

# Release Notes for Cisco ASR 1000 Series, Cisco IOS XE Denali 16.3

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**First Published:** 2016-08-03

**Last Modified:** 2018-03-02

## About Cisco ASR 1000 Series Aggregation Services Routers



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Cisco ASR 1000 Series Aggregation Services Routers are Cisco routers deployed as managed service provider routers, enterprise edge routers, and service provider edge routers. These routers use an innovative and powerful hardware processor technology known as the Cisco QuantumFlow Processor.

Cisco ASR 1000 Series Aggregation Services Routers run the Cisco IOS XE software and introduce a distributed software architecture that moves many operating system responsibilities out of the IOS process. In this architecture, Cisco IOS, which was previously responsible for almost all of the internal software processes, now runs as one of many Cisco IOS XE processes while allowing other Cisco IOS XE processes to share responsibility for running the router.

## Migrating to Cisco IOS XE Denali 16.3

The [Cisco IOS XE Denali 16.3 Migration Guide for Access and Edge Routers](#) contains key information and steps that will help ensure a successful migration from extant Cisco IOS XE 3S releases, Cisco IOS XE Denali 16.2 to Cisco IOS XE Denali 16.3. It is critical that you read this information before you begin migration to ensure that you have completed all the prerequisites and that you understand the migration process.

For a list of caveats in this release, see the *Caveats* section in this document.

## New Features and Important Notes

### New and Changed Information

The following sections list the new hardware and software features that are supported on the Cisco ASR 1000 Series Aggregation Services Routers.

#### New Hardware Features in Cisco ASR 1000 Series Aggregation Services Routers for Cisco IOS XE Denali Release 16.3.1

The following hardware features were introduced in Cisco ASR 1000 Series Aggregation Services Routers for Cisco IOS XE Denali Release 16.3.1.

##### Support for 10x10G EPA

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/modular\\_linecard/asr1\\_mlc\\_hig/mlc\\_asr1\\_overview.html](http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/modular_linecard/asr1_mlc_hig/mlc_asr1_overview.html)

##### Support for 18x1G EPA

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/modular\\_linecard/asr1\\_mlc\\_hig/mlc\\_asr1\\_overview.html](http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/modular_linecard/asr1_mlc_hig/mlc_asr1_overview.html)

##### ASR1000 Route Processor 3 (RP3)

Cisco ASR 1000 Series Route Processor 3 (Cisco ASR1000-RP3) runs the network operating system, BINOS kernel, and the IOSD (IOS daemon). The Cisco ASR1000-RP3 is supported on the Cisco ASR 1013, Cisco ASR 1006-X, and Cisco ASR 1009-X routers.

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/rp3/asr1\\_rp3.html](http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/rp3/asr1_rp3.html)

##### Cisco ASR 1001-HX Router

Cisco ASR 1001-HX Router is a part of the Cisco ASR 1000 Series and offers a compact form factor that consumes less rack space and power while offering 60 Gbps forwarding throughput. Cisco ASR 1001-HX Router supports all general purpose routing and security features of Cisco ASR 1000 Series Aggregation Services Routers.

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/1001HX\\_1002HX/b\\_ASR1001HX-1002HX\\_HIG.html](http://www.cisco.com/c/en/us/td/docs/routers/asr1000/install/guide/1001HX_1002HX/b_ASR1001HX-1002HX_HIG.html)

#### New Software Features in Cisco IOS XE Denali Release 16.3.1

The following are the new software features introduced in Cisco ASR 1000 Series Aggregation Services Routers for Cisco IOS XE Denali Release 16.3.1.

##### 10/40 KM 10G BiDi SFP+

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/interfaces\\_modules/transceiver\\_modules/compatibility/matrix/10GE\\_Tx\\_Matrix.html](http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/10GE_Tx_Matrix.html)

### **3-Level User-defined Queuing Policy Support**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_mqc/configuration/xs-16/qos-mqc-xe-16-book/3-level-user-defined-queuing-policy-support.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_mqc/configuration/xs-16/qos-mqc-xe-16-book/3-level-user-defined-queuing-policy-support.html)

### **40/80KM 1G BiDi SFP**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/interfaces\\_modules/transceiver\\_modules/compatibility/matrix/GE\\_Tx\\_Matrix.html](http://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/GE_Tx_Matrix.html)

### **Allow Use of Same ACL or Router-map on Multiple NAT Statements**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr\\_nat/configuration/xs-16/nat-xe-16-book/iadnat-dynamic-hsrp.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_nat/configuration/xs-16/nat-xe-16-book/iadnat-dynamic-hsrp.html)

### **BFD Support on DMVPN**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec\\_conn\\_dmvpn/configuration/xs-16/sec-conn-dmvpn-xe-16-book/sec-conn-dmvpn-bfd-support.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_dmvpn/configuration/xs-16/sec-conn-dmvpn-xe-16-book/sec-conn-dmvpn-bfd-support.html)

### **BGP - mVPN PE-PE Ingress Replication**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipmulti\\_mvpn/configuration/xs-16/mc-mvpn-xe-16-book/mc-bgp-mvpn-pe-pe-ingress-replication.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipmulti_mvpn/configuration/xs-16/mc-mvpn-xe-16-book/mc-bgp-mvpn-pe-pe-ingress-replication.html)

### **BGP IPv6 Admin Distance**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute\\_bgp/configuration/xs-16/irg-xe-16-book/bgp-ipv6-adm-distance.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_bgp/configuration/xs-16/irg-xe-16-book/bgp-ipv6-adm-distance.html)

### **BGP IPv6 Dynamic Neighbor Support and VRF Support**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute\\_bgp/configuration/xs-16/irg-xe-16-book/bgp-dynamic-neighbors.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_bgp/configuration/xs-16/irg-xe-16-book/bgp-dynamic-neighbors.html)

### **Consumption of Forked 18x Responses with SDP for CUBE**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-forked-18x-responses.html>

### **CTS SGACL Support on Routers**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec\\_usr\\_cts/configuration/xs-16/sec-usr-cts-xe-16-book/sec-cts-sgacl.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_usr_cts/configuration/xs-16/sec-usr-cts-xe-16-book/sec-cts-sgacl.html)

### **Customization of NBAR2 Built-in Protocols**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_nbar/configuration/xs-16/qos-nbar-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_nbar/configuration/xs-16/qos-nbar-xe-16-book.html)

**CVP TCL HA Enhancement**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-cvptcl-ha.html>

**DMVPN Config Simplification**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec\\_conn\\_dmvpn/configuration/xe-16/sec-conn-dmvpn-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_dmvpn/configuration/xe-16/sec-conn-dmvpn-xe-16-book.html)

**DNS Guard for DNS Learning Mechanism**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_nbar/configuration/xe-16/qos-nbar-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_nbar/configuration/xe-16/qos-nbar-xe-16-book.html)

**DNS Protocol Classification Change**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_nbar/configuration/xe-16/qos-nbar-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_nbar/configuration/xe-16/qos-nbar-xe-16-book.html)

**ECMP Loadbalance with Tunnel Visibility**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipswitch\\_cef/configuration/xe-16/sw-cef-xe-16-book/sw-cef-ecmp-loadbalance-with-tunnel-visibility.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipswitch_cef/configuration/xe-16/sw-cef-xe-16-book/sw-cef-ecmp-loadbalance-with-tunnel-visibility.html)

**EVPN VxLAN L3**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/cether/configuration/xe-16/ce-xe-16-book/evpn-vxlan-l3.html>

**IOx: Support 3rd Party Apps in KVMs**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/app\\_hosting/configuration/xe-16/lfc-mgmt-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/app_hosting/configuration/xe-16/lfc-mgmt-xe-16-book.html)

**MacSec on ASR1002-HX**

The Cisco ASR 1002-HX Router is a part of the Cisco ASR 1000 Series and offers a compact form factor that consumes less rack space and power while offering 100 Gbps forwarding throughput. The Cisco ASR 1002-HX Router supports all the general-purpose routing and security features of the Cisco ASR 1000 Series Aggregation Services Routers.

Effective Cisco IOS XE Denali 16.3.1, MACsec is supported on Cisco ASR 1002-HX Router in the 18-Port 1 Gigabit Ethernet Port Adapter (EPA-18X1GE) and built-in ports. The number of MACsec sessions supported on Cisco ASR 1000 Series Aggregation Services Routers is 464.

**MACSec Support**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/macsec/configuration/xe-16/macsec-xe-16-book.html>

### **MacSec support with ASR1000-MIP100 line card**

The Cisco ASR1006-X Router and Cisco ASR1009-X Router create a future-proof modular routing platform to support next generation Forwarding and Route Processor modules with hardware redundancy. The Cisco ASR1006-X Router and Cisco ASR1009-X Router provide up to 200 Gbps slot bandwidth to enable new high density Ethernet linecards utilizing the ASR1000-MIP100 and Ethernet Port Adapters (EPAs), and integrating N+1 power-on-demand design to the ASR1000 portfolio.

Effective Cisco IOS XE Denali 16.3.1, MACsec is supported on Cisco ASR1006-X Router and Cisco ASR1009-X Router in the ASR1000-MIP100 Modular Ethernet Line Card and in the 10-Port 10 Gigabit Ethernet Port Adapter (EPA-10X10GE). In this release, 16 MACSec sessions are supported per 10GE port

### **Media Monitoring on Control Plane for CUBE**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-voice-quality-monitoring.html>

### **Multiple SIP-UA Support**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-tenants.html>

### **Multitenancy Call Routing and Scaling Enhancements for CUBE**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html>

### **Multi-Tenant Support for NAT**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr\\_nat/configuration/xe-16/nat-xe-16-book/iadnat-dynamic-hsrp.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_nat/configuration/xe-16/nat-xe-16-book/iadnat-dynamic-hsrp.html)

### **Multi-VRF Support for CUBE**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html>

### **NAT Support on BDI interface**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr\\_nat/configuration/xe-16/nat-xe-16-book/iadnat-addr-consv.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_nat/configuration/xe-16/nat-xe-16-book/iadnat-addr-consv.html)

### **NSH Service Chaining for IOS-XE**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/wan\\_nsh/configuration/xe-16/wan-nsh-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/wan_nsh/configuration/xe-16/wan-nsh-xe-16-book.html)

### **OSPFv3 Route Filtering Using Distribute-List**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute\\_ospf/configuration/xr-16/iro-xe-16-book/ospfv3-route-filtering-dist-list.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_ospf/configuration/xr-16/iro-xe-16-book/ospfv3-route-filtering-dist-list.html)

### **PfRv3 Burst Probing**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/pfrv3/configuration/xr-16/pfrv3-xe-16-book/pfr-probe-reduction.html>

### **PKI Trustpool Enhancements**

Effective with Cisco IOS XE Denali 16.3.1, the way PKI Trustpools are managed have changed. The PKI Trustpool Enhancements feature is used for authentication of HTTPS connections built from the router. Common features that leverage this feature include, but not exhaustive, Plug and Play (PnP), Cisco Web Security (CWS), Cisco Umbrella Branch. If you are upgrading to this release, please review the changes to the feature at the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec\\_conn\\_pki/configuration/xr-16/sec-pki-xe-16-book/sec-pki-trustpool-mgmt.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_conn_pki/configuration/xr-16/sec-pki-xe-16-book/sec-pki-trustpool-mgmt.html)

### **Polaris YANG Infrastructure**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/datamodels/configuration/xr-16/data-models-xe-16-book.html>

### **QoS on GEC portchannel on ASR1k**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_mqc/configuration/xr-16/qos-mqc-xe-16-book/aggregate-etherchannel-quality-of-service.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_mqc/configuration/xr-16/qos-mqc-xe-16-book/aggregate-etherchannel-quality-of-service.html)

### **QoS Service Group**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_svcgrp/configuration/xr-16/qos-svcgrp-xe-16-book/qos-svcgrp-xe-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_svcgrp/configuration/xr-16/qos-svcgrp-xe-16-book/qos-svcgrp-xe-book.html)

### **Session-ID Support on CUBE**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-session-id.html>

### **Set IP Next-hop Unchanged/Next-hop-unchanged Allpaths IPv4/IPv6**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute\\_bgp/configuration/xr-16/irg-xe-16-book/irg-next-hop.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_bgp/configuration/xr-16/irg-xe-16-book/irg-next-hop.html)

### **Support for 14 Member-links per GEC Bundle**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/cether/configuration/xr-16/ce-xe-16-book/ce-ieee-link-bndl-xe.html>

### **Support for IEEE 1588v2 (Precision Clock Synchronization Protocol)**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/routers/asr1000/configuration/guide/chassis/asrswcfg/1588v2ptp.html>

### **Transport Hierarchy Support for DNS**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos\\_nbar/configuration/xe-16/qos-nbar-xe-16-book.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_nbar/configuration/xe-16/qos-nbar-xe-16-book.html)

### **VxLAN GPE Tunnel**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/cether/configuration/xe-16/ce-xe-16-book/vxlan-gpe-tunnel.html>

### **Web User Interface**

Supports an embedded GUI-based device-management tool that provides the ability to provision the router, simplifies device deployment and manageability, and enhances user experience. The following features are supported on Web User Interface from Cisco IOS XE Denali 16.3:

- Software Upgrade
- Enhanced Interior Gateway Routing Protocol (EIGRP)
- Network Address Translation (NAT)
- Virtual Routing and Forwarding (VRF)
- Application Visibility and Control (AVC)
- Custom Application
- Serial Interface

### **WebEx/Huron Requirements for Video SDP**

For detailed information, see the following Cisco document:

<http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-audio-forced.html>

## **New Software Features in Cisco ASR 1000 Series Aggregation Services Routers for Cisco IOS XE Denali Release 16.3.2**

The following are the new software features introduced in Cisco ASR 1000 Series Aggregation Services Routers for Cisco IOS XE Denali Release 16.3.2.

### **Bypass NAT Functionality**

For detailed information, see the following Cisco document:

[http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr\\_nat/configuration/xe-16/nat-xe-16-book/iadnat-addr-consv.html](http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_nat/configuration/xe-16/nat-xe-16-book/iadnat-addr-consv.html)

### **IWAN 2.2 - Multiple DMVPN Tunnel Termination**

The IWAN 2.2 - Multiple DMVPN Tunnel Termination feature allows you to terminate two or more active DMVPN tunnels. The limitation of only one active tunnel per VRF on a device is not valid anymore. The routing protocol must be configured to ensure that there is one primary path and one or more secondary paths for a network. When Performance Routing (PfR) is used in conjunction with this feature, PfR is used as the primary path as well as the secondary paths so that all paths can be used in an active-active manner. Use the

**maximum-secondary-paths** [**eibgp** | **ibgp**] *path* command to configure this feature, where the path indicates the number of secondary paths a routing protocol is allowed to install. The range for path is from zero to 32.

### Web User Interface - Configuring EIGRP Routing

Enhanced Interior Gateway Routing Protocol (EIGRP) is an interior gateway protocol suited for many different topologies and media. In a well-designed network, EIGRP scales well and provides extremely quick convergence times with minimal network traffic. Configuring EIGRP Routing.

## Important Notes

The following sections contain important notes about Cisco ASR 1000 Series Aggregation Services Routers.

### Display of Free Memory on the CLI

Starting with this release, the amount of free memory is computed more accurately. The output of the following commands (privileged EXEC mode) displays this information:

- **show memory platform**
- **show platform resources**
- **show processes memory platform**
- **show platform software status control-processor**
- **show platform software process list switch active R0 summary**

### Yang Data Modeling

There is a limitation to YANG data modeling, in which a maximum of 20 simultaneous NETCONF sessions only is supported.

The list of supported leafs (xpath) in the Native Yang Data Models (ned.yang), Cisco IOS XE Denali 16.3.1 is available at: <https://github.com/YangModels/yang>.

### Recommended Release for Cisco IWAN

Cisco IOS XE Denali 16.3.5 is not recommended for Cisco IWAN due to the following bugs: CSCvf98783, CSCvg35332, and CSCvg05896. Instead, it is recommended to use [Cisco IOS XE Denali 16.3.5c](#) for Cisco IWAN, which provides a fix for these bugs. For more details on these bugs, please see [Cisco Bug Search Tool](#).

### 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](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 to determine whether your software or hardware platforms are affected. You can find the field notices at the following location:

[http://www.cisco.com/en/US/support/tsd\\_products\\_field\\_notice\\_summary.html](http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html)

- **Bulletins**—You can find bulletins at the following location:



[http://www.cisco.com/en/US/products/sw/iosswrel/ps5012/prod\\_literature.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps5012/prod_literature.html)

## Caveats

### Open and Resolved Bugs

The open and resolved bugs for a release are accessible through the [Cisco Bug Search Tool](#). This web-based tool provides you with access to the Cisco bug tracking system, which maintains information about bugs and vulnerabilities in this product and other Cisco hardware and software products. Within the [Cisco Bug Search Tool](#), each bug is given a unique identifier (ID) with a pattern of CSCxxNNNNN, where x is any letter (a-z) and N is any number (0-9). The bug IDs are frequently referenced in Cisco documentation, such as Security Advisories, Field Notices and other Cisco support documents. Technical Assistance Center (TAC) engineers or other Cisco staff can also provide you with the ID for a specific bug. The [Cisco Bug Search Tool](#) enables you to filter the bugs so that you only see those in which you are interested.

In addition to being able to search for a specific bug ID, or for all bugs in a product and release, you can filter the open and/or resolved bugs by one or more of the following criteria:

- Last modified date
- Status, such as fixed (resolved) or open
- Severity
- Support cases

You can save searches that you perform frequently. You can also bookmark the URL for a search and email the URL for those search results.

### Using the Cisco Bug Search Tool

For more information about how to use the [Cisco Bug Search Tool](#), including how to set email alerts for bugs and to save bugs and searches, see [Bug Search Tool Help and FAQ](#).

#### Before You Begin

You must have a Cisco.com account to log in and access the [Cisco Bug Search Tool](#). If you do not have one, you can register for an account.

#### Procedure

- 
- Step 1** In your browser, navigate to the [Cisco Bug Search Tool](#).
  - Step 2** If you are redirected to a Log In page, enter your registered Cisco.com username and password and then, click Log In.
  - Step 3** To search for a specific bug, enter the bug ID in the Search For field and press Enter.
  - Step 4** To search for bugs related to a specific software release, do the following:
    - a) In the Product field, choose Series/Model from the drop-down list and then enter the product name in the text field. If you begin to type the product name, the [Cisco Bug Search Tool](#) provides you with a drop-down list of the top ten matches. If you do not see this product listed, continue typing to narrow the search results.
    - b) In the Releases field, enter the release for which you want to see bugs.

The [Cisco Bug Search Tool](#) displays a preview of the results of your search below your search criteria.

**Step 5** To see more content about a specific bug, you can do the following:

- Mouse over a bug in the preview to display a pop-up with more information about that bug.
- Click on the hyperlinked bug headline to open a page with the detailed bug information.

**Step 6** To restrict the results of a search, choose from one or more of the following filters:

Filter	Description
Modified Date	A predefined date range, such as last week or last six months.
Status	A specific type of bug, such as open or fixed.
Severity	The bug severity level as defined by Cisco. For definitions of the bug severity levels, see <a href="#">Bug Search Tool Help and FAQ</a> .
Rating	The rating assigned to the bug by users of the <a href="#">Cisco Bug Search Tool</a> .
Support Cases	Whether a support case has been opened or not.

Your search results update when you choose a filter.

## Caveats in Cisco IOS XE Denali Release 16.3.1

### Open Caveats—Cisco IOS XE Denali Release 16.3.1

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCva13738</a>	ISR4k dose not send SOLICIT msg in DHCPv6-PD over PPPoE
<a href="#">CSCut70443</a>	"request platform software console attach" command improvement
<a href="#">CSCva10549</a>	16.2:Kahuna:R0/0: kernel: FAT-fs (sda1): error seen while booting.
<a href="#">CSCuz37780</a>	16.3: Kahuna:"clock set" is not working after reload.
<a href="#">CSCuz30182</a>	ASR1013: Fails to detect power supply at startup
<a href="#">CSCva29676</a>	RP3: Polaris : Kernel warning messages seen on console
<a href="#">CSCva44676</a>	SpeedRacer fan speed cannot be set to 40%
<a href="#">CSCuu16717</a>	Speedracer, Kahuna and Nighster images do not support "show software authenticity"
<a href="#">CSCva34614</a>	astro_handle_fp_switchover_elc100 Called log messages on FP SO

Caveat ID Number	Description
<a href="#">CSCuz65809</a>	Traffic stalls on Argus-X after both FP reload
<a href="#">CSCuz98080</a>	Correct initialization of ZL registers in MIP100 rommon
<a href="#">CSCva42285</a>	CRC errors seen during EPA reload/shutdown.
<a href="#">CSCva57380</a>	Display Third party SFP only if 'service unsupported-transceiver' enable
<a href="#">CSCuy88976</a>	Polaris: Popinac gigE ports not coming up sometimes on FCV image
<a href="#">CSCva57167</a>	Uneven traffic drops at ingress for 10G with ArgusX and ESP100
<a href="#">CSCva29285</a>	ASR1K: CPP performance numbers capture when sent 64 bytewidthpackets across PC
<a href="#">CSCuz75265</a>	ASR1k: "sh plat software peer interface-manager rX" missing some info
<a href="#">CSCva33029</a>	AN: ISR-G3/ASR1K punts CD even after disabling autonomic
<a href="#">CSCuz08379</a>	NHRP ERROR message printed on spoke when BFD is configured only on HUB
<a href="#">CSCuz28143</a>	40K:ipv6 multicast packet loss seen during RP switchover
<a href="#">CSCuz75954</a>	16.3 : Router hangs while verifying mac limit with l2vpn profile
<a href="#">CSCuz57939</a>	PfRv3/ISR4k-channel is unreachable when there is no traffic after clear
<a href="#">CSCuz69348</a>	Polaris: clear domain iwan border channel doesn't work on XE platform
<a href="#">CSCuz67795</a>	Polaris: different probing behavior with probe reduction between ISR/ASR
<a href="#">CSCuz17713</a>	Router crashes with Ipsec/route map configuration changes
<a href="#">CSCuz57825</a>	10 Gig int with macsec config, not up with shut/no shut on both KS/NonKS
<a href="#">CSCuy93714</a>	ASR1001-X, frame counter increased after reload
<a href="#">CSCuz58508</a>	CSR interfaces do not support user settable MTU
<a href="#">CSCuz09519</a>	CSR: Ingress over-subscription not represented by 'show controllers'
<a href="#">CSCuz64672</a>	Polaris_dev: resource service-plane-heavy not take effective with 8vCPU
<a href="#">CSCuz76369</a>	AWS: CSR crashes, loses connectivity after detaching interface
<a href="#">CSCva45347</a>	PCIe pass-thru w/ ixgbe driver causes MaxTu drops due to TCP reassembly
<a href="#">CSCva13262</a>	AWS: All CSR interfaces are mapped to eth0
<a href="#">CSCuz64902</a>	AWS: CSR csr_mgmt container fails to learn default route
<a href="#">CSCva11162</a>	Config wipeout after add/delete an interface for ESX setup
<a href="#">CSCuz50549</a>	CSR startup config sometimes disappear after reload.
<a href="#">CSCva20296</a>	CSR1000v linux_iosd_vxe Core Seen After Qcow Install

Caveat ID Number	Description
<a href="#">CSCva27661</a>	VASI subsystems are not packaged in ipbasek9 image for CSR1K platform
<a href="#">CSCuz94912</a>	[UniScale]CSR loses startup config and picks up gw hostname after crash
<a href="#">CSCuz22828</a>	up14b : Performance drop for Complex QoS case with 362 bytes packet size
<a href="#">CSCuz80782</a>	Crypto low-queue queue-depth goes over queue-limit
<a href="#">CSCuz60031</a>	Trace back observed in CPP_CP process after SSO
<a href="#">CSCva56329</a>	DMI - AAA authentication/authorization timeout does not try fallback
<a href="#">CSCuw11002</a>	Polaris: Firmware version displayed as "unknown" in latest CGE7 image
<a href="#">CSCva17867</a>	ASR device is crashing on adding interfaces to AVC through Webui
<a href="#">CSCva00718</a>	ASR1k crash after making MQC config changes
<a href="#">CSCva58151</a>	ASR1K-ESP100 crash when a link with tunnels go down
<a href="#">CSCuz55555</a>	Traffic rate getting affected by qos policy
<a href="#">CSCva02658</a>	NBAR crash@__be_cvla_free_no_reuse_internal
<a href="#">CSCva47695</a>	Entry leak in the SID_CAM leading to SID_CAM_OVERFLOW
<a href="#">CSCva66139</a>	Crash when FNF FIA is enabled
<a href="#">CSCuz00895</a>	ESP crash observed while testing with Orange Configs
<a href="#">CSCva72169</a>	16.3:Image goes missing in stby-bootflash/harddisk after format and reload
<a href="#">CSCva07535</a>	AWS : CSR Crashed after copying config file using kron-policy
<a href="#">CSCva38141</a>	163: DTE not going down while applying rx clock less than threshold

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.1

All open bugs reported in Cisco IOS XE Denali Release 16.2.1 have been resolved, unless listed in the “Open Caveats—Cisco IOS XE Denali Release 16.3.1” section.

### Caveats in Cisco IOS XE Denali Release 16.3.1a

#### Resolved Caveats—Cisco IOS XE Denali Release 16.3.1a

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Identifier	Description
<a href="#">CSCvb29204</a>	BenignCertain on IOS and IOS-XE
<a href="#">CSCvb04298</a>	NTP-PTP: Invalid PTP time during NTP leap second insertion/deletion

Identifier	Description
<a href="#">CSCvb19326</a>	NTP Leap second add not working in Polaris

## Caveats in Cisco IOS XE Denali 16.3.2

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.2

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCuz52914</a>	Openstack: CSR goes in grub mode if Hard Reset
<a href="#">CSCvb46106</a>	Router crash when removing EzPM configs
<a href="#">CSCva80209</a>	cpp ipv4 multicast mLRE crash
<a href="#">CSCvb29458</a>	UP01v6 : ISR4321 has performance drop for CEF-IPv6 of -8.63%
<a href="#">CSCvb77550</a>	PfR channels unreachable with quick monitor and quick monitor probes to 1 in 10 secs.
<a href="#">CSCvb11664</a>	ASR1k:16.3_MR smd crash in FIPS Mode
<a href="#">CSCva31303</a>	ODNS: DNS breaks for hosts when ISR is enabled for both ODNS and Snort
<a href="#">CSCva87492</a>	16.4: Packet drops observed while verifying BGP Flowspec.
<a href="#">CSCvb38535</a>	Dreamliner failed to power up PD in some kind of case

## Caveats in Cisco IOS XE Denali 16.3.3

### Open Caveats—Cisco IOS XE Denali Release 16.3.3

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvc81017</a>	ISR4k:EssNoEncapInfo drop seen for pkts transit via PPPoA
<a href="#">CSCvc16495</a>	Power supplies showing "ps fail" when they function fine
<a href="#">CSCvc07319</a>	Random Netclock error messages appearing on console
<a href="#">CSCvc89102</a>	ASR1000 doesn't send PPP ECHO Reply
<a href="#">CSCvd10362</a>	Deletion of channel-group failed on QFP when FR encaps set on associated Serial Int.
<a href="#">CSCvc15571</a>	applying MPLS-TE command on an interface stops the complete traffic
<a href="#">CSCvb31243</a>	IOSd crash in QoS stats
<a href="#">CSCvc91743</a>	Platform does not trigger license release when the port moves into error disable state

Caveat ID Number	Description
<a href="#">CSCvc89965</a>	After reload ASR take incorrect Local Preference withroute- map using RPKI
<a href="#">CSCvd16828</a>	High CPU due to BGP Task process
<a href="#">CSCvd15140</a>	Router crashes using show BGP commands
<a href="#">CSCvd06688</a>	Traceback: loop in Crypto ACL creates CPUHOG then crash at large scale
<a href="#">CSCvc78492</a>	Unable to pass traffic if spoke to spoke fails to build in phase 2
<a href="#">CSCvc46230</a>	PfRv3: Crash While Evaluating/Moving TC's Between Channels
<a href="#">CSCvd04871</a>	Crash after IWAN does a recalculation in the RIB

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.3

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCvc06453</a>	As1k @ CFM traffic frames being sent with 2 dot1q tags
<a href="#">CSCvb30256</a>	ASR1000-2T+20X1GE: More than 1Gbps traffic is reported on 1GE port
<a href="#">CSCvb49832</a>	ASR1k-ELC- XCVR disabled after router reload and interface is down
<a href="#">CSCvc06521</a>	EPA-18X1GE and EPA-10x10GE reloads unexpectedly with traffic and EPA OIR
<a href="#">CSCvb01450</a>	IP/ARP connection failed between two direct-connected interfaces
<a href="#">CSCvc23830</a>	Vlan Oversubscription packets are not working.
<a href="#">CSCvb36753</a>	Ingress Unicast traffic not received on the BDI.
<a href="#">CSCvb21886</a>	POS interface doesn't come up on clearing alarms
<a href="#">CSCvc48813</a>	BQS unable to resume processing leading to pending objects constantly increasing
<a href="#">CSCvb82048</a>	Dual QFP Crash triggered by removing service policy from interface with mixed shaper feature enabled
<a href="#">CSCvb76638</a>	POLARIS 16.4: fman_fp and cpp_cp core files seen with L3VPN profile
<a href="#">CSCvb09881</a>	IWAN NBAR may cause a reload with pa_offset_to_addr
<a href="#">CSCva47695</a>	Entry leak in the SID_CAM leading to SID_CAM_OVERFLOW
<a href="#">CSCvb87341</a>	Ping to ASR1k with a MTU of 10000 Bytes and record option set fails

## Caveats in Cisco IOS XE Denali 16.3.4

### Open Caveats—Cisco IOS XE Denali Release 16.3.4

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvd69608</a>	Asr1k crashes at PPP process on pushing 4 or more per-user static ipv6 routes
<a href="#">CSCve41768</a>	ASR1K RP3 running Denali-16.3.2 - silent reload with Last reload reason: PowerOn
<a href="#">CSCve45753</a>	R0/0: kernel: i2c_master_xfer (line 276): port 0, addr 19, len 1 c2w master failed to send data:
<a href="#">CSCve57422</a>	ASR1k loopback I/F with Mgmt-intf vrf failed to communicate with peer device via G0 at RP2
<a href="#">CSCvc58538</a>	BGP crashes when removing advertise-map
<a href="#">CSCve32217</a>	Crash due memory corruption in AFW
<a href="#">CSCve44393</a>	ASR1006 crashes due watchdog in the DHCP client process
<a href="#">CSCve13491</a>	Router might crash due watchdog when creating a new swidb at if_index_allocate_index
<a href="#">CSCve59273</a>	ASR FP Crash - Memory corruption in libSRTP
<a href="#">CSCur42069</a>	Cube crashed when "sh sip-ua calls br" command entered
<a href="#">CSCve08418</a>	IPsec/IKEv2 Installation Sometimes Fails With Simultaneous Negotiations
<a href="#">CSCvd06688</a>	Traceback: loop in Crypto ACL creates CPUHOG then crash at large scale
<a href="#">CSCve07263</a>	IPSec Tunnel stuck in Up/Down state after shut/no-shut - VPN Interop
<a href="#">CSCvc46230</a>	PfRv3: Unexpected Reload While Evaluating/Moving TC's Between Channels
<a href="#">CSCve08943</a>	QFP sorter interrupts related to REAL_DISTANCE are fatal when they should be informational
<a href="#">CSCve59906</a>	router crash with "param long-dur-action disconnect"

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.4

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCvb21929</a>	ping fail under pppoe configuration
<a href="#">CSCvd90801</a>	EPA-18X1GE/ GLC-TE / asr1000rpx86-universalk9.16.03.03.SPA.bin MDI/MDIX fail
<a href="#">CSCve09829</a>	ISSU: 16.3.4 <-> 16.5.1 Config_Sync@lcap rate fast after Loadversion in RP2 platforms

Caveat ID Number	Description
<a href="#">CSCvc88902</a>	Crash on fw_ha_chk_selfzone
<a href="#">CSCvc39443</a>	router may crash with ZBFW ACL modification
<a href="#">CSCvc10866</a>	ISATAP Server feature broken on ASR1K
<a href="#">CSCvc83037</a>	ESP crash while doing NAT ALG
<a href="#">CSCvc91743</a>	Platform does not trigger license release when the port moves into error disable state
<a href="#">CSCvd61632</a>	"distance bgp 255 0 0" getting conf under IPv6 AF after some sequence of steps
<a href="#">CSCvc89965</a>	After reload route policy processing not re-evaluate with route-map using match RPKI
<a href="#">CSCvc99820</a>	BGP crashed configuring different update-source interface with v6 LL peering
<a href="#">CSCvd09584</a>	eVPN PMSI VNI decoding / encoding as MPLS label
<a href="#">CSCvd16828</a>	High CPU due to periodic route refresh to VPN peers using rfilter AF
<a href="#">CSCvd15140</a>	Router crashes using show BGP commands
<a href="#">CSCvd43437</a>	Wrong Source IP Selection for eBGP in EVN/VNET environment
<a href="#">CSCvb20224</a>	Router crashes on configuring bandwidth on the Dialer interface
<a href="#">CSCCuy27746</a>	CDP packet causes switch to crash due unexpected exception to CPUvector
<a href="#">CSCvc96709</a>	Crash using EIGRP and DVTI with IKEv2
<a href="#">CSCvc65604</a>	VNET global vrf neighbor is down after an interface flap
<a href="#">CSCvc14385</a>	Missing FIB subblock causes crash when configuring vrf
<a href="#">CSCvc55378</a>	ASR1k crashed while unconfiguring Netflow
<a href="#">CSCvd27889</a>	Crash occurred with APPNAV on ASRK
<a href="#">CSCvd58820</a>	Need API for ip best source address for given outgoing interface
<a href="#">CSCvc35453</a>	ISATAP Server feature broken on ASR1K
<a href="#">CSCuz63888</a>	Crash in "show ipc all" @ ipc_print_ports_internal
<a href="#">CSCvc66912</a>	CUBE Ent crashes when Diversion header received with no user portion and 'history-info' enabled
<a href="#">CSCvc34235</a>	"crypto ipsec fragmentation before-encryption" command disappears after reload
<a href="#">CSCvd40880</a>	Modifying crypto ACL leads to a removal of crypto map config
<a href="#">CSCvc09368</a>	Crash at update of context nhrp
<a href="#">CSCvc75262</a>	GETVPN GM in "Not initialised" state after ISSU runversion



Caveat ID Number	Description
<a href="#">CSCvc35196</a>	Behavior difference between XE3.17 and Polaris
<a href="#">CSCvc59750</a>	IKEv2 Aggregate-auth Timing Issue
<a href="#">CSCvd69373</a>	IKEv2: Unable to initiate IKE session to a specific peer due to 'in-neg' SA Leak
<a href="#">CSCvd39741</a>	IOS IKEv2 profile NVgen local auth is rejected from startup configuration upon reload
<a href="#">CSCvb94392</a>	Cisco IOS and IOS XE System Software SNMP Subsystem Denial of Service Vulnerability
<a href="#">CSCvd25106</a>	2nd isis instance crashes after configuring new connected-prefix-sid-map due to no instance PDB
<a href="#">CSCvc51408</a>	ISIS route oscillation due to ldp sync and interface max metric
<a href="#">CSCvc49232</a>	Crash in IWAG GTP on removing config
<a href="#">CSCvb47581</a>	IWAG leak in MCSA component
<a href="#">CSCvc15923</a>	L2TP Account accuracy: SSS disconnect ACKs are not received for few sessions
<a href="#">CSCvc17525</a>	complete traffic drop with DATA MDTs with latest polaris_dev
<a href="#">CSCvc82325</a>	Crash after the MPLS LDP neighbor flap in the NSR scenario
<a href="#">CSCvd01488</a>	Running command "show policy-map interface" or "show tech nbar" can cause crash
<a href="#">CSCvd41270</a>	Crash on IWAN Hub when TC is uncontrolled and current channel is present
<a href="#">CSCvd36813</a>	Memory Leak due to cent_rt_eigrp_nh_convert
<a href="#">CSCvd29705</a>	PfR Monitoring do not display VRF101 data and reports FVRF incorrectly
<a href="#">CSCvc62532</a>	HTTP connection may fail when IPv6 address is configured on any interface
<a href="#">CSCvc65670</a>	NTP leap second addition/deletion for consecutive leap months not working properly
<a href="#">CSCvc19234</a>	Old Constrained Node Sid not getting deleted from MPLS forwarding table on changing SID
<a href="#">CSCvc12420</a>	OSPF SRTE: CSTR path is not installed in some cases properly.
<a href="#">CSCvc71872</a>	OSPF: IPFRR repair path computation stopped after receiving type 10 opaque EPL lsa.
<a href="#">CSCvc54359</a>	SRTE: Single hope tunnel doesn't install any repair path.
<a href="#">CSCvc23238</a>	SRTE: when i/f address is removed, traceback is seen and adj-sids not destroyed.
<a href="#">CSCvc54211</a>	Tunnel & repair path continuously flapping on disabling SR on next node from head-end.

Caveat ID Number	Description
<a href="#">CSCvd58884</a>	During PKI enrollment, Cisco router rejects CA/RA reply containing HTTP 500 "Internal Server Error"
<a href="#">CSCvd69397</a>	Crash on vtcp parsing in Extended Processing Path for the FIA.
<a href="#">CSCvd82881</a>	16.6: ASR1K: RP crash seen @cpp_bqs_rm_yoda_init_or_save_child.
<a href="#">CSCvc71183</a>	ASR1K ESP100 - Both ESP crashing due to cpp_bqs_srt_yoda_place_child_internal: failed to grow tree
<a href="#">CSCvc83373</a>	cpp_cp process crashes due to sw wdog expiring while creating a queue
<a href="#">CSCvd68301</a>	Crash when interface with multiple tunnels sourced comes up
<a href="#">CSCvc80135</a>	Crash when removing and re-adding bandwidth remaining percent while class-default has fair-queue
<a href="#">CSCvc74759</a>	Dual QFP Crash triggered by removing service policy from interface with mixed shaper feature enabled
<a href="#">CSCvd23034</a>	Multiple Parent Events Per Node lead to a crash
<a href="#">CSCvd47310</a>	Secondary SUP keep crashing @ CPP Client process failed
<a href="#">CSCvd23920</a>	ASR1001-X crashed when add QoS config
<a href="#">CSCve01564</a>	CPP DRV: Transit Entrenched Recycle Path Does Not Enforce Packet Order
<a href="#">CSCvc79819</a>	ESP100 crashes after manual failover
<a href="#">CSCvb28686</a>	Throughput stuck after applying/removing qos policy
<a href="#">CSCva31708</a>	SR:RSP2:Object download failure(EOS object)error seen randomly
<a href="#">CSCvd68050</a>	CHUNKBADREFCOUNT crash
<a href="#">CSCvc26599</a>	ASR crashes when attempting SRTP/TLS call
<a href="#">CSCuz52528</a>	Evaluation of all for OpenSSL May 2016
<a href="#">CSCvb48683</a>	Evaluation of all for Openssl September 2016
<a href="#">CSCut35260</a>	SSL Handshake failure with rc4-128-md5 cipher on ASR/ISR platforms
<a href="#">CSCvb72458</a>	Router repeatedly crashing with "%UTIL-3-TREE: Data structure error"
<a href="#">CSCvb27784</a>	Router crashes when running the csim start command
<a href="#">CSCvd18792</a>	ISR4K - Hoot and Holler E&M port cannot be co-located with multicast hub

## Caveats in Cisco IOS XE Denali 16.3.5

### Open Caveats—Cisco IOS XE Denali Release 16.3.5

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvf81695</a>	ASR1K encryption processor trace file is not valid
<a href="#">CSCvf60961</a>	BGP scanner crashed with add/remove command bgp mpls-local-label
<a href="#">CSCvg05896</a>	IWAN EIGRP SAF - seq number mismatch after branch reload
<a href="#">CSCvd11419</a>	Configuring Packet tracer on IOS-XE triggers a crash intermittently
<a href="#">CSCvg09010</a>	KS merge fails for groups with TBAR due to PST update failure on primary KS
<a href="#">CSCuz16455</a>	ISIS SR: Subtract 3 instead of 2 from PD maximum label support for TILFA
<a href="#">CSCvg03683</a>	ASR1K CGN NAT ASR1K ESP100 crashed with clear ip nat translation *

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.5

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCve54313</a>	Crash in ALPS SNMP code
<a href="#">CSCvc77706</a>	[DT]Crash oberseved while sending ANCP port up
<a href="#">CSCvd73062</a>	PPPoE crash: due to invalid dldix while Virtual Access Interface is not yet attached to Dialer.
<a href="#">CSCvc16495</a>	Power supplies showing "ps fail" when they function fine
<a href="#">CSCvc42059</a>	tracelogs/punt_debug.log* missing when punt keepalive timeout / crash occurs
<a href="#">CSCvfl3960</a>	Incorrect status in show facility-alarm status after Gi0 no shut
<a href="#">CSCvc48365</a>	ASR1000-6TGE/2T+20X1GE:- Chunk corruption in XLIF pending process
<a href="#">CSCvf59830</a>	ASR1001-HX/ ASR1002-HX/ MIP-100 not able to send dot1q packet in EoMPLS.
<a href="#">CSCvfl1991</a>	cpp-mcplo-ucode crash when layer 2 switching packet
<a href="#">CSCve25878</a>	ASR1001-X: dot3StatsDuplexStatus gives unknown for tengig and gig interfaces
<a href="#">CSCve53205</a>	ASR1k 3.16 - ASR1k-ELC- XCVR disabled after router reload and interface is down
<a href="#">CSCvd62780</a>	CPAK-100GE-EPA sends out pause frames continuously when pause frames are received
<a href="#">CSCvd90801</a>	Ping failure on 1G EPA port with SFP GLC-TE/SFP-GE-T

Caveat ID Number	Description
CSCvf50756	ASR1001-X crashes on smc_msg_send_fragment
CSCvd63476	Changing autoneg setting on ASR1K cause link failure on subsequent link flap (connected to 2960XR)
CSCve44236	ISR4K crashes after assert failure in PA packet-buffer infrastructure
CSCvd10362	Deletion of channel-group failed on QFP when FR encaps set on associated Serial Int.
CSCve70876	Crypto device microcode hangs and crashes on ASR1k routers
CSCUw94493	Octeon core hang causing F1/F0 offline
CSCUu68879	ISR4300 shows abnormal large RTT/jitter value in IP SLA udp-jitter v2/v3
CSCvc83900	MIB counter, ipIfStatsHCOctets, does not show correct value
CSCvf01501	NBAR data-plane crash for DNS TXT query with an additional record
CSCve08344	Crash due to FNF while collecting and adding entries to cache
CSCvb50530	L2TP sessions cannot connect - Report Dataplane error
CSCve47695	ucode crash@cfg_qos_exported_hier while remving child policy from parent policy
CSCvf05057	SPA-1XCHSTM1/OC3 : IDB Mismatch between Active & Standby RPs in ASR1k
CSCvb78322	input frame and CRC counter increasing on administratively down Tengi interface
CSCUw97842	Standby RP crash at be_ancp_get_dsl_line_attrs
CSCvc58538	BGP crashes when removing advertise-map
CSCvd90251	Duplicate BGP prefixes are not dropped
CSCve68911	Nested Enhanced Route Refresh requests triggers Stale Prefixes.
CSCuz20869	RFC: BGP sending error sub-code: 8 instead of '4'
CSCvf62916	Router crashes when doing "show ip bgp neighbor" on a flapping BGP neighborhood
CSCve51657	Slow convergence with scale after a core link flaps
CSCvf24713	stale path message for that prefix is noticed when dampening is configured.
CSCve57697	Crash in Bstun SNMP code
CSCvd63393	Policy-map name 'policy-map PIN-G3/1/3.8' causes TB and subsequent RP Crash on Policy deletion/add.
CSCvb20224	Router crashes on configuring bandwidth on the Dialer interface
CSCvd19860	OSPFv3 AUTH breaks IPv6 traffic intermittently
CSCvd80715	ASR1k IOSD crash due to memory corruption in aaa accounting

Caveat ID Number	Description
<a href="#">CSCve61344</a>	DHCP NAK is observed with Rebind request
<a href="#">CSCve81985</a>	Subscriber session not synced to standby while assigning static ip in DHCP
<a href="#">CSCvb86484</a>	wrong EIGRP redistribution statement in startup config breaks BGP settings after router reload
<a href="#">CSCvc98571</a>	EEM applet will not release the Config Session Lock if it ends when CLI is in configuration mode
<a href="#">CSCve59273</a>	ASR FP Crash - Memory corruption in libSRTP
<a href="#">CSCvf92057</a>	CUBE is unable to send PRACK to Skype server for inbound calls
<a href="#">CSCvf81579</a>	ASR1K: IOSd crash in kmi_initial_check on null map dereference
<a href="#">CSCve10917</a>	IPSec crash on ASR1k router while processing KMI
<a href="#">CSCvd99474</a>	IPsec: For sVTI after rekey old SAs are not getting deleted
<a href="#">CSCvfl1237</a>	Memory leak seen@crypto_init_show_instance
<a href="#">CSCve87898</a>	Session coming up late after RP failover due to PD delay in polaris
<a href="#">CSCvc78492</a>	DMVPN : IOS-XE - Unable to pass traffic if spoke to spoke fails to build in phase 2
<a href="#">CSCvf34835</a>	IOS-XE GETVPN KS crashes while sending cgmGdoiKeyServerRegistrationComplete trap after GM reg
<a href="#">CSCve20850</a>	asr1k is unable to recover from the tunnel flapping at scale for IKEv2 dmVPN/BGP
<a href="#">CSCvb75167</a>	Crash in Crypto IKEv2 process
<a href="#">CSCvd54358</a>	Dynamic routes don't get propagated if old session is present in In-Active state.
<a href="#">CSCvc78694</a>	Ikev2 SA INIT queue CLI : Fix default behaviour
<a href="#">CSCve07263</a>	IPSec Tunnel stuck in Up/Down state after shut/no-shut - VPN Interop
<a href="#">CSCuz15131</a>	dqueue not empty prior to destruction crashes ipv4fib_les_switch_wrapper
<a href="#">CSCvd97524</a>	Fixed versions for CSCuz15131 crash when traffic with maximum size is on wire
<a href="#">CSCvb14640</a>	Cisco IOS and Cisco IOS XE Software IPv6 SNMP Message Handling Denial of Service Vulnerability
<a href="#">CSCuy09470</a>	ISIS hello stops to be sent after RSP switchover
<a href="#">CSCvd21785</a>	ISIS RIB and Global RIB out of sync resulting in complete traffic loss
<a href="#">CSCvd60080</a>	Radius attribute Acct-Terminate-Cause - 49 difference
<a href="#">CSCve47374</a>	assert stop processing leaks memory

Caveat ID Number	Description
<a href="#">CSCvd72530</a>	ASR1k configured as PxTR crashes when booted with 16.5.1 image at LISP fwd background process
<a href="#">CSCvd47567</a>	Unexpected reboot with NAT and Multicast configured
<a href="#">CSCve98696</a>	Interoperability issue of 16.3.4 with other releases
<a href="#">CSCve86613</a>	IOSXE-RP Punt Service Process crash @ __be_fmm_flow_int_table_entry_compare
<a href="#">CSCve61713</a>	PfRv3: Crash in Route-Control Process
<a href="#">CSCve14782</a>	PfRv3: Crash Observed While Checking/Modifying Channel Prefixes
<a href="#">CSCve43611</a>	PfRv3: Multiple TCAs Logged Simultaneously May Lead to Crash
<a href="#">CSCvf29213</a>	PFRV3: Site Prefix shows unreachable after removing and adding the specific route for the prefix
<a href="#">CSCve80719</a>	Site-prefix learning: Prefix withdrawal not working for hub-> branch on 16.6
<a href="#">CSCve92511</a>	Site-prefix of Peer BR is not synchronized after shut/no shut BR border
<a href="#">CSCve15722</a>	The second and later PfRv3 VRF configs are missing after reload
<a href="#">CSCvc07577</a>	Crash in BGP due to regular expressions
<a href="#">CSCvf51341</a>	Crash after show ip ospf database summary command
<a href="#">CSCvd48206</a>	OSPF TILFA SCALE: On reopt or clearing OSPF process, no. of protected prefixes goes down drastically
<a href="#">CSCvd73491</a>	OSPF TILFA SCALE: with 2K Inter-area Prefix Scale, some non-ECMP routes are not getting protected
<a href="#">CSCvd40276</a>	OSPF: Not able to remove ospfv3 config under Virtual-Template
<a href="#">CSCvd38714</a>	OSPF: When anycast present in two areas, when one area is removed, rout not getting installed in RIB
<a href="#">CSCvd67254</a>	Crash during CRL fetch failure
<a href="#">CSCvd38619</a>	EST client pki authentication request goes out to default URL always
<a href="#">CSCve29882</a>	EST client pki simpleenroll request goes out to default URL always
<a href="#">CSCve53984</a>	ISR 4300 crashed while importing certificate
<a href="#">CSCvd69749</a>	PKI Server: "Rollover RA Certificate" Becomes "Rollover ID Certificate" After Reload of Router
<a href="#">CSCve52258</a>	Both ESP crash on changing COS type on ATM VC
<a href="#">CSCve42512</a>	Both ESP crash on changing shaper rate under port-channel

Caveat ID Number	Description
<a href="#">CSCve48009</a>	cpp_cp_svr crash seen on ASR1002-X and device keeps rebooting with 16.5.1b
<a href="#">CSCve49596</a>	fp crash while changing port-channel from vlan based mode to LACP
<a href="#">CSCve40432</a>	Yoda: Collapse HQF Aggregation Node
<a href="#">CSCve76827</a>	large NAT policy-map takes long time to download
<a href="#">CSCvf74154</a>	SGACL: cpp_sp_svr crash during CFM EDIT request with reseq_enable = TRUE
<a href="#">CSCvd72277</a>	[UniScale]asr1k peers crashed while unconfiguring testbed devices in IPSEC IPv6 Ikev2/SCM
<a href="#">CSCve08943</a>	QFP sorter interrupts related to REAL_DISTANCE are fatal when they should be informational
<a href="#">CSCve98056</a>	ESP ucode crash with ALG for PPTP traffic and PAP is enabled.
<a href="#">CSCva28875</a>	NAT ALG fails on Multipart SIP Header
<a href="#">CSCvc60745</a>	tcp_getbuffer memory leak - refcount not reduced when packet dropped
<a href="#">CSCve60402</a>	Crash in Voice DNIS SNMP code
<a href="#">CSCvfi8162</a>	Crash observed in Mlpp-Bacd scenario
<a href="#">CSCve71893</a>	ISR4K - Hoot and Holler multicast replication issue
<a href="#">CSCve21448</a>	multiple ISR4K VGW's crashed with Segmentation fault(11), Process = DSMP
<a href="#">CSCCut98625</a>	ASSERTION FAILED : ..vtsp.c: vtsp_cdb_assert: then crash
<a href="#">CSCvfi9607</a>	ISR4K not correctly handling forked 18X responses with SDP
<a href="#">CSCCuy68013</a>	Switch crashed after add "ip wccp 61 global" command during traffic

## Caveats in Cisco IOS XE Denali 16.3.6

### Open Caveats—Cisco IOS XE Denali Release 16.3.6

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvf80757</a>	NETCONF-YANG/RESTCONF edit config fails silently, subsequent get config reports false-positive
<a href="#">CSCvg05452</a>	IOS-XE router crash from memory corruption during CCB cleanup
<a href="#">CSCvg94600</a>	crash with "debug platform condition ipv4 access-list "
<a href="#">CSCvh14715</a>	unexpected reload due QFP cpp-mcplo-ucode exception

Caveat ID Number	Description
<a href="#">CSCvh47124</a>	Nexthop is wrong in route-import table on branch when delete WAN interface and reconfigure it
<a href="#">CSCvh96950</a>	16.3:Ping failure and router crash while testing PFRv3 scenario
<a href="#">CSCvh97792</a>	Router: CCE crashed with EPC classify pkts

## Resolved Caveats—Cisco IOS XE Denali Release 16.3.6

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCus14734</a>	IP SLA http operation with customizable status for return codes
<a href="#">CSCuw85826</a>	Evaluation of Cisco IOS and IOS-XE for NTP_October_2015
<a href="#">CSCux86075</a>	Unexpected crash during SSH operation
<a href="#">CSCuy74937</a>	ASR1k: upgrade rom-monitor filename flash: returns "Invalid File"
<a href="#">CSCuy91126</a>	POLARIS: IPSec FlexVPN PSK does not scale on asr1013/RP2/ESP100
<a href="#">CSCva46459</a>	SSH session hangs if it is not closed properly
<a href="#">CSCva89792</a>	Auto-registration failure warning and RTP port allocation failure
<a href="#">CSCva92216</a>	BGP session is reset when unrecognized capability received in OPEN message
<a href="#">CSCvb00288</a>	CME No ringback after blind transfer
<a href="#">CSCvb34443</a>	ikev2 fragmentation not working with aes-gcm encryption - hmac failure
<a href="#">CSCvb53469</a>	Ephone-DN remains in down state when restart all is given in telephony-service
<a href="#">CSCvb65024</a>	LDAP authentication reuses old TCP connection
<a href="#">CSCvc18534</a>	Incorrect Radius Server Status when locally defined user called in tester command
<a href="#">CSCvc26134</a>	self-generated packets sent fail over PMIP-MUDP tunnel in LMA
<a href="#">CSCvc61653</a>	Polaris: polaris memory leak in btrace thread deletion: cli_agent.
<a href="#">CSCvc63958</a>	SIP CME relays out "Authorization: header" received from IP Phone.
<a href="#">CSCvc77378</a>	Glare condition exists for mid call DO INVITE when CUBE receives in-dialogue SIP OPTIONS message
<a href="#">CSCvd11419</a>	Configuring Packet tracer on IOS-XE triggers a crash intermittently
<a href="#">CSCvd16501</a>	High CPU due to SNMP ENGINE when polling mplsTunnelHopEntry
<a href="#">CSCvd64670</a>	SCEP enrollment failing with HTTP/1.1 500 Internal Error



Caveat ID Number	Description
<a href="#">CSCvd69608</a>	Asr1k crashes at PPP process on pushing 4 or more per-user static ipv6 routes
<a href="#">CSCvd80837</a>	Crash observed in DHCP SIP
<a href="#">CSCvd96815</a>	Enhancement: Un-controlled TC in DISCARDED state is dropped instead of RIB-routed
<a href="#">CSCve09104</a>	Command "segment-routing mpls" under router isis 1 not getting NVGEN'd
<a href="#">CSCve53263</a>	Configured Speed/Duplex are not supported on Mgmt Eth port
<a href="#">CSCve54486</a>	Crash when attempting to assign nonexistent/shutdown VLAN to 802.1x port
<a href="#">CSCve55089</a>	BGP crashes at bgp_ha_sso_enable_ssomode
<a href="#">CSCve57506</a>	IPv6 ESP traffic incorrectly dropped after decryption by IPv6 interface access-list
<a href="#">CSCve59906</a>	router crash with "param long-dur-action disconnect"
<a href="#">CSCve68771</a>	Crash in TCL/AFW processes
<a href="#">CSCve74806</a>	Standby Router crash when there is a m-line shrink case within the dialog.
<a href="#">CSCve75919</a>	In-dialog options ping received post ACK (call completion) cause cube to change codec and no audio
<a href="#">CSCvf05864</a>	BGP RR changes tunnel parameters for bgp evpn route type 3
<a href="#">CSCvf11721</a>	ASR1k netflow crash at flow_def_field_list_copy_with_callback
<a href="#">CSCvf16338</a>	voiprtp_register_transport_port_manager_and_reserve: Alloc ports failed, min: 8000, max: 48199 248
<a href="#">CSCvf16448</a>	No all IPv6 GRE crypto tunnels may come up or recover from flapping at scale
<a href="#">CSCvf24607</a>	Ipssec Session Fail After Up/down Link Between Dmvpn Tunnel
<a href="#">CSCvf24928</a>	QFP exmem memory leak in cpp_fm_sce_result_chunk
<a href="#">CSCvf30703</a>	Watchdog crash at sla_resp_config_command when executing the "show run" command
<a href="#">CSCvf31368</a>	router crash after EEM-wanfailover script triggered
<a href="#">CSCvf33947</a>	CUBE can't handle mid-call re-invite when midcall-signalling passthrough mediachange is configured
<a href="#">CSCvf35507</a>	Crash in SSH Process due to SCP memory corruption
<a href="#">CSCvf36269</a>	Cisco IOS and IOS XE Software Plug-and-Play PKI API Certificate Validation Vulnerability
<a href="#">CSCvf36888</a>	IOS-XE DMVPN Per-tunnel QoS not working on CSR1k without AX license
<a href="#">CSCvf38050</a>	Voice Gateway crash due to memory corruption while finding DN index during redirect

Caveat ID Number	Description
<a href="#">CSCvf39474</a>	GETVPN: TBAR sync "timer is not running" after KS upgrade causing anti-reply drops and GM outages
<a href="#">CSCvf43271</a>	Traceback: Stack master crash at dot1x authentication
<a href="#">CSCvf48159</a>	Router crash during T38 fax bitrate negotiation
<a href="#">CSCvf60862</a>	Cisco IOS and IOS XE Software IOS daemon Cross-Site Scripting Vulnerability
<a href="#">CSCvf63269</a>	After on the vnic edit on the fly changes - LAN-SRIOV sub interface ping fails after Reboot of ISRv
<a href="#">CSCvf63541</a>	BGP w/global import/export crashes when several nbrs deleted simultaneously
<a href="#">CSCvf65522</a>	ESP crashed - double_exception_has_occured - malformed PIM packet over GRE tunnel & ERR_DTL_INV_ADDR
<a href="#">CSCvf67269</a>	IS-IS support for multi-instance redistribution for IPv6.
<a href="#">CSCvf68261</a>	Crash when printing IPSEC anti-replay error
<a href="#">CSCvf70383</a>	Crash in SDP Passthru when T.38 as 1st mline in mid-call SDP
<a href="#">CSCvf73320</a>	[UniScale]isr4431 crashes while finding NDR with max oif number per multicast grp at scale
<a href="#">CSCvf74829</a>	CRL download fails due to "failed to create getcacert message"
<a href="#">CSCvf76535</a>	B2B NAT HA: Stale NAT translations stuck on primary router after communication loss with standby
<a href="#">CSCvf80163</a>	ASR1K crashes due to crypto microcode with no corefile/crashinfo
<a href="#">CSCvf80495</a>	IPv6 BGP network advertized not seen in the peer
<a href="#">CSCvf81695</a>	ASR1K encryption processor trace file is not valid
<a href="#">CSCvf86462</a>	Recommitx2: ASR1006-X memory leak fman_rp after sending 100,000,0 ARP entries
<a href="#">CSCvf89608</a>	Missing ip route to cellular interface after router reload or modem power cycle
<a href="#">CSCvf89894</a>	GETVPN // Primary KS sending rekey first to GM's and then to Secondary KS via scheduled rekey.
<a href="#">CSCvf92460</a>	show gtp parameters causes RP to crash
<a href="#">CSCvf94948</a>	Input policy-map classify traffic incorrectly - ISR4331
<a href="#">CSCvf95077</a>	Stale Mac entry in MLRIB
<a href="#">CSCvf95141</a>	ZBF crashes on standby
<a href="#">CSCvf96035</a>	ISIS redistribute connected not working for IPV6 routes

Caveat ID Number	Description
<a href="#">CSCvf97230</a>	RE-INVITE and OPTIONS Glare not handled by CUBE
<a href="#">CSCvg02533</a>	router crashed after triggers with debug
<a href="#">CSCvg05896</a>	IWAN EIGRP SAF - seq number mismatch after branch reload
<a href="#">CSCvg14256</a>	Crash at cc_detect_mute_call
<a href="#">CSCvg15158</a>	DMVPN session get stuck in NHRP and UP-NO-IKE state without active IKEv2 session until rekey
<a href="#">CSCvg17971</a>	ASR1k ESP may crash after a switchover if IPsec configured
<a href="#">CSCvg20200</a>	Polaris: Crash observed while client association with key-wrap enabled in controller.
<a href="#">CSCvg21440</a>	Memory leak with DMVPN tunnel protection ipsec
<a href="#">CSCvg28395</a>	Crash when doing snmp walk for ipAddressEntry
<a href="#">CSCvg31493</a>	Stale Mac entry in MLRIB additional fix
<a href="#">CSCvg45247</a>	Site-prefix learning: Unexpected Reboot in 'IP RIB Update' Process after 'no domain default'
<a href="#">CSCvg46973</a>	ASR1K -LNS ESP crash after failing/flapping TeGig interfaces
<a href="#">CSCvg52560</a>	Traceback: OCSF creates a large number of lists and triggers a memory problem
<a href="#">CSCvg60135</a>	ASR1000 resets unexpectedly with reason as LocalSoft on Polaris Release
<a href="#">CSCvg60288</a>	Device IP address AV pair replaced with 192.168.1.5
<a href="#">CSCvg74048</a>	PKI: All SCEP requests fail with "Failed to send the request. There is another request in progress"
<a href="#">CSCvg75380</a>	Polaris 16.3.5: Unexpected Reboot with Device Classifier enabled
<a href="#">CSCvg76912</a>	CFD: pnp config upgrade failed when IFS returns size 0 for all TFTP files
<a href="#">CSCvg77410</a>	qos/cce AOM pending batch ack due to BQS pending config
<a href="#">CSCvg84039</a>	Traceback: Crash on WAAS menu prompt for WAN Interface
<a href="#">CSCvg85879</a>	BGP sets the wrong Local Preference for routes validated by RPKI server
<a href="#">CSCvg89855</a>	ESP crashed - cpp_cp failed in cpp_qm_event_proc_defer_parent_event
<a href="#">CSCvg90226</a>	Crypto Traceback: Router crash at 'Crypto Support' segmentation fault
<a href="#">CSCvg92437</a>	AToM: MSPW VC Down with Reason as No VC Remote Label Binding Received on RP SSO
<a href="#">CSCvg94978</a>	CUBE Router crashed - Critical software exception, Process = CCH323_CT

Caveat ID Number	Description
<a href="#">CSCVg98890</a>	IOS-XE GM router might crash after the rekey method is changed from unicast to multicast
<a href="#">CSCvh00038</a>	Device IP address AV pair replaced with 192.168.1.5
<a href="#">CSCvh05611</a>	IOSd crash while applying dial peer configuration
<a href="#">CSCvh17481</a>	PKI: Device crash during srl download with multiple CDP URI
<a href="#">CSCvh24315</a>	Memory leak for CCSIP_TCP_SOCKET and CCSIP_UDP_SOCKET on CUBE
<a href="#">CSCvh26560</a>	ESP crashes with high scale QoS configuration
<a href="#">CSCvh47443</a>	Spoke-to-spoke site-prefix reachability checking should be removed
<a href="#">CSCvh53691</a>	FP crash with scaled IKE sessions.
<a href="#">CSCvh57091</a>	ESP crash when flapping interface with l2tp tunnels that have qos applied to the tunnels.
<a href="#">CSCvh58702</a>	Router crashes after interface flap where sessions get moved from one interface to another
<a href="#">CSCvh60525</a>	CLI 'aaa common-criteria' not available on IPBASEK9 license
<a href="#">CSCvh64729</a>	FP crash @cpp_qm_create_queue while adding fair-queue

## Caveats in Cisco IOS XE Denali 16.3.7

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.7

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCCue23560</a>	ASR1K FNF IPV4 Export MTU is fixed at 1500 bytes
<a href="#">CSCCux20847</a>	R0/0: ASR1002-X kernel: bullseye_i2c_master_xfer Error Repeats Every Hour
<a href="#">CSCvd04871</a>	Crash after IWAN does a recalculation in the RIB
<a href="#">CSCvd14310</a>	IP TUNNELS: Overlapping Loopback Interface Causes Incorrect Forwarding Decision with AppNav and Pfr
<a href="#">CSCve23281</a>	Crash on Session Border Control bad chunk free
<a href="#">CSCve56437</a>	Router runs Denali 16.3.x may crash with AFW_application_process when sip call disconnect
<a href="#">CSCvf06123</a>	Route-map not checked when packet is flowing from OUT to IN with Static Nat
<a href="#">CSCvf84349</a>	Router crash on polling cEigrpPeerEntry
<a href="#">CSCvg03444</a>	Hub MC continues to send EIGRP SAF hellos after adjacency removed

Caveat ID Number	Description
<a href="#">CSCvg05452</a>	IOS-XE router crash from memory corruption during CCB cleanup
<a href="#">CSCvg06428</a>	[ASR1006-X] After reload LC show as "inserted"
<a href="#">CSCvg09010</a>	KS merge fails for groups with TBAR due to PST update failure on primary KS
<a href="#">CSCvg30991</a>	IOS-XE routers: Memory leak observed on process ivr: peer_item_t in AFW_application_process
<a href="#">CSCvg33454</a>	Pass load balancing information in IP header to container
<a href="#">CSCvg34731</a>	IOS-XE MOS scores always show 4.x even with massive packet loss.
<a href="#">CSCvg41950</a>	Cisco IOS XE Software Diagnostic Shell Path Traversal Vulnerability
<a href="#">CSCvg45950</a>	packet drop seen intermittently if 40G traffic sent via cts interface
<a href="#">CSCvg47772</a>	MAB CWA broken with ISE 2.3 CCO
<a href="#">CSCvg87048</a>	Few Stale session are observed during vpdn longevity
<a href="#">CSCvg94908</a>	Mgig stack keeps crashing while configuring with Radius commands
<a href="#">CSCvg95562</a>	CENT: branch MC crashed @ cent_pdp_msg_send_from_pickexit after CSCup19724
<a href="#">CSCvg97010</a>	load-balance advanced moving traffic to fallback path when primary path are not over utilized
<a href="#">CSCvh06249</a>	Crash when receiving EVPN NLRI with incorrect NLRI length field value
<a href="#">CSCvh14715</a>	CVLA crash on memory merge scan task
<a href="#">CSCvh21717</a>	Punted IPv6 NS packets input queue build-up memory exhaustion
<a href="#">CSCvh22348</a>	ASR1006-X SIP's timestamp is not synced with RP timestamp.
<a href="#">CSCvh22775</a>	SIP40 in slot 5 of ASR1013 when inserted ESP-200 in F1 by replacing ESP-40, showed ESI lock failure
<a href="#">CSCvh32216</a>	Sporadic Crashes Due to IPSec (during ISAKMP AAA interaction)
<a href="#">CSCvh48610</a>	iwan router crash while updating pmi policy
<a href="#">CSCvh57242</a>	cpp-mcplo-ucode crash when layer 2 switching packet
<a href="#">CSCvh57657</a>	NAT MIB not populated when using traditional NAT
<a href="#">CSCvh61453</a>	NULL remote_hostname from LAC
<a href="#">CSCvh70356</a>	ASR1K - ECMP load-balance w/ DPI L2TP Tunnel visibility and QoS may generate ucode crash
<a href="#">CSCvh75132</a>	CPP crash stuck thread detected multikey_hash_replace_int

Caveat ID Number	Description
<a href="#">CSCvh79942</a>	Chunk corruption crash related to PNP or Guestshell
<a href="#">CSCvh83215</a>	IOS-XE Voice NIM/PVDM Service-Engine Admin Down leads to one-way audio
<a href="#">CSCvh83319</a>	Interop vrrp doesnt work between cedge and vedge
<a href="#">CSCvh85788</a>	Local LAN-only prefix present in master route-import table but not present in site prefix DB
<a href="#">CSCvh96821</a>	ASR1004 started relaying clients' DHCP Discover messages to DHCP Server with the wrong IP address
<a href="#">CSCvh99576</a>	LACP Rate defaults to fast with no way to change it to normal
<a href="#">CSCvi01745</a>	cpp_cp_svr crashes, causing reload
<a href="#">CSCvi02816</a>	ZBF not able to identify the WAAS optimized flow and drops ACK
<a href="#">CSCvi11065</a>	Router cpp_cp_svr process crashes at cpp_qm_event_parent_event_create
<a href="#">CSCvi12657</a>	BQS pending deferred is stuck
<a href="#">CSCvi13062</a>	FP cpp_cp_svr crash @cpp_bqs_srt_yoda_place_child
<a href="#">CSCvi16454</a>	Router crash due to PuntInject Keepalive Process - kmalloc failures
<a href="#">CSCvi21288</a>	PFRv3 RC FIA is not enabled on interfaces with one of sub-interface with xconnect config
<a href="#">CSCvi23169</a>	ASR1006-X EPA card input errors
<a href="#">CSCvi24515</a>	IOS-XE - FTP closing connection as NAT device does not process the 230 reply message
<a href="#">CSCvi27958</a>	MIP100 get struck in disconnecting state on FP reload
<a href="#">CSCvi31038</a>	Interface on ASR1001-X will become down/down after shut/no shut
<a href="#">CSCvi32156</a>	Router crashes when DMVPN tunnel moves access ports
<a href="#">CSCvi38391</a>	H.245 messages are not translated by NAT outside when H.323 video call is initiated from Out-2-In
<a href="#">CSCvi42002</a>	CDP packets not getting encapsulated over multipoint GRE tunnel
<a href="#">CSCvi44988</a>	C1111-8P: random commands may trigger TACACS+ to crash
<a href="#">CSCvi54878</a>	Memory leaks seen at PKI_name_list_add(0xa139cc0)+0x3e
<a href="#">CSCvi56463</a>	Unexpected Reset, Crypto IKMP Segmentation fault with IPsec AAA Configuration
<a href="#">CSCvi63840</a>	vif interface counters do not increment with multicast service reflection on IOS-XE

Caveat ID Number	Description
<a href="#">CSCvi66343</a>	ASR1K Datapath is not passing CTS tagging over PFRV3 auto-tunnel with "cts sgt inline"
<a href="#">CSCvi67613</a>	Protocol type for GRE header doesn't work consistently with "cts sgt inline" enable over auto-tunnel
<a href="#">CSCvi70145</a>	ASR1k   Segmentation fault in dhcp_sip process
<a href="#">CSCvi72480</a>	Memory leak seen when having same src mac -address with different src ip address
<a href="#">CSCvi79674</a>	CPP 0 failure Stuck Thread resulting in Unexpected Reboot
<a href="#">CSCvi86082</a>	ASR1001-x crash due to wrong packet size
<a href="#">CSCvi86983</a>	ZBFW HA: active router stuck in cold standby state after shut no shut the wan interface
<a href="#">CSCvi96164</a>	PnP DHCP discovery over VRF fails when using server FQDN in option 43 string
<a href="#">CSCvj02081</a>	CPP crash on L2TP router
<a href="#">CSCvj03263</a>	H225 gatekeeper request dropping under "ALG PARSER" with ZBF
<a href="#">CSCvj23301</a>	IOS: Crypto Ruleset fails to get deleted
<a href="#">CSCvj27172</a>	Crash during Generic Call Filter Module cleanup
<a href="#">CSCvj29593</a>	debug platform condition start causes keepalive failures with Vasi interface
<a href="#">CSCvj38384</a>	%PMIPV6-5-TUNNELDELETE:
<a href="#">CSCvj41163</a>	Memory size in smand process increases on 3850/3650 without any services, uplinks nor configuration
<a href="#">CSCvj41550</a>	default channel operation state changing from I/O to D/O failed when zero-sla enabled
<a href="#">CSCvj49476</a>	Telnet Sessions Hang/Become unavailable at execution of "show run"
<a href="#">CSCvj52681</a>	dynamic vlan assignment causes all sif entires under the port to be deleted
<a href="#">CSCvj57502</a>	Memory leak@CENT-BR-0 when change the path label frequently
<a href="#">CSCvj67042</a>	LAN Switches does not learn the right ED upon OTV failover
<a href="#">CSCvj67623</a>	DNS ALG will not work when trying to match specific destination hosts
<a href="#">CSCvj70568</a>	FlexVPN    DHCP entries not flushing for ikev2 timed out reconnect sessions
<a href="#">CSCvj76285</a>	Snmp v2 breaks due to Authentication failure, bad community string, 16.03.06
<a href="#">CSCvj84104</a>	PLR channel is not muted for some time
<a href="#">CSCvk15062</a>	Modification to ZBFW access-lists do not reflect in TCAM

## Open Caveats—Cisco IOS XE Denali Release 16.3.7

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvg67820</a>	HIGH CPU observation on FMAN RP ESS EVENT TRACING
<a href="#">CSCvj64493</a>	Standby switch crash when removing kron scheduler command
<a href="#">CSCvj68607</a>	ASR1K crash in tplus_handle_req_timeout
<a href="#">CSCvj88805</a>	ASR1K - No kernel/coredump generated with watchdog reload event
<a href="#">CSCvj90089</a>	Crash while doing a conference call
<a href="#">CSCvk24143</a>	ASR1001-X crash due to free block at tty_handle

## Caveats in Cisco IOS XE Denali 16.3.8

### Resolved Caveats—Cisco IOS XE Denali Release 16.3.8

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCva46032</a>	FlexVPN: Hostname in DHCP is incorrect when using AnyConnect
<a href="#">CSCvf18470</a>	IOS-XE CUBE HA crash
<a href="#">CSCvf65079</a>	CUBE reloaded with reason: RG-application reload on voice-b2bha RG
<a href="#">CSCvg75315</a>	ASR1K BGP scanner crash when change VRF and BGP configuration
<a href="#">CSCvg79610</a>	APPNAV - Overlapping Loopback Interface Causes Incorrect Forwarding Decision with AppNav and PfR
<a href="#">CSCvh49380</a>	PFRv3 Incorrect reported value of TCA threshold in traffic-class router change history
<a href="#">CSCvi01558</a>	iBGP dynamic peer using TTL 1
<a href="#">CSCvi10166</a>	ASR1009-X/RP2:power supplies are seen as ASR1000X-FAN and Insufficient number of power supplies (0)
<a href="#">CSCvi65958</a>	Standby RP crashes due to shortage of memory when running OSPF
<a href="#">CSCvi74088</a>	link local multicast packets are received when the SVI is in down state
<a href="#">CSCvi78168</a>	CUBE does not update Session number after receiving a 491 request Pending Message
<a href="#">CSCvj12370</a>	ASR1002-X router crashed in cpp_qm_event_collapse_hl_node
<a href="#">CSCvj31705</a>	ASR1k unexpected crash when appNav holds a stale pointer.
<a href="#">CSCvj37835</a>	EPA-1X100GE/CPAK-100G-SR4 stays in a down/down state after a reset.



Caveat ID Number	Description
<a href="#">CSCvj59170</a>	CUBE fails to handle second SDP Offer during initial dialog setup
<a href="#">CSCvj78551</a>	ASR1001X @incorrect traffic statistics reported of port-channel sub interface using SNMP.
<a href="#">CSCvj90089</a>	Crash while doing a conference call
<a href="#">CSCvj91448</a>	PKI:-IP address parsing issue while printing the subject name if classless IP is used in Trustpoint
<a href="#">CSCvj94863</a>	Channel with wrong label may be created on hub border
<a href="#">CSCvj95351</a>	OSPF SR uloop : After issuing "clear ip ospf process". ospf process crashed.
<a href="#">CSCvk12152</a>	Unable to remove command 'ip nat inside destination'
<a href="#">CSCvk16771</a>	ISIS for IP is enabled/installing routes in the RIB while IP routing is disabled
<a href="#">CSCvk20560</a>	491 not sent in a multiple re-invites in DO2EO scenario
<a href="#">CSCvk24143</a>	ASR1001-X crash due to free block at tty_handle
<a href="#">CSCvk37875</a>	High Availability system with two Voice Gateways - Crash
<a href="#">CSCvk45884</a>	BGP 'address-family ipv4' sub-configuration is not shown in the running configuration
<a href="#">CSCvk63602</a>	WAAS Policy Configuration push may caused AppNav Class-maps programming issue in TCAM
<a href="#">CSCvk63706</a>	ASR1000-6TGE / ASR1000-2T+20X1GE in status Unknown after Active RP3 OIR
<a href="#">CSCvk66880</a>	CUBE incorrectly fomats SIP SDP
<a href="#">CSCvk69093</a>	CUBE is not responding to SIP INFO
<a href="#">CSCvm03696</a>	ISDN PRI calls getting dropped with cause 47 because of bad interaction between CDAPI and TSP layers
<a href="#">CSCvm03744</a>	"%FMFP-3-OBJ_DWNLD_TO_DP_FAILED:fman_fp_image:xxx" appears when configured "ip port-map" on ISR44xx.
<a href="#">CSCvm19399</a>	CRL file is getting overwritten when PKI server turns up after reload
<a href="#">CSCvm44488</a>	ASR1001-HX 10GE SFP+ ports may operate as 1000Mbps
<a href="#">CSCvm49190</a>	Hairpin call to PSTN fails with primary-net5 switch-type on ISR4k.
<a href="#">CSCvm57817</a>	ASR1002-X crash due to ccp_cp_svr going into lockdown state.
<a href="#">CSCvm58960</a>	"VoIP dial-Peer <XX> is Busied out" printed in log every 2 minutes when destination is not reachable
<a href="#">CSCvm64545</a>	ISSU:NetFlow not exporting flow resulting in new feature not working after ISSU.

Caveat ID Number	Description
<a href="#">CSCvm65384</a>	SNMP OID conflict. Trap being generated with wrong oid 6999. it should be 854
<a href="#">CSCvm74894</a>	PKI authentication should proceed even if GetCACaps return any http failure
<a href="#">CSCvm76452</a>	IPSec background crash while sending SNMP trap
<a href="#">CSCvm76464</a>	ASR1k crash due to QoS in case of 4k subscribers per subinterface
<a href="#">CSCvm91422</a>	[MiFID] [Inbox-HA] VRF-ID is set to 65535 after switchover, call fails
<a href="#">CSCvm92019</a>	Media Ant-Trombone does not properly handle a Re-Invite utilizing a Replaces Header
<a href="#">CSCvm95929</a>	100FX OPNEXT SFP does not come up on ASR1001-X
<a href="#">CSCvn00218</a>	CUBE Crash in sipSPIAppAddCallInfoUI
<a href="#">CSCvn14454</a>	iWAN router PDP crash
<a href="#">CSCvn14737</a>	Crash with SIP call
<a href="#">CSCvn22777</a>	CUBE-HA: Standby CUBE reports error VOICE_HA-3-DATA_RECREATE_ERR: (STBY-Create) in CCAPI module
<a href="#">CSCvn36359</a>	CUBE doesn't forward INVITE with "midcal-signalling passthru media-change" during a video escalation
<a href="#">CSCvn41467</a>	Recommit of CSCvm99778 - eca/ewlc/qwlc/mewlc Sanity : AP join failed.
<a href="#">CSCvn63198</a>	iWAN domain password is overwritten by the global password, "password encryption aes"

### Open Caveats—Cisco IOS XE Denali Release 16.3.8

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvn02419</a>	Router crash occurs while running Dell software update
<a href="#">CSCvn83172</a>	Router reloads on 'show track' command when there is track object for deleted serial sub-interface.
<a href="#">CSCvn86402</a>	IOS FW thread crashed with Stuck CPP Thread - tw timer lock
<a href="#">CSCvn93715</a>	fman_fp crash removing from forward list

### Caveats in Cisco IOS XE Denali 16.3.9

#### Resolved Caveats—Cisco IOS XE Everest Release 16.3.9

All resolved bugs for this release are available in the [Cisco Bug Search Tool](#) through the Resolved Bug Search.

Caveat ID Number	Description
<a href="#">CSCvb22637</a>	nginx crashes when username containing formatted string logs into WebUI
<a href="#">CSCve47826</a>	Memory leak Crypto IKEv2 at ikev2_ios_psh_set_route_info
<a href="#">CSCvf25402</a>	Incorrect handling of SIGVTALRM (signal 26)
<a href="#">CSCvh11088</a>	Crash on OPF_CSR32_OPF_LOGIC_ERR_LEAF_INT__INT_START_OF_BURST_MARKER_ERR
<a href="#">CSCvj28921</a>	High CPU due to Alignment Corrections - SMEF & IWAN
<a href="#">CSCvk17998</a>	Rekey Timer are same for both the Server and Client
<a href="#">CSCvk53405</a>	Router crash - AFW_application_process
<a href="#">CSCvm51112</a>	"clear crypto sa vrf MyVrf" triggers crash after updating pre-shared-keys
<a href="#">CSCvn00104</a>	Software crash due to memory corruption after packet trace was enabled.
<a href="#">CSCvn17530</a>	Router Crashes When PKI-CRL-IO_0 Runs out of Stack Space During Failed DNS Lookup for CA Server
<a href="#">CSCvn37237</a>	ASR1002-HX crashed after huge traffic is transmitted over it
<a href="#">CSCvn53969</a>	Memory leak in SMD process due to AAA Idle-timer not being freed
<a href="#">CSCvn78349</a>	FlexVPN with password encryption - keyring aaa LIST password 6 xxxxx encrypted again upon reload
<a href="#">CSCvo03458</a>	PKI "revocation check crl none" does not fallback if CRL not reachable
<a href="#">CSCvo27553</a>	PKI incorrect fingerprint calculation during CA authentication
<a href="#">CSCvo42379</a>	ASR1000 / ISR4300 Console Hang with line speed set to 115200 in 16.3
<a href="#">CSCvo43897</a>	ISR 4331, wrongly adding to Port to subscriber field after translation.
<a href="#">CSCvo46127</a>	MaxSusRate is not working with service class
<a href="#">CSCvo47866</a>	Crash at Process = SCCP Auto Config
<a href="#">CSCvo66216</a>	IPSec-Session count in "show crypto eli" reaches max causing VPN failure
<a href="#">CSCvo67856</a>	in.telnetd process consumes 100% CPU in show process cpu platform sorted
<a href="#">CSCvo70504</a>	Missing Calling-Station-ID in Accounting Ticket for Web-Tal locations
<a href="#">CSCvo71721</a>	When sending account-logon ISG do not reply with ACK nor NACK.
<a href="#">CSCvo94211</a>	Traffic stops flowing on Xconnect tunnel when upgraded to 16.9.2
<a href="#">CSCvo94468</a>	%PERF_MON_ASYNC-3-MEM: Memory cleanup failed - ssrc db cache results in PMI not created on BR

Caveat ID Number	Description
<a href="#">CSCvo99156</a>	Unexpected reload in btrace routines due to division by NULL.
<a href="#">CSCvp00579</a>	bqs may select an inaccurate rate
<a href="#">CSCvp59848</a>	ASR1001-x crash while configuring policy-map
<a href="#">CSCvp63616</a>	Crash due to too many DSPs
<a href="#">CSCvp92334</a>	Crash after Media monitor look up.
<a href="#">CSCvq05197</a>	EPA-CPAK-2X40GE boots on 16.3.x even though it is not supported until 16.4.1 on ASR1002-HX

### Open Caveats—Cisco IOS XE Denali Release 16.3.9

All open bugs for this release are available in the [Cisco Bug Search Tool](#) through the Open Bug Search.

Caveat ID Number	Description
<a href="#">CSCvi28402</a>	Stateful features enhancement for big flow (Elephant flow) -CFT infra dependency
<a href="#">CSCvm56670</a>	ACL dropping packets after updating it - %CPPEXMEM-3-NOMEM
<a href="#">CSCvn03502</a>	SR: CFLOW input intf index is 0xffffffff for Service-engine DSP module interface
<a href="#">CSCvn31903</a>	ISR4K CUBE send first register with wrong ip address after reload - SIP-UA
<a href="#">CSCvn78961</a>	Subscribers cannot re-login due to CoA time-out (lite-sessions in routed mode)
<a href="#">CSCvo20934</a>	FMAN crash due to Flexible Netflow (fnf)
<a href="#">CSCvo62122</a>	IOS-XE Router may crash when attempting to Fragment Corrupted IPv4 Packet
<a href="#">CSCvp00054</a>	Router unexpected reloads when doing ipv4_nat_destroy_addrport_bind
<a href="#">CSCvp24981</a>	When FQDN used for APN, IOS DNS resolves FQDN to IP, but GTP stays in DNS pending and IP 0.0.0.0
<a href="#">CSCvp31671</a>	Router crashes due to a call loop
<a href="#">CSCvp32910</a>	CHUNKBADROOTCHUNKPTR: Bad root chunk pointer in chunk header post SSO - ASR1K
<a href="#">CSCvp34230</a>	CUBE HA - Global bind is removed during interface flap
<a href="#">CSCvp79485</a>	DMVPN - Packet is encapsulated but not encrypted going out DMVPN tunnel
<a href="#">CSCvp86216</a>	Router ucode crash with NAT with interface flap

