Release Notes for Cisco 8000 Series Routers, IOS XR Release 25.2.1

Contents

Cisco 8000 Series Routers, IOS XR Release 25.2.1

Cisco IOS XR Release 25.2.1 introduces new features and hardware for the Cisco 8000 Series Routers. Key features include disk encryption, advanced telemetry, DDoS protection, enhanced QoS statistics, and updated multicast and routing capabilities. The release also features a new hardware, Cisco 400G QSFP-DD Ultra Long Haul Coherent Optics.

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 Cisco 8000 Series Routers, Release 25.2.1

Product Impact	Feature	Description
Setup and Upgrade		
Software Reliability	Disk encryption	Introduced in this release on: Fixed Systems (8200 [ASIC: Q100, Q200, P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100]); Centralized Systems (8600 [ASIC: Q200]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100]) To ensure data security even when a router leaves the customer's premises, we now provide Linux Unified Key Setup (LUKS) with AES-XTS encryption, robust encryption mechanisms, with keys securely stored in the hardware Trusted Authentication Module (TAM). This encryption capability, enabled by default across all router nodes and immutable, operates seamlessly in the background, allowing users to interact with the filesystem without altering their experience, thereby providing continuous and reliable data protection. The disk encryption feature impacts the IOS XR software upgrade process. For more information, refer the Cisco 8000 IOS XR Software - Upgrade/Downgrade docs for IOS XR Release 25.2.1, in the Cisco Software Download portal.
Telemetry		
Software Reliability	Stream telemetry data for IPv4 and IPv6 data on interfaces	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100]); Centralized Systems (8600 [ASIC: Q200]); Modular Systems (8800 [LC ASIC: Q200, P100]) You can now enhance network reliability and resource optimization for efficient data collection and analysis by monitoring interface performance and operational status across platforms. This ensures consistent management, proactive troubleshooting, and optimization in multi-vendor environments by using openconfig-interfaces.yang data models. This can be achieved by enabling telemetry to configure specific sensor paths for tracking interface states.

Product Impact	Feature	Description
API Experience	Component change notification	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100]); Centralized Systems (8600 [ASIC: Q200]); Modular Systems (8800 [LC ASIC: Q200, P100]) You can now enhance operational efficiency with real-time, event-driven notifications that offer actionable insights and seamless adaptation to dynamic inventory changes. This feature ensures awareness of system component changes and outperforms traditional MDT capabilities, which focus on telemetry data rather than change-driven alerts.
Application Hosting		
Upgrade	Cisco Secure DDoS Edge Protection	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100])(select variants only*); Centralized Systems (8600 [ASIC:Q200]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100])(select variants only*) You can now enable the router to detect DDoS attacks targeting MPLS traffic using DDoS edge protection. The router analyzes MPLS flows to identify malicious traffic patterns, ensuring the availability and performance of services traversing MPLS networks.
Modular QoS		
Ease of Use	Increased accuracy of guaranteed service rate statistics for traffic shaping	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100]); Centralized Systems (8600 [ASIC: Q200], 8400 [ASIC: K100]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100]) You can now view accurate guaranteed service rates for traffic shaping policies applied on a main interface. This enhancement is based on the actual programmed Queue Max. Bandwidth (BW) value retrieved from the Network Processing Unit (NPU), enabling the system to accurately calculate and display the guaranteed service rates for traffic shaping.
Ease of Use	Enhanced PFC pause duration monitoring	Introduced in this release on: Modular Systems (8800 [LC ASIC: Q200]) This feature improves network congestion analysis by providing granular visibility into Priority Flow Control (PFC) pause durations. It introduces the ability to monitor both transmit (TX) and receive (RX) pause durations in microseconds, allowing for precise identification of congestion patterns. Previously, only pause percentages were available, but this enhancement provides a more detailed and accurate understanding of PFC pause events.
NetFlow and sFlow		

Product Impact	Feature	Description
Software Reliability	Mirror and stream dropped traps using SPAN and sFlow	Introduced in this release on: Modular Systems (8800 [LC ASIC: P100]) The forwarding dropped trap feature enables the mirroring and forwarding of system-generated notifications, triggered when packets are dropped during the forwarding process, to an sFlow collector. This provides valuable insights into potential network issues and enhances network traffic monitoring and analysis by leveraging SPAN and sFlow.
Software Reliability	Simultaneous L2 and L3 flow monitoring using IPFIX	Introduced in this release on: Fixed Systems (8000 [ASIC: Q200] (select variants only*), 8200 [ASIC: Q200] (select variants only*), 8200 [ASIC: Q200] (select variants only*); Modular Systems (8800 [LC ASIC: Q200]) (select variants only*) This feature introduces support for simultaneous L2 and L3 flow monitoring. You can configure IP Flow Information Export (IPFIX) to actively monitor and record end-to-end L2 and L3 flow information elements from network devices. Previously, you could only monitor L2 or L3 flow. *This feature is supported on: • 8201-32FH • 88-LC0-34H14FH • 88-LC0-36FH • 88-LC0-36FH-M
System Management		
Hardware Reliability	Core dump folder limit	Introduced in this release on: Fixed Systems (8200, 8700); Centralized Systems (8600); Modular Systems (8800 [LC ASIC: Q100, Q200, P100, K100]) You can now set configurable disk storage limits between 20% and 50% of total space to prevent excessive core dumps during repeated crashes. This is complemented by a new core dump folder limit, which restricts the number of retained coreinfo files to a maximum of 50. Together, these features ensure better disk management by controlling storage consumption and preserving space for critical system operations. Additionally, periodic automatic cleanup every 15 minutes helps maintain optimal disk usage, enhancing overall system reliability and performance.
Interface and Hardware Components		
Software Reliability	Unique capture for SPAN-to-File	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200,P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100]);Centralized Systems (8600 [ASIC: Q200]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100]) This feature enhances the SPAN-to-File functionality by allowing you to capture only a single, unique packet for each punt reason or interface. This prevents interesting packets from being overshadowed by repeated packets in the analyzed flow, ensuring that diverse and relevant packets are retained for analysis.

Product Impact	Feature	Description
Software Reliability	2x200G DACs with 2x200 Breakout	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200](select variants only*), Modular Systems (8800 [LC ASIC: Q200]) (select variants only*) This feature enables support for configuring 2x200G DAC (Direct Attach Copper) cables with a 2x200G breakout. It addresses the issue where certain 2x200G DAC cables are incorrectly detected as 400G cables and allows you to explicitly configure the 2x200G breakout using the CLI (Command-Line Interface). *The feature is supported on: • 88-LC0-36FH • 88-LC0-36FH-M • 8201-32FH • 8202-32FH-M
Software Reliability	Integrated Routing and Bridging with Bridge-Group Virtual Interface	Introduced in this release on: Fixed Systems (8200 [ASIC: P100]); Fixed Systems (8700 [ASIC: P100]); Modular Systems (8800 [LC ASIC: P100]) Integrated Routing and Bridging (IRB) provides the ability to exchange traffic between bridging services on a router and a routed interface using a Bridge-Group Virtual Interface (BVI). IRB over BVI enables seamless communication between Layer 2 bridging and Layer 3 routing by using BVI as a logical interface. *This feature is supported on: • 8212-48FH-M • 8711-32FH-M • 88-LC1-36EH
Ease of use	Local SPAN	Introduced in this release on: Modular Systems (8800 [LC ASIC: P100])(select variants only*) Local SPAN allows you to monitor network traffic on a single switch by copying traffic from one or more source ports or VLANs to a destination port for analysis. This process occurs entirely within the same device, ensuring that both source and destination ports are located on it. You can monitor and analyze traffic without affecting the normal operation of the network. *This feature is now supported on: • 88-LC1-36EH • 88-LC1-12TH24FH-E
Routing		
Ease of Setup	IS-IS static neighbor	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100]); Centralized Systems (8600 [ASIC: Q200]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100]) 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.
MPLS		

Product Impact	Feature	Description
Software Reliability	Decoupled Mode for L2VPN and EVPN VPWS services	Introduced in this release on: Fixed Systems (8200, 8700); Centralized Systems (8600); Modular Systems (8800 [LC ASIC: Q100, Q200, P100, K100]) Decoupled mode improves fault tolerance by allowing the PE router to maintain the PW in an active state independently of the AC status. Unlike the traditional coupled mode, which requires both AC and PW to be active for traffic flow, decoupled mode ensures uninterrupted PW traffic even during AC failures.
EVPN		
Software Reliability	EVPN and L3VPN using Route Type-5 over BGP-LU with SR	Introduced in this release on: Modular Systems (8800 [LC ASIC: P100]) (select variants only*) Enhance your network infrastructure with our advanced architecture that seamlessly integrates EVPN, L3VPN, and Route Type-5 over BGP-LU over segment routing, offering a scalable, flexible, and resilient solution for service providers and large enterprises. This design combines the versatility of EVPN for Layer 2 services with the robust scalability of L3VPN, ensuring seamless IP connectivity across multiple sites using Route Type-5. * This is supported on 88-LC1-12TH24FH-E and 88-LC1-52Y8H-EM.
Software Reliability	EVPN bridging and E-Line services over BGP-LU underlay with SR	Introduced in this release on: Fixed Systems (8200 [ASIC: P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100]); Modular Systems (8800 [LC ASIC: P100]) You can configure end-to-end services between data centers using the BGP Labeled Unicast (BGP-LU) underlay with segment routing. The feature supports EVPN E-LAN and E-Line services and enables load balancing across transport, BGP-LU, and service levels using segment routing.
Multicast		
Ease of Use	Multicast IRB	Introduced in this release on: Fixed Systems (8200 [ASIC: P100], 8700 [ASIC: P100]); Modular Systems (8800 [LC ASIC: P100]) Multicast IRB enables the routing of multicast packets into and out of a bridge domain through a BVI. The feature supports native multicast for MVPN profiles such as 0, 1, 3, 5, 6, 11, 14, 17, 19, 21, 22, and 25. For more information about the supported MVPN profiles, see mVPN Profiles within Cisco IOS XR.
Segment Routing		

Product Impact	Feature	Description
Ease of Use	Dual-stack with SRv6 unicast and IPv4 multicast core	Introduced in this release on: Fixed Systems (8700 [ASIC: K100]) (select variants only*) The feature introduces dual-stack support with SRv6 for unicast traffic and IPv4 for multicast communication. The dual-stack simplifies the routing process by combining the advantages of both IPv4 and SRv6 protocols and facilitates smoother interoperability between the two protocols. The dual-stack enables efficient unicast communication through SRv6 by allowing precise control over the path that a packet takes through a network and streamlines the network routing, while using the deployment support of IPv4 for multicast traffic. *This feature is supported on 8712-MOD-M.
API Experience	gRPC based North Bound API for BGP-LS objects	Introduced in this release on: Fixed Systems (8200 [ASIC: Q200, P100], 8700 [ASIC: P100, K100], 8010 [ASIC: A100]); Centralized Systems (8600 [ASIC: Q200]); Modular Systems (8800 [LC ASIC: Q100, Q200, P100]) This gRPC-based API exports BGP-LS topology objects, which include Nodes, Links, IPv4 and IPv6 Prefixes, SRv6 SIDs, and SR Policy Candidate Paths. The API is designed to provide real-time updates to external controllers and applications, enabling them to perform tasks such as re-optimization, service placement, and network visualization. For more information, see the Cisco Crosswork Optimization Engine User Guides.
System Security		
Ease of Use	MACsec encryption on layer 3 subinterfaces	Introduced in this release on: Fixed Systems (8200 [ASIC: P100]) (select variants only*) You can now configure MACsec policies on Layer 3 subinterfaces, allowing greater flexibility to secure different L3 subinterfaces under the same physical interface. This is achieved by enabling the router to keep VLAN tags unencrypted, allowing L3 subinterfaces to function as MACsec endpoints. Applying MACsec policies at this level enhances network security by adding an extra layer of protection for communication between subnets. *This feature support is now extended to 8212-48FH-M.
Ease of Use	Power-on self-test KAT with MACsec	Introduced in this release on: Fixed Systems (8200 [ASIC: P100]) (select variants only*) We have introduced the integration of Known Answer Tests (KAT) with MACsec on Cisco 8606 Series Routers, supporting secure communication, operational reliability, and stringent security standards for government and enterprise networks. This integration ensures cryptographic integrity and enhances security through algorithms like SHA and DES, Secure Hash Algorithm (SHA) and Data Encryption Standard (DES), aligning with Federal Information Processing Standards (FIPS). *This feature support is now extended to 8212-48FH-M.

Product Impact	Feature	Description
Software Reliability	Enhanced hash rotation range	Introduced in this release on: Introduced in this release on: Fixed Systems (8200 [ASIC: Q200]; Centralized Systems (8600 [ASIC:Q200]); Modular Systems (8800 [LC ASIC: Q200]) We have now increased the configurable hash rotate counts from 36 to 144 providing each Network Processing Unit (NPU) with the flexibility to operate using a distinct hash rotation value within this expanded spectrum. The increase in hash rotation range improves traffic load balancing and reduces polarization by enabling unique values per NPU, which is especially beneficial in large-scale or high-density router deployments. This capability allows better performance, scalability, and resource utilization across the network.

New hardware

Table 2. New hardware for Cisco 8000 Series Routers, Release 25.2.1

Hardware	Description
Optics	This release launches the following new optics on selective hardware within the product portfolio. For details, refer to the Transceiver Module Group (TMG) Compatibility Matrix. Cisco 400G QSFP-DD Ultra Long Haul Coherent Optics DP04QSDD-ULH

Changes in behavior

- Disable packet truncation for sFlow and NetFlow: The sFlow and NetFlow packet captures are truncated by default to a specific number of bytes, depending on the platform:
  - Q100 and Q200 based systems: Truncated to 383 bytes
  - K100, A100, and P100 based systems: Truncated to 192 bytes.

  To capture full packets and disable this truncation, use the hw-module profile netflow fpc-enable location command. Please note that a system reload is required for the changes to take effect.
- Autoroute announce with IPv6 destination address for ISIS: Two new keywords, **destination** and **ipv6**, were added to the **autoroute announce** command to provide the IPv6 destination address to ISIS thus allowing an MPLS-TE tunnel as the nexthop for IPv6 destinations. ISIS uses this address when filtering prefixes.
- Customize docker run options using application manager: The **--cap-add=NET_RAW** option has been added to the docker run configuration which enables application manager containers to perform advanced network-level operations, improving the functionality of containerized applications.
- 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: 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.
- Full overwrite for gNMI union-replace operations: The gNMI union-replace operation has been enhanced to align more closely with the intended behavior defined in the gNMI specification. Instead of merging new configuration data with existing configuration, the operation now performs a full commit-replace, ensuring that the resulting configuration reflects only the contents of the union-replace request.
- Deprecation of openconfig-platform-pipeline-counters model: The **openconfig-platform-pipeline-counters** model is being deprecated for all blocks except error-counters. This change supports a broader transition toward user-specific drop counter models.
- When performing a statistics collection via gNMI from the router for **Cisco-IOS-XR-platforms-ofa-oper:ofa/stats/nodes/node/Cisco-IOS-XR-ofa-npu-stats-oper:asic-statistics/asic-statistics-drop-for-npu-ids/asic-statistics-drop-for-npu-id**, the precision is incorrectly reported in microseconds instead of nanoseconds.
- 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

Table 3. Open issues for Cisco 8000 Series Routers, Release 25.2.1

Bug ID	Description
CSCwo90316	SRv6 traffic not converged within expected post BGP PIC down rollback trigger.
CSCwj89574	In a fully populated Cisco 8800 router, the snmp OIDs - pfc MIB is slow.
CSCwn52365	BFD sessions flapped on BOB interfaces with ifmgr process restart.
CSCwj32566	Multicast shaper not working for P100 and K100 ASIC based line cards and routers

Known issues

There are no known issues in this release.

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 software in this release.

Table 4. Compatibility matrix for Cisco 8000 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

Upgrade and downgrade paths

To view all supported Cisco IOS XR Software upgrades from the current version according to the support data installed on the running system, enter the **show install upgrade-matrix running** command:

```
Router# show install upgrade-matrix running
Matrix: XR version: 25.2.1, File version: 1.0, Version: N/A

The upgrade matrix indicates that the following system upgrades are supported from the
current XR version:

From       To         Restrictions
---------- ---------- ----------------------------------------------------
25.2.1     24.1.2     Target fixes; Caveats; Replace performed via reimage
25.2.1     24.2.11    Target fixes; Caveats; Replace performed via reimage
25.2.1     24.2.2     Target fixes; Caveats; Replace performed via reimage
25.2.1     24.2.20    Caveats; Replace performed via reimage
25.2.1     24.2.21    Caveats; Replace performed via reimage
25.2.1     24.3.1     Target fixes; Caveats; Replace performed via reimage
25.2.1     24.3.2     Target fixes; Caveats; Replace performed via reimage
25.2.1     24.3.20    Caveats; Replace performed via reimage
25.2.1     24.4.1     Caveats; Replace performed via reimage
25.2.1     24.4.2     Caveats; Replace performed via reimage
25.2.1     25.1.1     Caveats; Replace performed via reimage
25.2.1     25.1.2     Caveats; Replace performed via reimage
25.2.1     7.10.2     Target fixes; Caveats; Replace performed via reimage
25.2.1     7.11.2     Target fixes; Caveats; Replace performed via reimage
25.2.1     7.11.21    Target fixes; Caveats; Replace performed via reimage

Add the from and to versions to the end of the CLI command, for data on versions with
additional restrictions

For example, to display restrictions for the 25.2.1->24.1.2 upgrade, use
        'show install upgrade-matrix running 25.2.1 24.1.2'
```

Software version

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

```
RP/0/RP0/CPU0# show version
Cisco IOS XR Software, Version 25.2.1 LNT
Copyright (c) 2013-2025 by Cisco Systems, Inc.
```

```
Build Information:
 Built By     : cisco
 Built On     : Sat Jun 14 01:14:18 UTC 2025
 Build Host   : iox-ucs-1018
 Workspace    : /auto/srcarchive11/prod/25.2.1/8000/ws/
 Version      : 25.2.1
 Label        : 25.2.1

cisco 8000 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz)
cisco 8201 (Intel(R) Xeon(R) CPU D-1530 @ 2.40GHz) processor with 32GB of memory
CSR-Dual uptime is 1 hour, 49 minutes
Cisco 8201 Chassis w/ 24x400GE QSFP56-DD & 12x100GE QSFP28
```

Supported hardware

Table of supported hardware components and the minimum required software versions.

Table 5. Supported hardware for Cisco 8010 Series Routers

Part Number	Description	Support Initially Provided in IOS XR Release
Cisco 8010 Series Routers - Chassis		
8011-4G24Y4H-I	Cisco 8010 1 RU Fixed System - 4 QSFP28 100GbE, 24 SFP28 25GbE, and 4 RJ-45 100MbE	Release 25.1.1
Cisco 8010 Series Routers - Power Supply Unit (PSU)		
PWR-400-AC	Cisco 400W AC Power Module	Release 25.1.1
PWR-400-DC	Cisco 400W DC Power Module	Release 25.1.1

Table 6. Supported hardware for Cisco 8200 Series Routers

Part Number	Description	Support Initially Provided in IOS XR Release
Cisco 8200 Series Routers - Chassis		
8201-SYS	Cisco 8200 1 RU Fixed System - 24 QSFP56-DD 400GbE and 12 QSFP28 100GbE	Release 7.0.12
8202-SYS	Cisco 8200 2 RU Fixed System - 12 QSFP56-DD 400GbE and 60 QSFP28 100GbE	Release 7.3.1
8201-32FH	Cisco 8200 1 RU Fixed System - 32 QSFP56-DD 400GbE	Release 7.3.15
8201-24H8FH	Cisco 8200 1 RU Fixed System - 8 QSFP56-DD 400GbE and 24 QSFP28 100GbE	Release 7.7.1

Part Number	Description	Support Initially Provided in IOS XR Release
8202-32FH-M	Cisco 8200 2 RU Fixed System - 32 QSFP56-DD 400GbE with MACsec	Release 7.5.2
8212-48FH-M	Cisco 8200 2 RU Fixed System - 24 QSFP-DD 800G or 48 QSFP56-DD 400GbE with MACsec	Release 24.3.1
Cisco 8200 Series Routers - Power Supply Unit (PSU)		
PSU1.4KW-ACPI	Cisco 1.4KW AC Power Module with Port-side Air Intake	Release 7.0.12
PSU1.4KW-ACPE	Cisco 1.4KW AC Power Module with Port-side Air Exhaust	Release 7.0.12
PSU2KW-ACPI	Cisco 2KW AC Power Module with Port-side Air Intake	Release 7.3.1
PSU2KW-ACPE	Cisco 2KW AC Power Module with Port-side Air Exhaust	Release 7.3.1
PSU3KW-HVPI	Cisco 3KW HV AC/DC Power Supply Unit	Release 7.5.3

Table 7. Supported hardware for Cisco 8600 Series Routers

Part Number	Description	Support Initially Provided in IOS XR Release
Cisco 8600 Series Routers - Chassis		
8608	Cisco 8600 7 RU Centralized System	Release 7.10.1
Cisco 8600 Series Routers - Modular Port Adapters (MPA)		
86-MPA-14H2FH-M	Cisco 8608 MPA - 2 QSFP-DD 400GbE and 14 QSFP / 16 QSFP 100GbE	Release 7.10.1
86-MPA-24Z-M	Cisco 8608 MPA - 24 SFP56 10/25/50 GbE	Release 7.10.1
86-MPA-4FH-M	Cisco 8608 MPA - 4 QSFP-DD 400GbE	Release 7.10.1
Cisco 8600 Series Routers - Power Supply Unit (PSU)		
PSU3.2KW-ACPI	Cisco 3.2-kW AC Power Supply Unit	Release 7.10.1
PSU3.2KW-DCPI	Cisco 3.2-kW DC Power Supply Unit	Release 7.10.1
PSU4.3KW-HVPI	Cisco 4.3KW HV AC/DC Power Supply Unit	Release 7.10.1

Table 8. Supported hardware for Cisco 8700 Series Routers

Part Number	Description	Support Initially Provided in IOS XR Release
Cisco 8700 Series Routers - Chassis		

Part Number	Description	Support Initially Provided in IOS XR Release
8711-32FH-M	Cisco 8700 1 RU Fixed System - 16 QSFP-DD800 and 16 QSFP56-DD	Release 24.3.1
8712-MOD-M	Cisco 8700 2 RU Fixed System	Release 24.4.1
Cisco 8700 Series Routers - Modular Port Adapters (MPA)		
8K-MPA-4D	Cisco 8712 MPA - 4 QSFP-DD 400GbE	Release 24.4.1
8K-MPA-16H	Cisco 8712 MPA - 16 QSFP-28 100GbE	Release 24.4.1
8K-MPA-16Z2D	Cisco 8712 MPA - 2 QSFP-DD 400GbE, 2 QSFP-DD 200GbE, and 16 SFP 50GbE	Release 24.4.1
8K-MPA-18Z1D	Cisco 8712 MPA - 1 QSFP-DD 400 GbE and 18 zSFP56+ 50GbE	Release 25.1.1
Cisco 8700 Series Routers - Power Supply Unit (PSU)		
PSU2KW-ACPI	Cisco 8711-32FH-M PSU - 2KW AC Power Module with Port-side Air Intake	Release 24.3.1
PSU2KW-ACPE	Cisco 8711-32FH-M PSU - 2KW AC Power Module with Port-side Air Exhaust	Release 24.3.1
PSU2KW-DCPI	Cisco 8711-32FH-M PSU - 2KW DC Power Module with Port-side Air Intake	Release 24.3.1
PSU2KW-DCPE	Cisco 8711-32FH-M PSU - 2KW DC Power Module with Port-side Air Exhaust	Release 24.3.1
PSU2KW-DCPI	Cisco 8712-MOD-M PSU - 2KW 48V DC Power Module with Port-side Air Intake	Release 24.4.1
PSU2KW-DCPE	Cisco 8712-MOD-M PSU - 2KW 48V DC Power Module with Port-side Exhaust	Release 24.4.1
PSU2KW-ACPI	Cisco 8712-MOD-M PSU - 2KW AC Power Module with Port-side Air Intake	Release 24.4.1
PSU2KW-ACPE	Cisco 8712-MOD-M PSU - 2KW AC Power Module with Port-side Exhaust	Release 24.4.1

Table 9. Supported hardware for Cisco 8800 Series Routers

Part Number	Description	Support Initially Provided in IOS XR Release
Cisco 8800 Series Routers - Chassis		
8804-SYS	Cisco 8800 Modular System - 10 RU with 4 Line Card Slots	Release 7.3.2
8808-SYS	Cisco 8800 Modular System - 16 RU with 8 Line Card Slots	Release 7.0.12
8812-SYS	Cisco 8800 Modular System - 21 RU with 12 Line Card Slots	Release 7.0.12
8818-SYS	Cisco 8800 Modular System - 33 RU with 18 Line Card Slots	Release 7.0.14
Cisco 8800 Series Routers - Route Processors		

Part Number	Description	Support Initially Provided in IOS XR Release
8800-RP	Cisco 8800 Route Processor - 4 Core	Release 7.0.12
8800-RP2	Cisco 8800 Route Processor - 8 Core	Release 7.11.1
Cisco 8800 Series Routers - Fabric Modules		
8808-FC	Cisco 8808 System Fabric Module - Q100-based fabric modules with 14.4T per LC slot	Release 7.0.12
8812-FC	Cisco 8812 System Fabric Module - Q100-based fabric modules with 14.4T per LC slot	Release 7.0.12
8818-FC	Cisco 8818 System Fabric Module - Q100-based fabric modules with 14.4T per LC slot	Release 7.0.14
8808-FC0	Cisco 8808 System Fabric Module - Q200-based fabric modules with 14.4T per LC slot	Release 7.3.15
8818-FC0	Cisco 8818 System Fabric Module - Q200-based fabric modules with 14.4T per LC slot	Release 7.3.16
8804-FC0	Cisco 8804 System Fabric Module - Q200-based fabric modules with 14.4T per LC slot	Release 7.3.16
8808-FC1	Cisco 8808 System Fabric Module - F100-based fabric modules with 28.8T per LC slot	Release 24.2.1
8804-FC1	Cisco 8804 System Fabric Module - F100-based fabric modules with 28.8T per LC slot	Release 25.1.1
Cisco 8800 Series Routers - Line Cards		
8800-LC-48H	Cisco 8800 Line Card with MACsec - Q100 ASIC based 4.8 Tbps line card	Release 7.0.12
8800-LC-36FH	Cisco 8800 Line Card - Q100 ASIC based 14.4 Tbps line card	Release 7.0.12
88-LC0-36FH	Cisco 8800 Line Card - Q200 ASIC based 14.4 Tbps line card	Release 7.3.15
88-LC0-36FH-M	Cisco 8800 Line Card with MACsec- Q200 ASIC based 14.4 Tbps line card	Release 7.3.15
88-LC0-34H14FH	Cisco 8800 Line Card - Q200 ASIC based 9 Tbps line card	Release 7.3.3 Release 7.5.1
88-LC1-36EH	Cisco 8800 Line Card - P100 ASIC based 28.8 Tbps line card	Release 24.2.11
88-LC1-12TH24FH-E	Cisco 8800 Line Card - P100 ASIC based 12 Tbps line card	Release 24.3.1
88-LC1-52Y8H-EM	Cisco 8800 Line Card - P100 ASIC based 3.7 Tbps line card	Release 24.3.1
Cisco 8800 Series Routers - Power Supply Unit (PSU)		
PSU4.8KW-DC100	4.8KW 48V 100A DC Power Supply	Release 7.3.2

Part Number	Description	Support Initially Provided in IOS XR Release
PSU6.3KW-HV	6.3KW AC/HVAC/HVDC Power Supply	Release 7.0.12
PSU6.3KW-20A-HV	6.3KW AC/HVAC/HVDC Power Supply-20A	Release 7.0.12

Supported software packages

Overview of Cisco IOS XR software

The Cisco IOS XR software is composed of a base image (ISO) that provides the XR infrastructure. The ISO image is made up of a set of packages (also called RPMs). These packages are of three types:

- A mandatory package that is included in the ISO
- An optional package that is included in the ISO
- An optional package that is not included in the ISO

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

View installed software packages

To determine the Cisco IOS XR Software packages installed on your router, log in to the router and enter the **show install active** command. To view the optional and bug fix RPM packages, first install the package and use the **show install active summary** command.

To know about all the RPMs installed including XR, OS and other components use the **show install active all** command.

Flexible software modularity

The software modularity approach provides a flexible model that allows you to install a subset of IOS XR packages on devices based on your individual requirements. All critical components are modularized as packages so that you can select the features that you want to run on your router.

Determine firmware support

To determine firmware support on your router, log in to the router and enter **show fpd package** command.

Related resources

Table 10. Related resources

Resource	Description
Smart licensing	Provides information about Smart Licensing Using Policy solutions and their deployment on IOS XR routers.
Cisco 8000 documentation	Provides CDC documentation for Cisco 8000 series routers.
Transceiver Module Group (TMG) compatibility matrix	Allows searching 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	Allows searching by release number, error strings, or comparing release numbers to view a detailed repository of error messages and descriptions.

Resource	Description
Cisco IOS XR MIBs	Allows selecting the MIB of your choice from a drop-down to explore an extensive repository of MIB information.
Yang data models in GitHub	Provides yang data models introduced and enhanced in every IOS XR release.
Recommended release	Provides a general guide in case of upgrading IOS XR routers or new deployments that involve IOS XR routers.

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