# Release Notes for Cisco NCS 520 Series Ethernet Access Device, Cisco IOS XE Fuji 16.9.x

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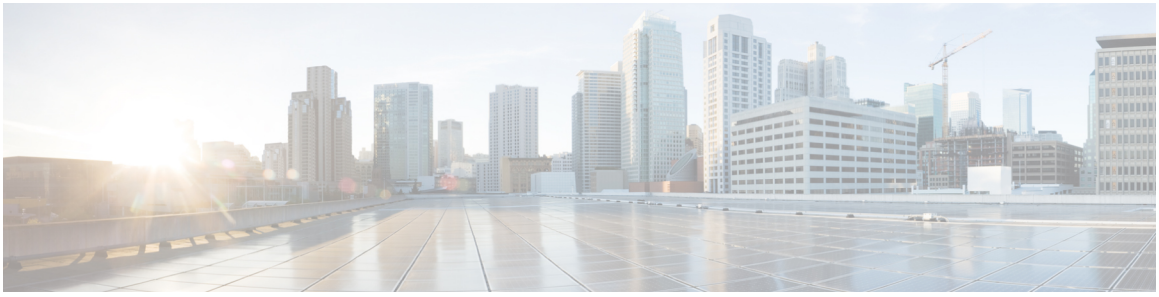
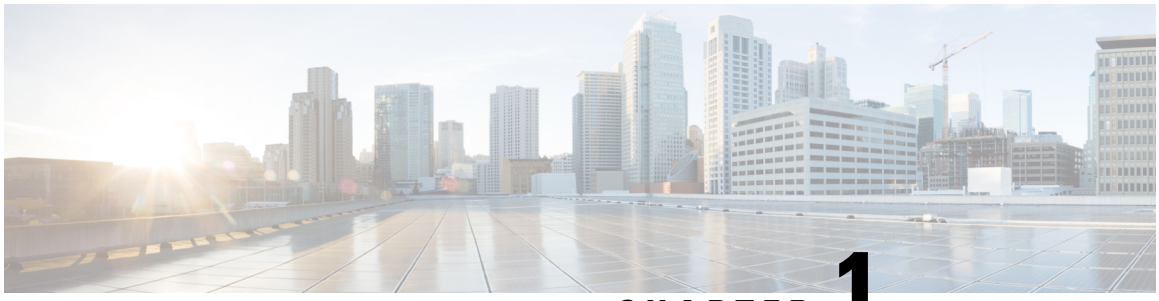


# CONTENTS



CHAPTER 1

# Introduction

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# Cisco NCS 520 Series Ethernet Access Device Overview

The Cisco NCS 520 Series Ethernet Access Device is a family of low cost, fixed Carrier Ethernet Network Interface Devices (NID) and a switch that is targeted to be the next generation replacement of the Cisco ME 3400 series Access Switches. The Cisco NCS 520 Series Ethernet Access Device adds 10G NID and low-cost MBH switch to the existing Service Provider Access portfolio, with the following features:

- MEF CE 3.0 compliant
- Premium SKUs with support for extended temperature (from -40C to 65C)
- Conformal coating on the PCBAs (to be able to support installation in ventilated enclosures)

This release note contains information about the Cisco NCS 520 Series Ethernet Access Device, provides features information for these devices, hardware support, limitations and restrictions, and caveats.

This release note provides information for these variants of the Cisco NCS 520 Series Ethernet Access Device:

- N520-4G4Z-A (Base)
- N520-X-4G4Z-A (Premium)
- N520-X-4G4Z-D (Premium)
- N520-20G4Z-A (Base)
- N520-20G4Z-D (Base)
- N520-X-20G4Z-A (Premium)
- N520-X-20G4Z-D (Premium)

# Feature Navigator

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

# Determining the Software Version

Use the following commands to verify your software version:

- Consolidated Package— **show version**

# Supported FPGA Version

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

***Table 1: FPGA Versions for NCS520-20G4Z-A ,NCS520-20G4Z-D, NCS520-X-20G4Z-A, NCS520-X-20G4Z-D,N520-4G4Z-A,N520-X-4G4Z-A and N520-X-4G4Z-D***

| Release | FPGA Version |
|---|---|
| Cisco IOS XE Fuji 16.9.7 | 0x0003001E |

# Software Licensing Overview

The Cisco NCS 520 Series Ethernet Access Device supports the following types of licenses:

- Port Licensing—Port Upgrade license is available as a "Pay as you Grow" model.

- 10G upgrade license
- 1G upgrade license

- Metro Access (default)

The following method is used to activate the above licenses:

- Cisco Software Licensing—The Cisco Software License Activation feature is a set of processes and components to activate Cisco software feature sets by obtaining and validating fee-based Cisco software licenses.

**Note** Licenses generated by the Cisco Software Licensing are tied to the UDI of the chassis and a corresponding watchtower device certificate (WDC) is stored in the system.

The following features are supported for the software licenses:

- QoS, with deep buffers and hierarchical QoS (HQOS)
- Layer 2: 802.1d, 802.1q
- Ethernet Virtual Circuit (EVC)
- Ethernet OAM (802.1ag, 802.3ah)
- IPv4 and IPv6 host connectivity

# Limitations and Restrictions on the Cisco NCS 520 Series Ethernet Access Device

**Note** The error message "PLATFORM-1-NOSPACE: SD bootflash : no space alarm assert" may occur in the following scenarios:

- Any sector of SD Card gets corrupted
- Improper shut down of router
- power outage.

This issue is observed on platforms which use EXT2 file systems.

We recommend performing a reload of the router. As a result, above alarm will not be seen during the next reload due to FSCK(file systems check) execution.

However, If the error persists after a router reload, we recommend to format the bootflash or FSCK manually from IOS.

- The **default interface** command is used to default the parameters under that interface. However, when speed is configured on the interface, the following error is displayed:

  ```
  Speed is configured. Remove speed configuration before enabling auto-negotiation
  ```

- Adding or deleting the Trunk Ethernet flow points (TEFPs) with scaled bridge-domain, without delay causes the Cisco NCS 520 Series Ethernet Access Device to crash.
- Virtual services should be deactivated and uninstalled before performing replace operations.
- The **controller** and **nid-controller** commands are not supported.
- Cisco NCS 520 Series Ethernet Access Device displays an error in Hierarchical QoS policy while trying to remove the **bandwidth** and **bandwidth percent** commands from the default parent class dynamically. To remove the commands, you must first remove the bandwidth from child class and then from the parent class.
- When port is in OPER-DOWN state, applying Hierarchical QoS followed by speed change sets wrong bandwidth values on standard queues. To work around the mismatch, you must reattach the policy to the port level again.

# 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.

# MIBs Support

The below tables summarize the supported MIBs on the Cisco NCS 520 Series Ethernet Access Device.

| **Supported Systems SNMP MIBs** | | |
|---|---|---|
| IF-MIB | CISCO-flash-mib | cisco-ENITY-ALARM |
| CISCO-ENTITY-EXT-MIB | CISCO-BULK-FILE-MIB | NOTIFICATION-LOG-MIB |
| SNMP-COMMUNITY-MIB | CISCO-ENHANCED-MEMPOOL-MIB | CISCO-SYSLOG-MIB |
| SNMP-FRAMEWORK-MIB | ENTITY-SENSOR-MIB | CISCO-CONFIG-MAN-MIB |
| SNMPv2-MIB | SNMP-MPD-MIB | entity-state-mib-cisco |
| CISCO-ENTITY-MIB | CISCO-ENTITY-SENSOR-MIB | |

| **Supported Layer 2 and OAM SNMP MIBs** | | |
|---|---|---|
| DS1-MIB | CISCO-CDP-MIBCISCO-CEF-MIB | |

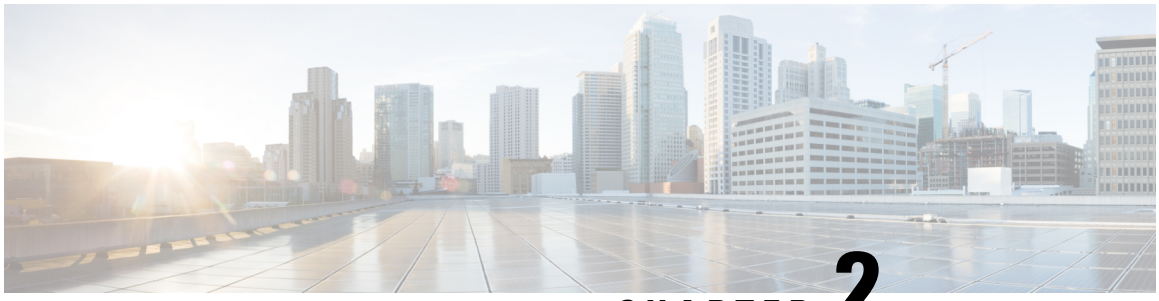
| Supported Layer 2 and OAM SNMP MIBs | | |
|---|---|---|
| CISCO-IPSLA-ETHERNET-MIB | CISCO-ETHER-CFM-MIB | IEEE8021-CFM-MIB |

| Supported QoS SNMP MIBs | | |
|---|---|---|
| CLASS-BASED-QOS-POLICING-MIB | CLASS-BASED-QOS-MARKING-MIB | CLASS-BASED-QOS-SHAPE-MIB |
| CISCO-CLASS-BASED-QOS-MIB | | |

# Accessibility Features in the Cisco NCS 520 Series Ethernet Access Device

For a list of accessibility features in Cisco NCS 520 Series Ethernet Access Device, see the Voluntary Product Accessibility Template (VPAT) on the Cisco website, or contact accessibility@cisco.com.

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



CHAPTER 2

# New Features

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



## New Software Features in Cisco IOS XE Fuji 16.9.7

There are no new features introduced for this release.

## New Hardware Features in Cisco IOS XE Fuji 16.9.7

There are no new features introduced for this release.

## New Software Features in Cisco IOS XE Fuji 16.9.6

There are no new Software Features introduced for this release.

# New Hardware Features in Cisco IOS XE Fuji 16.9.6

There are no new features introduced for this release.

# New Software Features in Cisco IOS XE Fuji 16.9.5

There are no new Software Features introduced for this release.

# New Hardware Features in Cisco IOS XE Fuji 16.9.5

There are no new features introduced for this release.

# New Software Features in Cisco IOS XE Fuji 16.9.4

There are no new Software Features introduced for this release.

# New Hardware Features in Cisco IOS XE Fuji 16.9.4

There are no new features introduced for this release.

# New Software Features in Cisco IOS XE Fuji 16.9.3

There are no new features introduced for this release.

# New Hardware Features in Cisco IOS XE Fuji 16.9.3

There are no new features introduced for this release.

# New Software Features in Cisco IOS XE Fuji 16.9.2

There are no new features introduced for this release.

# New Hardware Features in Cisco IOS XE Fuji 16.9.2

There are no new features introduced for this release.

# Supported Software Features in Cisco IOS XE Fuji 16.9.1a

**Support for Flex Links**

Flex Link is a pair of Layer 2 interfaces, where one interface is configured to act as a backup to the other. The feature provides an alternative solution to the Spanning Tree Protocol (STP), allowing you to turn off STP and still provide basic link redundancy. Flex Links are typically configured in service provider or enterprise networks, where, you do not want to run STP on the router.

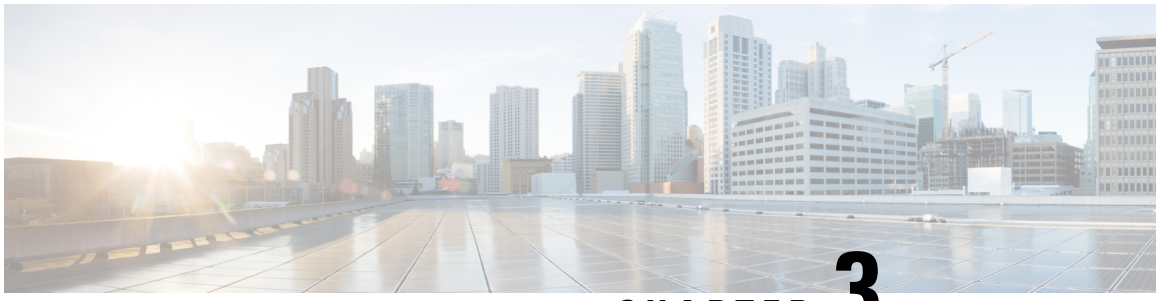
For more information, see LAN Switching Configuration Guide (Cisco NCS 520 Series).

# Supported Hardware Features in Cisco IOS XE Fuji 16.9.1a

The Cisco NCS 520 Series Ethernet Access Device supports the following four new variants in Cisco IOS XE Fuji 16.9.1:

- N520-20G4Z-A (Base)
- N520-20G4Z-D (Base)
- N520-X-20G4Z-A (Premium)
- N520-X-20G4Z-D (Premium)

This subfamily of variants have fixed ENET interfaces (20 x 1GE + 4 x 10GE ports available), with a single or dual power supply for AC and dual power supplies for DC.



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.

• Closed Caveats – Cisco IOS XE Fuji 16.9.1a, on page 18

# 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 16.9.7

| Caveat ID Number | Description |
|---|---|
| CSCvn64703 | Frames with packet size lesser than Port MTU and greater than 1500B counted as Giant Frames |

# 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 |
|---|---|
| CSCvw19031 | ISIS frames not forwarded transparently |

# 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 |

| Caveat ID Number | Description |
|---|---|
| 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

There are no Open Caveats for this release.

# Resolved Caveats – Cisco IOS XE Fuji 16.9.6

| Caveat ID Number | Description |
|---|---|
| CSCvo35846 | Egress drops are always observed in the interface counters |
| CSCvs18938 | Y1731-DMM reports a very high delay and jitter values periodically |
| CSCvs76696 | After restart smart license registration will fail |

# Open Caveats – Cisco IOS XE Fuji 16.9.5

| Caveat ID Number | Description |
|---|---|
| CSCvs18938 | Y1731-DMM reports a very high delay and jitter values periodically |

# Resolved Caveats – Cisco IOS XE Fuji 16.9.5

| Caveat ID Number | Description |
|---|---|
| CSCvg82472 | hw-util logs need to suppress while rommon upgrade |
| CSCvj74297 | External alarms not working for alarm pins one to three |
| CSCvr07281 | NCS520: link type set to "no negotiation auto" for 10G ports. |

| Caveat ID Number | Description |
|---|---|
| CSCvr25191 | NCS520: TFTP download time enhancement with BDI interface. |

# Open Caveats – Cisco IOS XE Fuji 16.9.4

| Caveat ID Number | Description |
|---|---|
| CSCvj62049 | Dom3::shut/no-shut on member link causes cpu to drop all control protocol pkts. |
| CSCvj74297 | External Alarms not working for alarm pins one to three |
| CSCvh15960 | During powercycle Dying GASP is not getting generated to remote peer on all the ports. |

# Resolved Caveats – Cisco IOS XE Fuji 16.9.4

| Caveat ID Number | Description |
|---|---|
| CSCvn59099 | STP peering not working on BD where there is a logical BDI interface created for the same. |
| CSCvp61364 | Shaper calculation should be done in L1 rate. |

# Open Caveats – Cisco IOS XE Fuji 16.9.4

| Caveat ID Number | Description |
|---|---|
| CSCvj62049 | Dom3::shut/no-shut on member link causes cpu to drop all control protocol pkts. |
| CSCvj74297 | External Alarms not working for alarm pins one to three |
| CSCvh15960 | During powercycle Dying GASP is not getting generated to remote peer on all the ports. |

# Resolved Caveats - Platform Independent

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

# Open Caveats – Cisco IOS XE Fuji 16.9.3

| Caveat ID Number | Description |
|---|---|
| CSCvj62049 | Dom3::shut/no-shut on member link causes cpu to drop all control protocol pkts. |
| CSCvj74297 | External Alarms not working for alarm pins one to three |
| CSCvh15960 | During powercycle Dying GASP is not getting generated to remote peer on all the ports. |

# Resolved Caveats – Cisco IOS XE Fuji 16.9.3

There are no new Resolved Caveats for this release.

# 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 |

# Open Caveats – Cisco IOS XE Fuji 16.9.2

| Caveat ID Number | Description |
|---|---|
| CSCvj62049 | Dom3::shut/no-shut on member link causes cpu to drop all control protocol pkts. |
| CSCvj74297 | External Alarms not working for alarm pins one to three |
| CSCvh15960 | During powercycle Dying GASP is not getting generated to remote peer on all the ports. |

# 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 |

| Caveat ID Number | Description |
|---|---|
| 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 recalcluating 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 |
|---|---|
| CSCvj66322 | Port-channel load balancing is not evenly distributed for known unicast traffic across multiple VLANS |
| CSCvm80578 | NCS520 does not generate CFM Continuity Check message, when MEP interface is being shutdown |
| CSCvm92920 | Support for NTP broadcast functionality in NCS520 |
| CSCvj37650 | Port-channel MTU configs do not get synced to all member links. |

# 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 |

| Caveat ID Number | Description |
|---|---|
| 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 |
| 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 |

| Caveat ID Number | Description |
|---|---|
| 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 unrechables 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 |
|---|---|
| CSCvj88373 | NCS520: Ten Gigabit Ethernet interface failed to come up after the iomd crash. |
| CSCvh15960 | During powercycle Dying GASP is not getting generated to remote peer on all the ports. |
| CSCvj37650 | Port-channel MTU configs do not get synced to all member links. |
| CSCvj62049 | Shut or no-shut on member link causes CPU to drop all control protocol packets. |
| CSCvj66322 | Port-channel load balancing is not evenly distributed for known unicast traffic across multiple VLANs. |
| CSCvj74297 | External alarms are not working for alarm pins of range one to three. |

# Closed Caveats – Cisco IOS XE Fuji 16.9.1a

| Caveat ID Number | Description |
|---|---|
| CSCvg89141 | The status of control-processor health is reported as unknown. |

| Caveat ID Number | Description |
|---|---|
| CSCvg97602 | Queue-depth stats are not shown in show policy-map ouput even with full queue buffer consumption. |
| CSCvh71767 | Set cos is not rejected on a egress policy-map. |
| CSCvh77557 | EFP policy in H-QoS fails after interface speed is changed manually. |
| CSCvh80098 | Randomly node reloads after ptpd_uea crash. |
| CSCvi25332 | NCS520 node stuck after kernel panic. |
| CSCvi30503 | The btrace logs rotation failed and bootflash size reduced after format bootflash. |
| CSCvi31277 | The tamd process crash seen with multiple reloads. |
| CSCvi85835 | With back-to-back connection on the copper ports, the ports are not coming up in 100M speed. |