Release Notes for Cisco ASR 920 Series Aggregation Services Router, Cisco IOS XE Fuji 16.7.x

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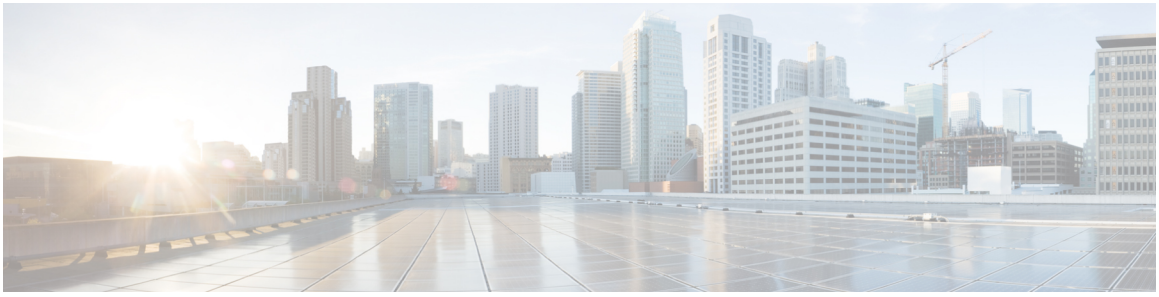
Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883



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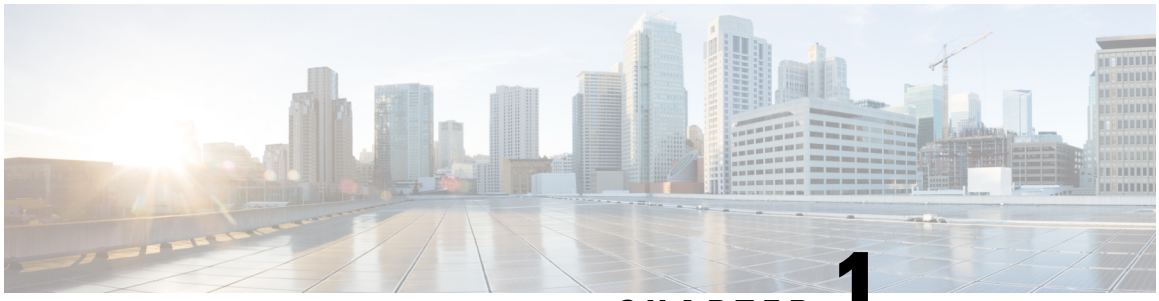

CHAPTER 1

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 for Cisco IOS XE Fuji 16.7.1.

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

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 16.7.1	0X0001001e

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
Cisco IOS XE Fuji 16.7.1	0X00030007	0.47	69.22	0.54 (0x36)

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 16.7.1	0x00010010	0.47	69.22	0.54 (0x36)	0.46

Software Licensing Overview

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
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

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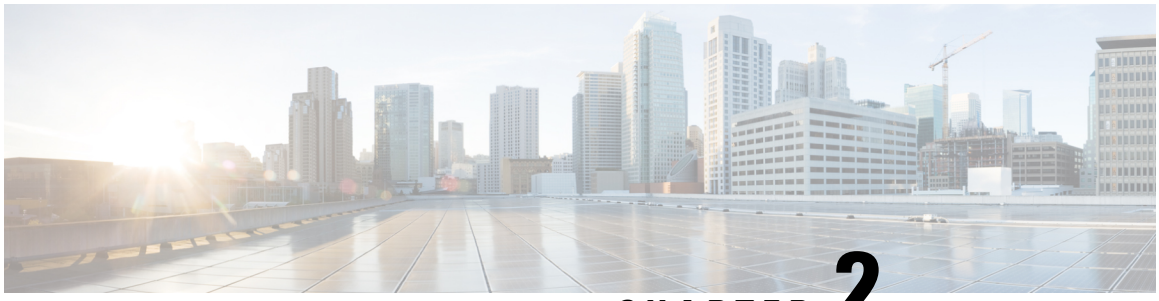


CHAPTER 2

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 16.7.2

There are no new hardware features in Cisco IOS XE Fuji 16.7.2.

New Software Features in Cisco IOS XE Fuji 16.7.2

There are no new software features in Cisco IOS XE Fuji 16.7.2.

New Hardware Features in Cisco IOS XE Fuji 16.7.1

- **4-port OC48/OC12/OC3 + 12-port T1/E1 + 4-port T3/E3 CEM Interface Module**

  The A900-IMA3G-IMSG interface module supports:

  - 12xDS1/E1 + 4xDS3/E3/STS-1e + 4xOC3/12/1GE or 1xOC48 interface over the high-density port

  For more information on supported ports, see Cisco ASR 920 Series Aggregation Services Router Hardware Installation Guide.

New Software Features in Cisco IOS XE Fuji 16.7.1

- **3G Synchronous Digital Hierarchy Support**

  Synchronous Digital Hierarchy (SDH) is supported on the 3G mode on 1-port OC48/ 4-port OC12/OC3 + 12-port T1/E1 + 4-port T3/E3 CEM Interface Module.

For more information, see Configuring SDH.

- **Latching Loopback**

  The Cisco ASR 920 routers supports latching loopback on the ASR 920 RSP2 module.

  For more information, see *Carrier Ethernet Configuration Guide Cisco IOS XE Fuji 16.7.x*.

- **Layer 2 Control Protocol**

  You can forward, tunnel, or discard Multiple Registration Protocol (MRP), Multiple VLAN Registration Protocol (MMRP) or Multiple MAC Registration Protocol (MVRP) for a service instance on an ethernet interface.

  For more information, see *Carrier Ethernet Configuration Guide, Cisco IOS XE Fuji 16.7.x*.

- **Port Licensing Support**

  The Cisco Software License Activation feature is a set of processes and components to activate Cisco IOS XE software feature sets by obtaining and validating fee-based Cisco software licenses. You should enable the license only for OCx ports on 1-port OC48/ 4-port OC12/OC3 + 12-port T1/E1 + 4-port T3/E3 CEM Interface Module. Use the **platform enable controller Mediatype** command to enable aparticular license type on the controller port.

  Note License is not required for the ports 0-15 (DSx ports).

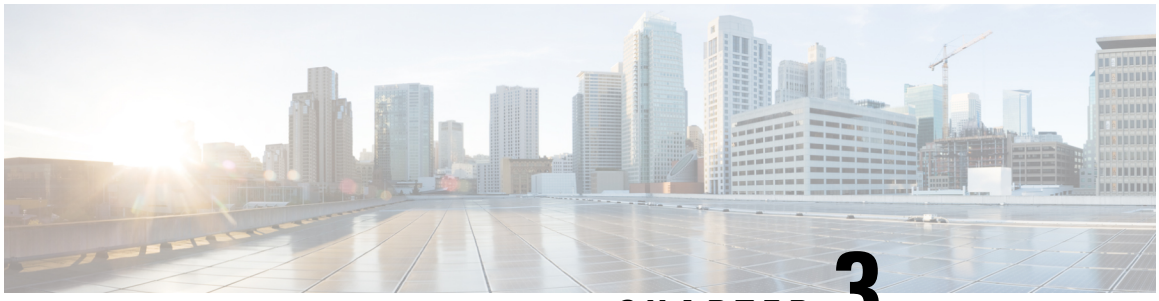
  For more information, see Configuring Support of 1 port OC48/ 4 port OC12/OC3 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module.

- **Programmability**

  Yet Another Next Generation (YANG) data-modelling language – A Data Modelling Language for the Network Configuration Protocol (NETCONF), which replaces the process of manual configuration with a programmatic and standards-based way of writing configurations to any network device. It supports the automation of configuration for multiple switches across the network using data models.

  RESTCONF - provides a programmatic interface based on standard mechanisms for accessing configuration data, state data, data-model-specific Remote Procedure Call (RPC) operations and event notifications defined in the YANG model.

  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/1671. 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, see Programmability Configuration Guide, Cisco IOS XE Fuji 16.7.1.



CHAPTER 3

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

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 16.7.2

Caveat ID Number	Description
CSCve00923	SR_OSPF: High conv observed with LDP labeled in primary path and unlabeled/imp null backup path.

Caveat ID Number	Description
CSCvi41441	ASR920 monitor session configuration without destination interface blocks ISIS on source interface.

Resolved Caveats – Cisco IOS XE Fuji 16.7.2

Caveat ID Number	Description
CSCvh55399	T1 service latency is asymmetric in a simple linear topology.
CSCvf46252	ASR920 crash in cylon_mgr when MPLS TE interface shut down.
CSCvf80724	ASR920 VPLS A-S PW: Complete traffic drop (imp and disp) over VPLS Act PW.
CSCvf99074	ASR-920-10SZ-PD: Ping loss on built-in Te 0/0/10 or 0/0/11 port and CRC or MAC errors at peer end.
CSCvg21893	Unexpected traffic sent out from ASR920 access port from REP ring.
CSCvg70173	ASR920: Not able to configure xconnect untagged service instance with EVPN under the same interface.
CSCvg79798	ZTP reset as last reload reason in IOS when ZTP button pressed greater than 8 seconds.
CSCvh03346	Fan speed display in IOS not matching the actual written value and read value.
CSCvh41777	Removal of the policy from the service instance under a tengig interface causes traffic loss
CSCvi06424	Traffic fails after moving or relearning mac-address from EFP to Xconnect interface.
CSCvg36200	IPv4 deny ACL applied in the BDI is blocking L2 switched traffic under certain conditions.
CSCvg53877	Egress QOS fails when speed is changed at interface through nego auto, speed CLI command.
CSCvg85163	ZTP not triggered with gratuitous ARP.
CSCvg21899	Traffic forwarding not happening for VLANs added through **encap dot1q add** command in TEFP.
CSCvg86559	ASR920: Cylon_Mgr resources leaked on multiple occurrences of primary core BFD session flaps
CSCvh03346	Fan speed display in IOS not matching the actual written value and read value.
CSCvh22799	ASR-920-12SZ-IM: Ports 4 to7 no traffic flow on TDM IM removal and inserting Gigabit Ethernet IM.
CSCvh86486	ASR-920-12SZ-IM: CIsco ASR 920 routers issue with sfp-h10gb-cu1m cabling.

Caveat ID Number	Description
CSCvi44683	ASR920 REP: Not able to achieve less than 50 ms convergence.
CSCvc27630	Tx packets or Tx bytes generated is always lesser than configured rate-steps.

Open Caveats – Cisco IOS XE Fuji 16.7.1

Caveat ID Number	Description
CSCvf97552	dualrate_eem_policy does not succeed during port mode change which causes BDI Ping failure
CSCvg08224	G8265.1: PTP flaps between Holdover and Locked with 64/64 packet rate and HOTSTANDBY
CSCvg21899	Traffic forwarding not happening for VLANs added via **encap dot1q add** command in TEFP
CSCvg26930	Ten Gig interface going into admin down state after one gig shut down
CSCvg42314	ASR920: Random BFD Flap seen on ASR920

Resolved Caveats – Cisco IOS XE Fuji 16.7.1

Caveat ID Number	Description
CSCvd75495	Wrong marking for locally generated packet of BFD,LDP, and BGP
CSCvf10783	Cisco IOS XE Software for Cisco ASR 920 Series Routers Arbitrary File Overwrite Vulnerability
CSCvf68605	DHCP Snooping Database restore/renew failing on all ASR903/ASR920 variants