



Release Notes for Cisco ASR 9000 Series Routers, IOS XR Release 26.1.1

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Cisco ASR 9000 Series Routers, IOS XR Release 26.1.1

Cisco IOS XR Release 26.1.1 is a new feature and hardware release for Cisco ASR 9000 Series routers. Key highlights in this release include MLDP Make-Before-Break (MBB) duplicate packet mitigation to minimize packet loss and prevent duplicate packets during LSP transitions in dynamic multicast environments, BGP SID locator tracking for SRv6 services to improve network convergence and path selection by extending BGP next-hop tracking to SRv6 SID locators, and strengthened device security with automatic RSA 3072-bit SSH host key generation. Additional enhancements include proactive syslog warnings for weak or deprecated SSH keys to ensure compliance with evolving security standards. These features collectively improve reliability, security, and operational consistency across both multicast and segment routing deployments.

New software features

Table 1. New software features for ASR 9000 Series Aggregation Services Routers, Release 26.1.1

Product impact	Feature	Description
Broadband Network Gateway		
Ease of Use	Broadband subscriber termination on variable speed interfaces	You can now meet growing bandwidth needs by terminating broadband subscribers on interfaces with different speeds on LSP cards. This flexibility allows you to support a wider range of subscriber requirements as bandwidth demands increase.
Ease of Use	SNMP Lawful Intercept using Circuit-ID	The SNMP Lawful Intercept using Circuit-Id functionality is now extended to Line Card (LC) based subscribers. Previously, static identification using circuit ID was available only for Route Processor (RP) based subscribers.
Multicast		
Software Reliability	MBB duplicate packet mitigation	MLDP (Multicast Label Distribution Protocol) Make-Before-Break (MBB) duplicate packet mitigation is designed to minimize packet loss during the transition from an old Label Switched Path (LSP) to a new one. This process is particularly important in dynamic network environments where path changes can occur due to link-up or link-down events. This feature prevents duplicate packets during MLDP MBB events, especially during link-up and due to differential path latency.
Segment Routing		
Software Reliability	BGP SID locator tracking for SRv6 services	You can now enhance SRv6 path selection by extending BGP next-hop tracking to monitor the reachability and metric of SRv6 SID locators. BGP tracks locators for both Layer 2 and Layer 3 services and updates path selection when a locator becomes unreachable, even if the next-hop remains reachable. The feature introduces these changes: CLI: <ul style="list-style-type: none"> • nexthop validation use-locator
Ease of Use	SRv6-TE explicit BSID and remote steering	You can now manually configure a deterministic and persistent binding SID, also known as an explicit BSID, for an SRv6-TE policy. The router also supports remote BSID steering, which allows it to recognize traffic whose destination address matches a local policy

Product impact	Feature	Description
		<p>BSID and steer the traffic directly into the associated SRv6-TE policy.</p> <p>Previously, the router allocated SRv6-TE policy binding SIDs dynamically and could change the BSID during reloads or policy reinstallation. This behavior limited deterministic policy stitching and integration with external controllers.</p> <p>The feature introduces these changes:</p> <p>*CLI:*</p> <ul style="list-style-type: none"> * show segment-routing traffic-eng database explicit-bsid srv6 summary detail * clear segment-routing srv6 sid _<address>_ * The enforce keyword is introduced as an explicit option in binding-sid command. * The following show commands are updated to display the requested BSID and binding SID behavior: <pre>show segment-routing traffic-eng policy show segment-routing srv6 static-endpoint</pre> <p>*YANG Data Models:*</p> <ul style="list-style-type: none"> * Cisco-IOS-XR-infra-xtc-agent-oper.yang * Cisco-IOS-XR-segment-routing-srv6-cfg.yang <p>see GitHub , YANG Data Models Navigator)</p>
System Security		
Software Reliability	SSH key strength: 3072 bits by default	<p>This update enhances device security by automatically generating RSA 3072-bit SSH host keys during system boot, replacing the previous default of RSA 2048-bit keys. The stronger key size aligns with industry best practices and provides improved cryptographic protection, ensuring secure SSH access and compliance with future security requirements.</p>
Software Reliability	Syslog warnings for RSA keys and DSA keys	<p>This enhancement ensures Cisco IOS XR devices comply with evolving security standards by sending syslog warnings if weak SSH host keys are found during system reboot where an Rivest, Shamir, and Adelman (RSA) key less than 3072 bits or any Digital Signature Algorithm (DSA) keys are detected. The default RSA key size has been increased from 2048 to 3072 bits to strengthen security.</p> <p>Additionally, DSA keys are no longer auto-generated at boot, and if found, a syslog warning prompts their removal to align with current best practices.</p>

New hardware features

There are no new hardware introduced in this release.

Changes in behavior

- The default minimum syslog TLS version is now TLS 1.2 to enhance security. A one-time syslog warning will be generated if TLS 1.0 or TLS 1.1 is used, and a continuous warning will occur if the syslog minimum TLS version is configured as TLS 1.0 or 1.1.
- Starting with the Cisco IOS XR Software Release 26.1.1, if the route-policy applied to the eBGP neighbor includes the set next-hop unchanged command, the system preserves and advertises both the received remote SRv6 SID and the remote next-hop when advertising the leaked route from GRT to the VRF table. The local SRv6 SID is no longer always sent.

Open issues

There are no open issues in this release.

Known issues

- During a software upgrade to IOS XR Release 26.1.1, the system may not complete the Auto-FPD upgrade as expected. After the upgrade, the FPD status shows 'RLOAD REQ', indicating that you must perform an additional reload to activate the updated FPD.

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

Cisco IOS XR	Crosswork	EPNM
Release 26.1.1	Crosswork Optimization Engine 6.0	Evolved Programmable Network Manager 8.1.1

Memory

The available memory for Cisco ASR 9000 Series Aggregation Services Router running Cisco IOS XR Software Release consist of the following:

- 32 GB memory on the A99-RP-F
- 24 GB memory on the RP3 transport optimised (TR) variant and 40 GB memory on the RP3 service edge (SE) variant
- 24 GB memory on the RP3-X transport optimized (TR) variant and 48 GB memory on the RP3-X service edge (SE) variant
- 24 GB memory on the RSP5 transport optimized (TR) variant and 40 GB memory on the RSP5 service edge (SE) variant
- 24 GB memory on the RSP5-X transport optimized (TR) variant and 48 GB memory on the RSP5-X service edge (SE) variant
- 2 GB compact flash on route switch processors (RSPs)
- 8 GB memory on the line cards (LCs) running Cisco IOS XR 64-bit image

Caution: If you remove the media in which the software image or configuration is stored, the router may become unstable and fail.

Software compatibility

Cisco IOS XR Software Release is compatible with the following Cisco ASR 9000 Series Aggregation Services Router systems.

- Cisco ASR 9900 Series Chassis
 - Cisco ASR 9922 Chassis
 - Cisco ASR 9912 Chassis
 - Cisco ASR 9910 Chassis
 - Cisco ASR 9906 Chassis
 - Cisco ASR 9904 Chassis
 - Cisco ASR 9903 Chassis
 - Cisco ASR 9902 Chassis
 - Cisco ASR 9901 Chassis
- Cisco ASR 9000 Series Chassis
 - Cisco ASR 9010 Chassis
 - Cisco ASR 9006 Chassis

For Cisco license support, please contact your Cisco Sales Representative or Customer Service at 800-553-NETS (6387) or 408-526-4000. For questions on the program other than ordering, please send e-mail to: cwm-license@cisco.com.

Supported hardware

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

Table 3. Supported Hardware

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
Cisco ASR 9000 Series Aggregation Services Router - Route Switch Processor Cards		
A9K-RSP5-X-SE	ASR 9000 Series Route Switch Processor 5 for Service Edge, Premium	Release 7.6.2
A9K-RSP5-X-TR	ASR 9000 Series Route Switch Processor 5 for Packet Transport, Premium	Release 7.6.2
A9K-RSP5-SE	ASR 9000 Route Switch Processor 5 for Service Edge	Release 6.5.15
A9K-RSP5-TR	ASR 9000 Route Switch Processor 5 for Packet Transport	Release 6.5.15
Cisco ASR 9000 Series Aggregation Services Router - Route Processor Cards		

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
A99-RP3-X-SE	ASR 9900 Route Processor 3 for Service Edge, Premium	Release 7.6.2
A99-RP3-X-TR	ASR 9900 Route Processor 3 for Packet Transport, Premium	Release 7.6.2
A99-RP3-SE	ASR 9900 Route Processor 3 for Service Edge	Release 6.5.15
A99-RP3-TR	ASR 9900 Route Processor 3 for Packet Transport	Release 6.5.15
Cisco ASR 9901 Router		
ASR-9901	Cisco ASR 9000 Series Aggregation Services Router 2-RU Fixed Port	Release 6.4.1
ASR-9901-FAN	Cisco ASR 9000 Series Aggregation Services Router 2-RU Fixed Port Fan Tray	Release 6.4.1
A9K-1600W-AC	Cisco ASR 9000 Series Aggregation Services Router 2-RU 1600W AC Power Module	Release 6.4.1
A9K-1600W-DC	Cisco ASR 9000 Series Aggregation Services Router 2-RU 1600W DC Power Module	Release 6.4.1
Cisco ASR 9902 Router		
ASR-9902	Cisco ASR 9902 2RU Chassis with fixed ports	Release 7.4.1
A99-RP-F	Cisco ASR 9900 Fixed Chassis Route Processor	Release 7.1.3
ASR-9902-4P-KIT	Cisco ASR 9902 4-Post Mounting Kit for 19-Inch and 23-Inch Rack	Release 7.4.1
ASR-9902-4P-KIT-L	ASR 9902 4-Post Mounting Kit for 19 and 23 inch Rack - Long	Release 7.4.1
ASR-9902-2P-KIT	Cisco ASR 9902 2-Post Mounting Kit for 19-Inch and 23-Inch Rack	Release 7.4.1
ASR-9902-CAB-MGMT	Cisco ASR 9902 Cable Management	Release 7.4.1
ASR-9902-FILTER	Cisco ASR 9902 Air Filter	Release 7.4.1
ASR-9902-FAN	Cisco ASR 9902 Fan Tray	Release 7.4.1
Cisco ASR 9903 Router		
ASR-9903	Cisco ASR 9903 Compact High-Performance Router with fixed ports and PEC (Port Expansion Card) slot.	Release 7.1.3
A99-RP-F	Cisco ASR 9900 Fixed Chassis Route Processor	Release 7.1.3
ASR-9903-FAN	Cisco ASR 9903 Router Fan Tray	Release 7.1.3
ASR-9903-4P-KIT	ASR 9903 4-Post Mounting Kit for 19-inch Rack	Release 7.1.3

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
ASR-9903-CAB-MGMT	ASR 9903 Cable Management Brackets	Release 7.1.3
ASR-9903-FILTER	ASR 9903 Air Filter	Release 7.1.3
Cisco ASR 9904 Router		
ASR-9904	Cisco ASR 9000 Series Aggregation Services Router 4-Slot 2 Line Card Slot Chassis, 6 RU	Release 6.1.2
ASR-9904-AC	Cisco ASR 9000 Series Aggregation Services Router 4-Slot 2 Line Card Slot AC Chassis w/ PEM V2	Release 6.1.2
ASR-9904-DC	Cisco ASR 9000 Series Aggregation Services Router 4-Slot 2 Line Card Slot DC Chassis w/ PEM V2	Release 6.1.2
ASR-9904-FAN	Cisco ASR 9000 Series Aggregation Services Router 4-Slot Fan Tray	Release 6.1.2
ASR-9904-FILTER	Cisco ASR 9000 Series Aggregation Services Router 4-Slot Filter	Release 6.1.2
ASR-9904-BAFFLE	Cisco ASR 9000 Series Aggregation Services Router 4-Slot Baffle	Release 6.1.2
Cisco ASR 9912 Router		
ASR-9912	Cisco ASR 9000 Series Aggregation Services Router 12-Slot 10 Line Card Slot Chassis	Release 6.1.2
ASR-9912-AC	Cisco ASR 9000 Series Aggregation Services Router 12-Slot 10 Line Card Slot AC Chassis w/ PEM V2	Release 6.1.2
ASR-9912-DC	Cisco ASR 9000 Series Aggregation Services Router 12-Slot 10 Line Card Slot DC Chassis w/ PEM V2	Release 6.1.2
A99-SFC3	Cisco ASR 9900 Switch Fabric Card 3	Release 6.5.15
ASR-9912-FAN	Cisco ASR 9000 Series Aggregation Services Router 12-Slot Fan Tray	Release 6.1.2
Cisco ASR 9922 Router		
ASR-9922	Cisco ASR 9922 20 Line Card Slot Chassis, 44 RU	Release 6.1.2
ASR-9922-AC	Cisco ASR 9000 Series Aggregation Services Router 22-Slot 20 Line Card Slot AC Chassis w/ PEM V2	Release 6.1.2
ASR-9922-DC	Cisco ASR 9000 Series Aggregation Services Router 22-Slot 20 Line Card Slot DC Chassis w/ PEM V2	Release 6.1.2
A99-SFC3	Cisco ASR 9900 Switch Fabric Card 3	Release 6.5.15
ASR-9922-FAN-V3	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Fan Tray version 3	Release 6.5.15

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
ASR-9922-FLTR-CV2	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Air Filter with Media, Center	Release 6.1.2
ASR-9922-FLTR-LR	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Air Filter with Media, Left & Right	Release 6.1.2
ASR-9922-RP-FILR	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Route Processor Filler	Release 6.1.2
ASR-9922-FAN-V2	Cisco ASR 9000 Series Aggregation Services Router 22-Slot Version 2 Fan Tray	Release 6.1.2
Cisco ASR 9006 Router		
ASR-9006-SYS	Cisco ASR 9000 Series Aggregation Services Router 6-Slot System	Release 6.1.2
ASR-9006-AC-V2	Cisco ASR 9000 Series Aggregation Services Router 6-Slot AC Chassis Version 2	Release 6.1.2
ASR-9006-DC-V2	Cisco ASR 9000 Series Aggregation Services Router 6-Slot DC Chassis Version 2	Release 6.1.2
ASR-9006-FAN	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Fan Tray	Release 6.1.2
ASR-9006-FAN-V2	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Version 2 Fan Tray	Release 6.1.2
ASR-9006-DOOR	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Door Kit	Release 6.1.2
ASR-9006-FILTER	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Air Filter	Release 6.1.2
Cisco ASR 9906 Router		
ASR-9906	Cisco ASR 9000 Series Aggregation Services Router 6-Slot chassis	Release 6.3.1
ASR-9906-FAN	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Fan Tray	Release 6.3.1
ASR-9906-FILTER	Cisco ASR 9000 Series Aggregation Services Router 6-Slot Fan Filter	Release 6.3.1
A99-SFC3-T	ASR 9906 Switch Fabric Card	Release 6.5.15
Cisco ASR 9010 Router		
ASR-9010-SYS	Cisco ASR 9000 Series Aggregation Services Router 10-Slot System	Release 6.1.2
ASR-9010-AC-V2	Cisco ASR 9000 Series Aggregation Services Router 10-Slot AC Chassis Version 2	Release 6.1.2
ASR-9010-DC-V2	Cisco ASR 9000 Series Aggregation Services Router 10-Slot DC Chassis Version 2	Release 6.1.2
ASR-9010-FAN	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Fan Tray	Release 6.1.2

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
ASR-9010-FAN-V2	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Version 2 Fan Tray	Release 6.1.2
ASR-9010-DOOR	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Door Kit	Release 6.1.2
ASR-9010-2P-KIT	Cisco ASR 9000 Series Aggregation Services Router 2 Post Mounting Kit	Release 6.1.2
ASR-9010-4P-KIT	Cisco ASR 9000 Series Aggregation Services Router 4 Post Mounting Kit	Release 6.1.2
ASR-9010-FILTER	Cisco ASR 9000 Series Aggregation Services Router 10-Slot Air Filter	Release 6.1.2
Cisco ASR 9910 Router		
ASR-9910	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) System	Release 6.2.1
ASR-9910-FAN	Cisco ASR 9000 Series Aggregation Services Router 10-Slot(9910) Fan Tray	Release 6.2.1
ASR-9910-ACC-KIT	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Accessory Kit	Release 6.2.1
ASR-9910-4P-KIT	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) 4 Post Rack Mounting Kit	Release 6.2.1
ASR-9910-2P-KIT	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) 2 Post Rack Mounting Kit	Release 6.2.1
ASR-9910-AIRREF	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Air Reflector	Release 6.2.1
ASR-9910-FILTER	Cisco ASR 9000 Series Aggregation Services Router 10-Slot (9910) Air Filter	Release 6.2.1
A99-SFC3-S	ASR 9910 Switch Fabric Card 3	Release 6.5.15
Cisco ASR 9000 Series Aggregation Services Router - Route Switch Processor Cards		
A9K-RSP5-X-SE	ASR 9000 Series Route Switch Processor 5 for Service Edge, Premium	Release 7.6.2
A9K-RSP5-X-TR	ASR 9000 Series Route Switch Processor 5 for Packet Transport, Premium	Release 7.6.2
A9K-RSP5-SE	ASR 9000 Route Switch Processor 5 for Service Edge	Release 6.5.15
A9K-RSP5-TR	ASR 9000 Route Switch Processor 5 for Packet Transport	Release 6.5.15
Cisco ASR 9000 Series Aggregation Services Router - Power Modules		
PWR-2KW-DC-V2	Cisco ASR 9000 Series Aggregation Services Router 2KW DC Power Module, version 2	Release 6.1.2

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
PWR-3KW-AC-V2	Cisco ASR 9000 Series Aggregation Services Router 3KW AC Power Module, version 2	Release 6.1.2
A9K-AC-PEM-V2	Cisco ASR 9000 Series Aggregation Services Router AC Power Entry Module Version 2	Release 6.1.2
A9K-DC-PEM-V2	Cisco ASR 9000 Series Aggregation Services Router DC Power Entry Module Version 2	Release 6.1.2
A9K-PEM-V2-FILR	Cisco ASR 9000 Series Aggregation Services Router Power Entry Module Version 2 Filler	Release 6.1.2
A9K-AC-PEM-V3	Cisco ASR 9000 Series Aggregation Services Router AC Power Enclosure Module Version 3	Release 6.1.2
A9K-DC-PEM-V3	Cisco ASR 9000 Series Aggregation Services Router DC Power Enclosure Module Version 3	Release 6.1.2
PWR-6KW-AC-V3	Cisco ASR 9000 Series Aggregation Services Router 6kW AC Power Module Version 3	Release 6.1.2
PWR-4.4KW-DC-V3	Cisco ASR 9000 Series Aggregation Services Router 4.4kW DC Power Module Version 3	Release 6.1.2
PWR-1.6KW-AC	ASR 9900 Fixed Chassis AC Power Supply	Release 7.1.25
PWR-1.6KW-DC	ASR 9900 Fixed Chassis DC Power Supply	Release 7.1.25
Cisco ASR 9000 Series Aggregation Services Router - Line Cards		
A99-4HG-FLEX-X-SE	ASR 9900 400GE Combo Service Edge Line Card Enhanced - 5th Generation	Release 25.2.1
A9K-4HG-FLEX-X-SE	ASR 9000 400GE Combo Service Edge Line Card Enhanced - 5th Generation	Release 25.1.1
A9K-4HG-FLEX-SE	ASR 9000 400GE Combo Service Edge Line Card - 5th Generation	Release 7.4.1
A9K-4HG-FLEX-TR	ASR 9000 400GE Combo Packet Transport Line Card - 5th Generation	Release 7.4.1
A99-4HG-FLEX-SE	ASR 9900 400GE Combo Service Edge Line Card - 5th Generation	Release 7.4.1
A99-4HG-FLEX-TR	ASR 9900 400GE Combo Packet Transport Line Card - 5th Generation	Release 7.4.1
A9903-8HG-PEC	ASR 9903 800G Multi-rate Port Expansion Card	Release 7.4.1
A99-10X400GE-X-SE	ASR 9900 4T Service Edge Line Card - 5th Generation	Release 7.3.1

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
A99-10X400GE-X-TR	ASR 9900 4T Packet Transport Line Card - 5th Generation	Release 7.3.1
A9903-20HG-PEC	ASR 9903 2T Multi-rate Port Expansion Card	Release 7.1.3
A99-32X100GE-X-SE	ASR 9000 32-Port 100GE QSFP28/QSFP+ Service Edge optimized Line Card - 5th Generation	Release 7.1.15
A99-32X100GE-X-TR	ASR 9000 32-Port 100GE QSFP28/QSFP+ Packet Transport optimized Line Card - 5th Generation	Release 7.1.15
A9K-20HG-FLEX-SE	ASR 9000 2T Service Edge Combo Line Card - 5th Generation	Release 7.1.15
A9K-20HG-FLEX-TR	ASR 9000 2T Packet Transport Combo Line Card - 5th Generation	Release 7.1.15
A9K-8HG-FLEX-SE	ASR 9000 800G Service Edge Combo Line Card - 5th Generation	Release 7.1.15
A9K-8HG-FLEX-TR	ASR 9000 800G Packet Transport Combo Line Card - 5th Generation	Release 7.1.15
A9K-16X100GE-TR	ASR 9000 16-port 100GE QSFP TR line card	Release 6.5.15
A99-32X100GE-TR	ASR 9900 32-port 100GE QSFP TR line card	Release 6.5.15
A99-48X10GE-1G-SE	ASR 9000 48 port dual rate 10G/1G Service Edge line card	Release 6.5.2
A99-48X10GE-1G-TR	ASR 9000 48 port dual rate 10G/1G Transport Optimised line card	Release 6.5.2
A99-16X100GE-X-SE	ASR 9900 16-port 100GE QSFP SE	Release 6.5.3
A9K-48X10GE-1G-CM	ASR 9000 48-port dual-rate 10G/1G Consumption Model line card	Release 6.4.1
A9K-24X10GE-1G-CM	ASR 9000 24-port dual-rate 10G/1G Consumption Model line card	Release 6.4.1
A9K-48X10GE-1G-SE	ASR9000 48-port dual-rate 10G/1G service edge-optimized line card	Release 6.3.2
A9K-48X10GE-1G-TR	ASR9000 48-port dual-rate 10G/1G packet transport-optimized line card	Release 6.3.2
A9K-24X10GE-1G-SE	ASR9000 24-port dual-rate 10G/1G service edge-optimized line card	Release 6.3.2

Part Number	Description	Support Initially Provided in IOS XR 64 bit Release
A9K-24X10GE-1G-TR	ASR9000 24-port dual-rate 10G/1G packet transport-optimized line card	Release 6.3.2
Cisco ASR 9000 Series Aggregation Services Router - Modular Line Cards		
A9K-MOD400-CM	Cisco ASR 9000 Modular 400G Consumption Model Line Card	Release 6.2.1
A9K-MOD400-SE	Cisco ASR 9000 Series Aggregation Services Router 400 Gigabyte Modular Line Card, Service Edge Optimized	Release 6.2.1
A9K-MOD400-TR	Cisco ASR 9000 Series Aggregation Services Router 400 Gigabyte Modular Line Card, Packet Transport Optimized	Release 6.2.1
Cisco ASR 9000 Series Aggregation Services Router - Modular Port Adapters (MPAs)		
A9K-MPA-1X200GE	Cisco ASR 9000 1-port 200-Gigabit Ethernet MPA, requires CFP2-DCO optics	Release 6.6.2
A9K-MPA-32X1GE	Cisco ASR 9000 32-port 1-Gigabit Ethernet MPA with MACSec	Release 6.6.2
A9K-MPA20X10GE-CM	Cisco ASR 9000 20x10GE Consumption Model MPA	Release 6.5.1
A9K-MPA2X100GE-CM	Cisco ASR 9000 2x100GE Consumption Model MPA	Release 6.5.1
A9K-MPA-1X100GE	Cisco ASR 9000 Series Aggregation Services Router 1-port 100-Gigabit Modular Port Adapter	Release 6.3.1
A9K-MPA-2X100GE	Cisco ASR 9000 Series Aggregation Services Router 2-port 100-Gigabit Modular Port Adapter	Release 6.2.2
A9K-MPA-20x10GE	20-Port 10-Gigabit Ethernet Modular Port Adapter with SFP+	Release 6.2.1
A9K-MPA-8X10GE	Cisco ASR 9000 Series Aggregation Services Router 8-port 10GE Modular Port Adapter	Release 6.3.2
A9K-MPA-4X10GE	Cisco ASR 9000 Series Aggregation Services Router 4-port 10GE Modular Port Adapter	Release 6.2.1
A9K-MPA-20X1GE	Cisco ASR 9000 Series Aggregation Services Router 20-port 1GE Modular Port Adapter	Release 6.2.1
A9K-MPA-2X40GE	Cisco ASR 9000 Series Aggregation Services Router 2-port 40GE Modular Port Adapter	Release 6.3.1

Supported software packages

Feature set (software images)

Visit the [Cisco Software Download](#) page to download the Cisco IOS XR software.

Cisco IOS XR 64 bit

This table lists the feature set matrix (ISO and RPM files) and associated filenames available for the Cisco IOS XR 64 bit 26.1.1 Release supported on the Cisco ASR 9000 Series Aggregation Services Router.

Table 4. Cisco IOS XR 64 bit Software Release 26.1.1 TAR Files

Feature Set	Filename	Description
Cisco IOS XR IP/MPLS Core Software [for RSP and RP systems]	ASR9K-x64-iosxr-px-26.1.1.tar	Cisco IOS XR Manageability Package Cisco IOS XR MPLS Package Cisco IOS XR MPLS -TE and RSVP Package Cisco IOS XR Multicast Package Cisco IOS XR Optics Package Cisco IOS XR BNG Package Cisco IOS XR Lawful Intercept Package Cisco IOS XR Satellite Package Cisco IOS XR EIGRP Package Cisco IOS XR ISIS Package Cisco IOS XR OSPF Package Cisco IOS XR Service Package
Cisco IOS XR IP/MPLS Core Software 3DES [for RSP and RP systems]	ASR9K-x64-iosxr-px-k9-26.1.1.tar	Cisco IOS XR Manageability Package Cisco IOS XR MPLS Package Cisco IOS XR MPLS -TE and RSVP Package Cisco IOS XR Multicast Package Cisco IOS XR Optics Package Cisco IOS XR BNG Package Cisco IOS XR Lawful Intercept Package Cisco IOS XR Satellite Package Cisco IOS XR Security Package Cisco IOS XR EIGRP Package Cisco IOS XR ISIS Package Cisco IOS XR OSPF Package Cisco IOS XR Service Package
Cisco IOS XR IP Unicast Routing Core Bundle and Migration to IOS XR 64 bit tar image	asr9k-mini-x64-migrate_to_eXR.tar-26.1.1	Contains the required core packages, including OS, Admin, Base, Forwarding, Modular Services Card, Routing, FPD, SNMP Agent, and Alarm Correlation. Contains mini.iso file for XR 64 bit 24.3.2 and additional software for migration to 64 bit.

Table 5. Cisco IOS XR 64 bit Software Release 26.1.1 ISO and RPM Files

Feature Set	Filename	Description
Composite Package		
Cisco IOS XR IP Unicast Routing Core Bundle	asr9k-mini-x64-26.1.1.iso	Contains the required core packages, including OS, Admin, Base, Forwarding, Modular Services Card, Routing, FPD, SNMP Agent, and Alarm Correlation. The mini iso file is used for upgrading to the new release.
Individually Installable Optional Packages		
Cisco IOS XR 64 bit EIGRP package	asr9k-eigrp-x64-1.0.0.0-r2611.x86_64.rpm	Includes EIGRP protocol support software

Feature Set	Filename	Description
Cisco IOS XR BNG Package	asr9k-bng-x64-1.1.0.0-r2611.x86_64.rpm	Includes binaries to support BNG features.
Cisco IOS XR 64 bit ISIS package	asr9k-isis-x64-1.1.0.0-r2611.x86_64.rpm	Includes IS-IS Link state protocol support software
Cisco IOS XR 64 bit OSPF package	asr9k-ospf-x64-1.1.0.0-r2611.x86_64.rpm	Includes OSPF link state protocol support software
Cisco IOS XR Manageability Package	asr9k-mgbl-x64-3.0.0.0-r2611.x86_64.rpm	CORBA2 agent, XML3 Parser, and HTTP server packages. This RPM also contains some SNMP MIB infrastructure. Certain MIBs won't work if this RPM is not installed. IPSLA and environment MIBs are part of the mgbl rpm.
Cisco IOS XR 64 bit MPLS-TE and RSVP package	asr9k-mpls-te-rsvp-x64-1.2.0.0-r2611.x86_64.rpm	MPLS Traffic Engineering (MPLS-TE), Resource Reservation Protocol (RSVP).
Cisco IOS XR 64 bit MPLS Package	asr9k-mpls-x64-2.1.0.0-r2611.x86_64.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 64 bit Multicast Package	asr9k-mcast-x64-2.0.0.0-r2611.x86_64.rpm	Multicast Routing Protocols (PIM, Multicast Source Discovery Protocol [MSDP], Internet Group Management Protocol [IGMP], Auto-RP), Tools (SAP, MTrace), and Infrastructure [(Multicast Routing Information Base [MRIB], Multicast-Unicast RIB [MURIB], Multicast forwarding [MFWD]), and Bidirectional Protocol Independent Multicast (BIDIR-PIM).
Cisco IOS XR 64 bit Optics Package	asr9k-optic-x64-1.0.0.0-r2611.x86_64.rpm	Firmware for the optics feature for Cisco ASR 9000 Series Aggregation Services Router Chassis. It enables Transport / OTN feature under interfaces.
Cisco IOS XR 64 bit Lawful Intercept (LI) Package	asr9k-li-x64-1.1.0.0-r2611.x86_64.rpm	Includes LI software images.
Cisco IOS XR Security Package	asr9k-k9sec-x64-3.1.0.0-r2611.x86_64.rpm	Support for Encryption, Decryption,, Secure Shell (SSH), Secure Socket Layer (SSL), and Public-key infrastructure (PKI).
Cisco IOS XR Satellite Package - ASR9000v	asr9k-9000v-nV-x64-1.0.0.0-r2611.x86_64.rpm	Includes RPM to support Cisco ASR9000v Series Router Software and to support Cisco ASR 9000v Series Router as a satellite for Cisco ASR 9000 Series Router
Cisco IOS XR 64 bit Services Package	asr9k-services-x64-1.0.0.0-r2611.x86_64.rpm	Includes RPM to support Cisco IOS XR 64-bit inline MAP-T function

Related resources

Table 6. Related resources

Resource	Description
Cisco feature finder	Assists in locating features introduced across Cisco IOS XR releases and platforms.
Smart licensing	Provides information about Smart Licensing Using Policy solutions and their deployment on IOS XR routers.
Cisco ASR 9000 documentation	Provides CDC documentation for Cisco ASR 9000 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.
Cisco IOS XR MIBs	Allows selecting the MIB of your choice from a drop-down to explore an extensive repository of MIB information.
Feature deprecation and removal details	Outlines the features currently supported by each operating system.
Feature deprecation phasing out insecure capabilities	Provides a list of insecure features and protocols that are scheduled for systematic deprecation and eventual removal from specified Cisco products.
Feature removal and suggested alternatives	Details the reasons why certain features or protocols are deemed insecure and offers secure alternatives when available.
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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