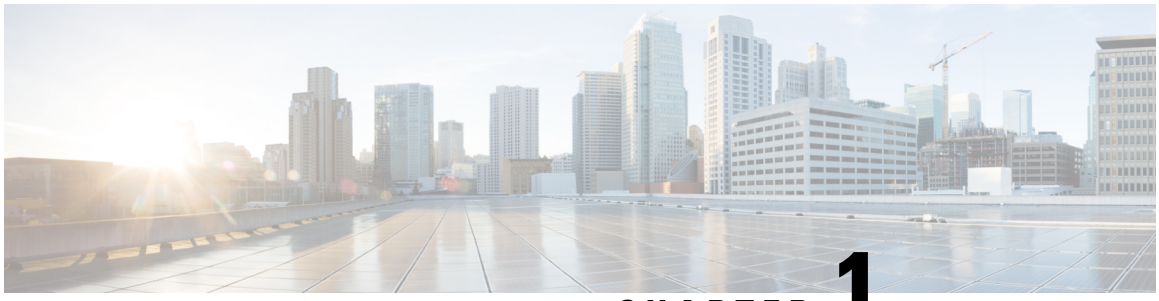
Release Notes for Cisco ASR 900 Series Routers, Cisco IOS XE Fuji 16.7.x

First Published: 2018-05-31

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

The Cisco ASR 900 Series Routers are full-featured, modular aggregation platforms designed for the cost-effective delivery of converged mobile, residential, and business services. This document provides information about the IOS XE software release for the Cisco ASR 900 Series Routers beginning with Release Cisco IOS XE Fuji 16.7.1.

Overview of Cisco ASR 900 Series Routers

Cisco ASR 900 Series Router

The Cisco ASR 900 Series Router is a fully-featured routing platform designed for the cost-effective delivery of converged mobile and business services. With full redundancy, shallow depth, low power consumption and high service scale, this 3-rack-unit (3RU) router is optimized for small aggregation and remote point-of-presence (POP) applications. The Cisco ASR 900 Series Router provides a rich and scalable feature set of Legacy, Timing, Carrier Ethernet, Layer 2 VPN (L2VPN) and Layer 3 VPN (L3VPN) services in a compact package.

The Cisco ASR 900 Series Router is a fully modular platform with support for upto 6-Interface Modules (IMs), two Route Switch Processor (RSP) slots, two power supplies and redundant fans, based on the router model. Cisco offers a wide choice of LAN and WAN interfaces available in speeds ranging from nxDS0 to 10 Gigabit Ethernet. The design of the Cisco ASR 900 Series Router delivers in-box hardware redundancy for all hardware components and supports software redundancy with In Service Software Upgrade (ISSU) and Non-Stop Forwarding (NSF) support.

Cisco ASR 902 Router

The Cisco ASR 902 Router is a full-featured aggregation platform designed for cost-effective delivery of converged mobile and business services. With shallow depth, low power consumption, and an extended temperature range, this compact 2-rack unit (2RU) router provides high service scale and flexible hardware configuration.

Cisco ASR 903 Router

The Cisco ASR 903 Series Aggregation Services Router is a Cisco aggregation router product. This router uses an innovative and powerful forwarding technology known as the Cisco Carrier Ethernet ASIC.

The Cisco ASR 903 Series Router is a 6-Interface Module (IM), 3-RU, hardware-redundant chassis with two Route Switch Processor (RSP) slots, and six IM slots. It supports fully redundant RSPs that allow for full RSP hardware redundancy, NSF, ISSU, and future RSP service upgrades.

Cisco ASR 907 Router

The Cisco ASR 907 Router seven-rack (7RU) unit router that belongs to the Cisco ASR90x family of routers. This router complements Cisco's offerings for IP RAN solutions for the GSM, UMTS, LTE and CDMA. Given its form-factor, interface types and Gigabit Ethernet density the Cisco ASR 907 Router can also be positioned as a Carrier Ethernet aggregation platform.

The Cisco ASR 907 Router is a cost optimized, fully redundant, centralized forwarding, extended temperature, and flexible pre-aggregation router.

Feature Navigator

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

Hardware Support

Cisco ASR 902 Supported Interface Modules

A900-RSP2-Supported Interface Modules (ASR 902 Router)

Table 1: A900-RSP2-Supported Interface Modules and Part Numbers

RSP	Interface Modules	Part Numbers	Slots
A900-RSP2A-128 A900U-RSP2A-128	8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	All
	8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	
	1-port 10-Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	
	16-port T1/E1 Interface Module	A900-IMA16D	
	4-port OC3/STM-1 (OC-3) or 1-port OC12/STM-4 (OC-12) Interface Module	A900-IMA4OS	
	SFP Combo IM—8-port Gigabit Ethernet (8x1GE) + 1-port 10-Gigabit Ethernet (1x10GE)	A900-IMA8S1Z	
	Copper Combo IM—8-port Gigabit Ethernet (8x1GE) + 1-port 10-Gigabit Ethernet Interface Module (1x10GE)	A900-IMA8T1Z	
	2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	
	14-port Serial Interface Module	A900-IMASER14A/S	

RSP	Interface Modules	Part Numbers	Slots
	4-port C37.94 Interface Module	A900-IMA4C3794	
A900-RSP2A-64 A900U-RSP2A-64	1-port 10 Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	0-2
	2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	
	4-port OC3/STM-1 (OC-3) or 1-port OC12/STM-4 (OC-12) Interface Module	A900-IMA4OS	
	8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	0, 2 and 3
	8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	
	16-port T1/E1 Interface Module	A900-IMA16D	
	32-port T1/E1 Interface Module	A900-IMA32D	
	8-port T1/E1 Interface Module	A900-IMA8D	
	6-port E & M Interface Module	A900-IMA6EM	
	14-port Serial Interface Module	A900-IMASER14A/S	
	4-port C37.94 Interface Module	A900-IMA4C3794	

A900-RSP3C-200-S Supported Interface Modules (ASR 902 Router)

Table 2: A900-RSP3C-200 Supported Interface Modules and Part Numbers

RSP Module	Supported Interface Modules	Part Numbers	Slot
A900-RSP3C-200-S	8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	All[1]
	8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	
	1-port 10 Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	0 and 1
	SFP Combo IM—8-port Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet (1x10GE)	A900-IMA8S1Z	All
	Copper Combo IM—8-port Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet Interface Module (1x10GE)	A900-IMA8T1Z	
	2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	
	8-port 10 Gigabit Ethernet Interface Module (8x10GE)	A900-IMA8Z	0
	2-port 40 Gigabit Ethernet QSFP Interface Module (2x40GE)	A900-IMA2F	

[1] There are restrictions using the interface modules in different slots with RSP3 module. Contact Cisco Sales/Support for the valid combinations..

Cisco ASR 903 Supported Interface Modules

A900-RSP2 Supported Interface Modules

A900-IMA2Z IM supports SFP+ and XFP on ports 0 and 1. Either SFP+ or XFP can be connected on each port. If both are connected on the same port, the port will go down.

The combination IMs (A900-IMA8S1Z, A900-IMA8T1Z) are not supported on the A900-RSP2-64 RSP module on the Cisco ASR 903 Router.

The table below is applicable for A900-RSP2A-128 and A900U-RSP2A-128 RSP modules.

Table 3: A900-RSP2A-128 Supported Interface Modules and Part Numbers

Supported Interface Modules	Part Numbers	Slot
1-port OC48/ STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-Port T1/E1 + 4-Port T3/E3 CEM Interface Module	A900-IMA3G-IMSG	2,3,4,5

Supported Interface Modules	Part Numbers	Slot
8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	All
8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	
1-port 10 Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	
16-port T1/E1 Interface Module	A900-IMA16D	
32-port T1/E1 Interface Module	A900-IMA32D	
8-portT1/E1 Interface Module	A900-IMA8D	
4-port OC3/STM-1 (OC-3) or 1-port OC12/STM-4 (OC-12) Interface Module	A900-IMA4OS	
SFP Combo IM—8-port SFP Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet (1x10GE)	A900-IMA8S1Z	
Copper Combo IM—8-port 10/100/1000 Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet Interface Module (1x10GE)	A900-IMA8T1Z	
2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	
6-port E & M Interface Module	A900-IMA6EM	
14-port Serial Interface Module	A900-IMASER14A/S	
4-port C37.94 Interface Module	A900-IMA4C3794	

The table below is applicable for A900-RSP2A-64 and A900U-RSP2A-64 RSP modules.

Table 4: A900-RSP2A-64 Supported Interface Modules and Part Numbers

Supported Interface Modules	Part Numbers	Slot
1-port 10 Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	0-2
2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	
4-port OC3/STM-1 (OC-3) or 1-port OC12/STM-4 (OC-12) Interface Module	A900-IMA4OS	

Supported Interface Modules	Part Numbers	Slot
8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	3-5
8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	
16-port T1/E1 Interface Module	A900-IMA16D	
32-port T1/E1 Interface Module	A900-IMA32D	
8-port T1/E1 Interface Module	A900-IMA8D	
6-port E & M Interface Module	A900-IMA6EM	
14-port Serial Interface Module	A900-IMASER14A/S	
4-port C37.94 Interface Module	A900-IMA4C3794	

A900-RSP3C-400-S Supported Interface Modules

The table below is applicable for A900-RSP3C-400-S RSP module.

Note There are certain restrictions in using the interface modules on different slots with RSP3 module. Contact Cisco Sales/Support for the valid combinations.

Table 5: A900-RSP3C-400 Supported Interface Modules and Part Numbers

Supported Interface Modules	Part Numbers	Slot
8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	All
8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	All
1-port 10 Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	All
SFP Combo IM—8-port SFP Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet (1x10GE)	A900-IMA8S1Z	All
Copper Combo IM—8-port 10/100/1000 Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet Interface Module (1x10GE)	A900-IMA8T1Z	All
2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	All
8-port 10 Gigabit Ethernet Interface Module (8x10GE)	A900-IMA8Z	All
1-port 100 Gigabit Ethernet Interface Module (1x100GE)	A900-IMA1C	4 or 5
2-port 100 Gigabit Ethernet (QSFP) Interface Module (2x100GE)	N560-IMA2C	4 and 5[2]

Supported Interface Modules	Part Numbers	Slot
2-port 40 Gigabit Ethernet QSFP Interface Module (2x40GE)	A900-IMA2F	4 or 5
8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module	A900-IMA8CS1Z-M	0,3,4 or 5
48-port T1/E1 Interface module	A900-IMA48D-C	All
48-port T3/E3 Interface module	A900-IMA48T-C	All
1-port OC-192 or 8-Port Low Rate CEM Interface Module	A900-IMA8S1Z-CX	All
4-port OC-48/OC-12/OC-3 + 12-Port A900-IMA3G-IMSG T1/E1 + 4-Port T3/E3 CEM Interface Module	A900-IMA3G-IMSG	All
6-port E & M Interface Module	A900-IMA6EM	All
4-port C37.94 Interface Module	A900-IMA4C3794	All

[2] IM supports only one port of 100G with RSP3 as QSFP28 on Port 0 in both slots 4 and 5.

A900-RSP3C-200-S Supported Interface Modules

The table below is applicable for A900-RSP3C-200-S RSP module.

Note There are certain restrictions in using the interface modules on different slots with RSP3 module. Contact Cisco Sales/Support for the valid combinations.

Note FAN OIR is applicable every time the IM based fan speed profile is switched to the IMA1C and IMA2F interface modules. Even though the IMs remain in the Out-of-Service state, they are still considered as present in the chassis.

Table 6: A900-RSP3C-200 Supported Interface Modules and Part Numbers

Supported Interface Modules	Part Numbers	Slot
8-port Gigabit Ethernet SFP Interface Module (8x1GE)	A900-IMA8S	All
8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8x1GE)	A900-IMA8T	
1-port 10 Gigabit Ethernet XFP Interface Module (1x10GE)	A900-IMA1X	0, 2 or 4

Supported Interface Modules	Part Numbers	Slot
SFP Combo IM—8-port SFP Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet (1x10GE)	A900-IMA8S1Z	1-5[3]
Copper Combo IM—8-port 10/100/1000 Gigabit Ethernet (8x1GE) + 1-port 10 Gigabit Ethernet Interface Module (1x10GE)	A900-IMA8T1Z	0-4
2-port 10 Gigabit Ethernet Interface Module (2x10GE)	A900-IMA2Z	
8-port 10 Gigabit Ethernet Interface Module (8x10GE)	A900-IMA8Z	4
2-port 40 Gigabit Ethernet QSFP Interface Module (2x40GE)	A900-IMA2F	4
4-port OC-48/OC-12/OC-3 + 12-Port A900-IMA3G-IMSG T1/E1 + 4-Port T3/E3 CEM Interface Module	A900-IMA3G-IMSG	2-5[4]
4-port C37.94 Interface Module	A900-IMA4C3794	4
6-port E & M Interface Module	A900-IMA6EM	4

[3] If you have a 1-port 10G IM in slot 0, then SFP combo may not be supported in slot 5.
[4] If slot 0 has 8X10G IM and you want to insert IMA-3G-IMSG to slot 5, then insert 8X10G IM on slot 6, by using the **hw-module subslot 0/0 A900-IMA8Z mode 6-Port** command.

Cisco ASR 907 Supported Interface Modules

Supported Interface Modules

Note There are certain restrictions in using the interface modules on different slots in the chassis. Contact Cisco Sales and Support for the valid combinations.

Table 7: A900-RSP3 Supported Interface Modules and Part Numbers

RSP Module	Interface Modules	Part Number	Slot
A900-RSP3C-400-W	8-port Gigabit Ethernet SFP Interface Module (8X1GE)	A900-IMA8S	0,1,2,5,6,9,10,13,14,15
	8-port Gigabit Ethernet RJ45 (Copper) Interface Module (8X1GE)	A900-IMA8T	0,1,2,5,6,9,10,13,14,15
	1-port 10 Gigabit Ethernet XFP Interface Module (1X10GE)	A900-IMA1X	Not Supported
	SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet (1X10GE)	ASR900-IMA8S1Z	2,5,6,9,10,13,14,15
	Copper Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet Interface Module (1X10GE)	ASR900-IMA8T1Z	2,5,6,9,10,13,14,15
	2-port 10 Gigabit Ethernet Interface Module (2X10GE)	ASR900-IMA2Z	3,4,7,8,11,12
	16-port T1/E1 Interface Module	A900-IMA16D	Not Supported
	14-port Serial Interface Module	A900-IMASER14A/S	Not Supported
	8-port T1/E1 Interface Module	A900-IMA8D	Not Supported
	32-port T1/E1 Interface Module	A900-IMA32D	Not Supported
	1x100G Interface module	A900-IMA1C	7 and 8
	2-port 100 Gigabit Ethernet (QSFP) Interface Module (2X100GE)	A900-IMA2C	7 and 8[5]
	2x40G Interface module	A900-IMA2F	3,4,7,8,11,12
	8x10G Interface module	A900-IMA8Z[6]	3,4,7,8,11,12
	8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module	A900-IMA8CS1Z-M	0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15
	1-port OC-192 or 8-Port Low Rate CEM Interface Module	A900-IMA8S1Z-CX	3,4,7,8,11,12 (10 G Mode) 0,1,2,5,6,9,10,13,14,15 (5 G Mode)
	48-port T1/E1 Interface module	A900-IMA48D-C	2,3,4,5,6,7,8,9,10,11,12,13,14,15
	48-port T3/E3 Interface module	A900-IMA48T-C	2,3,4,5,6,7,8,9,10,11,12,13,14,15
		A900-IMA3G-IMSG	3,5,7,9,11,13,15

RSP Module	Interface Modules	Part Number	Slot
	1-port OC48/ STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-Port T1/E1 + 4-Port T3/E3 CEM Interface Module		

	Combo 8-Port SFP GE and 1-Port 10GE With CEM/iMSG 20G Interface Module	A900-IMA1Z8S-CXMS	3, 7, 11[7]
			4, 8, 12[8]
			5, 9, 13, 15[9]
			Note To enable this IM on slot 0 or slot 1, do the following and reload the router:
			`Router# configure t`
			`Router(config)# license feature service-offload enable`

[5] IM supports only one port of 100G with RSP3 as QSFP28 on Port 0 in both slots 7 and 8.
[6] Six IM slots are supported with various combinations but only five IM slots are functional at a time.
[7] These slots are supported on 10G or 20G mode.
[8] These slots are supported on 10G or 20G mode, only if the adjacent odd slots are empty.
[9] These slots are supported on 10G mode.

Feature Matrix

The feature matrix lists the features supported for each platform. For more information, see the Cisco ASR 900 Series Aggregation Services Routers Feature Compatibility Matrix on Cisco.com.

The cumulative Feature Compatibility Release Matrix is available on Content Hub.

Software Licensing Overview

The router offers the following base licenses:

- Metro Services
- Metro IP Services
- Metro Aggregation Services

Table 8: Cisco ASR 900 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-overview- Port License

Note These features require a software license to use.

Determining the Software Version

You can use the following commands to verify your software version:

- Consolidated Package—**show version**
- Individual sub-packages—**show version installed** (lists all installed packages)

Upgrading to a New Software Release

Only Cisco IOS XE Fuji 16.7.1 consolidated packages can be downloaded from Cisco.com; users who want to run the router using individual subpackages must first download the image from Cisco.com and extract the individual subpackages from the consolidated package.

For information about upgrading to a new software release, see the Cisco ASR 900 Series Router Configuration Guide.

ROMMON Version

We recommend you to upgrade the ROMMON version to 15.6(20r)S.

For more information on the ROMMON package, see Cisco Software Download.

Supported FPGA Versions

Use the show hw-module all fpd command to display the FPGA version on the router.

The below table lists the FPGA version for the software releases.

Note If there is an FPGA upgrade during ISSU, it will cause traffic disruption. TDM interface modules get reset irrespective of FPGA upgrade during the ISSU.

Table 9: IM FPGA Versions for all Ethernet Phase 1 and Phase 2 IMs

Cisco IOS XE Release	Gigabit Ethernet Interface Module (Phase 1) FPGA	Gigabit Ethernet Interface Module (Phase 2) FPGA	TDM Interface Module FPGA	RSP2 Module HoFPGA
16.7.1	• A900-IMA2Z — 0.47 • A900-IMA8T / A900-IMA8S — 0.47	• A900-IMA2Z — 69.22 • A900-IMA8T / A900-IMA8S — 69.24	—	0X00030005

Table 10: CEM FPGA Versions

Cisco IOS XE Release	48-port T1/E1 CEM Interface Module FPGA	48-port T3/E3 CEM Interface Module FPGA	1-port OC-192 Interface Module + 8-port Low Rate Interface Module FPGA
16.7.1	0x46410046	0x46410046	5G mode: 0x10780059 10G mode: 0x10120076

Table 11: IM FPGA Versions for ASR 903 RSP3 and ASR 907

Cisco IOS XE Release	IO FGPA	8 x10 FPGA	2x40 FPGA	1x100 FPGA
16.7.1	—	0.21	0.22	0.20

MIB Support

The below table summarizes the supported MIBs on the Cisco ASR 900 Series Router.

Table 12: Supported MIBs

Supported MIBs		
BGP4-MIB (RFC 1657)	CISCO-IMAGE-LICENSE-MGMT-MIB	MPLS-LDP-STD-MIB (RFC 3815)
CISCO-BGP-POLICY-ACCOUNTING-MIB	CISCO-IMAGE-MIB	MPLS-LSR-STD-MIB (RFC 3813)
CISCO-BGP4-MIB	CISCO-IPMROUTE-MIB	MPLS-TP-MIB
CISCO-BULK-FILE-MIB	CISCO-LICENSE-MGMT-MIB	MSDP-MIB
CISCO-CBP-TARGET-MIB	CISCO-MVPN-MIB	NOTIFICATION-LOG-MIB (RFC 3014)
CISCO-CDP-MIB	CISCO-NETSYNC-MIB	OSPF-MIB (RFC 1850)
CISCO-CEF-MIB	CISCO-OSPF-MIB	OSPF-TRAP-MIB (RFC 1850)
CISCO-CLASS-BASED-QOS-MIB	CISCO-OSPF-TRAP-MIB	PIM-MIB (RFC 2934)
CISCO-CONFIG-COPY-MIB	CISCO-PIM-MIB	RFC1213-MIB
CISCO-CONFIG-MAN-MIB	CISCO-PROCESS-MIB	RFC2982-MIB
CISCO-DATA-COLLECTION-MIB	CISCO-PRODUCTS-MIB	RMON-MIB (RFC 1757)
CISCO-EMBEDDED-EVENT-MGRMIB	CISCO-PTP-MIB	RSVP-MIB
CISCO-ENHANCED-MEMPOOL-MIB	CISCO-RF-MIB	SNMP-COMMUNITY-MIB (RFC 2576)
CISCO-ENTITY-ALARM-MIB	CISCO-RTTMON-MIB	SNMP-FRAMEWORK-MIB (RFC 2571)
CISCO-ENTITY-EXT-MIB	CISCO-SONET-MIB	SNMP-MPD-MIB (RFC 2572)
CISCO-ENTITY-FRU-CONTROLMIB	CISCO-SYSLOG-MIB	SNMP-NOTIFICATION-MIB (RFC 2573)
CISCO-ENTITY-SENSOR-MIB	DS1-MIB (RFC 2495)	SNMP-PROXY-MIB (RFC 2573)
CISCO-ENTITY-VENDORTYPE-OID-MIB	ENTITY-MIB (RFC 4133)	SNMP-TARGET-MIB (RFC 2573)
CISCO-FLASH-MIB	ENTITY-SENSOR-MIB (RFC 3433)	SNMP-USM-MIB (RFC 2574)
CISCO-FTP-CLIENT-MIB	ENTITY-STATE-MIB	SNMPv2-MIB (RFC 1907)
CISCO-IETF-ISIS-MIB	EVENT-MIB (RFC 2981)	SNMPv2-SMI
CISCO-IETF-PW-ATM-MIB	ETHERLIKE-MIB (RFC 3635)	SNMP-VIEW-BASED-ACM-MIB (RFC 2575)
CISCO-IETF-PW-ENET-MIB	IF-MIB (RFC 2863)	SONET-MIB
CISCO-IETF-PW-MIB	IGMP-STD-MIB (RFC 2933)	TCP-MIB (RFC 4022)
CISCO-IETF-PW-MPLS-MIB	IP-FORWARD-MIB	TUNNEL-MIB (RFC 4087)
CISCO-IETF-PW-TDM-MIB	IP-MIB (RFC 4293)	UDP-MIB (RFC 4113)

CISCO-IF-EXTENSION-MIB	IPMROUTE-STD-MIB (RFC 2932)	CISCO-FRAME-RELAY-MIB
CISCO-IGMP-FILTER-MIB	MPLS-LDP-GENERIC-STD-MIB (RFC 3815)	IF-MIB
CISCO-AAA-SERVER-MIB	—	—

Table 13: Unverified MIBs

Unverified MIBs		
ATM-MIB	CISCO-IETF-DHCP-SERVER-EXT-MIB	EXPRESSION-MIB
CISCO-ATM-EXT-MIB	—	HC-ALARM-MIB
CISCO-ATM-IF-MIB	CISCO-IETF-PPVPN-MPLS-VPN-MIB	HC-RMON-MIB
CISCO-ATM-PVC-MIB	CISCO-IP-STAT-MIB	IEEE8021-CFM-MIB
CISCO-ATM-PVCTRAP-EXTN-MIB	CISCO-IPSLA-ETHERNET-MIB	IEEE8021-CFM-V2-MIB
CISCO-BCP-MIB	CISCO-L2-CONTROL-MIB	IEEE8023-LAG-MIB
CISCO-CALLHOME-MIB	CISCO-LAG-MIB	INT-SERV-GUARANTEED-MIB
CISCO-CIRCUIT-INTERFACE-MIB	CISCO-MAC-NOTIFICATION-MIB	INTEGRATED-SERVICES-MIB
CISCO-CONTEXT-MAPPING-MIB	CISCO-MEMORY-POOL-MIB	MPLS-L3VPN-STD-MIB (RFC 4382)
CISCO-EIGRP-MIB	CISCO-NHRP-EXT-MIB	MPLS-LDP-ATM-STD-MIB (RFC 3815)
CISCO-ERM-MIB	CISCO-NTP-MIB	MPLS-LDP-MIB
CISCO-ETHER-CFM-MIB	CISCO-PING-MIB	MPLS-TE-STD-MIB
CISCO-ETHERLIKE-EXT-MIB	CISCO-RESILIENT-ETHERNET-PROTOCOL-MIB	MPLS-VPN-MIB
CISCO-EVC-MIB	CISCO-RTTMON-ICMP-MIB	NHRP-MIB
CISCO-HSRP-EXT-MIB	CISCO-RTTMON-IP-EXT-MIB	RFC2006-MIB (MIP)
CISCO-HSRP-MIB	CISCO-RTTMON-RTP-MIB	RMON2-MIB (RFC 2021)
CISCO-IETF-ATM2-PVCTRAP-MIB	CISCO-SNMP-TARGET-EXT-MIB	SMON-MIB
CISCO-IETF-ATM2-PVCTRAP-MIBEXTN	CISCO-TCP-MIB	VRRP-MIB
CISCO-IETF-BFD-MIB	CISCO-VRF-MIB	—
CISCO-IETF-DHCP-SERVER-MIB	ETHER-WIS (RFC 3637)	—

MIB Documentation

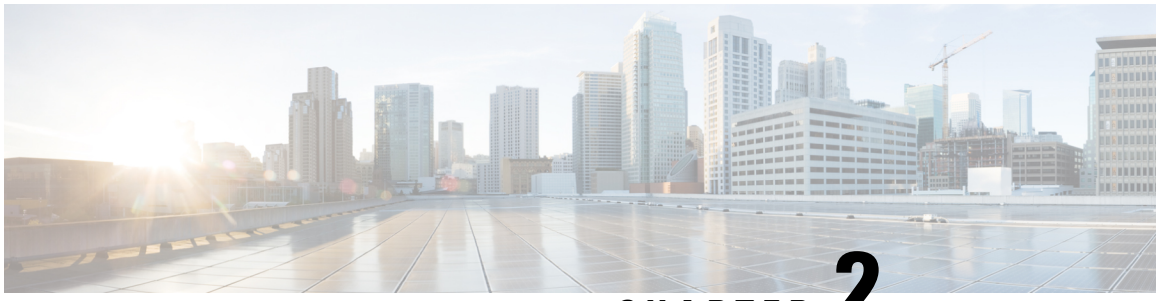
The following resources provide more detail about MIBs on the Cisco ASR 900 Series Router:

- Cisco ASR 900 Series Router MIB Guide—For information about the Cisco ASR 903 Series Router product implementation of the MIB protocol, see *Cisco ASR 903 Series Aggregation Services Router MIB Specifications Guide* at the following location:

  http://www.cisco.com/c/en/us/td/docs/wireless/asr_900/mib/guide/asr903mib.html

- MIB Locator—To locate and download MIBs for selected platforms, Cisco IOS and Cisco IOS XE releases, and feature sets, use Cisco MIB Locator found at the following location:

  http://tools.cisco.com/ITDIT/MIBS/servlet/index



CHAPTER 2

New Features

This chapter describes the new features supported on the Cisco IOS XE Fuji 16.7.1.

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

- **8/16-port 1 Gigabit Ethernet (SFP / SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module**

  The A900-IMA8CS1Z-M interface module has the flexibility to support SFP+/SFP/CSFP on the modules as mentioned below:

  - 1-port 10 Gigabit Ethernet Small Form-Factor Pluggable (SFP+) interface supports one of three modules as 1xSFP+, 1xSFP or 1xCSFP
  - 8-port Gigabit Ethernet Small Form-Factor Pluggable (SFP) interface supports as either 8xSFP or 8xCSFP

  For more information on supported ports, see Cisco ASR 903 and ASR 903U Aggregation Services Router Hardware Installation Guide, Cisco ASR 907 Router Hardware Installation Guide or Cisco ASR 914 Aggregation Services Router Hardware Installation Guide.

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

  The A900-IMA3G-IMSG interface module supports:

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

For more information on supported ports, see Cisco ASR 903 and ASR 903U Aggregation Services Router Hardware Installation Guide, or 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.

  Note You can configure STM-1 or STM-4 on all four ports. If you configure rate STM-16 on any of the four ports, others ports are not available.

  For more information on 3G, see Configuring SDH.

- **5G Synchronous Digital Hierarchy Support**

  Synchronous Digital Hierarchy (SDH) is supported on the 5G mode on 1-port OC192/STM-64 or 8-Port OC3/12/48/STM-1/-4/-16 Interface Module.

  Note The OC-192/STM-64 port is disabled in 5G mode.

  Ports 0-7 are available as STM-16, STM-4, and STM-1 ports. To achieve 5G traffic on the card, four ports are grouped. For example, 0-3 and 4-7 can provide a maximum traffic of 2.5G.

  Note If one of the port is configured as STM-16, the other ports in the group cannot be configured. If STM-4 or STM-1 rate is configured in any of the port groups, STM-16 cannot be configured.

  For more information on 5G, see Configuring 5G Mode on 1-Port OC192/STM-64 or 8-Port OC3/12/48/STM-1/-4/-16 Interface Module.

- **AIS Coreflap**

  New alarms are generated for AIS support during core failure for 8-port T1/E1 interface module and 16-port T1/E1 interface module on the Cisco ASR 903 platform. AIS alarms are generated to replace the normal traffic signal when it contains a defect. AIS alarms are generated and detected either when the TDM circuits go down on the access layer of the network topology or a failure occurs in the MPLS domain due to which SAToP connectivity goes down. For more information, see Cisco ASR 900 Router Series Configuration Guide, Cisco IOS XE Fuji 16.7.1.

- **Card Protection for 48-port T1/E1 CEM Interface Module and 48-port T3/E3 CEM Interface Module**

The card protection feature protects traffic when the interface module is out of service, a software failure occurs, or hardware issues are observed. Card protection is supported on primary and backup cards. Traffic is switched to the backup interface module when the primary interface module does not respond and vice versa. A new Y-cable is introduced to support the feature.

The following features are added in this release (Maintenance commands):

- Lockout
- Force
- Manual

Note This feature does not require any change in the patch panel of the interface modules.

For more information on DS1/DS3, see Card Protection for 48-port T1/E1 CEM Interface Module and 48-port T3/E3 CEM Interface Module.

- **CESoPSN**

  Effective Cisco IOS XE Fuji 16.7.1, the Cisco RSP3 module supports Circuit Emulation Service over Packet Switched Network (CESoPSN) features on the 48-Port T1/E1 CEM Interface Module, 48-Port T3/E3 CEM Interface Module, and 1-Port OC-192 or 8-Port Low Rate CEM Interface Module. The CESoPSN features include CEM group configuration, Bit-Error Rate Testing (BERT), Adaptive Clock Recovery (ACR), and Differential Clock Recovery (DCR).

  For more information, see 48-Port T1/E1 CEM Interface Module Configuration Guide, 48-Port T3/E3 CEM Interface Module Configuration Guide, and 1-Port OC-192 or 8-Port Low Rate CEM Interface Module Configuration Guide, Cisco IOS XE Fuji 16.7.1.

- **Configuring 8/16-port 1-Gigabit Ethernet (SFP / SFP) + 1-port 10-Gigabit Ethernet (SFP+) / 2-port 1-Gigabit Ethernet (CSFP)**

  This interface module operates on multiple port densities and operating modes to provide extended bandwidth. Each physical port can be extended to have 2 ports of 1 Gigabit Ethernet with the use of Compact-SFP (CSFP). Each port on CSFP acts as Transmitter or Receiver and connects to GLC-BX-U using a single strand fiber.

  The interface module has 8 physical ports of 1 Gigabit Ethernet and 1 physical port of 10 Gigabit Ethernet, but with the support of CSFP, it can support a maximum of 18 ports of 1 Gigabit Ethernet. For more information, see Configuring 8 / 16-port 1 Gigabit Ethernet (SFP / SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module.

- **EVC Egress Filtering for the Cisco RSP3 Module**

  EVC Filtering is used to filter out unmatched packets that go out as an attachment or access circuit, when the packets do not match a for a given tag format. The packets are filtered based on the matching tag format at the ingress point of the AC. At the egress point of the AC, the packets are matched based on VLAN parameters. If the packets do not match the expected VLAN tag format, then the packets are dropped.

  For more information, see Carrier Ethernet Configuration Guide, Cisco IOS XE Fuji 16.7.1.

- **FPGA based SAT Support on the RSP3 Module**

In FPGA based SAT, the FPGA generates and terminates the packets based on the IP SLA configurations. All measurements are performed in FPGA. For more information, see IP SLAs Configuration Guide, Cisco IOS XE Fuji 16.7.1.

- **Latching Loopback**

  The Cisco ASR 900 routers supports latching loopback on the RSP2 module.

  For more information, see Carrier Ethernet Configuration Guide Cisco IOS XE Fuji 16.7.1.

- **Layer 2 Control Protocol**

  Effective Cisco IOS XE Fuji 16.7.1, 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 16.7.1.

- **MAC Limiting Support for the Cisco RSP3 Module**

  MAC address limiting on the bridge domain feature is now supported for the Cisco RSP3 module.

  For more information, see Layer 2 Configuration Guide, Cisco IOS XE Fuji 16.7.1.

- **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 a particular 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.

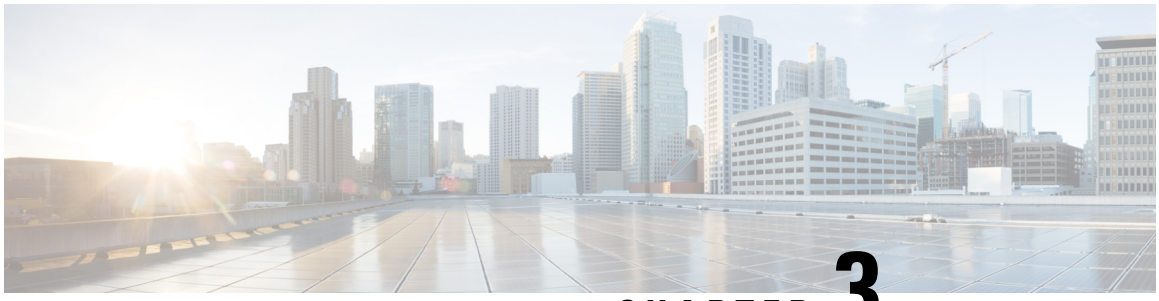
- **Support for BFD over IPv6 on Cisco RSP3**

BFD over IPv6 is now supported on the Cisco RSP3 module. For more information, see IP Routing: BFD Configuration Guide, Cisco IOS XE Fuji 16.7.1.

- **TCAM Scale Support for Ingress QoS**

  Effective Cisco IOS XE Fuji 16.7.1 release, the Cisco RSP3 module supports the Ternary Content Addressable Memory (TCAM) scale for ingress QoS. The TCAM scale increases to 2048 TCAM entries per Network Processor Unit for the ingress QoS policy maps.

  For more information, see Quality of Service Configuration Guidelines, Cisco IOS XE Everest 16.7.1 (Cisco ASR 900 Series).



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
CSCvf72165	RSP3 - Router crash after "debug platform condition" command is applied.
CSCvg06222	RSP3: ~30sec traffic loss for EOMPLS services during ReOpt after TE Node Protection trigger.
CSCvg06788	RSP3:3-10sec traffic loss for FlexLsp Tunnels (unidirectional) from HE to TE on Active path cutover.
CSCvh10730	BFD stuck at init state for Sessin ID 1023 alone on ASR903 RSP3C after link flap.
CSCvh51026	ASR903: Router unresponsive and hangs during boot-up while loading router with package image file.
CSCvh67319	ASR903: Router unresponsive during bootup with the packages.conf file.
CSCvi06358	Label and outgoing interface programmed wrongly for prefix in RSP3.
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
CSCvf03157	RSP3:PC stays in suspended state on IM OIR
CSCvf72154	RSP3 - PIM neighborship down on BDI interface due to packets ASIC loop.
CSCvg14965	L3VPN traffic marking is getting effected with conditional marking policy-map.
CSCvg43975	RSP3: Leak in G8032 IOS TDL Messaging on Flapping the Ring
CSCvg84664	ASR903 Port does not come up with hard loopback inserted.
CSCvg95992	Change syslog message for RSP3 on fan removal.
CSCvh04843	G.8275.1: Unable to scale the number of ports beyond 8.
CSCvh08220	RSP3: Crash in IOSD chasfs task on Defaulting and Removing IMA-1X.
CSCvh69270	RSP2_MLDP-Rentry chunk memory leak when zapping the multicast channels.
CSCvh76761	A900-RSP3C-200-S RSP module crashes while MPLS TE tunnel interfaces comes up.
CSCvi13675	ASR903: l2protocol forward option dropping L2 control protocols over xconnect with 3 labels.
CSCvi52798	ISSU COMPAT CHECK enablement for RSP3 and RSP2.
CSCvi58812	Reloads when removing sonet mode from controller.

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.
CSCvg21893	Unexpected traffic was sent out from ASR920 access port from REP ring.
CSCvg08224	G8265.1: PTP flaps between HOLDOVER and LOCKED with 64/64 packet rate and HOTSTANDBY.
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.
CSCve55089	BGP crashes at bgp_ha_sso_enable_sso mode.
CSCvf59201	IP SLA tracks are down, but IP reachability is up.
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
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

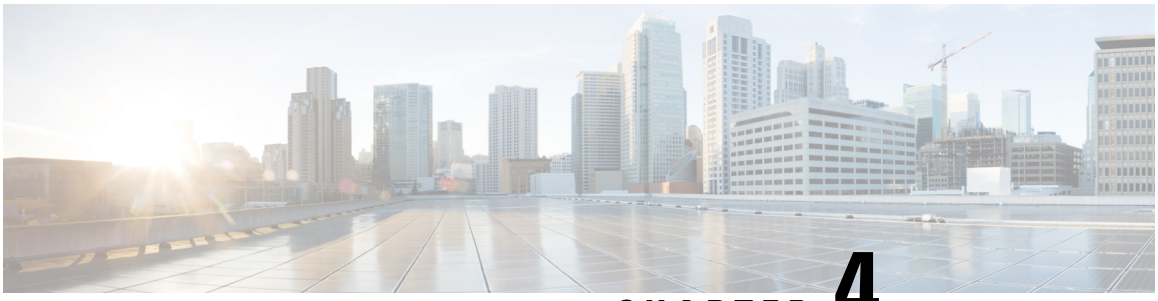
Caveat ID Number	Description
CSCvc38475	Serdes not locking with ISSU and reload
CSCvd38391	Standby Router: uea_mgr crashed @ ml2vpn_provision_pw_and_ac
CSCvd77735	RSP3 - Small loss (6-10ms) observed for VPLS traffic when BGP backup peer is powered down
CSCve05859	Exxx EIN: G.8275.1 testing: Clock loop forming between synce and ptp

Caveat ID Number	Description
CSCvf09940	RSP3_2x10GE: output netsync drifting after SSO when locked to 2x10GE
CSCvf64393	After BD MAC limit is exceeded on Trunk EFP Learning gets enabled after adding/removing an encap
CSCvf72154	RSP3 - PIM neighborship down on BDI interface due to packets ASIC loop.
CSCvf72165	RSP3 - Router crash after "debug platform condition" command is applied.
CSCvf76893	CFM statistics is not getting updated for PC and UP Mep's in server-client model
CSCvf77914	Clock-recovery: Incorrect TUG3 displayed in log, show recovered-clock output
CSCvf95955	3G : MSP : APS Inactive iff pull out work active cable when lockout of protection
CSCvf96566	30-80sec traffic drop for EOMPLS Service during re-opt (after unshutting the primary interface)
CSCvf96598	RSP2 : ~15sec loss traffic for /HSPW service on ISSU/sso
CSCvf99088	RSP3: UP MEP CFM packets to bypass ingress QOS processing
CSCvg01577	LineStatusChange notification with not proper for clear event and problem event
CSCvg06222	RSP3: ~30sec traffic loss for EOMPLS services during ReOpt after TE Node Protection trigger
CSCvg06788	RSP3:3-10sec traffic loss for FlexLsp Tunnels (unidirectional) from HE to TE on Active path cutover
CSCvg10313	Cu clock source still squelched on interface bring up after two SSOs
CSCvg28351	VPLS with Segment Routing not flowing traffic.
CSCvg36086	100G driver switchover failure on forced SSO crash scenario causing serdes lock/ping failures
CSCvg47991	IM crash convergence time is higher
CSCvg51739	Service instance packet counter SNMP poll returns excessive value
CSCvg55061	RSP3 goes for reset, if soft-error occurs in ASIC memory where punt-keep alive is configured
CSCvf82663	ASR903/RSP3C crashed at dl_callback

Resolved Caveats – Cisco IOS XE Fuji 16.7.1

Caveat ID Number	Description
CSCvd89421	RMEP failure due to CFM HW table corruption

Caveat ID Number	Description
CSCve10095	Traffic is getting dropped in both direction due to hw programming went for toss
CSCve75491	TE auto-bw: Incorrect bandwidth requested on soaking with traffic
CSCvf03157	RSP3:PC stays in suspended state on IM OIR
CSCvf34496	RSP3-QIP:Error objects on Stby cfm_mp_ifh 16794673 sid 3001 download to CPP failed seen upon IM-OIR
CSCvf55743	ASR903: ifHCInBroadcastPkts, ifHCOutBroadcastPkts return incorrect decreasing values for portchannel
CSCvf57056	T3 framed satop reporting parity errors on L-bit instead of AIS
CSCvf62586	FAN missing in ASR902 RSP2 chassis
CSCvf68040	Labels not programmed on stby RSP for t1 circuits for denether IM
CSCvf75494	IOT: Session status for RawSocket Server is not correctly displayed.
CSCvf75503	IOT: CLI Allows same TCP port to be configured for the clients and servers.
CSCvf77295	MAC limit EXCEED is not received and MAC learning is not disabled after BD shut/no shut
CSCvf79693	RSP3: BGP support over Router PW.
CSCvf85222	[RSP3] CFM over PC scale to be reduced to free up 1 Port Scheduler from each ARAD
CSCvf87314	IOT: Raw-Socket TCP Session details is displaying the truncated VRF Names
CSCvf90854	Configured priority2 under ptp clock is not sent downstream when T- BC selected VP
CSCvf91437	Ping to the loopback IP of remote fails with explicit null configuration.
CSCvf96793	DS3 VCOP AIS raised for J1 byte mismatch
CSCvg01577	LineStatusChange notification with not proper for clear event and problem event
CSCvg03308	[RSP3-DHCP-Relay]:unicast dhcp relay is getting dropped in transparent case with HSRP/VRRP/GLBP
CSCvg28721	RSP3:uea-mgr crashed while trying to install a label entry in kbp(update case)
CSCvg43975	RSP3: Leak in G8032 IOS TDL Messaging on Flapping the Ring
CSCuz24819	Crash seen when WAN-PHY mode is enabled in RSP3
CSCvc94414	RSP3: Incorrect traffic rate recieved with specific values of CIR/PIR in HQOS policy



CHAPTER 4

Restrictions and Limitations

- IPsec is not supported in Cisco IOS XE Fuji 16.7.1 release.
- The **ip cef accounting** command is *not* supported on the router.
- Erasing router configuration using **write erase command** does *not* work on standby mode.
- Crash may be observed on the router when:
    - EoMPLS, CEM, ATM and IMA Pseudowire Redundancy (PW-redundancy) configurations exist while switchover and fail-back of the pseudowires are being triggered, and the **show platform hardware pp active pw eompls** command is executed.
- Configuration sync does *not* happen on the Standby RSP when the active RSP has Cisco Software Licensing configured, and the standby RSP has Smart Licensing configured on the router. If the active RSP has Smart Licensing configured, the state of the standby RSP is undetermined. The state could be pending or authorized as the sync between the RSP modules is not performed.
- Evaluation mode feature licenses may not be available to use after disabling, and enabling the smart licensing on the ASR 903 RSP2 module. A reload of the router is required.
- Ingress counters are not incremented for packets of the below format on the RSP3 module for the 10 Gigabit Ethernet interfaces, 100 Gigabit Ethernet interfaces, and 40 Gigabit Ethernet interfaces:

  Packet Format

  MAC header---->Vlan header---->Length/Type

  When these packets are received on the RSP3 module, the packets are not dropped, but the counters are not incremented.

- ISSU is not supported between a Cisco IOS XE 3S Release and the Cisco IOS XE Fuji 16.7.1.
- This is applicable only to Cisco ASR903 RSP2 module.
    - 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.

- Effective with Cisco IOS XE Everest 16.6.1, the Port-channel (PoCH) scale is reduced to 24 from 48 for Cisco ASR 900 RSP3 module.

Note The PoCH scale for Cisco ASR 907 routers is 48.