



Release Notes for Cisco NCS 4206 and Cisco NCS 4216 Series, Cisco IOS XE Fuji 16.9.x

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CHAPTER 1

Introduction



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The Cisco NCS 4206 and Cisco NCS 4216 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 NCS 4206 and Cisco NCS 4216 beginning with Release 3.18SP.

- [Overview of Cisco NCS 4206 and NCS 4216, on page 2](#)
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Overview of Cisco NCS 4206 and NCS 4216

Cisco NCS 4206

The Cisco NCS 4206 is a fully-featured aggregation platform designed for the cost-effective delivery of converged mobile and business services. With shallow depth, low power consumption, and an extended temperature range, this compact 3-rack-unit (RU) chassis provides high service scale, full redundancy, and flexible hardware configuration.

The Cisco NCS 4206 expands the Cisco service provider product portfolio by providing a rich and scalable feature set of Layer 2 VPN (L2VPN) and Layer 3 VPN (L3VPN) services in a compact package. It also supports a variety of software features, including Carrier Ethernet features, Timing over Packet, and pseudowire.

For more information on the Cisco NCS 4206 Chassis, see the [Cisco NCS 4206 Hardware Installation Guide](#).

Cisco NCS 4216

The Cisco NCS 4216 is a seven-rack (7RU) unit chassis that belongs to the Cisco NCS 4200 family of chassis. This chassis 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 NCS 4216 can also be positioned as a Carrier Ethernet aggregation platform.

The Cisco NCS 4216 is a cost optimized, fully redundant, centralized forwarding, extended temperature, and flexible pre-aggregation chassis.

For more information about the Cisco NCS 4216 Chassis, see the [Cisco NCS 4216 Hardware Installation Guide](#).

Cisco NCS 4216 F2B

The Cisco NCS 4216 F2B is a 14-rack unit router that belongs to the Cisco NCS 4200 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 NCS 4216 F2B can also be positioned as a Carrier Ethernet aggregation platform.

The Cisco NCS 4216 F2B is a cost optimized, fully redundant, centralized forwarding, extended temperature, and flexible pre-aggregation router.

For more information about the Cisco NCS 4216 F2B Chassis, see the [Cisco NCS 4216 F2B Hardware Installation Guide](#).

NCS 4216 14RU

The Cisco NCS 4216 14RU is a 14-rack unit router that belongs to the Cisco NCS 4200 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 NCS 4216 14RU can also be positioned as a Carrier Ethernet aggregation platform.

The Cisco NCS 4216 14RU is a cost optimized, fully redundant, centralized forwarding, extended temperature, and flexible pre-aggregation router.

For more information about the Cisco NCS 4216 14RU chassis, see the [Cisco NCS 4216 14RU Hardware Installation Guide](#).

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 Supported

The following sections list the hardware supported for Cisco NCS 4206 and Cisco NCS 4216 chassis.

Cisco NCS 4206 Supported Interface Modules

Supported Interface Modules



Note If the **license feature service-offload enable** command is configured, then the NCS4200-1T8LR-PS IM is not supported in the router for RSP3.



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



Note FAN OIR is applicable every time the IM based fan speed profile is switched to NCS4200-1H-PK= and NCS4200-2Q-P interface modules. Even though the IMs remain in the Out-of-Service state, they are still considered as present in the chassis.

Table 1: NCS420X-RSP Supported Interface Modules and Part Numbers

RSP Module	Supported Interface Modules	Part Numbers	Slot
NCS420X-RSP	8-port 10 Gigabit Ethernet Interface Module (8X10GE)	NCS4200-8T-PS	All
	1-port 100 Gigabit Ethernet Interface Module (1X100GE)	NCS4200-1H-PK=	4 and 5
	2-port 40 Gigabit Ethernet QSFP Interface Module (2X40GE)	NCS4200-2Q-P	4 and 5
	8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module	NCS4200-1T16G-PS	0,3,4, and 5
	1-port OC-192 Interface module or 8-port Low Rate Interface Module	NCS4200-1T8S-10CS	2,3,4, and 5
	1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG Interface Module	NCS4200-1T8S-20CS	2,3,4, and 5 ¹
	48-port T1/E1 CEM Interface Module	NCS4200-48T1E1-CE	All
	48-port T3/E3 CEM Interface Module	NCS4200-48T3E3-CE	All
	2-port 100 Gigabit Ethernet (QSFP) Interface Module (2X100GE) ²	NCS4200-2H-PQ	4,5
	1-port OC48 ³ / STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module	NCS4200-3GMS	2,3,4, and 5

¹ These slots are supported on 10G or 20G mode.

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

³ If OC48 is enabled, then the remaining 3 ports are disabled.

Table 2: NCS420X-RSP-128 Supported Interface Modules and Part Numbers

RSP Module	Supported Interface Modules	Part Numbers	Slot
NCS420X-RSP	SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet Interface Module (1X10GE)	NCS4200-1T8LR-PS	All
	8-port T1/E1 CEM Interface Module	NCS4200-8E1T1-CE	All
	1-port OC48 ⁴ / STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module	NCS4200-3GMS	2,3,4, and 5

⁴ If OC48 is enabled, then the remaining 3 ports are disabled.

Cisco NCS 4216 Supported Interface Modules

For information on supported interface modules, see [Supported Interface Modules](#).

Swapping of Interface Modules

The following Ethernet interface modules support swapping on the Cisco NCS4216-RSP module:

Use the **hw-module subslot default** command before performing a swap of the modules to default the interfaces on the interface module.

- SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet (1X10GE)
- 2-port 40 Gigabit Ethernet Interface Module (2X40GE)
- 8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module
- 8-port 10 Gigabit Ethernet Interface Module (8X10GE)
- 1-port 100 Gigabit Ethernet Interface Module (1X100GE)
- 2-port 100 Gigabit Ethernet (QSFP) Interface Module (2X100GE)

Use of **hw-module subslot default** command is not supported on the following interface modules.

- OC-192 Interface Module with 8-port Low Rate CEM Interface Module (10G HO / 10G LO)
- 48 T1/E1 TDM Interface Module (48XT1/E1)
- 48 T3/E3 TDM Interface Module (48XT3/E3)
- 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
- NCS 4200 Combo 8-Port SFP GE and 1-Port 10 GE 20G Interface Module



Note If the **license feature service-offload enable** command is configured, then the NCS4200-1T8LR-PS IM is not supported in the router for RSP3.



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

Table 3: NCS4216-RSP Supported Interface Modules and Part Numbers

RSP Module	Interface Modules	Part Number	Slot
NCS4216-RSP	SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet (1X10GE)	NCS4200-1T8LR-PS	2,5,6,9,10,13,14,15
	1-port 100 Gigabit Ethernet Interface Module (1X100GE)	NCS4200-1H-PK	7,8
	2-port 100 Gigabit Ethernet (QSFP) Interface Module (2X100GE) ⁵	NCS4200-2H-PQ	7,8
	2-port 40 Gigabit Ethernet QSFP Interface Module (2X40GE)	NCS4200-2Q-P	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	NCS4200-1T16G-PS	All slots
	1-port OC48 ⁶ / STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module	NCS4200-3GMS	All slots
	8-port 10 Gigabit Ethernet Interface Module (8X10GE)	NCS4200-8T-PS	3,4,7,8,11,12
	1-port OC-192 Interface Module with 8-port Low Rate CEM Interface Module (5G/ 10G HO / 10G LO)	NCS4200-1T8S-10CS	3,4,7,8,11,12 (10G mode) 0,1,2,5,6,9,10,13,14,15 (5G mode) Note To enable this IM on slot 0 or slot 1, do the following and reload the router: <pre>Router# configure t Router(config)# license feature service-offload enable</pre>
	1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG Interface Module	NCS4200-1T8S-20CS	3,4,7,8,11,12 (20G mode) 0,1,2,5,6,9,10,13,14,15 (10G mode) Note To enable this IM on slot 0 or slot 1, do the following and reload the router: <pre>Router# configure t Router(config)# license feature service-offload enable</pre>
	48-port T1/E1 Interface module	NCS4200-48T1E1-CE	2,3,4,5,6,7,8,9,10,13,14,15
48-port T3/E3 Interface module	NCS4200-48T3E3-CE	2,3,4,5,6,7,8,9,10,13,14,15	

- ⁵ IM supports only one port of 100G with RSP3 as QSFP28 on Port 0 in both slots 7 and 8.
- ⁶ If OC48 is enabled, then the remaining 3 ports are disabled.

Cisco NCS 4216 F2B Supported Interface Modules

For information on supported interface modules, see [Supported Interface Modules](#).

Swapping of Interface Modules

The following interface modules support swapping on the Cisco NCS4216-RSP module:

- SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet (1X10GE)
- 2-port 40 Gigabit Ethernet Interface Module (2X40GE)
- 8-port 10 Gigabit Ethernet Interface Module (8X10GE)
- 1-port 100 Gigabit Ethernet Interface Module (1X100GE)
- 2-port 100 Gigabit Ethernet Interface Module (2X100GE)
- 8/16-port 1 Gigabit Ethernet (SFP/SFP) + 1-port 10 Gigabit Ethernet (SFP+) / 2-port 1 Gigabit Ethernet (CSFP) Interface Module
- 1-port OC-192 Interface Module with 8-port Low Rate CEM Interface Module (10G HO / 10G LO)
- 48-port T1/E1 TDM Interface Module (48XT1/E1)
- 48-port T3/E3 TDM Interface Module (48XT3/E3)
- 1-port OC 482/ STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module (NCS4200-3GMS)
- 1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG Interface Module (NCS 4200-1T8S-20CS)

Use the **hw-module subslot default** command before performing a swap of the modules to default the interfaces on the interface module.

See the *Cisco NCS 4216 Router Hardware Installation Guide* for information on Supported Interface Modules on the RSP.



Note If the **license feature service-offload enable** command is configured, then the NCS4200-1T8LR-PS IM is not supported in the router for RSP3.



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

Table 4: Cisco NCS4216-RSP Supported Interface Modules and Part Numbers

RSP Module	Interface Modules	Part Number	Slot
NCS4216-RSP	SFP Combo IM—8-port Gigabit Ethernet (8X1GE) + 1-port 10 Gigabit Ethernet (1X10GE)	NCS4200-1T8LR-PS	2,5,6,9,10,13,14,15
	1-port 100 Gigabit Ethernet Interface Module (1X100GE)	NCS4200-1H-PK	7,8
	2-port 100 Gigabit Ethernet (QSFP) Interface Module (2X100GE) ⁷	NCS4200-2H-PQ	7,8
	2-port 40 Gigabit Ethernet QSFP Interface Module (2X40GE)	NCS4200-2Q-P	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	NCS4200-1T16G-PS	All slots
	8-port 10 Gigabit Ethernet Interface Module (8X10GE)	NCS4200-8T-PS	3,4,7,8,11,12
	1-port OC-192 Interface Module with 8-port Low Rate CEM Interface Module (5G/ 10G HO / 10G LO)	NCS4200-1T8S-10CS	3,4,7,8,11,12 (10G mode) 0,1,2,5,6,9,10,13,14,15 (5G mode)
	1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG Interface Module	NCS4200-1T8S-20CS	3,4,7,8,11,12 (20G mode) 0,1,2,5,6,9,10,13,14,15 (10G mode)
	48XT1/E1 Interface module	NCS4200-48T1E1-CE	2,3,4,5,6,7,8,9,10,13,14,15
	48XT3/E3 Interface module	NCS4200-48T3E3-CE	2,3,4,5,6,7,8,9,10,13,14,15
	1-port OC48 ⁸ / STM-16 or 4-port OC-12/OC-3 / STM-1/STM-4 + 12-port T1/E1 + 4-Port T3/E3 CEM Interface Module	NCS4200-3GMS	All slots

⁷ IM supports only one port of 100G with RSP3 as QSFP28 on Port 0 in both slots 7 and 8.

⁸ If OC48 is enabled, then the remaining 3 ports are disabled.

Restrictions and Limitations for Cisco NCS 4206 and Cisco NCS 4216

- VT PMON is not supported.
- M13 framing (channelized and non-channelized) is not supported for all releases prior to Cisco IOS XE 16.8.1. Starting from Cisco IOS XE 16.8.1, it is supported on DS3 IM.
- APS is supported across interface modules. But it is not supported on the same interface module.
- VT loopback is not supported if T1 is configured for the VT mode.

- DS1/DS3 SF/SD is not supported.
- Alternate 0's and 1's BERT pattern is not supported for DS1.
- All zeros BERT pattern on system side does not get in sync on DS3.
- DS3/OCx MDL does not interoperate with legacy Q.921 standards.
- APM is not supported with EPAR on CEP.
- FDL is not supported.
- STS24-c is not supported on OCx.
- Port restriction on OCx. If you have OC48 configured on a port, you cannot use the neighboring port. The port pair groups are 0-1, 2-3, 4-5, 6-7. If one of the ports within these port groups is configured with OC48 rate, then the other port will not be usable.
- Bellcore remote loopbacks are not supported for DS1/DS3. Only T1.403 remote loopbacks are supported.
- DS3 over CEP is not supported on DS3 IM.
- CEP MIB is not supported.
- HSPW is not supported on DS3/DS1/OCX card.
- The **ip cef accounting** command is not supported on the chassis.
- Crash may be observed on the chassis 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 ompls** 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 chassis. 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 Cisco NCS 4206. A reload of the chassis 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.
- T1 SAToP, T3 SAToP, and CT3 are supported on an UPSR ring, only with local connect mode. Cross connect of T1, T3, and CT3 circuits to UPSR are not supported.
- DCC is supported only on PPP encapsulation. It is not supported on CLNS encapsulation.
- If oversubscription is enabled on 8x10G, PTP is not supported.
- 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 NCS 4216 routers is 48.

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.

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 3S consolidated packages can be downloaded from Cisco.com; users who want to run the chassis using individual subpackages must first download the image from Cisco.com and extract the individual subpackages from the consolidated package.

Supported FPGA Versions for NCS 4206 and NCS 4216

Use the **show hw-module all fpd** command to display the IM FPGA version on the chassis.

Use the **show platform software agent iomd [slot/subslot] firmware cem-fpga** command to display the CEM FPGA version on the chassis.

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



Note During ISSU, TDM interface modules are reset for FPGA upgrade.

Table 5: Supported FPGA Versions for NCS 4206-RSP3 and NCS 4216

	Cisco IOS XE Release	48 X T1/E1 CEM Interface Module FPGA	48 X T3/E3 CEM Interface Module FPGA	OC-192 Interface Module + 8-port Low Rate Interface Module FPGA	NCS4200-3GMS	8x10G FPGA	2x40G FPGA	1x100G FPGA
IM FPGA	16.9.1	1.22	1.22	1.15	2.0	0.22	0.22	0.20
CEM FPGA		0x50090050	0x50060050	5G mode: 0x10070062 10G mode: 0x10480078	0x10520063	—	—	—
IM FPGA	16.9.4	1.23	1.22	1.15	2.0	0.22	0.22	0.20
CEM FPGA		0x60210021	0x60210031	5G mode: 0x60210012 10G mode: 0x60210051	0x60210061	—	—	—
IM FPGA	16.9.5	1.22	1.22	1.15	2.0	0.22	0.22	0.20
CEM FPGA		0x60210021	0x60210031	5G mode: 0x60210012 10G mode: 0x60210051	0x60210061	—	—	—
IM FPGA	16.9.6	1.22	1.22	1.15	2.0	0.22	0.22	0.20
CEM FPGA		0x60210021	0x60210031	5G mode: 0x60210012 10G mode: 0x60210051	0x60210061	—	—	—

	Cisco IOS XE Release	48 X T1/E1 CEM Interface Module FPGA	48 X T3/E3 CEM Interface Module FPGA	OC-192 Interface Module + 8-port Low Rate Interface Module FPGA	NCS4200-3GMS	8x10G FPGA	2x40G FPGA	1x100G FPGA
IM FPGA	16.9.7	1.22	1.22	1.15	2.0	0.22	0.22	0.20
CEM FPGA		0x60210021	0x60210031	5G mode: 0x60210012 10G mode: 0x60210051	0x60210061	—	—	—

Deferrals

Cisco IOS software images are subject to deferral. We recommend that you view the deferral notices at the following location to determine whether your software release is affected:

http://www.cisco.com/en/US/products/products_security_advisories_listing.html.

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

The below table summarizes the supported MIBs on the Cisco NCS 4206 and Cisco NCS 4216.

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)

Supported MIBs		
CISCO-CEF-MIB	CISCO-OSPF-MIB (draft-ietf-ospf-mib-update-05)	OSPF-TRAP-MIB (RFC 1850)
CISCO-CLASS-BASED-QOS-MIB	CISCO-OSPF-TRAP-MIB (draft-ietf-ospf-mib-update-05)	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-MGR-MIB	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-CONTROL-MIB	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)	

The below table summarizes the unverified and supported MIBs on the Cisco NCS 4206 and Cisco NCS 4216.

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

Unverified MIBs		
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-MIB-EXTN	CISCO-TCP-MIB	VRRP-MIB
CISCO-IETF-BFD-MIB	CISCO-VRF-MIB	
CISCO-IETF-DHCP-SERVER-MIB	ETHER-WIS (RFC 3637)	

MIB Documentation

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>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at the following location:

<http://tools.cisco.com/RPF/register/register.do>

Open Source License Notices

For a listing of the license notices for open source software used in Cisco IOS XE 3S Releases, see the documents accessible from the License Information page at the following location:

http://www.cisco.com/en/US/products/ps11174/products_licensing_information_listing.html

Communications, Services, and Additional Information

- To receive timely, relevant information from Cisco, sign up at [Cisco Profile Manager](#).
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- To obtain general networking, training, and certification titles, visit [Cisco Press](#).
- To find warranty information for a specific product or product family, access [Cisco Warranty Finder](#).

Cisco Bug Search Tool

[Cisco Bug Search Tool](#) (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.



CHAPTER 2

New Features

This chapter describes the new features supported for this release.

- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.7, on page 17](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.7, on page 17](#)
- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.6, on page 18](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.6, on page 18](#)
- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.5, on page 18](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.5, on page 18](#)
- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.4, on page 18](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.4, on page 18](#)
- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.3, on page 19](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.3, on page 19](#)
- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.2, on page 19](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.2, on page 19](#)
- [New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.1a, on page 19](#)
- [New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.1a, on page 22](#)

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.7

There are no new features introduced for this release.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.7

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.6

There are no new features introduced for this release.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.6

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.5

There are no new features introduced for this release.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.5

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.4

- **SDM template enhancement for uRPF scale**

A new feature template, RSP3_SDM_TEMPLATE_IPV4_IPV6, is introduced to enhance the uRPF scale from 4096 to 32768 and decrease the IPv6 scale from 65536 to 36864. You can enable this template using the `sdm prefer ipv4_ipv6` command.

For more information on SDM template enhancement for uRPF scale, see [Cisco NCS 4200 Series Software Configuration Guide, Cisco IOS XE Fuji 16.9.x.](#)

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.4

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.3

- **BDI statistics Support on RSP3 Module**

Starting Cisco IOS XE Fuji Release 16.9.3, BDI statistics is supported on the RSP3 module. The **show interface** command displays the BDI statistics for the interface.

For more information, see [Carrier Ethernet Configuration Guide, Cisco IOS XE Fuji 16.9.x \(Cisco ASR 4200 Series\)](#)

- **Storm Control Support on Port Channel on RSP3 Module**

Starting with Cisco IOS XE Fuji 16.9.3, storm control over port channel is supported on the RSP3 module. Storm control over port-channel is applicable for port channel interfaces, and is used for restricting the unicast, broadcast and multicast ingress traffic on the port channel interfaces.

For more information see, [Storm Control Configuration Guide, Cisco IOS XE Fuji 16.9.x \(Cisco ASR 4200 Series\)](#)

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.3

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.2

There are no new features introduced for this release.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.2

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.1a

- **3G CEM LC support with RSP3 400G**

In addition to support on RSP2 module, the 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 is supported on RSP3.

For more information, see the [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 16.9.x \(Cisco NCS 4200 Series\)](#).

- **BFD Echo Mode**

BFD echo mode works with asynchronous BFD. Echo packets are sent by the forwarding engine and forwarded back along the same path in order to perform detection--the BFD session at the other end does not participate in the actual forwarding of the echo packets.

Starting with Cisco IOS XE Fuji Release 16.9.x, this feature is supported on the RSP3 module.

For more information, see the [IP Routing: BFD Configuration Guide, Cisco IOS XE Fuji 16.9.x \(NCS 4200 Series\)](#).

- **CoPP**

The Control Plane Policing feature allows you to configure a quality of service (QoS) filter that manages the traffic flow of control plane packets to protect the control plane of routers and switches against reconnaissance and denial-of-service (DoS) attacks. In this way, the control plane (CP) can help maintain packet forwarding and protocol states despite an attack or heavy traffic load on the router or switch.

Starting with Cisco IOS XE Fuji Release 16.9.x, this feature is supported on the RSP3 module.

For more information, see the [QoS Policing and Shaping Configuration Guide, Cisco IOS XE Fuji 16.9.x \(Cisco NCS 4200 Series\)](#).

- **Dying GASP via SNMP trap**

Dying GASP via SNMP trap feature is supported on Cisco RSP3 module. The feature helps to quickly notify a network administrator whenever a node undergoes power shutdown.

The following new command is introduced:

platform dying-gasp-port-enable

For more information on the feature, see the [Cisco NCS 4200 Series Software Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

For more information on the new command, see the [Cisco IOS Interface and Hardware Component Command Reference](#).

- **HDLC or PPP to Ethernet IPv4 Interworking Pseudowire**

The L2VPN interworking allows you to connect disparate attachment circuits, for example, TDM and Ethernet attachment circuits. The L2VPN interworking operates in IP (routed) mode that facilitates transport of IPv4 payload in HDLC or PPP frames to Ethernet, over MPLS network translation. The configuration is supported on NCS4200-3GMS.

For more information, see the [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 16.9.x \(Cisco NCS 4200 Series\)](#).

- **Micro BFD**

The BFD feature now supports micro BFD sessions on individual port channel member links to monitor Layer 3 connectivity on those links. With micro BFD feature, BFD is able to verify the ability of each member link to be able to forward Layer 3 packets and appropriately update the load balance.

For more information on the feature, see the [IP Routing: BFD Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

- **MPLS TE and BGP PIC Edge**

MPLS TE Load balancing, BGP PIC Edge, and RFC 3107 are now supported over TE-FRR.

For more information on the feature, see the [IP Routing: BGP Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

- **Multicast VPN over Routed Pseudowire**

Routed Pseudowire and Virtual Private LAN Services (VPLS) configuration can route layer 3 traffic as well as layer 2 traffic for pseudowire connections between Provider Edge (PE) devices using VPLS multipoint PE. The ability to route frames to and from these interfaces supports termination of pseudowires into the layer 3 network (VPN or global) on the same switch, or to the tunnel layer 3 frames over a layer 2 tunnel (VPLS).

For more information on the feature, see [IP Multicast: Multicast Configuration Guide, Cisco IOS XE Fuji 16.9.x \(Cisco NCS 4200 Series\)](#).

- **RS232 Sync**

The serial interface module now supports pseudowire transport over MPLS and raw socket for Sync traffic. Out of 14 ports, 6 ports (8-13) support sync interfaces. RS232 Sync data is carried over Raw Socket.

For more information, see the [Cisco NCS 4200 Series Software Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

- **Support for STS1e**

3GSM-DS3 ports and 48 T3/E3 ports can be configured in STS-1e mode.

For more information, see the [48-Port T1/E1 CEM Interface Module Configuration Guide, Cisco IOS XE Fuji 16.9.x \(Cisco NCS 4200 Series\)](#) and [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 16.9.x \(Cisco NCS 4200 Series\)](#).

- **Transparent Overhead Tunneling Data Communication Channel**

Transport overhead tunnel is implemented using circuit emulation technology to provide transparency for the Data Communication Channel (DCC) bytes. It is achieved by sending DCC bytes from one Add or Drop multiplexers (ADM) to other peer ADM through ASR devices using transport overhead pseudowire.

For more information, see the [1-Port OC-192 or 8-Port Low Rate CEM Interface Module Configuration Guide, Cisco IOS XE Fuji 16.9.x \(Cisco NCS 4200 Series\)](#).

- **Programmability Support**

- **Candidate Configuration**—A temporary configuration that can be modified without changing running configuration. You can then choose when to update the device's configuration with the candidate configuration, by committing and confirming the candidate configuration.
- **Model-Driven Telemetry**—Model-driven telemetry allows network devices to continuously stream real time configuration and operating state information to subscribers.

For more information, see the [Programmability Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

- **VPLS Statistics**

VPLS statistic feature supports packet and byte count in ingress and egress directions.

For more information on the supported MIBs, see the [MPLS Layer 2 VPNs Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

- **VRRPv3 SNMP MIB**

SNMP MIBs are now supported for Virtual Router Redundancy Protocol (VRRP) version 3. For more information on the supported MIBs, see the [First Hop Redundancy Protocols Configuration Guide, Cisco IOS XE Fuji 16.9.x \(NCS 4200 Series\)](#).

- **Over Subscription Mode and Partial Port Mode Support on 8-port 10 Gigabit Ethernet Interface Module on NCS 4216 Chassis**

Over subscription mode enables the operation of the 8-port 10 Gigabit Ethernet interface module in slots with a lesser backplane capacity. With over subscription mode all the front plane ports of the interface module receive and transmit traffic.

Partial port mode is used to free the used Serializer/Deserializer (SerDes) lines, to accommodate other interface modules that support over subscription in slots that may utilize the shared SerDes.

Both these modes are introduced to support population of maximum number of interface modules on the chassis.

For more information, see [Cisco NCS 4200 Series Software Configuration Guide, Cisco IOS XE Fuji 16.9.x](#).

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Fuji 16.9.1a

From current release, the following interface module is supported on NCS 4216 and NCS 4216 F2B chassis.

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

The NCS4200-3GMS interface module supports:

- 12xDS1/E1 + 4xDS3/E3/STS-1e interface over the high-density port
- 1xOC48/12/3 or 1GE interface and 3xOC12/3 or 1GE interface

For more information on supported ports, see [Cisco NCS 4206 Hardware Installation Guide](#), [Cisco NCS 4216 Hardware Installation Guide](#), or [Cisco NCS 4216 F2B Hardware Installation Guide](#).



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, on page 24](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.7, on page 24](#)
- [Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.7, on page 24](#)
- [Resolved Caveats – Cisco IOS XE Fuji 16.9.7, on page 24](#)
- [Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.7, on page 25](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.6, on page 25](#)
- [Resolved Caveats – Cisco IOS XE Fuji 16.9.6, on page 25](#)
- [Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.6, on page 26](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.5f, on page 26](#)
- [Resolved Caveats – Cisco IOS XE Fuji 16.9.5f, on page 27](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.5, on page 27](#)
- [Resolved Caveats – Cisco IOS XE Fuji 16.9.5, on page 27](#)
- [Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.7, on page 28](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.4, on page 29](#)
- [Resolved Caveats – Cisco IOS XE Fuji 16.9.4, on page 30](#)
- [Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.4, on page 31](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.3, on page 31](#)
- [Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.3, on page 32](#)
- [Resolved Caveats – Cisco IOS XE Fuji 16.9.3, on page 32](#)
- [Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.3, on page 33](#)
- [Open Caveats – Cisco IOS XE Fuji 16.9.2, on page 33](#)

- Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.2, on page 34
- Resolved Caveats – Cisco IOS XE Fuji 16.9.2, on page 34
- Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.2, on page 36
- Open Caveats – Cisco IOS XE Fuji 16.9.1a, on page 37
- Resolved Caveats – Cisco IOS XE Fuji 16.9.1a, on page 40

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/cbsshhelp/help.html>

Open Caveats – Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCvo42088	Default SONET Path alarm severity is not correct
CSCvp16487	High CPU utilisation observed for IOMD process

Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCvv79677	ASR902-RSP2 crashed after BGP flaps
CSCvv80471	IPv6 BGP update is not applied after changes to inbound route-map
CSCvw19062	Changing external route tag does not update origin code in BGP
CSCvw44599	IPSLA UDP-jitter: Packets are sent at appx 2ms less or more than the config packet interval

Resolved Caveats – Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCvv24059	Router crash noticed on RSP when EMPLSINTD is exhausted.
CSCvv51145	Crash seen on show plat hard pp active feature multicast database ipv4 table label eos
CSCvv83093	OBFL updation with valid time after NTP Sync in RTC failure case

Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCvu85572	Dynamic neighbor does not form when peer-group is shutdown in different vrf
CSCvv17560	BMP BGP server can lead to CPUHOG and crashes
CSCvv40006	Traceback: IP SLA triggers INJECT_HDR_LENGTH_ER and INJECT_FEATURE_ESCAPE log message
CSCvv64633	BGP: advertised community list is malformed due to GSHUT community
CSCvw05035	BGP fall-over not working when Null0 static route is configured
CSCvw37109	Pseudowire interface may be unexpectedly removed from VFI on unrelated configuration change
CSCvx02515	BGP IPv6 link-local session does not come up

Open Caveats – Cisco IOS XE Fuji 16.9.6

Caveat ID Number	Description
CSCvi58066	[show platform hardware qfp active feature ipsec debugging] passed into mcprp_dc_handler
CSCvt82525	Crash while IPV6 updating prefixes

Resolved Caveats – Cisco IOS XE Fuji 16.9.6

Caveat ID Number	Description
CSCvn47496	ENH : RSP3C Request for overriding restriction "MVPN-GRE VRF-SM: RP must be at Encap PE"
CSCvo80325	CFM Error object observed after CFM session flap
CSCvq64605	RSP3: RLFA resource leak on FRR create/delete with link flaps
CSCvr29358	Placeholder - RSP3C: Read only file system error/IO error seen on eUSB
CSCvr86355	Netconf login via loopback int is failing though it is working with other inband int
CSCvt14323	IGMP: reports received on mLACP Port-Channel dropped incorrectly

Caveat ID Number	Description
CSCvt25458	MPLS TE is not coming UP when bandwidth configured on Juniper head end
CSCvt35963	Uea_mgr and keepalive crashes observed in a sequence after attempting to enable service-offload
CSCvt58155	rsp3c: Kernel crash bcmINTR rcu_check_callback
CSCvt64706	CPU HOG due to constant soft-parity errors
CSCvt98075	Memory leak seen on SNMP DG when IGP flaps
CSCvu18276	Standby RSP3 crash during IOS upgrade
CSCvu30972	All readings for Power supply unit reflect as zero though the unit is functional

Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.6

Caveat ID Number	Description
CSCvs18780	SR Labels not installed in forwarding plane when there are multiple sources for the prefix SID
CSCvs95815	C1111 telnet refused for link-local addresses when using ipv6 access class

Open Caveats – Cisco IOS XE Fuji 16.9.5f

Caveat ID Number	Description
CSCvj88449	VCoP BERT test to a physical loop
CSCvm84355	[SVSP-299]-'linkDown' trap should not be sent when the port is in AINS mode-[SVSPE-570]
CSCvn99725	Iomd crash followed by E&M module reload during ISSU
CSCvq64605	RSP3: RLFA resource leak on FRR create/delete with link flaps
CSCvs30865	rLFA for LDP causes loss of MPLS traffic after RSP switchover
CSCvs58993	Crash after Failed to write chassis filesystem object pf/2/fan property state

Resolved Caveats – Cisco IOS XE Fuji 16.9.5f

Caveat ID Number	Description
CSCvr97004	VTY lines higher than 5 cannot be configured NVGEN
CSCvt21903	Traffic drops observed with IPSec traffic

Open Caveats – Cisco IOS XE Fuji 16.9.5

Caveat ID Number	Description
CSCvj88449	VCoP BERT test to a physical loop
CSCvm84355	[SVSP-299]-'linkDown' trap should not be sent when the port is in AINS mode-[SVSPE-570]
CSCvn99725	Iomd crash followed by E&M module reload during ISSU
CSCvq64605	RSP3: RLFA resource leak on FRR create/delete with link flaps
CSCvs30865	rLFA for LDP causes loss of MPLS traffic after RSP switchover
CSCvs58993	Crash after Failed to write chassis filesystem object pf/2/fan property state

Resolved Caveats – Cisco IOS XE Fuji 16.9.5

Caveat ID Number	Description
CSCvk56297	Enhancement request to warn about different software image in RSP3
CSCvk68174	Led Indicator on ASR903 showing down after configuring xconnect
CSCvm31596	ASR903 RSP3C-400-S going in hang state
CSCvm79556	RSP3: MSPW VC down after Switchover (Error Local access circuit is not ready for label advertise)
CSCvp48572	Limitation of configuring 280 or more service instances under one interface/portchannel in router
CSCvp91087	PRBS/BERT line is not working on pdh de1 of 3GMS IM
CSCvq67129	ASR 907 forwards directed broadcast out same interface if uRPF is enabled on BDI
CSCvq67989	APS Protect : LAIS : Incorrect response alarm reported
CSCvq76305	ASR900 autoRP listener functionality issue

Caveat ID Number	Description
CSCvr28956	Show debug memory leak should not be the part of "show tech" as this is intrusive command
CSCvr40112	Removing pseudowire-class for 1 peer makes all the peers fail.
CSCvr50508	Router_RP_0_fman_rp crash on applying conditional crypto debug
CSCvr59626	RSP2_HA: Standby RP goes for a crash upon continuous rep interface flap
CSCvr97005	ASR920-IMA3G loopback CLI rejected on T1 controller when AINS alarm-profile configured
CSCvm38889	New fan tray speed algorithm based upon type of IMs present in ASR903 chassis
CSCvq16372	ROMMON auto upgrade in RSP3

Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCvf02131	IP SLA can trigger crash when used with MPLS probe
CSCvm79556	RSP3: MSPW VC down after Switchover (Error Local access circuit is not ready for label advertise)
CSCvo55194	After RSP switchover label imposition was not programmed in Software on APS standby router
CSCvo71904	The 'app-hosting' fails with "ip unnumbered" configuration in Virtual PortGroup
CSCvp74674	QoS fails to apply to tunnel2 when underlying tunnel1 reachability change
CSCvp77521	Device-tracking tracking 0.0.0.0 mask ignored after Legacy IPDT to SISF conversion
CSCvp81958	BGL18 Alpha: Cat9x00 hitting "No connections to Shell Manager available for processing the command"
CSCvp91484	CSCvp91484 - SDA Fabric Multicast - Unable to calculate RPF from LISP
CSCvq19669	Evaluation of all for TCP_SACK
CSCvq33994	BGP YANG oper address-family fails with vpnv4-unicast
CSCvq56114	Cat3k crash in IGMP code due to invalid source count in DNS lookup
CSCvq58265	ASR1K BGP PIC Repair path broke after link flap
CSCvq69866	HSRPv2 crash whilst retrieving group from received packet

Caveat ID Number	Description
CSCvq70148	BGP is improperly formatting the BGP ASSET attribute if ASSET attribute length is beyond 255
CSCvq76305	ASR900 autoRP listener functionality issue
CSCvq78692	mGRE L3VPN broken after reload
CSCvq89252	IP SLA for Path-Jitter returning a value which isn't defined by the MIB
CSCvq96794	VPLS label misprogramming after RSP switchover
CSCvr05213	Smart licensing PID and SN logs filling up the IOSRP tracelogs
CSCvr05406	LISP Map-cache not updated correctly after wired Host-mobility
CSCvr08740	Router crash after receiving EVPN route-type 2 without any ext-community
CSCvr09014	IGP metric not detected MPLS TE topology
CSCvr10897	Adjacency SIDs not detected in mpls traffic-eng topology (interop issue)
CSCvr12450	LISP: Block adding SVI (anycast gateway) MAC address to LISP ethernet database after svi reconfig
CSCvr18919	Cat9k SVL - Upon redundancy failover, route being purged on downstream device
CSCvr23104	BGP looped update among 3 peers
CSCvr27393	Crash on "BGP Router" process
CSCvr37065	C9200L kernel Oops jumbo packets
CSCvr39868	Unexpected reload when issuing show ip mroute vrf <vrf> verbose
CSCvr40112	Removing pseudowire-class for 1 peer makes all the peers fail.
CSCvr54031	TBs seen with scaled IP SLA configs with "ip sla reset"
CSCvr59231	Cat9400- PNP fails with Dual Supervisor with non default startup vlan
CSCvs02038	BGP Loss of RPKI Table
CSCvs15811	cbr8/L2VPN : Toggle of PW-Status-TLV causes Backup PW to remain DOWN

Open Caveats – Cisco IOS XE Fuji 16.9.4

Caveat ID Number	Description
CSCvj33102	[SVSP-215]-AINS card type profile not working post router reload for DS1 card
CSCvk00975	LDP not coming up due to TCP failure with OS mode and 2:1 mode

Caveat ID Number	Description
CSCvn13911	RSP3:ARAD sesnor threshold alarms not displaying on console, in FAN OIR thermal shutdown case
CSCvo18347	REP may flap while enabling netconf for the first time on RSP2
CSCvo60233	IMA8Z : OTN mode Port Not Coming Up after shutdown , MSR, SSO and no shutdown in Sequence
CSCvq54167	ASR Crash fib_rpf_list_hw_notify_create

Resolved Caveats – Cisco IOS XE Fuji 16.9.4

Caveat ID Number	Description
CSCvi93315	RSP2: Cylon_Mgr Crash in Multicast on RP SSO Soak
CSCvj75078	RSP3: IOMD crash @ iomd_bsess_open_callback_retry on new active after RP SSO
CSCvk32423	IMA8Z 6-port mode, hwidx not created leading to complete traffic drop
CSCvn40185	RSP3: With USB device connected to RSP3 and reloading RSP3 causing erase startup configs.
CSCvn82547	OSPF packets over VPLS are punted to CPU queue 15
CSCvn97073	Vz Sol: serdes release doesn't happen for OCx IM when moved from slot 14 to slot 12
CSCvo10847	RSP3:POCH TE-FRR with Min Link less than No of Members Triggers FRR Via FLCDC
CSCvo40953	SDH : Serial interface stay in up/down status for SDH Modes
CSCvo44727	OC-3 port will not clear PUNEQ alarm
CSCvo65688	16.9.3-QIP-crete-TOD flaps in Crete (master) when setup is left overnight
CSCvp16947	The router shows CRITICAL alarm when one of the power supplies is missing
CSCvp19127	Card-protection : Channelized T1 circuits fails to pass traffic , after RSP switchover
CSCvp25241	APS group OC48 does not send signal fail indication in K1 byte
CSCvp27918	The router router should throw out warning when wrong FAN TRAY installed (Module overheat and shut down)

Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.4

Caveat ID Number	Description
CSCvm06775	ATOM CW is not exchanged after node reload
CSCvn01354	ICMP echo probe is successful when the source interface does not have the ip address.
CSCvo21122	Memory leak at hman process
CSCvo41879	Interface is not joined to mcast map-notify after reload
CSCvo62584	DHCP discover packets were being dropped at firewall since UDP source port as 0.
CSCvo67856	in.telnetd process consumes 100% CPU in show process cpu platform sorted
CSCvo90060	Wrong label programming leading to traffic drop
CSCvo90231	spurious accesses are seen in show alignment output with BGP
CSCvp71303	Router crashes when "tod-clock revertive" command is executed
CSCvp78236	Crash during SNMP Configuration, ospfv3_pdb_from_router_info

Open Caveats – Cisco IOS XE Fuji 16.9.3

Caveat ID Number	Description
CSCvj32802	RSP3: Tunnel stats are not working after FRR cutover
CSCvm76770	Unpredictable asymmetry on T1/E1 IM
CSCvn99716	C3794 controller displays down state with traffic flow
CSCvn99725	Iomd crash followed by E&M module reload during ISSU
CSCvo65688	QIP-TOD flaps in Cisco ASR-920-12SZ-IM and ASR-920U-12SZ-IM (master) when setup is left overnight
CSCvn97073	SerDes release does not work for OCx IM when moved from slot 14 to slot 12
CSCvo78794	iMSG : standby RSP3 chooses continuous reload with combination of HDLC and PPP
CSCvp19127	A900-IMA48D-C protection : T1 circuits fails to pass traffic, after RSP switchover

Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.3

Caveat ID Number	Description
CSCvk34062	LLDP TX not working on few ports after the router is reloaded

Resolved Caveats – Cisco IOS XE Fuji 16.9.3

Caveat ID Number	Description
CSCvc38475	SerDes not locking with ISSU and reload
CSCvi21714	ASR907 showing alarms of power supply 3 missing
CSCvj39070	UEA_MGR crashes during MPLS FRR cutover
CSCvk13764	"uea_mgr fault on fp_0_0 " issue leads to 907 crash on boot-up .
CSCvk54023	Convergence delay in active RSP removal
CSCvk59137	Fan tray temperature read as 0 degree Celsius
CSCvk72044	cylon_mgr crash@adjmgr_get_fid_index seen in soak run
CSCvk75941	[RP-OIR]: Interface comes out of PoCH on IM OIR followed by RP OIR.
CSCvm74609	Async signaling: Not able to remove the signaling commands when device is booted with older images.
CSCvm83498	SONET SIT: PUNEQ is asserted to wrong port with 3c and 12c config on port pair
CSCvm90040	A900-IMASER14A/S: Duplicate IP Addresses in Different Routing Contexts Break Raw Socket Listener
CSCvm96368	non-Cisco USB is not recognized in rommon while it shows up in IOS-XE
CSCvn08456	RSP3: Giant counters incremented for packets bigger than 1500 bytes
CSCvn19901	After upgrade (318SP2-1671) the router stayed down
CSCvn49741	ASR903/920 cylon_mgr crash.
CSCvn64973	A900-IMA4OS module reload with controller mode change
CSCvo07619	ASR920-BDI IPv6 ping failure_FMFP_OBJ_Download_Failure
CSCvn07765	On Upgrading the node using ISSU from an image where we have the issue outlined in CSCvn07765 to an image having the fix we expect the CU SFP ports to go down after ISSU completion. Workaround to get the ports up again is to flap the ports once
CSCvp16487	NCS4200-48T3E3-CE: High CPU utilisation observed for IOMD process

Platform Independent Resolved Caveats - Cisco IOS XE Fuji 16.9.3

Caveat ID Number	Description
CSCvm67074	IS-IS Node Cache may consume excessive CPU
CSCvm68200	OBS: router bgp af network mask does not sync to CBD on reload/full-sync
CSCvn00184	IOS-XE can not build SR-TE towards SR node without mpls-te enabled
CSCvn25081	Cisco-IOS-XE-bgp YANG model needs proper handling for neighbor <ip> activate command with peer-groups
CSCvn69452	in.telnetd process consumes 100% CPU in show process cpu platform sorted

Open Caveats – Cisco IOS XE Fuji 16.9.2

Caveat ID Number	Description
CSCvi72770	Unpredictable asymmetry across the port on C37.94 IM
CSCvj32802	RSP3: Tunnel stats are not working after FRR cutover
CSCvj84951	ASR903 reports optic field is zero and incorrect Tx/Rx optical power thresholds for QSFP-40G-LR4
CSCvk72286	High Path Asymmetry value ~ 17 msec observed with RS-232 Async Service
CSCvm64157	IOT: Inconsistent behaviour of E&M impedance attribute
CSCvm88691	ASR07: Group D (9-16) fan failure alarms are not reporting on fan failure condition
CSCvm90040	Raw Sockets: Duplicate IP Addresses in Different Routing Contexts Break Raw Socket Listener
CSCvm90057	Raw Sockets: Raw Socket Packet Debugs Cause Router to Crash
CSCvm96368	Non-Cisco USB is not recognized in rommon while it shows up in IOS-XE
CSCvm97580	On shutting backup ABR, traffic drops observed for 6PE over primary ABR drops.
CSCvk77003	One VLAN traffic is not flowing in scaling BCPoMLPPP with 64 VLANs
CSCvm08992	E1 interfaces go DOWN on remote alarm (RDI)
CSCvk73179	TDM traffic in priority queue affected with 9,000 bytes size packet of transit data traffic

Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.2

Caveat ID Number	Description
CSCvj17588	Router may reload in BGP Router process when interface flap occurs with IPv6 MPLS per vrf routes
CSCvk59169	Strict SID has NOT been enabled in ISIS segment-routing
CSCvm52543	Subscriber session hangs after the upgrade and reload
CSCvm59483	Host crashes the DSP if ipv6 commands are configured under Service-Engine [Purge ipv6 config option]
CSCvm61279	Crash under AFW_application_process with shared-line configuration
CSCvm76590	CUBE does not forward 200 OK in SRTP-RTP scenario with TCL script on Dial-peer
CSCvm76699	TCP closed when using Virtual IP HA(high availability)setup with WSAPI registration
CSCvn01507	ISR not recalculating the hash value correctly after payload change
CSCvn02047	Configuring more than 5k NAT entries cause high CPU utilization with no traffic.

Resolved Caveats – Cisco IOS XE Fuji 16.9.2

Caveat ID Number	Description
CSCvg67742	ASR903-RSP3C Enhancement of log messages on FAN Tray OIR
CSCvh59821	RSP3 : FP Switchover is not successful on active failover due to kernel crash
CSCvi91527	RSP2 8xT1E1 Adaptive Clock Recovery in UNKNOWN status
CSCvj22030	ACR fails with +/- 50 ppm tolerance
CSCvj27554	Handling for BHEEM FPGA SEU on RSP3
CSCvj40597	Show ptp port running and detail showing incorrect clock IDS.
CSCvj43861	E3-CP : show facility-alarm status shows E1 level alarms though its configured as clear channel
CSCvj49266	Rx getting dropped at Master after losing its 10M input.
CSCvj50537	ISSU Failure in Vz ME lab
CSCvj60379	RSP3: ARP Request Not Generated when IPv4 Routable Packets with L4 Header are Punted
CSCvj67071	RS232 Async: line and pattern issues in Albedo with different data/stop bits.

Caveat ID Number	Description
CSCvj76013	RSP3: Error Objects wrt to Load balance on on increasing the BGP next-hop
CSCvj87273	ASR903/Rudy: False high temp readings from ARAD+ sensor causing system shutdown
CSCvj89265	IOT: Issue with duplex mode while creating RS422 Service
CSCvk04547	Port-channel member link flap on RP OIR
CSCvk14135	With monitoring session configured slave is not locking<167>
CSCvk20144	Not able to see the physical-layer configuration under "show run" command
CSCvk23983	DATA CORRUPTION-1-DATA INCONSISTENCY observed with VFI and XCONNECT configuration during reload.
CSCvk32660	EM IM: Dejitter Buffer Not Taking Effect on IM or Router Bootup
CSCvk37892	IOT: Default duplex "full" is displayed in show run output
CSCvk64429	Show controllers output not showing c3794 controller in ASR903U
CSCvk70824	RSP3 crashes after executing "show mac address-table" simultaneously from two vty sessions.
CSCvm04696	Mac learnt on G8032 blocked ports due to DHCPv4 discovery pkts
CSCvm10079	Force QL Tx option is not working when netsync configured with more than 3 input sources.
CSCvm11685	RSP3C crash//UEA_CEF//Pointer held by trefp is NULL
CSCvi91527	RSP2 8xT1E1 Adaptive Clock Recovery in UNKNOWN status
CSCvj22030	ACR fails with +/- 50 ppm tolerance
CSCvk23983	DATA INCONSISTENCY observed with VFI and XCONNECT configuration during reload
CSCvj76560	BFD DDR BUSY condition not recovered
CSCvk07069	OBFL logging for SBE/MBE FPGA interrupts
CSCvk62834	16101:cylon_mgr crash@nile_cef_prefix_v4u_get_adj_info seen in soak run on Polaris image
CSCvj70711	BFD flap during DDR3 Busy recovery
CSCvk45460	MLDP:Router crashed after breaking the core link with recursive enabled
CSCvm21116	RP-reset when show pla har pp act command is executed for the failed object after EMPLSintd exhaust
CSCvj22030	ACR fails with +/- 50 ppm tolerance

Platform Independent Open Caveats - Cisco IOS XE Fuji 16.9.2

Caveat ID Number	Description
CSCuz14861	IOS-XE Fails to correctly populate RTCP SSRC Field
CSCvf65079	ASR CUBE 1K reloaded with reason: RG-application reload on voice-b2bha RG
CSCvj16209	CME with external SIP trunk registration results into crash
CSCvj24940	Voice VRF with No Bind OPTIONS Ping response not sent
CSCvj25678	Crash after failing to modify xcode
CSCvj27172	Crash during Generic Call Filter Module cleanup
CSCvj43156	Crash in XDR process: "fib_rp_table_broker_encode_buf.size <= FIB_RP_TABLE_BROKER_ENC_BUF_SZ"
CSCvj50005	ISR4K PPE ucode crash when processing ipsec traffic on CWS tunnel
CSCvj69654	OSPF originates default route without "default-information originate"
CSCvj73544	OSPF routing loop for external route with multiple VLINKs/ABRs
CSCvj88138	VASI NAT: FTP ALG translation is sometimes failed
CSCvj91448	PKI:-IP address parsing issue while printing the subject name if classless IP is used in Trustpoint
CSCvj92548	CSR1k-FlexVPN: Spoke to Spoke: Implicit NHRP entry due to expired resolution request handling.
CSCvj92862	Router returns 255 length byte-stream chars instead of actual length for OSPFV2 Key-string
CSCvj95351	OSPF SR uloop : After issuing clear ip ospf process OSPF process crashed.
CSCvk00446	BGP high CPU when config 256k vxlan static route
CSCvk02072	Hoot-n-holler multicast traffic marked with DSCP 0
CSCvk07838	CUBE is using wrong source IP address to send SIP error
CSCvk10633	BGP crash while running show command and same time BGP peer reset
CSCvk12152	Unable to remove command ip nat inside destination
CSCvk15062	Modification to ZBFW access-lists do not reflect in TCAM
CSCvk17777	When using VRF NAT port used for ftp data is not freed
CSCvk24323	Router crash in ISIS with SR Ti-LFA

Caveat ID Number	Description
CSCvk27007	MGCP status remains Down after IOS upgrade caused by CSCvh70570
CSCvk37875	High Availability system with two Voice Gateways - Crash
CSCvk49905	Crash when shifting the layer 2 LACP member peer from one link to another
CSCvk53405	Router crash - AFW_application_process
CSCvk56331	Initial contact in IKEv1 phase 2 rekey (QM1) causes all crypto sessions to drop
CSCvk60184	Random crash of data plane with SRTP-SRTP / SRTP-RTP load tests
CSCvk65072	Crash due ZBF + NAT
CSCvk65354	Extension Mobility Not working when used with Greek locale on SIP CME
CSCvk66880	CUBE incorrectly fomats SIP SDP
CSCvk69075	No calls shown in output show call active voice brief on CUBE & stale entries are present
CSCvk69093	CUBE is not responding to SIP INFO
CSCvm01351	Observed IPv6 Adj memory leaks
CSCvm02627	Incorrect Contact port 5060 used instead of 5061 by CUBE in 302 Moved Temporarily message
CSCvm03744	%FMFP-3-OBJ_DWNLD_TO_DP_FAILED:fman_fp_image:xxx" appears when configured ip port-map on Router
CSCvm06270	ICMP unreachables are not sent to the client on C1117 platform
CSCvm08571	Rework need on CSCvj59170 to support SDP parsing
CSCvm16619	CPP-mcplo-ucode crash while encrypting SIP packets with ALG NAT for SIP
CSCvm53491	SIP CME Crashes when Calling Shared Line
CSCvm56592	CME/BE4K: Corrupted config file for Auto Registered IP Phones after reload
CSCvm56670	ACL dropping packets after updating it - %CPPEXMEM-3-NOMEM
CSCvm66103	Crash due to communication failure - IPC (Inter-Procedure Call) messages between DSP and RP.

Open Caveats – Cisco IOS XE Fuji 16.9.1a

Caveat ID Number	Description
CSCvg10313	Cu clock source still squelched on interface bring up after two SSOs

Caveat ID Number	Description
CSCvi72770	Unpredictable asymmetry across the port on C37.94 IM
CSCvi84049	Attaching E1 serial interface with multilink group failed
CSCvi88851	RSP3: Sometimes IMs Take 4 Minutes to Com Online after OIR Re-insertion
CSCvi91527	RSP2 8xT1E1 Adaptive Clock Recovery in UNKNOWN status
CSCvj02225	RS232 rawsocket (async/sync) failing due to punt issue in datapath
CSCvj05503	Channelized T3 function is setting DS2 X bits to 0 for normal condition
CSCvj16369	Alarm is not asserted when we do no mode and mode on vt1.5 and ct3 with alarm injected
CSCvj19108	Alarm-profile: Detach alarm-prof after IM removal, Later tracebacks are seen when IM is re-inserted.
CSCvj22030	ACR fails with +/- 50 ppm tolerance
CSCvj32802	RSP3: Tunnel stats are not working after FRR cutover
CSCvj33102	[SVSP-215]-AINS card type profile not working post router reload for DS1 card
CSCvj37683	IP SLA UDPjitter probe - false-positives on RSP3-based routers
CSCvj40597	show ptp port running and detail showing incorrect clock IDS.
CSCvj49266	Rx getting dropped at Master after losing its 10M input.
CSCvj57705	RSP3: Failed to move VLAN to blocked (for normal EFP) on modifying the exclusion list under G8032
CSCvj60860	RS232 Async serial interface output stats are not incr and no end to end traffic.
CSCvj67071	RS232 Async: line and pattern issues in Albedo with different data/stop bits.
CSCvj70563	Higher latency with E&M traffic
CSCvj72171	PPPoE packets (PADI PADO PADR PADS PADT) counters are not getting incremented after SSO
CSCvj82644	PTP session moves out of PA after configuring more than 63 scale slaves in HBC<RSP3>
CSCvj84567	rs232 sync: multiple session establishment failures leads to event memory exhaustion in clients
CSCvj84662	ENM IM: Frame and Pattern errors see with Type TO in default operation mode(2-wire).
CSCvj84951	ASR903 reports optic field is zero and incorrect Tx/Rx optical power thresholds for QSFP-40G-LR4
CSCvj88449	VCoP BERT test to a physical loop

Caveat ID Number	Description
CSCvj89265	IOT: Issue with duplex mode while creating RS422 Service
CSCvk04648	FMFP3-3-OBJ_DWNLD_TO_DP_FAILED: SIP0: fman_fp_image: adj 0x3e5, Flags None download to DP failed
CSCvk07960	RSP3_400 - silent reload - Last reload reason: Critical process smand fault on rp_0_0 (rc=0)
CSCvk13953	Crash when configuring L2VPN under pseudowire interface
CSCvk14135	With monitoring session configured slave is not locking<167>
CSCvk15424	iMSG: VC missing from AVL tree on standby with scale of 1k, one VC found missing in standby RSP
CSCvg00947	Serial IM LEDs shows inconsistent behavior while performing SSO
CSCvg66190	IOT: Rawsocket disconnected clients are not sending any notification
CSCvh51488	RS232 sync, when continous traffic is sent without interframe gap, RX<TX with end to end traffic
CSCvi72770	Unpredictable asymmetry across the port on C37.94 IM
CSCvj02225	RS232 rawsocket (async/sync) failing due to punt issue in datapath
CSCvj24884	Traceback seen while loading image in Active and standby
CSCvj60860	RS232 Async serial interface output stats are not incr and no end to end traffic.
CSCvj70563	Higher latency with E&M traffic
CSCvj74325	X.21: Serial IM flaps/hangs when CEM interface allows to config clock rates 4032000 and 8064000.
CSCvj82372	CPUHOG observed when rs232 aync raw-socket config and unconfig on ASR920.
CSCvj82885	IOS thread disabled interrupt Tracebacks seen with r232 async session
CSCvj84567	RS232 sync: multiple session establishment failures leads to event memory exhaustion in clients
CSCvj84662	ENM IM: Frame and Pattern errors see with Type TO in default operation mode(2-wire).
CSCvj86932	X21: CEM ingress and Egress counters are not incrementing for different clock rates.
CSCvk00980	Router crashed while configuring Async raw-tcp service post OIR.
CSCvk23646	RS232 - traffic fails with parity values except default
CSCvk23733	RS232 Async: Pattern(SLIP) issues seen with higher raw-socket packet-length values(>510)

Caveat ID Number	Description
CSCvk30191	RS232 async raw-socket: IM rebooted and IFCFG_CMD_TIMEOUT traces seen with OIR.
CSCvk31981	RS232 async: raw TCP sessions are up even tough cable is not connected.
CSCvh83686	BGP Link Bandwidth community gets corrupted for a large values
CSCvi11914	BGP PIC/Max-paths:150K scale device stuck with pending issues for huge time with network changes
CSCvi90526	OSPF TILFA: SRLG protect tilfa path computation ALGORITHM fails due to wrong directly connected flag
CSCvi92979	ISIS SRTE: verbatim tunnels stay UP even if the IGP is shut (happens after fail over)
CSCvj09305	slow convergence when configuring ha-mode sso for IPv6 peers
CSCvj10061	Display full IPv6 address in "sh l2tp tunnel"
CSCvj73841	Overly aggressive initial SPF delay timer is configured -> SR uloop does not take effect
CSCvj78075	SAP: YANG: Yang model for arp entries is missing arp alias support
CSCvj81382	IPv6 AAA Prefix Support for 3rd party PPP clients no password for -dhepv6 Access-Request
CSCvj85608	ARP reply not accepted if sourced from nat alias address in other VRFs
CSCvj93060	VRF stuck in deletion mode
CSCvk24323	Crash in ISIS with SR Ti-LFA
CSCvk32822	QoS stats process crash
CSCve01696	Support IPsec feature with metroipaccess license.
CSCvm06486	Unconfiguring cem-group 0 unframed under controller T3, IOSD crash is seen.

Resolved Caveats – Cisco IOS XE Fuji 16.9.1a

Caveat ID Number	Description
CSCvd81332	EVENTLIB-3-CPUHOG: SIP1: iomd traceback observed while doing SSO
CSCve05859	Exxx EIN: G.8275.1 testing: Clock loop forming between synce and ptp
CSCve16000	Max of ECMP path to 8 for RSP3C
CSCve52155	RSP3: BFD Session Between 2 RSP3s Down on Reloading 1 RSP3

Caveat ID Number	Description
CSCve75491	TE auto-bw: Incorrect bandwidth requested on soaking with traffic
CSCvf03157	RSP3: PC stays in suspended state on IM OIR
CSCvf05560	Conditional EXP Marking for BDI+EVC
CSCvf09940	RSP3_2x10GE: output netsync drifting after SSO when locked to 2x10GE
CSCvf33429	APS UNI ADM mode: APS reverts back on clearing the shut from inactive controller
CSCvf41558	Support: A900-IMA1Z8S-CX in slot 0/1 for ASR907 in 5g mode
CSCvf45581	QoS: Configuration failed. Can not configure more than one access-group per class
CSCvf50635	Dynamic stream are getting deleted on ASR920 router with G8275.2 profile <POLARIS> ASR920 Timing THS
CSCvf54458	903: OOS issue seen at 8X1G IM
CSCvf55743	ASR903: ifHCInBroadcastPkts, ifHCOutBroadcastPkts return incorrect decreasing values for portchannel
CSCvf56674	CPU HOG seen on SSO
CSCvf63352	CESoPSN: Denethor:ACR clock changes from P2 to P1 after SSO
CSCvf66442	MPLS IP support over Routed VPLS.
CSCvf67781	IOT: In SERIAL controllers, the clock-rate value 128000 is not shown in 'show running-config all'
CSCvf72154	RSP3 - PIM neighborship down on BDI interface due to packets ASIC loop.
CSCvf72165	RSP3 - Router crash after "debug platform condition" command is applied.
CSCvf72273	RSP3_G8275.1: Both the PLL locked to REMOTE RP and PLL lock status is OFF
CSCvf72306	Placeholder to support multiple EFPs per port with BDI on RSP3
CSCvf75418	Combo IM/2x10gig IM iomd cpu utilization more than 50%
CSCvf75578	CESoPSN: ACR/DCR :P1 needs to be give more priority than P2
CSCvf76928	1G on 10G peer end remains down on shut/no shut
CSCvf78415	OCx APS CESoP: AIS is seen on DS1 after sonet-acr shut, OIR, no shut
CSCvf79354	RSP3: OOS recovery failed on 1G of SFP combo IM
CSCvf79533	Need to remove free-running CLI under E1 controller
CSCvf80056	MAC-FLAP-Syslog-Not generated for TEFP BDs
CSCvf82663	ASR903/RSP3C crashed at dl_callback

Caveat ID Number	Description
CSCvf85222	[RSP3] CFM over PC scale to be reduced to free up 1 Port Scheduler from each ARAD
CSCvf85795	VC3 TX C2 is displaying as 0 on show controller sdh output
CSCvf86662	RSP3_907: G8275.1 T-GM is hogging and stopping the PTP packets downstream
CSCvf90662	Doing configure replace of async config with cem config blocks all configs on interface
CSCvf90832	RSP3_907: UTC Offset is NOT taken care properly when VP is selected.
CSCvf90854	configured priority2 under ptp clock is not sent downstream when T- BC selected VP
CSCvf91208	Unable to retrieve stream with G8275.2 profile <POLARIS> ASR920 Timing THS
CSCvf95131	APS: ACR Rate configuration mismatch is seen in "show running" and "show controller"
CSCvf95955	3G : MSP : APS Inactive iff pull out work active cable when lockout of protection
CSCvf97942	VZ_Sol : syslog messages for PATH alarm clear not coming for all 48 paths
CSCvf99109	Interface up in RSP3 phase1 IM and down at the peer
CSCvg01156	G275.2 Huge TIE jump seen on slave after reload completes on RSP3 master
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
CSCvg04717	DDR Busy and Calibration handling in FPGA software driver
CSCvg06691	G8265.1: huge TIE deviation while master is lost and regained continuously.
CSCvg09862	show controller o/p should show both remote and local PMON in the same CLI
CSCvg14825	Require varbind entSensorPrecision,Scale & Type along with trap entSensorThresholdNotification
CSCvg22018	Alarm prof: Modifications in the attached profile is not effective until it is reattached.
CSCvg23956	RSP2: VPLS Backup PW: Enable member bdi CLI under l2vpn xconnect context
CSCvg25003	Router gets rebooted with PTP master switch
CSCvg27327	Netsync is not working on 10G port of celebron
CSCvg28721	RSP3: uea-mgr crashed while trying to install a label entry in kbp(update case)
CSCvg33938	Sol: Behavior of Loopback local and APS group
CSCvg38326	To throw warning and reject the priority configuration in class-default
CSCvg40919	Loopback commands: redundant loopback commands are seen under path

Caveat ID Number	Description
CSCvg42691	RSP3- P node ECMP loadbalancing failing for ip traffic
CSCvg43975	RSP3: Leak in G8032 IOS TDL Messaging on Flapping the Ring
CSCvg49571	RSP3: Accuracy not proper with double failure and restore
CSCvg53410	RSP3: IMA1X handle PHY HiBER events
CSCvg54341	Alarm prof: LP-UNEQ is seen when mode vt-15 is reconfigured
CSCvg61571	VZ Sol : Cem traffic is not flowing either in slot 0 or 1 when slot 11 and slot 12 are configured
CSCvg65763	TOD cisco format got broken.
CSCvg65787	E3 channelization is not enabled by default, whereas for T3 channelization is enabled by default.
CSCvg66177	DCC interface stats are not getting incremented even though DCC links are UP
CSCvg66287	Alarm prof: port profile is not removed when no mode sonet is executed
CSCvg66293	IOT: Admin and Oper state of C37.94 controller are not proper in SNMP IfTable
CSCvg76895	VID.116-ONS-SI-2G-L1 SFP is rejected by Sonet Module - OC48 SFP Init failure image
CSCvg84699	BFD session not coming up on RSP3 due to wrong platform offload limit
CSCvg88313	ACR/DCR : Global clock config has to be blocked for STSnC
CSCvg88758	STSnC (n=1,12 and 48) : C2 value is not reset to "0" after no mode configuration
CSCvg89287	show facility-alarm status critical major minor info are not displaying selected fields alone
CSCvg90002	SATOP: Remote loopback is not working in card protection controller
CSCvg95992	Change syslog message for RSP3 on fan removal
CSCvh04843	G.8275.1: Unable to scale the number of ports beyond 8.
CSCvh14269	Alarm prof: When a profile is attached, LO alarms are not reported in syslog though syslog is enabled
CSCvi53346	RSP3 : BFD packets not sent out towards 9K after timer change and link flap
CSCvi79409	ENM flaps/hangs on configuring CEM interface
CSCvi80618	G.8265.1- SYNC and Delay Request are not being injected at ASR920 with VRF.
CSCvi84144	Auto-neg off not working
CSCvi92596	ISSU: interface module delay calculation needs to be enhanced for TDM IMs

Caveat ID Number	Description
CSCvi95085	PTP Holdover Timer resets to zero as soon as QL Flap in the event of double failure
CSCvi96045	T3 timestamping not happening on Celeborn 10G
CSCvi97136	Stream is still active though the clock port deleted at master.
CSCvi97402	Conditional marking not working for new policy-map when all 3 marker profile are used
CSCvj00215	CRC on ARAD to be detected and handled
CSCvj02290	Sync RS232: router reloads when traffic is sent in both directions simultaneously
CSCvj02765	G8275.1 : BC hybrid not moving to PA when multiple masters are present
CSCvj04138	"show ptp port virtual" showing Signal Fail as True eventhough the port is up
CSCvj04207	PTP over IMA8Z and IMA2Z is not working
CSCvj06628	RSP3:With HSRP Loop ,Unicast ARP Packet drops due to Br Q choke
CSCvj21360	Need to CLI support for enable/disable of control-word for iMSG feature
CSCvj27560	cman-fp/cmcc heartbeat failure crash due to pca954x channel selection errors.
CSCvj28545	RS422 service is not working on ports 0 to 3
CSCvj30510	DSx UPSR - Access circuit TDM settings mismatch error seen with xconnect
CSCvj35440	Reading wrong bheem address causing RSP3 crash.
CSCvj39051	Default clock class 6 without input 1pps config <169>
CSCvj39606	AG1 CLI command "show ptp port running detail" not showing output
CSCvj40006	Adding one more vlan tag to the existing service instance causing entire traffic dr
CSCvj43887	Type TO is not working for different payload sizes
CSCvj52956	Unable to configure LOOPBACK option when alarm-profile attached
CSCvj57301	[VF-PT] Slave not locking on a specific ASR903 port (IMA8T Gi0/5/0)
CSCvj57659	SONET SIT: APSd process doesn't get re-initialized when standby iomd crashes
CSCvj63480	RS232 Async: IOSXE-WATCHDOG - Router crashed while performing OIR
CSCvj65555	G8275: Clock class value is 6 even when TOD is removed in TGM
CSCvj69889	Memory leaks seen when sync rs232 raw-socket service is unconfigured and re-configured
CSCvj70809	%SPA_SERIAL_IM-3-NULL_DATA_STRUCTURE: NULL pointer detected: msg in set destination address

Caveat ID Number	Description
CSCvj85141	Policy-map on Multilink interface interrupts ARP on ASR 903
CSCuy30367	ENH: IOS-XE should allow "ip address dhcp" on Tunnel interfaces
CSCve57194	RSP3 crashes @ fillin_mempool_pc_array, mempool_pc_summary_tty
CSCvg51358	DHCPNAK is not sent in roaming scenario.
CSCvh57050	IGMP multicast SSM-map with DNS doesn't work with IGMPv3
CSCvh60871	Unexpected Reboot following 'show platform software adjacency oce [ID]'
CSCvh61453	NULL remote_hostname from LAC
CSCvh69518	%SYS-3-TIMERNEG:Cannot start timer with negative offset Process= "ARP Background"
CSCvi31493	Configuration of BGP auto-summary using NETCONF fails
CSCvi36351	Standby rp crash on removing member link from port-channel
CSCvi60900	DHCP Leasequery Padding contains previously used data
CSCvj87392	DHCP server with option 249 pushes only the routes configured in the first instance.
CSCvg39675	3850 DHCP relay updates ARP table with incorrect MAC entry
CSCvh41614	IoT[T1E1 CAS]: CEM counters are getting zero after delete/recreate cem-group with CAS
CSCvh67138	RS232 sync, when "no chan-group" is done sessions are not getting removed
CSCvj53263	IOT: Issue with Raw Socket Packet length default value
CSCvj63480	RS232 Async: IOSXE-WATCHDOG - Router crashed while performing OIR
CSCvj67071	RS232 Async: line and pattern issues in Albedo with different data/stop bits.
CSCvj69889	memory leaks seen when sync rs232 raw-socket service is unconfigured and re-configured
CSCvj89265	IOT: Issue with duplex mode while creating RS422 Service
CSCvk20144	Not able to see the physical-layer configuration under "show run" command
CSCvk32660	EM IM: Dejitter Buffer Not Taking Effect on IM or Router Bootup

