

Release Notes for Cisco NCS 560 Series Routers, Cisco IOS XR Release 25.1.1

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Network Convergence System 560 Series Routers

What's New in Cisco IOS XR Release 25.1.1

For more details on the Cisco IOS XR release model and associated support, see Software Lifecycle Support Statement - IOS XR.

Software Features Enhanced and Introduced

To learn about features introduced in other Cisco IOS XR releases, select the release from the Documentation Landing Page.

Feature	Description
Segment Routing	
SRv6 policy counters (POL.CP.SL.INT.E)	The network administrators can now monitor and manage network performance, capacity planning, and traffic engineering by reviewing the policy counters (POL.CP.SL.INT.E) in SRv6-TE.
	The feature introduces these changes:
	CLI:
	• show cef ipv6 accounting
Static SRv6 pseudowire	This feature introduces support for Static Segment Routing over IPv6 (SRv6) Pseudo-wires in the IOSXR platform. This enhancement aims to extend the existing Virtual Private Wire Service (VPWS) capabilities by incorporating SRv6, providing improved flexibility and scalability for service providers.
L2VPN and Ethern	et Services

Feature	Description				
EVPN-IRB ND partial suppression	You can now manage and minimize Neighbor Discovery (ND) for IPv6 traffic on a network segment by configuring partial suppression mode.				
mode	You can configure EVPN-IRB ARP and ND proxy full or partial suppression modes for these features:				
	EVPN-IRB multi-homing				
	• VM Mobility				
Layer 2 fast reroute for E-Line services You can now ensure faster convergence and uninterrupted service by redir traffic using the EVPN pseudowire (PW) in an E-Line configuration when dual-homing link fails.					
Interface and Hard	ware Component				
Minimum-delay bin	For statistics aggregation, you can now configure a distinct width for the first bin to adjust for large propagation delay. By using this feature, you can avoid wasting several bins that would be empty in some unavoidable situations such as delay due to speed of light limitations.				
	The feature introduces these changes:				
	CLI:				
	• The minimum-delay keyword is introduced in the aggregate command.				
	YANG Data Models: New XPaths for				
	• Cisco-IOS-XR-infra-sla-cfg.yang				
	• Cisco-IOS-XR-um-ethernet-sla-cfg.yang				
	• Cisco-IOS-XR-infra-sla-oper.yang				
	(see GitHub, YANG Data Models Navigator)				

YANG Data Models Introduced and Enhanced

This release introduces or enhances the following data models. For detailed information about the supported and unsupported sensor paths of all the data models, see the Github repository. To get a comprehensive list of the data models supported in a release, navigate to the Available-Content.md file for the release in the Github repository. The unsupported sensor paths are documented as deviations. For example, openconfig-acl.yangprovides details about the supported sensor paths, whereas cisco-xr-openconfig-acl-deviations.yang provides the unsupported sensor paths for openconfig-acl.yang on Cisco IOS XR routers.

You can also view the data model definitions using the YANG Data Models Navigator tool. This GUI-based and easy-to-use tool helps you explore the nuances of the data model and view the dependencies between various containers in the model. You can view the list of models supported across Cisco IOS XR releases and platforms, locate a specific model, view the containers and their respective lists, leaves, and leaf lists presented visually in a tree structure.

To get started with using data models, see the *Programmability Configuration Guide for Cisco NCS 560 Series Routers*.

Feature	Description
Programmability	
Cisco-IOS-XR-infra-sla-cfg.yang	This native yang data model is enhanced to support BinsMinDelay and MinDelayMicroseconds options under the existing YANG leaf: /dfy/gl/sla/putools/putool/putiles/putile/statistics/statistic/aggregation
Cisco-IOS-XR-um-ethernet-sla-cfg.yang	This unified data model is enhanced to support BinsMinDelay and MinDelayMicroseconds options under the existing YANG leaf: /dfy/gl/sla/prtxxxls/prtxxxl/profiles/profile/statistics/statistic/aggregation
Cisco-IOS-XR-infra-sla-oper.yang	The existing bin width leaf in the Cisco native data model reflects the configured minimum delay value.

Hardware Introduced



Note

Before you install the Cisco router, you must prepare your site for the installation, for more details on site planning and environmental requirements, see Hardware Installation Guide.

Hardware	Description
Optics	This release launches these new optics on selective hardware within the product portfolio. For details refer to the <u>Transceiver Module Group (TMG) Compatibility Matrix</u>
	Multirate GE, FE pluggable optics
	• ONS-SC-PTP-1510
	• ONS-SC-PTP-1514

Behavior Changes

- From this release, the default order of authentication methods for SSH clients on Cisco IOS XR routers running Cisco IOS XR SSH is changed to: **public-key**, **keyboard-interactive**, and **password**.
- Prior to this release, the default order was: public-key, password, and keyboard-interactive.
- 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** *index* **address 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 adjacency address** 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.

Restrictions and Limitations

- Telemetry data collection may timeout due to CPU overload during route churn. In such scenarios, telemetry will resume when the CPU becomes available after the route churn is complete.
- The standby RP may get into 'NOT READY' state intermittently due to some network churn, though the corresponding VM is up and running. But this is a transient state and shows that some data aren't in sync between active and standby due to the network churn. After both active and standby are in sync with respect to all the parameters, then the standby RP comes into 'READY' state.

Caveats

There are no caveats in 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 25.1.1 Packages for Cisco NCS 560 Series Router

Composite Package					
Feature Set	Filename	Description			
Cisco IOS XR IP Unicast Routing Core Bundle	ncs560-mini-x-25.1.1.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-r2511.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-r2511.x86_64.rpm	Supports OSPF			
Cisco IOS XR Security Package	ncs560-k9sec-1.0.0.0-r2511.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-r2511.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-r2511.x86_64.rpm	Supports Intermediate System to Intermediate System (IS-IS).				
Cisco IOS XR USB Boot Package	ncs560-usb_boot-25.1.1.zip	Supports Cisco IOS XR USB Boot Package				
Cisco IOS XR MPLS Package	ncs560-mpls-1.0.0.0-r2511.x86_64.rpm ncs560-mpls-te-rsvp-1.00.0-r2511.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-r2511.x86_64.rpm	Lawful Intercept				
Cisco IOS XR EIGRP Package	ncs560-eigrp-1.0.0.0-r2511.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
Tue Mar 25 22:26:49.123 IST
Cisco IOS XR Software, Version 25.1.1
Copyright (c) 2013-2024 by Cisco Systems, Inc.
Build Information:
Built By : swtools
Built On : Mon Mar
              : Mon Mar 24 19:09:38 PDT 2025
Built Host : iox-ucs-054
Workspace : /auto/srcarchive12/prod/25.1.1/ncs560/ws
           : 25.1.1
:/opt/cisco/XR/packages/
Version
Location
 Label
              : 25.1.1
cisco NCS-560 () processor
System uptime is 2 hours 16 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
Tue Mar 25 22:27:19.679 IST

=======================================		Field Programmable Device Package			
Card Type	FPD Description	Req Reload		Min Req SW Ver	Min Req 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) DCA-SecMCU(A)	NO NO	0.11	0.11 1.04	0.0
A900-PWR1200-D	LIT-PriMCU(A) LIT-SecMCU(A)	NO NO	1.27 1.27	1.27 1.27	0.0
A900-PWR900-D2	LIT-PriMCU(A) LIT-SecMCU(A)	NO NO	1.82 1.84	1.82 1.84	0.0
A907-FAN-E	PSOC (A) PSOC (A)	NO NO	1.65 1.66	1.65 1.66	0.0 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) IOFPGA(A) PRIMARY-BIOS(A) SATA(A) SATA_MAR(A) SATA_MAR_B4(A) SATA_SMI(A)	NO YES YES NO NO NO	1.06 0.69 0.24 2.30 1.30 1.10	1.06 0.69 0.24 2.30 1.30 1.10	0.0 0.0 0.0 0.0 0.0 0.0

NECO A DODA CO					
	7 7 7 7 7 7 7	NO	1.06	1 00	0 0
N560-4-RSP4-CC	ADM(A)	NO	1.06	1.06	0.0
	IOFPGA(A)	YES	0.69	0.69	0.0
			0.24		
	PRIMARY-BIOS (A)	YES	0.24	0.24	0.0
	SATA(A)	NO	2.30	2.30	0.0
		MO			
	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
NOOU 4 KSI4E					
	IOFPGA(A)	YES	0.69	0.69	0.0
	PRIMARY-BIOS (A)	YES	0.24	0.24	0.0
	SATA(A)	NO	2.30	2.30	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	2.30	2.30	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
10000 11110 11	1500 (11)	110	2.02	2.02	0.0
N560-IMA-8Q/4L	IMFPGA	YES	1.27	1.27	0.0
NIECO TMA 1 tri	CEDS D DGO	NO	20 27207	20 27207	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
	1111 1 071	1110	1.20	1.20	0.0
N560-IMA2C	IMFPGA	YES	6.06	6.06	0.0
				6.06	0.0
N560-TMA2C-CC	TMFPGA	YES	6.06		
N560-IMA2C-CC	IMFPGA	YES	6.06	0.00	
N560-IMA2C-CC	IMFPGA	YES	6.06		
N560-IMA2C-CC	IMFPGA IMFPGA	YES YES		1.28	
	IMFPGA	YES	1.28	1.28	0.0
	IMFPGA QDD_100_BRT_FW_P0				
	IMFPGA QDD_100_BRT_FW_P0	YES	1.28	1.28	0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1	YES NO NO	1.28 70.130 70.130	1.28 70.130 70.130	0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0	YES NO NO NO	1.28 70.130 70.130 61.23	1.28 70.130 70.130 61.23	0.0 0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1	YES NO NO	1.28 70.130 70.130	1.28 70.130 70.130	0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1	YES NO NO NO NO	1.28 70.130 70.130 61.23 61.23	1.28 70.130 70.130 61.23 61.23	0.0 0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0	YES NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24	1.28 70.130 70.130 61.23 61.23 161.24	0.0 0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1	YES NO NO NO NO	1.28 70.130 70.130 61.23 61.23	1.28 70.130 70.130 61.23 61.23 161.24	0.0 0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0	YES NO NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24	1.28 70.130 70.130 61.23 61.23 161.24	0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P1	YES NO NO NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0
	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0	YES NO NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24	0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P1	YES NO NO NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P1	YES NO NO NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-L	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P1 IMFPGA QCS-PriMCU(A)	YES NO NO NO NO NO NO NO YES	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-L	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P0 QDD 400 ZRP FW P1 IMFPGA	YES NO NO NO NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-L	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P1 IMFPGA QCS-PriMCU(A)	YES NO NO NO NO NO NO NO YES	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-L	IMFPGA QDD 100 BRT FW P0 QDD 100 BRT FW P1 QDD 100 FW P0 QDD 100 FW P1 QDD 400 ZRP FW P1 IMFPGA QCS-PriMCU(A)	YES NO NO NO NO NO NO NO YES	1.28 70.130 70.130 61.23 61.23 161.24 161.24	1.28 70.130 70.130 61.23 61.23 161.24 161.24	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A)	YES NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28	0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A)	YES NO YES	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.28	1.28 70.130 70.130 61.23 61.23 161.24 1.24 1.28 1.82 1.82 1.84	0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A)	YES NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28	0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A)	YES NO YES NO NO NO YES YES	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.88 1.82 1.84	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA(A)	YES NO VES NO NO YES YES NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.88 1.82 1.84 1.06 0.80 0.24 2.30	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A)	YES NO YES NO NO NO YES YES	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.88 1.82 1.84	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A)	YES NO VES VES NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A) SATA_MAR(A) SATA_MAR_B4(A)	YES NO NO NO NO NO NO NO NO NO YES NO NO YES YES NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A)	YES NO VES VES NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A) SATA_MAR(A) SATA_MAR_B4(A)	YES NO NO NO NO NO NO NO NO NO YES NO NO YES YES NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E N560-RSP4	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A) SATA_MAR(A) SATA_SMI(A)	YES NO NO NO NO NO NO NO NO NO YES NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10 1.10	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A) SATA_MAR(A) SATA_MAR_B4(A)	YES NO NO NO NO NO NO NO NO NO YES NO NO YES YES NO NO NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E N560-RSP4	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P0 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A) SATA_MAR(A) SATA_SMI(A) ADM(A)	YES NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10 1.10	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
N560-IMA2C-DD N560-IMA2C-L N560-PWR1200-D-E N560-RSP4	IMFPGA QDD_100_BRT_FW_P0 QDD_100_BRT_FW_P1 QDD_100_FW_P0 QDD_100_FW_P1 QDD_400_ZRP_FW_P1 IMFPGA QCS-PriMCU(A) QCS-SecMCU(A) ADM(A) IOFPGA(A) PRIMARY-BIOS(A) SATA_MAR(A) SATA_MAR(A) SATA_SMI(A)	YES NO NO NO NO NO NO NO NO NO YES NO	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10 1.10	1.28 70.130 70.130 61.23 61.23 161.24 161.24 1.28 1.82 1.84 1.06 0.80 0.24 2.30 1.30 1.10 1.10	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

FPD Versions

	SATA (A) SATA_MAR (A) SATA_MAR_B4 (A) SATA_SMI (A)	NO NO NO	2.30 1.30 1.10 1.10	1.30 1.10 1.10	0.0 0.0 0.0
NCS4200-1T16G-PS	IMFPGA	YES		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) IOFPGA(A) PRIMARY-BIOS(A) SATA(A) SATA_MAR(A) SATA_MAR_B4(A) SATA_SMI(A)	NO YES YES NO NO NO	0.02 0.24 2.30 1.30	2.30 1.30 1.10	0.0 0.0 0.0 0.0 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

Tue Mar 25 22:27:14.943 IST

Auto-upgrade:Disabled

						FFD VE	1210112
Location	Card type	HWver	FPD device	ATR	Status	Running	Programd
0/0	A900-IMA8CS1Z-M	0.0	IMFPGA		CURRENT	1.115	1.115
0/1	A900-IMA8CS1Z-M	0.0	IMFPGA		CURRENT	1.115	1.115
0/2	A900-IMA8CS1Z-M	0.0	IMFPGA		CURRENT	1.115	1.115
0/3	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	N560-IMA-8Q/4L	0.0	IMFPGA		CURRENT	1.27	1.27
0/7	N560-IMA-8Q/4L	0.0	IMFPGA		CURRENT	1.27	1.27
0/9	N560-IMA2C	0.0	IMFPGA		CURRENT	6.06	6.06
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
0/12	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	2.30	2.30
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	2.30	2.30
0/FT0	A907-FAN-E	1.0	PSOC		CURRENT	1.65	1.65

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_25.1.1.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

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