

Release Notes for Cisco NCS 560 Series Routers, Cisco IOS XR Release 7.7.21

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Network Convergence System 560 Series Routers



Note Cisco IOS XR Release 7.7.21 is a special Extended Maintenance Release of [Cisco IOS XR Release 7.7.2](#) for Cisco NCS 560 Series routers. For more details on the Cisco IOS XR release model and associated support, see [Guidelines for Cisco IOS XR Software](#).

What's New in Cisco IOS XR Release 7.7.21

Cisco IOS XR Release 7.7.21 is a special Extended 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

There are no caveats for this release.

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 1: Release 7.7.21 Packages for Cisco NCS 560 Series Router

Composite Package		
Feature Set	Filename	Description
Cisco IOS XR IP Unicast Routing Core Bundle	ncs560-mini-x-7.7.21.iso	Contains base image contents that includes: <ul style="list-style-type: none"> • 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-2.0.0.0-r7721.x86_64.rpm	Telemetry, Extensible Markup Language (XML), Parser, and HTTP server packages, NETCONF, YANG Models, gRPC.
Cisco IOS XR OSPF package	ncs560-ospf-2.0.0.0-r7721.x86_64.rpm	Supports OSPF
Cisco IOS XR Security Package	ncs560-k9sec-2.0.0.0-r7721.x86_64.rpm	Support for Encryption, Decryption, Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI)
Multicast Package	ncs560-mcast-2.0.0.0-r7721.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-2.0.0.0-r7721.x86_64.rpm	Supports Intermediate System to Intermediate System (IS-IS).
Cisco IOS XR USB Boot Package	ncs560-usb_boot-7.7.21.zip	Supports Cisco IOS XR USB Boot Package
Cisco IOS XR MPLS Package	ncs560-mpls-1.0.0.0-r7721.x86_64.rpm ncs560-mpls-te-rsvp-2.0.0.0-r7721.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-r7721.x86_64.rpm	Lawful Intercept
Cisco IOS XR EIGRP Package	ncs560-eigrp-1.0.0.0-r7721.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 7.7.21
Copyright (c) 2013-2023 by Cisco Systems, Inc.

Build Information:
  Built By      : deenayak
  Built On     : Thu Jun 29 00:43:02 PDT 2023
  Built Host   : 5b4577a0c278
  Workspace    : /auto/srcarchive16/prod/7.7.21/ncs560/ws
  Version     : 7.7.21
  Location     : /opt/cisco/XR/packages/
  Label       : 7.7.21

cisco NCS-560 () processor
System uptime is 8 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-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   1.49   1.49     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    1.23   1.23     0.0
-----
A907-FAN-E             PSOC (A)                        NO    1.65   1.65     0.0
                        PSOC (A)                        NO    1.66   1.66     0.4
-----
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    2.20   2.20     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    2.20   2.20     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    2.20   2.20     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	2.20	2.20	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	161.10	161.10	0.0
	QDD_100_FW_P1	NO	161.10	161.10	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	2.20	2.20	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	2.20	2.20	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

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:Disabled
```

Location	Card type	FPD Versions				
		HWver	FPD device	ATR Status	Running	Programd
0/0	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.05	17.05
0/1	N560-IMA2C	0.0	IMFPGA	CURRENT	6.06	6.06
0/3	A900-IMA8Z	0.0	IMFPGA	CURRENT	17.05	17.05
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/RP0	N560-4-RSP4E	0.0	ADM	CURRENT	1.06	1.06
0/RP0	N560-4-RSP4E	0.0	IOFPGA	CURRENT	0.67	0.64
0/RP0	N560-4-RSP4E	0.0	PRIMARY-BIOS	CURRENT	0.21	0.21
0/RP0	N560-4-RSP4E	0.0	SATA	CURRENT	2.20	2.20

0/RP1	N560-4-RSP4E	0.0	ADM	CURRENT	1.06	1.06
0/RP1	N560-4-RSP4E	0.0	IOFPGA	CURRENT	0.67	0.67
0/RP1	N560-4-RSP4E	0.0	PRIMARY-BIOS	CURRENT	0.21	0.21
0/RP1	N560-4-RSP4E	0.0	SATA	CURRENT	2.20	2.20
0/FT0	N560-4-PWR-FAN	0.1	PSOC	CURRENT	177.08	177.08
0/FT1	N560-4-FAN-H	0.1	PSOC	CURRENT	177.02	177.02
0/FT2	N560-4-FAN-H	0.1	PSOC	CURRENT	177.02	177.02
0/PM0	A900-PWR1200-A	0.1	DCA-PrimCU	CURRENT	0.13	0.13
0/PM0	A900-PWR1200-A	0.1	DCA-SecMCU	CURRENT	2.03	2.03
0/PM1	A900-PWR1200-A	0.1	DCA-PrimCU	CURRENT	0.13	0.13
0/PM1	A900-PWR1200-A	0.1	DCA-SecMCU	CURRENT	2.03	2.03
0/PM2	A900-PWR1200-A	0.1	DCA-PrimCU	CURRENT	0.13	0.13
0/PM2	A900-PWR1200-A	0.1	DCA-SecMCU	CURRENT	2.03	2.03

Important Notes

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_7.7.21.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>

