



Introduction

This release notes contain information about the Cisco ASR 920 Series Aggregation Services Routers, provides new and changed information for these routers, hardware support, limitations and restrictions, and caveats.



Note Explore the [Content Hub](#), the all new portal that offers an enhanced product documentation experience.

- Use faceted search to locate content that is most relevant to you.
- Create customized PDFs for ready reference.
- Benefit from context-based recommendations.

Get started with the Content Hub at content.cisco.com to craft a personalized documentation experience.

Do provide feedback about your experience with the Content Hub.

This release notes provides information for these variants of the Cisco ASR 920 Series Routers:

- ASR-920-12CZ-A
- ASR-920-12CZ-D
- ASR-920-4SZ-A
- ASR-920-4SZ-D
- ASR-920-10SZ-PD
- ASR-920-24SZ-IM
- ASR-920-24SZ-M
- ASR-920-24TZ-M
- ASR-920-12SZ-IM
- ASR-920-20SZ-M
- ASR-920-12SZ-A
- ASR-920-12SZ-D
- ASR-920-8S4Z-PD

- Cisco ASR 920 Series Routers Overview, on page 2
- Feature Navigator, on page 2
- Determining the Software Version, on page 2
- Supported HoFPGA Versions, on page 2
- Software Licensing Overview, on page 6
- Limitations and Restrictions on the Cisco ASR 920 Series Routers, on page 7
- Field Notices and Bulletins, on page 9
- MIB Support, on page 9
- Accessibility Features in the Cisco ASR 920 Series Routers, on page 9
- End-of-Life and End-of-Sale Notices, on page 9
- Additional References, on page 9

Cisco ASR 920 Series Routers Overview

The Cisco ASR 920 Series Aggregation Services Routers provide a comprehensive and scalable set of Layer 2 and Layer 3 VPN services in a compact package. They are temperature-hardened, small form factor, with high throughput and low power consumption ideal for mobile backhaul, business services and residential voice, video, and data ("triple-play") applications.

Feature Navigator

Use the Cisco Feature Navigator to find information about feature, platform, and software image support. To access the Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on cisco.com is not required.

Determining the Software Version

Use the following commands to verify your software version:

- Consolidated Package— **show version**

Supported HoFPGA Versions

The tables below list the HoFPGA version of the software releases.

Table 1: HoFPGA Versions for the Cisco ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, and ASR-920-10SZ-PD

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.7	0X00040044

Table 2: HoFPGA Versions for the Cisco ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, and ASR-920-10SZ-PD

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.6	0X00040044

Table 3: HoFPGA Versions for the Cisco ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, and ASR-920-10SZ-PD

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.5	0X00030014

Table 4: HoFPGA Versions for the Cisco ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, and ASR-920-10SZ-PD

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.4	0X00030014

Table 5: HoFPGA Versions for the Cisco ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, and ASR-920-10SZ-PD

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.3	0X00040036

Table 6: HoFPGA Versions for the Cisco ASR-920-12CZ-A, ASR-920-12CZ-D, ASR-920-4SZ-A, ASR-920-4SZ-D, and ASR-920-10SZ-PD

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.1	0X00020029

Table 7: HoFPGA Versions for the Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, and ASR-920-24TZ-M

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.7	0X00030016

Table 8: HoFPGA Versions for the Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, and ASR-920-24TZ-M

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.6	0X00030015

Table 9: HoFPGA Versions for the Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, and ASR-920-24TZ-M

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.5	0X00030014

Table 10: HoFPGA Versions for the Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, and ASR-920-24TZ-M

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.4	0X00030014

Table 11: HoFPGA Versions for the Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, and ASR-920-24TZ-M

Release	HoFPGA Version	Gigabit Ethernet Interface Module (Phase 1) FPGA	Gigabit Ethernet Interface Module (Phase2) FPGA	8 T1/E1	32 T1/E1
Cisco IOS XE Fuji 16.9.3	0X0003000a	0.47	69.22	0.54	0.46

Table 12: HoFPGA Versions for the Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, and ASR-920-24TZ-M

Release	HoFPGA Version	Gigabit Ethernet Interface Module (Phase 1) FPGA	Gigabit Ethernet Interface Module (Phase2) FPGA	8 T1/E1	32 T1/E1
Cisco IOS XE Fuji 16.9.1	0X0003000a	0.47	69.24	0.54	0.46

Table 13: HoFPGA Versions for the Cisco ASR-920-12SZ-IM

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.7	0X0003001e

Table 14: HoFPGA Versions for the Cisco ASR-920-12SZ-IM

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.6	0X0003001C

Table 15: HoFPGA Versions for the Cisco ASR-920-12SZ-IM

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.5	0X0003001B

Table 16: HoFPGA Versions for the Cisco ASR-920-12SZ-IM

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.4	0X0003001B

Table 17: HoFPGA Versions for the Cisco ASR-920-12SZ-IM

Release	HoFPGA Version	Gigabit Ethernet Interface Module (Phase 1) FPGA	Gigabit Ethernet Interface Module (Phase2) FPGA	8 T1/E1	32 T1/E1
Cisco IOS XE Fuji 16.9.3	0X00010016	0.47	69.22	0.54	0.46

Table 18: HoFPGA Versions for the Cisco ASR-920-12SZ-IM

Release	HoFPGA Version	Gigabit Ethernet Interface Module (Phase 1) FPGA	Gigabit Ethernet Interface Module (Phase2) FPGA	8 T1/E1	32 T1/E1
Cisco IOS XE Fuji 16.9.1	0X00010016	0.47	69.24	0.54	0.46

Table 19: HoFPGA Versions for the Cisco ASR-920-12SZ-A, Cisco ASR-920-12SZ-D

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.7	0X00010040

Table 20: HoFPGA Versions for the Cisco ASR-920-12SZ-A, Cisco ASR-920-12SZ-D

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.6	0X00010040

Table 21: HoFPGA Versions for the Cisco ASR-920-12SZ-A, Cisco ASR-920-12SZ-D

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.5	0X00010039

Table 22: HoFPGA Versions for the Cisco ASR-920-12SZ-A, Cisco ASR-920-12SZ-D

Release	HoFPGA Version
Cisco IOS XE Fuji 16.9.4	0X00010039

Software Licensing Overview

Starting with Cisco IOS XE Cupertino 17.7.1, PAK licenses are no longer available. When you purchase the Cisco IOS XE Cupertino 17.7.1 release or later, Smart Licensing is enabled by default. We recommend that you move to Smart Licensing before upgrading to Cisco IOS XE Cupertino 17.7.1 or a higher release, for a seamless experience.

If you are using Cisco IOS XE Bengaluru 17.6.1 or an earlier release version, Smart Licensing is not enabled by default. To enable Smart Licensing, see [Software Activation Configuration Guide \(Cisco IOS XE ASR 920 Routers\)](#).

The router offers the following base licenses:

- Metro Services
- Metro IP Services
- Advanced Metro IP access
 - SDM Video Template

Table 23: Cisco ASR 920 Software Licenses Feature Set

Metro Services	Metro IP Services	Metro Aggregation Services
—	Includes all features in Metro Services	Includes all features in Metro IP Services

Metro Services	Metro IP Services	Metro Aggregation Services
QoS, with deep buffers and hierarchical QoS (HQoS)	IP routing (RIP, OSPF, EIGRP, BGP, IS-IS)	MPLS (LDP and VPN)
Layer 2: 802.1d, 802.1q	PIM (SM, DM, SSM), SSM mapping	MPLS TE and FRR
Ethernet Virtual Circuit (EVC)	BFD	MPLS OAM
Ethernet OAM (802.1ag, 802.3ah)	Multi-VRF CE (VRF lite) with service awareness (ARP, ping, SNMP, syslog, trace-route, FTP, TFTP)	MPLS-TP
Multiple Spanning Tree (MST) and Resilient Ethernet Protocol (REP)	IEEE 1588-2008 Ordinary Slave Clock and Transparent Clock	Pseudowire emulation (EoMPLS, CESoPSN, and SAToP)
Synchronous Ethernet	—	VPLS and HVPLS
IPv4 and IPv6 host connectivity	—	Pseudowire redundancy
—	—	MR-APS and mLACP

The router offers the following additional feature licenses:

- ATM
- IEEE 1588-2008 Boundary Clock/Master Clock
- OC-x Port License

Limitations and Restrictions on the Cisco ASR 920 Series Routers

- To downgrade from Cisco IOS XE Fuji 16.9.x release, always use a lower version of the ROMMON. If you downgrade with ROMMON version 15.6.(24r)S, it may result in a continuous boot loop and might crash.
- A downgrade from a secure FPGA image (image with a fix of caveats CSCvp67001, CSCvp86314, or CSCvp86329), to an image with nonsecure FPGA must not be attempted as it may result in the router getting stuck in a bootloop.
- IPsec is not supported on Cisco ASR-920-12SZ-A and Cisco ASR-920-12SZ-D routers in Cisco IOS XE Fuji 16.9.1 release.
- The default interface command is used to default the parameters under that interface. However, when speed is configured on the interface, the following error is displayed:

```
Speed is configured. Remove speed configuration before enabling auto-negotiation
```
- Adding or deleting the Trunk Ethernet flow points (TEFPs) with scaled bridge-domain, without delay causes the Cisco ASR 920 Series router to crash.
- Virtual services should be deactivated and uninstalled before performing replace operations.

- The Cisco ASR920 Series Routers no longer support the controller and nid-controller commands for the Cisco ME1200 switch.
- The following interface modules (IMs) do not require the activation command for IM boot up, provided no other IM is activated in subslot 0/1 before.

However, if an IM was activated in the system earlier, deactivate the previously activated IM before inserting a new IM in system.

- 16-Port T1/E1 Interface Module
 - 32-Port T1/E1 Interface Module
 - 8-Port T1/E1 Interface Module
 - 4-port OC3/STM-1 (OC-3) or 1-port OC12/STM-4 (OC-12) Interface Module
 - 14-Port Serial Interface Module
 - 6-Port E and M Interface Module
 - 4-Port C37.94 Interface Module
- RS422 works on ports 0–7 only.
 - Only the Cisco IOS XE Fuji 16.9.1 No Payload Encryption (NPE) image can be installed on the Cisco ASR-920-12SZ-A/Cisco ASR-920-12SZ-D routers.
 - GNSS OIR is not supported on the Cisco ASR-920-12SZ-A/D routers.
 - Traffic is dropped when packets of size 64–100 bytes are sent on 1G and 10G ports.
 - For 64-byte packets, traffic drop is seen at 70% and beyond of the line rate.
 - For 90-byte packets, traffic drop is seen at 90% and beyond of the line rate.
 - For 95-byte packets, traffic drop is seen at 95% and beyond of the line rate.
 - Traffic is dropped when:
 - Traffic is sent on a VRF interface.
 - Traffic is sent across layer 2 and layer 3.
 - The following restriction is applicable only to:
 - Cisco ASR-920-24SZ-IM, Cisco ASR-920-24SZ-M, and Cisco ASR-920-24TZ-M
 - Cisco ASR-920-12SZ-A and Cisco ASR-920-12SZ-D

However, traffic is not dropped when the packet size is greater than 100 bytes, even if the packets are sent bidirectionally at the line rate.

Important Notes



Note Port channel 61-64 is not supported in the 16.9.3 release. The range of configurable port channel interfaces has been limited to 60.

Field Notices and Bulletins

- Field Notices—We recommend that you view the field notices for this release to determine whether your software or hardware platforms are affected. You can find field notices at http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html.
- Bulletins—You can find bulletins at http://www.cisco.com/en/US/products/sw/iosswrel/ps5012/prod_literature.html.

MIB Support

To view supported MIB, go to <http://tools.cisco.com/ITDIT/MIBS/MainServlet>.

Accessibility Features in the Cisco ASR 920 Series Routers

For a list of accessibility features in Cisco ASR 920 Series Routers, see the [Voluntary Product Accessibility Template \(VPAT\)](#) on the Cisco website, or contact accessibility@cisco.com.

All product documents are accessible except for images, graphics, and some charts. If you would like to receive the product documentation in audio format, braille, or large print, contact accessibility@cisco.com.

End-of-Life and End-of-Sale Notices

For End-of-Life and End-of-Sale Notices for the Cisco ASR 920 Series Routers, see <http://www.cisco.com/c/en/us/products/routers/asr-920-series-aggregation-services-router/eos-eol-notice-listing.html>.

Additional References

Product Information

- [Cisco ASR 920 Series Aggregation Services Router Data Sheets](#)

Hardware Installation Guides

- [Cisco ASR 920 Series Aggregation Services Router Hardware Guides](#)

Software Configuration Guides

- [Cisco ASR 920 Series Aggregation Services Router Configuration Guides](#)

Regulatory Compliance and Safety Information

- [Regulatory Compliance and Safety Information for the Cisco ASR 920 Series Aggregation Services Routers](#)

Field Notices and Bulletins

- **Field Notices**—We recommend that you view the field notices for this release to determine whether your software or hardware platforms are affected. You can find field notices at http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html.
- **Bulletins**—You can find bulletins at http://www.cisco.com/en/US/products/sw/iosswrel/ps5012/prod_literature.html.

MIB Support

To view supported MIB, go to <http://tools.cisco.com/ITDIT/MIBS/MainServlet>.

Accessibility Features in the Cisco ASR 920 Series Routers

For a list of accessibility features in Cisco ASR 920 Series Routers, see the [Voluntary Product Accessibility Template \(VPAT\)](#) on the Cisco website, or contact accessibility@cisco.com.

All product documents are accessible except for images, graphics, and some charts. If you would like to receive the product documentation in audio format, braille, or large print, contact accessibility@cisco.com.

End-of-Life and End-of-Sale Notices

For End-of-Life and End-of-Sale Notices for the Cisco ASR 920 Series Routers, see <http://www.cisco.com/c/en/us/products/routers/asr-920-series-aggregation-services-router/eos-eol-notice-listing.html>.