7.0(3)I1(2)	9.2(1)	yes
11	bios	v01.48(00:v01.52(00	v01.48(00	no
14	lcn9k	7.0(3)I1(2)	9.2(1)	yes
14	bios	v01.48(00:v01.48(00	v01.48(00	no
15	lcn9k	7.0(3)I1(2)	9.2(1)	yes
15	bios	v01.48(00:v01.40(00	v01.48(00	no
16	lcn9k	7.0(3)I1(2)	9.2(1)	yes
16	bios	v01.48(00:v01.42(00	v01.48(00	no
21	lcn9k	7.0(3)I1(2)	9.2(1)	yes
21	bios	v01.48(00:v01.42(00	v01.48(00	no
22	lcn9k	7.0(3)I1(2)	9.2(1)	yes
22	bios	v01.48(00:v01.40(00	v01.48(00	no
23	lcn9k	7.0(3)I1(2)	9.2(1)	yes
23	bios	v01.48(00:v01.40(00	v01.48(00	no
24	lcn9k	7.0(3)I1(2)	9.2(1)	yes

```
  24      bios              v01.48(00:v01.40(00          v01.48(00          no
  25      lcn9k                   7.0(3)I1(2)          9.2(1)          yes
  25      bios              v01.48(00:v01.40(00          v01.48(00          no
  26      lcn9k                   7.0(3)I1(2)          9.2(1)          yes
  26      bios              v01.48(00:v01.40(00          v01.48(00          no
  27      nxos                    7.0(3)I1(2)          9.2(1)          yes
  27      bios    v08.06(09/10/2014):v08.18(08/11/2015)    v08.26(01/12/2016)        yes
  28      nxos                    7.0(3)I1(2)          9.2(1)          yes
  28      bios    v08.06(09/10/2014):v08.26(01/12/2016)    v08.26(01/12/2016)        yes
  29      lcn9k                   7.0(3)I1(2)          9.2(1)          yes
  29      bios              v01.48(00:v01.35(00          v01.48(00          no
  30      lcn9k                   7.0(3)I1(2)          9.2(1)          yes
  30      bios              v01.48(00:v01.35(00          v01.48(00          no

Switch will be reloaded for disruptive upgrade.
Do you want to continue with the installation (y/n)?  [n] y

Install is in progress, please wait.

Performing runtime checks.
[####################] 100% -- SUCCESS

Syncing image bootflash:/Nxos.9.2.1.bin to standby.
[####################] 100% -- SUCCESS

Setting boot variables.
[####################] 100% -- SUCCESS

Performing configuration copy.
[####################] 100% -- SUCCESS

Module 1: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 6: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 8: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 9: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 10: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS
```

```
Module 11: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 14: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 15: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 16: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 21: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 22: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 23: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 24: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 25: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 26: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 27: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 28: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Module 29: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS
```

```
Module 30: Refreshing compact flash and upgrading bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[####################] 100% -- SUCCESS

Finishing the upgrade, switch will reboot in 10 seconds.
switch(config)#
User Access Verification
switch login: [ 2644.917727] [1456980048]  writing reset reason 88,

CISCO SWITCH Ver 8.26

CISCO SWITCH Ver 8.26
Memory Size (Bytes): 0x0000000080000000 + 0x0000000380000000
 Relocated to memory
Time: 6/3/2016  4:41:8
Detected CISCO IOFPGA
Booting from Primary Bios
Code Signing Results: 0x0
Using Upgrade FPGA
FPGA Revision        : 0x27
FPGA ID              : 0x1168153
FPGA Date            : 0x20160111
Reset Cause Register: 0x22
Boot Ctrl Register  : 0x60ff
EventLog  Register1 : 0x2000000
EventLog  Register2 : 0xfbe77fff
Version 2.16.1240. Copyright (C) 2013 American Megatrends, Inc.
Board type  1
IOFPGA @ 0xe8000000
SLOT_ID @ 0x1b
Standalone chassis
check_bootmode: grub: Continue grub
Trying to read config file /boot/grub/menu.lst.local from (hd0,4)
 Filesystem type is ext2fs, partition type 0x83

Booting bootflash:/Nxos.9.2.1.bin ...
Booting bootflash:/Nxos.9.2.1.bin
Trying diskboot
 Filesystem type is ext2fs, partition type 0x83
IOFPGA ID: 1168153
Image valid


Image Signature verification was Successful.

Boot Time: 3/3/2016  4:41:44
INIT: version 2.88 booting
Unsquashing rootfs ...

Loading IGB driver ...
Installing SSE module ... done
```

```
Creating the sse device node ... done
Loading I2C driver ...
Installing CCTRL driver for card_type 3 ...
CCTRL driver for card_index 21000 ...
old data: 4000004 new data: 1
Not Micron SSD...

Checking all filesystems.....
Installing default sprom values ...
 done.Configuring network ...
Installing LC netdev ...
Installing psdev ...
Installing veobc ...
Installing OBFL driver ...
mounting plog for N9k!
tune2fs 1.42.1 (17-Feb-2012)
Setting reserved blocks percentage to 0% (0 blocks)
Starting portmap daemon...
creating NFS state directory: done
starting 8 nfsd kernel threads: done
starting mountd: done
starting statd: done
Saving image for img-sync ...
Loading system software
Installing local RPMS
Patch Repository Setup completed successfully
dealing with default shell..
file /proc/cmdline found, look for shell
unset shelltype, nothing to do..
user add file found..edit it
Uncompressing system image: Thu Jun 3 04:42:11 UTC 2016
blogger: nothing to do.

..done Thu Mar 3 04:42:11 UTC 2016
Creating /dev/mcelog
Starting mcelog daemon
Overwriting dme stub lib
Replaced dme stub lib
INIT: Entering runlevel: 3
Running S93thirdparty-script...

2016 Mar  3 04:42:37 switch%$ VDC-1 %$  %USER-2-SYSTEM_MSG: <<%USBHSD-2-MOUNT>> logflash: online  -
usbhsd
2016 Mar  3 04:42:37 switch%$ VDC-1 %$ Mar  3 04:42:37 %KERN-2-SYSTEM_MSG: [   12.509615] hwport mode=6 -
kernel
2016 Mar  3 04:42:40 switch%$ VDC-1 %$ %VMAN-2-INSTALL_STATE: Installing virtual service 'guestshell+'
2016 Mar  3 04:42:40 switch%$ VDC-1 %$  %DAEMON-2-SYSTEM_MSG: <<%ASCII-CFG-2-CONF_CONTROL>>
Binary restore - ascii-cfg[13904]
2016 Mar  3 04:42:40 switch%$ VDC-1 %$  %DAEMON-2-SYSTEM_MSG: <<%ASCII-CFG-2-CONF_CONTROL>>
Restore DME database - ascii-cfg[13904]
2016 Mar  3 04:42:42 switch%$ VDC-1 %$ netstack: Registration with cli server complete
2016 Mar  3 04:43:00 switch%$ VDC-1 %$ %USER-2-SYSTEM_MSG: ssnmgr_app_init called on ssnmgr up - aclmgr
```

```
2016 Mar  3 04:43:09 switch%$ VDC-1 %$ %USER-0-SYSTEM_MSG: end of default policer - copp
2016 Mar  3 04:43:10 switch%$ VDC-1 %$ %VMAN-2-INSTALL_STATE: Install success virtual service 'guestshell+';
Activating
2016 Mar  3 04:43:10 switch%$ VDC-1 %$ %VMAN-2-ACTIVATION_STATE: Activating virtual service 'guestshell+'
2016 Mar  3 04:43:13 switch%$ VDC-1 %$ %CARDCLIENT-2-FPGA_BOOT_PRIMARY: IOFPGA booted from Primary
2016 Mar  3 04:43:18 switch%$ VDC-1 %$ %USER-2-SYSTEM_MSG: IPV6 Netlink thread init successful  - icmpv6
2016 Mar  3 04:43:19 switch%$ VDC-1 %$ %VDC_MGR-2-VDC_ONLINE: vdc 1 has come online


User Access Verification
switchlogin: 2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of
Module 1
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 6
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 8
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 9
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 10
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 11
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 14
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 15
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 16
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 21
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 22
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 23
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 24
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 25
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 26
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 28
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 29
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 30
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 1 ok (Serial number DTM173903QQ)
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 1 ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 2 ok (Serial number DTM174000SB)
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 2 ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 3 ok (Serial number DTM174000RR)
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 3 ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 4 ok (Serial number DTM173903SH)
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 4 ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 5 ok (Serial number DTM173903SR)
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 5 ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-FANMOD_FAN_OK: Fan module 1 (Fan1(sys_fan1) fan) ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-FANMOD_FAN_OK: Fan module 2 (Fan2(sys_fan2) fan) ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-FANMOD_FAN_OK: Fan module 3 (Fan3(sys_fan3) fan) ok
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 30 detected (Serial number
SAL1803KQ78) Module-Type System Controller Model N9K-SC-A
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 30 powered up (Serial number
SAL1803KQ78)
2016 Mar  3 04:43:52 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 28 detected (Serial number
:unavailable) Module-Type Supervisor Module Model :unavailable
2016 Mar  3 04:43:58 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 29 detected (Serial number
SAL1803KQAS) Module-Type System Controller Model N9K-SC-A
2016 Mar  3 04:43:58 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 29 powered up (Serial number
```

```
SAL1803KQAS)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 21 detected (Serial number
SAL1813NZMB) Module-Type Fabric Module Model N9K-C9516-FM
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 22 detected (Serial number
SAL1811NE36) Module-Type Fabric Module Model N9K-C9516-FM
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 21 powered up (Serial number
SAL1813NZMB)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 22 powered up (Serial number
SAL1811NE36)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 23 detected (Serial number
SAL1813P9VN) Module-Type Fabric Module Model N9K-C9516-FM
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 23 powered up (Serial number
SAL1813P9VN)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 24 detected (Serial number
SAL1811NE3U) Module-Type Fabric Module Model N9K-C9516-FM
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 24 powered up (Serial number
SAL1811NE3U)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 25 detected (Serial number
SAL1813NZNB) Module-Type Fabric Module Model N9K-C9516-FM
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 25 powered up (Serial number
SAL1813NZNB)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 26 detected (Serial number
SAL1811NE46) Module-Type Fabric Module Model N9K-C9516-FM
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 26 powered up (Serial number
SAL1811NE46)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 1. Ejector based shutdown enabled
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 1 detected (Serial number
SAL1817REUZ) Module-Type 32p 40G Ethernet Module Model N9K-X9432PQ
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 1 powered up (Serial number
SAL1817REUZ)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 9. Ejector based shutdown enabled
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 9 detected (Serial number
SAL1746G7Y3) Module-Type 48x1/10G-T 4x40G Ethernet Module Model N9K-X9564TX
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 9 powered up (Serial number
SAL1746G7Y3)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 10. Ejector based shutdown enabled
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 10 detected (Serial number
SAL1817REVT) Module-Type 32p 40G Ethernet Module Model N9K-X9432PQ
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 10 powered up (Serial number
SAL1817REVT)
2016 Mar  3 04:44:01 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 11. Ejector based shutdown enabled
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 11 detected (Serial number
SAL1820SKZ1) Module-Type 36p 40G Ethernet Module Model N9K-X9536PQ
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 11 powered up (Serial number
SAL1820SKZ1)
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 15. Ejector based shutdown enabled
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 15 detected (Serial number
```

```
SAL1812NTFC) Module-Type 36p 40G Ethernet Module Model N9K-X9536PQ
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 15 powered up (Serial number
SAL1812NTFC)
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 16. Ejector based shutdown enabled
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 16 detected (Serial number
SAL1816QGWW) Module-Type 48x1/10G SFP+ 4x40G Ethernet Module Model N9K-X9464PX
2016 Mar  3 04:44:02 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 16 powered up (Serial number
SAL1816QGWW)
2016 Mar  3 04:44:08 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 14. Ejector based shutdown enabled
2016 Mar  3 04:44:08 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 14 detected (Serial number
SAL1910AP3B) Module-Type 8p 100G Ethernet Module Model N9K-X9408PC-CFP2
2016 Mar  3 04:44:08 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 14 powered up (Serial number
SAL1910AP3B)
2016 Mar  3 04:44:09 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 6. Ejector based shutdown enabled
2016 Mar  3 04:44:09 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 6 detected (Serial number
SAL1910AP4E) Module-Type 8p 100G Ethernet Module Model N9K-X9408PC-CFP2
2016 Mar  3 04:44:09 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 6 powered up (Serial number
SAL1910AP4E)
2016 Mar  3 04:44:10 switch%$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed
for module 8. Ejector based shutdown enabled
2016 Mar  3 04:44:10 switch%$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 8 detected (Serial number
SAL1746G7Y8) Module-Type 48x1/10G-T 4x40G Ethernet Module Model N9K-X9564TX
2016 Mar  3 04:44:10 switch%$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 8 powered up (Serial number
SAL1746G7Y8)
2016 Mar  3 04:44:56 switch%$ VDC-1 %$ %USBHSD-STANDBY-2-MOUNT: logflash: online
2016 Mar  3 04:47:31 switch%$ VDC-1 %$ %ASCII-CFG-2-CONF_CONTROL: System ready
2016 Mar  3 04:47:51 switch%$ VDC-1 %$ %VMAN-2-ACTIVATION_STATE: Successfully activated virtual service
'guestshell+'
2016 Mar  3 04:47:51 switch%$ VDC-1 %$ %VMAN-2-GUESTSHELL_ENABLED: The guest shell has been enabled. The
command 'guestshell' may be used to access it, 'guestshell destroy' to remove it.

User Access Verification

switch#  show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
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```

```
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Software
  BIOS: version 08.26
  NXOS: version 9.2(1)
  BIOS compile time:  06/12/2016
  NXOS image file is: bootflash:///Nxos.9.2.1.bin
  NXOS compile time:  2/8/2016 20:00:00 [02/09/2016 05:18:17]


Hardware
  cisco Nexus9000 C9516 (16 Slot) Chassis ("Supervisor Module")
  Intel(R) Xeon(R) CPU E5-2403 0 @ 1.80GHz with 16401664 kB of memory.
  Processor Board ID SAL1745FTPW

  Device name: switch
  bootflash:   20971520 kB
Kernel uptime is 0 day(s), 0 hour(s), 8 minute(s), 13 second(s)

Last reset at 235176 usecs after  Thu Mar  3 04:40:48 2016

  Reason: Reset due to upgrade
  System version: 7.0(3)I1(2)
  Service:

plugin
  Core Plugin, Ethernet Plugin

Active Package(s):
switch#
```

Downgrade Instructions

The only supported method of downgrading a Cisco Nexus 9000 Series switch is to utilize the install all command. Changing the boot variables, saving the configuration, and reloading the switch is not a supported method to downgrade the switch.

Disable the Guest Shell if you need to downgrade from Cisco NX-OS Release 9.2(1) to an earlier release.

- Performing an ISSU downgrade from Cisco NX-OS Release 9.2(1) to Release 7.0(3)I4(1) with an FCoE (Fiber Channel over Ethernet) NPV (N-port Virtualization) configuration causes the port channel to crash with a core file:

  ```
  [################# ] 38%2016 Apr 18 20:52:35 n93-ns1 %$ VDC-1 %$ %SYSMGR-2-
  SERVICE_CRASHED: Service "port-channel" (PID 14976) hasn't caught signal 11 (core will
  be saved)
  ```

- ISSU (non-disruptive) downgrade is not supported.
- Downgrading with PVLANs (Private VLANs) configured is only supported with Cisco NX-OS 6.1(2)I3(4x) releases.
- For a boot-variable change and reload to Cisco NX-OS Release 7.0(3)I1(1x), the PVLAN process is not brought up, and the PVLAN ports are kept down. For a boot-variable change to the Cisco NX-OS Release 6.1(2)I3(3) and earlier, an ASCII replay will be tried, but feature PVLANs and other PVLAN configurations will fail.

Software Maintenance Upgrades

For information about software maintenance upgrades, see the “Performing Software Maintenance Upgrades” section in the *Cisco Nexus 9000 Series NX-OS System Management Configuration Guide, Release 9.2(x)*.

Note: If you perform a software maintenance upgrade (SMU) and later upgrade your device to a new Cisco NX-OS software release, the new image will overwrite both the previous Cisco NX-OS release and the SMU package file.

If you are going to apply the patch for the issue described in CSCvh04723, you must make sure that the ACL is deleted before applying the patch. Otherwise, the issue will be seen again. This issue applies only to the ACL which has the redirect keyword in it.

Limitations

This section lists limitations related to Cisco NX-OS Release 9.2(1).

- When you upgrade a Cisco Nexus 9000 device to Cisco NX-OS Release 9.2(1), 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-C9364C, N9K-C9336C-FX2. 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.
- Support for NetFlow is not available on FM-E based chassis.
- PTP is not supported on the 96136YC-R line card or for line cards on the Cisco Nexus 9504 switch.
- Auto-negotiation is not supported on 25-G Ethernet transceiver modules on Cisco Nexus 9200 and 9300-FX platform switches, and Cisco Nexus 9500 platform switches that use N9K-X9700-EX line cards.
- On the Cisco Nexus 9364C switches, auto-negotiation might not work on ports 49-64 when bringing up 100G links using the QSFP-100G-CR4 cable. The workaround for this issue is that you must hard code the speed on ports 49-64 and disable auto-negotiation.
- Software streaming telemetry does not support the TCP protocol. The `tcp` option is displayed in the Help text, but is not accepted during configuration.
- Autonegotiation (40 G/100 G) and 1 Gb with QSA is not supported on the following ports:
  - Cisco Nexus 9336C-FX2 switch: ports 1-6 and 33-36
  - Cisco Nexus 9364C switch: ports 49-66

- Cisco Nexus 93240YC-FX2 switch: ports 51-54
- Cisco Nexus 9788TC line card: ports 49-52

NOTE: Peer speed must be set when using coper cables on these ports.

- We recommend using multicast heavy template for optimal bandwidth utilization when using multicast traffic flows.
- IPv6 multicast is not supported on Cisco Nexus 9500 platform switches.
- Multicast heavy template is recommended for optimal bandwidth utilization when using multicast traffic flows.
- The following features are not supported on the Cisco Nexus 9364C switch.
  - 100 G port cannot support breakout (HW limitation)
  - FEX
  - ISSU
  - Segment routing
  - 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.
- You must use either the CLI or SNMP to configure a feature on your switch. Do not configure a feature using both interfaces to the switch.
- 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.
- Ingress queuing policy is supported only at the system level (and not at the interface level) for Cisco Nexus 9508 switches with the X9732C-EX line card, and Cisco Nexus 93108TC-EX and 93180YC-EX switches.
- Q-in-VNI has the following limitations:
  - Single tag is supported on Cisco Nexus 9300 platform switches. It can be enabled by unconfiguring the overlay-encapsulation vxlan-with-tag command from interface nve:

```
switch(config)# int nve 1
switch (config-if-nve)# no overlay-encapsulation vxlan-with-tag
switch # sh run int nve 1

!Command: show running-config interface nve1
!Time: Wed Jul 20 23:26:25 2016

version 7.0(3u)I4(2u)

interface nve1
  no shutdown
  source-interface loopback0
  host-reachability protocol bgp
  member vni 900001 associate-vrf
  member vni 2000980
```

```
suppress-arp
mcast-group 225.4.0.1
```

  - Single tag is not supported on Cisco Nexus 9500 platform switches; only double tag is supported.
  - Double tag is not supported on Cisco Nexus 9300-EX platform switches, only single tag is supported.
  - When upgrading from Cisco NX-OS Release 7.0(3)I3(1) or 7.0(3)I4(1) to Cisco NX-OS Release 9.2(1) with Cisco Nexus 9300 platform switches without the overlay-encapsulation vxlan-with-tag command under interface nve, you should add overlay-encapsulation vxlan-with-tag under the nve interface in the older release before starting the ISSU upgrade. We were only supporting double tag in Cisco NX-OS Release 7.0(3)I3(1) and 7.0(3)I4(1). We now support single tag also in Cisco NX-OS Release 9.2(1).
  - We do not support traffic between ports configured for Q-in-VNI and ports configured for trunk on Cisco Nexus 9300-EX platform switches.

- Configuration replace has following limitations:
  - Rollback is not supported in the context of auto configurations. Checkpoints do not store auto configurations. Therefore, after a rollback is performed, the corresponding auto configurations will not be present.
  - The configuration replace feature is not supported on port profiles that are inherited on the switch interfaces.
  - The configuration replace feature is not supported on switches that include FEX modules.
  - The configuration replace feature is not supported for breakout interface configurations.
  - The configuration replace feature is supported only for the configure terminal mode commands. The configure profile, configure maintenance mode, configure jobs, and any other modes are not supported.
  - The configuration replace feature can fail if there is a change in the macsec policy between the running configuration and the user provided configuration, the configuration replace operation can fail. However, you can add or delete the macsec policy.
  - The configuration replace feature is not supported on the hardware profile portmode feature on Cisco Nexus C92160YC-X (N9K-C93180LC-EX) and Cisco Nexus C93180LC-EX (N9K-C93180LC-EX) switches.
  - The configuration replace feature is not supported for the VRRPv3 feature.
- 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.
- Fast reload is supported only on the Cisco Nexus 9232C, and 92304QC switches starting with Cisco NX-OS Release 7.0(3)I6(1).
- CoPP (Control Plane Policing) cannot be disabled. If you attempt to disable it in Cisco NX-OS Release 9.2(1), an error message appears. In previous releases, attempting to disable CoPP causes packets to be rate limited at 50 packets per seconds.
- Skip CoPP policy option has been removed from the Cisco NX-OS initial setup utility because using it can impact the control plane of the network.
- hardware profile front portmode command is not supported on the Cisco Nexus 9000 Series switches.
- PV (Port VLAN) configuration through an interface range is not supported.

- Layer 3 routed traffic for missing Layer 2 adjacency information is not flooded back onto VLAN members of ingress units when the source MAC address of routed traffic is a non-VDC (Virtual Device Context) MAC address. This limitation is for hardware flood traffic and can occur when the SVI (Switched Virtual Interface) has a user-configured MAC address.
- neighbor-down fib-accelerate command is supported in a BGP-only environment.
- Uplink modules should not be removed from a Cisco Nexus 9300 platform switch that is running Cisco NX-OS Release 9.2(1). The ports on uplink modules should be used only for uplinks.
- PortLoopback and BootupPortLoopback tests are not supported.
- PFC (Priority Flow Control) and LLFC (Link-Level Flow Control) are supported for all Cisco Nexus 9300 and 9500 platform switches except for the 100 Gb 9408PC line card and the 100 Gb M4PC generic expansion module (GEM).
- Multiple MACsec peers (different SCI values) for the same interface is 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).
- Eight QoS groups are supported only on modular platforms with the Cisco Nexus 9300 N9K-M4PC-CFP2 uplink module, and the following Cisco Nexus 9500 platform line cards:
  - N9K-X9432PQ
  - N9K-X9464PX
  - N9K-X9464TX
  - N9K-X9636PQ
- Flooding for Microsoft Network Load Balancing (NLB) unicast mode is supported only on Cisco Nexus 9200, 9300-EX, 9300-FX and 9500 platform switches. However, if the NLB servers are connected on FEX HIFs, flooding does not work. NLB is not supported in max-host system routing mode, and NLB multicast mode is not supported.

  Note: To work around the situation of Unicast NLB limitation, Cisco can statically hard code the *address resolution protocol* (*ARP*) and MAC address pointing to the correct interface. Please refer to bug ID CSCuq03168.
- TCAM resources are not shared when:
  - Applying VACL (VLAN ACL) to multiple VLANs
  - Routed ACL (Access Control List) is applied to multiple SVIs in the egress direction
- Cisco Nexus 9000 Series switch hardware does not support range checks (layer 4 operators) in egress TCAM. Because of this, ACL/QoS policies with layer 4 operations-based classification need to be expanded to multiple entries in the egress TCAM. Egress TCAM space planning should take this limitation into account.

- Applying the same QoS policy and ACL on multiple interfaces requires applying the qos-policy with the no-stats option to share the label.
- Multiple port VLAN mappings configured on an interface during a rollback operation causes the rollback feature to fail.
- The following switches support QSFP+ with the QSFP to SFP/SFP+ adapter (40 Gb to 10 Gb):
  - N9K-C93120TX
  - 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
- Weighted ECMP (Equal-Cost Multi-Path) is not supported on the Cisco Nexus 9000 Series switches.
- 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 Private VLANs

This section provides guidelines and limitations for configuring private VLANs.

- Configuring Private VLANs
- Secondary and Primary VLAN Configuration
- Private VLAN Port Configuration
- Limitations with Other Features

Configuring Private VLANs

For more information, see the *Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration Guide*.

Private VLANs have the following configuration guidelines and limitations:

- Private VLANs must be enabled before the device can apply the private VLAN functionality.
- VLAN interface feature must be enabled before the device can apply this functionality.
- VLAN network interfaces for all VLANs that you plan to configure as secondary VLANs should be shut down before being configured.
- When a static MAC is created on a regular VLAN, and then that VLAN is converted to a secondary VLAN, the Cisco NX-OS maintains the MAC that was configured on the secondary VLAN as the static MAC.
- PVLANs support port modes as follows:
    - Community host
    - Isolated host
    - Isolated host trunk
    - Promiscuous
    - Promiscuous trunk
- When configuring PVLAN promiscuous or PVLAN isolated trunks, it is recommended to allow non-private VLANs in the list specified by the switchport private-vlan trunk allowed vlan command.
- PVLANs are mapped or associated depending on the PVLAN trunk mode.
- PVLANs support the following:

  - Layer 2 forwarding
  - PACLs (Port Access Control Lists)
  - Promiscuous trunk
  - PVLAN across switches through a regular trunk port
  - RACLs (Router Access Control Lists)
- PVLANs support SVIs as follows:
  - HSRP (Hot Standby Router Protocol) on the primary SVI
  - Primary and secondary IPs on the SVI
  - SVI allowed only on primary VLANs
- PVLANs support STP as follows:
  - MST (Multiple Spanning Tree)
  - RSTP (Rapid Spanning Tree Protocol)
- PVLANs port mode is not supported on the following:
  - 40-Gb interfaces of the Cisco Nexus ALE ports on Cisco Nexus 9300 platform switches.
  - Cisco Nexus 3164Q
- PVLANs are supported on breakout ports for the Cisco Nexus 9200, 9300-EX, and 9300-FX platform switches.
- PVLANs do not provide support for the following:
  - DHCP (Dynamic Host Channel Protocol) snooping
  - IP multicast or IGMP snooping
  - PVLAN QoS
  - SPAN (Switch Port Analyzer) when the source is a PVLAN VLAN
  - Tunnels
  - VACLs
  - VTP (VLAN Trunk Protocol)
  - VXLANs
- Breakout ports cannot be configured to be part of a private VLAN on Cisco Nexus 9500 platform switches' 40 G ports with the following line cards:
  - N9K-X9636PQ
  - N9K-X9564PX
  - N9K-X9564TX

- N9K-X9536PQ
- N9K-X9432PQ
- N9K-X9464PX
- N9K-X9464TX

- For more details, see the *Cisco Nexus 9000 Series NX-OS Layer 2 Switching Configuration Guide*.
- Configuring multiple isolated VLAN configurations per PVLAN group is allowed by the Cisco NX-OS CLI. However, such a configuration is not supported. A PVLAN group can have at most one isolated VLAN.

Secondary and Primary VLAN Configuration

Follow these guidelines when configuring secondary or primary VLANs in private VLANs:

- Default VLANs (VLAN1), or any of the internally allocated VLANs, cannot be configured as primary or secondary VLANs.
- VLAN configuration (config-vlan) mode must be used to configure PVLANs.
- Primary VLANs can have multiple isolated and community VLANs associated with it. An isolated or community VLAN can be associated with only one primary VLAN.
- Private VLANs provide host isolation at Layer 2. However, hosts can communicate with each other at Layer 3.
- PVLAN groups can have one isolated VLAN at most. Multiple isolated VLAN configurations per primary VLAN configurations are not supported.
- When a secondary VLAN is associated with the primary VLAN, the STP parameters of the primary VLAN, such as bridge priorities, are propagated to the secondary VLAN. However, STP parameters do not necessarily propagate to other devices. You should manually check the STP configuration to ensure that the spanning tree topologies for the primary, isolated, and community VLANs match exactly so that the VLANs can properly share the same forwarding database.
- For normal trunk ports, note the following:
  - Separate instances of STP exist for each VLAN in the private VLAN.
  - STP parameters for the primary and all secondary VLANs must match.
  - Primary and all associated secondary VLANs should be in the same MST instance.
- For non-trunking ports, STP is aware only of the primary VLAN for any private VLAN host port; STP runs only on the primary VLAN for all private VLAN ports.

Note: We recommend that you enable BPDU Guard on all ports that you configure as a host port; do not enable this feature on promiscuous ports.

- PVLAN promiscuous trunk ports allow you to configure a maximum of 16 private VLAN primary and secondary VLAN pairs on each promiscuous trunk port.
- For PVLAN isolated trunk ports, note the following:
  - You can configure a maximum of 16 private VLAN primary and secondary VLAN pairs on each isolated trunk port.

  - The native VLAN must be either a normal VLAN or a private VLAN secondary VLAN. You cannot configure a private VLAN primary port as the native VLAN for a private VLAN isolated trunk port.

- Downgrading a system that has PVLAN ports configured to a release that does not support PVLAN requires unconfiguring the ports.
- Before configuring a VLAN as a secondary VLAN, you must shut down the VLAN network interface for the secondary VLAN.

Private VLAN Port Configuration

Follow these guidelines when configuring private VLAN ports:

- Deleting a VLAN used in the PVLAN configuration causes PVLAN ports (promiscuous ports or host ports, not trunk ports) that are associated with the VLAN to become inactive.
- Layer 2 access ports that are assigned to the VLANs that you configure as primary, isolated, or community VLANs are inactive while the VLAN is part of the PVLAN configuration. Layer 2 trunk interfaces, which may carry PVLANs, are active and remain part of the STP database.
- Use only the PVLAN configuration commands to assign ports to primary, isolated, or community VLANs.

Limitations with Other Features

Consider these configuration limitations with other features when configuring PVLAN:

Note: In some cases, the configuration is accepted with no error messages, but the commands have no effect.

- After configuring the association between the primary and secondary VLANs and deleting the association, all static MAC addresses that were created on the primary VLANs remain on the primary VLAN only.
- After configuring the association between the primary and secondary VLANs:
  - Static MAC addresses for the secondary VLANs cannot be created.
  - Dynamic MAC addresses that learned the secondary VLANs are aged out.
- Destination SPAN ports cannot be isolated ports. However, a source SPAN port can be an isolated port.
- Ensure consistent PVLAN type, states, and configuration across vPC peers. There is currently no PVLAN consistency check for vPC. Inconsistent PVLAN configs across vPV peers may end up in incorrect forwarding and impacts.
- In PVLANs, STP controls only the primary VLAN.
- PVLAN host or promiscuous ports cannot be SPAN destination ports.
- PVLAN ports can be configured as SPAN source ports.
- vPC pairing between T2 and TH platforms is not recommended.

Note: See the *Cisco Nexus 9000 Series NX-OS Security Configuration Guide* for information on configuring static MAC addresses.

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 on Cisco Nexus 9300 platform switches. It is supported on Cisco Nexus 9300-EX, 9300-FX, and 9300-FX2 switches.
- 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 9.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
- DHCP
- FEX
- Other Unsupported Features
- PVLAN
- VXLAN

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.)
- 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
- 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)
- PV routing for VXLAN
- 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
- 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-X96136YC-R Line Card

The following features are not supported for the N9K-X96136YC-R line card:

- Breakout is not supported.
- PTP and gPTP are not supported.

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

DHCP

DHCP subnet broadcast is not supported.

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, 93108TC-EX, 93180YC-FX, 92108TC-FX, 93240YC-FX2, 9336C-FX2, 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.

Other Unsupported Features

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

- Cisco Nexus 9300 platform switches do not support the 64-bit ALPM routing mode.
- Due to a Poodle vulnerability, SSLv3 is no longer supported.
- 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

PVLAN

This section lists PVLAN features that are not supported.

- PVLAN PO/VPC PO is not supported on Cisco Nexus N9K-X9632PC-QSFP100, N9K-X9432C-S.

VXLAN

This section lists VXLAN features that are not supported.

- Consistency checkers are not supported for VXLAN tables.
- DHCP snooping and DAI features are not supported on VXLAN VLANs.
- IPv6 for VXLAN EVPN ESI MH is not supported.
- Native VLANs for VXLAN are not supported. All traffic on VXLAN Layer 2 trunks needs to be tagged.
- QoS buffer-boost is not applicable for VXLAN traffic.
- QoS classification is not supported for VXLAN traffic in the network-to-host direction as ingress policy on uplink interface.
- Static MAC pointing to remote VTEP (VXLAN Tunnel End Point) is not supported with BGP EVPN (Ethernet VPN).
- TX SPAN (Switched Port Analyzer) for VXLAN traffic is not supported for the access-to-network direction.
- VXLAN routing and VXLAN Bud Nodes features on the 3164Q platform are not supported.

VXLAN ACL Limitations

- The following ACL related features are not supported:
- Egress RACL that is applied on an uplink Layer 3 interface that matches on the inner or outer payload in the access-to-network direction (encapsulated path).
- Ingress RACL that is applied on an uplink Layer 3 interface that matches on the inner or outer payload in the network-to-access direction (decapsulated path).

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

Cisco Nexus 9000 Series Software Upgrade and Downgrade Guide URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/92x/upgrade/guide/b-cisco-nexus-9000-nx-os-software-upgrade-downgrade-guide-92x.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

New Documentation

The *Cisco Nexus 9000 Series FPGA/EPLD Upgrade Release Notes, Release 9.2(1)* is available at the following URL.

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/92x/epld-rn/nxos_n9K_epldRN_921.html

The *Cisco Nexus 9000 Series NX-OS Verified Scalability Guide, Release 9.2(1)* is available at the following URL:

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/9-x/scalability/guide_921/b_Cisco_Nexus_9000_Series_NX-OS_Verified_Scalability_Guide_921.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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