



Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)I2(2b)

This document describes the features, caveats, and limitations for Cisco NX-OS Release 7.0(3)I2(2b) software for use on the Cisco Nexus 9000 Series switches, the Cisco Nexus 31128PQ switch, and the Cisco Nexus 3164Q switch. Use this document in combination with documents listed in Related Documentation, page 18.

Note: Starting with Cisco NX-OS Release 7.0(3)I2(1), the Cisco NX-OS image filename has changed to start with "nxos" instead of "n9000."

Table 1 shows the online change history for this document.

Table 1. Online History Change

Date	Description
February 29, 2016	Created the release notes for Release 7.0(3)I2(2b).
March 1, 2016	Moved CSCuy35913 to Open Caveats.
March 4, 2016	<ul style="list-style-type: none">■ Updated <i>Limitations</i>.■ Updated <i>Supported FEX Modules</i>.
March 23, 2016	Removed the bullets stating that private VLANs support PVLAN across switches: <ul style="list-style-type: none">– Through a regular trunk port-channel– Through a regular vPC-port
April 8, 2016	Added the following statement to <i>Limitations</i> : N9K-X9408PC-CFP2 line cards do not support port-channeling.
May 25, 2016	<ul style="list-style-type: none">■ Added Cisco Nexus 9408 Line Card and 9300 Series Leaf Switches section■ Added to FEX limitations: VTEP connected to FEX host interface ports is not supported.■ Added to the Supported FEX Modules section: <p>Note: For Cisco Nexus 9500 switches, 4x10G breakout for FEX connectivity is not supported. Native 10G or 40G should be used.</p>

Date	Description
June 6, 2016	<ul style="list-style-type: none"><li data-bbox="527 296 764 323">■ Updated Table 2<li data-bbox="527 350 1247 378">■ Added link to Cisco Nexus 31128PQ Switch - Read Me First

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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 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 switches NX-OS 7.0(3)I2(1)	ofa-2.1.0-r1-nxos-SPA-k9.ova

Supported Device Hardware

[Table 3](#) lists the Cisco Nexus 9000 Series hardware that Cisco NX-OS Release 7.0(3)I2(2b) supports. For additional information about the supported hardware, see the Hardware Installation Guide for your Cisco Nexus 9000 Series device.

Table 3. Cisco Nexus 9000 Series Hardware

Product ID	Hardware	Quantity

System Requirements

Product ID	Hardware	Quantity
N9K-C9516	Cisco Nexus 9516 16-slot chassis	1
N9K-C9516-FM	Cisco Nexus 9500 Series fabric module	3-6 depending on the line card
N9K-C9516-FAN	Cisco Nexus 9516 fan trays	3
N9K-C9508	Cisco Nexus 9508 8-slot chassis	1
N9K-C9508-FM	Cisco Nexus 9508 Series fabric module	3-6 depending on the line card
N9K-C9508-FAN	Cisco Nexus 9508 fan trays	3
N9K-X9564PX	Cisco Nexus 9500 Series 48-port, 1-/10-Gbps SFP+ plus 4-port QSFP I/O module	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 16 in the Cisco Nexus 9516
N9K-X9564TX	Cisco Nexus 9500 Series 48-port, 1-/10-Gbps BASE-T plus 4-port QSFP I/O module	<ul style="list-style-type: none"> ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 16 in the Cisco Nexus 9516
N9K-X9536PQ	Cisco Nexus 9500 36-port, 40 Gigabit Ethernet QSFP aggregation module	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 16 in the Cisco Nexus 9516

Product ID	Hardware	Quantity
N9K-X9636PQ	Cisco Nexus 9500 Series 36-port 40-Gigabit QSFP I/O module <i>Note:</i> Not supported on the Cisco Nexus 9516 switch (N9K-C9516).	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508
N9K-X9464PX	Cisco Nexus 9500 Series 48-port 10-Gigabit SFP+ plus 4-port QSFP I/O module	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 16 in the Cisco Nexus 9516
N9K-X9464TX	Cisco Nexus 9500 Series 48-port 10-GBASE-T plus 4-port QSFP I/O module	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 16 in the Cisco Nexus 9516
N9K-X9432PQ	Cisco Nexus 9500 Series 32-port 40-Gigabit QSFP I/O module <i>Note:</i> The Cisco Nexus X9432PQ I/O module supports static breakout.	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 16 in the Cisco Nexus 9516

System Requirements

Product ID	Hardware	Quantity
N9K-X9408PC-CFP2	Cisco Nexus 9500 Series 8-port 100-Gigabit CFP2 I/O module for the Cisco Nexus 9504, 9508, and 9516 modular switches	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 16 in the Cisco Nexus 9516
N9K-SC-A	Cisco Nexus 9500 Series System Controller Module	2
N9K-SUP-A	Cisco Nexus 9500 Series supervisor module	2
N9K-SUP-B	Cisco Nexus 9500 Series supervisor B module	2
N9K-PAC-3000W-B	Cisco Nexus 9500 Series 3000 W AC power supply	<ul style="list-style-type: none"> ■ Up to 4 in the Cisco Nexus 9504 ■ Up to 8 in the Cisco Nexus 9508 ■ Up to 10 in the Cisco Nexus 9516
N9K-C9504	Cisco Nexus 9504 4-slot chassis	1
N9K-C9504-FM	Cisco Nexus 9504 fabric module	3 to 6 depending on line card
N9K-C9504-FAN	Cisco Nexus 9504 fan trays	3
N9K-C9396PX	Cisco Nexus 9300 48-port, 1/10-Gigabit Ethernet SFP+ and 12-port, 40-Gigabit Ethernet QSFP switch	1
N9K-C9396TX	Cisco Nexus 9300 48-port, 1/10-Gigabit Ethernet BASE-T and 12-port, 40-Gigabit Ethernet QSFP switch	1
N9K-C9372PX	Cisco Nexus 9300 48-port, 1/10-Gigabit Ethernet SFP+ and 6-port, 40-Gigabit Ethernet QSFP switch	1
N9K-C9372PX-E	An enhanced version of the N9K-C9372PX.	
N9K-C9372TX	Cisco Nexus 9300 48-port, 1/10-Gigabit Ethernet BASE-T and 6-port, 40-Gigabit Ethernet QSFP switch	1

Product ID	Hardware	Quantity
N9K-C9332PQ	<p>Cisco Nexus 9300 32-port, 40-Gigabit Ethernet QSFP switch with support for 4x10G breakout mode</p> <ul style="list-style-type: none"> ■ Ports 1 to 26 (except 13 and 14) support 4x10G breakout mode. ■ Ports 27 to 32 (ALE uplink ports) support using QSA for 10G SFP/SFP+ transceivers in QSFP+ ports 	1
N9K-C93128TX	Cisco Nexus 9300 switch with 96 1-/10-Gigabit BASE-T ports and eight 40-Gigabit Ethernet QSPF ports (The 1-/10-Gigabit BASE-T ports also support a speed of 100 Megabits.)	1
N9K-C93120TX	Cisco Nexus 93120TX switch with 96 1-/10-Gigabit BASE-T ports and 6 QSFP uplink ports	
N9K-PAC-650W	<p>Cisco Nexus 9300 650 W AC power supply, hot air out (red)</p> <p><i>Note:</i> For use with the Cisco Nexus 9396 switch (N9K-C9396PX).</p>	2 or less
N9K-PAC-650W-B	<p>Cisco Nexus 9300 650 W AC power supply, cold air in (blue)</p> <p><i>Note:</i> For use with the Cisco Nexus 9396 switch (N9K-C9396PX).</p>	2 or less
N9K-PAC-1200W	<p>Cisco Nexus 9300 1200 W AC power supply, hot air out (red)</p> <p><i>Note:</i> For use with the Cisco Nexus 93128 switch (N9K-C93128TX).</p>	2 or less
N9K-PAC-1200W-B	<p>Cisco Nexus 9300 1200 W AC power supply, cold air in (blue)</p> <p><i>Note:</i> For use with the Cisco Nexus 93128 switch (N9K-C93128TX).</p>	2 or less
N9K-C9300-FAN1	<p>Cisco Nexus 9300 fan 1, hot air out (red)</p> <p><i>Note:</i> For use with the Cisco Nexus 9396 switch (N9K-C9396PX).</p>	3
N9K-C9300-FAN1-B	<p>Cisco Nexus 9300 fan 1, cold air in (blue)</p> <p><i>Note:</i> For use with the Cisco Nexus 9396 switch (N9K-C9396PX).</p>	3
N9K-C9300-FAN2	<p>Cisco Nexus 9300 fan 2, port side intake (red)</p> <p><i>Note:</i> For use with the Cisco Nexus 93128 switch (N9K-C93128TX).</p>	3
N9K-C9300-FAN2-B	<p>Cisco Nexus 9300 fan 2, port side exhaust (blue)</p> <p><i>Note:</i> For use with the Cisco Nexus 93128 switch (N9K-C93128TX).</p>	3
NXA-FAN-30CFM-F	<p>Cisco Nexus 9300 fan, port-side exhaust</p> <p><i>Note:</i> For use with the Cisco Nexus 9332PQ, 9372PX, and 9372TX switches (N9K-C9332PQ, N9K-C9372PX, and N9K-9372TX).</p>	4

System Requirements

Product ID	Hardware	Quantity
NXA-FAN-30CFM-B	Cisco Nexus 9300 fan, port-side intake <i>Note:</i> For use with the Cisco Nexus 9332PQ, 9372PX, and 9372TX switches (N9K-C9332PQ, N9K-C9372PX, and N9K-9372TX).	4
N9K-M12PQ	Cisco Nexus GEM 9300 uplink module, 12-port, 40-Gigabit Ethernet QSPF <i>Note:</i> The front-panel ports on these GEM modules do not support auto negotiation with copper cables. Manually configure the speed on the peer switch.	1 (required)
N9K-M6PQ	Cisco Nexus GEM 6-port 40-Gigabit Ethernet uplink module for the Cisco Nexus 9396PX, 9396TX, and 93128TX switches <i>Note:</i> The front-panel ports on these GEM modules do not support auto negotiation with copper cables. Manually configure the speed on the peer switch.	1
N9K-M6PQ-E	An enhanced version of the N9K-M6PQ.	
N9K-M4PC-CFP2	Cisco Nexus 9300 uplink module for the 93128TX (2 active ports), 9396PX (4 active ports), and 9396TX (4 active ports) Top-of-rack switches	1

Table 4 lists the Cisco Nexus 3164Q switch hardware that Cisco NX-OS Release 7.0(3)I2(2b) supports.

Table 4. Cisco Nexus 3164Q Switch Hardware

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

For additional information about the supported hardware, see the *Cisco Nexus 3000 Series Hardware Installation Guide*.

Table 5 lists the Cisco Nexus 31128PQ switch hardware that Cisco NX-OS Release 7.0(3)I2(2b) supports.

Table 5. Cisco Nexus 31128PQ Switch Hardware

Product ID	Hardware	Quantity

Product ID	Hardware	Quantity
N3K-C31128PQ-10GE	Nexus 31128PQ, 96 SFP+ ports, 8 QSFP+ ports, 2RU switch	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)I2(2b) supports the following FEXes on Cisco Nexus 9332PQ (support for 2300 only), 9372PX, 9372PX-E, 9396PX and 9500 Series Switches:

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

Note: Please note the following:

- Cisco Nexus 9300 Series switches do not support FEX on uplink modules (ALE).
- For FEX HIF port channels, Cisco recommends that you enable STP port type edge using the spanning tree port type edge [trunk] command.
- The following Cisco FEX Switches have 40G QSFP uplinks as network interfaces:
 - 2248PQ
 - 2348UPQ
 - 2348TQ

New and Changed Information

To connect the above FEX(es) to a Cisco Nexus 9396PX ToR, a Cisco Nexus 9372PX ToR, or a supported Cisco Nexus 9500 10G line card, a set of breakout cables would be required.

Note: For Cisco Nexus 9500 switches, 4x10G breakout for FEX connectivity is not supported. Native 10G or 40G should be used.

New and Changed Information

This section lists the following topics:

- New Hardware Features in Cisco NX-OS Release 7.0(3)I2(2b)
- New Software Features in Cisco NX-OS Release 7.0(3)I2(2b)

New Hardware Features in Cisco NX-OS Release 7.0(3)I2(2b)

Cisco NX-OS Release 7.0(3)I2(2b) does not include new hardware features.

New Software Features in Cisco NX-OS Release 7.0(3)I2(2b)

Cisco NX-OS Release 7.0(3)I2(2b) does not include new software features.

Caveats

This section includes the following topics:

- Resolved Caveats—Cisco NX-OS Release 7.0(3)I2(2b)
- Open Caveats—Cisco NX-OS Release 7.0(3)I2(2b)

Resolved Caveats—Cisco NX-OS Release 7.0(3)I2(2b)

[Table 6](#) lists the Resolved Caveats in Cisco NX-OS Release 7.0(3)I2(2b). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 6 Resolved Caveats in Cisco NX-OS Release 7.0(3)I2(2b)

Record Number	Description
CSCuj78363	The formatting of IPv6 addresses in NXOS is incorrect. The "::" symbol must not be used to shorten just one 16-bit 0 field. For example, the representation 2001:db8:0:1:1:1:1:1 is correct, but 2001:db8::1:1:1:1:1 is not correct.
CSCun26341	There is no hostname (or ipaddr) in SYSLOG msg content.
CSCur22618	The show queuing interface command returns empty output when executed for FEX HIF interfaces.
CSCut60707	I/O Errors due to Journal corruption causes eUSB to remount as RO.
CSCuu66187	EEM events with a cron timer do not trigger.

Record Number	Description
CSCuv12285	For the Sponsor Portal, when using IE, you cannot add custom fields. And when you save, you get an error message. Also, other differences are seen in the display between IE and FF. The settings for Create account Random and Import are blank.
CSCuv29358	HIF interfaces on a Cisco Nexus 2348 may report incorrect counters.
CSCuv29468	Enhancement request for better event logging of PHY level issues in SDK event history.
CSCuv43018	"aciqos" crashed following a heartbeat failure.
CSCuv63473	MAC entries are not in sync between vPC peers. There are some MACs missing.
CSCuw06102	Ethanalyzer decode-internal match rule is out of range.
CSCuw36684	<p>A vulnerability in Simple Network Management Protocol (SNMP) interface of the Nexus 3000 (N3K) Series Switch could allow an authenticated, remote attacker to cause a partial denial of service (DoS) condition to the SNMP service running on the device.</p> <p>The vulnerability is due to improper handling of a SNMP request with a non-existent Object Identifier (OID). An attacker could exploit this vulnerability by sending a crafted SNMP request to the affected device. An exploit could allow the attacker to cause a partial DoS condition of the SNMP interface where SNMP requests with legitimately formatted OIDs will timeout. The DoS condition does clear and SNMP requests will start to be processed normally as expected.</p>
CSCuw40975	<p>Establishing an OSPF neighbor over a tunnel interface terminating on a Cisco Nexus 3100 switch will fail if the sending device is transmitting the OSPF packets with a TTL value greater than 1.</p> <p>These OSPF packets will be dropped in hardware and not sent to the CPU for further processing.</p>
CSCuw71568	AAA may crash and dump core randomly. This is likely to occur when accounting logs reach the threshold and are being archived due to a corner case issue with AAA process reloads of the switch.
CSCuw76278	<p>The Cisco Nexus 9000 Series switch Netstack process may crash after upgrading to 7.0(3)I2(1) or later, and display the following message in the log:-</p> <p>NETSTACK-2-PANIC: netstack [xxxx] sbflush: locked: PANIC: (null)</p> <p>SYSMGR-2-SERVICE_CRASHED: Service "netstack" (PID xxxxx) hasn't caught signal 6 (core will be saved).</p>
CSCuw82627	<p>Unable to upgrade code on Cisco Nexus 9000 Series switches using the install all command. The following error is seen:</p> <p>Pre-upgrade check failed. Return code 0x40930062 (free space in the filesystem is below threshold).</p>
CSCuw96342	TTL for inner packet after decap is not decremented when decap is done on 9500.
CSCuw98552	<p>TapSwitch is "leaking" some spanned traffic from Sw1/Sw2 back to the Sw1/Sw2 SPAN-destination port.</p> <p>The traffic received on the Span destination (e1/37) should be dropped. Instead, that traffic is re-spanned back, the traffic to loop.</p>

Caveats

Record Number	Description
CSCux99004	ALE ports should not show "FEX Fabric: yes" in show interface ethx/y capabilities output. This functionality is not supported and cannot be configured.
CSCux02038	The "::" symbol must not be used to shorten just one 16-bit 0 field. For example, the representation 2001:db8:0:1:1:1:1:1 is correct, but 2001:db8::1:1:1:1:1 is not correct.
CSCux05635	PV is mapping a CLI warning on switchport vlan mapping enable.
CSCux05817	CR4 cables are not displaying PID QSFP-H40G-CUXM and displaying the type as QSFP-40G-CR4
CSCux17524	With as-format asdot enabled on the Cisco Nexus 9000 Series switch, show ip route shows a 32 bit number for the route tag rather than the asdot notation for the as.
CSCux20639	L2 VLAN is no longer learning MAC addresses after a remote-span configuration.
CSCux21534	When executing a repave (copy file start + fast-reload) on a Cisco Nexus 3264 switch with PFC configured on all interfaces and the hardware qos ing-pg-no-min command used, the network qos policy is not applied due to buffer exhaustion.
CSCux22173	When the nvram is getting corrupted repeatedly - due to bad nvram battery etc. The nvram driver gets into a deadlock. This is very rare.
CSCux35434	The Cisco Nexus 9504 POAP with templates including breakout & TCAM configuration fail to POAP the box erases the username/password.
CSCux35867	VxLAN VRF context creation fails for RBAC users.
CSCux37668	PTP multicast traffic in a routed Cisco Nexus 9000 environment is not creating multicast state, no (s,g) is created.
CSCux38660	When running show lldp neighbor xml or show lldp neighbor json chassis may respond with encoder error message.
CSCux43153	Username with multiple numeric characters fail TACACS authentication.
CSCux50558	Cisco-Finisar optics are not recognized after upgrade.
CSCux52183	Install may fail with following message on Nexus 9500 switches if previous install attempts were aborted. sys03-eor1(config)# install all nxos bootflash:nxos.7.0.3.I2.2a.bin parallel Installer will perform compatibility check first. Please wait. Installer is forced disruptive Pre-upgrade check failed. Return code 0x40930062 (free space in the filesystem is below threshold). sys03-eor1(config)# sys03-eor1(config)#
CSCux52849	Module reloads due to bcm_usd process crash.
CSCux54401	The log message "%COPP-2-COPP_NO_POLICY: Control-plane is unprotected" is displayed only once during bootup. This message needs to be repeated periodically, as the initial message can be missed among many other boot-time logs.

Record Number	Description
CSCux58418	After enabling the mpls strip feature, traffic gets forwarded fine for a while. After sometime, traffic does not get forwarded.
CSCux67139	The Cisco 9000 Series switch is sending out undersized packets (less than <64 bytes) show interface on the Cisco Nexus 9000 Series switch egress interface does not report any drops or errors.
CSCux69299	Different FM might select different egress interface in ECMP.
CSCux69872	The copy run start command fails due to the /var/sysmgr folder being 100%. The /var/sysmgr/ folder was full due to uncollect debug files. If the system fails to zip the core file, it should delete the uncollect file to avoid this issue.
CsCux70000	The following error message is thrown and interfaces go to err-disabled: %ETHPORT-5-IF_DOWN_ERROR_DISABLED: Interface Ethernet1/48 is down (Error disabled. Reason:fu hashtable key not present) %ETHPORT-5-IF_SEQ_ERROR: Error ("fu hashtable key not present") communicating with MTS_SAP_PIXM_LOCAL for opcode
CSCux71293	The IPv6 route tracking using HMM shows the track state as UP even when the route is learned remotely and not through HMM.
CSCux79367	In a Double-side vPC scenario, DHCP offer/ack packets are looping when DHCP relay is used.
CSCux82382	Cisco Nexus 3000 Series switch may reboot unexpectedly. Last reset reason is recorded as 'bcm_usd hap reset'.
CSCux85380	Nexus switch can core the SSH process when using a client that tries to authenticate using " public key."
CSCux86269	When unplugging a Twinax cable, it takes about 3 seconds to remove the interface from LACP. This causes traffic drop for about 3 seconds because packets are forwarded to the interface where the cable is not connected.
CSCux86553	The Cisco Nexus 9000 Series switch may observe the following error while configuring clock settings: %MODULE-4-MOD_WARNING: Module # (Serial number: XXXXXXXXX) reported warning due to Client Failed TIMEZONE_DETAIL Operation in device DEV_LINECARD (device error 0x0)
CSCux86891	The Cisco Nexus 3100 may reload due to an aclqos process crash.
CSCux89481	When a customer removes one of the power supplies, show environment power will not display any information about that power supply. Ideally, it should display that the power supply is absent.
CSCux89937	The Cisco Nexus 9000 Series switch displays an error message that indicates a problem with the SPROM but does not clarify which SPROM (Chassis/LC/etc) is corrupted. Also, show sprom backplane x = > will display MAC address of all zeroes.

Caveats

Record Number	Description
CSCux98820	show inventory on N3K-C3132Q (on other Cisco Nexus 3000 Series switches as well) shows a PID for the fan module, which is not valid.
CSCux99539	<p>Following error messages are seen intermittently:</p> <p>%PFMA-2-PS_FAIL: Power supply 2 failed or shutdown (Serial number DCBxxxxx)</p> <p>%NOHMS-2-NOHMS_DIAG_ERR_PS_FAIL: System minor alarm on power supply 2: failed or not powered up</p> <p>%KERN-3-SYSTEM_MSG: [44773.886323] pfm/3482 - failed to set mux addr 0x70 ch 4 err I2C_ERR_NO_RESPONSE - kernel</p> <p>%NOHMS-2-NOHMS_DIAG_ERR_PS_RECOVERED: Recovered: System minor alarm on power supply 2: failed or not powered up</p> <p>The recovered message usually seen there after 30 sec to 2 mins after the above messages.</p>
CSCuy01506	N3048 returns an incorrect SysObjectID
CSCuy14581	MAC addresses are not learned on HIF port-channel.
CSCuy15922	Cisco Nexus 9504 switches do not display NTP access-group information with the show ntp access-groups command.
CSCuy16019	Traffic is no longer being blocked.
CSCuy16040	ACL filtering of traffic destined to local IPs does not work in 7.x release
CSCuy18436	The Cisco Nexus 3000 switch as a non-designated router drops L2 multicast traffic.
CSCuy18581	<ul style="list-style-type: none"> ■ Switch is unresponsive; console is hung ■ LCs are down ■ SCs are in flashing amber state ■ crash-info or core files are not generated
CSCuy29503	On the Cisco Nexus 3048 switch, fan2 and fan4 are 100% down when upgrading from 6.0(2)U6(4) to 7.0(3)I2(2b).
CSCuy36651	The Cisco Nexus 3000 Series switch does not respond to ARP requests on the LACP I state port.
CSCuy38033	In an ECMP environment, the same flow might send out on different egress interfaces when they hit different NFE instances of FMs on a Cisco Nexus 9508 or 9516 platform.
CSCuy41523	On Cisco Nexus 3000 Series switches: after link flaps, the MTU programming goes to the default MTU value 1500 for affected interface.
CSCuy42027	When the Cisco Nexus 9000 Series switch sees a bad sector in the flash on a line card (not supervisor), it marks the entire file system as Read-Only. The Gold Diagnostic test will mark it as failure.

Open Caveats—Cisco NX-OS Release 7.0(3)I2(2b)

Table 7 lists the open caveats in Cisco NX-OS Release 7.0(3)I2(2b). Click the bug ID to access the Bug Search tool and see additional information about the bug.

Table 7 Open Caveats in Cisco NX-OS Release 7.0(3)I2(2b)

Bug ID	Description
CSCun26726	HSRP packet decoding fails with an assertion error.
CSCun34856	All VLANs are suspended if one has a QoS policy, but the TCAM is not configured.
CSCuq03168	Microsoft NLB traffic being routed into the destination VLAN is experiencing packet loss.
CSCur30555	The show policy-map type queuing command does not show statistics for FEX HIF interfaces.
CSCur37816	When QoS Lite TCAM is configured, policer violated statistics shown as part of the show policy-map interface command are reported as 0 instead of NA (Not-Applicable).
CSCur46879	When copying the tunnel configuration file to running, the tunnel may flap before stabilizing.
CSCur59482	Policer action is not supported when a QoS policy of type "qos" is applied with the no-stats keyword.
CSCur61647	Even though there are no QoS classification policies currently active on any of the FEX HIF interfaces, the show incompatibility command still reports FEX QoS incompatibility during downgrade from 3.2 to earlier versions of software.
CSCur87839	Traffic cannot be routed using policy-based routing if the next-hop reachability is across the vPC peer link and the local vPC leg is down.
CSCus06693	ERPSAN sessions with a destination on the port-channel sub-interface is not supported.

Caveats

Bug ID	Description
CSCus07061	When a remote end of a vPC port channel member is shut down, the local end takes ~10 seconds to shut down. This only occurs when the port channel is 'active' (i.e., has LACP enabled).
CSCus58475	Vntag-mgr times out after changing VLANS for a range of 20 vPC port-channels.
CSCus63613	When a user reloads the active supervisor, the standby supervisor also reloads. During the reload process, the Service Policy Manager (SPM) cannot send data to the standby supervisor. A syslog is observed, notifying the active supervisor that the SPM has not successfully updated its data base to the standby supervisor. The active supervisor reloads the standby supervisor again, and the standby supervisor eventually reaches a good standby state.
CSCuu31392	ERSPAN packets are dropped on the intermediate switches if more than one ERSPAN session resolves over 40 Gig uplinks on a ToR.
CSCuu33640	An ITD policy is shown in no shut state. However, no policy is actually applied to the ingress policy if an invalid ACL is used for "exclude."
CSCuv90152	Packets are accepted on HIFPC members in suspended state.
CSCuv96382	For single label mpls/stripped tap-aggr packets, when the mpls strip dest-mac xxxx.xxxx.xxxx CLI is configured, dmac is not re-written on the modular (EOR) setup. The same will work on ToRs.
CSCuw02188	The Dynamic Twice NAT CLIs are not removable after upgrading the switch to 7.0(3)I2(1). Also, the Dynamic Twice NAT outside entry is not programmed in the hardware.
CSCux15156	When policy-map is copied through qos copy policy-map, the newly created policy-map cannot be modified or deleted.
CSCux42376	Packets entering on NS-PO ports are encapsulated with inner dot1q.
CSCuy35913	Ethpm locks up and causes copy r s, and relative operations to fail.

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 to 7.0(3)I2(2b), 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 7.0(3)I2(2b).

Downgrade Instructions

Disable the Guest Shell if you need to downgrade from Cisco NX-OS Release 7.0(3)I2(2b) to an earlier release.

Note:

- Downgrading with PVLANS configured is only supported with 6.1(2)I3(4x) releases.
- For a boot-variable change and reload to a 7.0(3)I1(1x) release, the PVLAN process is not brought up, and the PVLAN ports are kept down. For a boot-variable change to the 6.1(2)I3(3) release 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)I2(2b).

- Generation 1 100G line cards (N9K-X9408PC-CFP2) and generic expansion modules (N9K-M4PC-CFP2) only support 40G flows.
- N9K-X9408PC-CFP2 line cards do not support port channeling.
- In-Service Software Upgrades (ISSU) are not supported on Cisco Nexus 9000 Series switches.
- CoPP (Control Plane Policing) cannot be disabled. If you attempt to disable it in Cisco NX-OS Release 7.0(3)I3(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

Limitations

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 (Border Gateway Protocol)-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)I2(2b). 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 Series 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 Series line cards:
 - N9K-X9636PQ
 - N9K-X9464PX
 - N9K-X9464TX
 - N9K-X9432PQ
- Cisco NX-OS Release 7.0(3)I2(2b) supports flooding for Microsoft Network Load Balancing (NLB) unicast mode on Cisco Nexus 9500 Series 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—Cisco NX-OS Release 7.0(3)I2(2b)” section.

- TCAM resources are not shared when:
 - Routed ACL (Access Control List) is applied to multiple SVIs in the egress direction
 - Applying VACL (VLAN ACL) to multiple VLANs
- 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
 - N9K-C9396TX

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 N9300 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
 - 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

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

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.
- Private VLANs support port modes as follows:
 - Promiscuous
 - Promiscuous trunk
 - Isolated host
 - Isolated host trunk
 - Community host
- 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 id command.
- Private VLANs are mapped or associated depending on the PVLAN trunk mode.
- Private VLANs support the following:
 - PACLs (Port Access Control Lists)
 - RAACLs (Router Access Control Lists)
 - Layer 2 forwarding
 - PVLAN across switches through a regular trunk port
- Private VLANs support SVIs as follows:
 - SVI allowed only on primary VLANs
 - Primary and secondary IPs on the SVI
 - HSRP (Hot Standby Router Protocol) on the primary SVI
- Private VLANs support STP as follows:
 - RSTP (Rapid Spanning Tree Protocol)
 - MST (Multiple Spanning Tree)

- Private VLANs port mode is not supported on the following:
 - 40G interfaces of the Cisco Nexus C9396PX or Cisco Nexus C93128TX
 - Cisco Nexus 3164Q
- Private VLANs do not provide port mode support for the following:
 - Port channels
 - vPCs (Virtual Port Channels) interfaces
- Private VLANs do not provide support on breakout.
- Private VLANs do not provide support for the following:
 - IP multicast or IGMP snooping
 - DHCP (Dynamic Host Channel Protocol) snooping
 - PVLAN QoS
 - VACLs
 - VLAN Trunk Protocol (VTP)
 - Tunnels
 - VXLANs
 - SPAN (Switch Port Analyzer) when the source is a PVLAN VLAN
- Shared interfaces cannot be configured to be part of a private VLAN. For more details, see the *Cisco Nexus 9000 Series NX-OS Interfaces 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 private VLANs.
- 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

Guidelines and Limitations for Private VLANs

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

- Private VLAN promiscuous trunk ports allow you to configure a maximum of 16 private VLAN primary and secondary VLAN pairs on each promiscuous trunk port.
- For private VLAN 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 private VLAN ports configured 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:

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

Limitations with Other Features

Consider these configuration limitations with other features when configuring private VLANs:

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

- 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.
- Private VLAN ports can be configured as SPAN source ports.
- Private VLAN host or promiscuous ports cannot be SPAN destination ports.
- Destination SPAN ports cannot be isolated ports. However, a source SPAN port can be an isolated port.
- After configuring the association between the primary and secondary VLANs:
 - Dynamic MAC addresses that learned the secondary VLANs are aged out.
 - Static MAC addresses for the secondary VLANs cannot be created.
- 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.
- In private VLANs, STP controls only the primary VLAN.

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

Unsupported Features

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

- VXLAN
- DHCP
- FEX
- Cisco Nexus 9408 Line Card and 9300 Series Leaf Switches
- Other Unsupported Features

VXLAN

This section lists VXLAN features that are not supported.

- TX SPAN (Switched Port Analyzer) for VXLAN traffic is not supported for the access-to-network direction.
- QoS classification is not supported for VXLAN traffic in the network-to-access direction.
- QoS buffer-boost is not applicable for VXLAN traffic.
- ACL and QoS for VXLAN traffic in the network-to-access direction is not supported.
- Native VLANs for VXLAN are not supported. All traffic on VXLAN Layer 2 trunks needs to be tagged.
- Consistency checkers are not supported for VXLAN tables.
- VXLAN routing and VXLAN Bud Nodes features on the 3164Q platform are not supported.
- DHCP snooping and DAI features are not supported on VXLAN VLANs.

Unsupported Features

- IGMP snooping is not supported on VXLAN VLANs.
- Static MAC pointing to remote VTEP (VXLAN Tunnel End Point) is not supported with BGP EVPN (Ethernet VPN).

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

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.
- FEX is supported only on the Cisco Nexus 9332PQ, 9372PX, 9372PX-E and 9396PX and 9500 switches. It is not supported on the other Cisco Nexus 9300 Series.
- Cisco Nexus 9300 Series switches do not support FEX on uplink modules (ALE).
- FEX vPC is not supported between any model of FEX and the Nexus9300 (TOR) and 9500 Switches (EOR) as the parent switches
- 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.
- IPSG is not supported on FEX ports.

Cisco Nexus 9408 Line Card and 9300 Series Leaf Switches

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

- Breakout ports
- Port-channel (No LACP)
- vPC
- MCT (Multichassis EtherChannel Trunk)
- FEX
- 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

Other Unsupported Features

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

- Due to a Poodle vulnerability, SSLv3 is no longer supported.
- The Cisco Nexus 9300 Series switches do not support the 64-bit ALPM routing mode.
- IPSG is not supported on the following:
 - The last 6 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

New Documentation

No new documentation for this release.

Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to nexus9k-docfeedback@cisco.com. We appreciate your feedback.

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For information on obtaining documentation and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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

Open a service request online at:

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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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Cisco Nexus 9000 Series NX-OS Release Notes, Release 7.0(3)I2(2b)

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