Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)I4(6)

This document describes the features, caveats, and limitations for Cisco NX-OS Release 7.0(3)I4(6) software for use on the following switches:

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

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

Table 1 shows the online change history for this document.

Table 1 Online History Change

Date	Description
September 4, 2017	Updated the instructions for upgrading from Cisco NX-OS Releases 7.0(3)I1(2), 7.0(3)I1(3), or 7.0(3)I1(3a).
June 21, 2017	Replace X9564TX2 with X9464TX2.
May 26, 2017	Corrected release number from which an ISSU can be performed in the Upgrade Instructions section from 7.0(3)I4(1) to 7.0(3)I3(1).
March 10, 2017	Created the release notes for Release 7.0(3)I4(6).

Contents

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 9000 Series uses an enhanced version of Cisco NX-OS software with a single binary image that supports every switch in the series, which simplifies image management.

System Requirements

This section includes the following sections:

- Supported Cisco Software Releases
- Supported Device Hardware
- Supported Optics
- Supported FEX Modules

Supported Cisco Software Releases

Table 2 summarizes information about the Cisco Nexus platforms and software release versions that Cisco OpenFlow Plug-in supports.

Table 2 Cisco Plug-in for OpenFlow Compatibility Matrix

Switches	Cisco Plug-in for OpenFlow
Cisco Nexus 9300 Series switches and Cisco Nexus 31128PQ, 3232C, and 3264Q switches NX-OS 7.0(3)I3(1) and later	ofa-2.1.4-r2-nxos-SPA-k9.ova
Cisco Nexus 9300 Series switches and Cisco Nexus 31128PQ switches NX-OS 7.0(3)I2(1)	ofa-2.1.0-r1-nxos-SPA-k9.ova

Supported Device Hardware

The tables below list the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 7.0(3)I4(6) supports. For additional information about the supported hardware, see the *Hardware Installation Guide* for your Cisco Nexus 9000 Series device.

- Table 3 lists the Cisco Nexus 9000 Series fabric modules
- Table 4 lists the Cisco Nexus 9000 Series fans and fan trays
- Table 5 lists the Cisco Nexus 9000 Series line cards
- Table 6 lists the Cisco Nexus 9000 Series power supplies
- Table 7 lists the Cisco Nexus 9000 Series supervisor modules

- Table 8 lists the Cisco Nexus 9000 Series system controllers
- Table 9 lists the Cisco Nexus 9000 Series uplink modules
- Table 11 lists the 3232C and 3264Q switch hardware
- Table 12 lists the Cisco Nexus 3164Q switch hardware
- Table 13 lists the Cisco Nexus 31128PQ switch hardware

Table 3 Cisco Nexus 9000 Series Fabric Modules

Product ID	Hardware	Quantity
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 22, 23, 24, and 26.	4
N9K-C9504-FM-S	100-Gigabit -S fabric module (for the Cisco Nexus 9504 chassis) that supports the 100-Gigabit (-S) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4
N9K-C9508-FM	Cisco Nexus 9508 Series 40-Gigabit fabric module	3-6 depending on the line cards
N9K-C9508-FM-E	100-Gigabit -E fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-EX) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4
N9K-C9508-FM-S	100-Gigabit -S fabric module (for the Cisco Nexus 9508 chassis) that supports the 100-Gigabit (-S) line cards. When used, there must be 4 of these fabric modules installed in fabric slots 22, 23, 24, and 26.	4
N9K-C9516-FM	Cisco Nexus 9500 platform 40-Gigabit fabric module	3-6 depending on the line cards

Table 4 Cisco Nexus 9000 Series Fans and Fan Trays

Product ID	Hardware	Quantity

N9K-C9300-FAN1	Cisco Nexus 9300 fan 1 module with port-side intake airflow (burgundy coloring) **Note:** Supports early versions of the Cisco Nexus 9396 switch (N9K-C9396PX).	3
N9K-C9300-FAN1-B	Cisco Nexus 9300 fan 1 module with port-side exhaust airflow (blue coloring) **Note:** Supports early versions of the Cisco Nexus 9396 switch (N9K-C9396PX).	3
N9K-C9300-FAN2	Cisco Nexus 9300 fan 2 module with port-side intake airflow (burgundy coloring) **Note:** Supports the Cisco Nexus 93128TX, 9396PX, and 9396TX switches.	3
N9K-C9300-FAN2-B	Cisco Nexus 9300 fan 2 module with port-side exhaust airflow (blue coloring) **Note:** Supports the Cisco Nexus 93128TX, 9396PX, and 9396TX switches.	3
N9K-C9300-FAN3	Cisco Nexus 9300 fan 2 module with port-side intake airflow (burgundy coloring) **Note:** Supports the Cisco Nexus 93120TX, 92304QC, and 9272Q switches.	2
N9K-C9300-FAN3-B	Cisco Nexus 9300 fan 2 module with port-side exhaust airflow (blue coloring) **Note:** Supports the Cisco Nexus 93120TX, 92304QC, and 9272Q switches.	2
N9K-C9504-FAN	Cisco Nexus 9504 fan tray	3
N9K-C9508-FAN	Cisco Nexus 9508 fan tray	3
NXA-FAN-30CFM-B	Cisco Nexus 9200 and 9300 fan module with port-side intake airflow (burgundy coloring) **Note:** Supports the Cisco Nexus 92160YC-X, 9236C, 93108TC-EX, 93180YC-EX, 9332PQ, 9372PX, 9372PX-E, 9372TX, and 9372TX-E switches.	4
NXA-FAN-30CFM-F	Cisco Nexus 9200 and 9300 fan module with port-side exhaust airflow (blue coloring) **Note:** Supports the Cisco Nexus 92160YC-X, 9236C, 93108TC-EX, 93180YC-EX, 9332PQ, 9372PX, 9372PX-E, 9372TX, and 9372TX-E switches.	4

Table 5 Cisco Nexus 9500 Platform Line Cards

Product ID	Description	Quantity

Product ID	Description	Quantity
N9K-X9408PC-CFP2	Line card with 8 100-Gigabit CFP2 ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K-X9432C-S	Line card with 32 100-Gigabit QSFP28 ports (supported by four 100-Gigabit –S fabric modules [N9K-C9504-FM-S and N9K-C9508-FM-S])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508)
N9K-X9432PQ	Line card with 32 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM]) **Note:** This line card supports static breakout.	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K-X9464PX	Line card with 48 10-Gigabit SFP+ ports and 4 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K-X9464TX	Line card with 48 10GBASE-T ports and 4 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K- X9464TX2	Line card with 48 1-/10GBASE-T ports and 4 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)

Product ID	Description	Quantity
N9K-X9536PQ	Line card with 36 40-Gigabit Ethernet QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K-X9564PX	Line card with 48 1-/10-Gigabit SFP+ ports and 4 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K-X9564TX	Line card with 48 1-/10-GBASE-T ports and 4 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM, N9K-C9508-FM, and N9K-9516FM])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508) ■ 16 (Cisco Nexus 9516)
N9K-X9636PQ	Line card with 36 40-Gigabit QSFP+ ports (supported by 40-Gigabit fabric modules [N9K-C9504-FM and N9K-C9508-FM]) **Note:** Not supported on the Cisco Nexus 9516 switch (N9K-C9516).	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508)
N9K-X9732C-EX	Line card with 32 40-/100-Gigabit Ethernet QSFP28 ports (supported by 100-Gigabit –E fabric modules [N9K-C9504-FM-E and N9K-C9508-FM-E])	■ 4 (Cisco Nexus 9504) ■ 8 (Cisco Nexus 9508)

Table 6 Cisco Nexus 9000 Series Power Supplies

Product ID	Hardware	Quantity
N9K-PAC-650W	650-W AC power supply, port-side intake airflow (burgundy coloring) **Note:** Supports the Cisco Nexus 9332PQ, 9372PX, 9372PX-E, 9372TX, 9372TX-E, 9396PX, and 9396TX switches.	2
N9K-PAC-650W-B	650-W AC power supply, port-side exhaust airflow (blue coloring) **Note:** Supports the Cisco Nexus 9332PQ, 9372PX, 9372PX-E, 9372TX, 9372TX-E, 9396PX, and 9396TX switches.	2

N9K-PAC-1200W	1200-W AC power supply, port-side intake airflow (burgundy coloring) **Note:** Supports the Cisco Nexus 93120TX switches.	2
N9K-PAC-1200W-B	1200-W AC power supply, port-side exhaust airflow (blue coloring) **Note:** Supports the Cisco Nexus 93120TX switches.	2
N9K-PAC-3000W-B	3000-W AC power supply **Note**: Supports the Cisco Nexus 9504, 9508, and 9516 switches.	■ Up to 4 (Cisco Nexus 9504) ■ Up to 8 (Cisco Nexus 9508) ■ Up to 10 (Cisco Nexus 9516)
N9K-PDC-3000W-B	3000-W DC power supply **Note**: Supports the Cisco Nexus 9504, 9508, and 9516 switches.	■ Up to 4 (Cisco Nexus 9504) ■ Up to 8 (Cisco Nexus 9508) ■ Up to 10 (Cisco Nexus 9516)
N9K-PUV-1200W	1200-W AC power supply (airflow direction determined by the installed fan modules) **Note:** Supports all of the Cisco Nexus 9200 and 9300 NX-OS mode switches.	2
N9K-PUV-3000W-B	3000-W Universal AC/DC power supply	■ Up to 4 (Cisco Nexus 9504) ■ Up to 8 (Cisco Nexus 9508) ■ Up to 10 (Cisco Nexus 9516)
NXA-PAC-650W-PE	Nexus 650W power supply port side exhaust. **Note:** Supports the Cisco Nexus 92160YC-X, 92304QC, and 9236C switches.	2
NXA-PAC-650W-PI	Nexus 6500W power supply port side intake. **Note:** Supports the Cisco Nexus 92160YC-X, 92304QC, and 9236C switches.	2
UCSC-PSU-930WDC	930-W DC power supply with port-side intake airflow **Note:** Supports all Cisco Nexus 9200 and 9300 NX-OS mode switches.	2
UCS-PSU-6332-DC	930-W DC power supply with port-side exhaust airflow **Note:** Supports all Cisco Nexus 9200 and 9300 NX-OS mode switches.	2

Table 7 Cisco Nexus 9500 Platform Supervisor Modules

Product ID	Hardware	Quantity
N9K-SUP-A	Cisco Nexus 9500 platform supervisor A module with 4 cores	2
N9K-SUP-B	Cisco Nexus 9500 platform supervisor B module with 6 cores	2

Table 8 Cisco Nexus 9000 Series Switches

Product ID	Description	Quantity
N9K-C9236C	Cisco Nexus 9236C 1-RU switch with 36 40-/100-Gigabit QSFP28 ports (144 10-/25-Gigabit ports when using breakout cables). **Note**: Beginning with Cisco NX-OS Release 7.0(3)I4(3), 25G CVR-2QSFP28-8SFP adapters are supported on the Cisco Nexus 9236C switches.	1
N9K-C9272Q	Cisco Nexus 9272Q 2-RU switch with 72 40-Gigabit Ethernet QSFP+ ports (up to 35 of the ports [ports 37-71] also support breakout cables providing up to 140 10-Gigabit connections)	1
N9K-C9332PQ	Cisco Nexus 9332PQ 1-RU switch with 32 40-Gigabit Ethernet QSFP+ ports and supports 4x10G breakout mode for ports 1 to 26 (except ports 13 and 14). Ports 27 to 32 (ALE uplink ports) support using the QSFP-to-SFP+ Adapter (QSA) for 10-Gigabit SFP/SFP+ transceivers in QSFP+ ports.	1
N9K-C9372PX	Cisco Nexus 9372PX 1-RU switch with 48 1-/10-Gigabit Ethernet SFP+ ports and 6 40-Gigabit Ethernet QSFP+ ports.	1
N9K-C9372PX-E	An enhanced version of the N9K-C9372PX switch.	1
N9K-C9372TX	Cisco Nexus 9372TX 1-RU switch with 48 1/10GBASE-T ports and 6 40-Gigabit Ethernet QSFP+ ports.	1
N9K-C9372TX-E	An enhanced version of the N9K-C9372TX switch.	1
N9K-C9396PX	Cisco Nexus 9396PX 1-RU switch with 48 1-/10-Gigabit Ethernet SFP+ ports and an uplink module with up to 12 40-Gigabit Ethernet QSPF+ ports	1

N9K-C9396TX	Cisco Nexus 9396TX 1-RU switch with 48 1/10GBASE-T and an uplink module with up to12 40-Gigabit Ethernet QSFP+ ports	1
N9K-C9504	Cisco Nexus 9504 4-slot modular switch	1
N9K-C9508	Cisco Nexus 9508 8-slot modular switch	1
N9K-C9516	Cisco Nexus 9516 16-slot modular switch	1
N9K-C92160YC-X	Cisco Nexus 92160YC-X 1-RU switch with 48 10-/25-Gigabit SFP+ ports and 6 40-Gigabit QSFP+ ports (4 of these ports support 100-Gigabit QSFP28 optics).	1
N9K-C92304QC	Cisco Nexus 92304QC 2-RU switch with 56 40-Gigabit Ethernet ports (64 10-Gigabit ports if using breakout cables) and 8 100-Gigabit ports.	1
N9K-C93120TX	Cisco Nexus 93120TX 2RU switch with 96 1/10GBASE-T ports and 6 40-Gigabit QSFP+ uplink ports.	1
N9K-C93128TX	Cisco Nexus 93128TX 3-RU switch with 96 1/10GBASE-T ports and an uplink module that supports up to 8 40-Gigabit Ethernet QSPF+ ports (the 1/10GBASE-T ports also support a speed of 100 Megabits per second.)	1
N9K-C93108TC-EX	Cisco Nexus 93108TC-EX 1-RU switch with 48 10GBASE-T ports and 6 40/100-Gigabit QSFP28 ports.	1
N9K-C93180YC-EX	Cisco Nexus 93180YC-EX 1-RU switch with 48 10-/25-Gigabit Ethernet ports and 6 40/100-Gigabit QSFP28 ports.	1

Table 9 Cisco Nexus 9000 Series Uplink Modules

Product ID	Hardware	Quantity
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.	1

N9K-M6PQ	Cisco Nexus 9300 uplink module with 6 40-Gigabit Ethernet QSFP+ ports for the Cisco Nexus 9396PX, 9396TX, and 93128TX switches. **Note:** The front-panel ports on these uplink modules do not support auto negotiation with copper cables. You can manually configure the speed on the peer switch.	1
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. **Note:** The front-panel ports on these uplink modules do not support auto negotiation with copper cables. You can manually configure the speed on the peer switch.	1 (required)

Table 10 Cisco Nexus 9500 Platform System Controller

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

Table 11 Cisco Nexus 3232C and 3264Q Switch Hardware

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

Note: Beginning with Cisco NX-OS Release 7.0(3)I4(3), 25G CVR-2QSFP28-8SFP is supported on the Cisco Nexus 3232C switches.

Table 12 Cisco Nexus 3164Q Switch Hardware

Product ID	Hardware	Quantity
N3K-C3164Q-40GE	Cisco Nexus 3164Q, 64 x 40G SFP+, 2-RU switch	1
N9K-C9300-FAN3	Cisco Nexus 3164Q fan module	3
N9K-PAC-1200W	Cisco Nexus 3164Q 1200W AC power supply	2

Table 13 Cisco Nexus 31128PQ Switch Hardware

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

Note: The Cisco Nexus M6PQ-E uplink module and the Cisco Nexus 9372PX-E and 9372TX-E switches need to run the following minimum Cisco NX-OS releases:

- 7.0(3)I2(2d)
- 7.0(3)I2(2e)
- 7.0(3)I3(2)
- 7.0(3)I4(1)

Supported Optics

See the *Cisco 10-Gigabit Ethernet Transceiver Modules Compatibility Matrix* for a list of supported optical components.

Supported FEX Modules

Cisco NX-OS Release 7.0(3)I4(6) supports the following FEXes (Fabric extenders) on Cisco Nexus 9332PQ, 9372PX, 9372PX-E, 9396PX and 9500 Platform Switches:

- Cisco Nexus 2224TP
- Cisco Nexus 2232PP
- Cisco Nexus 2232TM and 2232TM-E
- Cisco Nexus 2248PQ
- Cisco Nexus 2248TP and 2248TP-E
- Cisco Nexus 2348TQ
- Cisco Nexus 2348UPQ
- Cisco Nexus B22Dell
- Cisco Nexus B22HP
- Cisco Nexus NB22FTS
- Cisco Nexus NB22IBM

Note: Please note the following:

- The 9408 and line card is not supported with the 2300 FEX.
- Cisco Nexus 9300 Series switches do not support FEX on uplink modules (ALE).

- For FEX HIF port channels, we recommend that you enable STP port type edge using the **spanning tree port type edge [trunk]** command.
- The Cisco 2248PQ, 2348TQ, and 2348UPQ FEXes support connections to the Nexus 9300 or 9500 switches by using supported breakout cables to connect a QSFP+ uplink on the FEX and an SFP+ link on the parent switch (4x10G links).

  Note: For Cisco Nexus 9500 switches, 4x10G breakout for FEX connectivity is not supported.

New and Changed Information

This section lists the following topics:

- New Hardware Features in Cisco NX-OS Release 7.0(3)I4(6)
- New Software Features in Cisco NX-OS Release 7.0(3)I4(6)

New Hardware Features in Cisco NX-OS Release 7.0(3)I4(6)

Cisco NX-OS Release 7.0(3)I4(6) does not include new hardware features.

New Software Features in Cisco NX-OS Release 7.0(3)I4(6)

- SSH - Changed the default value of the **show ssh key** command to display the fingerprint in SHA256 format by default and added the **md5** option if you want to see the fingerprint in MD5 format. For more information, see the *Cisco Nexus 9000 Series Security Configuration Guide*.

Caveats

This section includes the following topics:

- Resolved Caveats—Cisco NX-OS Release 7.0(3)I4(6)
- Open Caveats—Cisco NX-OS Release 7.0(3)I4(6)
- Known Behaviors—Cisco NX-OS Release 7.0(3)I4(6)

Resolved Caveats—Cisco NX-OS Release 7.0(3)I4(6)

Table 14 lists the Resolved Caveats in Cisco NX-OS Release 7.0(3)I4(6). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 14 Resolved Caveats in Cisco NX-OS Release 7.0(3)I4(6)

Bug ID	Description
CSCva88345	N9K - FEX-fabric sfp invalid reported for QSFP-40G-SR-BD
CSCvb11692	Kernel panic due to fatal interrupt
CSCvb35224	SSTE:mpls_static crash after doing cold boot with full config
CSCvb52582	N9K-C93108TC-EX MAC speed mismatch between ingress and egress ports can lead to Underrun/CRC errors.
CSCvb81335	DHCP packets punted to CPU when feature is disabled on transit dut
CSCvb85116	SPAN TX source tags output with vlan 4095 (TOR/intra-asic)

CSCvb90350	Atomic update, apply qos policy with 400 entries with no-stats erros but programs the tcam
CSCvc10898	Once a user has connected via NXAPI, it can't be deleted anymore
CSCvc11632	N3K- generates syslog recurringly ->%USER-3-SYSTEM_MSG: user delete failed for userid:userdel:
CSCvc18092	Traffic impact when adding VLAN under port-profile
CSCvc29451	cannot establish bgp session with static route underlay
CSCvc29999	Incorrect power redundancy reported
CSCvc41631	EOBC/EPC heartbeat failure causes module reset with no core or stack traces
CSCvc49621	vsh sessions hang after ssh session termination
CSCvc54618	N9K: 'show interface Ethx/x' takes 10 to 20 sec to output if QSA/SFP-10GSR are inserted.
CSCvc56379	N9K Crash when Standby is inserted with ACI image and active has n9k standalone image
CSCvc58714	Incorrect placement of OSPF rfc1583compatibility command under VRF configuration
CSCvc58759	CLI timeout doing mtu 1476 config on ipip tunnel w/ upgrade 7.0(3)I3(1) & earlier to 7.0(3)I4(1)
CSCvc59118	N9K:Default interface not clearing duplex configs under interface
CSCvc62087	MAC move on same T2 instance might cause MTS buffer exhausted
CSCvc65350	Nexus 9K Switch Crashes Due to "ACLQOS" Process with NAT and DHCP
CSCvc69750	N9K-C92160YC-X: VLAN add to pre-existing trunk fails after upgrade to 7.0(3)I5(1)
CSCvc70778	"Fatal Upgrade Error" HW reset reason printed by mistake in "show logging onboard int re-set-reason"
CSCvc71792	implement a knob to allow weak ciphers
CSCvc72646	post-routed unknown unicast flooding broken on same T2 instance
CSCvc74591	Backend processing error when nxapi receives 60s+ requests
CSCvc75047	memory leak in ipfib process due to duplicate ip in vxlan environment
CSCvc84014	Need to bypass accounting logs from EEM
CSCvc92124	"show ptp corrections | json" returns "output conversion failed"
CSCvc92246	"show ptp corrections | json" has incorrect correction-val values
CSCvc92265	NX-OS NTP and HSRP: replies with the wrong source IP
CSCvd01493	cdp and stp bpdu packets getting looped in vpc setup through l2pt
CSCvd03141	Inability to Remove Type Config Causes Config to be Stuck And Cannot Install different FEX
CSCvd03501	Kernel panic - not syncing: Fatal exception-Nexus9
CSCvd04392	F&L: NVE loopback IP next-hop incorrectly programmed as Null0 in FIB
CSCvd11194	Switch access PO ports remains in individual state in lacp after multiple link flaps or PXE boot
CSCvd26767	Nexus93180YC-EX: Input errors increasing on port 53

Open Caveats—Cisco NX-OS Release 7.0(3)I4(6)

There are no Open Caveats for this release.

Known Behaviors—Cisco NX-OS Release 7.0(3)I4(6)

There are no known behavior changes for this release.

Upgrade Instructions

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

Note:

- When upgrading from Cisco NX-OS Release 7.0(3)I2(2d) to Cisco NX-OS Release 7.0(3)I4(5) or Cisco NX-OS Release 7.0(3)I4(6), enter the **remove route-target both auto** or **AS:NNN** command for all Layer 2 VNI under EVPN configuration and enter the **route-target import auto** or **AS:NNN,** and **route-target export auto** or **AS:NNN** commands at the command line.
- Upgrade from Cisco NX-OS Release 7.0(3)I4(6) to 7.0(3)I5(1) is disruptive.
- 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*.
- Use **install all** when upgrading to Cisco NX-OS Release 7.0(3)I4(x). Failing to follow this requirement requires console access to recover.
- When upgrading to Cisco NX-OS Release 7.0(3)I4(6), Guest Shell automatically upgrades from 1.0 to 2.0. In the process, the contents of the guest shell 1.0 root filesystem will be 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 7.0(3)I4(6).
- An ISSU (In-Service Software Upgrades) can be performed only from a Cisco NX-OS Release 7.0(3)I3(1) or later image to a later image. The **sh spanning-tree issu-impact** command must be entered on both VPC primary and secondary switches before attempting a non-disruptive (ND) ISSU (In-Service Software Upgrades). If an ISSU is attempted without fixing recommended STP changes on VPC primary or secondary, traffic might get impacted.
- While performing a non-disruptive ISSU, VRRP and VRRPV3 will display 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.
- If you have ITD probes configured, you need to disable the ITD service (using the **shutdown** command) before upgrading to Cisco NX-OS Release 7.0(3)I4(6). 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.)
- Using the **install all** command when upgrading to Cisco NX-OS Release 7.0(3)I4(6) on the Cisco Nexus 9508 switch and the Cisco Nexus 3164Q switch can only be performed from Cisco NX-OS Release 6.1(2)I3(4d) or later.

Patch Upgrade Instructions

- 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 and then upgrading with **install all**. Failing to follow this requirement requires console access to recover.
- Upgrading from Cisco NX-OS Release 7.0(3)I1(2), Release 7.0(3)I1(3), or Release 7.0(3)I1(3a) to Release 7.0(3)I4(6) 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 **install all**.

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 **install all**.

Table 16 Install ISSU Non-Disruptive on TOR

```
Switch# install all nxos nxos.7.0.3.I4.6.bin non-disruptive
Installer will perform compatibility check first. Please wait.

Verifying image bootflash:/nxos.7.0.3.I4.6.bin for boot variable "nxos".
[####################] 100% -- SUCCESS

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

Preparing "nxos" version info using image bootflash:/nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "bios" version info using image bootflash:/nxos.7.0.3.I4.6.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  non-disruptive         reset
```

```
Images will be upgraded according to following table:
Module       Image                Running-Version(pri:alt)          New-Version  Upg-Required
------ ---------- ---------------------------------------- -------------------- ------------
     1       nxos                           7.0(3)I4(1)          7.0(3)I4(6)          yes
     1       bios     v07.59(08/26/2016):v07.15(06/29/2014)    v07.51(02/15/2016)          no


Do you want to continue with the installation (y/n)?  [n] y


Install is in progress, please wait.

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

Notifying services about the upgrade.
[####################] 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

Upgrade can no longer be aborted, any failure will result in a disruptive upgrade.

Freeing memory in the file system.
[####################] 100% -- SUCCESS

Loading images into memory.
[####################] 100% -- SUCCESS

Saving linecard runtime state.
[####################] 100% -- SUCCESS

Saving supervisor runtime state.
[####################] 100% -- SUCCESS

Saving mts state.
Dec 22 15:04:56 %CARDCLIENT-2-CARDCL_CRIT cardcl_on_exit: graceful_shutdown 2
[####################] 100% -- SUCCESS

 Rebooting the switch to proceed with the upgrade.
All telnet and ssh connections will now be temporarily terminated.
TOR-1-OSLO# incrond[13972]: stopping service
Dec 22 15:04:57 %CARDCLIENT-2-FPGA_BOOT_PRIMARY IOFPGA booted from Primary
Dec 22 15:04:57 %CARDCLIENT-2-FPGA_BOOT_PRIMARY MIFPGA booted from Primary
[ 1265.884223] [1482444297] Starting new kernel
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 19 ...
CCTRL driver for card_index 21025 ...
Checking SSD firmware ...
        Model Number:       Micron_M550_MTFDDAT064MAY
        Serial Number:      14010C07C47C
        Firmware Revision:  MU03

Checking all filesystems.....
Installing default sprom values ...
done.Configuring network ...
Installing LC netdev ...
Installing veobc ...
Installing OBFL driver ...
mounting plog for N9k!
invalid group file entry
delete line 'aaa-db-operator:508:'? No
grpck: no changes
..done Thu Dec 22 15:05:17 PST 2016
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
TOR ISSU is TRUE. Touching /isan-upgrade/isan.bin at Thu Dec 22 15:05:21 PST 2016
Uncompressing system image: Thu Dec 22 15:05:21 PST 2016
blogger: nothing to do.

..done Thu Dec 22 15:05:21 PST 2016
Creating /dev/mcelog
Starting mcelog daemon
Overwriting dme stub lib
Replaced dme stub lib
INIT: Entering runlevel: 3 exist
Running S93thirdparty-script...

Populating conf files for hybrid sysmgr ...
Starting hybrid sysmgr ...

Continuing with installation process, please wait.
```

```
The login will be disabled until the installation is completed.

Status for linecard upgrade.
[####################] 100% -- SUCCESS

Performing supervisor state verification.
[####################] 100% -- SUCCESS

Supervisor non-disruptive upgrade successful.


Install has been successful.
```

Table 15 Patch Upgrade Example

```
N9K-16(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
N9K-16(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

N9K-16(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
N9K-16(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

N9K-16(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
N9K-16(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

N9K-16(config)# install all nxos bootflash:Nxos.7.0.3.I4.6.bin
Installer will perform compatibility check first. Please wait.
uri is: /Nxos.7.0.3.I4.6.bin
Installer is forced disruptive

Verifying image bootflash:/Nxos.7.0.3.I4.6.bin for boot variable "nxos".
[####################] 100% -- SUCCESS

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

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "bios" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos. 7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS
```

```
Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "nxos" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.bin.
[####################] 100% -- SUCCESS

Preparing "lcn9k" version info using image bootflash:/Nxos.7.0.3.I4.6.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)        7.0(3)I4(6)        yes
   1     bios              v01.42(00:v01.42(00         v01.48(00        yes
   6     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
   6     bios              v01.48(00:v01.48(00         v01.48(00         no
   8     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
   8     bios              v01.48(00:v01.29(00         v01.48(00         no
   9     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
   9     bios              v01.48(00:v01.35(00         v01.48(00         no
  10     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  10     bios              v01.48(00:v01.42(00         v01.48(00         no
  11     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  11     bios              v01.48(00:v01.52(00         v01.48(00         no
  14     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  14     bios              v01.48(00:v01.48(00         v01.48(00         no
  15     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  15     bios              v01.48(00:v01.40(00         v01.48(00         no
  16     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  16     bios              v01.48(00:v01.42(00         v01.48(00         no
  21     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  21     bios              v01.48(00:v01.42(00         v01.48(00         no
  22     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  22     bios              v01.48(00:v01.40(00         v01.48(00         no
  23     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  23     bios              v01.48(00:v01.40(00         v01.48(00         no
  24     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  24     bios              v01.48(00:v01.40(00         v01.48(00         no
  25     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  25     bios              v01.48(00:v01.40(00         v01.48(00         no
  26     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        yes
  26     bios              v01.48(00:v01.40(00         v01.48(00         no
  27     nxos                      7.0(3)I1(2)        7.0(3)I4(6)        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)        7.0(3)I4(6)        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)        7.0(3)I4(6)        yes
  29     bios              v01.48(00:v01.35(00         v01.48(00         no
  30     lcn9k                     7.0(3)I1(2)        7.0(3)I4(6)        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.7.0.3.I4.6.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.
N9K-16(config)#
User Access Verification
N9K-16 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.7.0.3.I4.6.bin ...
Booting bootflash:/Nxos.7.0.3.I4.6.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 N9K-16 %$ VDC-1 %$  %USER-2-SYSTEM_MSG: <<%USBHSD-2-MOUNT>> logflash: online  - usbhsd
2016 Mar  3 04:42:37 N9K-16 %$ VDC-1 %$ Mar  3 04:42:37 %KERN-2-SYSTEM_MSG: [   12.509615] hwport mode=6 - kernel
2016 Mar  3 04:42:40 N9K-16 %$ VDC-1 %$ %VMAN-2-INSTALL_STATE: Installing virtual service 'guestshell+'
2016 Mar  3 04:42:40 N9K-16 %$ VDC-1 %$  %DAEMON-2-SYSTEM_MSG: <<%ASCII-CFG-2-CONF_CONTROL>> Binary restore - ascii-
cfg[13904]
2016 Mar  3 04:42:40 N9K-16 %$ VDC-1 %$  %DAEMON-2-SYSTEM_MSG: <<%ASCII-CFG-2-CONF_CONTROL>> Restore DME database
- ascii-cfg[13904]
2016 Mar  3 04:42:42 N9K-16 %$ VDC-1 %$ netstack: Registration with cli server complete
2016 Mar  3 04:43:00 N9K-16 %$ VDC-1 %$ %USER-2-SYSTEM_MSG: ssnmgr_app_init called on ssnmgr up - aclmgr
2016 Mar  3 04:43:09 N9K-16 %$ VDC-1 %$ %USER-0-SYSTEM_MSG: end of default policer - copp
2016 Mar  3 04:43:10 N9K-16 %$ VDC-1 %$ %VMAN-2-INSTALL_STATE: Install success virtual service 'guestshell+'; Activating
2016 Mar  3 04:43:10 N9K-16 %$ VDC-1 %$ %VMAN-2-ACTIVATION_STATE: Activating virtual service 'guestshell+'
2016 Mar  3 04:43:13 N9K-16 %$ VDC-1 %$ %CARDCLIENT-2-FPGA_BOOT_PRIMARY: IOFPGA booted from Primary
2016 Mar  3 04:43:18 N9K-16 %$ VDC-1 %$ %USER-2-SYSTEM_MSG: IPV6 Netlink thread init successful  - icmpv6
2016 Mar  3 04:43:19 N9K-16 %$ VDC-1 %$ %VDC_MGR-2-VDC_ONLINE: vdc 1 has come online


User Access Verification
N9K-16 login: 2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 1
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 6
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 8
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 9
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 10
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 11
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 14
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 15
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 16
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 21
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 22
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 23
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 24
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 25
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 26
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 28
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 29
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PRESENT: Detected the presence of Module 30
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 1 ok (Serial number DTM173903QQ)
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 1 ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 2 ok (Serial number DTM174000SB)
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 2 ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 3 ok (Serial number DTM174000RR)
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 3 ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 4 ok (Serial number DTM173903SH)
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 4 ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_OK: Power supply 5 ok (Serial number DTM173903SR)
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-PS_FANOK: Fan in Power supply 5 ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-FANMOD_FAN_OK: Fan module 1 (Fan1(sys_fan1) fan) ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-FANMOD_FAN_OK: Fan module 2 (Fan2(sys_fan2) fan) ok
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-FANMOD_FAN_OK: Fan module 3 (Fan3(sys_fan3) fan) ok
2016 Mar  3 04:43:52 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 30 powered up (Serial number SAL1803KQ78)
2016 Mar  3 04:43:52 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_DETECT: Module 28 detected (Serial number :unavailable) Module-
Type Supervisor Module Model :unavailable
2016 Mar  3 04:43:58 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 29 powered up (Serial number SAL1803KQAS)
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 21 powered up (Serial number SAL1813NZMB)
2016 Mar  3 04:44:01 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 22 powered up (Serial number SAL1811NE36)
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 23 powered up (Serial number SAL1813P9VN)
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 24 powered up (Serial number SAL1811NE3U)
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 25 powered up (Serial number SAL1813NZNB)
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 26 powered up (Serial number SAL1811NE46)
2016 Mar  3 04:44:01 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 1.
Ejector based shutdown enabled
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 1 powered up (Serial number SAL1817REUZ)
2016 Mar  3 04:44:01 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 9.
Ejector based shutdown enabled
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 9 powered up (Serial number SAL1746G7Y3)
2016 Mar  3 04:44:01 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 10.
Ejector based shutdown enabled
2016 Mar  3 04:44:01 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 10 powered up (Serial number SAL1817REVT)
2016 Mar  3 04:44:01 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 11.
Ejector based shutdown enabled
2016 Mar  3 04:44:02 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 11 powered up (Serial number SAL1820SKZ1)
2016 Mar  3 04:44:02 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 15.
Ejector based shutdown enabled
2016 Mar  3 04:44:02 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 15 powered up (Serial number SAL1812NTFC)
2016 Mar  3 04:44:02 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 16.
Ejector based shutdown enabled
2016 Mar  3 04:44:02 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 16 powered up (Serial number SAL1816QGWW)
2016 Mar  3 04:44:08 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 14.
Ejector based shutdown enabled
2016 Mar  3 04:44:08 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 14 powered up (Serial number SAL1910AP3B)
2016 Mar  3 04:44:09 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 6.
Ejector based shutdown enabled
2016 Mar  3 04:44:09 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 6 powered up (Serial number SAL1910AP4E)
2016 Mar  3 04:44:10 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MODULE_EJECTOR_POLICY_ENABLED: All Ejectors closed for module 8.
```

```
Ejector based shutdown enabled
2016 Mar  3 04:44:10 N9K-16 %$ 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 N9K-16 %$ VDC-1 %$ %PLATFORM-2-MOD_PWRUP: Module 8 powered up (Serial number SAL1746G7Y8)
2016 Mar  3 04:44:56 N9K-16 %$ VDC-1 %$ %USBHSD-STANDBY-2-MOUNT: logflash: online
2016 Mar  3 04:47:31 N9K-16 %$ VDC-1 %$ %ASCII-CFG-2-CONF_CONTROL: System ready
2016 Mar  3 04:47:51 N9K-16 %$ VDC-1 %$ %VMAN-2-ACTIVATION_STATE: Successfully activated virtual service 'guestshell+'
2016 Mar  3 04:47:51 N9K-16 %$ 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

N9K-16#  show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
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licenses, such as open source.  This software is provided "as is," and unless
otherwise stated, there is no warranty, express or implied, including but not
limited to warranties of merchantability and fitness for a particular purpose.
Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or
GNU General Public License (GPL) version 3.0  or the GNU
Lesser General Public License (LGPL) Version 2.1 or
Lesser General Public License (LGPL) Version 2.0.
A copy of each such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://opensource.org/licenses/gpl-3.0.html and
http://www.opensource.org/licenses/lgpl-2.1.php and
http://www.gnu.org/licenses/old-licenses/library.txt.

Software
  BIOS: version 08.26
  NXOS: version 7.0(3)I4(6)
  BIOS compile time:  06/12/2016
  NXOS image file is: bootflash:///Nxos.7.0.3.I4.6.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: N9K-16
  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):
N9K-16#
```

Downgrade Instructions

Disable the Guest Shell if you need to downgrade from Cisco NX-OS Release 7.0(3)I4(6) to an earlier release.

- Performing an ISSU downgrade from Cisco NX-OS Release 7.0(3)I4(6) 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.

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.

Limitations

This section lists limitations related to Cisco NX-OS Release 7.0(3)I4(6).

- 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.
- QinVNI has the following limitations:
  - Single tag is supported on Cisco Nexus 9300 Series switches. It can be enabled by unconfiguring the **overlay-encapsulation vxlan-with-tag** command from interface nve:

    ```
    N9564PX-2(config)# int nve 1
    N9564PX-2(config-if-nve)# no overlay-encapsulation vxlan-with-tag
    N9564PX-2# sh run int nve 1

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

    version 7.0(3)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.
  - When upgrading from Cisco Nexus 7.0(3)I3(1) or Release 7.0(3)I4(1) to Release 7.0(3)I4(6) with Cisco Nexus 9300 Series 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 Nexus 7.0(3)I3(1) and Release 7.0(3)I4(1) . We now support single tag also in Release 7.0(3)I4(6).

- 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 support is available for N9K-C9232C and N9K-C92304QC.
- CoPP (Control Plane Policing) cannot be disabled. If you attempt to disable it in Cisco NX-OS Release 7.0(3)I4(6), 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.
- When a switch comes up with Cisco NX-OS Release 7.0(3)I4(6) and a custom CoPP policy, a syslog warning is logged. This warning is for informational purposes only.

  2017 Mar 10 05:06:11 tim %ACLQOS-SLOT1-4-ACLQOS_WARNING: ACLQOS Warning: COPP static acl:acl-mac-l2pt is missing, check 'show system internal access-list copp static-acls' for required static acls

  A similar warning is logged when a custom CoPP policy is changed. This limitation applies to Cisco Nexus 9300 and 921xx Series switches and to N9K-X9732C-EX line cards.
- **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 Series switch that is running Cisco NX-OS Release 7.0(3)I4(6). 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 hardware except for the 100G 9408PC line card and the 100G M4PC generic expansion module (GEM).
- FEXes 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

- Cisco NX-OS Release 7.0(3)I4(2) supports flooding for Microsoft Network Load Balancing (NLB) unicast mode on Cisco Nexus 9500 platform switches but not on Cisco Nexus 9300 Series switches. NLB is not supported in max-host system routing mode. NLB multicast mode is not supported on Cisco Nexus 9500 or 9300 Series switches.

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 in detail in the Open Caveats section.

- 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 QSA (QSFP to SFP/SFP+ Adapter) (40G to 10G QSA):
  - N9K-C93120TX
  - N9K-C93128TX
  - N9K-C9332PQ
  - N9K-C9372PX
  - N9K-C9372PX-E
  - N9K-C9372TX
  - N9K-C9396PX

Note: The Cisco Nexus 9300 support for the QSFP+ breakout has the following limitations:

- Only 10G can be supported using QSA on 40G uplink ports on Cisco Nexus 9300 switches in NX-OS.
- 1G with QSA is not supported.
- For the Cisco Nexus 9332PQ switch, all ports except 13-14 and 27-32 can support breakout
- All ports in the QSA speed group must operate at the same speed (see the configuration guide)

- The following switches support the breakout cable (40G ports to 4x10G ports):
  - N9K-C9332PQ

  - N9K-X9436PQ
  - N9K-X9536PQ
  - N9K-C93180YC-EX
  - N9K-C93108TC-EX
  - N9K-X9732C-EX line card

- Weighted ECMP (Equal-Cost Multi-Path) Nexus 3000 feature is not supported on the Cisco Nexus 9000 Series switch.
- 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

Unsupported Features

This section lists features that are not supported for private VLANs in the current release.

- VXLAN
- DHCP
- FEX
- Cisco Nexus 3232C and 3264Q Switches
- Cisco 9200 Nexus Series, 93108TC-EX, and 93180YC-EX Switches
- Cisco Nexus 9408 Line Card and 9300 Series Switches
- Cisco Nexus 9732C-EX Line Card
- Other Unsupported Features

VXLAN

This section lists VXLAN features that are not supported.

- ACL and QoS for VXLAN traffic in the network-to-access direction are not supported.
- Consistency checkers are not supported for VXLAN tables.
- DHCP snooping and DAI features are not supported on VXLAN VLANs.
- IGMP snooping is not supported on VXLAN VLANs.
- 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-access direction.
- 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:

- 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).
- 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).
- Egress VACL for decapsulated VXLAN traffic.

Note: We recommend that you use a PACL or VACL on the access side to filter out traffic entering the overlay network.

DHCP

DHCP subnet broadcast is not supported.

FEX

- VTEP connected to FEX host interface ports is not supported.
- ASCII replay with FEX needs be done twice for HIF configurations to be applied. The second time should be done after the FEXs have come up.
- Cisco Nexus 9300 Series switches do not support FEX on uplink modules (ALE).
- FEX is supported only on the Cisco Nexus 9332PQ, 9372PX, 9372PX-E, 9396PX, and 9500 platform switches (FEX is not supported on the N9K-X9732C-EX line card, 93180YC-EX and 93108TC-EX switches, and Cisco Nexus 9200 platforms).
- FEX vPC is not supported between any model of FEX and the Nexus 9300 (TOR) and 9500 Switches (EOR) as the parent switches.
- IPSG (IP Source Guard) is not supported on FEX ports.

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 NXOS image from the loader.
- Automatic negotiation support for 25G and 50G 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)
- ISSU

- 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 Series switches or between Cisco Nexus 3232C or 3264Q switches and Cisco Nexus 3100 Series switches
- VXLAN

Cisco 9200 Nexus Series, 93108TC-EX, and 93180YC-EX Switches

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

- Segment routing, static MPLS, and MPLS stripping (supported for Cisco Nexus 9200 Series switches but not for Cisco Nexus 93108TC-EX and 93180YC-EX switches)
- 64-bit ALPM routing mode
- 9272PQ and 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
- Cisco Nexus 2000 Series Fabric Extenders
- DCBXP for LLDP
- Egress port ACLs
- Egress QoS policer or marking
- FCoE NPV
- FEX
- GRE v4 payload over v6 tunnels
- Intelligent Traffic Director
- IP length-based matches
- IPinIP on 92160
- ISSU
- Layer 2 Q-in-Q (Layer 2 Q-in-Q is supported on Cisco Nexus 93108TC-EX and 93180YC-EX switches. **Note**: Not supported on Cisco Nexus 9200 Series switches.)
- Micro-burst detection
- MTU (Multi Transmission Unit) checks for packets received with an MPLS header
- OpenFlow, due to a hardware limitation
- Packet-based statistics for traffic storm control (only byte-based statistics are supported)
- Policy-based routing
- PV routing for VXLAN

- PVLANs
- Q-in-VNI and Q-in-Q for VXLAN are not supported on Cisco Nexus 9200 Series switches, Cisco Nexus 93108TC-EX switches, and Cisco Nexus 93180YC-EX switches.
- Resilient hashing for ECMP
- 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
- sFlow
- 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 9408 Line Card and 9300 Series Switches

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

- Breakout ports
- Port-channel (No LACP)
- vPC
- MCT (Multichassis EtherChannel Trunk)
- FEX (this applies to the 9408 and –EX switches, not all 9300 switches)
- PTP (Precision Time Protocol)
- PFC/LLFC
- 802.3x
- PVLAN
- Storm Control
- VXLAN access port.
- SPAN destination/ERSPAN destination IP
- Shaping support on 100g port is limited
- Only support 40G flows

Cisco Nexus 9732C-EX Line Card

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

- FEX
- TAP aggregation

- SPAN port-channel destinations
- Marker packet support for ERSPAN Type 3

Other Unsupported Features

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

- Cisco Nexus 9300 Series 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 40G physical ports on the 9372PX, 9372TX, and 9332PQ switches
  - All 40G physical ports on the 9396PX, 9396TX, and 93128TX switches

Related Documentation

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

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

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

http://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:

http://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:

http://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

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http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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