Release Notes for Cisco CSR 1000v Series, Cisco IOS XE Fuji 16.9.x

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Cisco CSR 1000v Series Cloud Services Routers Overview

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Virtual Router

The Cisco Cloud Services Router 1000V (CSR 1000V) is a cloud-based virtual router that is intended for deployment in cloud and virtual data centers. This router is optimized to serve as a single-tenant or a multitenant WAN gateway.

When you deploy a CSR 1000V instance on a VM, the Cisco IOS XE software functions as if it were deployed on a traditional Cisco hardware platform. You can configure different features depending on the Cisco IOS XE software image.

Secure Connectivity

CSR 1000V provides secure connectivity from an enterprise network such as a branch office or a data center, to a public or a private cloud.

System Requirements

Hardware Requirements

For hardware requirements and installation instructions, see the Cisco CSR 1000v Series Cloud Services Router Software Configuration Guide .

Software Images and Licenses

The following sections describe the licensing and software images for CSR 1000V.

Cisco Smart Licensing

The Cisco CSR 1000V router supports Cisco Smart Licensing. To use Cisco Smart Licensing, you must first configure the Call Home feature and obtain the Cisco Smart Call Home Services. For more information, see Installing CSR 1000V Licenses and Smart Licensing Guide for Access and Edge Routers.

For a more detailed overview on Cisco Licensing, go to https://cisco.com/go/licensingguide.

Cisco CSR 1000v Evaluation Licenses

Evaluation license availability depends on the software version:

- Evaluation licenses valid for 60 days are available at the Cisco Software Licensing (CSL) portal: http:/www.cisco.com/go/license

The following evaluation licenses are available:

- IPBASE technology package license with 10 Gbps maximum throughput

- SEC technology package license with 5 Gbps maximum throughput

- APPX technology package license with 5 Gbps maximum throughput

- AX technology package license with 2.5 Gbps maximum throughput

If you need an evaluation license for the Security technology package, or for an AX technology package with higher throughput, contact your Cisco service representative.

For instructions on obtaining and installing evaluation licenses, see the "Installing CSL Evaluation Licenses for Cisco IOS XE 3.13S and Later" section of the Cisco CSR 1000v Software Configuration Guide .

Cisco CSR 1000v Software Licenses

Cisco CSR 1000v software licenses are divided into feature set licenses. The supported feature licenses depend on the release.

Current License Types

The following are the license types that are supported (Cisco IOS XE Everest 16.4.1 or later):

- IPBase: Basic Networking Routing (Routing, HSRP, NAT, ACL, VRF, GRE, QoS)

- Security: IPBase package + Security features (IP Security VPN, Firewall, MPLS, Multicast)

- AX: IPBase package + Security features + Advanced Networking features (AppNav, AVC, OTV and LISP)

- APPX Package: IPBase package + Advanced Networking features - Security features (IP security features not supported)

Legacy License Types

The three legacy technology packages - Standard, Advanced, and Premium - were replaced in the Cisco IOS XE Release 3.13 with the **IPBase**, **Security**, and **AX** technology packages.

Features Supported by License Packages

For more information about the Cisco IOS XE technologies supported in the feature set packages, see the overview chapter of the Cisco CSR 1000v Series Cloud Services Router Software Configuration Guide.

Throughput

The Cisco CSR 1000v router provides both perpetual licenses and term subscription licenses that support the feature set packages for the following maximum throughput levels:

- 10 Mbps

- 50 Mbps

- 100 Mbps

- 250 Mbps

- 500 Mbps

- 1 Gbps

- 2.5 Gbps

- 5 Gbps

- 10 Gbps

The throughput levels are supported for different feature set packages in each version. For more information about how the maximum throughput levels are regulated on the router, see the Cisco CSR 1000v Cloud Services Router Software Configuration Guide.

Memory Upgrade

A memory upgrade license is available to add memory to the Cisco CSR 1000v router (Cisco IOS XE 3.11S or later). This license is available only for selected technology packages.

Additional Information about Licenses and Activation

For more information about each software license, including part numbers, see the Cisco CSR 1000v Router Datasheet. For more information about the standard Cisco IOS XE software activation procedure, see the Software Activation Configuration Guide, Cisco IOS XE Release 3S.

Software Image Nomenclature for OVA, ISO, and QCOW2 Installation Files

The Cisco CSR 1000v installation file nomenclature indicates properties supported by the router in a given release.

For example, these are filename examples for the Cisco IOS XE Everest 16.4.1 release:

- csr1000v-universalk9.16.04.01.ova

- csr1000v-universalk9.16.04.01.iso

- csr1000v-universalk9.16.04.01.qcow2

The filename attributes are listed below, along with the release properties.

Table 1: OVA Installation Filename Attributes

Filename Attribute	Properties
Example:universalk9	Installed image package.
03.09.00a.S.153-2.S0a	Indicates that the software image is for the Cisco IOS XE 3.9.0aS release image (mapped to the Cisco IOS 15.3(2) release).
std or ext	Standard release or extended maintenance support release.

Features and Notes: Cisco IOS XE Fuji 16.9.1

Features

Features—Cisco IOS XE Fuji 16.9.1

The following new software features are supported on the Cisco CSR 1000v for Cisco IOS XE Fuji 16.9.1.

- Transit VPC with autoscaling for the Cisco CSR 1000v on Amazon Web Services(AWS). For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/routers/csr1000/software/aws/b_csraws_transitVPC.html.

- EoGRE support—EoGRE is supported on the Cisco CSR 1000v as a part of the virtual BNG solution, with 16K authentication sessions and 32K walk-by sessions. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iwag/configuration/xe-16/IWAG_Config_Guide_BookMap/spwifi-eogre.html.

- Cisco CSR 1000v on Google Cloud Platform(GCP)—The Google Cloud Platform (GCP) network infrastructure provides a basic routing service which interconnects subnets within a Virtual Private Cloud(VPC) network. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/routers/csr1000/software/gcp/b_csrgcp.html.

- High Availability (HA) Version 2 for Cisco CSR 1000v on Microsoft Azure—In HA version 2, you can configure redundancy nodes in the guestshell using Python scripts. HA Version 2 uses Microsoft Azure's Managed Service Identity(MSI) for authentication, instead of Azure Active Directory (AAD). For further information, see the following Cisco document: Cisco CSR 1000v Deployment Guide for Microsoft Azure.

- Day 0 bootstrap file for Cisco CSR 1000v on Microsoft Azure—Create a "Day 0" bootstrap file, which includes the initial Cisco IOS XE configuration commands that you wish to run on the router and information about running Python packages, scripts, and licensing. Upload the Day 0 bootstrap file to create a Cisco CSR 1000v VM instance. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs//routers/csr1000/software/azu/b_csr1000config-azure.html.

- Configuring LISP Layer 2 Extension to Cisco CSR 1000v on Amazon Web Services—Extends a Layer 2 domain, using one subnet, from the enterprise data center to the public cloud. This feature allows the

migration of VMs from on-premises to the cloud. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/routers/csr1000/software/aws/b_csraws.html.

- Web Root URL filtering enhancements. For further information, see: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_data_utd/configuration/xe-16-9/sec-data-utd-xe-16-9-book.pdf.

- AppFW—Application Awareness capability for ZBFW. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_data_zbf/configuration/xe-16-9/sec-data-zbf-xe-16-9-book/app-firewall-app-fw.html.

- IKEv2 Event Trace Enhancements—For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_ike2vpn/configuration/xe-16-9/sec-flex-vpn-xe-16-9-book/sec-cfg-ikev2-flex.html.

- IS-IS: Event Trace Improvements—For detailed information, see the following Cisco document:https://www.cisco.com/c/en/us/td/docs/ios/iproute_isis/command/reference/irs_book/irs_is2.html.

- IS-IS: Provide Per-Interface Statistics for CLNS/ISIS Traffic—For detailed information, see the following Cisco document:https://www.cisco.com/c/en/us/td/docs/ios/iproute_isis/command/reference/irs_book/irs_is2.html.

- Event trace for PFRv3 errors and PFRv3 channels. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/pfrv3/configuration/xe-16-9/pfrv3-xe-16-9-book/pfrv3-event-trace.html.

- DMVPN Transit Vnet Support on Microsoft Azure. For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/routers/csr1000/software/azu/b_csr1000config-azure.html.

- Web User Interface—Supports an embedded GUI-based device-management tool that allows you to provision the router, and simplify management of the device. For information on how to access the Web User Interface, see: Using the Web User Interface.

  The following features are supported on the Web User Interface from Cisco IOS XE Fuji 16.9.1:

  - Day Zero Configuration.

  - Open Shortest Path First (OSPF).

  - Snort IPS Enhancement

- Programmability—YANG Data Models—For the list of Cisco IOS XE YANG models available with this release, navigate to https://github.com/YangModels/yang/tree/master/vendor/cisco/xe/1691. Revision statements that are embedded in the YANG files indicate if there has been a model revision. The README.md file in the same github location highlights changes that have been made in the release.

- Programmability—Candidate Config Support—For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/169/b_169_programmability_cg/configuring_yang_datamodel.html.

- Configuring LISP L2 Extension for CSR 1000v on AWS—For detailed information, see the following Cisco document: https://www.cisco.com/c/en/us/td/docs/routers/csr1000/software/aws/b_csraws/configure-lisp-layer2-extension.html.

Notes

The following section includes important notes about the Cisco CSR 1000v for Cisco IOS XE Fuji 16.9.

Encrypted Traffic Analytics records may not be exported after a reload if an "inactive timeout" command has been configured

When the router is reloaded with a large configuration, which generates many messages for initializing features in the data plane, the Encrypted Traffic Analytics (ETA) records may not be exported. This occurs if the ETA **inactive timeout** command is included in the configuration.

Workaround

Remove **inactive timeout** command from the ETA configuration. After a reload, you can add the **inactive timeout** command to the configuration.

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:

https://tools.cisco.com/security/center/publicationListing.x

Field Notices

- Field Notices—We recommend that you view the field notices to determine whether your software or hardware platforms are affected. You can find the field notices at the following location:

  http://www.cisco.com/c/en/us/support/web/tsd-products-field-notice-summary.html

Limitations and Restrictions in Cisco IOS XE Fuji 16.9.1

There are no new limitations and restrictions in Cisco IOS XE Fuji 16.9.1.

Resolved and Open Bugs for Cisco IOS XE 16.x

Overview

Caveats, or bugs describe unexpected behavior. Severity 1 caveats are the most serious, severity 2 caveats are less serious, and severity 3 caveats are moderate caveats. This section includes severity 1, severity 2, and selected severity 3 caveats.

Terminology

The Dictionary of Internetworking Terms and Acronyms contains definitions of acronyms that are not defined in this document:

http://docwiki.cisco.com/wiki/Category:Internetworking_Terms_and_Acronyms_(ITA)

Bug Search Tool

If you have an account on Cisco.com, you can also use the Bug Search Tool (BST) to find select caveats of any severity. To reach the Bug Search Tool, log into Cisco.com and go to https://tools.cisco.com/bugsearch/search.

If a defect that you have requested is not displayed, it is possible that the defect number does not exist or the defect does not have a description available.

You can use the Bug Search Tool to view new and updated caveats. To search for bugs, go to https://tools.cisco.com/bugsearch/search .

For Best Bug Search Tool Results

For best results when using the Bug Search Tool:

- In the **Product** field, enter **Cloud Services Router**.

- In the **Releases** field, enter one or more Cisco IOS XE releases of interest. The search results include caveats related to any of the releases that you enter in this field.

The tool provides autofill while you type in these fields to assist in entering valid values. For example, a search using release number **16.6** should find the caveats for Cisco IOS XE Everest 16.6.1.

Caveats: Cisco IOS XE Fuji 16.9.x

Open Caveats—Cisco IOS XE Fuji 16.9.8

There are no open caveats in this release.

Resolved Caveats—Cisco IOS XE Fuji 16.9.8

All resolved caveats for this release are available in the Cisco Bug Search Tool.

Caveat ID Number	Description
CSCvt53563	Cisco IOS XE Software NETCONF and RESTCONF Authentication Bypass Vulnerability
CSCvw25564	Cisco IOS and IOS XE Software IKEv2 AutoReconnect Feature Denial of Service Vulnerability
CSCvx41294	High CPU usage caused by \"TCP Timer\" process
CSCvv12527	Crash in SNMP Engine process while polling chassis id in lldp
CSCvv78028	Cisco IOS XE Software Zone-Based Policy Firewall ICMP and UDP Inspection Vulnerability
CSCvx16081	Cisco IOS XE Software H.323 Application Level Gateway Bypass Vulnerability
CSCvx37176	Cisco IOS XE Software Rate Limiting Network Address Translation Denial of Service Vulnerability

Open Caveats—Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCvm05934	RSA Keysize > 2048 may cause crash
CSCvt66541	DNAC Wolverine - Crypto PKI-CRL-IO_1 process crashed in crypto_send_pki_request,crypto_crl_io_proc
CSCvu57706	CUBE fails to send calls with below error after updating IOS to 16.9.5 Error (Resource busy)
CSCvv03229	Crash in sre_dp_traverse_dfa_legacy as SIP invite messages crosses a GRE Tunnel
CSCvv36247	Memory Leak in MallocLite / Crypto IKMP
CSCvw89147	Crash at the moment of calculating tcp header

Resolved Caveats—Cisco IOS XE Fuji 16.9.7

Caveat ID Number	Description
CSCuv97577	Mishandling of dsmpSession pointer causes a crash
CSCvr93458	Hub router crashed when run test_mpol_policy_qos_policy_template testcase
CSCvt74346	Router may unexpectedly be reloaded when collecting data from the interface using telemetry/Netconf.
CSCvu19733	Evaluation of CVE-2020-11868 for IOS
CSCvv26538	Crash due to a NULL pointer while bringing down PPPoE sessions.
CSCvv51048	Memory leak "AAA SESS ATTR"
CSCvv58056	ACLs may be partially loaded into hardware resulting in unexpected drop or permit
CSCvv80705	3850 switch may crash after manipulating configuration
CSCvv84345	ASR1K Crash on configuring IP NAT inside source list under VRF
CSCvv88621	GETVPN: All GM will crash when Primary KS recovers its COOP role after network outage
CSCvv99800	ASR1K FMANFP crashes during bootup with memory corruption
CSCvw06719	"platform ipsec reassemble transit" tail-drops unencrypted IPv4 Fragments with specific payload
CSCvw11902	Passive FTP doesn't work with NAT
CSCvw14836	ISR router running 16.9.6 crashes authenticating crypto certificate
CSCvw34157	APPNAV CFT Crashes
CSCvw48800	unable to transfer 1500 byte IP packet when using BRI bundled Multilink

Caveat ID Number	Description
CSCvw56517	LMR Unable to hear first seconds of audio

Open Caveats - Cisco IOS XE Fuji 16.9.6

Caveat ID Number	Description
CSCvo78046	AWS: UDI serial changes when CSR 1000v instance type is changed from c4 to c5 or vice versa

Resolved Caveats - Cisco IOS XE Fuji 16.9.5

Caveat ID Number	Description
CSCvo78046	AWS: UDI serial changes when CSR 1000v instance type is changed from c4 to c5 or vice versa

Resolved Caveats - Cisco IOS XE Fuji 16.9.4

Caveat ID Number	Description
CSCvp37231	CSR1000v - i40evf interface shows Up but does not pass traffic
CSCvp48213	CSR1000v loses ssh/telnet connectivity on AWS and is unable to ping Elastic IP

Open Caveats - Cisco IOS XE Fuji 16.9.4

Caveat ID Number	Description
CSCvo78046	AWS: UDI serial changes when CSR 1000v instance type is changed from c4 to c5 or vice versa
CSCvp25925	CSR1000v AWS typo in user-data can break SSH connectivity
CSCvq39787	Support status of Restapi container for CSR has not been documented
CSCvq75994	Issue with installing CSR 1KV MEMORY 4G license with SLR

Resolved Caveats—Cisco IOS XE Fuji 16.9.3

Caveat ID Number	Description
CSCvm73802	16.9 - show bootflash: is empty when there is a loop in the filesystem
CSCvn10032	Input errors when reloading CSR

Open Caveats—Cisco IOS XE Fuji 16.9.2

Caveat ID Number	Description
CSCvj12370	cpp_cp_svr crash in bqs while running QMRT test tool.
CSCvj45781	QFP CGM Memory depletion during ISG session churn
CSCvk59169	Strict SID has NOT been enabled in ISIS segment-routing
CSCvm52543	Subscriber session hangs after the upgrade and reload
CSCvm76590	CUBE doesn't forward 200 OK in SRTP-RTP scenario with TCL script on Dial-peer
CSCvm78822	config-sync failure 'aaa authorization commands'
CSCvm94788	Device reloads when applying #client <IP> vrf Mgmt-vrf server-key 062B0C09586D590B5656390E15
CSCvm94970	Crash seen on CSR1000V during NAT44 hsl scale test when clearing max NAT translations
CSCvn00997	CSR1000V CUBE-Standard INVALID TAG

Resolved Caveats—Cisco IOS XE Fuji 16.9.2

Caveat ID Number	Description
CSCve76719	Cisco IOS XE Software for Cisco ISRv Router Static Credential Vulnerability
CSCvj69654	OSPF originates default route without "default-information originate"
CSCvj73544	OSPF routing loop for external route with multiple VLINKs/ABRs
CSCvj79145	CSRs fail to scale up to desired NAT64 stateful Dynamic translations
CSCvj92548	CSR1k-FlexVPN: Spoke to Spoke: Implicit NHRP entry due to expired resolution request handling.
CSCvj92862	Viptela-netconf 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
CSCvk10633	BGP crash while running show command and same time bgp peer reset
CSCvk41664	CSR1000v: crash at mempool_add_region when adding memory
CSCvk42631	CSR1000v running inside Citrix XenServer 7.0 crashed
CSCvk66712	CSR1v may crash in hal_process_ipc when performing "clear ip nat tr *" with max NAT pools

Caveat ID Number	Description
CSCvk72831	CSCvj79145 fix exposed a latent DPDK issue leading to a crash with MPLS IPv6 per vrf prefix
CSCvm01351	ASR920:Observed IPv6 Adj memory leaks
CSCvm14346	ISR/CSR - Memory Corruption of mdl_tbl due to fia-history CLI
CSCvm46634	Azure CSR1000v HAv1 VXE_CLOUD_HA-4-NOTCFGD, flags=0x7F0000 error

Open Caveats—Cisco IOS XE Fuji 16.9.1

Caveat ID Number	Description
CSCvk05015	CSR1000v: Throughput license not in use until reapplying the platform throughput config
CSCuz74957	Router crashed due to stack corruption from buffer overflow
CSCve00779	uloop avoidance MUST NOT be done when there were unrelated topo changes
CSCve31475	SNMP dead loop @ipAddressIfIndex.ipv6z
CSCvh83686	BGP Link Bandwidth community gets corrupted for a large values
CSCvh96252	MEM leak on doing interface range shut/noshut (G.8032/MST)
CSCvi11914	BGP PIC/Max-paths:150K scale device stuck with pending issues for huge time with network changes
CSCvi88890	Console authentication fails on non-master switches of C3850 stack.
CSCvi90526	OSPF TILFA: SRLG protect tilfa path computation ALGORITHM fails due to wrong directly connected flag
CSCvi90901	High CPU Seen after CSCve30867
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"
CSCvj17588	isr4431 crashes in ""BGP Router" process when interface flap occurs with IPv6 MPLS per vrf routes
CSCvj26944	Cisco-IOS-XE-policy yang model doesn't support "set precedence"
CSCvj35317	Ti-LFA Repair Path is not Loop-Free
CSCvj39651	Operation Cisco-IOS-XE-rpc:reload return inconsistent value error.
CSCvj45781	QFP CGM Memory depletion during ISG session churn

Caveat ID Number	Description
CSCvj55699	CAT3k/9k does not create (S,G) due to RFP error "failed, internal error or RIB not converged yet"
CSCvj62869	SF: mismatched interface drop counter compared to policy drop counters on longevity
CSCvj68607	ASR1K crash in tplus_handle_req_timeout
CSCvj70279	netconf: gnmib Not Running
CSCvj73841	Overly aggressive initial SPF delay timer is configured -> SR uloop does not take effect
CSCvj76285	Snmp v2 breaks due to Authentication failure, bad community string, 16.03.06
CSCvj76644	IOS crash observed on bootup during resize_loggerQ
CSCvj78075	SAP: YANG: Yang model for arp entries is missing arp alias support
CSCvj78647	mtu cli is disappeared from show run when interface dialer sh/no shu
CSCvj79547	Complete content for interface templates
CSCvj79694	sgt-map gets cleared for some of the end points for unknown reason
CSCvj81382	IPv6 AAA Prefix Support for 3rd party PPP clients no password for -dhcpv6 Access-Request
CSCvj82886	FNF export not working after second switchover when ETA+FNF is configured
CSCvj83704	Synchronization of built-in interface templates broken or never implemented
CSCvj84751	cBR8 - 16.8.1 - Supervisor crash when entering 'guestshell run bash'
CSCvj85608	ARP reply not accepted if sourced from nat alias address in other VRFs
CSCvj86054	3650/3850 do not send reload message to Syslog
CSCvj86208	Interface ifOperStatus should be notPresent when module is not installed
CSCvj87427	Performance problems when configuring via CLI when netconf/restconf/gnmi is enabled
CSCvj93060	VRF stuck in deletion mode
CSCvj93816	Crash in ssh_process when removing pnp profile from switch
CSCvk00144	cat9500 periodically crashing on SSH Process with Reload reason content is absent
CSCvk10212	Unable to migrate from ADSL to VDSL without reboot
CSCvk12253	ASR1001-HX crashed due to critical software exception on operation group-object add/remove
CSCvk14494	Interface 'vrrp <group> preempt' default command not displayed in show run all

Caveat ID Number	Description
CSCvk16869	Deletion of FHRP Configuration via NETCONF/RESTCONF/gNMI Fails
CSCvk20003	Polaris: Host limit of 32 for session monitoring sessions
CSCvk24143	ASR1001-X crash due to free block at tty_handle
CSCvk24323	ASR920 crash in ISIS with SR Ti-LFA
CSCvk29063	Crash when doing a new SSL Connection.
CSCvk30813	MAB fails to start negotiation after device moves to another layer 2 adjacent switch
CSCvk31017	Standby Reload Due to Parser Error when configuring TACACS
CSCvk31079	MPLS TE + MLDP - TTL issue
CSCvk31115	Device-sensor doesn't send data off initial boot
CSCvk32094	mVPN Profile 0 Extranet Data MDT Flapping Dual Ingress PE
CSCvk32822	QoS stats process crash
CSCvk34062	LLDP TX not happening on few ports after box reload
CSCvk34593	oc-system/telnet-server: "enable" leaf is false even if transport input/output is set to "all"
CSCvk36507	Fman-fp in one c9300 crashed unexpectedly and took down the rest of stack members without failover
CSCvk37852	IOS/IOS-XE 16.6.3 - SSH on VRF int is allowed irrespective of vrf-also key
CSCvj10061	Display full IPv6 address in "sh l2tp tunnel"
CSCvj17588	isr4431 crashes in ""BGP Router" process when interface flap occurs with IPv6 MPLS per vrf routes
CSCvj26944	Cisco-IOS-XE-policy yang model doesn't support "set precedence"
CSCvj35317	Ti-LFA Repair Path is not Loop-Free
CSCvj39651	Operation Cisco-IOS-XE-rpc:reload return inconsistent value error.
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CSCvj62869	SF: mismatched interface drop counter compared to policy drop counters on longevity
CSCvj68607	ASR1K crash in tplus_handle_req_timeout
CSCvj70279	netconf: gnmib Not Running

Caveat ID Number	Description
CSCvj73841	Overly aggressive initial SPF delay timer is configured -> SR uloop does not take effect
CSCvj76285	Snmp v2 breaks due to Authentication failure, bad community string, 16.03.06
CSCvj76644	IOS crash observed on bootup during resize_loggerQ.
CSCvj78075	SAP: YANG: Yang model for arp entries is missing arp alias support.
CSCvj78647	The **mtu** CLI disappeared from show run when interface dialer sh/no shu
CSCvj79547	Complete content for interface templates.
CSCvj79694	The sgt-map gets cleared for some of the end points for unknown reason.
CSCvj81382	IPv6 AAA Prefix Support for 3rd party PPP clients no password for -dhcpv6 Access-Request
CSCvj82886	FNF export not working after second switchover when ETA+FNF is configured
CSCvj83704	Synchronization of built-in interface templates broken or never implemented
CSCvj84751	cBR8 - 16.8.1 - Supervisor crash when entering 'guestshell run bash'
CSCvj85608	ARP reply not accepted if sourced from nat alias address in other VRFs
CSCvj86054	3650/3850 do not send reload message to Syslog
CSCvj86208	Interface ifOperStatus should be notPresent when module is not installed
CSCvj87427	Performance problems when configuring via CLI when netconf/restconf/gnmi is enabled
CSCvj93060	VRF stuck in deletion mode
CSCvj93816	Crash in ssh_process when removing pnp profile from switch
CSCvk00144	cat9500 periodically crashing on SSH Process with Reload reason content is absent
CSCvk10212	Unable to migrate from ADSL to VDSL without reboot
CSCvk12253	ASR1001-HX crashed due to critical software exception on operation group-object add/remove
CSCvk12876	out of the sync after no ip prefix-list
CSCvk14494	Interface vrrp <group> preempt default command not displayed in show run all.
CSCvk16869	Deletion of FHRP Configuration via NETCONF/RESTCONF/gNMI fails.
CSCvk20003	Host limit of 32 for session monitoring sessions.
CSCvk29063	Crash when doing a new SSL Connection.
CSCvk31017	Device standby reloads Due to parser error when configuring TACACS.

Caveat ID Number	Description
CSCvk31079	MPLS TE + MLDP - TTL issue.
CSCvk31115	Device-sensor does not send data off initial boot.
CSCvk32094	The mVPN Profile 0 Extranet Data MDT flapping dual ingress PE.
CSCvk32822	QoS stats process crash.
CSCvk34062	LLDP TX not happening on few ports after box reload.
CSCvk34593	The oc-system/telnet-server: "enable" leaf is false even if transport input/output is set to "all"
CSCvk37852	IOS/IOS-XE 16.6.3 - SSH on VRF int is allowed irrespective of vrf-also key.

Resolved Caveats—Cisco IOS XE Fuji 16.9.1

Caveat ID Number	Description
CSCvf53023	ISRv: Hot add of multiple vnics fails to add some
CSCvf63269	After on the vnic edit on the fly changes - LAN-SRIOV sub interface ping fails after Reboot of ISRv
CSCvf80385	Intermittent Errors when Hot Adding VNIC
CSCvf93716	AWS/Azure - unable to ssh into CSR1000v if configured with 192.x.x.x subnet
CSCvg01392	CSR: arp reply cannot be received through GEC sub-interfaces
CSCvg03944	ISRV 16.06.01 traceback when issuing show controllers
CSCvg24034	Azure: HA lost auth token when getting route table
CSCvg32814	IOSXE router may reload when crypto session fails
CSCvg62464	CSR1000v Interface Hot Add Crash
CSCuy30367	ENH: IOS-XE should allow "ip address dhcp" on Tunnel interfaces
CSCvb69966	Memory leak under LLDP Protocol process
CSCvd62086	ASR1K and ISR4xxx needs to generate puntinject_stats.log.xxxx and save in bootflash
CSCve57194	RSP3 crashes @ fillin_mempool_pc_array, mempool_pc_summary_tty
CSCvf19460	CTS Pac download fails with ISE reachability through loopback interface over vrf
CSCvf37923	Crash due to Stack overflow
CSCvf80363	rotate nginx access/error log files
CSCvg16234	ISR receives a control packet (CDP) with a CMD tag it should process it, not drop it

Caveat ID Number	Description
CSCvg51358	DHCPNAK is not sent in roaming scenario.
CSCvg53159	%SNMP-3-RESPONSE_DELAYED: processing GetNext of cafSessionEntry.2 seen on catalyst switch
CSCvg71127	Remove stack 1+1 CLI from C9500
CSCvg75315	ASR1K BGP scanner crash when change VRF and BGP configuration
CSCvg83961	CrashKernel crashes with corrupted RAM disk on vWLC
CSCvh00630	ISRv/QOS - service-policy defined in bootstrap config may not be applied
CSCvh02516	Cannot add static route through dynamic NEMO tunnel interface
CSCvh20041	UDP SLA Probes not working through PMIPv6 tunnel with GETVPN
CSCvh23753	DNA-C/underlay automation/cat9300 stack - ip router isis failed due to parser return error
CSCvh26828	Crash in SNMP ENGINE when polling lldpRemChassisId object
CSCvh28323	ASR1002HX FP Crash post LNS path switchover
CSCvh29003	Making SYSTEM MIB (1.3.6.1.2.1.1) VRF aware for ASR 1001-X
CSCvh32416	Evaluation of all for CPU Side-Channel Information Disclosure Vulnerability
CSCvh57050	IGMP multicast SSM-map with DNS doesn't work with IGMPv3
CSCvh60525	CLI 'aaa common-criteria' not available on IPBASEK9 license
CSCvh60871	Unexpected Reboot following 'show platform software adjacency oce [ID]'
CSCvh61453	NULL remote_hostname from LAC
CSCvh62532	System reload when clearing cts pac
CSCvh63932	Noisy debugs in "periodic" tracelog
CSCvh68810	16.8.1:dot1x Clients stops responding (ping to clinet IP fails) after 2nd SSO
CSCvh69518	%SYS-3-TIMERNEG:Cannot start timer with negative offset Process= "ARP Background"
CSCvh70297	Redundancy Mode None does not Sync
CSCvh71539	Command "show aaa servers" reloads the switch
CSCvh73134	ISDN memory leak
CSCvh77637	isdn pri-group cause router get into a loop
CSCvh80485	cts pacs and cts credentials are lost after SSO

Caveat ID Number	Description
CSCvh85385	3850 - ACL application check on the FED failed
CSCvh92275	QoS Overrides loadbalancing to per prefix even with only session level policing applied
CSCvh96821	ASR1004 started relaying clients' DHCP Discover messages to DHCP Server with the wrong IP address
CSCvh97226	Ordering isssue for crypto keyring and crypto isakmp profile
CSCvh99651	AAA-Proxy errors in dmiauthd tracelogs
CSCvi07387	ip dhcp excluded-address deletion issues via netconf
CSCvi07402	no increment for 'input errors' in 'show i/f counters' for pkts larger than configured MTU+30 byte
CSCvi11665	Virtual-service guest IP accepts broadcast address
CSCvi12341	Unable to see Device-Sensor in accounting message on ISE (MUD URI)
CSCvi20882	Netconf IP-SLA udp-jitter case missing leaf codec
CSCvi22603	Flex-LSP tunnel flap on failing active protecting link without WRAP enabled
CSCvi22835	Vz: Non-Polaris to Polaris ISSU compatibility issue
CSCvi24614	16.8.1: MKA session not coming up consistently after SSO and keepalive timeout.
CSCvi25507	Session Mgrd crah obsered with 16.8.1 image
CSCvi31493	Configuration of BGP auto-summary using NETCONF fails
CSCvi34260	16.8.1:dot1x Clients stops responding (ping to clinet IP fails) after SSO (CSCvh68810) (PD changes)
CSCvi34314	ISR/C1100: interface down/up does not renew dhcp assigned ip address
CSCvi35143	Repeatedly Tracebacks seen : %INFRA-3-INVALID_GPM_ACCESS: Invalid GPM Load
CSCvi36290	Incorrect BDI configuration state shown by NETCONF on interface creation
CSCvi36351	standby rp crash on removing member link from port-channel
CSCvi36875	Restored DB is session-lock locked out with insane timeout after boot
CSCvi48471	active SUP crash when active run 16.7.1 and standby run 3.18.2aSP
CSCvi49335	RBM-3-RBM_ERR: Returning from SISF handler as idb is NULL console error messages on FE node
CSCvi60900	DHCP Leasequery Padding contains previously used data
CSCvi64534	Remove stack 1+1 CLI for WS-C3850-48XS

Caveat ID Number	Description
CSCvi72769	UDP SLA echo packets not getting encrypted
CSCvi75086	Rapid TDL memory leak in SMD process leads to crash of active switch in stack for ipv6 clients
CSCvi86093	Switch reloads when kron job scheduled in 0 minutes
CSCvi89742	Excessive memory (20MB)) allocated for event tracing by lslib subsys
CSCvj29095	High CPU due to Alignment Corrections - DNS & NBAR
CSCvj30995	ASR1K - exhausted IP Session Handles - %IDMGR-3-INVALID_ID: bad id in id_get (Out of IDs!) (id: 0x0)
CSCvj41163	Memory size in smand process increases on 3850/3650 without any services, uplinks nor configuration
CSCvj55797	NETCONF doesn't list all the ip nat configuration
CSCvj56303	NETCONF issue when updating NAT config with VRF keyword
CSCvj69569	"sh auth sess sw st" broken and session monitoring sessions coming in sh auth sess in legacy mode.
CSCvj79542	Missing interface source template model
CSCvj87392	DHCP server with option 249 pushes only the routes confiugred in the first instance.
CSCvj89345	AVC license should be activated only in case of smart licensing model
CSCvf19460	CTS Pac download fails with ISE reachability through loopback interface over vrf .
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CSCvg51358	DHCPNAK is not sent in roaming scenario.
CSCvh02516	Cannot add static route through dynamic NEMO tunnel interface.
CSCvh16650	Netconf Get routing-state received an errored RPC response.
CSCvh20041	UDP SLA Probes not working through PMIPv6 tunnel with GETVPN.
CSCvh26828	Crash in SNMP ENGINE when polling lldpRemChassisId object.
CSCvh32416	Evaluation of all for CPU Side-Channel Information Disclosure Vulnerability.
CSCvh57050	IGMP multicast SSM-map with DNS does not work with IGMPv3.
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Related Documentation

- Release Notes for previous versions of Cisco Cloud Services Router 1000V Series

- Configuration Guides for Cisco Cloud Services Router 1000V Series

- Product Landing page for Cisco Cloud Services Router 1000V Series

- Datasheet for Cisco Cloud Services Router 1000V Series

- Field Notices

- Deferral Notices

- Cisco Bulletins