Cisco Nexus 7000 Series NX-OS Release Notes, Release 6.1

Date: October 10, 2014
Part Number: OL-26854-06 E0
Current Release: 6.1(5a)

This document describes the features, caveats, and limitations for Cisco NX-OS software for use on the Cisco Nexus 7000 Series devices. Use this document in combination with documents listed in the "Related Documentation" section on page 103.

Note Release notes are sometimes updated with new information about restrictions and caveats. See the following website for the most recent version of the *Cisco Nexus 7000 Series NX-OS Release Notes, Release 6.x* Release Notes:
http://www.cisco.com/c/en/us/support/switches/nexus-7000-series-switches/products-release-notes-list.html

Table 1 shows the online change history for this document.

Table 1 Online History Change

Part Number	Revision	Date	Description
OL-26854-01	A0	August 10, 2012	Created release notes for Release 6.1(1).
	B0	September 21, 2012	Updated Table 6, Supported ISSU and ISSD Paths.
OL-26854-02	A0	October 26, 2012	Created release notes for Release 6.1(2).
	B0	October 31, 2012	Moved CSCub96561 to the "Open Caveats—Cisco NX-OS Release 6.1" section.
	C0	November 5, 2012	Added information about the Enhanced F2 Series modules.
	D0	November 19, 2012	Added a footnote to Table 6 and Table 7 about an IPFIB errors caveat in the "Upgrade or Downgrade Caveats" section.
	E0	November 20, 2012	Removed caveat CSCuc63099.

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Table 1 Online History Change (continued)

Part Number	Revision	Date	Description
OL-26854-03	A0	February 23, 2013	Created release notes for Release 6.1(3).
	B0	February 25, 2012	Added CSCuc86223 to the "Resolved Caveats—Cisco NX-OS Release 6.1(3)" section.
	C0	February 28, 2013	Updated the description of the Result Bundle Hash Load Balancing and Distribution feature in the "Cisco NX-OS Release 6.1(3) Software Features" section.
	D0	March 12, 2013	Added CSCud48236 to the "Resolved Caveats—Cisco NX-OS Release 6.1(3)" section.
	E0	March 28, 2013	• Added CSCud62221 to the "Resolved Caveats—Cisco NX-OS Release 6.1(3)" section. • Added BFD Not Supported on the MTI Interface to the "Limitations" section. • Revised the description of Improved Load Balancing and Traffic Distribution Across Port-Channel Member Links in the "Cisco NX-OS Release 6.1(3) Software Features" section.
	F0	April 11, 2013	Added CSCua92618 to the "Resolved Caveats—Cisco NX-OS Release 6.1(3)" section.
OL-26854-04	A0	May 17, 2013	Created release notes for Release 6.1(4).
	B0	May 29, 2013	Added CSCud41785 to the "Resolved Caveats—Cisco NX-OS Release 6.1(4)" section.
	C0	June 6, 2013	• Added CSCub47799 to the "Open Caveats—Cisco NX-OS Release 6.1" section. • Updated the description of CSCts64738 in the Resolved Caveats—Cisco NX-OS Release 6.1(2), page 79 section.
	D0	June 14, 2013	Updated the description of CSCub47799 in the "Open Caveats—Cisco NX-OS Release 6.1" section.
	E0	June 17, 2013	• Moved CSCud48236 to the "Open Caveats—Cisco NX-OS Release 6.1" section. • Added CSCtt47383 to the "Resolved Caveats—Cisco NX-OS Release 6.1(1)" section.
	F0	July 3, 2013	Added a caveat about Increased TCAM Usage for Handling Fragmented Packets in QoS ACL entries to the "Upgrade/Downgrade Paths and Caveats" section.

Table 1 Online History Change (continued)

Part Number	Revision	Date	Description
OL-26854-05	A0	September 15, 2013	Created release notes for Release 6.1(4a).
	B0	October 25, 2013	Updated the LISP caveats in the "Upgrade or Downgrade Caveats" section.
OL-26854-06	A0	March 27, 2014	Created release notes for Release 6.1(5).
	B0	April 14, 2014	Added CSCub25410 to the "Open Caveats—Cisco NX-OS Release 6.1" section.
	C0	April 15, 2014	Updated the "Upgrade or Downgrade Caveats" section to add steps for performing an upgrade from a supported ISSU and ISSD release to a Cisco NX-OX 6.x.x release.
	D0	May 1, 2014	Updated the description of caveat CSCtz15101.
	E0	September 9, 2014	Updated the "Resolved Caveats—Cisco NX-OS Release 6.1(5)" section.

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Introduction

The Cisco NX-OS software for the Cisco Nexus 7000 Series devices fulfills the routing, switching, and storage networking requirements of data centers and provides an Extensible Markup Language (XML) interface and a command-line interface (CLI) similar to Cisco IOS software.

System Requirements

This section includes the following topics:

- Memory Requirements, page 4
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- Integrating F2 Series Modules Into a Cisco Nexus 7000 Series System, page 14

Memory Requirements

Note The information in this section applies only if you have a Cisco Nexus 7000 Series system with a Supervisor 1 module with 4 GB of memory. If your system has a Supervisor 1 with 8 GB of memory, or a Supervisor 2 or Supervisor 2E module, you do not need the information in this section because a memory upgrade is not needed.

Cisco NX-OS software may require 8 GB of memory, depending on the software version you use and the software features you enable.

An 8 GB supervisor memory upgrade kit, N7K-SUP1-8GBUPG=, allows for growth in the features and capabilities that can be delivered in existing Cisco Nexus 7000 Series Supervisor 1 modules. The memory upgrade kit is supported on Cisco Nexus 7000 Series systems running Cisco NX-OS Release 5.1 or later releases. Instructions for upgrading to the new memory are available in the "Upgrading Memory for Supervisor Modules" section of the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide.*

The following guidelines can help you determine whether or not to upgrade an existing supervisor module:

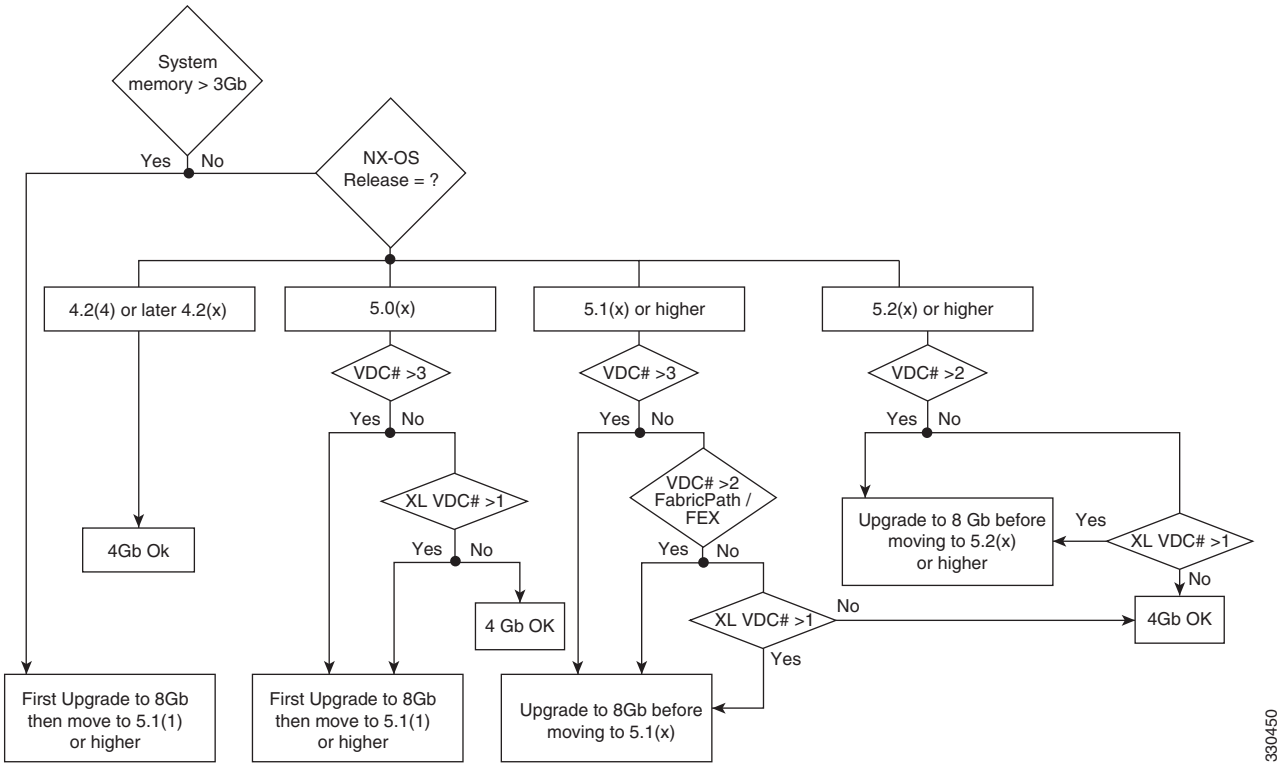
- When the system memory usage exceeds 3 GB (75 percent of total memory), we recommend that you upgrade the memory to 8 GB. Use the **show system resources** command from any VDC context to check the system memory usage:

```
Nexus-7000# show system resources
Load average:   1 minute: 0.47   5 minutes: 0.24   15 minutes: 0.15
Processes   :   959 total, 1 running
CPU states  :   3.0% user,   3.5% kernel,   93.5% idle
Memory usage:   4115776K total,   2793428K used,   1322348K free <-------------
```

- If you create more than one VDC with XL mode enabled, or if you have more than two VDCs, 8 GB of memory is required.

For additional guidance about whether or not to upgrade a supervisor module to 8 GB of memory, see Figure 1.

Figure 1 Supervisor Memory Upgrade Decision Flowchart



When you insert a supervisor module into a Cisco Nexus 7000 Series switch running Cisco NX-OS Release 5.1(x) or a later release, be aware that one of the following syslog messages will display, depending on the software version and the amount of memory for the supervisor module:

- If you are running Cisco NX-OS Release 5.1(1) or a later release and you have an 8-GB supervisor as the active supervisor and you insert a 4-GB supervisor module as the standby, it will be powered down. A severity 2 syslog message indicates that the memory amounts should be equivalent between the active and the standby supervisor:

  ```
  2010 Dec 3 00:05:37 switch %$ VDC-1 %$ %SYSMGR-2-SUP_POWERDOWN: Supervisor in slot 10
  is running with less memory than active supervisor in slot 9
  ```

  In this situation, you have the option to upgrade the memory in the 4-GB supervisor or shut down the system and remove the extra memory from the 8-GB supervisor.

- If you are running Cisco NX-OS Release 5.1(2) or a later release and you insert a 8-GB supervisor module as the standby, a severity 4 syslog message appears.

  ```
  2010 Dec  1 23:32:08 switch %SYSMGR-4-ACTIVE_LOWER_MEM_THAN_STANDBY: Active supervisor
  in slot 5 is running with less memory than standby supervisor in slot 6.
  ```

  In this situation, you have the option to remove the extra memory or do a switchover and upgrade the memory in the 4-GB supervisor.

Supported Device Hardware

The Cisco NX-OS software supports the Cisco Nexus 7000 Series chassis. You can find detailed information about supported hardware in the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*.

Table 2 shows the hardware supported by Cisco NX-OS Release, 6 x, Release 5.x and Release 4.x software.

Table 3 shows the FEX modules supported by Cisco Nexus 7000 Series I/O modules.

Table 4 shows the transceiver devices supported by each release.

For a list of minimum recommended Cisco NX-OS software releases for use with Cisco Nexus 7000 Series devices, see the document *Minimum Recommended Cisco NX-OS Releases for Cisco Nexus 7000 Series Switches*.

Table 2 Hardware Supported by Cisco NX-OS Software Releases

Product ID	Hardware	Minimum Software Release
N7K-C7004	Cisco Nexus 7004 chassis	6.1(2)
N7K-C7009	Cisco Nexus 7009 chassis	5.2(1)
N7K-C7010	Cisco Nexus 7010 chassis	4.0(1)
N7K-C7018	Cisco Nexus 7018 chassis	4.1(2)
N7K-C7004-FAN=	Replacement fan for the Cisco Nexus 7004 chassis	6.1(2)
N7K-C7009-FAN=	Replacement fan for the Cisco Nexus 7009 chassis	5.2(1)
N7K-C7010-FAN-S	System fan tray for the Cisco Nexus 7010 chassis	4.0(1)
N7K-C7010-FAN-F	Fabric fan tray for the Cisco Nexus 7010 chassis	4.0(1)
N7K-C7018-FAN	Fan tray for the Cisco Nexus 7018 chassis	4.1(2)
N7K-AC-3KW	3.0-kW AC power supply unit	6.1(2)
N7K-DC-3KW	3.0-kW DC power supply unit	6.1(2)
N7K-AC-6.0KW	6.0-kW AC power supply unit	4.0(1)
N7K-AC-7.5KW-INT N7K-AC-7.5KW-US	7.5-kW AC power supply unit	4.1(2) 4.1(2)
N7K-DC-6.0KW N7K-DC-PIU N7K-DC-CAB=	6.0-kW DC power supply unit (cable included) DC power interface unit DC 48 V-48 V cable (spare)	5.0(2) 5.0(2) 5.0(2)
N7K-SUP2E	Supervisor 2 Enhanced module	6.1(1)
N7K-SUP2	Supervisor 2 module	6.1(1)
N7K-SUP1	Supervisor 1 module	4.0(1)

Table 2 Hardware Supported by Cisco NX-OS Software Releases (continued)

Product ID	Hardware	Minimum Software Release
N7K-SUP1-8GBUPG	Supervisor module memory kit upgrade	5.1(1)
N7K-C7009-FAB-2	Fabric module, Cisco Nexus 7000 Series 9-slot	5.2(1)
N7K-C7010-FAB-2	Fabric module, Cisco Nexus 7000 Series 10-slot	6.0(1)
N7K-C7010-FAB-1	Fabric module, Cisco Nexus 7000 Series 10-slot	4.0(1)
N7K-C7018-FAB-2	Fabric module, Cisco Nexus 7000 Series 18-slot	6.0(1)
N7K-C7018-FAB-1	Fabric module, Cisco Nexus 7000 Series 18-slot	4.1(2)
N7K-F248XT-25E	Enhanced 48-port 1/10 GBase-T RJ45 module (F2 Series)	6.1(2)
N7K-F248XP-25E	Enhanced 48-port 1/10 Gigabit Ethernet SFP+ I/O module (F2 Series)	6.1(2)
N7K-F248XP-25	48-port 1/10 Gigabit Ethernet SFP+ I/O module (F2 Series)	6.0(1)
N7K-F132XP-15	32-port 1/10 Gigabit Ethernet module (F1 Series)	5.1(1)
N7K-M202CF-22L	2-port 100-Gigabit Ethernet I/O module XL (M2 Series)	6.1(1)
N7K-M206FQ-23L	6-port 40-Gigabit Ethernet I/O module XL (M2 Series)	6.1(1)
N7K-M224XP-23L	24-port 10-Gigabit Ethernet I/O module XL (M2 Series)	6.1(1)
N7K-M108X2-12L	8-port 10-Gigabit Ethernet I/O module XL[1]	5.0(2)
N7K-M132XP-12	32-port 10-Gigabit Ethernet SFP+ I/O module	4.0(1)
N7K-M132XP-12L	32-port 10-Gigabit Ethernet SFP+ I/O module XL[1]	5.1(1)
N7K-M148GS-11	48-port 1-Gigabit Ethernet SFP I/O module	4.1(2)
N7K-M148GS-11L	48-port 1-Gigabit Ethernet I/O module XL[1]	5.0(2)
N7K-M148GT-11	48-port 10/100/1000 Ethernet I/O module	4.0(1)
N7K-M148GT-11L	48-port 10/100/1000 Ethernet I/O module XL[1]	5.1(2)

Table 2 Hardware Supported by Cisco NX-OS Software Releases (continued)

Product ID	Hardware	Minimum Software Release
N2K-C2248TP-1GE	Cisco Nexus 2248TP Fabric Extender	5.1(1)
N2K-C2224TP-1GE	Cisco Nexus 2224TP Fabric Extender	5.2(1)
N2K-C2232PP-10GE	Cisco Nexus 2232PP Fabric Extender	5.2(1)
N2K-C2232TM	Cisco Nexus 2232TM Fabric Extender	6.1(1)
N2K-C2248TP-E	Cisco Nexus 2248TP-E Fabric Extender	6.1(1)

1. Requires the Cisco Nexus 7010 Scalable Feature Package license (N7K-C7010-XL) or the Cisco Nexus 7018 Scalable Feature Package license (N7K-C7018-XL), depending on the chassis, to enable all XL-capable I/O modules to operate in XL mode.

Table 3 FEX Modules Supported by Cisco Nexus 7000 Series Modules

Cisco Nexus 7000 Series Module	FEX Module	Minimum Software Release
32-port 10-Gigabit Ethernet SFP+ I/O module (N7K-M132XP-12) 32-port 10-Gigabit Ethernet SFP+ I/O module (N7K-M132XP-12L)	N2K-C2248TP-1GE	5.1(1)
	N2K-C2224TP-1GE N2K-C2232PP-10GE	5.2(1)
	N2K-C2232TM N2K-C2248TP-E	6.1(1)
48-port 1/10 Gigabit Ethernet SFP+ I/O F2 Series module (N7K-F248XP-25)	N2K-C2224TP-1GE N2K-C2248TP-1GE N2K-C2232PP-10GE	6.0(1)
	N2K-C2232TM N2K-C2248TP-E	6.1(1)
24-port 10-Gigabit Ethernet I/O M2 Series module XL (N7K-M224XP-23L)	N2K-C2224TP-1GE N2K-C2248TP-1GE N2K-C2232PP-10GE N2K-C2232TM N2K-C2248TP-E	6.1(1)
Enhanced 48-port 1/10 Gigabit Ethernet SFP+ I/O module (F2 Series) (N7K-F248XP-25E)	N2K-C2224TP-1GE N2K-C2248TP-1GE N2K-C2232PP-10GE N2K-C2232TM N2K-C2248TP-E	6.1(2)

Note The Cisco Nexus 7000 Enhanced F2 Series 48-port 1/10 GBase-T RJ45 Module (N7K-F248XT-25E) does not support Cisco Nexus 2000 Fabric Extender modules.

Table 4 Transceivers Supported by Cisco NX-OS Software Releases

I/O Module	Product ID	Transceiver Type	Minimum Software Version
N7K-F248XP-25	FET-10G	Cisco Fabric Extender Transceiver (FET)	6.0(1)
	SFP-10G-SR	10GBASE-SR SFP+	6.0(1)
	SFP-10G-LR	10GBASE-LR SFP+	6.0(1)
	SFP-10G-ER	10GBASE-ERMSFP+	6.0(1)
	SFP-10G-LRM	10GBASE-LRM SFP+	6.0(1)
	SFP-10G-ZR[3]	10GBASE-ZR SFP+	6.1(1)
	SFP-H10GB-CUxM	SFP-H10GB-CUxM Twinax Cable Passive (1m, 3m, 5m)	6.0(1)
	SFP-H10GB-ACUxM	SFP-H10GB-ACUxM Twinax Cable Active (7m, 10m)	6.0(1)
	SFP-GE-T	1000BASE-T SFP	6.0(1)
	SFP-GE-S	1000BASE-SX SFP (DOM)	6.0(1)
	SFP-GE-L	1000BASE-LX/LH SFP (DOM)	6.0(1)
	SFP-GE-Z	1000BASE-ZX SFP (DOM)	6.0(1)
	GLC-LH-SM	1000BASE-LX/LH SFP	6.0(1)
	GLC-LH-SMD	1000BASE-LX/LH SFP	6.0(1)
	GLC-SX-MM	1000BASE-SX SFP	6.0(1)
	GLC-SX-MMD	1000BASE-SX SFP	6.0(1)
	GLC-ZX-SM	1000BASE-ZX SFP	6.0(1)
	GLC-T	1000BASE-T SFP	6.0(1)
	GLC-BX-D	1000BASE-BX10-D	6.0(1)
	GLC-BX-U	1000BASE-BX10-U	6.0(1)
	GLC-EX-SMD	1000BASE-EX SFP	6.1(1)
	CWDM-SFP-xxxx[1]	1000BASE-CWDM	6.0(1)
	DWDM-SFP10G-xx.xx[1]		6.1(1)
	DWDM-SFP-xxxx[1]	1000BASE-DWDM	6.0(1)

Table 4 Transceivers Supported by Cisco NX-OS Software Releases (continued)

I/O Module	Product ID	Transceiver Type	Minimum Software Version
N7K-F248XP-25E	FET-10G	Cisco Fabric Extender Transceiver (FET)	6.1(2)
	SFP-10G-SR	10GBASE-SR SFP+	6.1(2)
	SFP-10G-LR	10GBASE-LR SFP+	6.1(2)
	SFP-10G-ER	10GBASE-ERMSFP+	6.1(2)
	SFP-10G-LRM	10GBASE-LRM SFP+	6.1(2)
	SFP-10G-ZR[3]	10GBASE-ZR SFP+	6.1(2)
	SFP-H10GB-CUxM	SFP-H10GB-CUxM Twinax Cable Passive (1m, 3m, 5m)	6.1(2)
	SFP-H10GB-ACUxM	SFP-H10GB-ACUxM Twinax Cable Active (7m, 10m)	6.1(2)
	SFP-GE-T	1000BASE-T SFP	6.1(2)
	SFP-GE-S	1000BASE-SX SFP (DOM)	6.1(2)
	SFP-GE-L	1000BASE-LX/LH SFP (DOM)	6.1(2)
	SFP-GE-Z	1000BASE-ZX SFP (DOM)	6.1(2)
	GLC-LH-SM	1000BASE-LX/LH SFP	6.1(2)
	GLC-LH-SMD	1000BASE-LX/LH SFP	6.1(2)
	GLC-SX-MM	1000BASE-SX SFP	6.1(2)
	GLC-SX-MMD	1000BASE-SX SFP	6.1(2)
	GLC-ZX-SM	1000BASE-ZX SFP	6.1(2)
	GLC-T	1000BASE-T SFP	6.1(2)
	GLC-BX-D	1000BASE-BX10-D	6.1(2)
	GLC-BX-U	1000BASE-BX10-U	6.1(2)
	GLC-EX-SMD	1000BASE-EX SFP	6.1(2)
	CWDM-SFP-xxxx[2]	1000BASE-CWDM	6.1(2)
	DWDM-SFP10G-xx.xx[1]		6.1(2)
	DWDM-SFP-xxxx[1]	1000BASE-DWDM	6.1(2)

Table 4 Transceivers Supported by Cisco NX-OS Software Releases (continued)

I/O Module	Product ID	Transceiver Type	Minimum Software Version
N7K-F132XP-15	SFP-10G-SR	10GBASE-SR SFP+	5.2(1)
	SFP-10G-LR	10GBASE-LR SFP+	5.1(1)
	SFP-10G-ER[3]	10GBASE-ER SFP+	5.1(1)
	SFP-10G-LRM	10GBASE-LRM SFP+	5.1(1)
	SFP-10G-ZR[3]	10GBASE-ZR SFP+	6.1(1)
	SFP-H10GB-CUxM	SFP-H10GB-CUxM Twinax Cable Passive (1m, 3m, 5m)	5.1(1)
	SFP-H10GB-ACUxM	SFP-H10GB-ACUxM Twinax Cable Active (7m, 10m)	5.1(1)
	SFP-GE-T	1000BASE-T SFP	5.1(1)
	SFP-GE-S	1000BASE-SX SFP (DOM)	5.1(1)
	SFP-GE-L	1000BASE-LX/LH SFP (DOM)	5.1(1)
	SFP-GE-Z	1000BASE-ZX SFP (DOM)	5.1(1)
	GLC-LH-SM	1000BASE-LX/LH SFP	5.1(1)
	GLC-SX-MM	1000BASE-SX SFP	5.1(1)
	GLC-ZX-SM	1000BASE-ZX SFP	5.1(1)
	GLC-T	1000BASE-T SFP	5.1(1)
	GLC-LH-SMD	1000BASE-LX/LH SFP	5.2(1)
	GLC-SX-MMD	1000BASE-SX SFP	5.2(1)
	GLC-EX-SMD	1000BASE-EX-SFP	6.1(1)
	DWDM-SFP10G-xx.xx[1]		6.1(1)
N7K-M108X2-12L	SFP-10G-SR[4]	10GBASE-SR SFP+	5.2(3a)
	SFP-10G-LR[4]	10GBASE-LR SFP+	5.2(3a)
	SFP-10G-LRM[4]	10GBASE-LRM SFP+	5.2(1)
	SFP-H10GB-CUxM[4]	SFP-H10GB-CUxM Twinax Cable Passive (1m, 3m, 5m)	5.2(1)
	CVR-X2-SFP10G	OneX Converter Module - X2 to SFP+ Adapter	5.2(1)
	X2-10GB-CX4	10GBASE-CX4 X2	5.1(1)
	X2-10GB-ZR	10GBASE-ZR X2	5.1(1)
	X2-10GB-LX4	10GBASE-LX4 X2	5.1(1)
	X2-10GB-SR	10GBASE-SR X2	5.0(2a)
	X2-10GB-LR	10GBASE-LRX2	5.0(2a)
	X2-10GB-LRM	10GBASE-LRM X2	5.0(2a)
	X2-10GB-ER	10GBASE-ERX2	5.0(2a)
	DWDM-X2-xx.xx=[1]	10GBASE-DWDM X2	5.0(2a)

Table 4 Transceivers Supported by Cisco NX-OS Software Releases (continued)

I/O Module	Product ID	Transceiver Type	Minimum Software Version
N7K-M148GS-11	SFP-GE-S	1000BASE-SX	4.1(2)
	GLC-SX-MM		4.1(2)
	SFP-GE-L	1000BASE-LX	4.1(2)
	GLC-LH-SM		4.1(2)
	SFP-GE-Z	1000BASE-ZX	4.1(2)
	GLC-ZX-SM		4.1(2)
	GLC-T	1000BASE-T	4.2(1)
	SFP-GE-T		4.2(1)
	GLC-BX-D	1000BASE-BX10-D	5.2(1)
	GLC-BX-U	1000BASE-BX10-U	5.2(1)
	GLC-SX-MMD	1000BASE-SX	5.2(1)
	GLC-LH-SMD	1000BASE-LX	5.2(1)
	CWDM-SFP-xxxx[1]	1000BASE-CWDM	4.2(1)
	DWDM-SFP-xxxx[1]	1000BASE-DWDM	4.2(1)
N7K-M148GS-11L	SFP-GE-S	1000BASE-SX	5.0(2a)
	GLC-SX-MM		5.0(2a)
	SFP-GE-L	1000BASE-LX	5.0(2a)
	GLC-LH-SM		5.0(2a)
	SFP-GE-Z	1000BASE-ZX	5.0(2a)
	GLC-ZX-SM		5.0(2a)
	GLC-T	1000BASE-T	5.0(2a)
	SFP-GE-T		5.0(2a)
	GLC-BX-D	1000BASE-BX10-D	5.2(1)
	GLC-BX-U	1000BASE-BX10-U	5.2(1)
	GLC-SX-MMD	1000BASE-SX	5.2(1)
	GLC-LH-SMD	1000BASE-LX	5.2(1)
	DWDM-SFP-xxxx[1]	1000BASE-DWDM	5.0(2a)
	CWDM-SFP-xxxx[1]	1000BASE-CWDM	5.0(2a)
N7K-M132XP-12	FET-10G	Cisco Fabric Extender Transceiver (FET)	5.1(1)
	SFP-10G-SR	10GBASE-SR SFP+	4.2(6)
	SFP-10G-LR	10GBASE-LR SFP+	4.0(3)
	SFP-10G-ER	10GBASE-ER SFP+	4.0(1)
	SFP-H10GB-ACUxM[3]	SFP-H10GB-ACUxM Twinax Cable Active (7m, 10m)	5.1(2)

Table 4 Transceivers Supported by Cisco NX-OS Software Releases (continued)

I/O Module	Product ID	Transceiver Type	Minimum Software Version
N7K-M132XP-12L	FET-10G	Cisco Fabric Extender Transceiver (FET)	5.1(1)
	SFP-10G-SR	10GBASE-SR SFP+	5.1(1)
	SFP-10G-LR	10GBASE-LR SFP+	5.1(1)
	SFP-10G-ER	10GBASE-ER SFP+	5.1(1)
	SFP-10G-LRM	10GBASE-LRM SFP+	5.1(1)
	SFP-10G-ZR[3]	10GBASE-ZR SFP+	6.1(1)
	SFP-H10GB-ACUxM	SFP-H10GB-ACUxM Twinax Cable Active (7m, 10m)	5.1(1)
	SFP-H10GB-CUxM[3]	SFP-H10GB-CUxM Twinax Cable Passive (1m, 3m, 5m)	5.1(2)
	DWDM-SFP10G-xx.xx		6.1(1)
N7K-M224XP-23L	FET-10G	Cisco Fabric Extender Transceiver (FET)	6.1(1)
	SFP-10G-SR	10GBASE-SR SFP+	6.1(1)
	SFP-10G-LR	10GBASE-LR SFP+	6.1(1)
	SFP-10G-ER	10GBASE-ER SFP+	6.1(1)
	SFP-10G-ZR[3]	10GBASE-ZR SFP+	6.1(1)
	SFP-10G-LRM	10GBASE-LRM SFP+	6.1(1)
	SFP-H10GB-ACUxM	SFP-H10GB-ACUxM Twinax Cable Active (7m, 10m)	6.1(1)
	SFP-H10GB-CUxM[3]	SFP-H10GB-CUxM Twinax Cable Passive (1m, 3m, 5m)	6.1(1)
	DWDM-SFP10G-xx.xx[1]		6.1(1)
N7K-M206FQ-23L	QSFP-40GE-LR4		6.1(4)
	QSFP-40G-SR4		6.1(1)
N7K-M202CF-22L	CFP-100G-LR4		6.1(1)
	CFP-40G-SR4		6.1(2)
	CFP-40G-LR4		6.1(2)
	CFP-100G-SR10		6.1(3)

1. For a complete list of supported optical transceivers of this type, go to the Cisco Transceiver Module Compatibility Information page.
2. For a complete list of supported optical transceivers of this type, go to the Cisco Transceiver Module Compatibility Information page.
3. Only version -02 is supported.
4. Requires CVR-X2-SFP10G, OneX Converter Module (X2 to SFP+ Adapter).

Integrating F2 Series Modules Into a Cisco Nexus 7000 Series System

The Cisco Nexus 7000 48-port 1/10 Gigabit Ethernet SFP+ I/O module (F2 Series) module is a low-latency, high-performance, high-density module that offers most Layer 2 and Layer 3 functions of Cisco NX-OS software. When integrating the F2 Series module into a Cisco Nexus 7000 Series system, observe the following guidelines:

- An F2 Series module requires its own F2 Series module VDC. This VDC is restricted to the F2 Series module; M1 and F1 ports cannot be in the F2 Series module VDC. The default VDC can also be configured as an F2 Series module VDC.
- If you boot up an unconfigured Cisco Nexus 7000 Series device that contains only F2 Series modules, then the default VDC is automatically configured as an F2 Series module VDC.
- When configuring a vPC peer link on an F2 Series module, you must have an F2 Series module on either side of the vPC peer link. Only identical I/O modules on either side of a vPC peer link are supported. Using different I/O modules on either side of a vPC peer link is not supported.

The preceding considerations also apply to the Enhanced F2-Series modules: Cisco Nexus 7000 Enhanced F2 Series 48-port 1/10 Gigabit Ethernet SFP+ I/O module (N7K-F248XP-25E) and Cisco Nexus 7000 Enhanced F2 Series 48-port 1/10 GBase-T RJ45 module (N7K-F248XT-25E).

Some software features are not available on the F2 Series modules in Cisco NX-OS Release 6.x. See Table 5 for a list of features that have hardware and software support on the F2 Series and Enhanced F2 Series modules.

Table 5 Feature Support on F2 Series and Enhanced F2 Series Modules

	Hardware Support		Software Support	
Feature	**F2 Series Module**	**F2E-Series Module**	**F2 Series Module**	**F2E-Series Module**
ACL Capture	Yes	Yes	Currently not supported	Currently not supported
ERSPAN	Yes	Yes	6.1(1)	6.1(2)
FCoE	Yes	Yes	6.1(1)	6.1(2) SFP+ only
GRE tunnels	No	No	N/A	N/A
LISP	No	No	N/A	N/A
MACSEC	No	Yes	N/A	Currently not supported
MPLS	No	No	N/A	N/A
NetFlow	Yes	Yes	6.1(2)	6.1(2)
OTV	No	No	N/A	N/A
PIM-BiDir	No	Yes	N/A	Currently not supported
VLAN counters	No	Yes	N/A	Currently not supported
Interoperability with M-Series modules	No	Yes	N/A	Currently not supported

Migrating to M2 Series Modules

When preparing to migrate from an M1 Series module or an F2 Series to an M2 Series module, observe these guidelines:

- The M2 Series modules interoperate with M1 Series and F1 Series modules in the same VDC.
- The M2 Series modules work with Fabric 1 and Fabric 2 modules and they work with both Supervisor 1 and Supervisor 2 modules.
- The migration procedure is disruptive.

To ensure an error-free migration, we recommend that you follow these steps to install an M2 Series module:

1. Remove the module to be replaced.
2. Enter the **write erase** command to erase the startup configuration.
3. Insert the M2 Series module.
4. Enter the **copy running-config startup-config** command to copy the configuration to the switch.

Note Follow the safety precautions and installation instructions in the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide* when replacing an I/O module.

Upgrade/Downgrade Paths and Caveats

This section includes information about upgrading or downgrading Cisco NX-OS software on Cisco Nexus 7000 Series devices. It includes the following sections:

- Supported Upgrade and Downgrade Paths, page 15
- Upgrade or Downgrade Caveats, page 17

Supported Upgrade and Downgrade Paths

Note Before you upgrade or downgrade your Cisco NX-OS software, we recommend that you read the complete list of caveats in this section to understand how an upgrade or downgrade might affect your network, depending on the features that you have configured.

Do not change any configuration settings or network settings during a software upgrade. Any changes in the network settings may cause a disruptive upgrade.

Refer to Table 6 for the nondisruptive upgrade (ISSU) path to, and nondisruptive downgrade (ISSD) path from Cisco NX-OS Release 6.1(x). Releases that are not listed for a particular release train do not support a direct ISSU or ISSD to the current release.

Table 6 Supported ISSU and ISSD Paths

Current Release	**Release Train**	**Releases That Support ISSU to the Current Release**	**Releases That Support ISSD from the Current Release**
NX-OS Release 6.1(5a)	6.1	6.1(5)	Not Supported
Previous Release	**Release Train**	**Releases That Support ISSU to the Current Release**	**Releases That Support ISSD from the Current Release**
NX-OS Release 6.1(5)	6.1	6.1(2), 6.1(3), 6.1(4), 6.1(4a), 6.1(5)upg	6.1(2), 6.1(3), 6.1(4), 6.1(4a), 6.1(5)upg
	6.0	6.0(4)	6.0(4)
	5.2	5.2(3a), 5.2(4), 5.2(5), 5.2(7)*	5.2(3a), 5.2(4), 5.2(5), 5.2(7)
Previous Release	**Release Train**	**Releases That Support ISSU to the Current Release**	**Releases That Support ISSD from the Current Release**
NX-OS Release 6.1(4a)	6.1	6.1(1), 6.1(2), 6.1(3)	6.1(1), 6.1(2), 6.1(3)
	6.0	6.0(3), 6.0(4)	6.0(3), 6.0(4)
	5.2	5.2(4), 5.2(5), 5.2(7)*, 5.2(9)	5.2(4), 5.2(5), 5.2(7), 5.2(9)
Previous Release	**Release Train**	**Releases That Support ISSU to the Current Release**	**Releases That Support ISSD from the Current Release**
NX-OS Release 6.1(4)	6.1	6.1(1), 6.1(2), 6.1(3)	6.1(1), 6.1(2), 6.1(3)
	6.0	6.0(3), 6.0(4)	6.0(3), 6.0(4)
	5.2	5.2(4), 5.2(5), 5.2(7), 5.2(9)	5.2(4), 5.2(5), 5.2(7), 5.2(9)
Previous Release	**Release Train**	**Releases That Support ISSU to the Previous Release**	**Releases That Support ISSD from the Previous Release**
NX-OS Release 6.1(3)	6.1	6.1(1), 6.1(2)	6.1(1), 6.1(2)
	6.0	6.0(2), 6.0(3), 6.0(4)	6.0(2), 6.0(3), 6.0(4)
	5.2	5.2(1), 5.2(3a), 5.2(4), 5.2(5), 5.2(7)*, 5.2(9)	5.2(1), 5.2(3a), 5.2(4), 5.2(5), 5.2(7), 5.2(9)
Previous Release	**Release Train**	**Releases That Support ISSU to the Previous Release**	**Releases That Support ISSD from the Previous Release**
NX-OS Release 6.1(2)	6.1	6.1(1)	6.1(1)
	6.0	6.0(2), 6.0(3), 6.0(4)	6.0(2), 6.0(3), 6.0(4)
	5.2	5.2(3a), 5.2(4), 5.2(5), 5.2(7)*, 5.2(9)	5.2(3a), 5.2(4), 5.2(5), 5.2(7), 5.2(9)
Previous Release	**Release Train**	**Releases That Support ISSU to the Previous Release**	**Releases That Support ISSD from the Previous Release**
NX-OS Release 6.1(1)	6.1	N/A	N/A
	6.0	6.0(2), 6.0(3), 6.0(4)	6.0(2), 6.0(3), 6.0(4)
	5.2	5.2(3a), 5.2(4), 5.2(5)	5.2(3a), 5.2(4), 5.2(5)

* Before performing an ISSU to NX-OS Release 6.1(x), see the •IPFIB Errors caveat in this section.

Unless otherwise noted, all releases within the same release train are ISSU and ISSD compatible to releases within the same train. In addition, all releases of Cisco NX-OS Release 6.1(x) software are ISSU and ISSD compatible will all releases of Cisco NX-OS Release 6.0(x).

If you are running a Cisco NX-OS release earlier than Release 5.2, you can perform an ISSU in multiple steps. Table 7 lists the supported multistep ISSU paths.

Table 7 Multistep ISSU Paths to the Current Release

Starting Release	Intermediate Release	Destination Release
4.2(6), 5.0(3), 5.1(3), or 5.1(5)	5.2(7)[1]	6.1(4)
4.2(8), 5.1(5)	5.2(9)	6.1(4a)

1. Before performing an ISSU to NX-OS Release 5.2(7), see the •IPFIB Errors caveat in this section.

Upgrade or Downgrade Caveats

A software upgrade or downgrade can be impacted by the following features or hardware:

- To perform an ISSU to Release 6.x.x from one of the ISSU supported releases listed in the Supported ISSU and ISSD Paths (Table 6) table, follow these steps:
  1. Enter the **show running-config aclmgr inactive-if-config** command for all VDCs.
  2. Enter the **clear inactive-config acl** command for all VDCs.
  3. If the configuration includes any mac packet-classify configurations on any interface, remove all of the configurations by using the **no mac packet-classify** command.
- FEX Host Interface

  When you upgrade Cisco NX-OS software by changing boot variables and reloading the device, make sure to save the FEX HIF configuration to the startup configuration, as well as another location (such as bootflash or an external server). Once the upgrade to a new release is complete, and the FEX is fully online and associated, reapply the FEX HIF configuration.

Note During the process of Cisco Fabric Extender (FEX) modules getting connected to a Cisco Nexus 7000 Series switch, if the switch is manually upgraded or downgraded, FEX host interfaces (HIFs) lose the configuration. To avoid it, if you are manually upgrading the vPC system, you must save the FEX HIF (FEX host interfaces connected to hosts) configurations to both the startup configuration file and to an external device before starting the reload, and reapply the configuration once the FEX module is fully online.

- IPv6 PBR

  Before performing an ISSU to Cisco NX-OS Release 6.1(3), disable IPv6 Policy Based Routing (PBR). Failure to disable IPv6 PBR prior to the upgrade might result in a failure of the ACLQOS process when an IP route is cleared following the ISSU.
- M2 Series Module Failure Following ISSU and Module Reload

When a specific sequence of events occur prior to an ISSU from Cisco NX-OS Release 6.1(1) to Release 6.1(2), on a Cisco Nexus 7000 Series device with both F1 Series and M2 Series modules installed, the M2 Series module fails when it reloads after the upgrade. The following ordered sequence of events lead to the failure of the M2 Series module:

1. A 40 G CFP transceiver (CFP-40G-SR4 or CFP-40G-LR4) is inserted in a port on the 2-port 100-Gigabit Ethernet I/O module XL (M2 Series) that is installed in a Cisco Nexus 7000 Series device running Cisco NX-OS Release 6.1(1).
2. The M2 Series module reloads or the entire chassis reloads.
3. The ISSU from Cisco NX-OS Release 6.1(1) to Release 6.1(2) occurs.

If this problem occurs, reload the F1 Series module following the upgrade to Cisco NX-OS Release 6.1(2). The M2 Series will then come online.

- vPC+ for FEX Server Facing Ports

  ISSD is not supported when vPC+ for FEX server facing ports is enabled. If you are using this feature, you should disable it prior to an ISSD from Cisco NX-OS Release 6.1(2) by removing vPC+ from FEX server facing ports.

- Unsupported Modules

  When downgrading from Cisco NX-OS Release 6.1(2) to an earlier release, first power down all modules that are unsupported in the downgrade image. Then purge the configuration of the unsupported modules using the **purge module** *module_number* **running-config** command.

- OSPF

  Cisco NX-OS Release 6.1(1) supports an increased number of OSPF process instances per VDC. See the *Cisco Nexus 7000 Series NX-OS Verified Scalability Guide* for the latest verified number.

  If you have more than four OSPF v2 or more than four OSPF v3 process instances configured and you downgrade to an earlier release, you must remove instances 5 and higher. Use the following command to match an OSPF v2 process tag with an OSPF process instance:

```
switch# show system internal sysmgr service name ospf
Service "__inst_005__ospf" ("ospf", 13):  <= OSPF process instance
        UUID = 0x41000119, PID = 3402, SAP = 320
        State: SRV_STATE_HANDSHAKED (entered at time Mon Jul 23 05:11:33 2012).
        Restart count: 1
        Time of last restart: Mon Jul 23 05:11:33 2012.
        The service never crashed since the last reboot.
        Tag = 1                 <= configured process tag
        Plugin ID: 1
```

  Use the **show system internal sysmgr service name ospfv3** command to match an OSPF v3 process tag with an OSPF v3 process instance.

- QoS Policies and ACLs

  Before you perform an ISSU or an ISSD between specific releases, you must first remove QoS policies and ACLs from interfaces that are in the down state. See Table 8 to determine which release combinations are impacted.

Table 8 Impact of Inactive QoS Policies and ACLs on ISSU and ISSD

Source Image	Destination Image	ISSU or ISSD Impact?
Release 5.2(x) earlier than 5.2(4)	Release 6.x	Yes
Release 5.2(4) and later 5.2(x) releases	Release 6.x	No

Table 8 Impact of Inactive QoS Policies and ACLs on ISSU and ISSD

Source Image	Destination Image	ISSU or ISSD Impact?
Release 6.x earlier than Release 6.0(3)	Release 6.x and Release 5.x	Yes
Release 6.0(3) and later 6.x releases	Release 6.x and Release 5.x	No

If you do not remove the QoS policies and ACLs, the installer process aborts the upgrade or downgrade process, and a message similar to the following is displayed:

```
Service "ipqosmgr" : Please remove inactive policies using the command "clear
inactive-config qos" Pre-upgrade check failed. Return code 0x415E0055 (Need to clear
inactive-if-config from qos manager using the command "conf;clear inactive-config qos"
or can manually clear the config shown by the command: "show running-config ipqos
inactive-if-config").
```

Note The automatic **clear inactive-config qos** command that clears an inactive configuration will delete the port channel policies even if one of the ports in a port channel has inactive policies.

Guidelines for manual policy removal: during a manual removal, when the interface is part of a port channel, remove the policy map or access list from the port channel or remove the interface from the port channel before performing the ISSU or ISSD. For all other interface types, remove the policy map or access list from the interface.

- CoPP

  The default Control Plane Policing (CoPP) policy does not change when you upgrade the Cisco NX-OS software.

  If you downgrade from Cisco NX-OS Release 6.0(1) without using ISSD to a release earlier than NX-OS Release 5.2(1), the CoPP configuration is lost, and a CoPP policy is no longer attached to the control plane.

- Feature Support

  Any features introduced in a release must be disabled before downgrading to a release that does not support those features.

- AES Password Encryption

  If you enable the AES password encryption feature and a master encryption key in Cisco NX-OS Release 6.0(1), you must decrypt all type-6 passwords, disable the AES password encryption feature, and delete the master key before downgrading.

- Aggressive Failure Detection Timers

  ISSU, stateful switchover (SSO), and graceful restart are not supported when aggressive failure detection timers are used for any Layer 3 protocols. Starting in Cisco NX-OS Release 5.2(3a), the First Hop Redundancy Protocol (FHRP) with aggressive timers has been validated for SSO or ISSU using the extended hold timer feature. Other protocols such as OSPF have been validated with aggressive timers without SSO or ISSU support. For additional information on aggressive timer support and extended hold timers for FHRP, see the *Cisco Nexus 7000 Series NX-OS Unicast Routing Configuration Guide*.

- BFD

  BFD for static routes does not support a stateful switchover (SSO) or an ISSU. When you perform an ISSU or an SSO, a small amount of packet loss can result in flows that follow static routes protected by BFD.

- LISP
  - If you have LISP configured on a Cisco Nexus 7000 Series device, you must remove the configuration before an ISSU. Enter the **no lisp feature** command to individually unconfigure the LISP commands. Then enter the **no feature lisp** command. After the ISSU completes, enter the **feature lisp** command to reenable LISP and then reconfigure it
  - If you perform an ISSU from Cisco NX-OS Release 5.2(3a) or Release 5.2(4) to Release 6.1(2), and LISP was enabled prior to the upgrade, you must enter the **clear ip route** command and clear the LISP map cache following the upgrade to allow LISP to work in Release 6.1(2).
- IPFIB Errors

  During an upgrade to Cisco NX-OS Release 5.2(7) or a later release, the following error messages might appear:

  ```
  %IPFIB-SLOT2-2-FIB_TCAM_HA_ERROR: FIB recovery errors, please capture 'show
  tech forwarding l3 unicast' and 'show tech forwarding l3 multicast'
  ```

  In addition, the ipfib process might fail.

  This issue can be triggered when the following sequence of events occur:

  - You perform an ISSU to Cisco NX-OS Release 5.2(1), Release 5.2(3a), Release 5.2(4), or Release 5.2(5) release from an earlier 5.0(x) or 5.1(x) release and you have not reloaded the switch.
  - You make configuration changes in the 5.2(x) release running on the Cisco Nexus 7000 Series system.
  - You perform an ISSU to NX-OS Release 5.2(7) or a later release.

  To work around this issue, follow these steps:

  1. Prior to the upgrade, execute the following commands to avoid the issue:
  a. Enter the **feature lisp** command.
  b. Enter the **ip lisp etr** command for all VRFs, followed by the **no ip lisp etr** command.
  c. Enter the **no feature lisp** command.
  2. If you experience this issue, reload the affected modules on your Cisco Nexus 7000 Series system.

  Note The Transport Services Package license is required to enable LISP. If you do not have this license, you can enable the grace period for it. If you cannot enable the grace period, perform an ISSU and reload the affected modules.

  You should perform these steps even if you are not using LISP because the issue can occur even if LISP is not running.
- Increased TCAM Usage for Handling Fragmented Packets in QoS ACL Entries

  Due to an optimization in handling of fragmented packets in QoS ACL entries in Cisco NX-OS Release 5.2(9), Release 6.1(3), and later releases, TCAM usage might increase once the system is reloaded with the new software release. Once the new version boots, any ACL entry that references Layer 4 information will use an extra TCAM entry so that it can match on fragmented packets and that will cause TCAM usage to increase. This increase is not seen during an ISSU upgrade, until the system or module is reloaded at some point after the ISSU upgrade is complete.
- OTV

Any upgrade from an image that is earlier than Cisco NX-OS Release 5.2(1) to an image that is Cisco NX-OS Release 5.2(1) or later in an OTV network is disruptive. A software image upgrade from Cisco NX-OS Release 5.2(1) or later to Cisco NX-OS Release 6.0(1) is not disruptive.

Any upgrade from an image that is earlier than Cisco NX-OS Release 6.2(2) to an image that is Cisco NX-OS Release 6.2(2) or later in an OTV network is disruptive. When you upgrade from any previous release, the OTV overlay needs to be shut down for ISSU to operate.

For more details, see the "Preparing OTV for ISSU to Cisco NX-OS 5.2(1) or Later Releases in a Dual-Homed Site" section in the *Cisco Nexus 7000 Series NX-OS OTV Configuration Guide*.

CMP Images

Cisco NX-OS Release 6.1(1) includes a new image for the connectivity management processor (CMP) on the Supervisor 1 module. The CMP is upgraded to Release 6.1(1) on successful ISSU to Cisco NX-OS to Release 6.1(1). When the ISSU completes, you should reload the CMP image on the active and standby Supervisor 1 modules.

The Supervisor 2 and Supervisor 2 Enhanced modules do not have a CMP. Therefore, Cisco NX-OS Release 6.1(1) does not include a CMP image for the Supervisor 2 or Supervisor 2 Enhanced module.

For additional information about the CMP, see the *Cisco Nexus 7000 Series Connectivity Management Processor Configuration Guide.*

EPLD Images

Cisco NX-OS Release 6.1(4) includes new EPLD images, but it is not necessary to upgrade existing EPLD images to use Cisco NX-OS Release 6.1(4).

Cisco NX-OS Release 6.1(3) includes an EPLD image for M2 Series modules that have XL tables. For instructions about upgrading to this EPLD image, see the *Cisco Nexus 7000 Series FPGA/EPLD Upgrade Release Notes, Release 6.1.*

The new hardware introduced in Cisco NX-OS Release 6.1(1) and Release 6.1(2) includes new EPLD images. It is not necessary to upgrade existing EPLD images to use Cisco NX-OS Release 6.1(1) or Release 6.1(2). However, if you plan to migrate from a Supervisor 1 to a Supervisor 2 or Supervisor 2E module, and you have a Fabric 2 module in your system, you must upgrade the EPLD image on the Fabric 2 module. For instructions about upgrading EPLD images, see the *Cisco Nexus 7000 Series FPGA/EPLD Upgrade Release Notes, Release 6.1.*

For additional information about migrating from a Supervisor 1 module to a Supervisor 2 or Supervisor 2E module, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide.*

New Hardware

This section briefly describes the new hardware introduced in Cisco NX-OS Release 6.1. For detailed information about the new hardware, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*.

This section includes the following topics:

- New Hardware in Cisco NX-OS Release 6.1(1), page 22

- New Hardware in Cisco NX-OS Release 6.1(2), page 23
- New Hardware in Cisco NX-OS Release 6.1(3), page 24
- New Hardware in Cisco NX-OS Release 6.1(4), page 24
- New Hardware in Cisco NX-OS Release 6.1(5), page 24

New Hardware in Cisco NX-OS Release 6.1(1)

Cisco NX-OS Release 6.1(1) introduces new hardware that is described in the following sections:

- M2 Series Modules, page 22
- Supervisor 2 Modules, page 22
- FEX Modules, page 23

M2 Series Modules

The Cisco Nexus 7000 M2 Series Modules are the next generation of highly scalable, high-performance modules that offer up to 240 G bandwidth per slot. There are three Cisco Nexus 7000 M2 Series modules in the M series module family:

- The 24-port 10-Gigabit Ethernet I/O M2 Series module XL (N7K-M224XP-23L) provides 240 Gb of bandwidth and up to 384 nonblocking 10-G ports per chassis. This module also supports the Cisco Nexus 2000 Fabric Extender (FEX) modules.
- The 6-port 40-Gigabit Ethernet I/O M2 Series module XL (N7K-M206FQ-23L) provides 240 Gb of bandwidth and up to 96 nonblocking 40-G ports per chassis.
- The 2-port 100-Gigabit Ethernet I/O M2 Series module XL (N7K-M202CF-22L) provides 200 Gb of bandwidth and up to 32 nonblocking 100-G ports per chassis.

The M2 Series modules work with Fabric 1 and Fabric 2 modules and they work with both Supervisor 1 and Supervisor 2 modules. The M2 Series modules interoperate with M1 Series and F1 Series modules in the same VDC.

With the exception of LISP, the M2 Series modules support all the features of the M1 Series modules.

For additional information about the M2 Series modules, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide.*

Supervisor 2 Modules

Cisco NX-OS Release 6.1 introduces a new generation of supervisor modules that offer increased scalability and an enhanced user experience.

- The Supervisor 2 module (N7K-SUP2) has a quad core CPU and 12 GB of RAM.
- The Supervisor 2 Enhanced (2E) (N7K-SUP2E) module has a dual quad core CPU and 32 GB of RAM and provides increased software scale such as an increased number of VDCs and connected FEX modules.

Note For verified scale information for all supervisor modules, see the *Cisco Nexus 7000 Series NX-OS Verified Scalability Guide.*

The Supervisor 2 or Supervisor 2E is required to deploy FCoE on the 48-port 1/10-Gigabit Ethernet SFP+ F2 series I/O module (N7K-F248XP-25).

All Cisco Nexus 7000 Series I/O modules are compatible with the Supervisor 2 and Supervisor 2E modules and both the Fabric 1 and Fabric 2 modules support the Supervisor 2 module.

The Supervisor 2 and Supervisor 2 Enhanced modules do not have a connectivity management processor (CMP).

Note A Supervisor 1 and a Supervisor 2 or Supervisor 2E module cannot be installed in a Cisco Nexus 7000 Series chassis at the same time.

For more information about the Supervisor 2 and Supervisor 2E modules, including instructions on how to migrate from a Supervisor 1 module to a Supervisor 2 or Supervisor 2E module, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide.*

FEX Modules

Cisco NX-OS Release 6.1(1) supports the following Fabric Extender (FEX) modules on Cisco Nexus 7000 Series systems with the Supervisor 1, Supervisor 2, or Supervisor 2E modules:

- Cisco Nexus 2232TM
- Cisco Nexus 2248TP-E

Cisco NX-OS Release 6.1(1) also supports the following reverse airflow fans and power supplies for fabric extender modules:

- N2200-PDC-400W
- N2200-PAC-400W-B
- N2K-C2248-FAN-B
- N2K-C2232-FAN-B

For additional information, see the *Cisco Nexus 2000 Series Hardware Installation Guide.*

New Hardware in Cisco NX-OS Release 6.1(2)

Cisco NX-OS Release 6.1(2) introduces new hardware that is described in the following section:

- Cisco Nexus 7004 Switch, page 23
- Enhanced F2 Series Modules, page 24

Cisco Nexus 7004 Switch

The Cisco Nexus 7004 switch (N7K-C7004) is a four-slot chassis that holds two supervisor modules and two I/O modules. Unlike other Cisco Nexus 7000 Series devices, the Cisco Nexus 7004 does not have fabric modules.

The Cisco Nexus 7004 switch supports the following modules: all XL versions of M1series modules, M2 series modules, and F2 series modules. It does not support the F1 series module or non-XL M1 series modules. In addition, the Cisco Nexus 7004 switch supports both the Supervisor 2 and 2E modules. It does not support the Supervisor 1 module.

The Cisco Nexus 7004 switch supports the same features as all Cisco Nexus 7000 Series switch chassis, including but not limited to FEX, ISSU, vPC, FabricPath, OTV, LISP, VDC, CoPP, NetFlow, and MPLS.

Energy efficiency can be achieved with the Cisco Nexus 7004 switch through its 3KW AC power supplies, the independent variable-speed fan system, and the lack of fabric modules.

For additional information, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*.

Enhanced F2 Series Modules

Two enhanced F2 Series modules are available:

- Cisco Nexus 7000 Enhanced F2-Series 48-port 1/10 Gigabit Ethernet SFP+ I/O module (N7K-F248XP-25E)
- Cisco Nexus 7000 Enhanced F2-Series 48 Port 1/10 GBase-T RJ45 Module (N7K-F248XT-25E)

These modules support all of the features of the standard F2-series modules, and they function like an F2-series module with Layer 2 and Layer 3 enabled. The enhanced F2-series module hardware is capable of interoperability with M2-series modules and the XL versions of M1 series modules. This capability will be enabled in a later software release. The enhanced F2-series modules also support IPv6 DSCP-to-Queue mapping. In addition, the enhanced F2-Series modules interoperate with standard F2-Series modules in the same system or VDC.

In addition, the Cisco Nexus 7000 Enhanced F2-Series 48 Port 1/10 GBase-T RJ45 Module supports 10 GBase-T, which is a standard that provides 10 Gbps connections over unshielded or shielded twisted-pair cables over distances of up to 330 feet (110 meters). This module offers low power consumption, low latency, full Layer 2 and Layer 3 support, and Energy Efficient Ethernet (EEE) to help save power.

For additional information about the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*.

New Hardware in Cisco NX-OS Release 6.1(3)

Cisco NX-OS Release 6.1(3) does not include new hardware.

New Hardware in Cisco NX-OS Release 6.1(4)

Cisco NX-OS Release 6.1(4) does not include new hardware.

New Hardware in Cisco NX-OS Release 6.1(5)

Cisco NX-OS Release 6.1(5) does not include new hardware.

New Software Features

This section briefly describes the new features introduced in Cisco NX-OS Release 6.1 software. For detailed information about the features listed, see the documents listed in the “Related Documentation” section. The “New and Changed Information” section in each of these books provides a detailed list of all new features and includes links to the feature description or new command.

This section includes the following topics:

- Cisco NX-OS Release 6.1(1) Software Features, page 25
- Cisco NX-OS Release 6.1(2) Software Features, page 26
- Cisco NX-OS Release 6.1(3) Software Features, page 28
- Cisco NX-OS Release 6.1(4) Software Features, page 29
- Cisco NX-OS Release 6.1(5) Software Features, page 29

Cisco NX-OS Release 6.1(1) Software Features

Cisco NX-OS Release 6.1(1) includes the features described in the following sections:

- Virtual Device Context, page 25
- IP Service Level Agreement, page 25
- FCoE Support, page 26
- FEX Scalability, page 26
- Additional New Functionality, page 26

Virtual Device Context

- Admin VDC

  Cisco NX-OS Release 6.1 introduces a new type of VDC that provides fault isolation for switch-wide administrative functions. The new VDC is called the admin VDC. You can enable the admin VDC at initial system bootup through a setup script. However, creation of the admin VDC is optional; it is not required. The admin VDC is used for administrative functions only.

  The admin VDC is supported on Supervisor 2 and Supervisor 2E modules only. When an admin VDC is enabled, only the mgmt0 port is allocated to the admin VDC. A license is not required to enable the admin VDC.

  For detailed information about creating the admin VDC and guidelines for using it, see the *Cisco Nexus 7000 Series Virtual Device Context Configuration Guide.*

- VDC Control Groups

  In Cisco NX-OS Release 6.1(1), you can configure CPU shares per VDC. This features requires the Supervisor 2 or Supervisor 2E module.

- Increased Number of Supported VDCs

  The Supervisor 2E module increments the number of supported VDCs to eight, plus the admin VDC. This feature requires the N7K-VDC1K9 license.

IP Service Level Agreement

IP Service Level Agreement (SLA) is network performance-monitoring software that allows users to do service level monitoring, troubleshooting, and resource planning. In Cisco NX-OS Release 6.1(1), the IP SLA sender or responder support the following features: UDP jitter, UDP echo, TCP connect, SNMP, and reaction threshold traps. IP SLA does not require a license.

For additional information about the IP SLA feature, see the *Cisco Nexus 7000 Series IP SLA Configuration Guide.*

FCoE Support

The 48-port 1/10-Gigabit Ethernet SFP+ F2 series I/O module (N7K-F248XP-25) supports FCoE, and requires either the Supervisor 2 or Supervisor 2E module, and the N7K-FCOEF248XP license.

FEX Scalability

With the Supervisor 2E module, Cisco NX-OS Release 6.1(1) supports an increased number of FEX modules. See the *Cisco Nexus 7000 Series Verified Scalability Guide.*

Additional New Functionality

Cisco NX-OS Release 6.1(1) adds support for the following features:

- BGP add path capability
- ERSPAN on F2 Series modules
- FabricPath traceroute PONG
- IS-IS for v6 single topology
- Online diagnostics including the SnakeLoopback and RewriteEngineLoopback test on F2 Series modules
- OSPF flexible distance manipulation
- PVLAN on F2 Series modules
- QoS DSCP to queue mapping for IPv4 on F2 Series modules
- RBACL
- Cisco Nexus 4000 FCoE Initialization Protocol (FIP) snooping

For additional information about these features, see the *Cisco Nexus 7000 Series Switches Configuration Guides.*

Cisco NX-OS Release 6.1(2) Software Features

Cisco NX-OS Release 6.1(2) includes the features described in the following topics:

- Power on Auto Provisioning, page 26
- Python Scripting, page 27
- DCSP-to-Queue on the Enhanced F2 Series Modules, page 27
- vPC+ For Cisco Nexus 2000 Fabric Extender Server Ports, page 27
- FabricPath on F2 Series Modules, page 27
- Sampled NetFlow, page 27

Power on Auto Provisioning

Power on Auto Provisioning (PoAP) makes possible automatic provisioning and self deployment of switches. PoAP simplifies switch configuration and helps to minimize operational costs.

For additional information about the PoAP feature, see the *Cisco Nexus 7000 Series Fundamentals Configuration Guide.*

Python Scripting

Python scripting provides programmatic access to Cisco NX-OS and allows you to gather network intelligence. Python is a very powerful programming language that includes standard libraries and it is highly scalable. Python is integrated with PoAP.

For additional information about Python scripting, see the *Cisco Nexus 7000 Series Fundamentals Configuration Guide*.

DCSP-to-Queue on the Enhanced F2 Series Modules

The new enhanced F2 series modules support IPv4 and IPv6 packets for DSCP-to-queue on ingress ports. With this feature, you can match traffic that is received on Layer 3 and access ports.

For additional information about DSCP-to-queue for IPv6, see the *Cisco Nexus 7000 Series QoS Configuration Guide.*

vPC+ For Cisco Nexus 2000 Fabric Extender Server Ports

vPC+ is now supported on FEX server ports. This capability enables an active-active host port vPC to a FabricPath cloud.

For additional information about vPC+ on FEX, see the *Cisco Nexus 7000 Series FabricPath Configuration Guide*.

FabricPath on F2 Series Modules

Cisco NX-OS Release 6.1(2) includes a new command that makes it possible for FabricPath core ports on specified modules or port groups to no longer learn MAC addressees in VLANs where no switch virtual interface (SVI) exists.

The **no hardware fabricpath mac-learning module** *module* [**port-group** *port-group-list*] command can be entered only on the default VDC or admin VDC. It affects the specified modules or port groups regardless of VDC membership.

Use this command for modules or port groups that have only FabricPath core ports (or unused or shutdown ports). Do not use the command on port groups that have CE edge ports or any other type of port.

For VLANs with SVIs configured (even on port groups where the command is applied), and for port groups where the command has not been applied, the F2 Series module still learns source MAC (SMAC) addresses from broadcast frames.

Using this command on port groups that have only FabricPath core ports does not affect forwarding behavior because FabricPath core ports do not use the MAC address table to perform forwarding.

For additional information on using FabricPath on F2 Series modules, see the *Cisco Nexus 7000 Series FabricPath Configuration Guide.*

Sampled NetFlow

Sampled NetFlow is available on F2 Series modules. Sampling is available on ingress ports only.

For additional information about NetFlow sampling, see the *Cisco Nexus 7000 Series System Management Configuration Guide*.

Cisco NX-OS Release 6.1(3) Software Features

Cisco NX-OS Release 6.1(3) includes the features described in the following topics:

- Four Queue Support for F2 Series Modules, page 28
- Improved Load Balancing and Traffic Distribution Across Port-Channel Member Links, page 28
- Deny ACE Support for VACL, PBR, and QoS, page 28
- QoS MIB Support, page 28
- Minimum Links on the FEX Fabric Port Channel, page 28
- Smart Zoning, page 29
- 100G-SR10 Optics Support, page 29
- PowerOn Auto Provisioning Template Script, page 29
- New Cisco MAC Address for BPDUs Sent on vPCs, page 29
- FabricPath Port-Channel Limit Command for vPC+, page 29

Four Queue Support for F2 Series Modules

Cisco NX-OS Release 6.1(3) increases ingress buffer support from two queues to four queues on F2 Series modules. For more information, see the *Cisco Nexus 7000 Series NX-OS QoS Configuration Guide*.

Improved Load Balancing and Traffic Distribution Across Port-Channel Member Links

Improved load balancing for port channels is available on Cisco Nexus 7000 M2 and M1 Series I/O XL modules, and on F2 Series modules through the new modulo mode. If you plan to use modulo mode on an M2 Series module, see •CSCue43842.

For more information, see the *Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide*.

Deny ACE Support for VACL, PBR, and QoS

Beginning with Cisco NX-OS Release 6.1(3), you can configure the device to support deny access control entries (ACEs) in a sequence for the following sequence-based features: VLAN ACL (VACL), policy-based routing (PBR), and QoS. For more information, see the *Cisco Nexus 7000 Series NX-OS Security Configuration Guide.*

QoS MIB Support

QoS MIB support for F2 Series modules is available in Cisco NX-OS Release 6.1(3). For more information, see the *Cisco Nexus 7000 Series NX-OS MIB Quick Reference.*

Minimum Links on the FEX Fabric Port Channel

Beginning with Cisco NX-OS Release 6.1(3), you can configure a minimum number of links for the FEX fabric port channel so that when a certain number of FEX fabric port-channel member ports go down, the host-facing interfaces of the FEX are suspended. For more information, see the *Cisco Nexus 2000 NX-OS Fabric Extender Software Configuration Guide.*

Smart Zoning

Smart zoning supports zoning among more devices by reducing the number of zoning entries that needs to be programmed by considering device type information without increasing the size of the zone set. Smart zoning enables you to select the host, target, or both as the end device type. For more information, see the *Cisco Nexus 7000 Series NX-OS SAN Switching Configuration Guide*.

100G-SR10 Optics Support

Cisco NX-OS Release 6.1(3) adds 100G-SR10 optics support for the M2 Series 2-port 100-Gigabit Ethernet I/O module (N7K-M202CF-22L).

PowerOn Auto Provisioning Template Script

A new template configuration script is available for PowerOn Auto Provisioning (PoAP). For more information, see the *Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide*.

New Cisco MAC Address for BPDUs Sent on vPCs

Cisco NX-OS Release 6.1(3) enables STP to use the new Cisco MAC address 00:26:0b:xx:xx:xx as the source address of BPDUs generated on vPC ports. For more information, see the *Cisco Nexus 7000 Series NX-OS Layer 2 Switching Configuration Guide*.

FabricPath Port-Channel Limit Command for vPC+

Cisco NX-OS Release 6.1(3) provides support for more than 244 vPC+ port channels for VDCs that have an F2 Series module. For more information, see the *Cisco Nexus 7000 Series NX-OS FabricPath Configuration Guide*.

Cisco NX-OS Release 6.1(4) Software Features

Cisco NX-OS Release 6.1(4) includes bug fixes and the following enhancements:

- Support for the QSFP-40GE-LR4 optical transceiver on the M2 Series 6-port, 40-Gigabit Ethernet I/O module XL (N7K-M206FQ-23L).
- Enhancements have been made to the following MIBs:
  - CISCO-SWITCH-RATE-LIMITER-MIB for information from the **show hardware rate-limit** command
  - CISCO-SWITCH-HARDWARE-CAPACITY-MIB for information associated with MAC address table utilization and forwarding engine utilization, and information from the **show hardware capacity interface** command
  - CISCO-HARDWARE-IP-VERIFY-MIB for information from the **show hardware forwarding ip verify** command

Cisco NX-OS Release 6.1(5) Software Features

Cisco NX-OS Release 6.1(5) does not include new software.

Licensing

Cisco NX-OS Release 6.1(1) includes the following changes to Cisco NX-OS software licenses:

- There are two VDC licenses:
  - N7K-ADV1K9—Enables four VDCs. This is an existing license.
  - N7K-VDC1K9—Enables support for eight VDCs on the Cisco Nexus 7000 Series Supervisor 2E module. This is a new license. One license is needed per chassis. A separate license is not required for each supervisor module.
- N7K-FCOEF248XP—Supports Fibre Channel over Ethernet (FCoE) for the 48-port 1/10-Gigabit Ethernet SFP+ F2 series I/O module. This is a new license.
- Cisco TrustSec (CTS) is now included in the base Cisco NX-OS software that comes with the purchase of a Cisco Nexus 7000 Series system. Previously, CTS required the Advanced Services Package license, N7K-ADV1K9.

Cisco NX-OS Release 6.1(2) includes the following new license:

- N7K-C7004-XL—Enables M Series modules to increase the forwarding information base (FIB) capacity to one million.

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

MIBs

Cisco NX-OS Release 6.1(1) supports a subset of the following MIBs:

- CISCO-RTTMON-MIB (for IP SLA)
- IF-MIB

Cisco NX-OS Release 6.1(3) supports the QoS MIB on F2 Series modules.

Limitations

This section describes the limitations in Cisco NX-OS Release 6.1 for the Cisco Nexus 7000 Series devices. It includes the following sections:

- DHCP Snooping with vPC+ FEX, page 31
- Fabric Module Migration Errors, page 31
- Proxy Limitation for the N7K-F132XP-15 Module, page 31
- Storage VDC Interfaces, page 31
- PONG in a vPC Environment, page 31
- SVI Statistics on an F2 Series Module, page 31
- LISP Traffic, page 32
- Role-Based Access Control, page 32
- Standby Supervisor Can Reset with Feature-Set Operation, page 32
- Unfair Traffic Distribution for Flood Traffic, page 32
- BFD Not Supported on the MTI Interface, page 32

- QoS Traffic Shaping, page 33

DHCP Snooping with vPC+ FEX

DHCP snooping is not supported when the vPC+ FEX feature is enabled.

Fabric Module Migration Errors

When you remove a Fabric 1 module and replace it with a Fabric 2 module, errors might occur. On rare occasions, 1 to 10 packets can drop during the fabric module migration process.

To avoid this situation, enter the **out-of-service xbar** command before you remove each Fabric1 module.

Once the Fabric 1 module is out of service, remove it and insert the Fabric 2 module.

Proxy Limitation for the N7K-F132XP-15 Module

When the 6-port 40-Gigabit Ethernet I/O module XL (M2 Series) (N7K-M206FQ-23L) acts as a proxy for more than 90 G traffic from the 32-port 10-Gigabit Ethernet I/O module XL (N7K-F132XP-15), packet drops can occur. You might experience this issue if ports are over-subscribed on the N7K-F132XP-15 F1 Series module.

Storage VDC Interfaces

In Cisco NX-OS Release 6.1(1), a Cisco Nexus 7000 Series device with the Supervisor 2 or Supervisor 2E module supports interfaces from the same module series, either F1 or F2, in the storage VDC for FCoE. A combination of interfaces from an F1 Series module and an F2 Series module is not supported in the storage VDC.

PONG in a vPC Environment

There are two situations where PONG is not supported in a vPC environment:

- In a vPC environment, a PONG to an access switch or from an access switch might fail. To work around this issue, use the interface option while executing a PONG from an access switch to a vPC peer. The interface can be one that does not need to go over the peer link, such as an interface that is directly connected to the primary switch.
- When FabricPath is enabled and there are two parallel links on an F2 Series module, PONG might fail. To work around this issue, form a port channel with the two links as members.

SVI Statistics on an F2 Series Module

F2 Series I/O modules do not support per-VLAN statistics. Therefore, the **show interface** command will not display per-VLAN Rx/Tx counters or statistics for switch virtual interfaces (SVIs).

LISP Traffic

A Layer 3 link is required between aggregation switches when deploying LISP host mobility on redundant xTRs that are part of a vPC. In rare (but possible) scenarios, failure to deploy this Layer 3 link might result in traffic being moved to the CPU and potentially dropped by the CoPP rate limiters.

Role-Based Access Control

- Beginning with Cisco NX-OS Release 5.2, you can configure role-based access control (RBAC) in the Cisco Nexus 7000 storage VDC using Cisco NX-OS CLI commands. You cannot configure RBAC in the Cisco Nexus 7000 storage VDC using Cisco DCNM. Note that RBAC in the storage VDC is RBAC for the Cisco Nexus 7000 Series devices, which is different from that for the Cisco MDS 9500 Series switches.
- RBAC CLI scripts used in Cisco MDS 9500 Series switches cannot be applied to the storage VDC configured for a Cisco Nexus 7000 Series device.
- You cannot distribute the RBAC configuration between a Cisco MDS 9500 Series switch and the storage VDC configured for a Cisco Nexus 7000 Series device. To prevent this distribution, make sure to assign RBAC in Cisco MDS and the Cisco Nexus 7000 storage VDC to different CFS regions.

Standby Supervisor Can Reset with Feature-Set Operation

The standby supervisor might reload when a feature-set operation (install, uninstall, enable, or disable) is performed, if the HA state of the standby supervisor is not “HA standby” at the time of the feature-set operation. To prevent the reload, ensure that the state of the standby supervisor is “HA standby.” To check the HA state for the specific VDC where the feature-set operation is performed, enter the **show system redundancy ha status** command on the active supervisor.

A reload of the standby supervisor has no operational impact because the active supervisor is not affected.

In addition, if you perform a feature-set operation while modules are in the process of coming up, then those modules will be power cycled. Modules that are up and in the “ok” state are not power cycled when you perform a feature set operation.

Unfair Traffic Distribution for Flood Traffic

Uneven load balancing of flood traffic occurs when you have a seven-member port channel. This behavior is expected and it occurs on all M Series and F Series modules. In addition, M Series modules do not support Result Bundle Hash (RBH) distribution for multicast traffic.

BFD Not Supported on the MTI Interface

If bidirectional forwarding detection (BFD) on protocol independent multicast (PIM) is configured together with MPLS multicast VPN (MVPN), the following error might appear:

```
2012 Jan  3 15:16:35 dc3_sw2-dc3_sw2-2 %PIM-3-BFD_REMOVE_FAIL:  pim [22512]  Session
remove request for neighbor 11.0.3.1 on interface Ethernet2/17 failed (not enough memory)
```

This error is benign. To avoid the error, disable BFD on the multicast tunnel interface (MTI) interface.

QoS Traffic Shaping

On M1 modules, it may not be possible to configure actual values for traffic shaping. For example, on a 1 Gigabit interface with 65% average shaping, the output rate on the interface goes only up to 450Mbps, whereas with 70%, it goes to 850Mbps.

Caveats

This section includes the following topics:

- Open Caveats—Cisco NX-OS Release 6.1, page 33
- Resolved Caveats—Cisco NX-OS Release 6.1(5a), page 52
- Resolved Caveats—Cisco NX-OS Release 6.1(5), page 53
- Resolved Caveats—Cisco NX-OS Release 6.1(4a), page 55
- Resolved Caveats—Cisco NX-OS Release 6.1(4), page 67
- Resolved Caveats—Cisco NX-OS Release 6.1(3), page 71
- Resolved Caveats—Cisco NX-OS Release 6.1(2), page 79
- Resolved Caveats—Cisco NX-OS Release 6.1(1), page 84

Note Release note information is sometimes updated after the product Release Notes document is published. Use the Cisco Bug Toolkit to see the most up-to-date release note information for any caveat listed in this document.

Open Caveats—Cisco NX-OS Release 6.1

- CSCta69220

  Symptom: A Web Cache Control Protocol (WCCP) redirect configuration on an interface is not removed when TCAM programming fails due to an unsupported combination of features.

  Conditions: This symptom might be seen when Bank Chaining (Hardware Resource Pooling) is enabled and a WCCP configuration is applied after a RACL configuration. This issue might result in a SBADDFAIL syslog that indicates an unsupported feature combination. The WCCP configuration on the interface is not removed when the error occurs and the WCCP redirect is not programmed in the TCAM.

  Workaround: Remove the WCCP redirect from the interface. When this operation is done, the SBDELFAIL syslog will appear. Ignore the syslog message and remove the RACL configuration from the interface and reapply the WCCP redirect on the interface. TCAM programming should work.

- CSCtg90667

  Symptom: If the netstack process fails, existing BGP sessions might flap and routes might be relearned, which could cause traffic loss.

Conditions: This symptom might be seen only when the netstack process fails or terminates ungracefully.

Workaround: None.

- CSCto65106

  Symptom: Connectivity loss for 5-10 seconds after vPC peer-link is brought back online.

  Conditions: This symptom might be seen with the following conditions:

  - vPC peer-link is brought down, the operational primary Cisco Nexus 7000 Series device continues forwarding traffic on its vPCs.
  - vPC peer-link is brought back up, traffic hashing through operational secondary Cisco Nexus 7000 Series device may see connectivity loss.
  - Issue has been seen only with a large number (greater than 30) of vPCs configured.

  Workaround: None.

- CSCtn27064

  Symptom: Applying a large egress ACL to an interface might cause BFD flaps.

  Conditions: This symptom might be seen when a large egress ACL is applied to, or removed from an unrelated Layer 3 physical interface or SVI.

  Workaround: None.

- CSCtq48316

  Symptom: SNMP fails when cfcRequestEntryStatus is set to active.

  Condition: This symptom might be seen when the cfcRequestEntryStatus field in a table in the CISCO-FTP-CLIENT-MIB is set to a value of one.

  Workaround: None.

- CSCtq65756

  Symptom: Reloading a switch with many BFD sessions can leave a few port-channel member ports in an error-disabled state on the connected switches.

  Conditions: This symptom might be seen when there is a heavy BFD and ACL Manager interaction, with many sessions going up or down, and the ACL manager process on the supervisor module can get busy processing BFD-related ACL requests. At the same time, if one or more port-channel members are trying to come up, they fail to be part of that port channel and potentially leave them in a suspended state on the local and remote end.

  Workaround: Enter the **shut** and **no shut** commands on the member ports of the suspended port-channel members to bring them back up.

- CSCtq84651

  Symptom: OSPFv3 advertises the local prefix even though the address is a duplicate in the network.

Conditions: This symptom might be seen when OSPFv3 forms an IPv6 neighbor, even though the local address is a duplicate in the network. This can result in a black hole of traffic to the local IPv6 address.

Workaround: Reconfigure the local address with a unique IPv6 address.

- CSCtr44822

  Symptom: A vulnerability exists in the ARP code of the Cisco Nexus 7000 Series device that might allow an unauthenticated adjacent attacker to trigger the restart of the adjmgr process. This problem might lead to packet drops and potentially trigger the reload of the affected device.

  An attacker might be able to trigger this behavior by flooding the affected device with ARP packets. The attacker might need to be in the same subnet in order to execute the attack

  Conditions: This symptom could be triggered by a flood executed in an adjacent network (such as in the same layer).

  Workaround: There is no workaround for this issue. However, we recommend that you implement hardening measures as per this guide:

  http://www.cisco.com/en/US/prod/collateral/switches/ps9441/ps9402/guide_c07-665160.html

- CSCts72420

  Symptom: Packet drops are seen when an FcoE port generates pause frame under congestion.

  Conditions: This problem occurs when the distance between Cisco Nexus 7000 Series devices is about 20 km and congestion is present and in_discards can be seen. It also occurs with 10 km on FCoE + F132 card.

  Workaround: None.

- CSCtt06094

  Symptom: When bundled CTS links into a Layer 3 port channel with a Cisco Catalyst 3000 Series switch, the interface(s) reauthenticate every 30 seconds which causes the port channel to bounce and eventually go into suspend state. If the port channel is removed, the CTS links stay up.

  Conditions: The symptom might be seen when bundled CTS links into a Layer 3 port channel with a Cisco Catalyst 3000 Series switch.

  Workaround: None.

- CSCtw93199

  Symptom: Some of the dynamically learned MAC addresses might point to the wrong interface.

  Conditions: This symptom might be seen in an unstable Layer 2 topology that could be caused by a Layer 2 loop or any event where a peer link can drop traffic which results in a mac-sync across a vPC peer to be out of sync.

  Workaround: Enter the **clear mac address dynamic** command for a specific MAC address or VLAN where the issue is seen. This command clears the MAC address and correctly relearns the MAC address across peers.

- CSCtw93913

Symptom: Flooded traffic may not reach all FabricPath switches in a network where FabricPath is deployed.

Conditions: This symptom might be seen if FabricPath is included in the flood outgoing interfaces list and it is moved to a port channel.

Workaround: Enter the **shut** command on the FabricPath member port and ensure that it is not a member of an outgoing flood list before adding it to a port channel. Enter the s**how l2 mroute flood vlan** *vlan-id* command to verify that the member port is not a part of the flood outgoing interface list.

- CSCtw95999

  Symptom: Flow control cannot be configured on a port-channel interface after an ISSU. The following error is displayed:

  ```
  switch(config)# interface port-channel 5
  switch(config-if)# flowcontrol receive on
  ERROR: port-channel5: no such pss key
  ```

  Conditions: This symptom might be seen following an ISSU from Cisco NX-OS Release 6.0(1) to Release 6.0(2).

  Workaround: Remove the port channel and create it again.

- CSCtz10762

  Symptom: A Cisco Nexus 2000 Series FEX does not copy the core files to the Cisco Nexus 7000 Series device following a failure, but continues to try to copy the files.

  ```
  N7k-2  SYSMGR-FEX101-3-CORE_OP_FAILED  Core operation failed: send_msg_to_ccdmon:
  Could not send to CORE_DMON return -1 errno 32
  N7k-2  SYSMGR-FEX101-5-SUBPROC_TERMINATED  "System Manager (core-client)" (PID 1903)
  has finished with error code SYSMGR_EXITCODE_CORE_CLIENT_ERR (11).
  ```

  Conditions: This symptom might be seen when a Cisco Nexus 2000 Series FEX is connected to a nondefault VDC that fails.

  Workaround: Contact Cisco TAC to manually copy the core files.

- CSCtz93559

  Symptom: A port becomes error-disabled during an ISSU, but is not reinitialized after the ISSU.

  Conditions: This symptom might be seen when a port tries to come up at about the same time as the module is completing the upgrade.

  Workaround: Enter the **shut** command followed by the **no shut** command on the port.

- CSCtz99806

  Symptom: A Label Distribution Protocol (LDP) session periodically goes down after the **clear ip route** command is entered.

  Conditions: This symptom might be seen after entering the **clear ip route** command on a Cisco Nexus 7000 Series VDC.

  Workaround: None

- CSCua03341

  Symptom: After an upgrade from the 32-port 10-Gigabit Ethernet SFP+ I/O module (N7K-M132XP-12) to the 48-port 1/10 Gigabit Ethernet SFP+ I/O F2 Series module (N7K-F248XP-25), ports cannot be bundled into port channels because they incorrectly show up as rate mode shared. F2 Series modules do not support rate-mode shared. The following message appears in the switch log:

  ```
  %ETH_PORT_CHANNEL-3-COMPAT_CHECK_FAILURE: rate mode is not compatible
  ```

  Conditions: The symptom might be seen when the upgrade procedure follows these steps:

  1. Load the configuration on a Cisco Nexus 7000 Series device with only M132 modules and port channels created on rate-mode shared 10-G interfaces.
  2. Remove N7K-M132XP-12 modules and replace with the N7K-F248XP-25 modules.
  3. Set the existing M1 Series VDC to an F2 Series only VDC and reload the VDC without saving the configuration. (The startup configuration still shows interface and port channel configurations.)

  Workaround: If there is an error, follow these steps to restore service:

  1. On the F2 Series VDC default configuration, if the F2 Series interfaces show as shared, move them to a separate F2 VDC.
  2. Save the configuration.
  3. Readd the interfaces back to the F2 Series VDC.
  4. Reapply the configuration.

- CSCua77771

  Symptom: The NPACL process fails after 128,000 ACLs are configured on the egress of an interface.

  Conditions: This symptom might be seen when a very large number of ACLs are configured.

  Workaround: None. To avoid this issue, keep the ACL configuration to 64,000 ACLs or less.

- CSCua78233

  Symptom: An entry cannot be added to an existing route map. The following error displays:

  ```
  % Internal error encountered - please check syslog for error details
  In the logs:
   %RPM-3-INFRA_SYSERR:  rpm [3864]  ppf_node_link failed with error - Object doesn't
  exist (0x41170006) - in rpm_ppf_proc_ifelse_action()
  ```

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device running Cisco NX-OS Release 5.2(3a).

  Workaround: None.

- CSCua79792

  Symptom: An SNMP walk on ciscoCBQosMIB 64-bit counter objects can be very slow.

  Conditions: This symptom is mostly seen when QoS values are read from CISCO-CLASS-BASED-QOS-MIB or when a full SNMP walk is performed.

Workaround: Retrieve OIDs with option -t 20 and the MIB walk can take approximately10 minutes. In addition, use SNMP version 2.

- CSCub25410

  Symptom: Performing an ISSU from Cisco NX-OS Release 5.2.4 that includes a MAC packet classify configuration to any Cisco NX-OS Release 6.X.X and a VDC reload will cause an ACLQOS crash.

  Conditions: This symptom might be seen when you perform an ISSU from Cisco NX-OS Release 5.2.4 to any Cisco NX-OS Release 6.x.x and you have a MAC packet classify and a VDC reload.

  Workaround: Remove the MAC packet classify before the ISSU and reapply after the ISSU is complete.

- CSCub03706

  Symptom: After migrating to the admin VDC, a line card port that was configured with the **snmp-server source-interface** command is still present.

  Conditions: This symptom might be seen when an snmp-server source interface was configured on a line card port before the migration to the admin VDC.

  Workaround: Remove the configuration by entering the **no snmp-server source-interface** command and reconfigure the source interface if needed.

- CSCub12659

  Symptom: A VTP type-2 consistency status failure occurs.

  Conditions: This symptom might be seen when VTP type-2 parameters are received by MCECM when the MCT comes up. The MCECM may not sync VTP parameters to the peer switch, which causes a VTP type-2 consistency status failure.

  Workaround: To work around this issue, follow these steps:

  1. Remove the VTP parameter that is not synced to the peer switch and reconfigure it.
  2. Verify that the VTP parameters are in sync by using the **show vpc consistency-parameters global** command.

- CSCub14046

  Symptom: After a reload of a Cisco Nexus 7000 Series device with MPLS enabled, an LDP neighbor might be missing.

  Conditions: This symptom might be seen when a Cisco Nexus 7000 Series device has MPLS enabled and has port-channel interfaces in the MPLS core to devices other than Cisco Nexus 7000 Series devices.

  Workaround: None.

- CSCub14554

  Symptom: When the MPLS traffic engineering feature is enabled in more than 6 VDCs, the mpls_te process fails, which causes a supervisor switchover and reload.

  Conditions: This symptom might be seen in a single supervisor setup with a Supervisor 2 module.

Workaround: None.

- CSCub21497

  Symptom: %WCCP-1-SBADDFAIL: Unable to add WCCP subblock on interface Vlan200: Error string: Verify failed in LC.

  Also, a programming failure on the port-channel.

  Conditions: This symptom might be seen while a redirect-list attached to WCCP groups when a policy is attached to a port-channel interface or a VLAN having WCCP policy attached to port-channel interface.

  Workaround: Perform a feature restart using **no feature wccp** and **feature wccp**.

- CSCub27817

  Symptom: Some FEX vPC+s do not come up after a switch reload in a scale setup.

  Conditions: This symptom might be seen in a scale setup with approximately1000 VLANs when a switch reload is performed with a saved configuration and the configuration has port channels in access mode (but not in trunk mode). As a result, some of the VLANs might fail to come up on set of interfaces.

  Workaround: Flap the port channel. In addition, configure port channels in trunk mode.

- CSCub43975

  Symptom: When there are two switches (switch 1 and switch 2) connected back-to-back and FabricPath is enabled, PONG works correctly when using the destination switch ID. However, PONG fails if PONG messages are sent from switch 1 to switch 2 using a static MAC address as the source and destination. PONG works correctly if PONG messages are sent from switch 2 to switch 1 using a static MAC address.

  Conditions: This symptom might be seen only on an F1 Series module with FabricPath enabled. It occurs only when a static MAC address is used and the PONG message is sent from switch1 to switch 2.

  Workaround: Send the PONG message first from switch 2 to switch 1 and then send the PONG message from switch 1 to switch 2.

- CSCub47799

  Symptom: One or more switches in a fabric experience a reload or a zone process failure following a certain sequence of actions on an enhanced device-alias entry.

  Conditions: This symptom might be seen in the following Cisco NX-OS releases on the following platforms:

  – Cisco MDS 9000 switches running Cisco NX-OS Release 5.2(6), Release 5.2(6a), Release 5.2(6b), Release 5.2(8), Release 5.2(8a), or Release 6.2(1).

  – Cisco Nexus 7000 Series switches running Cisco NX-OS Release 6.1(3) or Release 6.1(4).

  In addition, both of the following conditions must be true:

  – The device-alias is set to enhanced mode with the **device-alias mode enhanced** command.

  – Multiple commands are entered using the same device-alias name before a commit, or a named device-alias is not online at the time the commit is performed.

The issue occurs in both basic zone mode and enhanced zone mode.

Workaround: This issue can be avoided by grouping together device-alias commands of the same type and committing the changes before starting the next type of command. You must enter the **device-alias commit** command after each and every like type of device-alias action. For example:

- Clear commands: clear the device-alias database and immediately enter the **device-alias commit** command after you delete or clear the entries.
- Delete commands: enter any device-alias delete commands and immediately enter the **device-alias commit** command.
- Rename commands: rename any device-aliases to new temporary names and immediately enter the **device-alias commit** command. Rename the temporary names to final names and immediately enter the **device-alias commit** command.

Note Multiple device-alias commands of the same type, such as delete, rename, or add, can be included in the same batch if all the affected device-alias names are unique.

The following workaround examples show how to release Alias2, and rename Alias1 to Alias2.

Workaround example 1: Alias1 is changed to Alias2. Alias2 is still an active device and is changed to Alias3.

```
device-alias rename Alias1 temp_Alias1
device-alias rename Alias2 temp_Alias2
device-alias commit
show device-alias session status  <<< Verify the commit was successful

device-alias rename temp_Alias1 Alias2
device-alias commit
show device-alias session status  <<< Verify the commit was successful
```

Workaround example 2: Alias1 is changed to Alias2 and Alias2 is no longer required or active:

```
device-alias delete Alias2
device-alias commit
show device-alias session status  <<< Verify the commit was successful

device-alias rename Alias1 Alias2
device-alias commit
show device-alias session status  <<< Verify the commit was successful
```

- CSCub51931

  Symptom: A vPC peer link failure causes traffic to silently drop.

  Conditions: This symptom might be seen when a failure of the vPC peer link leads to an xTR not having any connectivity to the site, yet the xTR continues to be reachable in the core. ITRs will continue to encapsulate traffic to the isolated ETR and this traffic will be dropped.

  Workaround Scripts can be written to track the state of the peer link and remove the RLOC address from the routing process so that traffic is no longer sent to the isolated ETR.

- CSCuc01831

  Symptom: When a F2 Series module is removed and reinserted on a Cisco Nexus 7000 Series device that is running Cisco NX-OS 6.1(1) and has a Supervisor 1 module, for 5 to 20 seconds the HSRP virtual MAC of the local SVI is programmed with an unknown LTL index of 0x0ffff, which could cause a brief packet loss.

Conditions: This symptom might be seen when the F2 Series module has FabricPath and vPC+ configured on it.

Workaround: None.

- CSCuc26921

  Symptom: The status management bus (SMB) gold test fails 20 times and stops running after writing a syslog message. After fixing the fan and replacing it, the SMB gold test does not restart on it own, and it needs to be started manually.

  Conditions: This symptom might be seen when the fan fails in a Cisco Nexus 7004 switch.

  Workaround: After fixing and replacing the fan, enter the **diagnostic monitor module** *supervisor* **test SystemMgmtBus** command to restart the gold monitor test for the fan.

- CSCuc41076

  Symptom: A vPC peer switch in a hybrid topology blocks the non-vPC MST instances in the non-vPC trunk link between the vPC peers.

  Conditions: This symptom might be seen when there are two port channels between a Cisco Nexus 7000 Series device. One is a vPC peer link that allows only the vPC VLANs and the second port channel allows only non-vPC VLANs.

  Workaround: None.

- CSCuc42603

  Symptom: All virtual Fibre Channel interfaces (VFCs) go down at the same time due to missing FIP keepalive messages.

  Conditions: This symptom might be seen when a FIP keepalive message is sent but not processed.

  Workaround: Change the FIP keepalive period to 60 seconds, as shown in the following example:

  ```
  switch(config)# fcoe fka-adv-period 60
  ```

- CSCuc49827

  Symptom: A port on a 6-port 40-Gigabit Ethernet M2 Series I/O module XL (N7K-M206FQ-23L) comes up in a port channel with the speed configured at 100,000.

  Conditions: This symptom might be seen in a port channel that has the speed configured at 100,000 and that has one port with a 2-port 100-Gigabit Ethernet M2 Series I/O module XL (N7K-M202CF-22L) inserted and another one with a 6-port 40-Gigabit Ethernet M2 Series I/O module XL (N7K-M206FQ-23L) inserted. The port with N7K-M206FQ-23L inserted comes up and the port with the N7K-M202CF-22L inserted stays down.

  Workaround: Do not bundle ports on the 2-port 100-Gigabit Ethernet M2 Series I/O module XL (N7K-M202CF-22L) with different types of transceivers in the same port channel.

- CSCuc50150

  Symptom: On two Cisco Nexus 7000 Series devices in a vPC with two FEXs in a FEX Straight-Through topology, a vPC host or server that connects to two FEXs might lose its MAC address entry on one of the switches. The output from the **show mac address-table address** command shows the correct entry on one switch, but it will be missing on the other.

Conditions: This symptom might be seen in a topology setup as described, and the affected host has to be in a vPC toward two separate FEXs.

Workaround: Clear the affected MAC entry on the device with the correct entry. This action clears the issue for some time.

- CSCuc67690

  Symptom: DHCP packets are dropped on a Cisco Nexus 7000 Series device with DHCP snooping enabled when clients and servers are connected on an F2 Series module, a FEX vPC+ is enabled, or an enhanced vPC+ setup.

  Conditions: This symptom might be seen when the following conditions exist:

  - The client and server are connected on an F2 Series module.
  - Enhanced vPC+ is enabled, or the client or server is configured with a FEX vPC+.

  Workaround: None.

- CSCud05567

  Symptom: Following a system switchover, copying to bootflash on the supervisor module does not work.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: None.

- CSCud09901

  Symptom: A packet loss might exceed 4 seconds.

  Conditions: This symptom might be seen when a port channel is split between two M2 Series modules and one of the modules is reloaded or powered off.

  Workaround: None.

- CSCud38845

  Symptom: The ipqosmgr process crashes if any F Series modules reload after you enter the **clear qos policies 8e-4q4q** command.

  Conditions: This symptom might be seen when you enter the **clear qos policies 8e-4q4q** command and create user-defined 8e-4q4q network-qos policy maps without using the **qos copy** command. The user-defined 8e-4q4q network-qos policy maps might have been created before or after you entered the **clear qos policies 8e-4q4q** command.

  Workaround: Clear all user-defined 8e-4q4q network-qos policy maps before entering the **clear qos policies 8e-4q4q** command. After you enter the **clear qos policies 8e-4q4q** command, do not create or attach user-defined 8e-4q4q network-qos policy maps to the system QoS.

- CSCud41785

  Symptom: Supervisor-bound traffic from multiple F2E Series module forwarding engines can be dropped.

Conditions: A heavy load of supervisor-bound traffic and cumulative traffic from multiple F2E forwarding engines destined to the supervisor can contribute to drops.

Workaround: Protocol configuration and topology changes might improve or eliminate the condition. For example, tune CoPP policies to drop noncontrol-plane supervisor-bound traffic more aggressively to prevent drops.

- CSCud43009

  Symptom: IPv6 pings do not work on a Cisco Nexus 7000 Series device with F2 Series modules that is running Cisco NX-OS Release 6.0(2).

  Conditions: This symptom might be seen when optimized multicast flooding is configured on a few VLANs. The problem starts after the forced deletion of a neighbor.

  Workaround: Initiate a IPv6 ping towards the Cisco Nexus 7000 Series device.

- CSCud61259

  Symptom: On a Cisco Nexus 7000 Series device, deleting the route in the prefix list that is called in the import map for VRF also deletes the route on another VRF.

  Conditions: This symptom might be seen in a topology with two routers configured for VRF.

  Workaround: None.

- CSCud65216

  Symptom: A hardware failure on the supervisor module did not trigger a switchover.

  Conditions: This symptom might be seen when the supervisor experiences a hardware issue, and there might be multiple symptoms such as traffic silently disappearing or a failure of routing protocols.

  Workaround: Enter the **system switchover** command to manually switch over to the standby supervisor.

- CSCud73780

  Symptom: The standby supervisor remains in the power-up state after a switchover.

  Conditions: This symptom might be seen under the following conditions:

  - There are five VDCs, including the management VDC, and there is a large FabricPath network (18 FabricPath neighbors).
  - After a system switchover, the standby supervisor remains in the powered-up state.
  - Both supervisor modules will be up normally by power off/power on or system read.

  Workaround: None.

- CSCud83785

  Symptom: Reloading a Cisco Nexus 7000 Series device that is the HSRP active caused the private-VLAN host communication to stop. Even after the Cisco Nexus 7000 Series device comes back online, the communication does not begin.

Conditions: This symptom might be seen when two Cisco Nexus 7000 Series devices are in a vPC and other connected devices are also in the vPC. One of the Cisco Nexus 7000 Series devices is the root of STP and HSRP active.

Workaround: Enter the **ip redirect** command on the SVI interface of the second Cisco Nexus 7000 Series device that became the current HSRP active.

- CSCue28863

  Symptom: The adjacency manager (AM) and the Layer 2 feature manager (L2FM) become overloaded due to Generic Attribute Registration Protocol (GARP) storm messages.

  Conditions: This symptom might be seen when there are continuous host movements that cause MAC address changes and GARP storms.

  Workaround: None.

- CSCue29303

  Symptom: A port does not forward FabricPath traffic as expected if the **switchport trunk allowed vlan none** command is configured on the interface.

  Conditions: This symptom might be seen when a port is configured for FabricPath and the **switchport trunk allowed vlan none** command is also present in the configuration.

  Workaround: Remove the **switchport trunk allowed vlan none** command from the configuration.

- CSCue43842

  Symptom: Unfair load balancing occurs with M2 Series modules under certain conditions.

  Conditions: This symptom might be seen if the m1xl module type has not been enabled.

  Workaround: Enable the m1xl module type with the **system module-type** command and reenable the hash module scheme as follows:

  1. Enter the **system module-type m1xl m2xl** command. You can enter other module types, but you must enter m1xl.
  2. Enter the **no port-channel load-balance hash-modulo** command.
  3. Enter the **port-channel load-balance hash-modulo** command.

- CSCue67277

  Symptom: If a port flaps during an ISSU, the port is error disabled and it stays error disabled even after the ISSU completes.

  Conditions: This symptom might be seen only if a port flaps while an ISSU is in progress.

  Workaround: Enter the **shut** command followed by the **no shut** command to bring up the error-disabled port.

- CSCue72195

  Symptom: Memory that leaks is tagged as follows:

```
switch# show system internal aclmgr memstat details | i libaclmgr
   7 [r-xp]/isan/plugin/0/isan/lib/libaclmgr     82     89       4052       4500
```

Conditions: This symptom might be seen when adding and removing object-group entries.

```
switch(config)# object-group ip address o1
switch(config-ipaddr-ogroup)# show system internal aclmgr memstat details | i        \
libaclmgr
   7 [r-xp]/isan/plugin/0/isan/lib/libaclmgr     82     89       4052       4500
switch(config-ipaddr-ogroup)# 192.168.2.4/32
switch(config-ipaddr-ogroup)# show system internal aclmgr memstat details | i        \
libaclmgr
   7 [r-xp]/isan/plugin/0/isan/lib/libaclmgr     84     89       4444       4500
switch(config-ipaddr-ogroup)# no 192.168.2.4/32
switch(config-ipaddr-ogroup)# show system internal aclmgr memstat details | i        \
libaclmgr
   7 [r-xp]/isan/plugin/0/isan/lib/libaclmgr     86     89       4836       4836
```

Workaround: The only workaround is to not use object groups. For example, the following configuration can change as follows:

Before:

```
object-group ip address o1
  10 host 192.168.1.1
  20 172.23.56.34/24
ip access-list foo
  10 permit tcp addrgroup o1 any dscp af41
```

After:

```
ip access-list foo
  10 permit tcp 192.168.1.1/32 any dscp af41
  20 permit tcp 172.23.56.34/24 any dscp af41
```

- CSCue73984

  Symptom: Object tracking shows a switchport interface to be “UP” when the link state is down. For example, object tracking shows a port-channel switchport to be “UP” when there are no member ports.

  Conditions: This symptom might be seen when you configure the interface as a switchport interface and administratively bring up the interface when the link state is down. For example, administratively bring up a port channel without any member ports.

  Note that this issue affects any interface configured with the “switchport” option.

  Workaround: Remove and re-add the tracking configuration line which tracks the interface. Or, for port channel interfaces, add member ports and remove them to trigger object tracking to show the right state.

- CSCuf35758

  Symptom: A non-vPC VLAN on a dedicated Layer 2 trunk across vPC peers goes into an STP blocking state when the peer switch is enabled.

  Conditions: This symptom might be seen when the peer switch is enabled.

  The STP priority is the same for the non-vPC VLANs as required by the peer switch recommendation.

  Workaround: Use a different global root priority for the non-vPC VLAN, assuming a pseudo-configuration is not in use for the non-vPC VLAN. If a pseudo-configuration is in use, use a different root priority under the pseudo-configuration for the non-vPC VLAN.

- CSCuf60213

  Symptom: An F2 Series module fails because of the “clp_mac” process. The error message “CLM_CFG_PARITY_ERR” can be seen in the core file.

  Conditions: This symptom might be seen following a port configuration register parity error.

  Workaround: None.

- CSCug42033

  Symptom: Multicast or broadcast messages such as ARP or HSRP hello, cannot be flooded through a private VLAN.

  Conditions: This symptom might be seen if you execute one of the following operations:

  - Remove some of the secondary VLANs from a vPC trunk when a private VLAN, MST, or vPC is configured.
  - Delete some of the secondary VLANs.

  Workaround: Reconfigure the removed secondary VLANs as a trunk again, or reconfigure the deleted secondary VLANs again.

- CSCug79700

  Symptom: A next-hop filter is set to block BGP using the default route as the next hop, but when the specific route is gone, 0/0 is used as the next hop after the second hop, which causes traffic to silently disappear.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device that is running Cisco NX-OS Release 6.1(4).

  Workaround: None.

- CSCug93052

  Symptom: On a Cisco Nexus 7000 Series device when you enable the grace period for VDC creation on Cisco NX-OS Release 6.1(3) or 6.1(4) before either VDC_LICENSES or ADVANCED are installed, the VDC will be associated with the VDC_LICENSES license with a grace period. If you install a LAN_ADVANCED license to unlock VDCs 2-4, the grace period will still count down and expire which results in VDC deletion.

  To check whether you will be affected by this license issue or not, use the following command:

```
switch(config-vdc)# show license usage
Feature                      Ins  Lic   Status Expiry Date Comments
                                Count
--------------------------------------------------------------------------------
MPLS_PKG                      No    -   Unused             Grace 100D 0H
STORAGE-ENT                   No    -   Unused             Grace 100D 0H
VDC_LICENSES                  No    0   In use             Grace 99D 23H
ENTERPRISE_PKG                No    -   Unused             Grace 100D 0H
FCOE-N7K-F132XP               No    0   Unused             Grace 100D 0H
FCOE-N7K-F240XT               No    0   Unused             Grace 100D 0H
FCOE-N7K-F248XP               No    0   Unused             Grace 100D 0H
ENHANCED_LAYER2_PKG           No    -   Unused             Grace 100D 0H
SCALABLE_SERVICES_PKG         No    -   Unused             -
TRANSPORT_SERVICES_PKG        No    -   Unused             Grace 100D 0H
LAN_ADVANCED_SERVICES_PKG     Yes   -   Unused Never       -
LAN_ENTERPRISE_SERVICES_PKG   No    -   Unused             Grace 100D 0H
```

```
--------------------------------------------------------------------------------
```

In this example, VDC_LICENSES is not installed and the grace period is in use. VDCs are associated with this license. LAN_ADVANCED is installed but not in use. VDC_LICENSES license will expire and the VDC will be removed when that occurs. You need to contact customer support before license expires.

```
switch(config-vdc)# show license usage
Feature                      Ins  Lic   Status Expiry Date Comments
                                 Count
--------------------------------------------------------------------------------
MPLS_PKG                      No    -   Unused             -
STORAGE-ENT                   No    -   Unused             -
VDC_LICENSES                  No    0   Unused             Grace 119D 17H
ENTERPRISE_PKG                No    -   Unused             -
FCOE-N7K-F132XP               No    0   Unused             -
FCOE-N7K-F240XT               No    0   Unused             -
FCOE-N7K-F248XP               No    0   Unused             -
ENHANCED_LAYER2_PKG           No    -   Unused             -
SCALABLE_SERVICES_PKG         No    -   Unused             -
TRANSPORT_SERVICES_PKG        No    -   Unused             -
LAN_ADVANCED_SERVICES_PKG     Yes   -   In use Never       -
LAN_ENTERPRISE_SERVICES_PKG   No    -   Unused             -
--------------------------------------------------------------------------------
```

In this example, LAN_ADVANCED is installed and in use. VDC_LICENSES is not installed and not in use. There will not be any license issue.

```
switch(config-vdc)# show license usage
Feature                      Ins  Lic   Status Expiry Date Comments
                                 Count
--------------------------------------------------------------------------------
MPLS_PKG                      No    -   Unused             -
STORAGE-ENT                   No    -   Unused             -
VDC_LICENSES                  Yes   4   In use Never       -
ENTERPRISE_PKG                No    -   Unused             -
FCOE-N7K-F132XP               No    0   Unused             -
FCOE-N7K-F240XT               No    0   Unused             -
FCOE-N7K-F248XP               No    0   Unused             -
ENHANCED_LAYER2_PKG           No    -   Unused             -
SCALABLE_SERVICES_PKG         No    -   Unused             -
TRANSPORT_SERVICES_PKG        No    -   Unused             -
LAN_ADVANCED_SERVICES_PKG     No    -   Unused             Grace 1D 0H
LAN_ENTERPRISE_SERVICES_PKG   No    -   Unused             -
--------------------------------------------------------------------------------
```

In this example, VDC_LICENSES is installed and in use. LAN_ADVANCED is not installed and not in use. There will not be any license issue.

Note For Cisco NX-OS Release 6.1(2) and 6.1(1), the VDC may be created on VDC_LICENSES instead of LAN_ADVANCED when no permanent licenses are installed. The same command can be used to check what licenses are installed and which license are in use. If VDCs are created on temporary license instead of installed permanent licenses, there will be VDC expire issue.

Note 6.2(x) user: Cisco NX-OS Release 6.2(x) does not have this issue. It may affect 6.2(x) user only if upgraded from a 6.1(x) version with this issue (i.e.: VDCs will be associated with a temporary license instead of a permanent license. The permanent license will be shown as unused). To fix this issue in 6.2(x), uninstall the permanent license (command: **clear license**) and reinstall back (command: **install license**). After the permanent license is installed, VDCs will be associated with that license.

Conditions: The symptoms are as follows:

1. Grace period enabled for extra VDC creation in Cisco NX-OS Release 6.1(3)/4.
2. Create a VDC with no license installed.
3. LAN_ADVANCED license installed later.

Note If VDC_LICENSES is installed instead of LAN_ADVANCED, there will not be any license issue. VDCs will be associated with VDC_LICENSES which will not expire.

Note For Cisco NX-OS Release 6.1(2) and 6.1(1), a VDC may be created on VDC_LICENSES instead of LAN_ADVANCED when no permanent licenses are installed. You need to check which licenses are installed and which licenses are in use.

Workaround: There are the following workarounds:

Workaround 1:

1. Backup the configuration for all VDCs.
2. Install the LAN_ADVANCED license.
3. Delete all VDCs but the default.
4. Re-create the VDCs and apply VDC configurations back.

Workaround 2:

1. Install the LAN_ADVANCED license.
2. Reload the switch.

Once workaround 1 and 2 are applied, VDCs will be associated with the permanent license and will not expire.

Workaround 3 (workaround for 6.2(x) user):

Cisco NX-OS Release 6.2(x) does not have this issue. It will only affect 6.2(x) if you upgraded from a 6.1(x) version with this issue. To fix this issue in 6.2(x), uninstall the permanent license (command: **clear license**) and reinstall back (command: **install license**). After the permanent license is installed, the VDCs will be associated with the permanent license.

- CSCuh04650

  Symptom: The Cisco Nexus 7000 Series devices operates normally before it unexpectedly writes out an ACLQOS core which also causes the line cards to go into power down state.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device running 5.2(5) code which was previously operating normally.

  Workaround: None.

- CSCuh42525

  Symptom: Collecting “show tech-support lacp all” causes ports with lacp rate-fast configuration (local or partner) to flap.

  Conditions: This symptom might be seen when collecting “show tech-support lacp all”.

Workaround: None.

- CSCui30261

  Symptom: A pltfm_config crash followed by a switchover when **show run** is issued on default VDC.

  Conditions: This symptom might be seen after multiple ISSUs to 6.1.x. The crash is seen only when **show run** is issued from the default VDC.

  Workaround: None.

- CSCuj17443

  Symptom: Unable to add **inherit** command:

```
N7K(config)# interface port-channel1006
N7K(config-if)# inherit port-profile Blade-Servers
ERROR: Failed to write VSH commands
N7K(config-if)# exit
```

  Conditions: This symptom might be seen with the following conditions:

  - Hardware: Cisco Nexus 7009 (9 Slot) Chassis (“Supervisor Module-1X”)
  - Software: Cisco NX-OS Release 6.0(4) to 6.2(1)
  - ACS: 5.3 patch 6

  The **inherit** command on Cisco Nexus 7000 Series device is not working with TACACS authorization enabled.

  Workaround: Remove TACACS authorization commands

- CSCum01502

  Symptom: Cisco Nexus 7000 Series device running Cisco NX-OS Release 6.1(1) rebooted due netstack hap reset.

  Reset reason for Supervisor-module 6 (from Supervisor in slot 6):

```
1) At 124660 usecs after Tue Nov 26 14:06:43 2013
    Reason: Reset triggered due to HA policy of Reset
    Service: netstack hap reset
    Version: 6.1(1)
```

  Conditions: Unknown.

  Workaround: None.

- CSCum20367

  Symptom: Supervisor crash due to “snmpd” hap reset when you poll object ciscoMvpnMrouteMdtGrpAddrType (OID 1.3.6.1.4.1.9.10.113.1.4.1.1.6) under CISCO-MVPN-MIB

```
%SYSMGR-2-SERVICE_CRASHED: Service "snmpd" (PID xxxx) hasn't caught signal 11 (core
will be saved)
```

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series switch running Cisco NX-OS Release 6.2(2).

  Workaround: Configure a role with the following RBAC rules and associate it with the defined snmp-server community on the switch:

```
Nexus(config)# role name NO-SNMP-MVPN
Nexus(config-role)# rule 1 deny read oid 1.3.6.1.4.1.9.10.113
Nexus(config-role)# rule 2 permit read-write oid 1
Nexus(config-role)# exit
Nexus(config)# snmp-server community <community_name> group NO-SNMP-MVPN
```

This would block any polling to the affected OID and avoid the crash.

- CSCum41587

  Symptom: When you try to configure pre-bestpath cost using the route-map for community ID 127 or higher, the switch will change the cost value to “4294967295”, irrespective of what cost you try to enter.

  Conditions: This symptom might be seen when the community ID is higher than 127 and you try and change the cost using the route-map.

  Workaround: None.

- CSCum61205

  Symptom: All broadcast and link local multicast is lost across the OTV circuit. For example:

  ARP cannot be completed across OTV; HSRP peers go active/active as their hellos use link local multicast.

  This occurs during packet OTV packet decapsulation due to a missing label in hardware.

  Conditions: This symptom might be seen under the following sequence of events:

  1. Overlay is up and extending at least one VLAN.
  2. Configure “layer-2 multicast lookup mac” under one of the extended VLANs.
  3. Bounce the overlay (any event that causes the overlay to go down such as a join interface failure, internal interface failure, manual shut/no shut, etc...).

  Workaround:

  1. Send a single non-link local or reserved multicast frame (i.e., not in the 224.0.0.0/24 subnet). The creation of the OTV mroute will automatically update the missing label in hardware.
  2. Delete and recreate the affected VLAN.
  3. Remove “layer-2 multicast lookup mac” from the extended VLANs and then shut/no shut the overlay

- CSCum76187

  Symptom: Incorrect STP interface state on CE interfaces, after a supervisor switchover.

  *LOOP_Inc and FWD & *LOOP_Inc & BKN state after second switchover.

  Conditions: This symptom might be seen with an ISSU from Cisco NX-OS Release 6.1(2) to 6.2(2). Chassis/VDC should have both, CE as well as FP interfaces. VLAN should be FP.

  Workaround: Perform a shut/no shut on the interface.

- CSCun06941

  Symptom: On a Cisco Nexus 7000 Series device, VTP,CDP packets are not passing through L2VPN.

Conditions: This symptom might be seen when configuring L2VPN on a Cisco Nexus 7000 Series device.

Workaround: None.

- CSCun25245

  Symptom: Packets with unicast IP and multicast MAC are being duplicated on the destination interface which can cause performance issues to the application.

  Conditions: This symptom might be seen on using MS NLB Option 2: Static ARP + MAC-based L2 Multicast Lookups + Static Joins + IP Multicast MAC.

  Workaround: Use unicast mode.

  Further Problem Description: Packets that are copied to the CPU must meet the following:

  - Packet needs to be inter-VLAN routed.
  - Multicast L2 lookup is MAC based.
  - You have either an IGMP static entry for the “group” or received a “join” entry.

- CSCun34206

  Symptom: Cisco Nexus switch crashes after switchport configuration.

  Conditions: This symptom might be seen while configuring switchport on an interface of a non default VDC.

  Workaround: None.

- CSCun50901

  Symptom: Cisco Nexus 7000 Series FEXs might crash with below errors without save core dump:

  ```
  2014 Mar  3 08:18:25 DALS_SW1_C7009_MDF-Production SYSMGR-FEX109-3-BASIC_TRACE
  core_copy: PID 1476 with message Core not generated by system for satctrl(0).
  WCOREDUMP(9) returned zero .
  2014 Mar  3 08:18:25 DALS_SW1_C7009_MDF-Production SYSMGR-FEX109-2-SERVICE_CRASHED
  Service (FEX) "satctrl" (PID 1723) hasn't caught signal 9 (no core).
  2014 Mar  3 08:18:25 DALS_SW1_C7009_MDF-Production
  SYSMGR-FEX109-2-HAP_FAILURE_SUP_RESET System reset due to service "satctrl" in vdc 1
  has had a hap failure
  ```

  Conditions: This symptom might be seen under normal operation but signal 9 might be related to a memory leak.

  Workaround: None.

- CSCun53797

  Symptom: A Cisco Nexus switch may experience a crash in the “ipqosmgr” process when SNMP tries to poll the interface QoS statistics. This may be a continuation of bug CSCuj75984.

  This is likely tied to polling the cbqos-mib in particular, since this MIB specifically causes the Cisco Nexus to access data related to its interface QoS statistics, which is the action that causes this crash.

  Conditions: This symptom might be seen with SNMP polling cbqos-mib.

Workaround: Assign the SNMP server to a user role that blocks the cbqos-mib but allows access to all other MIBs. For example:

```
switch(config)# role name Block-QoS-MIB
switch(config-role)# rule 1 permit read-write oid 1
switch(config-role)# rule 2 deny read oid 1.3.6.1.4.1.9.9.166
switch(config-role)# snmp-server community public group Block-QoS-MIB
switch(config)# end
```

To verify this is working as expected, use SNMP walk or any other tool to try to read the blocked MIB. “X.X.X.X” is the IP of the switch's management interface in the below example:

```
nms-server> snmpwalk -v 2c -c public X.X.X.X .1.3.6.1.4.1.9.9.166
CISCO-CLASS-BASED-QOS-MIB::ciscoCBQosMIB = No Such Object available on this agent at
this OID
```

- CSCun63523

  Symptom: Monitorc crash service on line cards due to memory leak.

  Conditions: This symptom might be seen on M2 line cards.

  Workaround: None.

- CSCun69580

  Symptom: MPLS tunnel takes too long to go down. Setup:

  Conditions: This symptom might be seen with the following setup:

  ```
  N7k1-PE --e1/21--------e1/21--n7k2-p1---e1/25-------------e1/25--n7k1-pe2
  ```

  Workaround: None.

Resolved Caveats—Cisco NX-OS Release 6.1(5a)

- CSCuq98748

  Symptom: Cisco NX-OS contains a version of Bash that is affected by vulnerabilities.

  Common Vulnerability and Exposures (CVE) IDs:

  CVE-2014-6271

  CVE-2014-6277

  CVE-2014-7169

  CVE-2014-6278

  CVE-2014-7186

  CVE-2014-7187

  Conditions: Occurs when the user triggers this vulnerability via specific use of environmental variables while logging into the switch via SSH. The condition requires the user to log in successfully and authenticate via SSH to trigger this vulnerability

  Workaround: This issue is resolved.

Resolved Caveats—Cisco NX-OS Release 6.1(5)

- CSCud63152

  Symptom: Traffic destined to CPU is flooded instead of being punted. This causes additional symptoms such as ARP i incomplete and L3 routed traffic is not routed correctly.

  Conditions: You might see this issue when the interface VLAN MAC address is not programmed in the hardware.

  Workaround: This issue is resolved.

  Additional Notes on this issue: After you complete an ISSU to a fixed release (Release 6.1(5) and later releases), you must reload the F2 and F2e Series modules to make the fix applicable. If you do not reload the F2 and F2e Series modules, you might continue to see this problem.

- CSCug93052

  Symptom: When you enable the grace period for VDC creation on your Cisco Nexus 7000 Series switch before either the VDC_LICENSES or ADVANCED are installed, the VDC is associated with the VDC_LICENSES license with the grace period. Even if you install a LAN_ADVANCED license to unlock VDCs 2 to 4, the grace period continues to count down to the expiry and the VDC is deleted.

  Use the **show license usage** command to determine if you will be affected by this license issue.

  The following sample output of the **show license usage** command shows that the VDC_LICENSES is not installed and is in use with a grace period. VDCs are associated with this license. The LAN_ADVANCED license is installed but not in use. The VDC_LICENSES license will expire and the VDC will be removed after the license expires. You must contact customer support before license expires.

```
switch(config-vdc)# show license usage
Feature                      Ins  Lic   Status Expiry Date Comments
                                 Count
--------------------------------------------------------------------------------
MPLS_PKG                      No    -   Unused             Grace 100D 0H
STORAGE-ENT                   No    -   Unused             Grace 100D 0H
VDC_LICENSES                  No    0   In use             Grace 99D 23H
ENTERPRISE_PKG                No    -   Unused             Grace 100D 0H
FCOE-N7K-F132XP               No    0   Unused             Grace 100D 0H
FCOE-N7K-F240XT               No    0   Unused             Grace 100D 0H
FCOE-N7K-F248XP               No    0   Unused             Grace 100D 0H
ENHANCED_LAYER2_PKG           No    -   Unused             Grace 100D 0H
SCALABLE_SERVICES_PKG         No    -   Unused             -
TRANSPORT_SERVICES_PKG        No    -   Unused             Grace 100D 0H
LAN_ADVANCED_SERVICES_PKG     Yes   -   Unused Never       -
LAN_ENTERPRISE_SERVICES_PKG   No    -   Unused             Grace 100D 0H
--------------------------------------------------------------------------------
```

  The following sample output of the **show license usage** command shows that the LAN_ADVANCED is installed and in use and that the VDC_LICENSES is not installed and not in use. There are no licensing issues with this scenario.

```
switch(config-vdc)# show lic us
Feature                      Ins  Lic   Status Expiry Date Comments
                                 Count
--------------------------------------------------------------------------------
MPLS_PKG                      No    -   Unused             -
STORAGE-ENT                   No    -   Unused             -
VDC_LICENSES                  No    0   Unused             Grace 119D 17H
```

```
ENTERPRISE_PKG                No    -   Unused             -
FCOE-N7K-F132XP               No    0   Unused             -
FCOE-N7K-F240XT               No    0   Unused             -
FCOE-N7K-F248XP               No    0   Unused             -
ENHANCED_LAYER2_PKG           No    -   Unused             -
SCALABLE_SERVICES_PKG         No    -   Unused             -
TRANSPORT_SERVICES_PKG        No    -   Unused             -
LAN_ADVANCED_SERVICES_PKG     Yes   -   In use Never       -
LAN_ENTERPRISE_SERVICES_PKG   No    -   Unused             -
--------------------------------------------------------------------------------
```

The following sample output of the **show license usage** command shows that the VDC_LICENSES is installed and in use and that the LAN_ADVANCED license is not installed and not in use. There are no licensing issues with this scenario.

```
switch(config-vdc)# show lic us
Feature                      Ins  Lic   Status Expiry Date Comments
                                 Count
--------------------------------------------------------------------------------
MPLS_PKG                     No    -   Unused             -
STORAGE-ENT                  No    -   Unused             -
VDC_LICENSES                 Yes   4   In use Never       -
ENTERPRISE_PKG               No    -   Unused             -
FCOE-N7K-F132XP              No    0   Unused             -
FCOE-N7K-F240XT              No    0   Unused             -
FCOE-N7K-F248XP              No    0   Unused             -
ENHANCED_LAYER2_PKG          No    -   Unused             -
SCALABLE_SERVICES_PKG        No    -   Unused             -
TRANSPORT_SERVICES_PKG       No    -   Unused             -
LAN_ADVANCED_SERVICES_PKG    No    -   Unused             Grace 1D 0H
LAN_ENTERPRISE_SERVICES_PKG  No    -   Unused             -
--------------------------------------------------------------------------------
```

Conditions: For Release 6.1(3) or Release 6.1(4), this issue might be seen when the Grace Period is enabled for extra VDC creation, you create VDCs with no license installed, and a LAN_ADVANCED license is installed later.

For Release 6.1(2) and 6.1(1), the VDC can be created on the VDC_LICENSES instead of the LAN_ADVANCED license when no permanent licenses are installed. Check to verify which licenses are installed and which licenses are in use. If the VDCs are created on a temporary license instead of on an installed permanent licenses, there will be VDC-expire issue.

You might also see this issue if you perform an upgrade from Release 6.1(x) with this issue, to Release 6.2(x). To resolve this issue in Release 6.2(x), use the **clear license** command to uninstall the permanent license and then use the **install license** command to reinstall the license. After the permanent license is installed, the VDCs are associated with the permanent license.

Workaround: This issue is resolved.

- CSCuf48417

  Symptom: HSRP hello packets are missing between HSRP peers, causing HSRP on the active to report loss of standby while the standby erroneously transitions to the active state. When this happens a hardware rate limiter drop counter increments.

  Conditions: This issue might be seen when there are large numbers of configured HSRP groups and an SSO switchover occurs or when you bring up interfaces that can cause a significant number of HSRP groups to become enabled at the same instant, causing HSRP hello packets to be sent in synchronized short bursts.

  Workaround: This issue is resolved.

- CSCuh85353

  Symptom: Connectivity is lost between the Cisco Nexus 7000 Series switch and the servers. The ARP entry for the server in the HSRP standby switch is incorrect and it is pointing the server IP to the VMAC of the switch virtual interface (SVI) rather than to the MAC address of the host.

  Conditions: This issue might be seen if there are two Cisco Nexus 7000 Series switches in a VPC pair and Local Proxy ARP is enabled on the SVI and HSRP is configured on the SVI. The first switch (HSRP standby) sends an ARP request to a host in the VLAN. The other switch (HSRP-active) already has the complete ARP entry for that host. The standby switch receives two responses: the actual host responds with the own host mac and the HSRP-active switch replies to broadcast ARP requests for the host IP with virtual MAC. If the ARP response from the host (actual MAC address) reaches the standby HSRP switch before the ARP response from the active switch,. the e standby updates its ARP table with the virtual MAC address (from the latest ARP response from active switch with the HSRP VMAC as sender). This breaks the communication for the hosts connected through the VPC.

  Workaround: This issue is resolved.

- CSCue09929

  Symptom: After a SUP switchover or an ISSU, the log file can be truncated and part of the Log file can be lost or the file can be out of order/discontinuous.

  Conditions: You might see this issue after a SUP switchover or after you perform an ISSU.

  Workaround: This issue is resolved.

- CSCue73984

  Symptom: Object tracking shows a switchport interface to be "UP" when the link state is down or when there are no member ports

  Conditions: This issue might be seen when you administratively bring up a port channel without any member ports. This issue can affect any interface that is configured with the switchport option.

  Workaround: This issue is resolved.

- CSCuh42525

  Symptom: Issuing the **show tech-support lacp all** command causes ports with a LACP rate-fast configuration (local or partner) to flap.

  Conditions: You might see this if you use the **show tech-support lacp all** command.

  Workaround: This issue is resolved.

Resolved Caveats—Cisco NX-OS Release 6.1(4a)

- CSCtz15101

  Symptom: When an Overlay Transport Virtualization (OTV) VDC is directly connected to a FabricPath VDC by VPC+, you may see occasional traffic flooding and traffic blackholing after MAC move.

Condition: This symptom might be seen when an OTV VDC is back-to-back connected to a FabricPath VDC by VPC+ channels. Both VDCs must reside on the same device. This only happens in case of VPC+ channels. This issue affects all releases prior Cisco NX-OS Release 6.1(4a).

Workaround: Connect OTV VDCs by non VPC channels.

- CSCua28518

  Symptom: The private VLAN feature appears to be enabled when it is not. The service returns an error and the feature shows as enabled.

  Conditions: This symptom might be seen on Cisco Nexus 7000 Series devices running Cisco NX-OS Release 6.0(3).

  Workaround: This issue is resolved.

- CSCuc69949

  Symptom: When you try to add an area as a not-so-stubby area (NSSA), an snmpd process crashes. For both Open Shortest Path First version 2 (OSPFv2) and OSPFv3 traps, the source router ID is set to the router ID of the default virtual routing and forwarding (VRF) for the traps sent from the non default VRF.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device that is running Cisco NX-OS Release 6.1(4).

  Workaround: This issue is resolved.

- CSCud48236

  Symptom: IEEE 802.3 frames, such as Class II logical link control driver (LLC2) or Systems Network Architecture (SNA), are dropped by the end host because they were delivered out of order.

  Conditions: This symptom might be seen when the IEEE 802.3 traffic is received on an F2 Series module (N7K-F248XP-25 and N7K-F248XP-25E, respectively) and must be transmitted to an egress interface that is a port channel.

  IEEE 802.3 frames (that are still used by some legacy software applications) differ from Ethernet II frames in the meaning of the Ether Type field, which for an IEEE 802.3 frame is interpreted as the frame's length. IEEE 802.3 frames with different lengths are hashed into different member links in a port channel, which might occasionally result in packets reaching the destination out of order.

  Further Problem Description: When LLC2 /SNA packets arrive out of order, frame rejects (FRMR), disconnects (DISC), and the loss of the session can result.

  Workaround: This issue is resolved.

- CSCud67443

  Symptom: After an in-service software upgrade (ISSU) from Release 4.2.6 to 4.2.8, the datapath retains stale hardware values. After the upgrade, one port loses the dedicated mode information and sets itself for over subscribed mode, which breaks the path between ASICs. The **show running-config** output might look like this example:

  ```
  !Command: show running-config interface Ethernet2/1
  !Time: Tue Dec 4 23:24:10 2012
  version 4.2(8)
  interface Ethernet2/1
  description e2/1
  ```

```
cts manual
policy static sgt 0x001F
sap pmk XXX
switchport
switchport mode trunk
switchport trunk native vlan 99
rate-mode dedicated force
logging event port link-status
logging event port trunk-status
no shutdown
# attach mod 2
Attaching to module 2 ...
To exit type 'exit', to abort type '$.'
module-2# sh ha int nax port 1 state
MACSEC: inst 15 port_sel 0
State: DISABLED
PortMode: OSM
MacsecMode: OFF
CtsMode: DISABLED
module-2# exit
rlogin: connection closed.
Now after changing back to shared and then to designated mode again:
# attach module 2
Attaching to module 2 ...
To exit type 'exit', to abort type '$.'
module-2# sh ha int nax port 1 state
MACSEC: inst 15 port_sel 0
State: DISABLED
PortMode: FULL
MacsecMode: OFF
CtsMode: DISABLED
```

Conditions: This problem might occur after an in service software upgrade (ISSU) from Release 4.2.6 to 4.2.8.

Workaround: This issue is resolved.

- CSCue14291

  Symptom: Proxy ARP may respond to an Address Resolution Protocol (ARP) request from a source network that differs from the receiving interface network.

  Conditions: This symptom might be seen when proxy ARP is enabled on an interface, and an ARP request arrives with a different IP source network. When /32 route is installed for this network on the interface, a routing issue is created.

  Workaround: Configure a /32 static route for the hosts to outweigh the AD of 250 that the Adjacency Manager uses on its /32 routes.

- CSCue14426

  Symptom: MAC address flapping and a high Layer 2 FM CPU overload occur.

  Conditions: This issue might be seen when a port-channel member port goes from individual mode back to being a member port, and the programming of the switch ID (SWID) and sub-switch ID (SSWID) by the Ethernet port manager (EthPM) process does not occur.

  Workaround: This issue is resolved.

- CSCue26331

  Symptom: During the installation of a Fabric Extender (FEX), Cisco Nexus 7000 Series devices sometimes reboot with the following errors:

  ```
  %$ VDC-1 %$ %SYSMGR-SLOT5-2-SERVICE_CRASHED: Service "iftmc" (PID 3357) hasn't caught
  signal 11 (core will be saved)
  ```

  Conditions: This problem sometimes occurs when the configuration contains a large number of VLANs.

  Workaround: This issue is resolved.

- CSCue28538

  Symptom: CPU usage exceeds allocations for virtual device contexts (VDCs).

  Conditions: This problem occurs when processes are not assigned to the proper VDC-based control group (cgroup).

  Workaround: This issue is resolved.

- CSCue30478

  Symptom: Enhanced Interior Gateway Routing Protocol (EIGRP) neighbor flapping occurs due to EIGRP stuck-in-active.

  Conditions: This symptom might be seen in a topology of three triangles that share the same link between Cisco Nexus 7000 Series devices that are running Cisco NS-OS Release 6.1(2).

  Workaround: This issue is resolved.

- CSCue51797

  Symptom: Egress unicast traffic is polarized on the Fabric Extender (FEX) host interface (HIF) port channel.

  Conditions: This problem occurs when an FEX is single-attached to Cisco Nexus 7000 series F2 modules.

  Workaround: This issue is resolved.

- CSCue56335

  Symptom: The SNMP process on a Cisco Nexus 7000 series device unexpectedly writes a core file.

  Conditions: This problem occurs during normal operation on Cisco Nexus 7000 series devices when SNMP polling *vlanTrunkPortVlansXmitJoined* in the CISCO-VTP-MIB.

  Workaround: This issue is resolved.

- CSCue77120

  Symptom: A Cisco Nexus 7000 Series device might not use the statically configured MAC address as the source MAC address when routing traffic.

  Conditions: This symptom might be seen after an ISSU upgrade.

  Workaround: This issue is resolved.

- CSCuf30186

  Symptom: A memory leak occurs in the SNMPD process when multiple OIDs are polled in one packet, and some errors occur.

  Conditions: This problem occurs each time an SNMP poll is done to more than one OID which generates an error.

  Workaround: This issue is resolved.

- CSCug17416

  Symptom: Ports sometimes reset when a service policy is applied on a port with traffic on it. These messages appear in the syslog:

```
R2D2_USD-SLOT3-2-R2D2_SYSLOG_CRIT  Reset R2D2 asic using EEM to recover from Fatal
Interrupt :2, r2d2_ingr_buf_fatal_intr
 %$  MODULE-2-MOD_SOMEPORTS_FAILED  Module 3 (serial: XXXXXXXXXXX) reported failure on
ports 3/3-3/3 (Ethernet) due to R2D2 : Fatal interrupt! in device 96 (error
0xc6002207)
R2D2_USD-SLOT3-2-R2D2_SYSLOG_CRIT  Disabling R2D2 interrupt using EEM :3,
r2d2_ingr_buf_fatal_intr
R2D2_USD-SLOT3-2-R2D2_SYSLOG_CRIT  Reset R2D2 asic using EEM to recover from Fatal
Interrupt :3, r2d2_ingr_buf_fatal_intr
MODULE-2-MOD_SOMEPORTS_FAILED  Module 3 (serial: XXXXXXXXXXX) reported failure on
ports 3/4-3/4 (Ethernet) due to R2D2 : Fatal interrupt! in device 96 (error
0xc6003207)
```

  Conditions: This problem occurs when a service policy with no buffers configured in the default queue is applied on a port.

  Workaround: This issue is resolved.

- CSCug27141

  Symptom: ARP queries sent from a N7K-F248XP-25 to an N2K-C2224TP-1GE might be sent out on the wrong VLAN, which causes a loss of connectivity for some hosts.

  Conditions: This problem might occur on a Cisco Nexus 7000 Series device after an upgrade to 6.1(3) that required a reload.

  Workaround: This issue is resolved.

- CSCug34878

  Symptom: The Fabric Extender (FEX) port receives duplicate Layer 3 multicast traffic.

  Conditions: This problem occurs on Cisco Nexus 7000 Series devices on which the FEX is connected through a port channel with two or more M2 modules as members or a single M2 line card with port members on a different port ASIC.

  Workaround: This issue is resolved.

- CSCug37851

  Symptom: A Cisco Nexus 7000 Series device might experience SNMP timeouts when using bulk Get requests.

Conditions: This symptom might be seen with Bridge and Entity MIBs, especially when FEX modules are in use.

Workaround: This issue is resolved.

- CSCug40835

  Symptom: A Cisco Nexus 7000 Series device running Cisco NX-OS Release 6.1(2) sometimes experiences an SPM service crash after a policy is appliced on many interfaces in a single command.

  Conditions: This problem might be seen on Cisco Nexus 7000 Series devices that are running the supervisor 1 module.

  Workaround: This issue is resolved.

- CSCug47098

  Symptom: Cisco Nexus 7000 series devices, with M1 modules only or in mixed chassis, may enter internal loop conditions across virtual device contexts (VDCs) that saturate all interswitch links and affect all services on the switch, causing a network outage.

  Conditions: This issue might be seen on Cisco Nexus 7000 Series devices with M1 series modules.

  Workaround: This issue is resolved.

- CSCug56887

  Symptom: Traffic flowing to an end host fails when a member link in a fabric port channel goes down.

  Conditions: This symptom might be seen only when a fabric port channel uses ports from the same ASIC.

  Workaround: This issue is resolved.

- CSCug57625

  Symptom: An OSPF ADJ stuck in LOADING message appears on a Cisco Nexus 7000 Series device.

  Conditions: This symptom might be seen when the Cisco Nexus 7000 Series device receives a Type-10 LSA with an unsupported link type of Sub TLV.

  Workaround: This issue is resolved.

- CSCug74534

  Symptom: When applying a policy map to VLANs in the VLAN configuration using the **no-stats** keyword, the VLANs with a prior policy-map configuration are not updated to the new configuration.

  The following error might appear:

  ```
  ETHPORT-3-IF_ERROR_VLANS_SUSPENDED: VLANs .. on Interface Ethernetxxx/y/z are being
  suspended. (Reason: Tcam will be over used, please enable bank chaining and/or turn
  off atomic update)
  ```

  Conditions: This problem occurs when you configure a VLAN policy map using the **no-stats** keyword to a VLAN range in which some VLANs already have a policy map configured.

Workaround: This issue is resolved.

- CSCug90667

  Symptom: After you enter the **wccp redirect exclude-in** command, Web Cache Communication Protocol (WCCP) traffic passing through the Cisco Nexus 7000 Series device might be silently discarded or dropped.

  Conditions: This condition occurs when you use the **redirect exclude-in** feature to enable a WCCP bypass.

  Workaround: This issue is resolved.

- CSCug98353

  Symptom: After a switchover, the Xbar driver attempts to gain access to the Xbars in the system. If this fails, the **show logging log** syslogs might contain the following error message:

  ```
  XBAR 4 Fabric 0 on swover initialization failed xbm_fabric_soft_init_on_swovr 1372
  ```

  If the Xbar is not failed by software, reloads of any modules might result in failures when they try to come online.

  Conditions: This problem occurs on Cisco Nexus 7710 and 7718 devices as well as any 7004, 7009, 7010, and 7018 devices that are running the supervisor 2 module.

  Workaround: This issue is resolved.

- CSCug99435

  Symptom: A valid Enhanced Interior Gateway Routing Protocol (EIGRP) path is marked as inaccessible and not used.

  Conditions: This problem might occur when the Cisco Nexus 7000 Series device learns the best path through a query from the next hop which is filtered using a distribute list.

  Workaround: This issue is resolved.

- CSCuh06994

  Symptom: Increased quality of service (QoS) ternary content addressable memory (TCAM) usage or possibly log messages similar to this message have occurred:

  ```
  ETHPORT-3-IF_ERROR_VLANS_SUSPENDED: VLANs on Interface Ethernet116/1/7 are being
  suspended. (Reason: Tcam will be over used, please enable bank chaining and/or turn
  off atomic update).
  ```

  However, there are legitimate scenarios when this message can occur, so this message alone is not an indication that the problem is occurring.

  Conditions: This problem occurs when the following conditions exist:

  - An F2 module and an FEX are attached
  - Ports on the FEX are configured as trunk ports
  - The service policy applied to VLANs, with the same VLANs carried on the FEX trunk ports mentioned above
  - The **no-stats** keyword is configured for the service policy that enables label sharing, as in this example:

```
service-policy type qos input TEST no-stats
```

- You add VLANs to the above trunk interfaces at different times and configure multiple trunks in a single command as in the example below:

```
N7K-1(config)# int eth 116/1/7 - 8
N7K-1(config-if-range)# switchport trunk allowed vlan 63
N7K-1(config-if-range)# switchport trunk allowed vlan add 741
```

- This problem can also be seen during a reload or bootup of the module or chassis.

Workaround: This issue is resolved.

- CSCuh07069

  Symptom: Traffic that is sent from sources on which the Cisco Locator/ID Separation Protocol (LISP) is not enabled to external networks always uses the default route and is copied to the CPU.

  Conditions: This problem occurs when the LISP router is configured with some LISP endpoint-ID networks and some non-LISP networks.

  Workaround: This issue is resolved.

- CSCuh08160

  Symptom: The multi-channel manager (MCM) process on a Cisco Nexus 7000 Series device might crash and restart.

  Conditions: This problem can occur when you enter the **show system internal mcm info** [**brief**] command when several VLANs are configured.

  Workaround: This issue is resolved.

- CSCuh18480

  Symptom: The crossbar spine experiences hardware device errors; for example, when the PCIe link to Xbar is noisy, the PCIe links fail to link train. This problem results in PCIE access failure in new standby supervisors.

  Conditions: This issue can occur on multiple switchovers.

  Workaround: This issue is resolved.

- CSCuh31297

  Symptom: Cisco Nexus 7000 Series devices experience a 4-byte memory leak per OID queried with an SNMP get next.

  Conditions: An SNMP get next query causes a 4-byte memory leak on these OIDs:

  - enterprises.9.9.91.1.1.1.1.1.301364014
  - enterprises.9.9.91.1.1.1.1.2.301364014
  - enterprises.9.9.91.1.1.1.1.3.301364014
  - enterprises.9.9.91.1.1.1.1.4.301364014
  - enterprises.9.9.91.1.1.1.1.5.301364014
  - enterprises.9.9.91.1.1.1.1.6.301364014

  - enterprises.9.9.91.1.1.1.1.7.301364014
  - enterprises.9.9.91.1.2.1.1.2.301364014.4
  - enterprises.9.9.91.1.2.1.1.3.301364014.4
  - enterprises.9.9.91.1.2.1.1.4.301364014.4
  - enterprises.9.9.91.1.2.1.1.5.301364014.4
  - enterprises.9.9.91.1.2.1.1.6.301364014.4

  Workaround: This issue is resolved.

- CSCuh31035

  Symptom: When you conduct an snmpwalk of the ipAddrTable, tcpConnTable, and ipNetToMediaTable MIBs, the length of IP address is included as part of the instance. The length should not be added because the IP address query does not call for the length prefix.

  Conditions: This problem sometimes occurs when you configure snmp-server on the Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCuh33729

  Symptom: Cisco Nexus 7000 series devices might suffer a memory leak.

  Conditions: This issue might be seen on Cisco Nexus 7000 Series devices when you execute an SNMP get on .enterprises.9.9.91.1.2.1.1.5.301351694.2.

  Workaround: This issue is resolved.

- CSCuh42525

  Symptom: Entering the **show tech-support lacp all** command sometimes causes port flaps.

  Conditions: This problem occurs when you enter the **show tech-support lacp all** command on Cisco Nexus 7000 Series devices.

  Workaround: This issue is resolved.

- CSCuh47328

  Symptom: The **show ip bgp summary** command, or any other **show ip bgp** command, does not produce any result. The parser hangs for 20 to 30 seconds and then recovers.

  Conditions: This problem occurs when you enter a clear line in the middle of a large CLI output which is stalled at the -------more------ prompt.

  Workaround: This issue is resolved.

- CSCuh48862

  Symptom: Cisco Nexus 7000 M2-Series Ethernet Modules enter the error-disable/failure state and display this error:

  ```
  VAL_EMM_CP_IRQ__2_FLD_USECNT_DEC
  ```

Conditions: Multiple ports are spanned for both ingress and egress directions and those packets are sent to multiple ports using multicast Local Target Logic (LTL).

Workaround: This issue is resolved.

- CSCuh49870

  Symptom: The **show install epld status** command returns "Could not pull epld logs from plog."

  Conditions: This problem sometimes occurs under these conditions:

  Upgrade the active supervisor PMFPGA. After the supervisor resets itself and boots up, enter the **show install epld status** command.

  Workaround: This issue is resolved.

- CSCuh57710

  Symptom: A MAC address assigned to a virtual port channel (PC + SWID.LID) is assigned instead to a local PC+ interface.

  Conditions: This problem occurs in PC+/FP environments.

  Workaround: This issue is resolved.

- CSCuh67647

  Symptom: Several defunct ("zombie") TACACS processes remain present on Cisco Nexus 7000 Series devices.

  Conditions: This problem might occur when DNS is enabled on the device but no valid DNS servers are configured.

  Workaround: This issue is resolved.

- CSCuh72902

  Symptom: Traffic is forwarded to incorrect destination virtual port channel plus channels. This problem can appear after a reload of the Cisco Nexus 7000 Series device or interface flaps. Various ports can be affected.

  Conditions: This problem occurs on Cisco Nexus 7000 Series devices configured in the virtual port channel plus domain, and or with FabricPath enabled. It can also occur when "Swid/Subswitchid/vdc" is incorrectly programmed into the switch table.

  Workaround: This issue is resolved.

- CSCuh75899

  Symptom: The *xbar_driver_usd* process on a module leaks memory, causing the module to reboot. After three occurrences of running out of memory and rebooting, the module remains powered off.

  Conditions: This issue might be seen on Cisco Nexus 7000 Series devices when you conduct SNMP polling *ciscoSwitchFabricMIB* with SNMP; when you enter commands beginning with **show hardware fabric-utilization internal snmp**; and when you walk *ciscoSwitchFabricMIB* 1,000 to 2,000 times, which uses all 100 MB of available memory for the *xbar_driver_usd* process.

  Workaround: This issue is resolved.

- CSCui02415

  Symptom: A Cisco Nexus 7000 Series device sometimes drops multicast packets when OI is added to S,G.

  Conditions: The drops might occur when the system is adding an OI to an S,G with a high number of S,Gs already in the system.

  Workaround: This issue is resolved.

- CSCui07608

  Symptom: The Open Shortest Path First (OSPF) process sometimes crashes when you are configuring redistribution when the route map is configured for “set distance.”

  Conditions: The OSPF process crash occurs when the route map, used for redistribution, has the “set distance” clause configured.

  Workaround: This issue is resolved.

- CSCui22836

  Symptom: When you are reloading F2 or F2E modules with Fabric Extenders (FEXes), forwarding broadcast traffic through FabricPath VLANs sometimes fails.

  Conditions: This problem occurs when FabricPath VLANs are used for FEX ports in setups without a virtual port channel (vPC) configuration.

  Workaround: This issue is resolved.

- CSCui33523

  Symptom: A secure shell (SSH) connection is established with a logical interface (port channel) that is down.

  Conditions: This problem occurs when the SSH packet causes an ICMP redirect message to be sent, and the incoming and outgoing port are the same.

  Workaround: This issue is resolved.

- CSCui33802

  Symptom: In Cisco NS-OS Release 6.1(4), the table index 1.3.6.1.4.1.9.9.109.1.1.1.1.6.1 does not work for polling the MIB for the active supervisor.

  Conditions: The table index is hard coded to 1 while fetching CISCO-PROCESS-MIB for cpmTotalTable.

  Workaround: This issue is resolved.

- CSCui39061

  Symptom: On Cisco Nexus 7000 Series devices running Cisco NX-OS Release 5.2(5), the supervisor sometimes restarts when the ipqosmgr module crashes.

  Conditions: This problem occurs on Cisco Nexus 7000 Series devices running Cisco NX-OS Release 5.2(5).

Workaround: This issue is resolved.

- CSCui57871

  Symptom: Some Type-3 link-state advertisements (LSAs) incorrectly have a /0 subnet mask. If the Type-1 LSAs that correspond to the incorrect Type-3 LSAs are removed, the affected LSA will remain and be refreshed as long as the router that originated them is online. These LSAs will continue to incorrectly advertise the max-metric if the max-metric feature was set to include summary LSAs.

  Conditions: This symptom might be seen on Cisco Nexus 7000 Series devices when rebooting or upgrading the code on an Area Border Router (ABR) that has any max-metric configuration in Open Shortest Path First (OSPF). This problem is rare, and it is less common on upgrades.

  Workaround: This issue is resolved.

- CSCui63317

  Symptom: Cisco Nexus 7000 Series devices report the following errors, and the VSH process crashes:

  ```
  2013 Aug 10 14:13:30 N7k vsh[27390]: CLI-4-WARN_OUT_OF_MEMORY: Out of memory
  ../feature/vsh/cli/cli_common/cli_tlv.cc:642
  2013 Aug 10 14:13:30 N7k last message repeated 8 times
  2013 Aug 10 14:13:30 N7k vsh[27390]: CLI-4-WARN_OUT_OF_MEMORY: Out of memory
  ../feature/vsh/cli/cli_common/cli_tlv.cc:675
  ```

  Conditions: When AAA authorization is enabled, the **show** commands sometimes cause a memory leak, which leads to CLI-4-WARN_OUT_OF_MEMORY errors and causes the VSH process to crash.

  Workaround: This issue is resolved.

- CSCui96609

  Symptom: The TrustSec link bounces if another TrustSec link is shut.

  Conditions: This problem occurs on Cisco Nexus 7000 Series devices when both links are connected to ports that belong to the same ASIC.

  Workaround: This issue is resolved.

- CSCuj24572

  Symptom: On a Cisco Nexus 7000 Series device running Cisco NX-OS Release 6.2(2), broadcast frames coming from the peer link might not be forwarded to host ports on a Cisco Nexus 2000 Series Fabric Extender. This leads to incomplete ARP entries where the fabric extender is not connected.

  Conditions: This symptom might be seen on Cisco Nexus 7000 Series devices using module type N7K-F248XP-25 or N7K-F248XP-25E after the module or the chassis reloads. However, after a nondisruptive ISSU, you will not see this issue until the module reloads.

  Workaround: This issue is resolved.

Resolved Caveats—Cisco NX-OS Release 6.1(4)

- CSCub80302

  Symptom: FCS/CRC exceptions should be logged in log file. Currently they are displayed in the exception log.

  Workaround: This issue is resolved.

- CSCuc16103

  Symptom: When BGP aggregation is configured, after all individual routes withdraw, it takes 10 to 20 seconds for Cisco NX-OS software to withdraw the aggregation routes, which causes a long convergence time.

  Conditions: This symptom might be seen because of the fixed 20-second periodic cleanup processing time.

  Workaround: This enhancement request to accelerate the cleanup process to improve the convergence time is resolved.

- CSCuc64097

  Symptom: Unicast traffic silently disappears when one of the switches in the aggregation layer is brought up after a reload.

  Conditions: This symptom might be seen under the following conditions:

  - The unit under test (UUT) is advertising type 3, 4, 5, and 7 LSAs to its neighbors.
  - UUT is reloaded and it received a copy of an old self-originated LSA for which the route lookup fails. UUT does not take any corrective action for the LSA due to the route lookup failure.
  - The neighbor keeps the copy of the old LSA, which causes the traffic to silently disappear.

  Workaround: This issue is resolved.

- CSCuc84457

  Symptom: A BGP neighbor password gets enforced or disabled only after a BGP process restart.

  Conditions: This symptom might be seen when you assign a BGP neighbor password to an established connection and do a reset with the **clear ip bgp *** command. The password is not enforced.

  Workaround: This issue is resolved.

- CSCud20864

  Symptom: A BGP path is multipath-enabled even though it has a higher or lower IGP metric than the current best path.

  Conditions: This symptom might be seen when double recursion is used. For example, the prefix points to a next hop that is also learned through BGP, which requires another recursive lookup to resolve the outgoing interface.

  Workaround: This issue is resolved.

- CSCud41785

  Symptom: On F2 and F2E Series modules, the ingress Control Plane Policing (CoPP) policy enforces DC3.COS and DC3.ACOS based on a user-supplied CoPP policy or the default CoPP policy. The DC3.ACOS field is used on the Supervisor 2 egress datapath to assign the output queue. However, in a subset of packets that are bound for the supervisor that use the CAP1 mechanism, the Decision Engine (DE) driven DC3.ACOS value is overwritten to zero (0), which violates the CoPP driven DC3.ACOS assignment. As a result, all CAP1 mechanism driven frames that are bound for the supervisor go to the default queue.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series switch with F2 or F2E Series modules that have control traffic.

  Workaround: This issue is resolved.

- CSCud75360

  Symptom: The following message might appear on a Cisco Nexus 7000 Series device with F2 Series modules:

```
2012 Nov  30 16:38:31 switch %IPFIB-SLOT3-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 4
2012 Nov  30 16:38:31 switch %IPFIB-SLOT2-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 5
2012 Nov  30 16:38:31 switch %IPFIB-SLOT3-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 5
2012 Nov  30 16:38:31 switch %IPFIB-SLOT2-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 7
2012 Nov  30 16:38:31 switch %IPFIB-SLOT3-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 7
2012 Nov  30 16:38:31 switch %IPFIB-SLOT2-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 8
2012 Nov  30 16:38:31 switch %IPFIB-SLOT2-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 10
2012 Nov  30 16:38:31 switch %IPFIB-SLOT3-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 8
2012 Nov  30 16:38:31 switch %IPFIB-SLOT2-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 11
2012 Nov  30 16:38:31 switch %IPFIB-SLOT3-4-CLP_FIB_TCAM_PF_INSERT_FAIL: FIB TCAM
prefix insertion failed for IPV6 unicast on instance 10
```

  After this log appears, it is possible that the FIB TCAM might freeze, and no new prefixes can be inserted.

  Conditions: This symptom might be seen when the FIB capacity is near the upper advertised limit of the F2 Series module, even if only for a brief period of time

  Workaround: This issue is resolved.

- CSCue11653

  Symptom: Cisco NX-OS software resets a line card due to an error in handling a parity interrupt.

  Conditions: This symptom might be seen when all of the following errors appear:

  - `SYSMGR-SLOT8-2-SERVICE_CRASHED: Service "lamira_usd" (PID 1944) hasn't caught signal 6 (core will be saved)`
  - The **show logging onboard mod 2 exception-log** command shows this output:

```
----------------------------
    Module:  2
----------------------------
```

```
Exception Log Record :  Mon Mar  4 11:25:32 2013 (602696 us)

Device Id         : 81
Device Name       : Lamira
Device Error Code : c5101210(H)
Device Error Type : ERR_TYPE_HW
Device Error Name : NULL
Device Instance   : 1 <----- this should be 1
Sys Error         : Generic failure
Errtype           : INFORMATIONAL
PhyPortLayer      : Ethernet
Port(s) Affected  :
Error Description : LM_INT_CL1_TCAM_B_PARITY_ERR <---------!
DSAP              : 211
UUID              : 382
Time              : Mon Mar  4 11:25:32 2013
                    (602696 usecs 513484AC(H) jiffies)
```

Or the command shows this output:

```
----------------------------
    Module:  2
----------------------------

Exception Log Record :  Mon Mar  4 11:25:32 2013 (602696 us)

Device Id         : 81
Device Name       : Lamira
Device Error Code : c5101210(H)
Device Error Type : ERR_TYPE_HW
Device Error Name : NULL
Device Instance   : 1 <---------- this should be '1'
Sys Error         : Generic failure
Errtype           : INFORMATIONAL
PhyPortLayer      : Ethernet
Port(s) Affected  :
Error Description :LM_INT_L3_TCAM_PARITY <---------!
DSAP              : 211
UUID              : 382
Time              : Mon Mar  4 11:25:32 2013
                    (602696 usecs 513484AC(H) jiffies)
```

– Enter the **show logging onboard internal lamira** command on the line card, and the output should show either of the following messages:

```
ACLQOS: STAT Register Scan - No Correctable Error Found

IPFIB: STAT Register Scan - No Correctable Error Found
```

Workaround: This issue is resolved.

- CSCue19535

  Symptom: All I/O modules fail to synchronize to a single fabric module, which causes the modules to reset instead of the fabric module being powered down.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCue31362

  Symptom: Intermittent MAC address flaps occur, but there is no impact to production.

  Conditions: This symptom might be seen following an upgrade to Cisco NX-OS Release 6.1(2) and is triggered by DHCP offer packets.

  Workaround: This issue is resolved.

- CSCue93642

  Symptom: When you enter any of the following commands, the IFTMC process on an F2 Series module goes into an infinite loop.

  - **show tech-support monitor erspan**
  - **show tech-support eltm**
  - **tac-pac**
  - **show system internal iftmc info vlan x**

  You can verify the problem by entering the following commands:

  ```
  switch# attach module x
  switch# show process | grep IFTMC
  ```

  An R state in the output indicates the existence of the problem.

  Conditions: This symptom might be seen when any port flap causes a timeout.

  Workaround: This issue is resolved.

- CSCuf03534

  Symptom: An SNMP response can be slow on a Cisco Nexus 7000 Series device, but it is especially slow for ciscoCBQosMIB.

  Conditions: This symptom might be seen with the CISCO-CLASS-BASED-QOS-MIB.

  Workaround: This issue is resolved.

- CSCug32189

  Symptom: The BGP process fails because of constant “Socket (43/-1) accept: Bad file descriptor” errors.

  ```
  BGP-3-SOCKCREATE   bgp-6000 [4524]  Cannot create socket for peer 1.1.1.1.: Bad file
  descriptor, stats: 60029780/880562/60910228/8747920/8462770
  ```

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCug37315

  Symptom: The jumbo MTU size on a Cisco Nexus 7000 Series device cannot be changed.

  Conditions: This symptom might be seen in a configuration that includes a Supervisor 2 module, an M2 Series module, and an M1 Series module. There are no F1 Series or F2 Series modules. You might see the issue when you do either of the following:

  - Create a VDC and change the jumbo MTU, with no interface allocated to it.
  - Create a VDC with M2 Series interfaces and change the jumbo mtu.

  Workaround: This issue is resolved.

- CSCug44175

  Symptom: Setting vlanTrunkPortVlansEnabled for ports that are a member of a trunk port channel does not return an error in SNMP.

  Conditions: This symptom might be seen in SNMP when you set vlanTrunkPortVlansEnabled for ports that are member of a trunk port channel.

  Workaround: This issue is resolved.

Resolved Caveats—Cisco NX-OS Release 6.1(3)

- CSCua39287

  Symptom: A Cisco Nexus 7000 Series device that is running NX-OS Release 5.2(5) might fail because of the TACACS+ process.

  Conditions: This symptom might be seen when TACACS+ is used for AAA.

  Workaround: This issue is resolved.

- CSCua59668

  Symptom: Counters show incorrect values for “service group clients and service group routers” in the output of the **show ip wccp** command.

  Conditions: This symptom might be seen when the cache engine connected interface was shut and the **show ip wccp** command does not clear the count for the cache engine that is down.

  Workaround: This issue is resolved.

- CSCua62566

  Symptom: While configuring a jumbo MTU, the following error message appears:

  ```
  %ETHPORT-2-IF_CRITICAL_FAILURE: (Debug syslog)Critical failure:
  qosmgr_dce_gldb_get_all_vl_params returned error: , no such pss key
  ```

  Conditions: This symptom might be seen under the following conditions:

  - The chassis does not have any F-series module installed.
  - There is an empty port channel in a random sequence of configurations that include adding or removing members of the port channel, and various commands such as the software monitor command or software mode access command are entered.
  - Configuring a system jumbo MTU is in progress.

  Workaround: This issue is resolved.

- CSCua63021

  Symptom: A Cisco Nexus 7000 Series device might report memory allocation failure errors such as the following:

  ```
  %PIM-3-ATIMERS_ERROR: malloc failed in heap_create
  %PIM-3-ERROR: -Traceback: <traceback>
  ```

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device running Cisco NX-OS Release 5.2(x) or Release 6.0(x) software, and the Cisco Nexus 7000 Series device is the PIM RP device.

  Workaround: This issue is resolved.

- CSCua92618

  Symptom: Input/CRC errors appear on the host interface on a Cisco Nexus 2232TM FEX. A RCV error appears in the output of the **show interface counter error** command.

  Conditions: This symptom might be seen on a Cisco Nexus 2232TM Fabric Extender.

  Workaround: This issue is resolved.

- CSCua94872

  Symptom: The errdisable recovery feature does not recover port-channel member ports in a Cisco Nexus 7000 Series device.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device running Cisco NX-OS Release 5.2(5) on a port-channel interface.

  Workaround: This issue is resolved.

- CSCua97463

  Symptom: The default-information originate configuration in the OSPF process is inconsistent with the actual OSPF behavior.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCua99168

  Symptom: The links and port channel on the 8-port 10-Gigabit Ethernet I/O module XL (N7K-M108X2-12L) are affected by input errors caused by short frames received on the module.

  Conditions: This symptom might be seen when Cisco TrustSec (CTS), either cts manual or cts dot1x, is configured on the interface.

  Workaround: This issue is resolved.

  Note If you upgrade the switch to Cisco NX-OS Release 6.1(3) through an ISSU, you must enter the **shut** command followed by the **no shut** command on the affected ports for the fix for this issue to take effect.

- CSCub50434

  Symptom: After an ISSU or a supervisor switchover, a Cisco Nexus 7000 Series device might send back a VTP packet on the same vPC from which it ingressed. In a Data Center Interconnect (DCI) topology, this packet return can cause a storm of VTP packets between the Cisco Nexus 7000 Series devices.

  Conditions: This symptom might be seen when Cisco Nexus 7000 Series devices are configured in VTP transparent mode.

  Workaround: This issue is resolved.

- CSCub61058

  Symptom: A Cisco Nexus 7000 Series device fails when a Cisco Nexus 2000 FEX module is connected to it.

  Conditions: This symptom might be seen when the switch is running Cisco NX-OS Release 5.2(5) and a community VLAN is present in the configuration.

  Workaround: This issue is resolved.

- CSCub71521

  Symptom: Configuration information is missing after a software upgrade.

  Conditions: This symptom might be seen following a Cisco NX-OS software upgrade, either nondisruptive (ISSU) or disruptive.

  Workaround: This issue is resolved.

- CSCub94465

  Symptom: A CoPP service has a memory leak that relates to the drop threshold logs. When the leak occurs, the following output is observed:

  ```
  switch# show system internal copp mem-stats detail | include drop_log_t
    58 COPP_MEM_drop_log_t  17172  17172  343440  343440
  ```

  The numbers keep rising every 5 minutes and also every time a **show running-config** command is entered, but not every time a syslog message is generated.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device that is running Cisco NX-OS Release 5.2(3a) where the CoPP policy has been modified by adding drop threshold logs.

  Workaround: This issue is resolved.

- CSCuc30562

  Symptom: A supervisor module in a Cisco Nexus 7000 Series device with dual supervisors might exhibit a error due to a inband driver link failure that can take up to 60 seconds to fail over and might cause interruption to service, disruption to the network, or links to fail. After the supervisor recovers, the following information can be seen in the onboard logs:

  ```
  switch(standby)# show logging onboard module 5 internal reset-reason
  Module:  5
          Last log in OBFL was written at time Sat Sep 22 21:50:57 2012 Reset Reason for
  this card:
          Image Version : 5.1(4)
          Reset Reason (LCM): Unknown (0) at time Sat Sep 22 14:50:48 2012
  ```

```
        Reset Reason (SW): Reset triggered due to Hardware Error (21) at time Sat Sep
22 14:44:56 2012
          Service (Additional Info): InbandFPGA SGMII RX link down
        Reset Reason (HW): Watchdog Timeout (2) at time Sat Sep 22 14:50:48 2012
```

Conditions: This symptom might be seen when the interrupt handler is not correctly resetting the supervisor after the fatal error is detected.

Workaround: This issue is resolved.

- CSCuc37251

  Symptom: A storm-control violation system does not generate log messages:

  ```
  %ETHPORT-5-STORM_CONTROL_ABOVE_THRESHOLD
  %ETHPORT-5-STORM_CONTROL_BELOW_THRESHOLD
  ```

  Conditions: This symptom might be seen when storm-control occurs on a Cisco Nexus 48-port 1/10 Gigabit Ethernet SFP+ I/O F2 Series module (N7K-F248XP-25). Other modules do have this issue.

  Workaround: This issue is resolved.

- CSCuc51978

  Symptom: A BGP keepalive packet is not generated at the configured interval once it starts retransmission.

  Conditions: This symptom might be seen when the packet starts retransmission.

  Workaround: This issue is resolved.

- CSCuc56272

  Symptom: During an ISSU, some modules fail to upgrade due to an SPM timeout in the UPGRADE_DONE_SEQ sequence.

  Conditions: This symptom might be seen when there are a large numbers of VLANs or port channels (especially VLANs over port channels) and many line cards or FEX modules.

  Workaround: This issue is resolved.

- CSCuc61695

  Symptom: On a Cisco Nexus 7000 Series device that is running Cisco NX-OS Release 6.1(2), you might see the following error messages:

  ```
  %ELTM-2-INTERFACE_INTERNAL_ERROR: Internal error: port-channel2:LIF not allocated to
  add or delete member port , collect output of show tech-support eltm
  %ETHPORT-5-IF_SEQ_ERROR: Error ("invalid argument to function call") communicating
  with MTS_SAP_ELTM for opcode MTS_OPC_ETHPM_PORT_PRE_CFG (RID_PORT: Ethernet [your
  port])
  %ETHPORT-5-IF_DOWN_ERROR_DISABLED: Interface Ethernet[your port] is down (Error
  disabled. Reason:invalid argument to function call)
  ```

  Conditions: This symptom might be seen when you create a new port channel.

  Workaround: This issue is resolved.

- CSCuc63554

  Symptom: ERSPAN packets are lost one way when traffic arrives through a vPC peer link.

  Conditions: This symptom might be seen when Cisco Nexus 7000 Series devices are in a vPC and traffic that needs to be spanned should go over the peer link. In addition, the ERSPAN destination should be reachable through any vPC that is present in the switch.

  Workaround: This issue is resolved.

- CSCuc72853

  Symptom: When a Cisco Nexus 7000 Series device is configured as a DHCP relay agent, the DHCP ACK packet for the DHCP inform packet is directed to IP 0.0.0.0, even though it should be directed to the client IP address.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device that is configured as a DHCP relay agent. The switch is running Cisco NX-OS Release 6.1(1).

  Workaround: This issue is resolved.

- CSCuc86223

  Symptom: A VLAN is not present in hardware on an F2 Series module.

  - MAC addresses for the affected VLAN are not learned by the affected forwarding engine (FE).
  - Traffic received on the port channel is dropped on the affected VLAN.

  Conditions: This symptom might be seen only on F2 Series modules following an ISSU from Cisco NX-OS Release 6.0(x) to Release 6.1(1) or Release 6.1(2).

  Workaround: This issue is resolved.

- CSCuc92186

  Symptom: When several peer templates have a common peer session, and the peer session is modified, the BGP adjacencies using the peer templates will shut down and remain in this state.

  Conditions: This symptom might be seen when BGP neighbors are configured with peer templates that have a common peer session. When the peer session is deleted, all BGP adjacencies that use peer templates with the common peer session go to a shutdown (Admin) state. Once a peer template is modified to remove the peer session, the BGP adjacency will remain in an idle state.

  Workaround: This issue is resolved.

- CSCuc94734

  Symptom: The BGP process fails on a Cisco Nexus 7000 Series device after configuring default-originate in the peer-template.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCuc97808

  Symptom: Cisco NX-OS software is not marking community redistributing when connected to BGP under VRF

  Conditions: This symptom might be seen when BGP community or extended community is set on redistribution (direct to BGP) for VRF.

  Workaround: This issue is resolved.

- CSCuc98282

  Symptom: A rollback on a Cisco FEX fabric port fails after the **default interface** command is entered for the interface

  Conditions: This symptom might be seen when you checkpoint the configuration and enter the **default interface** command on the Cisco FEX fabric ports. The command does not clean up all the commands. When a rollback to the checkpoint occurs, the rollback fails as the cleanup was not complete during **default interface** command.

  Workaround: This issue is resolved.

- CSCud00524

  Symptom: In a mixed ASM (PIM Sparse Mode) and PIM-Bidir environment, ASM (S,G) entries fail to be created.

  Conditions: This symptom might be seen when a static BiDir RP mapping is a supernet of the ASM RP configuration. If the ASM group is not a subnet of the Bidir group, this issue cannot occur.

  Workaround: This issue is resolved.

- CSCud02139

  Symptom: TACACS+ services can hang when a child process hangs.

  Conditions: This symptom might be seen with TACACS+ authentication when internal DNS requests are done. The default limit for these processes is 13. If the child process hangs, then no more child processes can be created which results in TACACS+ authentication failures.

  Workaround: This issue is resolved.

- CSCud10012

  Symptom: A Cisco Nexus 7000 Series device might unexpectedly reload. The logs on the switch show several cores for the res_mgr process prior to the hap reset:

  ```
  %SYSMGR-2-SERVICE_CRASHED: Service "res_mgr" (PID 4055) hasn't caught signal 11
  (core will be saved).
  ```

  Conditions: This symptom might be seen if you have a large number of VLAN or VRF ranges and their representation in a string takes more than 512 characters.

  Workaround: This issue is resolved.

- CSCud16096

  Symptom: The MTS queue gets stuck with Netstack and syslogd processes.

Conditions: This symptom might be seen on a switch running Cisco NX-OS Release 5.2(3a).

Workaround: This issue is resolved.

- CSCud16690

  Symptom: A Cisco Nexus 7000 Series device might fail during configuration.

  Conditions: This symptom might be seen when configuring default-information originate for OSPF.

  Workaround: This issue is resolved.

- CSCud18153

  Symptom: There is a delay of 7 seconds from the time that BFD goes down and an IS-IS session ends.

  Conditions: This symptom might be seen when the **shutdown** command is entered on the remote switch interface.

  Workaround: This issue is resolved.

- CSCud25824

  Symptom: An OSPF dead timer not maintained across a reload.

  Conditions: This symptom might be seen for the following reason. The default timers for Ethernet interfaces on a Cisco Nexus 7000 Series device are hello of 10 seconds and dead-timer of 4x10 = 40 seconds. When configuring a hello timer other than 10 seconds, the dead-timer automatically adjusts to 4 times the newly configured hello timer. If a user needs to combine a nondefault hello timer with the default 40-second dead timer, this new value does not show up in the running configuration. The dead timer of 40 seconds is applied within the OSPF process. On a reload, this value is removed from the OSPF process which will prevent adjacencies from coming up.

  Workaround: This issue is resolved.

- CSCud28161

  Symptom: Traffic loss can occur when a Cisco Nexus 7000 Series device is not able to advertise IS-IS routes to its IS-IS neighbors.

  Conditions: This symptom might be seen after any of the following events:

  - Entering the **reload module** command to perform a supervisor switchover.
  - Entering the **system switchover** command to perform a supervisor switchover.
  - Entering the **clear isis adj * vrf** command to clear the IS-IS adjacency.

  Workaround: This issue is resolved.

- CSCud37446

  Symptom: The SPM process failed with 16 neighbors in a FabricPath environment.

  Conditions: This symptom might be seen when 16 Cisco Nexus 5548 switches are connected to a Cisco Nexus 7000 Series device. The following messages appear after the SPM process failure:

  ```
  2012 Nov 20 15:39:28 csw299cmr %$ VDC-5 %$ %SYSMGR-2-SERVICE_CRASHED: Service "spm"
  (PID 11473) hasn't caught signal 6 (core will be saved).
  ```

```
2012 Nov 20 15:40:37 csw299cmr %$ VDC-5 %$ %SYSMGR-2-SERVICE_CRASHED: Service "spm"
(PID 15503) hasn't caught signal 6 (core will be saved).
2012 Nov 20 15:41:45 csw299cmr %$ VDC-5 %$ %SYSMGR-2-SERVICE_CRASHED: Service "spm"
(PID 15692) hasn't caught signal 6 (core will be saved).
```

Following the SPM process failure, there is a supervisor switchover and the interface configuration is removed.

Workaround: This issue is resolved.

- CSCud44291

  Symptom: On a Cisco Nexus 7000 Series device, if an interface index is queried that is higher than the number of ports on the specific line card, there is a chance that MTS memory can be held indefinitely by SNMPD and eventually exhaust MTS resources. In a dual supervisor environment, SNMPD will core and a HAP reset will occur. In a single supervisor environment, a core should be saved and the system will fail or reboot.

  Conditions: This symptom might be seen if a high-density line card is replaced in the same slot with a lower-density line card, and the management station continues to try and poll the nonexistent higher ports.

  Workaround: This issue is resolved.

- CSCud44300

  Symptom: On a Cisco Nexus 7000 Series device, if an interface index is queried that is higher than the number of ports on the specific line card, there is a chance that MTS memory can be held indefinitely by SNMPD and eventually exhaust MTS resources. In a dual supervisor environment, SNMPD will core and a HAP reset will occur. In a single supervisor environment, a core should be saved and the system will fail or reboot.

  Conditions: This symptom might be seen if a high-density line card is replaced in the same slot with a lower-density line card, and the management station continues to try and poll the nonexistent higher ports.

  Workaround: This issue is resolved.

- CSCud47068

  Symptom: The ipqosmgr process might fail and cause a supervisor switchover. In a switch with a single supervisor, the switch might reload if the network QoS template is applied and the Link Layer Discovery Protocol (LLDP) service is used.

  Conditions: This symptom might be seen on a switch running Cisco NX-OS Release 6.1(1) or 6.1(2) if the user template includes “match protocol iscsi” in the no-drop class and it is used in combination with the LLDP service and at least one of the interface is up, which activates the LLDP service.

  Workaround: This issue is resolved.

- CSCud59785

  Symptom: An Intra-Area summary route is not readvertised if a summary route exists.

Conditions: This symptom might be seen for the following reason. A Cisco Nexus 7000 Series device has an OSPF Intra-Area for prefix X/24 and receives an Inter-Area prefix for X/16. When the switch loses the Intra-Area for subnet X/24, it returns to service, but it does not send an LSA update for the X/24 prefix. As a result, the rest of the network never reinstalls the X/24 prefix.

Workaround: This issue is resolved.

- CSCud62221

  Symptom: On a Cisco Nexus 7000 Series device, MPLS assigns the same label for multiple prefixes (IPv4 and IPv6).

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device with multiple MPLS virtual routing and forwarding (VRF) instances.

  Workaround: This issue is resolved.

- CSCud6738

  Symptom: A FEX interface continues to send and receive traffic even when it is suspended by LACP.

  Conditions: This symptom might be seen when a FEX is connected to a Cisco Nexus 7000 Series device on an F2 Series module.

  Workaround: This issue is resolved.

- CSCud84175

  Symptom: A Cisco Nexus 7000 Series device that has two F2 Series modules will delete the MAC address of the end hosts or servers that it is learning from its Cisco Nexus 7000 Series peer switch.

  Conditions: The Cisco Nexus 7000 Series peer switch should learn the MAC address through an orphan port.

  Workaround: This issue is resolved.

- CSCud86392

  Symptom: AAA accounting does not send a stop record and the external AAA server does not reflect a stop record when a TELNET or SSH session times out due to inactivity. If the session is manually closed by the user, the stop record is correctly displayed.

  Conditions: This symptom might be seen when the Cisco Nexus 7000 Series device is configured for AAA accounting.

  Workaround: This issue is resolved.

Resolved Caveats—Cisco NX-OS Release 6.1(2)

- CSCts64738

  Symptom: Unicast MAC addresses are learned in FabricPath core switches during a broadcast ARP on a setup with an F2 Series module.

Conditions: This symptom might be seen on an F2 Series module when Unicast MAC addresses are learned from a broadcast ARP that results in MAC addresses being learned suboptimally in the MAC address table. Further Unicast re-ARP messages should take care of MAC addresses being removed on FabricPath core switches. This issue only occurs in switches with F2 Series modules.

Workaround: This issue is resolved. The new **no hardware fabricpath mac-learning** *module-number* **port-group** command can be used to selectively disable MAC learning on a module or port group.

- CSCtz00317

  Symptom: A long VLAN name and VTP server mode can coexist.

  Conditions: This symptom might be seen when you copy a backup vlan.dat file and then enter the **copy running-config startup-config** command and do a restart.

  Workaround: This issue is resolved.

- CSCua19335

  Symptom: An snmp walk starting at OID tcp.16 fails.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCua52067

  Symptom: In a vPC+ setup, if the switch ID on one of the peer switches is changed, the adjacency of the other peer points to null instead of a valid GPC.

  Conditions: This symptom might be seen because of a race condition that occurs when the Layer 2 process sends a GPC update (about the changed switch ID) over the peer before getting a GPC up message.

  Workaround: This issue is resolved.

- CSCua82201

  Symptom: A BGP process fails due to constant BGP socket open and close state changes.

  Conditions: This symptom might be seen if there are several idle peers over a period of time due to excessive churn of the Netstack client for BGP sockets. Newly provisioned BGP sessions fail to come up and display the following error:

  ```
  BGP-3-SOCKCREATE:  bgp-XXXX [24958]  Cannot create socket for peer X.X.X.X: Bad file
  descriptor, stats: 28391553/496156/28887500/14303942/14143771
  ```

  Workaround: This issue is resolved.

- CSCua87049

  Symptom: When the **copy startup-config running-config** command completes, some of the configurations, including the fex associate configuration do not get applied to the running configuration. As a result, FEX modules do not come online.

  Conditions: This symptom might be seen in the following scenario:

  - The system is stable and has a FEX configuration.

  - The **copy running-config startup-config** command is entered.
  - Feature-set FEX is disabled so that all the FEX modules go offline.
  - The **copy startup-config running-config** command is entered.
  - The FEXs that were supposed to be saved in the startup configuration (in the second bullet), do not come online.

  Workaround: This issue is resolved.

- CSCua99658

  Symptom: An EPLD upgrade on the 32-port 10-Gigabit Ethernet SFP+ I/O module XL (N7K-M132XP-12L) might fail when the module has the forwarding engine with the part number 73-12326-06. In a parallel EPLD upgrade, the EPLD upgrade on other modules is not affected; however, in a serial EPLD upgrade, other modules are affected as a result of this failure.

  Conditions: This symptom might be seen on the 32-port 10-Gigabit Ethernet SFP+ I/O module XL (N7K-M132XP-12L) with the forwarding engine that has the part number 73-12326-06.

  Workaround: This issue is resolved.

- CSCub17949

  Symptom: The MFDM process on a FEX fails and restarts. In addition, a destination virtual interface (DVIF) that does not belong to any FEX interface might not be cleaned up properly.

  Conditions: This symptom might be seen if the number of DVIFs exceeds the resource limit.

  Workaround: This issue is resolved.

- CSCub20893

  Symptom: A memory leak occurs whenever a port is error-disabled and flapped.

  Conditions: This symptom might be seen when a port goes into error-disabled mode and is recovered by flapping.

  Workaround: This issue is resolved.

- CSCub24422

  Symptom: During a VDC reload, the mcastfwd process might fail.

  Conditions: This symptom might be seen when a VDC reloads.

  Workaround: This issue is resolved.

- CSCub25449

  Symptom: FCoE traffic might be disrupted after an I/O module reloads. This disruption is caused by zone or IVR entries not being programmed on the Ethernet member ports that are in the up state on the recently reloaded modules.

  Conditions: The symptom might be seen when the following steps are executed on the zone server:

  1. Create an Ethernet port channel P, including members from multiple I/O modules.
  2. Create F mode VFC V and bind (implicitly or explicitly) to the port channel P.

3. Bring up the port-channel members.
4. Bring up the VFC and let the FLOGI occur over the VFC.
5. After the FLOGI occurs, reload one of the modules that has a member from the port channel P. This member should have been already in the up state.
6. After the module comes up and the member port is also up, the zone entries will not be programmed on the member port. This situation can cause traffic disruption.

The same conditions can trigger IVR rewrite information to disappear from the E/F ports depending on the configuration, which can cause possible FCoE traffic disruption with IVR.

Workaround: This issue is resolved.

- CSCub34905

  Symptom: After configuring the **fabricpath multicast load-balance** command in a vPC+ setup, ingress multicast packets on M1 Series and M2 Series modules and egress packets on F1 Series modules can be silently dropped.

  Conditions: This symptom might be seen after the **fabricpath multicast load-balance** command is applied.

  Workaround: This issue is resolved.

- CSCub43036

  Symptom: The ACLQoS process fails during ISSU or switchover on a switch that is running Cisco NX-OS Release 6.1(x).

  Conditions: This symptom might be seen when the ACLQoS process continuously does polling of ACL statistics to avoid wraparound of 32-bit statistics counters. As soon as an ISSU or switchover is triggered, the polling is supposed to stop, but the ACLQoS process is stopping later. If the ACLQoS process still tries to read statistics, the software failure can occur.

  Workaround: This issue is resolved.

- CSCub49473

  Symptom: Ingress traffic to FabricPath core ports and the peer link silently disappear.

  Conditions: This symptom might be seen in a setup with M1 Series modules and F1 Series modules following a reboot on one of the vPC pair.

  Workaround; This issue is resolved.

- CSCub54745

  Symptom: An Embedded Event Manager (EEM) policy that is configured based on an SNMP OID is not triggered. This behavior can be checked with the **show event manager history events** command.

  Conditions: This symptom might be seen after an ISSU to Cisco NX-OS Release 6.1(1) from an earlier release where SNMP OID-based EEM applets are configured. The issue can also occur rarely with a newly configured SNMP-based EEM applet in Cisco NX-OS Release 6.1(1).

  Workaround: This issue is resolved.

- CSCub96561

  Symptom: When an ISSU to Cisco NX-OS Release 6.1(2) is performed from any earlier release on F2 Series modules, the VLAN number is not programmed because the VLAN number was never programmed in the hardware in releases earlier than Cisco NX-OS Release 6.1(2).

  Conditions: This symptom might be seen when a MAC address access list is configured and an ISSU to Cisco NX-OS Release 6.1(2) occurs.

  Workaround: This issue is resolved.

- CSCuc24824

  Symptom: A Cisco Nexus 7000 Series device does not redirect traffic if a new VLAN is added to a WCCP policy on an XL module.

  Conditions: This symptom might be seen when new ports, VLANs, or a port channel are added to the existing running WCCP policy on an interface. New VLANs or ports do not have the WCCP policy applied for new members that were added.

  Workaround: This issue is resolved.

- CSCuc23075

  Symptom: An incorrect Layer 3 forwarding entry exists when using PVLANs on F2 Series modules.

  Conditions: This symptom might be seen when a primary VLAN has a SVI and both the primary VLAN and the secondary VLAN are the allowed VLAN in a port channel. The SVI egress LIF is incorrectly programmed with the secondary VLAN. As a result, routed packets are tagged with the secondary VLAN instead of the primary VLAN.

  Workaround: This issue is resolved.

- CSCuc58868

  Symptom: When the **show lldp entry** command is entered, the following inconsistencies are seen:

  - A non-ASCII character is appended to the system name when sysDesc is enabled on a Linux server running lldp.
  - An escape sequence is printed at the user prompt when portDesc TLV is enabled on a Linux server running lldpad. In some cases, help text will be printed at the --More-- prompt.

  Conditions: This symptom might be seen when some or all of the following conditions exist:

  - Linux servers are connected to a Cisco Nexus 7000 Series device.
  - lldpad is configured to enable tx of sysDesc TLV
  - lldpad is configured to enable tx of portDesc TLV

  Workaround: This issue is resolved.

- CSCuc64412

  Symptom: MAC address move messages appear for FEX vPC+ legs on the vPC secondary device.

  Conditions: This symptom might be seen in a vPC+ setup with two F2 Series VDCs. This setup has both non-FEX and FEX vPCs. When all the vPC legs are up, the **no port-channel limit** command is entered on both peers.

Workaround: This issue is resolved.

Resolved Caveats—Cisco NX-OS Release 6.1(1)

- CSCtc86471

  Symptom: After a supervisor failover on a Cisco Nexus 7000 Series device, the switch fails to recognize power supply 4. The **show environment power** command does not show the module 4 power supply, but does show an actual output value:

```
switch# sh environment power
Power Supply:
Voltage: 50 Volts
Power                                Actual        Total
Supply    Model                      Output     Capacity    Status
                                    (Watts )    (Watts )
-------  -------------------  -----------  -----------  --------------
1        N7K-AC-7.5KW-US            853 W       7500 W     Ok
2        N7K-AC-7.5KW-US            835 W       7500 W     Ok
3        N7K-AC-7.5KW-US            860 W       7500 W     Ok
4                                                840 W             0 W     Ok
```

  Conditions: This symptom might be seen following a supervisor switchover.

  Workaround: This issue is resolved.

- CSCtj11367

  Symptom: On a Cisco Nexus 7000 Series device running vPC, the HSRP gateway MAC address might be removed from the peer link after a peer-link flap.

  Conditions: The issue might be seen during the recovery phase of the vPC peer link and can be triggered by a loop condition that results in excessive traffic on the peer link. Under rare conditions, if the HSRP hellos are looped, it can result in the HSRP MAC address getting installed on the wrong port and remaining there after the loop is broken and the peer link is restored.

  Workaround: This issue is resolved.

- CSCtj44206

  Symptom: The internal queue overflowed after the **copy running-config startup-config** command was entered. A syslog can be seen in the output of the **show logging** command on the supervisor module.

```
%KERN-2-SYSTEM_MSG: Utaker overflowed. Size -40/5242880 - kernel
```

  Conditions: This symptom might be seen when a large number of processes exit or fail.

  Workaround: This issue is resolved.

- CSCtl18412

  Symptom: Policies such as ACL, QoS, and PBR for FEX interfaces are not cleaned from connecting modules when the FEX fabric ports are moved to another VDC. If those ports are moved back later to the same VDC and configured as a fabric port, or some other ports in same module are configured to be fabric ports, the FEX module might not come online (using those ports), or the relevant policies might not be enforced.

Conditions: This symptom might be seen when FEX fabric ports are moved to any other VDC.

Workaround: This issue is resolved.

- CSCtn93738

  Symptom: A Cisco Fabric Services (CFS) sessionless commit can cause TACACS to fail.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device that is running Cisco NX-OS Release 5.1(4) or an earlier release, if TACACS or RADIUS CFS is enabled and a CFS sessionless commit occurs.

  Workaround: This issue is resolved.

- CSCto34686

  Symptom: VSH failed when collecting the output of the **show tech** command.

  Conditions: This symptom might be seen when OBFL logging for stats is enabled in Cisco NX-OS Release 4.2(8) and Release 5.2(x) releases. An ISSU or ISSD to an image without OBFL logging enabled can cause OBFL to display a CLI to query the driver with an out-of-range, undefined counter ID, which can cause VSH to fail.

  Workaround: This issue is resolved.

- CSCtr26794

  Symptom: The **copy running-config startup-config** command is supposed to display an error if a VDC global configuration change is pending.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCtr58022

  Symptom: Memory usage of the system manager goes up by approximately 100 KB upon a VDC reload.

  Conditions: The symptom is not seen with every VDC reload and the triggers for it are unknown.

  Workaround: This issue is resolved.

- CSCtr76181

  Symptom: The SNMPD process dumps core if you set the managementDomainName with a zero-length string in the CISCO-VTP-MIB.

  Conditions: This symptom might be seen because the value in the SNMP SET operation is set to a zero-length string.

  Workaround: This issue is resolved.

- CSCtr86570

  Symptom: Configuring a Cisco IOS device connected to a Cisco Nexus 7000 Series device using unsupported ISL encapsulation causes the ISL frames to flood to a VLAN.

Conditions: This symptom might be seen when this misconfiguration occurs.

Workaround: This issue is resolved.

- CSCts35211

  Symptom: The PPM process fails on command updates or other port-profile operations.

  Conditions: This symptom might be seen when there is a startup configuration of port profiles where the interfaces have some override commands in the database.

  Workaround: This issue is resolved.

- CSCtt00148

  Symptom: Memory leaks occur when port-security dynamic MAC addresses are aged out and then relearned.

  Conditions: This symptom might be seen only for port-security dynamic MAC addresses. (It is not seen with static and sticky MAC addresses.) There are two types of aging: absolute and inactive. For the absolute timer, the MAC addresses are aged out after the specified number of minutes (aging time). For the inactivity timer, the MAC addresses are aged out if they are inactive for the specified aging time. If there is still traffic after the MAC addresses are aged out, then they are relearned. In this case, memory leaks occur.

  Workaround: This issue is resolved.

- CSCtt02614

  Symptom: The output of the **show fex transceiver** command or the **show interface ethernet transceiver fex-fabric** command has incorrect information. It shows an SFP is present but not supported.

  Conditions: This symptom might be seen in Cisco NX-OS Release 5.2(3a) and Release 6.0(1).

  Workaround: This issue is resolved.

- CSCtt18403

  Symptom: An OSPFv3 instance has some interfaces that remain in the down state after the **copy file running-configuration** command is executed.

  Conditions: This symptom might be seen when there are no IPv4 addresses configured on the switch. As a result, OSPFv3 cannot choose a router ID from the system.

  Workaround: This issue is resolved.

- CSCtt19402

  Symptom: All channels are in the suspended state after a reload and the vPC delay restore expired.

  Conditions: This symptom might be seen when there is fast continuous flapping of some interfaces and only after a reload of the vPC or the vPC is configured for the first time.

  Workaround: This issue is resolved.

- CSCtt47383

  Symptom: HSRP MAC address flaps occur in OTV sites.

  Starting in Cisco NX-OS Release 5.1(x), GARP and Unicast ARP packets with the source IP (SIP) address or the source MAC (SMAC) address as the virtual IP (VIP) address or the virtual MAC (VMAC) address in the ARP header use the VDC MAC address instead of the virtual MAC (VMAC) address as the source MAC address in the Layer 2 header.

  Assume an OTV is configured between two data centers, one on the north side and the other on the south side. The north side receives an ARP request to a Layer 2 broadcast address and generates a Unicast ARP reply to a host that is on the south to provide the GW IP MAC address. Because this packet originates with the SMAC of the VDC MAC address in the Ethernet header, the HSRP filter misses it and sends it through the OTV cloud. When the south side recieves this packet, the information is populated in the ND-Cache of the south side. As a result, any further ARP requests that it sees get a response from the ARP-ND-Cache. This packet has HSRP in the Ethernet header as an HSRP MAC address, which causes the HSRP MAC address to flap.

  Conditions: This symptom might be seen in Cisco NX-OS Release 5.1(x), Release 5.2(1), Release 5.2(2), and Release 6.1(1). It is resolved in Cisco NX-OS Release 5.2(3) and Release 6.1(1).

  Workaround: This issue is resolved.

- CSCtt97386

  Symptom: If Unicast Reverse Path Forwarding (uPRF) is enabled on a Layer 3 interface and the mode of the port is changed to switchport and then changed back to Layer 3 interface, then the uRPF configuration is still present on the interface. On configuring Layer 3 again on the port, there is no uRPF configuration on the port and no configuration should be there also in the hardware.

  Condition: This symptom might be seen when the stale configuration is present in the hardware only when the transition of the ports is as described in the Symptom.

  Workaround: This issue is resolved.

- CSCtu04972

  Symptom: VRRP is stuck in INIT state. VMAC is not allocated.

  Conditions: This symptom might be seen after a switch reload.

  Workaround: This issue is resolved.

- CSCtu04974

  Symptom: If medium p2p is configured on a Layer 3 port channel, you cannot enter into configuration mode for individual interfaces in the port channel. As a result, you cannot apply interface descriptions, shut down interfaces, or remove interfaces from the bundle.

  Conditions: This symptom might be seen for an interface that is part of a port channel that is configured with medium p2p.

  Workaround: This issue is resolved.

- CSCtu42326

  Symptom: When a peer link is brought up, VLANs 2047 to 4094 are suspended because they are not allowed in the vPC peer, even though those VLANs are allowed and correctly configured on the vPC peer device. As a result, 6- to10-second packet drops can occur in VLANs 2047 to 4094.

Conditions: This symptom might be seen if there are more than 2049 VLANs created and allowed on the vPC peer link. It is not necessary to have those VLANs in one range or started from number one. This symptom can occur when the total count of VLANs is more than 2049.

Workaround: This issue is resolved.

- CSCtu61247

  Symptom: When an F2 Series module port is configured to operate at 1-G port rate, changing the CoS to queue mapping on an oversubscribed port might cause the ports to go to a hardware failure state.

  Conditions: This symptom might be seen when the CoS to queue mapping on an oversubscribed port with both credited (known unicast traffic) and uncredited traffic (multicast, broadcast, or unknown unicast traffic) is changed. The result can be a fatal exception and ports are marked as a hardware failure.

  Workaround: This issue is resolved.

- CSCtw72949

  Symptom: When polling at a sustained rate on a Cisco Nexus 7000 Series device, certain objects from the BRIDGE-MIB might cause a relatively high CPU usage for SNMPD for some time after polling and might cause new requests to time out. On releases earlier than Cisco NX-OS Release 5.2, this polling might cause internal messages for interprocess communications to be queued and might affect other services.

  Conditions: This symptom might be seen when there is a large amount of SNMP access to the device against the BRIDGE-MIB.

  Workaround: This issue is resolved.

- CSCtw90615

  Symptom: OSPF does not automatically recalculate redistributed routes for database selection when route changes occur manually (such as removing static routes), or when routes are removed on neighboring devices into dynamic routing protocols (such as EIGRP). As a result, an outage could occur due to lack of a route.

  Conditions: This symptom might be seen when identical routes exist.

  OSPF requires unique link state IDs when inserting routes into the OSPF database. When OSPF chooses between two routes with different masks (such as 192.168.1.0/24 and 192.168.1.0/32) with identical link state IDs (that is,192.168.1.0) before inserting the routes into the database with identical parameters (such as Advertising Router), the Cisco NX-OS software selects the route with the longest match (/32). In this scenario when the /32 route is removed, OSPF will not automatically recalculate the routes and insert the /24 into the OSPF database and advertise it to neighboring routers.

  Workaround: This issue is resolved.

- CSCtw95584

  Symptom: There are insufficient TCAM entries in a bank.

Conditions: This symptom might be seen only when bank chaining is enabled. When very large policies that belong to multiple classes (such as IPv4, IPv6, and so on) are applied on the same interface, they fill up the entire TCAM part of a single session, which exposes this issue.

Workaround: This issue is resolved.

- CSCtx02315

  Symptom: A vPC fails and comes back up.

  Conditions: This symptom might be seen in a rare race condition when a role priority is changed and the peer link is flapped. There is no functional impact, however, because the running configuration is restored and traffic flow continues as expected.

  Workaround: This issue is resolved.

- CSCtx13600

  Symptom: A Cisco Nexus 7000 Series device that is running NX-OS Release 4.2(6) with an access-list deny setting with the log option might report the egress interface in the log entry instead of the ingress interface.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCtx35369

  Symptom: After a supervisor switchover, OSPF neighbors are down on the Cisco Nexus 7000 Series device.

  Conditions: This symptom might be seen if the OSPF neighbor uses an MD5 password with 16 characters. (The length for an unencrypted password is 16 characters.)

  Workaround: This issue is resolved.

- CSCtx52217

  Symptom: The NTP process fails on a Cisco Nexus 7000 Series device that is running a release earlier than Cisco NX-OS Release 5.2(5).

  Conditions: This symptom occurs very rarely. It is a memory corruption issue that occurs when there is a change in the system clock.

  Workaround: This issue is resolved.

- CSCtx52811

  Symptom: The Telnet server might stop accepting connections.

  Conditions: This symptom might be seen if scripts are run on a regular basis that connect to the Cisco Nexus 7000 Series device using Telnet.

  Workaround: This issue is resolved.

- CSCtx55374

  Symptom: The LDP process may fail on a device running NX-OS.

Conditions: This symptom might be seen when the MPLS feature is enabled, and hold time is configured in the MPLS LDP configuration.

Workaround: This issue is resolved.

- CSCty41162

  Symptom: All control packets are not being processed with one of the vPC peers. As a result, the following symptoms occur:

  - STP became root on both of the vPC switches and the peer-link went to *BA, vPC_PL_Inc state.
  - ARP cannot be solved with routed ports and the mgmt 0 port.
  - Routing protocol neighbors went down.

  Conditions: This symptom might be seen in a vPC setup that consists of nondefault VDCs.

  Workaround: This issue is resolved.

- CSCty41776

  Symptom: The **show tech detail** command never completes and has to be terminated by pressing CTRL-C.

  Conditions: This symptom might be seen when a VRRP configuration is present and active when the **show tech detail** command is entered.

  Workaround: This issue is resolved.

- CSCty52534

  Symptom: Queries are sent to the EIGRP stub router when they should not be sent.

  Conditions: This symptom might be seen when a router is configured as the stub router, and the partner router is told that the router is now the stub, and should therefore not send queries for failed routes to the router. However, even with the stub configured, the EIGRP neighbor still sends the query.

  - One router must be configured as the stub.
  - EIGRP must be configured with authentication.

  Workaround: This issue is resolved.

- CSCty58129

  Symptom: Following a failover to the standby RP, the configured bgp remote-as for some peers goes bad. (It reverts to a previous configuration.)

  Conditions: This symptom might be seen when the remote-as is changed, and the neighbor ip_address remote as_remote command has children.

  Workaround; This issue is resolved.

- CSCty81120

  Symptom: Traffic sourced from the CPU out of the inband may stop forwarding if a virtual queue index (VQI) on the active supervisor is locked.

Conditions: This symptom might be seen following an upgrade from Cisco NX-OS Release 6.0(1) to Release 6.0(4) on an F2 Series module.

Workaround: This issue is resolved.

- CSCty86291

  Symptom: Messages and Transactional Services (MTS) buffers fill up and the ETHPM process takes a long time to drain its MTS queue.

  Conditions: This symptom might be seen when VLANs are created one at a time.

  Workaround: This issue is resolved.

- CSCty92229

  Symptom: On a Cisco Nexus 7000 Series device that is running NX-OS Release 5.2(3a), a FEX port might stop learning MAC addresses after port security with static secure MAC address configurations is removed.

  Conditions: This symptom might be seen on a FEX managed by a Cisco Nexus 7000 Series device with port security enabled and static secure MAC addresses are configured.

  Workaround: This issue is resolved.

- CSCtz00277

  Symptom: The VLAN Manager service fails due to conflicting configurations in the VTP dat file and startup configuration file.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device running Cisco NX-OS Release 6.0(2).

  Workaround: This issue is resolved.

- CSCtz05007

  Symptom: An MST boundary port that previously was in Altn BLK state moves to Desg FWD state after a supervisor switchover that results in a spanning-tree loop.

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device that is running Cisco NX-OS Release 6.0(2).

  Workaround: This issue is resolved.

- CSCtz08517

  Symptom: Connected routes are incorrectly installed in a topology table.

  Conditions: This symptom might be seen following this sequence of steps:

  1. Configure a passive interface.
  2. Configure a default metric.
  3. Enter the **shut** command on the interface.
  4. Enter the **no default-metric** command.

  At this point, the topology table will have the connected route even though it is not in the RIB.

Workaround: This issue is resolved.

- CSCtz11230

  Symptom: The diag_port_lb service fails during an ISSU or system switchover.

  Conditions: This symptom might be seen in rare situations during a switchover or ISSU.

  Workaround: This issue is resolved.

- CSCtz13215

  Symptom: A memory leak occurs in the VHS library.

  Conditions: This symptom might be seen when you open multiple SSH sessions and log in to the device through TACACS.

  Workaround: This issue is resolved.

- CSCts51026

  Symptom: When tacac+ source-interface configuration is present, Small memory leak is seen in libipconf for each tacacs+ authentication and authorization request

  Conditions: This can occur only if tacacs+ source-interface configuration is present.

  Workaround: Disabling and enabling tacacs+ service will recover the memory that is leaked.

- CSCtz14547

  Symptom: Layer 2 multicast traffic can be sent to ports that are not in the IP IGMP snooping table.

  Conditions: This symptom might be seen after multiple IGMP join or leave statements on the 32-port 10-Gigabit Ethernet SFP+ I/O module XL (N7K-M132XP-12L) when ports are used in shared mode.

  Workaround: This issue is resolved.

- CSCtz14697

  Symptom: In Cisco NX-OS Release 5.2(x) and Release 6.0(x), the maximum label value in the **mpls label range** command was incorrect. The maximum label is 471804. During an ISSU to Cisco NX-OS Release 6.1(1) or a later release, the **mpls label range** command will change any values that are higher than 471804. If the whole range for dynamic or static labels is completely out of range, mpls label range will be reset to the default values.

  Conditions: This symptom might be seen when the **mpls label range** command is configured with a value higher than 471805. During ISSU, the maximum values will be capped at 471805. If the range is completely out of range, the label range will be reset to default values.

  Workaround: This issue is resolved.

- CSCtz16528

  Symptom: IDS check counters increment for Layer 2 forwarded frames. Although the counters increment, those frames actually get forwarded and transmitted out from the egress port.

Conditions: This symptom might be seen with Layer 2 forwarded frames that hit one of the IDS checks. For example, a Layer 2 forwarded frame with an IP address that is all zeroes is forwarded but is counted as if it was dropped by the IDS check.

Workaround: This issue is resolved.

- CSCtz29341

  Symptom: A Cisco Nexus 7000 Series device with M1 or F2 Series I/O modules might experience ports stuck in the initializing state following a switch reload. After some time, the port may become error-disabled due to a sequence timeout. The following errors are displayed for the affected interfaces:

  ```
  %ETHPORT-5-IF_SEQ_ERROR: Error ("sequence timeout") communicating with <None:Internal
  Error> for opcode <None> (RID_PORT: Ethernet2/48)
  %ETHPORT-5-IF_DOWN_ERROR_DISABLED: Interface Ethernet2/48 is down (Error disabled.
  Reason:sequence timeout)
  ```

  If the peer keep alive is affected, the peer link and vPCs will remain down.

  Conditions: This symptom might be seen following a switch reload.

  Workaround: This issue is resolved.

- CSCtz32293

  Symptom: Occasionally, users are unable to authenticate and logs report that all servers are unreachable:

  ```
  %TACACS-3-TACACS_ERROR_MESSAGE: All servers failed to respond
  ```

  Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device running Cisco NX-OS Release 5.2(3a). The servers can be pinged, but the switch is unable to authenticate with the AAA servers. This is not a connectivity issue with the AAA servers.

  Workaround: This issue is resolved.

- CSCtz36322

  Symptom: A device that is running Cisco NX-OS Release 5.2(3) might experience a reset in the ipqosmgr process.

  Conditions: This symptom might be seen when the ipqosmgr process resets on its own.

  Workaround: This issue is resolved.

- CSCtz37979

  Symptom: An ISSU from Cisco NX-OS Release 4.2(4) to Cisco NX-OS Release 4.2(8) failed. As a result, some modules were running Release 4.2(4) and others were running Release 4.2(8), which caused packets to be software switched.

  Conditions: This symptom was seen because an interface configured for CTS did not have a valid neighbor at the other end, which caused the ISSU to fail.

  Before starting the ISSU upgrade one of the interfaces had the following configuration:

  ```
  interface EthernetX/X
    cts manual
      sap pmk
  xxxxx98713298740000000000000000000000000000000000000000000000000000000000000000
    switchport
  ```

```
switchport mode trunk
switchport trunk allowed vlan 999
no shutdown
```

Because the other CTS peer was not configured properly, CTS was not working, which caused ISSU to abort the upgrade.

Workaround: This issue is resolved.

- CSCtz38881

  Symptom: During a message storm, the Messages and Transactional Services (MTS) buffer memory is depleted, which can lead to process failures on a Cisco Nexus 7000 Series device.

  Conditions: This symptom might be seen when an MTS process is unable to keep up with the amount of messages required to sync between modules in the switch. The buffer queue fills up which depletes the memory.

  Workaround: This issue is resolved.

- CSCtz46260

  Symptom: After an F1 Series module is powered down and replaced by a different module and a port channel is brought down, the following message appears:

  ```
  %SYSMGR-2-SERVICE_CRASHED: Service "l2fm"
  ```

  Conditions: This symptom might be seen when there are port channel sharing members between modules, and the target set is not cleaned up when the module is powered off and then replaced.

  Workaround: This issue is resolved.

- CSCtz50595

  Symptom: Packets are destined for the router MAC address of one node of two Cisco Nexus 7000 Series devices that are set up for vPC. The peer link is on a F1 module. M1 modules are in the system. The peer gateway that arrives on the peer may be policed heavily by control-plane policing after it is received from the peer link. This situation may lead to random connectivity being issued to any number of hosts when an ARP refresh occurs, which causes some replies to be dropped and the ARP entry to be flushed.

  Conditions: This symptom might be seen in the following scenario. There are two Cisco Nexus 7000 Series devices: switch1 and switch2. They are configured for vPC and the peer link is on the F1 Series module, M1 Series modules are present in both switches, and the peer-gateway configured.

  When switch2 sends an ARP request for a host and the reply packet hashes to switch1 on a vPC port channel, the destination MAC address of switch2 on switch1 has a gateway bit set because of the peer gateway. The gateway bit is sent to software for encapsulation and forwarded across the peer link to switch2. Because the encapsulated packet uses the same destination MAC address as the original destination, when the packet arrives at switch2, it is sent to an M1 Series module because the MAC address has the gateway bit set and is subject to CoPP. These packets are classified under the Layer 2 default class and may be dropped if there is other unwanted Layer 2 traffic in the network.

  Workaround: This issue is resolved.

- CSCtz56320

Symptom: A redistributed static default route is stuck in the EIGRP topology table after removal.

Condition: This symptom was seen when a static default route was misconfigured as follows:

```
ip route 172.16.1.0/0 10.1.1.1
```

Workaround: This issue is resolved.

- CSCtz60432

  Symptom: The **test cable-diagnostics tdr interface** command on an interface might cause a failure. An error message like the following might appear:

  ```
  %VSHD-2-VSHD_SYSLOG_EOL_ERR: EOL function
  pm_cli_ethpm_test_port_tdr from library libpmcli_eth.so exited due to Signal 11
  ```

  The output of the **show cores** command might have a vsh process-name core file.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCtz65462

  Symptom: ARP requests and other Layer 2 traffic with a broadcast destination address are not flooded to all ports on the same VLAN. The following message appears in the device logs:

  ```
  %MTM-SLOT3-2-MULTICAST_SOURCE_MAC_LEARNT: Inserted dynamically learnt multicast source
  mac ff:ff:ff:ff:ff:ff!
  ```

  Conditions: This symptom might be seen upon receipt of a Layer 2 frame with a broadcast source address (FFFF.FFFF.FFFF). The F2 Series module learns this address and adds it to its hardware table. Having this entry in the hardware table, Layer 2 traffic with a broadcast destination address (such as ARP requests) is dropped on the Cisco Nexus 7000 Series device because the ingress controller fails to flood it to the broadcast domain.

  Workaround: This issue is resolved.

- CSCtz67899

  Symptom: The syslog message resulting from a MAC address full condition did not appear in the syslog logfile.

  Conditions: This symptom might be seen when a lot of group entries are inserted in the MAC address table. There might be MAC address table collisions, at which point the insertion fails. In such a condition, a syslog message is expected to be recorded in the logfile, but it was not because the severity level of the syslog message was previously set at two.

  Workaround: This issue is resolved.

- CSCtz73126

  Symptom: On a Cisco Nexus 7000 Series device running NX-OS Release 6.0(3), IP PIM join packets are dropped on an F2 Series module VDC after being moved to the CPU.

  Conditions: This symptom might be seen on an F2 Series VDC.

  Workaround: This issue is resolved.

- CSCtz73538

  Symptom: The **show policy-map type control-plane expand** command does not show additional class-map information.

  Conditions: This symptom might be seen when CoPP is configured.

  Workaround: This issue is resolved.

- CSCtz77452

  Symptom: A Cisco Nexus 7000 Series device stops including IP TLVs in an ISIS LSP after an upgrade and switchover.

  Conditions: This symptom might be seen after an upgrade and switchover on the switch. The **redistribute direct route-map** command for IPV4 or IPV6 AFs or both is added and removed. There are no match statements with match interface conditions.

  Workaround: This issue is resolved.

- CSCtz77616

  Symptom: The values for the INPUT_SNMP and OUTPUT_SNMP fields are incorrect.

  Conditions: This might be seen when NetFlow version 5 is configured for NetFlow data export.

  Workaround: This issue is resolved.

- CSCtz80915

  Symptom: The TACACS service fails.

  Conditions: This symptom might be seen on a Cisco Nexus 7009 switch that is running NX-OS Release 6.0.2

  Workaround: This issue is resolved.

- CSCtz81929

  Symptom: If you change the logging level of the ELTM component, it does not appear in the output of the **show running-configuration** command and the configuration is not saved after a switch reload.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCtz85854

  Symptom: OSPF neighbors are not brought down even when there is a mismatch of hello intervals.

  Conditions: This symptom might be seen when an OSPF neighbor sends hello packets with a mismatched hello interval.

  Workaround: This issue is resolved.

- CSCtz86940

  Symptom: Static routes that are redistributed on the Cisco Nexus 7000 Series device into OSPF might not appear in the routing tables of OSPF neighbors because the forwarding address is not updated after route changes have occurred within the network.

  Conditions: This symptom might be seen if the source Cisco Nexus 7000 Series device is redistributing static routes that have available paths through SVI interfaces and other Layer 3 interfaces. There is a timing issue where OSPF learns of the reachability through the Layer 3 interfaces, however, the preferred path to the network destination is through an SVI interface. After a reload of the source Cisco Nexus 7000 Series device, OSPF installs the forwarding address of valid Layer 3 interfaces while the SVI is still initializing. After the SVI is fully operational, OSPF is not updated of this change in state.

  Workaround: This issue is resolved.

- CSCtz92311

  Symptom: In a PIM register-policy configuration, the following error message appears:

  ```
  PIM-3-RPM_LIB_INT_ERROR: Invalid arguments passed in rpm_eval_policy_match()
  ```

  Conditions: This symptom might be seen when a switch reloads.

  The switch is configured for VRF. With VRF for PIM, the **ip pim register-policy** command points to a route map.

  ```
  Vrf context  xyz
  ip pim rp-add xxx.xxx.xxx.xxx group-list xxx.xxx.xxx.xxx/x
  ip pim register-policy poly1
  ```

  Workaround: This issue is resolved.

- CSCua25567

  Symptom: The output of the **show fex detail** command is missing the serial number of the FEX.

  Conditions: This symptom might be seen after an ISSU to Cisco NX-OS Release 6.1(1).

  Workaround: This issue is resolved.

- CSCua27448

  Symptom: An ISSU might fail after the image download to the FEX. This symptom applies to a FEX running Cisco NX-OS Release 5.2(4) and earlier releases. Cisco NX-OS Release 6.0 and later releases do not have this symptom.

  Conditions: This symptom might be seen when there more FEX modules in a VDC.

  Workaround: This issue is resolved.

- CSCua39663

  Symptom: Following an ISSU from Cisco NX-OS Release 5.2(x) to Release 6.0(x), configuration corruption occurred. The following messages appeared in the output of the **show startup-configuration** command:

  ```
  tlvu_table_convert_tlv_to_indv_field: elem sz [0xa2]
  differs from tlv_sz[0x9e]
  ```

Conditions: This symptom might be seen on a Cisco Nexus 7000 Series device following an ISSU.

Workaround: This issue is resolved.

- CSCua41048

  Symptom: In a vPC+ setup, a vPC process might fail after vPC VLANs are changed to FabricPath mode. The failure does not occur in a vPC only setup.

  Conditions: This symptom might be triggered by the following events:

  - Converting an existing vPC setup to vPC+ setup
  - Executing a **fabricpath multicast loadbalance** command
  - Changing VLAN mode from CE to FabricPath in a vPC+ setup

  Workaround: This issue is resolved.

- CSCua42681

  Symptom: A Cisco Nexus 7000 Series device might not copy *,G outgoing interfaces to S,G. As a result, traffic can be silently dropped for the affected routes.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCua43329

  Symptom: A Cisco Nexus 2000 Series FEX module might fail when it receives a PDU larger than it expects.

  Conditions: This symptom might be seen when on a Cisco Nexus 2000 Series FEX is connected to a Cisco Nexus 7000 Series device. It is not seen when a Cisco Nexus 2000 Series FEX is connected to Cisco Nexus 5000 Series switch.

  Workaround: This issue is resolved.

- CSCua47901

  Symptom: A Cisco Nexus 7000 Series device might not copy *,G outgoing interfaces to S,G. As a result, traffic can be silently dropped for the affected routes.

  Conditions: This symptom might be seen under normal operating conditions for a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCua48852

  Symptom: After an ISSU or supervisor switchover, the following error might appear:

  ```
  "OTV:%ISIS_OTV-3-TX_TXLIST_ERROR: Node does not exist in the queue"
  ```

  Conditions: This symptom might be seen following an ISSU or supervisor switchover.

  Workaround: This issue resolved.

- CSCua54208

  Symptom: OTV fails to advertise the MAC address after that particular MAC address has been moved to another site.

  Conditions: This symptom might be seen in the following situation. A MAC address was local to site A. Now the MAC address has been moved to site B. The OTV VDC at site B correctly learns the MAC address on a local port channel or local interface; however, it again points to the overlay interface. Site A never learns this MAC address on the overlay interface.

  Workaround: This issue is resolved.

- CSCua67236

  Symptom: Stale static route information may remain in the RIB when BFD to the static route goes into a down state.

  Conditions: This symptom might be seen after a Cisco Nexus 7000 Series device reloads. BFD does not work correctly.

  Workaround: This issue is resolved.

- CSCua76253

  Symptom: When using VRF other than the management VRF to send SNMP traps, if the management port is down but not administratively down, all trap packets will be queued forever if the alarm for turning the mgmt port on failed to run.

  Conditions: This symptom might be seen an SNMP trap uses nonmanagement port or VRF.

  Workaround: This issue is resolved.

- CSCua78896

  Symptom: Hardware resources are not freed when the default VDC is migrated to the Ethernet VDC, which results in the default VDC being converted to the admin VDC.

  Conditions: The VLAN manager is not involved during VDC migration and therefore does not get an opportunity to free hardware resources.

  Workaround: This issue is resolved.

- CSCua88646

  Symptom: On a Cisco Nexus 7000 Series device (PE), a VRF route that points to next-hop is on a remote PE under VRF blue, loopback 10. When it is pinged from a Cisco Nexus 7000 Series device, it works, but when the traffic goes through the Cisco Nexus 7000 Series device, it fails. On the packet capture, the Cisco Nexus 7000 Series device puts two labels, 3 and 18 (VPN), for the failing one. But when pinged from a Cisco Nexus 7000 Series device, 18 (vpn), is the only label that is correct because both PEs are directly connected.

  Conditions: This symptom might be seen in the following setup:

  ```
  ---vrf blueâ??N7Kâ??e3/1------------ Cat6kâ??vrf-blue---Lo10 (2.2.2.2)
  ```

  On the Cisco Nexus 7000 Series device for VRF blue:

  ```
  ip route 0.0.0.0/0 2.2.2.2
  ```

  The output of the **show for vrf blue ipv4 route 0.0.0.0/0** command, displays PUSH2 18.

```
switch# sh for vrf blue ipv4 route 0.0.0.0/0

------------------+------------------+----------------------+-----------------
Prefix            | Next-hop         | Interface            | Labels
------------------+------------------+----------------------+-----------------
*0.0.0.0/0          1.1.1.1          Ethernet3/1            PUSH2  18

switch# sh sys inte for mpl adjacency 0x4301d

Device: 1   Index: 0x4301d   dmac: 0018.7494.3800 smac: 6c9c.ed44.dac1
    PUSH TWO              Label0 3       Label1 18
```

Workaround: This issue is resolved.

- CSCua88996

  Symptom: The PortLoopback test fails after a monitor port is reset to the default configuration.

  Conditions: This symptom might be seen after a port is configured as a monitor port and uses the default interface to reset.

  Workaround: This issue is resolved.

- CSCua90725

  Symptom: In vPC+ configuration with multiple 48-port 1/10 Gigabit Ethernet SFP+ I/O F2 Series modules (N7K-F248XP-25) in the chassis, when one of the F2 Series modules is reloaded, hardware programming on the reloaded module might be corrupted, which can cause incoming traffic to the module to be incorrectly forwarded.

  Conditions: This symptom might be seen in a vPC+ setup using multiple N7K-F248XP-25 I/O modules when one of them is reloaded.

  Workaround: This issue is resolved.

- CSCua92011

  Symptom: The PIM process might fail if a Layer 2 loop exists.

  Conditions: This symptom might be seen is a Layer 2 loop is introduced.

  Workaround: This issue is resolved.

- CSCua92293

  Symptom: After a PIM process failure, an mroute is stuck in a pending state with traffic loss.

  Conditions: This symptom might be seen after a PIM process failure.

  Workaround: This issue is resolved.

- CSCua93857

  Symptom: An MPLS traffic engineering configuration never comes back after a rollback of the **no feature mpls traffic-eng** command.

  Conditions; This symptom might be seen under normal operating conditions of a Cisco Nexus 7000 Series device.

  Workaround: This issue is resolved.

- CSCub00364

  Symptom: A 20- to 60-second packet loss is seen in an MVPN scenario when switching from the default to data MDT.

  Conditions: This symptom might be seen when the data MDT is configured on the PE router.

  Workaround: This issue is resolved.

- CSCub03070

  Symptom: While upgrading from Cisco NX-OS Release 5.2(1) to Release 5.2(5), the modules started failing when the switch was being upgraded.

  Conditions: This symptom might be seen during a Cisco NX-OS software upgrade when a LISP configuration is present.

  Workaround: This issue is resolved.

- CSCub14273

  Symptom: On the 8-port 10-Gigabit Ethernet I/O module XL (N7K-M108X2-12L), when an interface is configured to carry the VLAN tag as well as the CMD header for SGT propagation, the CMD header appears ahead of the VLAN tag in every packet sent. Similarly, for every packet received, the CMD header is expected to be ahead of the VLAN tag. This behavior means that the N7K-M108X2-12L module will not be able to pass traffic with other modules that place the VLAN tag ahead of the CMD header in their packets.

  Conditions: This symptom might be seen when the interface is configured such that packets are VLAN tagged and carry the CMD header, such as when cts manual is configured for a Layer 2 trunk port or for an Layer 3 subinterface.

  Workaround: This issue is resolved.

- CSCub15899

  Symptom: Under rare conditions, the SNMPD process might cause high CPU utilization even without SNMP polling.

  Conditions: This symptom might be seen when the SNMPD process consumes the maximum allowed amount of memory and no more memory can be allocated for received packet processing.

  Workaround: This issue is resolved.

- CSCub27343

  Symptom: During an ISSU or ISSD, due to potential differences in the SAPs used by services in either release of Cisco NX-OS, the System Manager might fail in rare circumstances due to a broken pipe. The behavior should be to ignore any SAPs on the active supervisor that are not valid in the release of Cisco NX-OS running on the standby supervisor.

  ```
  switch# show system internal log sysmgr sup-reset
  fsm_action_hot_switchover_part2: unable to move MTS to MTS_STATE_SWITCHOVER: Broken
  pipe (error-id 0x801E0020).
  ```

  Conditions: This symptom might be seen when an ISSU or SSD is performed between releases that have differences in SAP mappings used by MTS to allow intercommunication between services.

Workaround: This issue is resolved.

- CSCub30450

  Symptom: When an ERSPAN enabled interface is flapping, there is a memory leak of around 1000 bytes for each flap. The ELTM process in the supervisor module will generate a core file and then come back online.

  Conditions: This symptom might be seen when an ERSPAN enabled interface is flapping.

  Workaround: This issue is resolved.

- CSCub41319

  Symptom: This SA message with encapsulated data is sent with a wrong checksum, which causes the receiver MSDP peer to drop it. This packet will never be processed (decapsulated) and sent across to the downstream neighbors by the receiving MSDP peer.

  Conditions: This symptom might be seen in Cisco NX-OS Release 6.0(2).

  Workaround: This issue is resolved.

- CSCub60842

  Symptom: After a module is removed or inserted, all port-channel members may no longer have a BFD session.

```
switch# sh port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
        M - Not in use. Min-links not met
--------------------------------------------------------------------------------
Group Port-       Type     Protocol  Member Ports Channel
--------------------------------------------------------------------------------
21    Po21(RU)    Eth      LACP      Eth10/31(P)  Eth10/32(P)

switch# sh bfd neighbors

OurAddr         NeighAddr       LD/RD                RH/RS           Holdown(mult)
State       Int                   Vrf
10.1.28.98      10.1.28.97      1124073476/0         Up              N/A(3)
Up          Po21                  default

10.1.28.98      10.1.28.97      1124073478/1090519076 Up             148(3)
Up          Eth10/32              default
```

  Conditions: This symptom might be seen when a Layer 3 port channel is configured with BFD per link.

  Workaround: This issue is resolved.

Related Documentation

Cisco NX-OS documentation is available at the following URL:

http://www.cisco.com/c/en/us/support/ios-nx-os-software/nx-os-software/tsd-products-support-series-home.html

The Release Notes for upgrading the FPGA/EPLD is available at the following URL:

http://www.cisco.com/en/US/docs/switches/datacenter/sw/4_1/epld/epld_rn.html

Cisco NX-OS includes the following documents:

Release Notes

Cisco Nexus 7000 Series NX-OS Release Notes, Release 6.x

NX-OS Configuration Guides

Cisco Nexus 2000 Series Fabric Extender Software Configuration Guide

Cisco Nexus 7000 Series NX-OS Configuration Examples

Cisco Nexus 7000 Series NX-OS FabricPath Configuration Guide

Configuring Feature Set for FabricPath

Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide

Cisco Nexus 7000 Series NX-OS High Availability and Redundancy Guide

Cisco Nexus 7000 Series NX-OS Interfaces Configuration Guide

Cisco Nexus 7000 Series NX-OS IP SLAs Configuration Guide

Cisco Nexus 7000 Series NX-OS Layer 2 Switching Configuration Guide

Cisco Nexus 7000 Series NX-OS LISP Configuration Guide

Cisco Nexus 7000 Series NX-OS MPLS Configuration Guide

Cisco Nexus 7000 Series NX-OS Multicast Routing Configuration Guide

Cisco Nexus 7000 Series NX-OS OTV Configuration Guide

Cisco Nexus 7000 Series OTV Quick Start Guide

Cisco Nexus 7000 Series NX-OS Quality of Service Configuration Guide

Cisco Nexus 7000 Series NX-OS SAN Switching Configuration Guide

Cisco Nexus 7000 Series NX-OS Security Configuration Guide

Cisco Nexus 7000 Series NX-OS System Management Configuration Guide

Cisco Nexus 7000 Series NX-OS Unicast Routing Configuration Guide

Cisco Nexus 7000 Series NX-OS Verified Scalability Guide

Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide

Cisco Nexus 7000 Series NX-OS Virtual Device Context Quick Start

Cisco NX-OS FCoE Configuration Guide for Cisco Nexus 7000 and Cisco MDS 9500

NX-OS Command References

Cisco Nexus 7000 Series NX-OS Command Reference Master Index

Cisco Nexus 7000 Series NX-OS FabricPath Command Reference

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Cisco Nexus 7000 Series NX-OS Virtual Device Context Command Reference

Cisco NX-OS FCoE Command Reference for Cisco Nexus 7000 and Cisco MDS 9500

Other Software Document

Cisco NX-OS Licensing Guide

Cisco Nexus 7000 Series NX-OS MIB Quick Reference

Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide

Cisco NX-OS System Messages Reference

Cisco Nexus 7000 Series NX-OS Troubleshooting Guide

Cisco NX-OS XML Interface User Guide

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, 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

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