Release Notes for Cisco NCS 560 Series Routers, Cisco IOS XR Release 24.3.2

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Network Convergence System 560 Series Routers

What's New in Cisco IOS XR Release 24.3.2

Cisco IOS XR Release 24.3.2 is a maintenance release for Cisco NCS 560 Series routers. There are no new software features or hardware introduced in this release.

For more details on the Cisco IOS XR release model and associated support, see Guidelines for Cisco IOS XR Software.

Caveats

Table 1: Cisco IOS XR NCS 560 Routers Specific Bugs

Bug ID	Headline
CSCwn41235	MRIB process memory leak is observed once peer node process restarts.
CSCwk56030	After executing the shut or no shut command the interface remains up, but the egress traffic is down.

Release Package

This following table lists the Cisco IOS XR Software feature set matrix (packages) with associated filenames.

Visit the Cisco Software Download page to download the Cisco IOS XR software images.

Table 2: Release 24.3.2 Packages for Cisco NCS 560 Series Router

Composite Package		
Feature Set	**Filename**	**Description**
Cisco IOS XR IP Unicast Routing Core Bundle	ncs560-mini-x-24.3.2.iso	Contains base image contents that includes: • Host operating system • System Admin boot image • IOS XR boot image • BGP packages • OS • Admin • Base • Forwarding • Modular Services Card • Routing • SNMP Agent • Alarm Correlation
Cisco IOS XR Manageability Package	ncs560-mgbl-1.0.0.0-r2432.x86_64.rpm	Telemetry, Extensible Markup Language (XML), Parser, and HTTP server packages, NETCONF, YANG Models, gRPC.
Cisco IOS XR OSPF package	ncs560-ospf-1.0.0.0-r2432.x86_64.rpm	Supports OSPF
Cisco IOS XR Security Package	ncs560-k9sec-1.0.0.0-r2432.x86_64.rpm	k9sec is needed for IPsec or MACsec and Dot1x and for basic crypto services such as Decryption, Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).
Multicast Package	ncs560-mcast-1.0.0.0-r2432.x86_64.rpm	Supports Multicast Supports Automatic Multicast Tunneling (AMT), IGMP Multicast Listener Discovery (MLD), Multicast Label Distribution Protocol (MLDP), Multicast Source Discovery Protocol (MSDP) and PIM.

Composite Package		
Feature Set	**Filename**	**Description**
Cisco IOS XR ISIS package	ncs560-isis-1.0.0.0-r2432.x86_64.rpm	Supports Intermediate System to Intermediate System (IS-IS).
Cisco IOS XR USB Boot Package	ncs560-usb_boot-24.3.2.zip	Supports Cisco IOS XR USB Boot Package
Cisco IOS XR MPLS Package	ncs560-mpls-1.0.0.0-r2432.x86_64.rpm ncs560-mpls-te-rsvp-1.0.0.0-r2432.x86_64.rpm	Supports MPLS and MPLS Traffic Engineering (MPLS-TE) RPM. Label Distribution Protocol (LDP), MPLS Forwarding, MPLS Operations, Administration, and Maintenance (OAM), Link Manager Protocol (LMP), Optical User Network Interface (OUNI) and Layer-3 VPN. Cisco IOS XR MPLS-TE and RSVP Package MPLS Traffic Engineering (MPLS-TE) and Resource Reservation Protocol (RSVP).
Cisco IOS XR LI Package	ncs560-li-1.0.0.0-r2432.x86_64.rpm	Lawful Intercept
Cisco IOS XR EIGRP Package	ncs560-eigrp-1.0.0.0-r2432.x86_64.rpm	(Optional) Includes EIGRP protocol support software

Determine Software Version

Log in to the router and enter the **show version** command.

```
RP/0/RP0/CPU0:Router#show version
Cisco IOS XR Software, Version 24.3.2
Copyright (c) 2013-2024 by Cisco Systems, Inc.

Build Information:
 Built By     : swtools
 Built On     : Fri Dec  6 17:43:55 PST 2024
 Built Host   : iox-ucs-078
 Workspace    : /auto/srcarchive11/prod/24.3.2/ncs560/ws
 Version      : 24.3.2
 Location     : /opt/cisco/XR/packages/
 Label        : 24.3.2-iso

cisco NCS-560 () processor
System uptime is 56 minutes
```

Determine Firmware Support

Log in to the router and enter the **show fpd package** command to know the release image.

```
RP/0/RP0/CPU0:Router#show fpd package
Sat Dec  7 17:22:09.640 IST

================================ ============================================
                                         Field Programmable Device Package
                                 ============================================
                                           Req      SW       Min Req   Min Req
Card Type            FPD Description       Reload   Ver      SW Ver    Board Ver
================== ========================= ====== ======= ======== =========
------------------------------------------------------------------------------
A900-IMA-8Z-L-CC     IMFPGA                 YES      1.50      1.50       0.0
------------------------------------------------------------------------------
A900-IMA8CS1Z-CC     IMFPGA                 YES      1.115     1.115      0.0
------------------------------------------------------------------------------
A900-IMA8CS1Z-M      IMFPGA                 YES      1.115     1.115      0.0
------------------------------------------------------------------------------
A900-IMA8Z           IMFPGA                 YES     17.05     17.05       0.0
------------------------------------------------------------------------------
A900-IMA8Z-CC        IMFPGA                 YES     17.05     17.05       0.0
------------------------------------------------------------------------------
A900-IMA8Z-L         IMFPGA                 YES      1.50      1.50       0.0
------------------------------------------------------------------------------
A900-PWR1200-A       DCA-PriMCU(A)          NO       0.11      0.11       0.0
                     DCA-SecMCU(A)          NO       1.04      1.04       0.0
------------------------------------------------------------------------------
A900-PWR1200-D       LIT-PriMCU(A)          NO       1.27      1.27       0.0
                     LIT-SecMCU(A)          NO       1.27      1.27       0.0
------------------------------------------------------------------------------
A900-PWR900-D2       LIT-PriMCU(A)          NO       1.82      1.82       0.0
                     LIT-SecMCU(A)          NO       1.84      1.84       0.0
------------------------------------------------------------------------------
A907-FAN-E           PSOC(A)                NO       1.65      1.65       0.0
                     PSOC(A)                NO       1.66      1.66       0.4
------------------------------------------------------------------------------
A907-FAN-H           PSOC(A)                NO       1.65      1.65       0.0
------------------------------------------------------------------------------
ASR914-F2B-FAN       PSOC(A)                NO      44.08     44.08       0.0
------------------------------------------------------------------------------
N560-4-FAN-H         PSOC(A)                NO     177.02    177.02       0.0
------------------------------------------------------------------------------
N560-4-FAN-H-CC      PSOC(A)                NO     177.02    177.02       0.0
------------------------------------------------------------------------------
N560-4-FAN-H-R       PSOC(A)                NO     177.02    177.02       0.0
------------------------------------------------------------------------------
N560-4-PWR-FAN       PSOC(A)                NO     177.08    177.08       0.0
------------------------------------------------------------------------------
N560-4-PWR-FAN-CC    PSOC(A)                NO     177.08    177.08       0.0
------------------------------------------------------------------------------
N560-4-PWR-FAN-R     PSOC(A)                NO     177.08    177.08       0.0
------------------------------------------------------------------------------
N560-4-RSP4          ADM(A)                 NO       1.06      1.06       0.0
                     IOFPGA(A)              YES      0.69      0.69       0.0
                     PRIMARY-BIOS(A)        YES      0.24      0.24       0.0
                     SATA(A)                NO       2.20      2.20       0.0
                     SATA_MAR(A)            NO       1.30      1.30       0.0
                     SATA_MAR_B4(A)         NO       1.10      1.10       0.0
                     SATA_SMI(A)            NO       1.10      1.10       0.0
------------------------------------------------------------------------------
```

N560-4-RSP4-CC	ADM(A)	NO	1.06	1.06	0.0
	IOFPGA(A)	YES	0.69	0.69	0.0
	PRIMARY-BIOS(A)	YES	0.24	0.24	0.0
	SATA(A)	NO	2.20	2.20	0.0
	SATA_MAR(A)	NO	1.30	1.30	0.0
	SATA_MAR_B4(A)	NO	1.10	1.10	0.0
	SATA_SMI(A)	NO	1.10	1.10	0.0
N560-4-RSP4E	ADM(A)	NO	1.06	1.06	0.0
	IOFPGA(A)	YES	0.69	0.69	0.0
	PRIMARY-BIOS(A)	YES	0.24	0.24	0.0
	SATA(A)	NO	2.20	2.20	0.0
	SATA_MAR(A)	NO	1.30	1.30	0.0
	SATA_MAR_B4(A)	NO	1.10	1.10	0.0
	SATA_SMI(A)	NO	1.10	1.10	0.0
N560-4-RSP4E-CC	ADM(A)	NO	1.06	1.06	0.0
	IOFPGA(A)	YES	0.69	0.69	0.0
	PRIMARY-BIOS(A)	YES	0.24	0.24	0.0
	SATA(A)	NO	2.20	2.20	0.0
	SATA_MAR(A)	NO	1.30	1.30	0.0
	SATA_MAR_B4(A)	NO	1.10	1.10	0.0
	SATA_SMI(A)	NO	1.10	1.10	0.0
N560-FAN-H	PSOC(A)	NO	2.02	2.02	0.0
N560-IMA-8Q/4L	IMFPGA	YES	1.27	1.27	0.0
N560-IMA1W	CFP2-D-DCO	NO	38.27397	38.27397	0.0
	CFP2-DE-DCO	NO	38.27397	38.27397	0.0
	CFP2-DET-DCO	NO	38.27397	38.27397	0.0
	CFP2-DETS-DCO	NO	38.27397	38.27397	0.0
	CFP2-DS-DCO	NO	38.27397	38.27397	0.0
	CFP2-DS100-DCO	NO	38.27397	38.27397	0.0
	IMFPGA	YES	1.28	1.28	0.0
N560-IMA2C	IMFPGA	YES	6.06	6.06	0.0
N560-IMA2C-CC	IMFPGA	YES	6.06	6.06	0.0
N560-IMA2C-DD	IMFPGA	YES	1.28	1.28	0.0
	QDD_100_BRT_FW_P0	NO	70.130	70.130	0.0
	QDD_100_BRT_FW_P1	NO	70.130	70.130	0.0
	QDD_100_FW_P0	NO	61.23	61.23	0.0
	QDD_100_FW_P1	NO	61.23	61.23	0.0
	QDD_400_ZRP_FW_P0	NO	161.24	161.24	0.0
	QDD_400_ZRP_FW_P1	NO	161.24	161.24	0.0
N560-IMA2C-L	IMFPGA	YES	1.28	1.28	0.0
N560-PWR1200-D-E	QCS-PriMCU(A)	NO	1.82	1.82	0.0
	QCS-SecMCU(A)	NO	1.84	1.84	0.0
N560-RSP4	ADM(A)	NO	1.06	1.06	0.0
	IOFPGA(A)	YES	0.80	0.80	0.0
	PRIMARY-BIOS(A)	YES	0.24	0.24	0.0
	SATA(A)	NO	2.20	2.20	0.0
	SATA_MAR(A)	NO	1.30	1.30	0.0
	SATA_MAR_B4(A)	NO	1.10	1.10	0.0
	SATA_SMI(A)	NO	1.10	1.10	0.0
N560-RSP4-E	ADM(A)	NO	1.06	1.06	0.0
	IOFPGA(A)	YES	0.80	0.80	0.0
	PRIMARY-BIOS(A)	YES	0.24	0.24	0.0

```
                    SATA(A)                   NO      2.20      2.20      0.0
                    SATA_MAR(A)               NO      1.30      1.30      0.0
                    SATA_MAR_B4(A)            NO      1.10      1.10      0.0
                    SATA_SMI(A)               NO      1.10      1.10      0.0
--------------------------------------------------------------------------------
NCS4200-1T16G-PS    IMFPGA                    YES     1.115     1.115     0.0
--------------------------------------------------------------------------------
NCS4200-2H-PQ       IMFPGA                    YES     6.06      6.06      0.0
--------------------------------------------------------------------------------
NCS4200-8T-PS       IMFPGA                    YES    17.05     17.05      0.0
--------------------------------------------------------------------------------
NCS4216-F2B-FAN     PSOC(A)                   NO     44.08     44.08      0.0
--------------------------------------------------------------------------------
NCS4216-RSP-800     ADM(A)                    NO      1.06      1.06      0.0
                    IOFPGA(A)                 YES     0.02      0.02      0.0
                    PRIMARY-BIOS(A)           YES     0.24      0.24      0.0
                    SATA(A)                   NO      2.20      2.20      0.0
                    SATA_MAR(A)               NO      1.30      1.30      0.0
                    SATA_MAR_B4(A)            NO      1.10      1.10      0.0
                    SATA_SMI(A)               NO      1.10      1.10      0.0
```

Log in to the router and enter the **show hw-module fpd** command to know the current version.

```
RP/0/RP0/CPU0:Router#show hw-module fpd
Sat Dec  7 17:21:59.842 IST

Auto-upgrade:Enabled
                                                                  FPD Versions
                                                                  ==============
Location   Card type             HWver FPD device       ATR Status    Running   Programd
--------------------------------------------------------------------------------------
0/1        A900-IMA8CS1Z-M       0.0   IMFPGA                CURRENT     1.115     1.115

0/4        A900-IMA8Z            0.0   IMFPGA                CURRENT    17.05     17.05

0/5        A900-IMA8Z            0.0   IMFPGA                CURRENT    17.05     17.05

0/7        N560-IMA1W            0.0   IMFPGA                CURRENT     1.28      1.28

0/9        N560-IMA2C            0.0   IMFPGA                CURRENT     6.06      6.06

0/10       A900-IMA8Z            0.0   IMFPGA                CURRENT    17.05     17.05

0/13       A900-IMA8Z            0.0   IMFPGA                CURRENT    17.05     17.05

0/15       A900-IMA8CS1Z-M       0.0   IMFPGA                CURRENT     1.115     1.115

0/RP0      N560-RSP4-E           0.0   ADM                   CURRENT     1.06      1.06

0/RP0      N560-RSP4-E           0.0   IOFPGA                CURRENT     0.80      0.80

0/RP0      N560-RSP4-E           0.0   PRIMARY-BIOS          CURRENT     0.24      0.24

0/RP0      N560-RSP4-E           0.0   SATA                  CURRENT     2.20      2.20

0/RP1      N560-RSP4-E           0.0   ADM                   CURRENT     1.06      1.06

0/RP1      N560-RSP4-E           0.0   IOFPGA                CURRENT     0.80      0.80

0/RP1      N560-RSP4-E           0.0   PRIMARY-BIOS          CURRENT     0.24      0.24

0/RP1      N560-RSP4-E           0.0   SATA                  CURRENT     2.20      2.20

0/FT0      N560-FAN-H            1.0   PSOC                  CURRENT     2.02      2.02
```

Important Notes

Licensing

Starting with Cisco IOS XR Release 24.1.1, Smart Licensing Using Policy (SLP) is the default Licensing model. When you upgrade to the Cisco IOS XR Release 24.1.1 release or later, the Smart Licensing Using Policy is enabled by default.

You can migrate your devices to Smart Licensing with Policy model, see *Migrating from Smart Licensing to Smart Licensing Using Policy*, Smart Licensing Using Policy on Cisco IOS XR Routers.

We recommend that you update to the latest version of SSM On-Prem or Cisco Smart Licensing Utility.

Note SSM On-Prem and CSSM both support SLP devices and SL devices. SLP devices and SL devices can coexist in a network. The Smart Licensing (SL) model is available in releases Cisco IOS XR Release 7.11.1 and earlier.

Supported Transceiver Modules

For more information on the supported transceiver modules, see Transceiver Module Group (TMG) Compatibility Matrix. In the **Begin your Search** search box, enter the keyword NCS560 and click **Enter**.

Upgrading Cisco IOS XR Software

For software installation and upgrades, refer to the respective upgrade/downgrade docs *.tar* files based on your 560 router varaint.

Cisco IOS XR Software is installed and activated from modular packages, allowing specific features or software patches to be installed, upgraded, or downgraded without affecting unrelated processes. Software packages can be upgraded or downgraded on all supported card types, or on a single card (node).

The upgrade document for Cisco NCS 560 router is available along with the software image in *NCS560_Upgrade_MOP_24.3.1.tar* file.

Production Software Maintenance Updates (SMUs)

A production SMU is a SMU that is formally requested, developed, tested, and released. Production SMUs are intended for use in a live network environment and are formally supported by the Cisco TAC and the relevant development teams. Software bugs identified through software recommendations or Bug Search Tools are not a basis for production SMU requests.

For information on production SMU types, refer the Production SMU Types section of the *IOS XR Software Maintenance Updates (SMUs)* guide.

Cisco IOS XR Error messages

To view, search, compare, and download Cisco IOS XR Error Messages, refer to the Cisco IOS XR Error messages tool.

Cisco IOS XR MIBs

To determine the MIBs supported by platform and release, refer to the Cisco IOS XR MIBs tool.

Related Documentation

The most current Cisco NCS 560 router documentation is located at the following URL:

https://www.cisco.com/c/en/us/td/docs/iosxr/ncs-560-series-routers.html