



# Release Notes for Cisco NCS 560 Series Routers, Cisco IOS XR Release 7.9.2

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## What's New in Cisco IOS XR Release 7.9.2

Cisco IOS XR Release 7.9.2 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
<a href="#">CSCvw49101</a>	Issues with replace pattern when interface is configured under dhcp ipv4
<a href="#">CSCwe48642</a>	BGP VPNv4 prefix with ATTR_SET is not installed in VRF routing table

## 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 7.9.2 Packages for Cisco NCS 560 Series Router

Composite Package		
Feature Set	Filename	Description
Cisco IOS XR IP Unicast Routing Core Bundle	ncs560-mini-x-7.9.2.iso	Contains base image contents that includes: <ul style="list-style-type: none"> <li>• Host operating system</li> <li>• System Admin boot image</li> <li>• IOS XR boot image</li> <li>• BGP packages</li> <li>• OS</li> <li>• Admin</li> <li>• Base</li> <li>• Forwarding</li> <li>• Modular Services Card</li> <li>• Routing</li> <li>• SNMP Agent</li> <li>• Alarm Correlation</li> </ul>
Cisco IOS XR Manageability Package	ncs560-mgbl-1.0.0.0-r792.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-r792.x86_64.rpm	Supports OSPF
Cisco IOS XR Security Package	ncs560-k9sec-1.0.0.0-r792.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-r792.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-r792.x86_64.rpm	Supports Intermediate System to Intermediate System (IS-IS).
Cisco IOS XR USB Boot Package	ncs560-usb_boot-7.9.2.zip	Supports Cisco IOS XR USB Boot Package
Cisco IOS XR MPLS Package	ncs560-mpls-1.0.0.0-r792.x86_64.rpm ncs560-mpls-te-rsvp-1.0.0.0-r792.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-r792.x86_64.rpm	Lawful Intercept
Cisco IOS XR EIGRP Package	ncs560-eigrp-1.0.0.0-r792.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:NCS560#show version
Cisco IOS XR Software, Version 7.9.2
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
  Built By      : deenayak
  Built On     : Thu Jun 29 00:25:59 PDT 2023
  Built Host   : d8cf001fcc35
  Workspace    : /auto/srcarchive16/prod/7.9.2/ncs560/ws
  Version      : 7.9.2
  Location     : /opt/cisco/XR/packages/
  Label       : 7.9.2

cisco NCS-560 () processor
System uptime is 2 hour, 27 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
```

```
=====
                                Field Programmable Device Package
                                =====
Card Type          FPD Description          Req   SW   Min Req   Min Req
=====  =====  =====  =====  =====  =====
A900-IMA-8Z-L-CC   IMFPGA                   YES   1.50   1.50     0.0
-----
A900-IMA8CS1Z-CC  IMFPGA                   YES   1.113  1.113   0.0
-----
A900-IMA8CS1Z-M   IMFPGA                   YES   1.113  1.113   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-PrimMCU (A)         NO    0.11   0.11    0.0
                   DCA-SecMCU (A)         NO    1.04   1.04    0.0
-----
A900-PWR1200-D    LIT-PrimMCU (A)        NO    2.04   0.04    0.0
                   LIT-SecMCU (A)        NO    1.27   1.27    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
-----
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    0.67   0.67    0.0
                   PRIMARY-BIOS (A)       YES    0.21   0.21    0.0
                   SATA (A)               NO    2.10   2.10    0.0
                   SATA_MAR (A)          NO    1.30   1.30    0.0
-----
N560-4-RSP4-CC    ADM (A)                 NO    1.06   1.06    0.0
                   IOFPGA (A)             YES    0.67   0.67    0.0
                   PRIMARY-BIOS (A)       YES    0.21   0.21    0.0
                   SATA (A)               NO    2.10   2.10    0.0
                   SATA_MAR (A)          NO    1.30   1.30    0.0
-----
N560-4-RSP4E      ADM (A)                 NO    1.06   1.06    0.0
                   IOFPGA (A)             YES    0.67   0.67    0.0
                   PRIMARY-BIOS (A)       YES    0.21   0.21    0.0
=====
```

	SATA (A)	NO	2.10	2.10	0.0
	SATA_MAR (A)	NO	1.30	1.30	0.0
N560-4-RSP4E-CC	ADM (A)	NO	1.06	1.06	0.0
	IOFPGA (A)	YES	0.67	0.67	0.0
	PRIMARY-BIOS (A)	YES	0.21	0.21	0.0
	SATA (A)	NO	2.10	2.10	0.0
	SATA_MAR (A)	NO	1.30	1.30	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_FW_P0	NO	61.23	61.23	0.0
	QDD_100_FW_P1	NO	61.23	61.23	0.0
N560-IMA2C-L	IMFPGA	YES	1.28	1.28	0.0
N560-PWR1200-D-E	QCS-PrimMCU (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	0.78	0.78	0.0
	PRIMARY-BIOS (A)	YES	0.21	0.21	0.0
	SATA (A)	NO	2.10	2.10	0.0
	SATA_MAR (A)	NO	1.30	1.30	0.0
N560-RSP4-E	ADM (A)	NO	1.06	1.06	0.0
	IOFPGA (A)	YES	0.78	0.78	0.0
	PRIMARY-BIOS (A)	YES	0.21	0.21	0.0
	SATA (A)	NO	2.10	2.10	0.0
	SATA_MAR (A)	NO	1.30	1.30	0.0
NCS4200-1T16G-PS	IMFPGA	YES	1.113	1.113	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	0.01	0.01	0.0
	PRIMARY-BIOS (A)	YES	0.21	0.21	0.0
	SATA (A)	NO	2.10	2.10	0.0
	SATA_MAR (A)	NO	1.30	1.30	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
Auto-upgrade:Enabled
```

Location	Card type	HWver	FPD device	ATR Status	FPD Versions	
					Running	Programd
0/2	A900-IMA8CS1Z-M	0.0	IMFPGA	CURRENT	1.113	1.113
0/4	A900-IMA8CS1Z-M	0.0	IMFPGA	CURRENT	1.113	1.113
0/5	N560-IMA-8Q/4L	0.0	IMFPGA	CURRENT	1.27	1.27
0/7	N560-IMA2C	0.0	IMFPGA	CURRENT	6.06	6.06
0/9	N560-IMA-8Q/4L	0.0	IMFPGA	CURRENT	1.27	1.27
0/10	A900-IMA8Z-L	0.0	IMFPGA	CURRENT	1.50	1.50
0/11	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.05	17.05
0/RP0	N560-RSP4-E	0.0	ADM	CURRENT	1.06	1.06
0/RP0	N560-RSP4-E	0.0	IOFPGA	CURRENT	0.78	0.78
0/RP0	N560-RSP4-E	0.0	PRIMARY-BIOS	CURRENT	0.21	0.21
0/RP0	N560-RSP4-E	0.0	SATA	CURRENT	2.10	2.10
0/RP1	N560-RSP4-E	0.0	ADM	CURRENT	1.06	1.06
0/RP1	N560-RSP4-E	0.0	IOFPGA	CURRENT	0.78	0.78
0/RP1	N560-RSP4-E	0.0	PRIMARY-BIOS	CURRENT	0.21	0.21
0/RP1	N560-RSP4-E	0.0	SATA	CURRENT	2.10	2.10
0/FT0	A907-FAN-E	1.0	PSOC	CURRENT	1.65	1.65

## Important Notes

- Prior to Cisco IOS XR Release 7.2.1, a segment of an explicit segment list can be configured as an IPv4 address (representing a Node or a Link) using the **index indexaddress ipv4 address** command.

Starting with Cisco IOS XR Release 7.2.1, an IPv4-based segment (representing a Node or a Link) can also be configured with the new **index index mpls adjacencyaddress** command. The configuration is stored in NVRAM in the same CLI format used to create it. There is no conversion from the old CLI to the new CLI.

Starting with Cisco IOS XR Release 7.9.1, the old CLI has been deprecated. Old configurations stored in NVRAM will be rejected at boot-up.

As a result, explicit segment lists with IPv4-based segments using the old CLI must be re-configured using the new CLI.

There are no CLI changes for segments configured as MPLS labels using the **index index mpls label label** command.

- If you are on a release before Cisco IOS XR Release 7.4.1, you can configure SR-ODN with Flexible Algorithm constraints using the **segment-routing traffic-eng on-demand color color dynamic sid-algorithm algorithm-number** command.

Starting with Cisco IOS XR Release 7.4.1, you can also configure SR-ODN with Flexible Algorithm constraints using the new **segment-routing traffic-eng on-demand color color constraints segments sid-algorithm algorithm-number** command.

From Cisco IOS XR Release 7.9.1, the **segment-routing traffic-eng on-demand color color dynamic sid-algorithm algorithm-number** command is deprecated. Previous configurations stored in NVRAM will be rejected at boot-up. (Performing In-Service Software Upgrade (ISSU) to Cisco IOS XR Release 7.9.1 will also be rejected.)

Hence, for Cisco IOS XR Release 7.9.1, you must reconfigure all SR-ODN configurations with Flexible Algorithm constraints that use the **on-demand dynamic sid-algorithm** with the **on-demand constraints** command.

## 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

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\_7.9.2.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.

## Related Documentation

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

<https://www.cisco.com/c/en/us/support/routers/network-convergence-system-560-series-routers/products-installation-and-configuration-guides-list.html>

