



Release Notes for Cisco ASR 920 Series Aggregation Services Router, Cisco IOS XE Fuji 16.8.x

First Published: 2018-04-16

Americas Headquarters

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA http://www.cisco.com Tel: 408 526-4000

800 553-NETS (6387) Fax: 408 527-0883



CONTENTS

CHAPTER 1 Introduction 1

Cisco ASR 920 Series Routers Overview 2

Feature Navigator 2

Determining the Software Version 2

Supported HoFPGA Versions 2

Software Licensing Overview 3

Limitations and Restrictions on the Cisco ASR 920 Series Routers 4

Field Notices and Bulletins 5

MIB Support 5

Accessibility Features in the Cisco ASR 920 Series Routers 5

End-of-Life and End-of-Sale Notices 6

Additional References 6

CHAPTER 2 New Features 7

New Hardware Features in Cisco IOS XE Fuji 16.8.1c 7

New Hardware Features in Cisco IOS XE Fuji 16.8.1b 7

New Software Features in Cisco IOS XE Fuji 16.8.1c 7

New Software Features in Cisco IOS XE Fuji 16.8.1b 7

CHAPTER 3 Caveats 11

Cisco Bug Search Tool 11

Open Caveats – Cisco IOS XE Fuji 16.8.1c **11**

Open Caveats – Cisco IOS XE Fuji 16.8.1b 12

Resolved Caveats – Cisco IOS XE Fuji 16.8.1b 13



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 3
- Limitations and Restrictions on the Cisco ASR 920 Series Routers, on page 4
- Field Notices and Bulletins, on page 5
- MIB Support, on page 5
- Accessibility Features in the Cisco ASR 920 Series Routers, on page 5
- End-of-Life and End-of-Sale Notices, on page 6
- Additional References, on page 6

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 16.8.1	0X00020029

Table 2: 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 16.8.1	0X0003000a	0.47	69.24	0.54	0.46

Table 3: 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 16.8.1	0X00010013	0.47	69.24	0.54	0.46

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 4: 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
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

Metro Services	Metro IP Services	Metro Aggregation Services
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

• 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 from 0 to 7 only.
- The following restriction is applicable only to Cisco ASR-920-24SZ-IM, Cisco ASR-920-24SZ-M, and Cisco ASR-920-24TZ-M.
 - Traffic is dropped when packets of size 64 to 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.

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.

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.



New Features

This chapter describes the new hardware and software features supported on the Cisco ASR 920 Series Routers for this release.

- New Hardware Features in Cisco IOS XE Fuji 16.8.1c, on page 7
- New Hardware Features in Cisco IOS XE Fuji 16.8.1b, on page 7
- New Software Features in Cisco IOS XE Fuji 16.8.1c, on page 7
- New Software Features in Cisco IOS XE Fuji 16.8.1b, on page 7

New Hardware Features in Cisco IOS XE Fuji 16.8.1c

There are no new features in this release.

New Hardware Features in Cisco IOS XE Fuji 16.8.1b

There are no new hardware features in this release.

New Software Features in Cisco IOS XE Fuji 16.8.1c

There are no new features in this release.

New Software Features in Cisco IOS XE Fuji 16.8.1b

• Egress QoS for IPSLA

IPSLA packet classification is enabled in egress QoS. This feature enables you to apply classification and queueing on the egress interface for IPSLA packets. The egress interface can be either a Layer 2 interface under bridge domain interface (BDI) or a Layer 3 physical interface.

For more information on Egress QoS for IPSLA, see the Quality of Service Configuration Guidelines, Cisco IOS XE 16.8.x (Cisco ASR 920 Series).

The following new command is introduced for this feature:

· platform ipsla classify cpu packets

For more information on the new command, see the Cisco IOS Quality of Service Solutions Command Reference.

• IPv6 QoS support for SDM Template

SDM template is supported for IPv6 QoS. The resources supported for the IPv6 QoS SDM template are updated in the table detailing Feature Resources Allowed by Each SDM Template.

IPv4 ACL and IPv6 ACL are supported together as match criteria in a class-map. To configure more than one access-group per class, you can configure IPv6 ACL and IPv4 ACL configuration in any order in the class-map of policy map.

For more information on IPv6 QoS SDM template, see SDM Template Configuration Guide, Cisco IOS XE 16.8.x (Cisco ASR 920 Series).

Programmability

- Model-Based AAA— Implements the NETCONF Access Control Model (NACM). NACM is a form of role-based access control (RBAC) specified in RFC 6536.
- NETCONF Global Session Lock and Kill Session—Provides a global lock and the ability to kill
 non-responsive sessions in NETCONF. During a session conflict or client misuse of the global lock,
 NETCONF sessions can be monitored via the show netconf-yang sessions command, and
 non-responsive sessions can be cleared using the clear configuration lock command.
- NETCONF and RESTCONF Debug commands—Commands for debugging were added.
- NETCONF and RESTCONF IPv6 Support—Data model interfaces (DMIs) support the use of IPv6 protocol. DMI IPv6 support helps client applications to communicate with services that use IPv6 addresses. External facing interfaces will provide dual-stack support; both IPv4 and IPv6.
- YANG Data Models—For the list of Cisco IOS XE YANG models available with this release, navigate to https://github.com/YangModels/yang/tree/master/vendor/cisco/xe/1681

Revision statements embedded in the YANG files indicate if there has been a model revision. The README.md file in the same github location highlights changes that have been made in the release.

For more information on the Programmability features, see the Programmability Configuration Guide, Cisco IOS XE Fuji 16.8.x.

• Support of DS1 Framed Structure-Agnostic TDM over Packet (SAToP)

Framed Structure-Agnostic TDM over Packet (SAToP) detects an incoming AIS alarm in the DS1 SAToP mode. Framed SAToP helps in the detection of a packet drop and enhances performance by detecting the alarm earlier in the network. This feature is supported on the following interface module:

• 1-port OC-48/STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-port T3/E3 CEM Interface Module



Note

BERT is not supported in system direction for framed SAToP.

For more information on loopback remote configuration, see 1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module Configuration Guide, Cisco IOS XE Fuji 16.8.x (ASR 920 Series Routers).

The cem-group group-number command is updated with the new keyword framed as follows:

• cem-group group-number framed

For more information on the command, see the Cisco IOS Interface and Hardware Component Command Reference.

• Support of DS3 Circuit Emulation over Packet (CEP)

DS3 Circuit Emulation over Packet (CEP) feature is introduced to achieve STS-1 or VC4 CEP configuration on the interface module. Here, T3 or E3 can be mapped to either STS-1 or VC4 to be emulated on a packet network.

This feature is supported on the following interface module:

• 1 port OC-48/4 port OC-12/OC-3 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module

For more information, see 1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 CEM Interface Module Configuration Guide.

The show **controllers t3** command is updated with the new keyword path as follows:

show controllers t3 path

For more information on the updated command, see Cisco IOS Interface and Hardware Component Command Reference.

Support for Seven Level Priority Queues

The Cisco ASR 920 routers now support seven priority levels: level 1 (high) and level 7 (low). The device places traffic with a high-priority level on the outbound link ahead of traffic with a low-priority level. High-priority packets, therefore, are not delayed behind low-priority packets. For more information, see the QoS: Congestion Management Configuration Guide, Cisco IOS XE 16.8.x (Cisco ASR 920).

VPLS over Backup Pseudowire

Pseudowire redundancy allows you to detect any failure in the network and reroute the Layer 2 service to another endpoint that can continue to provide service by providing additional backup pseudowire. This feature provides the ability to recover from a failure of either the remote provider edge (PE) router or the link between the PE and customer edge (CE) routers.

For more information, see the MPLS Layer 2 VPNs Configuration Guide, Cisco IOS XE Fuji 16.8.x (Cisco ASR 920 Series).

New Software Features in Cisco IOS XE Fuji 16.8.1b



Caveats

This chapter describes open and resolved severity 1 and 2 caveats and select severity 3 caveats:

- The "Open Caveats" sections list open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved.
- The "Resolved Caveats" sections list caveats resolved in a specific release, but open in previous releases.

The bug IDs are sorted alphanumerically.



Note

The Caveats section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat you must use the Bug Search Tool.

- Cisco Bug Search Tool, on page 11
- Open Caveats Cisco IOS XE Fuji 16.8.1c, on page 11
- Open Caveats Cisco IOS XE Fuji 16.8.1b, on page 12
- Resolved Caveats Cisco IOS XE Fuji 16.8.1b, on page 13

Cisco Bug Search Tool

Cisco Bug Search Tool (BST), the online successor to Bug Toolkit, is designed to improve effectiveness in network risk management and device troubleshooting. You can search for bugs based on product, release, and keyword, and aggregates key data such as bug details, product, and version. For more details on the tool, see the help page located at http://www.cisco.com/web/applicat/cbsshelp/help.html

Open Caveats — Cisco IOS XE Fuji 16.8.1c

Caveat ID Number	Description
CSCvg00947	Serial IM LEDs shows inconsistent behavior while performing SSO
CSCvg75263	RSP3 SYSTEM PCS - Abnormal logging messages seen in RSP3 devices
CSCvg84653	PCIE_INTERRUPT_PIN set to 0 in Cisco RSP3 Module

Caveat ID Number	Description
CSCvi15065	RSP2: IOSXE-1-PLATFORM: R1/0: kernel: related logs post reload and SSO on RSP2 node
CSCvi56083	Last reload reason shown as poweron after kernel crash in active and standby RSP2
CSCvi58231	OC3 IOMD Crashes Many Times on ISSU from V167 To V168_1 build
CSCvi72321	THS: Ping for 1G on 10G fails on device with 1G on 10G mode
CSCvi81829	rs232 raw-socket, serial IM: CPU-HOG Traceback seen while performing ISSU and SSO
CSCvi88157	Traceback pointing to "celebrn_geim_set_port_enable" seen after port sh/no shut
CSCvj28545	rs422 service is not working on ports 0 to 3
CSCvj30845	in rs422 only 8 databits works, for other values traffic is broken

Open Caveats – Cisco IOS XE Fuji 16.8.1b

Caveat ID Number	Description
CSCvd58258	IOS-XE display issue show hw-module subslot X/X transceiver X idprom detail
CSCvf96598	RSP2 : ~15sec loss traffic for /HSPW service on ISSU/sso
CSCvg01047	G275.2 disqualified the dynamic port even before it completely negotiated the session
CSCvg08374	Trace back logs are seen on Striker while loading polaris baseline image
CSCvg23724	QOS fails to secure teleprotection traffic on MLPPP interface
CSCvh05198	Class-map association to policy-map dynamically throws debug errors on logging
CSCvh77376	Cisco ASR-920-12SZ-IM and ASR-920U-12SZ-IM: Chassis Fails to drop to rommon after a crash
CSCvi04483	ASR920:EOMPLS traffic drop - Imposition FID and Disposition label is set to "NULL"
CSCvi06424	ASR920:Traffic fails after moving/relearning mac-address from EFP to Xconnect interface
CSCvi10095	ASR920 : UDLD Err Disable (Admin down) observed on performing reload operations
CSCvi12362	Convergence coming high on doing local_shut on Cisco ASR-920-24SZ-IM, ASR-920-24SZ-M, ASR-920-24TZ-M
CSCvi48029	IOT: Device crashes after upgrade to 16.8.1

Resolved Caveats – Cisco IOS XE Fuji 16.8.1b

Caveat ID Number	Description
CSCvc27630	Tx Packets or Tx Bytes generated is always lesser than configured rate-steps
CSCvd75495	Wrong marking for locally generated packet of BFD,LDP, and BGP
CSCvd87285	ASR920 - Display issue - Egress i/f and L2 stats shows "unknown" and no packet drops
CSCvf10783	Cisco IOS XE Software for Cisco ASR 920 Series Routers Arbitrary File Overwrite Vulnerability
CSCvf49124	ASR920-12SZ-IM: Mgmt default gateway not reachable with 16.6.1 polaris image
CSCvf68605	DHCP Snooping Database restore/renew failing on all ASR903/ASR920 variants
CSCvf69983	Packets not looped back 100% for LLF-external when Responder present in MIP
CSCvf80056	MAC-FLAP-Syslog-Not generated for TEFP BDs
CSCvf80724	ASR920 VPLS A-S PW : Complete traffic drop (imp and disp) over VPLS Act PW
CSCvf99074	ASR-920-10SZ-PD Sees Ping Loss on Built-in Te 0/0/10 or 0/0/11 Port and CRC / MAC Errors at Peer End
CSCvg04717	RSP2A-64 and RSP2A-128 FPGA: DDR Busy and Calibration handling in FPGA software driver
CSCvg14825	Require varbind entSensorPrecision,Scale & Type along with trap entSensorThresholdNotification
CSCvg15807	ASR920 : BDI interface went down over REP ports on triggering EEM script for DUAL_RATE_CHANGE
CSCvg21893	Unexpected traffic was sent out from ASR920 access port from REP ring
CSCvg21899	Traffic forwarding not happening for VLANs added via "encap dot1q add" command in TEFP
CSCvg23956	RSP2: VPLS Backup PW: Enable member bdi CLI under l2vpn xconnect context
CSCvg26930	Ten Gig interface going into admin down state after one gig shut down
CSCvg31959	MLPQ does not work on dynamic modification of queue-limit in higher priority level class.
CSCvg36200	IPv4 deny ACL applied in the BDI is blocking L2 switched traffic under certain conditions
CSCvg44405	WRT : storm-control unable to fetch correct level in percentage value, hence failing to take action

Caveat ID Number	Description
CSCvg53877	Egress QOS Fails when speed is changed at interface via nego auto, speed cli command
CSCvg63915	ASR920: 2 Xconnect TDL Messages Leaked in Cylon_Mgr on "show running-config"
CSCvg77754	Dynamic application of class is not allowed to the policy-map which has DSCP followed by v4/v6 ACL
CSCvg79798	"ZTP reset" as last reload reason in IOS when ZTP button pressed > 8sec
CSCvg83081	Fixed Ports moving to admin down state after IMA8S insertion
CSCvg85163	ZTP not triggered with Gratuitous ARP
CSCvg88049	RSP2A-64 and RSP2A-128 : Remove IOS syslog message for link status IDLE
CSCvg93982	IOS XE entSensorThresholdNotification trap is not generated for Card Temperature
CSCvh03346	Fan speed display in IOS not matching the actual written value and read value
CSCvh06736	Device crashes on dynamically attaching a class to a policy .
CSCvh20282	Cisco ASR-920-12SZ-IM and ASR-920U-12SZ-IM: Traffic is not flooding on all the interface for same TEFP BD
CSCvh51154	Dest-mac + type-field in Ethernet header checks need to be added for G-arp packets to trigger ZTP
CSCvh83722	ASR920: All BFD Sessions Down as FPGA Stuck due to invalid Packet Length and Offset Error in DDR3
CSCvi06424	ASR920:Traffic fails after moving/relearning mac-address from EFP to Xconnect interface
CSCvf45581	QoS: Configuration failed. Cannot configure more than one access-group per class

 $^{\tiny{\textcircled{\scriptsize 0}}}$ 2017 Cisco Systems, Inc. All rights reserved.