Release Notes for Cisco NCS 560 Series Routers, Cisco IOS XR Release 25.2.1

Contents

Cisco NCS 560 Series Routers, Release 25.2.1

Cisco IOS XR Release 25.2.1 is a new feature release for Cisco NCS 560 Series routers.

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

New software features

Table 1. New software features for NCS 560 Series Routers, Release 25.2.1

Product Impact	Feature	Description
L2VPN		
Software Reliability	Selective multicast with IGMP proxy	Selective Multicast with IGMP Proxy addresses the issue of unnecessary flooding of multicast traffic in EVPN fabrics. It ensures multicast traffic is only forwarded to peers with active receivers, optimizing bandwidth usage.
Network Synchronization		
Upgrade	PTP profile interoperation	PTP profile interoperability is now extended to the **A900-IMA8CS1Z-M** NCS 560 router variant.
Routing		
Ease of Setup	IS-IS static neighbor	IS-IS static neighbor allows the advertisement of an IS-IS link without forming an actual IS-IS adjacency. This feature is useful when a link is required in the topology for the controller but IS-IS is not actively running on the link.
Segment Routing		
Software Reliability	Hardware offload of SRv6 liveness monitoring	You can now hardware offload the liveness monitoring in performance measurement to the router hardware, which is the Network Processing Unit (NPU). This feature helps you optimize and scale the measurement operation, helping you meet delay-bound Service Level Agreements (SLAs). Previously, this feature was software driven. Using hardware to offload performance monitoring tasks improves efficiency and reduce the load on the main processor.
Smart Licensing		
Licensing Process	Smart Licensing for QDD-400G-ZR-S and QDD-400G-ZRP-S optics	Smart Licensing for QDD-400G-ZR and QDD-400G-ZRP-S optics simplifies license management by automating the process and ensuring accurate license allocation based on bandwidth usage. This feature integrates existing licensing logic and fetches optics client information, enabling organizations to calculate the required licenses based on actual bandwidth consumption. By streamlining the licensing process, this feature reduces manual effort, minimizes errors, and enhances operational

Product Impact	Feature	Description
		efficiency, ensuring compliance and optimal resource utilization.

New hardware

There is no new hardware introduced in this release.

Changes in behavior

- Type6 server output enhancements: The show type6 server command now includes two new outputs that provides additional details for enhanced server management and troubleshooting:
  - Masterkey Length
  - Masterkey Hash
- gRPC remote-connection disable command: A new command, **grpc remote-connection disable**, has been introduced. This command allows users to disable TCP connections on the router, providing greater control over network configurations.
- The **Cisco-IOS-XR-pmengine-oper.yang** data model has been updated to ensure consistency. The naming convention has been standardized by renaming elements such as **hour24fec** to **hour24-fec**, **minute15pcs** to **minute15-pcs**, and **second30pcs** to **second30-pcs** across all layers, including OTN, OTNSEC, PCS, FEC, PRBS, Ether, and GFP. For more details on the sensor paths or the updated 25.2.1 YANG models, refer to the GitHub repository.

Open issues

There are no open issues in this release.

Known Issues

- 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.

Compatibility

Compatibility Matrix for EPNM and Crosswork with Cisco IOS XR Software

The compatibility matrix lists the version of EPNM and Crosswork that are supported with Cisco IOS XR Release in this release.

Table 2. Compatibility matrix for Cisco NCS 560 Series Routers, Release 25.2.1

Cisco IOS XR	Crosswork	EPNM
Release 25.2.1	Crosswork Optimization Engine 6.0	Evolved Programmable Network Manager 7.1.1

System requirements

Use the `show hw-module fpd` command in EXEC and Admin mode to view the hardware components with their current FPD version and status. The status of the hardware must be CURRENT; Running and Programed version must be the same. You can also use the `show fpd package` command in Admin mode to check the fpd versions.

Software version

To verify the software version running on the router, use show version command in the EXEC mode.

```
Router# show version
Tue Jun 17 01:30:16.505 EDT
Cisco IOS XR Software, Version 25.2.1
Copyright (c) 2013-2025 by Cisco Systems, Inc.

Build Information:
 Built By     : swtools
 Built On     : Mon Jun 16 07:27:32 PDT 2025
 Built Host   : iox-lnx-054
 Workspace    : /auto/srcarchive11/prod/25.2.1/ncs560/ws
 Version      : 25.2.1
 Location     : /opt/cisco/XR/packages/
 Label        : 25.2.1-iso

cisco NCS-560 () processor
System uptime is 9 hours 39 minutes
```

Supported software packages

This 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.

Feature Set	Filename	Description
Cisco IOS XR IP Unicast Routing Core Bundle	ncs560-mini-x-25.2.1.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-r2521.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-r2521.x86_64.rpm	Supports OSPF
Cisco IOS XR Security Package	ncs560-k9sec-1.0.0.0-r2521.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-r2521.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.
Cisco IOS XR ISIS package	ncs560-isis-1.0.0.0-r2521.x86_64.rpm	Supports Intermediate System to Intermediate System (IS-IS).
Cisco IOS XR USB Boot Package	ncs560-usb_boot-25.2.1.zip	Supports Cisco IOS XR USB Boot Package
Cisco IOS XR MPLS Package	ncs560-mpls-1.0.0.0-r2521.x86_64.rpm ncs560-mpls-te-rsvp-1.0.0.0-r2521.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-r2521.x86_64.rpm	Lawful Intercept
Cisco IOS XR EIGRP Package	ncs560-eigrp-1.0.0.0-r2521.x86_64.rpm	(Optional) Includes EIGRP protocol support softwar

Related resources

Table 3. Related resources

Document	Description
Cisco feature finder	An interactive tool that assists in locating features introduced across Cisco IOS XR releases and platforms.
Smart licensing	Information about Smart Licensing Using Policy solutions and their deployment on IOS XR Routers.
Cisco NCS 560 documentation	CCO Documentation for Cisco NCS 560 Series Routers
Transceiver Module Group (TMG) compatibility matrix	Search by product family, product ID, data rate, reach, cable type, or form factor to determine the transceivers that Cisco hardware device supports.
Cisco IOS XR error messages	Search by release number, error strings, or compare release numbers to view a detailed repository of error messages and descriptions.
Cisco IOS XR MIBs	Select the MIB of your choice from a drop-down to explore an extensive repository of MIB information.
YANG data models	A user-friendly reference designed to easily explore and understand the various data models supported in Cisco IOS XR platforms and releases.
Yang data models in Github	Repository containing the folders with yang data models introduced and enhanced in every IOS XR release.

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