



## **Release Notes for Cisco cBR Series Converged Broadband Routers, Cisco IOS XE Bengaluru 17.6**

**First Published:** 2021-08-02

**Last Modified:** 2022-10-25

### **Americas Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
<http://www.cisco.com>  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883





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## CHAPTER 1

# What's New in Cisco cBR-8 Series Routers



- Note** Explore the [Content Hub](#), the all new portal that offers an enhanced product documentation experience.
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Cisco is continuously enhancing the product with every release and this section covers a brief description of key features and enhancements that were added. It also includes links to detailed documentation, where available.

- [New and Changed Information, on page 1](#)
- [Behaviour Changes Introduced Features, on page 6](#)

## New and Changed Information

The following section lists the new software and hardware features supported on the Cisco cBR Series Converged Broadband Routers in this release:

### New Software Features in Cisco IOS XE Bengaluru 17.6.1z1

There are no new software features in the Cisco IOS XE Bengaluru 17.6.1z1 release for Cisco cBR-8 series routers.

### New Hardware Features in Cisco IOS XE Bengaluru 17.6.1z1

There are no new hardware features in the Cisco IOS XE Bengaluru 17.6.1z1 release for Cisco cBR-8 series routers.

## New Software Features in Cisco IOS XE Bengaluru 17.6.1z

The following features are supported from Cisco IOS XE Bengaluru 17.6.1z:

**Support for TLV 5.36:** This feature introduces TLV 5.36 support for cBR-8 routers. The output of the **show cable modem verbose** is modified and displays the UGS Service Flow Limit details.

**Command to set a threshold for AOM download process time:** The platform **aom pending-threshold {seconds-to-error} {seconds-to-warning}** command allows you to configure a threshold value, in seconds, to notify that an AOM download is stuck. When the specified threshold time is reached, an error and warning notification is sent to the console and trace log, respectively. The valid range is 60–3600 seconds. Use the **No** form of the command to remove the threshold value.

**Enhancements in leasequery to support multiple DHCP relays:** Cable DHCP leasequery now supports multiple DHCP relays between the cBR-8 router and the DHCP server for the following scenarios:

- Unitary DHCPv4
- Unitary DHCPv6, including CPE router
- Bulk DHCPv6 Lease Query (LQv6)

**Commands to view DHCP leasequery packet statistics:** This feature introduces new commands **show cable leasequery-stats [clear]** and **show cable ipv6 leasequery-stats [clear]** for DHCPv4 and DHCPv6, respectively, to view the packet processing statistics with an option to reset all counters to zero.

**OUUDP leakage detection for RPHY:** Cable operators can now measure cable signal leaks by initiating the Orthogonal Frequency-Division Multiple Access (OFDMA) Upstream Data Profile (OUUDP) leakage test sessions on one or more upstream OFDMA channels simultaneously. OUUDP test sessions are initiated using CLI commands in the config and EXEC modes. These commands direct modems to generate a test burst, which enables operators to locate leaks in the Federal Aviation Administration (FAA) frequency range above 100MHz. Operators use handheld or vehicle-based devices to detect leaks.

**Stats for multicast DEPI traffic:** This feature enables you to view statistics for the multicast group assigned by DEPI multicast pool. You can enable this feature using the **cable depi multicast statistic monitor** command. The **show cable depi multicast counter** command displays the statistics information.

**Enhancement to the show cable modem select usphy command:** The **show cable modem select usphy** command is enhanced such that if a modem is assigned with multiple upstream bonded channel, the best operating mode is used in usphy. The priority order for usphy operating mode of bonded upstreams is ofdma, atdma, and tdma.

**Configuring GCP session KeepAlive timeout on cBR-8 routers:** GCP KeepAlive messages are used to verify GCP connectivity between a CCAP Core and an RPD. You can use the **cable rphy gcp keepalive timeout** command to configure the interval and retry times of GCP keepAlive messages that cBR-8 router sends to RPD.

**Enhancement for configuring DPS with OFDMA:** DPS has been enhanced to support OFDMA channels. This can be enabled with either **cable upstream dps ofdma-only** or **cable upstream dps all** commands.

**Updates to the RPD auxiliary cores:** You can add or remove the auxiliary cores that exist outside the cBR-8 routers without rebooting the RPD.

**PW type support in spectrum capture capabilities for RPD:** You can check the supported PW type by using the **show cable rpd [{ ip-address | mac-address | rpd-id id | name name spectrum-capture-capabilities }]** command.

**New command support added to MAC-Domain profile configurations:** The following commands are added:

- **MAC-Domain profile**
  - **shutdown**
  - **cable upstream resiliency [change-channel-set | channel-down-detect | data-burst | modem-offline-detect | on-failure | sf-move]**

## New Hardware Features in Cisco IOS XE Bengaluru 17.6.1z

There are no new hardware features in the Cisco IOS XE Bengaluru 17.6.1z release for Cisco cBR-8 series routers.

## New Software Features in Cisco IOS XE Bengaluru 17.6.1x

The following features are supported from Cisco IOS XE Bengaluru 17.6.1x:

**Display CM counts per US IUC and DS profile:** This feature introduces new commands **show cable modem phy ofdm downstream prof-count** and **show cable modem phy ofdm upstream iuc-count**. It helps tracking and reporting number of Cable Modems being in use per Upstream IUC and Downstream Profile on each controller separately. These counters are indicative of health of the RF plant.

**Force 8-channel DBG with contiguous frequency channels:** Some CMs change to downstream partial mode when moving on the DBG with disconnected frequency channels. This feature allows you to create 8-channel DBG with contiguous frequency channels for load balance purpose.

**More detailed CM status and timeline information support:** This feature introduces new commands **show cable modem cm-status verbose** and **show cable modes timeline [dynamic | verbose]**, it allows you to get more detailed CM status and timeline information.

**Remote PHY 2 OFDMA channels per controller support:** This feature allows you to configure two OFDMA channels on the same upstream cable controller in a Remote PHY deployment.

**RPD ResetCtrl (TLV 40.1) feature support:** This feature introduces a new command **clear cable rpd reset**, you can use this command to perform different types of RPD reset, including factory configuration reset, non-volatile configuration reset, software reset, and hard reset.

**RPHY support for show cable upstream ofdma mer-fec command:** This feature introduces the command **show cable upstream ofdma mer-fec** in Remote PHY deployment to get the channel performance statistics for the upstream OFDMA channel.

**SNMP support for obtaining IUC RxMER per OFDMA channel:** This feature allows you to get the quality of different IUCs in the upstream direction.

**Support for docsIf31CmtsUsOfdmaDataIucStatsIucAverageMer:** This feature supports the MIB object `docsIf31CmtsUsOfdmaDataIucStatsIucAverageMer` to read the average MER of OFDMA channel.

**Enhancement to show tech-support cmts rpd command:** This feature enhances the command **show tech-support cmts rpd** to collect more Remote PHY related information from the CCAP core. It is recommended to use both **show tech-support** and **show tech-support cmts rpd** commands to get complete information.

## New Hardware Features in Cisco IOS XE Bengaluru 17.6.1x

There are no new hardware features in the Cisco IOS XE Bengaluru 17.6.1x release for Cisco cBR-8 series routers.

## New Software Features in Cisco IOS XE Bengaluru 17.6.1w

The following features are supported from Cisco IOS XE Bengaluru 17.6.1w:

- **Enhanced Support for Debugging CDMAN FPA Buffer:** In Cisco cBR Bengaluru 17.6.1w, the cable device manager's (cdman) FPA buffer check interval is reduced from 5 mins to 10s, along with other enhancements to effectively monitor the FPA buffer.
- **ARP Autoreply:** To reduce the CPU consumption due to the processing of ARPs in eRouters, and for the data plane to periodically punt a unicast ARP, the ARP-filter feature is enabled on the subscriber-side source-based rate limit (SBRL). The SBRL processing for ARP is also updated for ARP autoreply functionality. In Cisco cBR Bengaluru 17.6.1w, ARP autoreply is enabled by default.
- **Upstream Channel Priority:** This feature allows the cable modem to do the initial ranging on the upstream channel with the highest priority.
- **CLI to diagnose load balancing in modems:** The new 'show cable load-balance move-history cable x/y/z' CLI provides detailed information on modem movement through load balancing.
- **Increase Scale of Virtual OMs:** From cBR 17.6.1w, support for 55d1 Out of Band virtual-om configuration has been increased from 10 to 20. This provides for increased scalability of the Virtual OMs.
- **New MIB support on RPHY line cards:** Cisco cBR-8 supports `docsIf31CmtsUsOfdmaDataIucStatsInOctets` on RPHY line cards.
- **New command support added to MAC-Domain and Wideband-interface profile configurations:** The following commands were added:
  - **MAC-Domain profile**
    - `cable d31-mode`
    - `cable diplexer-band-edge`
    - `cable downstream [description | override]`
    - `cable dynamic-flow vrf`
    - `cable init-channel-timeout`
    - `cable insertion-interval [automatic]`
    - `cable rcc-templates frequency-based`
    - `cable rcp-control verbose`
    - `cable reduction-mode [energy-management | mta-battery]`
    - `cable registration-timeout`
    - `cable service type`



- **cable shared-secondary-secret index**
- **cable sid-cluster-group** [dynamic | num-of-cluster | req-multiplier]
- **cable sid-cluster-switching** [max-outstanding-byte | max-request | max-time | max-total-byte]
- **cable sync-interval**
- **cable udc-capability**
- **cable upstream** [dpon | ext-power | max-channel-power-offset | qos | ranging-init-technique | ranging-poll | <0-15>]
- **Wideband-interface profile**
  - **cable acfe** [constant-eir-demand | max-bonus-bandwidth]
  - **cable bonding-group-secondary**
  - **cable dynamic-secret** [lock | mark | reject]
  - **cable igmp static-group** <> [source]
  - **cable multicast ses-cache** <>
  - **cable multicast-qos group** <>
  - **cable privacy** [bpi-plus-policy | mandatory]
  - **cable shared-secondary-secret index** <> [0 | 7 | LINE]
  - **cable shared-secret** [0 | 7 | LINE]

## New Hardware Features in Cisco IOS XE Bengaluru 17.6.1w

There are no new hardware features in the Cisco IOS XE Bengaluru 17.6.1w release for Cisco cBR-8 series routers.

## New Software Features in Cisco IOS XE Bengaluru 17.6.1a

The following features are supported from Cisco IOS XE Bengaluru 17.6.1a:

**SNMP RX queuing:** This feature introduces a control plane policing queue to shape incoming SNMP traffic in Cisco cBR-8 routers. It reduces the need for SNMP poller to retransmit the polling request in case the request is dropped when SNMP traffic overloads the queue.

**Ability to configure Querier's Robustness Variable value in IGMP queries:** This feature fine-tunes the IGMP robustness variable to allow for expected packet loss on a subnet. You can increase the robustness variable on a congested network to increase the number of times that packets are resent.

The following features are applicable to the CBR-CCAP-LC-G2-R linecard:

- **32 SG/MAC Domains and 32 Video Service Groups:** Cisco cBR-8 routers support DOCSIS with 32 service groups (SG) and 32 video SGs on the CBR-CCAP-LC-G2-R and CBR-CCAP-LC-40G-R linecards.

The new 32 video SGs (downstream-video) are supported in addition to the existing 32 SGs (downstream-cable).

- **DS OFDM blocks increased to 80:** From Cisco IOS XE 17.6.1a, the CBR-CCAP-LC-G2-R line card capability on the Cisco cBR-8 platform has been enhanced to increase downstream OFDM blocks that are supported from 32 to 80.
- **DS bandwidth increased to 50 Gbps:** From Cisco IOS XE 17.6.1a, the CBR-CCAP-LC-G2-R line card capability on the Cisco cBR-8 platform has been enhanced to increase maximum downstream throughput from 40 Gbps to 50 Gbps.
- **DS SC-QAM increased to 1536:** From Cisco IOS XE Bengaluru 17.6.1a, the CBR-CCAP-LC-G2-R line card capability on the Cisco cBR-8 platform has been enhanced for improved scaling of downstream SC-QAM. From Cisco IOS XE 17.6.1a, 1536 downstream QAM channels are supported, instead of the earlier 768. This would provide for improved deployment and interoperability with Remote-PHY.




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**Note** Starting from Cisco IOS XE Bengaluru 17.6.1a, CBR-CCAP-LC-G2-R can only protect CBR-CCAP-LC-G2-R for linecard HA.

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## New Hardware Features in Cisco IOS XE Bengaluru 17.6.1a

There are no new hardware features in the Cisco IOS XE Bengaluru 17.6.1a release for Cisco cBR-8 series routers.

## Behaviour Changes Introduced Features

### Modified Software Features in Cisco IOS XE Bengaluru 17.6.1z1

There are no modified software features in the Cisco IOS XE Bengaluru 17.6.1z1 release for Cisco cBR-8 series routers.

### Modified Hardware Features in Cisco IOS XE Bengaluru 17.6.1z1

There are no modified hardware features in the Cisco IOS XE Bengaluru 17.6.1z1 release for Cisco cBR-8 series routers.

### Modified Software Features in Cisco IOS XE Bengaluru 17.6.1z

The following modified software features are supported from Cisco IOS XE Bengaluru 17.6.1z for Cisco cBR-8 series routers:

**Reducing SUP CPU Usage During CM Mass Registration Events:** You can use the **cable resiliency rbg-throttle [ auto | rate ]** command to reduce SUP CPU usage during CM Mass Registration Events.

**Preventing RBG deletion if CPP has traffic on the interface:** You can set the time in seconds for the **cable ds-resiliency idle-interval** command in global configuration mode, to move an unused Resiliency Bonding

Group's (RBG) state from Assigned to In\_Delete in global configuration mode. If CPP has traffic on the interface, then you can use this command to prevent RBG deletion.

## Modified Hardware Features in Cisco IOS XE Bengaluru 17.6.1z

There are no modified hardware features in the Cisco IOS XE Bengaluru 17.6.1z release for Cisco cBR-8 series routers.

## Modified Software Features in Cisco IOS XE Bengaluru 17.6.1x

There are no modified software features in the Cisco IOS XE Bengaluru 17.6.1x release for Cisco cBR-8 series routers.

## Modified Hardware Features in Cisco IOS XE Bengaluru 17.6.1x

There are no modified hardware features in the Cisco IOS XE Bengaluru 17.6.1x release for Cisco cBR-8 series routers.

## Modified Software Features in Cisco IOS XE Bengaluru 17.6.1w

There are no modified software features in the Cisco IOS XE Bengaluru 17.6.1w release for Cisco cBR-8 series routers.

## Modified Hardware Features in Cisco IOS XE Bengaluru 17.6.1w

There are no modified hardware features in the Cisco IOS XE Bengaluru 17.6.1w release for Cisco cBR-8 series routers.

## Modified Software Features in Cisco IOS XE Bengaluru 17.6.1a

There are no modified software features in the Cisco IOS XE Bengaluru 17.6.1a release for Cisco cBR-8 series routers.

## Modified Hardware Features in Cisco IOS XE Bengaluru 17.6.1a

There are no modified hardware features in the Cisco IOS XE Bengaluru 17.6.1a release for Cisco cBR-8 series routers.





## CHAPTER 2

# Caveats

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## Caveat List

This chapter describes open severity 1 and 2 caveats and select severity 3 caveats.

The *Open Caveats* section lists open caveats that apply to the current release and may apply to previous releases. A caveat that is open for a prior release and is still unresolved applies to all future releases until it is resolved.

The bug IDs are sorted alphanumerically.

The *Caveats* section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat you must use the Bug Search Tool.



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**Note** Starting with 17.6.1a Release Notes, the Open and Resolved Caveats include common software items that may affect the Cisco cBR-8 product. The Open and Resolved Caveats include generic IOS-XE 17.6.1a software items in addition to Cisco cBR-8 items.

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## Open Caveats for Cisco IOS XE Bengaluru 17.6.1z1

Identifier	Headline
<a href="#">CSCwc43466</a>	PNM UTSC showing incorrectly frequency with RPD
<a href="#">CSCwd05619</a>	SUP crash caused by “show cable modem select xxx”
<a href="#">CSCwc47527</a>	OUUDP: CM offline at end of OUUDP leak detection test when DBC-REQ fails
<a href="#">CSCwa89999</a>	CM stuck reject(pk) with error %PKI-3-CERTIFICATE_INVALID: Certificate chain validation has failed.
<a href="#">CSCwd00152</a>	cBR-CLC OBFL reports incomplete "IPH header says BG vld but BG address table vld bit is zero" errors
<a href="#">CSCwc38612</a>	default ofdma channel config not displayed correctly in the upstream controller-profile
<a href="#">CSCwd06998</a>	DSPHY Event Code 8394/8330 are not recognized by software on cBR
<a href="#">CSCwc45532</a>	CLC Core File Observed During LCHA when MDD Debug is Enabled
<a href="#">CSCwc24755</a>	RPHY : Cable RF-channels in Valid=FALSE state after linecard failover
<a href="#">CSCwc55505</a>	SUP reload @ DSG ADV daemon when no interface bundle
<a href="#">CSCwc30609</a>	scm qos does not display correct throughput data with high DS throughput

## Resolved Caveats for Cisco IOS XE Bengaluru 17.6.1z1

Identifier	Headline
<a href="#">CSCwc27514</a>	cBR-8 LC Crash Packet pointer pak in cdman process corrupted and resulted to the crash in frame 0
<a href="#">CSCwc75924</a>	Entries missing in docsRphyCcapRpdToCmMapStatusTable
<a href="#">CSCwc86350</a>	OUUDP potential TDL/IPC mem leak with oudp session
<a href="#">CSCwc48365</a>	cBR8 linecard reload onubr_map_rem_slot_from_vac_map_internal
<a href="#">CSCwc13569</a>	uboot enhancement to record boot steps
<a href="#">CSCwc76974</a>	SUP reload when cable oudp-leak-detect cm-list &lt;file&gt; points to a binary file
<a href="#">CSCwc80730</a>	OUUDP: cycle interval info is incorrect when 'strict-cm-list' is used
<a href="#">CSCwc70010</a>	D31 CM reports /p due to RNG and w-expire then changes to offline as unable to range

## Open Caveats for Cisco IOS XE Bengaluru 17.6.1z

Identifier	Headline
<a href="#">CSCwc19407</a>	OUUDP Leak Counters, mdm BurstNoEnergyRx cnt != BurstGrants after child OUUDP session complete
<a href="#">CSCwc44166</a>	OUUDP: Parent sessions should be downloaded to LC after card OIR
<a href="#">CSCwc31838</a>	After SUPHA, RPDs on two cylon cards drop offline
<a href="#">CSCwc44605</a>	OFDM issues after changing the DS controllers profile on cBR8
<a href="#">CSCwc47527</a>	OUUDP: CM offline at end of OUUDP leak detection test when DBC-REQ fails
<a href="#">CSCwc48365</a>	cBR8 linecard crash onubr_map_rem_slot_from_vac_map_internal
<a href="#">CSCwb97430</a>	2xOFDMA, traffic drop because CW errors after CDMAN restart test
<a href="#">CSCwc38612</a>	default ofdma channel config not displayed correctly in the upstream controller-profile
<a href="#">CSCwb19987</a>	Low throughput with Iperf TCP traffic on 2xOFDMA after config change to 50 kHz subcarrier spacing
<a href="#">CSCwc40949</a>	D31 CMs stuck at init(rc) after OFDMA subcarrier-spacing change, rpd reset then LCSD
<a href="#">CSCwc45532</a>	CLC Core File Observed During LCHA when MDD Debug is Enabled
<a href="#">CSCwc07026</a>	cBR-8 - Modems in partial state due to 2 L2TP sessions for some of the rf-channels
<a href="#">CSCwc24755</a>	RPHY : Cable RF-channels in Valid=FALSE state after linecard failover
<a href="#">CSCwc43466</a>	PNM UTSC showing incorrectly frequency with RPD
<a href="#">CSCwc47269</a>	OUUDP mdm oudp cnt mismatch with iosd lcpr with child session complete
<a href="#">CSCwc30609</a>	sem qos does not display correct throughput data with high DS throughput
<a href="#">CSCwc55505</a>	SUP reload @ DSG ADV daemon when no interface bundle.

## Resolved Caveats for Cisco IOS XE Bengaluru 17.6.1z

Identifier	Headline
<a href="#">CSCwb05571</a>	Redundant multicast pool feature does not work with downstream-video controller
<a href="#">CSCwc24234</a>	CBR8: Error when adding Upstream to RPD but without information what the error is
<a href="#">CSCwb79570</a>	SC-QAM channel 'utilization(%data bytes)' displays "0" on 'show int [c<lt;&gt;] mac-scheduler' output

Identifier	Headline
<a href="#">CSCwa74160</a>	SNMP walk for docsIf31CmtsCmDsOfdmProfileStatusEntry with bgsync disabled has stale data post lcp
<a href="#">CSCwb23298</a>	Ranging and data backoff return to default value after modulation profile change
<a href="#">CSCwa35656</a>	At times good codewords counter more than total codewords on 2nd OFDMA channel on 'scm ver'
<a href="#">CSCwc23036</a>	'Avg upstream channel utilization(%dps grants)' on show int c&lt;&gt; mac-sche displays 1% instead of 0
<a href="#">CSCvz81146</a>	inconsistent us-ctrl-prof config behavior - one get ofdma removed and one kept with default mod-prof
<a href="#">CSCwb86934</a>	CLC unexpected reload due to low FPA memory
<a href="#">CSCwb61715</a>	RCC template is not forced at load-balance in a specific macdomain
<a href="#">CSCwa82662</a>	cBR8/OFDM : Unfit profiles not cleared after modem reset
<a href="#">CSCwb25428</a>	CBR: Service Class Name not changing when using PCMM.
<a href="#">CSCwa77411</a>	memory leak when OFDMA channel is reinit
<a href="#">CSCwc20433</a>	CM are online in a Line Card, but there is no SNR showing for them.
<a href="#">CSCwb63818</a>	D3.0 CMs cannot join to multicast groups on secondary bonding group interface
<a href="#">CSCwb33257</a>	cbr8 - PSN in DS EHDR random generated after DBC cause modem stuck with uptime more than 2 years
<a href="#">CSCwb33867</a>	cBR8: Kobol-R line card failure to boot with "upstream-sharing 256x4" configured
<a href="#">CSCwb92999</a>	config allows 2-OFDMA frequency overlap which causes problem with the config sync
<a href="#">CSCwb33067</a>	cBR8 Sup module reload by SNMP Engine reload
<a href="#">CSCwb09590</a>	PNM UTSC frequency shifted fftPower data in ICCAP
<a href="#">CSCwc23022</a>	Avg upstream util used in the load-balancing calculation includes avg utili that includes DPS grants
<a href="#">CSCwa75169</a>	docsIf31CmtsCmUsOfdmaChannelRxPower use 6.4Mhz based with bgsync disabled
<a href="#">CSCwa38529</a>	Some data missing from entPhysicalTable after upgrading cbr-8
<a href="#">CSCwa98759</a>	DLM Information missing when no SC-QAM's are configured
<a href="#">CSCwb78333</a>	After LCSW at the time RPD offline, OFDMA channel not operational when RPD back online
<a href="#">CSCwa67083</a>	calculate SC-QAM SNR based on the IUC modulation type



Identifier	Headline
<a href="#">CSCwc09078</a>	High CPU with snmpbulkget of docsRphyCcapRpdToCmMapStatusTable
<a href="#">CSCwb02389</a>	Linecard reload - LCHA BPI isidkey assign incorrect
<a href="#">CSCwb94215</a>	"%RPHYMAN-2-CCAP_CORE_EVENT_CRITICAL: *: rphyman: Session Latency threshold of *us exceeded"
<a href="#">CSCwc18172</a>	CBR8 Upstream channel stuck in REINIT_PHY after PHY chip restart
<a href="#">CSCwb31637</a>	Empty map caused BRCM firmware halts
<a href="#">CSCwc11344</a>	Add 4th IE in empty MAPs by default to have MAP size >= 64 bytes
<a href="#">CSCwb00724</a>	mismatch configuration for CA on LC console and super after LC failover

## Open Caveats for Cisco IOS XE Bengaluru 17.6.1x

Caveat ID Number	Description
<a href="#">CSCwa02980</a>	ccm reset may make d31 CM stuck at init(rc) for long time
<a href="#">CSCwa35656</a>	At times good codewords counter more than total codewords on 2nd OFDMA channel on 'scm ver'
<a href="#">CSCwa36784</a>	codeword count on show int cable <> upstream <ofdma-chan> and 'scm ver' differs
<a href="#">CSCwa46178</a>	cBR-8 Configuring DPS can cause excessive MAP building times.
<a href="#">CSCwa55797</a>	PME encrypted sessions goes to Pending on Reload followed by SUPSO
<a href="#">CSCwa69267</a>	CBR-8 - Active SUP-LC crashes VEMAN process after reload command applied
<a href="#">CSCvz76131</a>	Critical level DS-JIB OBFL logs observed on linecard
<a href="#">CSCvt37553</a>	Some data missing from entPhysicalTable after upgrading cbr-8
<a href="#">CSCvu62879</a>	Crash@bgp_perform_general_scan
<a href="#">CSCvv82322</a>	ASR1001-X and ASR9K: Link issue when using macsec
<a href="#">CSCvw05693</a>	ASR1k - IPv6 Semaphore lock error tarceback with more than 50K dual stack PPPoE sessions
<a href="#">CSCvw13682</a>	L3 connected lite session not coming up , stuck in data-plane(qfp)
<a href="#">CSCvw67366</a>	ASR1002-X: Punt keepalive crashed due to bqs related interrupt
<a href="#">CSCvx89791</a>	AAA COA doesnt work when username only is provided
<a href="#">CSCvy57681</a>	Unexpected reboot of IOS-XE Router in BQS QM @ epp_qm_proc_rt_commit

Caveat ID Number	Description
<a href="#">CSCvy72193</a>	ISG IPv6 session lose connection w/ "no ipv6 nd ra suppres" due to final RA sent for other session
<a href="#">CSCvy78148</a>	Memory Corruption in SSS
<a href="#">CSCvy78284</a>	ASR920 will crash when zeroised RSA key is regenerated
<a href="#">CSCvy78992</a>	BGP Router process may crash after configuring maximum-paths eibgp
<a href="#">CSCvy80737</a>	ASR1k 10Giga SFP Interface port not coming up
<a href="#">CSCvy81940</a>	NIM-2T interface shows unexpected output values
<a href="#">CSCvy85281</a>	Crash triggered by "crypto gdoi ks rekey replace-now"
<a href="#">CSCvy87507</a>	Router unexpectedly routes traffic with broadcast dst MAC
<a href="#">CSCvy87752</a>	TCP crash with UNIX-EXT-SIGNAL: Segmentation fault(11), Process = LISP control
<a href="#">CSCvy89781</a>	CAT8K OSPFv3 adjacency won't come up after "ospfv3 authentication ipsec" is applied.
<a href="#">CSCvy90726</a>	BGP Memory Leak after upgrading to 17.3.x due to Duplicate Attribute Entries
<a href="#">CSCvz03342</a>	Multicast boundary command on tunnel interface DMVPN network is sending ttl=1 packet
<a href="#">CSCvy54048</a>	CPP Unexpected Reboot While Freeing CVLA Chunk

## Resolved Caveats for Cisco IOS XE Bengaluru 17.6.1x

Caveat ID Number	Description
<a href="#">CSCvt37553</a>	False environmental alarm about "Reading: 130 Celsius" from sensor on cBR8 SUP
<a href="#">CSCvx29857</a>	incorrect value on OID docsIf31CmtsCmUsOfdmaChannelRxPower
<a href="#">CSCvy02299</a>	New JIB number gets allocated for rf-channel belonging to QRG on port un-shut post LCHA
<a href="#">CSCvz75407</a>	RPHY - OFDMA channel is brought down after removing RPD from a shared SG
<a href="#">CSCvz86645</a>	Video process core files cannot be zipped
<a href="#">CSCvy20479</a>	USJIB-3-NON_CRIT_INTR BP_US_MAC_CAUI tx_pkt_bus_len_err count 1
<a href="#">CSCvz01002</a>	OFDM is not getting utilized completely before traffic is sent on SC-QAM after the LCSO
<a href="#">CSCvz65672</a>	pnm RxMer tftp file name and file decode having mismatch ofdma ifindex

Caveat ID Number	Description
<a href="#">CSCvz89427</a>	ifIndex in docsIf31CmtsCmRegStatusUsProfileIucList does not change after switchover to Slot 0
<a href="#">CSCvz94629</a>	OFDMA 16.12.1z2 / 8.6.3: OFDMA Ranging succeeds through trap
<a href="#">CSCvz96438</a>	DPS should more fairly distribute grants between SFs on SCQAM channels.
<a href="#">CSCwa00775</a>	IPDR: RxPwr value is not 1.6Mhz based for DOCSIS-CMTS-CM-US-OFDMA-STATUS-TYPE
<a href="#">CSCwa15138</a>	OFDMA 16.12.1z2 / 8.6.3: CWErr Downgrade not reacting as expected
<a href="#">CSCwa25383</a>	OFDMA: us_resil should not take OFDMA channels out of partial on continue ranging.
<a href="#">CSCwa27191</a>	CBR-8 reports double D3.1 licenses used
<a href="#">CSCwa35703</a>	Partial downgrade reason is not displayed for some CMs when we have 2-OFDMA
<a href="#">CSCvz91789</a>	55d1 ds traffic will fail for specific vom id after an LCHA
<a href="#">CSCwa14455</a>	Overlapping pilot-tone profile frequency
<a href="#">CSCwa22317</a>	cBR-8 vidman process crash when parsing invalid PMT ES-level descriptors
<a href="#">CSCwa64604</a>	cbr8 - SNMP inconsistency with R-PHY and VOD in qamConfigTable
<a href="#">CSCwa64700</a>	RPHY pnm mem leak when keeping toggle trigger mode freerun for tftp and other for l2tp
<a href="#">CSCvu90245</a>	cBR-8 Modems drop offline due to reconciliation fail during LCHA due to bpi index mismatch
<a href="#">CSCwa11170</a>	Cannot disable resiliency / rf-change-trigger after CSCvx33565
<a href="#">CSCwa27170</a>	17.6.1w slow modem registration rate due to "UBR_INFRA_STATS" process high cpu
<a href="#">CSCwa41969</a>	CBR: PCMM IPv6 classifiers not working when cable ip-init ipv4 mode on Cable interface.
<a href="#">CSCwa42312</a>	Wideband RBG losing config after manually failover SUP
<a href="#">CSCwa48889</a>	value reported for docsIf3CmtsCmUsStatusHighResolutionTimingOffset is in wrong units
<a href="#">CSCwa52373</a>	cBR-8 some entries are missing in SNMP mib docsSubMgtCpeIpTable
<a href="#">CSCwa52660</a>	CBR: The SUP card does not sync the next header of IPv6 classifier to line card.
<a href="#">CSCwa55795</a>	Some data missing from entAliasMappingIdentifier after upgrading cbr-8
<a href="#">CSCwa55887</a>	cBR-8 entPhysicalIndex referenced by ccwbWBtoRFBandwidth in entPhysicalName is broken

Caveat ID Number	Description
<a href="#">CSCwa57766</a>	cBR-8 - LC won't be reset if DS-PHY Module 1 Unresponsive

## Open Caveats for Cisco IOS XE Bengaluru 17.6.1w

Caveat ID Number	Description
<a href="#">CSCvu62879</a>	Crash@bgp_perform_general_scan
<a href="#">CSCvv82322</a>	ASR1001-X and ASR9K: Link issue when using macsec
<a href="#">CSCvw05693</a>	ASR1k - IPv6 Semaphore lock error tarceback with more than 50K dual stack PPPoE sessions
<a href="#">CSCvw13682</a>	L3 connected lite session not coming up , stuck in data-plane(qfp)
<a href="#">CSCvw67366</a>	ASR1002-X: Punt keepalive crashed due to bqs related interrupt
<a href="#">CSCvx89791</a>	AAA COA doesnt work when username only is provided
<a href="#">CSCvy02299</a>	New JIB number gets allocated for rf-channel belonging to QRG on port un-shut post LCHA
<a href="#">CSCvy54048</a>	CPP Unexpected Reboot While Freeing CVLA Chunk
<a href="#">CSCvy57681</a>	Unexpected reboot of IOS-XE Router in BQS QM @ cpp_qm_proc_rt_commit
<a href="#">CSCvy72193</a>	ISG IPv6 session lose connection w/ "no ipv6 nd ra suppres" due to final RA sent for other session
<a href="#">CSCvy78148</a>	Memory Corruption in SSS
<a href="#">CSCvy78284</a>	ASR920 will crash when zeroised RSA key is regenerated
<a href="#">CSCvy78992</a>	BGP Router process may crash after configuring maximum-paths eibgp
<a href="#">CSCvy80737</a>	ASR1k 10Giga SFP Interface port not coming up
<a href="#">CSCvy81940</a>	NIM-2T interface shows unexpected output values
<a href="#">CSCvy85281</a>	Crash triggered by "crypto gdoi ks rekey replace-now"
<a href="#">CSCvy87507</a>	Router unexpectedly routes traffic with broadcast dst MAC
<a href="#">CSCvy87752</a>	TCP crash with UNIX-EXT-SIGNAL: Segmentation fault(11), Process = LISP control
<a href="#">CSCvy89781</a>	CAT8K OSPFv3 adjacency won't come up after "ospfv3 authentication ipsec" is applied.
<a href="#">CSCvy90726</a>	BGP Memory Leak after upgrading to 17.3.x due to Duplicate Attribute Entries

Caveat ID Number	Description
<a href="#">CSCvz03342</a>	Multicast boundary command on tunnel interface DMVPN network is sending ttl=1 packet
<a href="#">CSCvz75407</a>	RPHY - OFDMA channel is brought down after removing RPD from a shared SG
<a href="#">CSCvz86645</a>	Video process core files cannot be zipped
<a href="#">CSCvz70035</a>	OpSim: Privacy skip-validity-period and retain-failed-certificates not applied to mac domain
<a href="#">CSCvz89427</a>	ifIndex in docsIf31CmtsCmRegStatusUsProfileIucList does not change after switchover to Slot 0
<a href="#">CSCvz94818</a>	Map Error on OFDMA channel with narrow spectrum
<a href="#">CSCwa02980</a>	ccm reset may make d31 CM stuck at init(rc) for long time
<a href="#">CSCvz91789</a>	55d1 ds traffic will fail for specific vom id after an LCHA
<a href="#">CSCwa06995</a>	Kobol-R: Video controllers are down on performing package upgrade
<a href="#">CSCvz76131</a>	Critical level DS-JIB OBFL logs observed on linecard
<a href="#">CSCvz93281</a>	SYS-2-NULLCHUNK: Chunk malloc operation on Null Chunk
<a href="#">CSCvz65672</a>	pnm RxMer tftp file name and file decode having mismatch ofdma ifindex

## Resolved Caveats for Cisco IOS XE Bengaluru 17.6.1w

Caveat ID Number	Description
<a href="#">CSCvy30760</a>	cbr8 - after SUP160 switchover, when TRANSCEIVER-6-INSERTED log is printed it causes interfaces flap
<a href="#">CSCvy52051</a>	cdman restart because of bus error at ubripc_recv_bg_base_addr_ch_cfg()
<a href="#">CSCvy78953</a>	OFDMA upstream modems may show more than 2 assigned IUCs in scmphy ofdm-profile upstream
<a href="#">CSCvy85973</a>	ACL with Object-group result in pending-issue on reload
<a href="#">CSCvy91179</a>	frequency overlap allowed for OOB with DOCSIS SCQAM when two OFDM is configured in controller
<a href="#">CSCvy92928</a>	CBR8/Gen 2 LC - Cable Video traffic marked as DSCP CS1 instead of CS4 when RPD is IPv6
<a href="#">CSCvy98918</a>	rpdc not showing configured ofdm rfch with cbr8 rpdc config change
<a href="#">CSCvz18622</a>	Lost ranging event notifications leads to w-expire state

Caveat ID Number	Description
<a href="#">CSCvz29183</a>	docsIfCmtsCmStatusUnerroreds returns incorrect value for D20 CM
<a href="#">CSCvz65529</a>	D20 CM not assigned GLBG ID after reset
<a href="#">CSCvz66822</a>	Standby sup unexpected reload when configuring upstream under fiber node
<a href="#">CSCvz78144</a>	DBG should take into account D31 CM DS lower & upper band edge
<a href="#">CSCvz62931</a>	Descriptive channel string on "show cable card 1/0 us-phy ofdma-channel info" entries incorrect.
<a href="#">CSCvz84204</a>	Very high min/avg/max delay with cm ping on the 17.6.1w image
<a href="#">CSCvz43440</a>	snmp walk "docsIfUpstreamChannelEntry" get slow response
<a href="#">CSCvz88784</a>	RPHY: inconsistent values with specific RPD base-power setting
<a href="#">CSCwa01041</a>	RPHY: Stby-cores not ready for LCSO

## Open Caveats for Cisco IOS XE Bengaluru 17.6.1a

Caveat ID Number	Description
<a href="#">CSCvy67180</a>	At times after the bootup some D31 CMs show partial online due to OFDM down
<a href="#">CSCvy91179</a>	frequency overlap allowed for OOB with DOCSIS SCQAM when two OFDM is configured in controller
<a href="#">CSCvu62879</a>	Crash@bgp_perform_general_scan
<a href="#">CSCvv82322</a>	ASR1001-X and ASR9K: Link issue when using macsec
<a href="#">CSCvw05693</a>	ASR1k - IPv6 Semaphore lock error tarceback with more than 50K dual stack PPPoE sessions
<a href="#">CSCvw13682</a>	L3 connected lite session not coming up , stuck in data-plane(qfp)
<a href="#">CSCvw67366</a>	ASR1002-X: Punt keepalive crashed due to bqs related interrupt
<a href="#">CSCvx79458</a>	ISG: IPoE subscribers QOS not installed in the hardware after churn
<a href="#">CSCvx89791</a>	AAA COA doesnt work when username only is provided
<a href="#">CSCvy02299</a>	New JIB number gets allocated for rf-channel belonging to QRG on port un-shut post LCHA
<a href="#">CSCvy17877</a>	BGP NSR fails to sync with local AS peering or prepending inbound AS
<a href="#">CSCvy30760</a>	cbr8 - after SUP160 switchover, when TRANSCEIVER-6-INSERTED log is printed it causes interfaces flap

Caveat ID Number	Description
<a href="#">CSCvy52051</a>	cdman restart because of bus error at ubripc_recv_bg_base_addr_ch_cfg()
<a href="#">CSCvy54048</a>	CPP Crash While Freeing CVLA Chunk
<a href="#">CSCvy57681</a>	Crash in BQS QM @ cpp_qm_proc_rt_commit
<a href="#">CSCvy68048</a>	Mismatch upstream modulation profile after controller reconfiguration
<a href="#">CSCvy72193</a>	ISG IPv6 session lose connection w/ "no ipv6 nd ra suppres" due to final RA sent for other session
<a href="#">CSCvy78148</a>	Memory Corruption in SSS
<a href="#">CSCvy78284</a>	ASR920 will crash when zeroised RSA key is regenerated
<a href="#">CSCvy78992</a>	BGP Router process may crash after configuring maximum-paths eibgp
<a href="#">CSCvy80737</a>	ASR1k 10Giga SFP Interface port not coming up
<a href="#">CSCvy81940</a>	NIM-2T interface shows unexpected output values
<a href="#">CSCvy85280</a>	SSH session unresponsive after configuring service-policy on Bundle
<a href="#">CSCvy85281</a>	Crash triggered by "crypto gdoi ks rekey replace-now"
<a href="#">CSCvy85973</a>	ACL with Object-group result in pending-issue on reload
<a href="#">CSCvy87507</a>	Router unexpectedly routes traffic with broadcast dst MAC
<a href="#">CSCvy87752</a>	TCP crash with UNIX-EXT-SIGNAL: Segmentation fault(11), Process = LISP control
<a href="#">CSCvy89781</a>	CAT8K OSPFv3 adjacency won't come up after "ospfv3 authentication ipsec" is applied.
<a href="#">CSCvy90726</a>	High BGP Memory Utilization after upgrading to 17.3.x due to Duplicate Attribute Entries
<a href="#">CSCvy92738</a>	ISR4k: TACACS+ stops working after changing the primary encryption key
<a href="#">CSCvy92928</a>	CBR8/Gen 2 LC - Cable Video traffic marked as DSCP CS1 instead of CS4 when RPD is IPv6
<a href="#">CSCvz03342</a>	Multicast boundary command on tunnel interface DMVPN network is sending ttl=1 packet

## Resolved Caveats for Cisco IOS XE Bengaluru 17.6.1a

Caveat ID Number	Description
<a href="#">CSCug48022</a>	Remove "NTP Core (INFO):946D 8D popcorn popcorn" from 'ntp logging'

Caveat ID Number	Description
CSCvf05845	Virtual-PPP interface stats counter is not incrementing for L2TP client initiated VPDN tunnelling
CSCvg75709	Unnecessary RIB updates when metric-style transition is configured.
CSCvi07524	Typo in " show cable modem <IP-Address> phy ofdm-profile downstream" command
CSCvn39513	DMVPN: "show dmvpn" command should be available without Security license
CSCvo41609	GETVPN: Clearing members on Key Server causing rekey processing failure on GMs
CSCvr91128	NAT HA - stale tcp sessions in standby router
CSCvu18041	cBR-8 IPDR: CmtsMdlfName format in Topology data mismatch with SAMIS & CM-US-STATS data
CSCvu82113	With 'exec-character-bits 8', the command getting '% Incomplete command.' for usage of "
CSCvu94438	Access Criteria truncated to 8 bytes in "show cable video encryption dvb tier-based" command
CSCvv11460	no redistributed connected route-map command not working
CSCvv26782	Handling level for redistribution command in ISIS
CSCvv40658	2 OFDM with Pilot tones will not work on RPD
CSCvv43038	Unexpected ACFE notification observed when DS resiliency
CSCvv50541	cBR8 - add event trace for CM DP APIs to track childless delete objects
CSCvw00698	Memory leak seen with gnmi subscription to get bgp data
CSCvw11607	Crash in DSP causing an mcpc-c-lc-ms core file
CSCvw17512	%CRIMSON-3-DATABASE_MEMLEAK: Database memory leak detected in /tmp/rp/tlddb/0/IOS_PRIV_OPER_DB
CSCvw20224	cdman reload after Stby Sup is inserted before running into redundancy mode
CSCvw21378	ASR1001-X built-in Tengig interfaces' counters increasing continuously and port stay up/up w/o SFP
CSCvw33113	Unexpected reload in NHRP when access to an invalid memory region
CSCvw37563	Controller Integrated-Cable NORESOURCE on VIDEO Channels after SUPHA
CSCvw40397	ECM PID allocation to be fixed at end of bucket for pre-encrypted sessions
CSCvw43862	docsIfSignalQualityTable objects are not retrievable via SNMP
CSCvw51062	When cyclic-prefix is 1024 while OFDM traffic BW is fully populated, drops are observed



Caveat ID Number	Description
<a href="#">CSCvw51810</a>	Disruption of IP communication due to AUTH_DRIVEN_DROP on uplinks when flapping downlink ports
<a href="#">CSCvw52574</a>	ASR1K configured with 'no ip unreachable' sending ICMP Type 3 Code 13
<a href="#">CSCvw60355</a>	DHCPv6: Memory allocation of DHCPv6 relay option results in crash
<a href="#">CSCvw62284</a>	ASR1000 ISG: Crash when processing DHCP Request
<a href="#">CSCvw63363</a>	IPv6 traffic is dropped after successful authentication by IPv6 pre-auth ACL in LowImpact mode
<a href="#">CSCvw64810</a>	Cisco IOx Application Environment Path Traversal Vulnerability
<a href="#">CSCvw65439</a>	crash seen at chunk_lock or memcmp with ipv6 host scale
<a href="#">CSCvw68124</a>	No "Percentage of ideal BL" displayed on scm prof-mgmt when using ZBL
<a href="#">CSCvw70009</a>	ASR1K: fman_rp crash seen on 16.9.X when "show platform software nat RP active logging" is run
<a href="#">CSCvw71941</a>	QFP crash in cpp_ess_tc_tgt_if_fm_edit_helper
<a href="#">CSCvw72292</a>	C8K-PAYG: Overlay-20.5 CLI-config-push fails with error: bad-cli - login, parser-context -Line con 0
<a href="#">CSCvw74558</a>	ASR1k Crashed while executing data perf related commands on asr1001-hx and asr1002hx
<a href="#">CSCvw74886</a>	2x2 RPD still in inst db after RPD was de-provisioned
<a href="#">CSCvw75827</a>	Incorrect MACSEC hardware entries would lead to severe traffic disruption
<a href="#">CSCvw76715</a>	OpenSSL vulnerability (CVE-2020-1971) evaluation for IOS-XE
<a href="#">CSCvw77485</a>	Router may not send PIM Register message if RP is reachable over TE tunnel
<a href="#">CSCvw81274</a>	Opflex generated Route Distinguisher is not globally unique on ASR1k
<a href="#">CSCvw81698</a>	9800 sends tacacs authentication requests missing last digit of remote ip
<a href="#">CSCvw82935</a>	GD: memory leak at IOSCC when mode change is done
<a href="#">CSCvw83094</a>	ASR1k cpp_cp crash w/hierarchical QoS on tunnel interface and source subinterface
<a href="#">CSCvw83359</a>	AWS:c8kv crashed and reboots if shut/no shut an interface a number of times
<a href="#">CSCvw83847</a>	Auto-rollback on Catalyst9k does not rollback completely when removing policy-map on ssh
<a href="#">CSCvw84671</a>	Hashed TACACS/RADIUS key displays differently in the running-config
<a href="#">CSCvw84883</a>	DDNS feature triggers crash on 16.X/17.X releases due to memory corruption

Caveat ID Number	Description
CSCvw86281	Need remove ec_map_dot1x_deprecated from Makefile on 17.3.2
CSCvw86292	Incorrect interface type used in mapping
CSCvw86295	Crash while configuring l2vpn evpn instance for VXLAN
CSCvw86304	Registering unsupported xpaths in mapping for cEdge
CSCvw86316	Incorrect xpaths in mapping for LISP
CSCvw86326	Internal error in mapping for logging source-interface
CSCvw86336	Unsupported interfaces for 'logging event link-status' needs to be removed in mapping
CSCvw86357	Internal error in SNMP mapping
CSCvw86364	Unsupported xpaths in tunnel reg_mapping for cEdge
CSCvw86392	SR-OAM fails to find the SID with SRMS enhancement
CSCvw86452	OSPF External type-1 Route in Database but missing in RIB
CSCvw87783	Registration not attempted on crypto socket down event
CSCvw89651	cBR8 - Add Functionality/CLI to Disable Enterprise ID (Option 17) Override for DHCPv6 Relay
CSCvw90220	Crash at #12 0x00007f010f4cb9db in cpp_bqs_rm_yoda_get_flush_obj while subscriber bringup
CSCvw91361	Crash when issuing "show crypto isakmp peers config"
CSCvw91811	Standby reset due to bulk-sync failure on configuring IP NAT reversible
CSCvw92643	Netflow crash at fnf_ipv6_output_feature_final_internal with flow record on IPv6 IPsec tunnel.
CSCvw93611	Incorrect accounting stop class attribute is observed while roaming with non-FT clients
CSCvw93769	Bias-free changes for CLI show mgcp srtp
CSCvw94166	IKE should have a mechanism to alert or mitigate resource exhaustion due to QM flooding
CSCvw94372	ASR fails to install rekey causing traffic drop
CSCvw94434	BQS crash seen at cpp_qm_event_proc_defer_cb
CSCvw94538	Rollover certification generation is not consistent on SUBCA
CSCvw94914	"Failed to get rpd cfg or ds rf port" error after re-provisioning RPD
CSCvw96342	handle the NULL ACL template in fman rp shim layer

Caveat ID Number	Description
<a href="#">CSCvw98579</a>	BQS crash seen in 17.3 while bringing up 30k PPPOE sessions
<a href="#">CSCvx00578</a>	Crash at boot up in isis_ip_sr_prefix_sid_notify() with flex-algo setup
<a href="#">CSCvx02009</a>	cEdge running 17.3.2 crashed - Critical software exception / IOSXE-WATCHDOG: Process = SNMP ENGINE
<a href="#">CSCvx02515</a>	BGP IPv6 link-local session doesn't come up
<a href="#">CSCvx02855</a>	No connected route created for Dialer interface
<a href="#">CSCvx02965</a>	17.5-ASR1k-9X,6X,13RU: fsck for harddisk always fails with error Device Busy.
<a href="#">CSCvx04248</a>	Not enough cdman FPA buffer for messages: cable modems cannot come online
<a href="#">CSCvx06573</a>	cBR8: missing L2 multicast traffic after line card replacement
<a href="#">CSCvx07549</a>	Discrepancy Between show run all and show access-sessions regarding access-session host mode
<a href="#">CSCvx07553</a>	DHCP corrupt binding results in crash when using DHCP RADIUS Proxy for ISG
<a href="#">CSCvx08994</a>	CTS credential password will be added to local keystore even if the password is longer than 24 char
<a href="#">CSCvx11702</a>	C8500-12X4QC: Traffic drops on 10G interface with large packet size 9000bytes with High priority.
<a href="#">CSCvx15716</a>	Generic RPCs have a space added at the end of the payload string
<a href="#">CSCvx15988</a>	Crash in ospf_teapp_autoroute_info_notification in standby RP on config replace
<a href="#">CSCvx16319</a>	cpp-mcplo-ucode NAT mib non SDWAN exception Unexpected reload
<a href="#">CSCvx19209</a>	ISIS crash in isis_sr_tilfa_compute_protection
<a href="#">CSCvx21820</a>	ACL under policy does not take effect for PIM BSR and RP candidate CLI
<a href="#">CSCvx22462</a>	ASR1001-HX Crash when large ACL is added
<a href="#">CSCvx23159</a>	FW-4-ALERT_ON: (target:class)-():getting aggressive seen when no half open feature configed
<a href="#">CSCvx23476</a>	LM960: Failed to establish data session when switched to 3G mode
<a href="#">CSCvx23725</a>	Flex-algo: modify label calculation
<a href="#">CSCvx25394</a>	Increase In Memory Usage by pubd and confd Over Time With Telemetry
<a href="#">CSCvx25522</a>	Crash may result after "show cef table internal" following IPv6 VPN VRF removal
<a href="#">CSCvx25680</a>	IOS-XE Memory Leak in SSS Manager
<a href="#">CSCvx25977</a>	Crash is seen with 'show tech isis' command

Caveat ID Number	Description
<a href="#">CSCvx26065</a>	1006-X: Box rebooted due to ucode crash, with 2M CFLOW and 8K BFD sessions
<a href="#">CSCvx26652</a>	Router crash observed during AppNav Cluster deletion
<a href="#">CSCvx29526</a>	Ping and traffic not working with qinq configuration with ethertype 0x9200 configured
<a href="#">CSCvx32046</a>	WLC crash @ parse_radius_response
<a href="#">CSCvx32090</a>	Port channel configuration triggers traceback
<a href="#">CSCvx32670</a>	Wrong reload reason reflected after a power outage.
<a href="#">CSCvx32807</a>	False positive alarm: IOSXE_RP_ALARM-6-INFO: ASSERT CRITICAL Fan Tray Bay 1 Fan Tray Module Missing
<a href="#">CSCvx34811</a>	The "clear pppoe all" command causes software crash.
<a href="#">CSCvx35590</a>	Unexpected RAPS-NR generated when clear local SF without faulty/block port.
<a href="#">CSCvx36205</a>	Removing and Adding Bulk ACL leads to dataplane programming failure
<a href="#">CSCvx36844</a>	Control plane hitting EID prefix entry limit for MAC after upgrade
<a href="#">CSCvx37388</a>	DHCP relay- cEdge does not forward DHCP Offers correctly with IPv6 UnderLay
<a href="#">CSCvx41293</a>	TCP-AO may calculate incorrect MAC on IOS XE under certain conditions
<a href="#">CSCvx41294</a>	High CPU usage caused by "TCP Timer" process
<a href="#">CSCvx42424</a>	Stateless static NAT breaks ICMP control messages like pMTUd and traceroute
<a href="#">CSCvx42622</a>	Whole segment routing SRMS range ignored when it overlaps with SID-Prefix
<a href="#">CSCvx43471</a>	Alpha OEAPWLC 17.3.3EFT4 Auth Failure With Sanet error
<a href="#">CSCvx43816</a>	Deprecation message in the helper prompt for "show ip pim all-vrfs"
<a href="#">CSCvx43938</a>	Mem leak in otlib after SRGB change
<a href="#">CSCvx44040</a>	Cisco Catalyst 9800-40 WNCD utilises 100 percent of CPU due to local EAP authentication loop
<a href="#">CSCvx44715</a>	CSR reloaded with traceback decode points to __be_bgp_drl_block_nvgen
<a href="#">CSCvx44834</a>	ASR1K - ACE entry added after object-group is missing in hardware causing packets drops
<a href="#">CSCvx45712</a>	ospf [17.6] timers manet value replicating under router level
<a href="#">CSCvx47585</a>	Netconf-Yang auth should send remote address attribute in TACACS Authorization Packets
<a href="#">CSCvx49498</a>	Standby SUP reload when the vcg configuration of an inactive LED is applied

Caveat ID Number	Description
<a href="#">CSCvx49943</a>	Flex algo Sid not advertised after delete/config back of flex algo in ospf
<a href="#">CSCvx52151</a>	Archive backup of flash contents failing in Install mode
<a href="#">CSCvx52273</a>	Smart license registration through proxy server fails
<a href="#">CSCvx54540</a>	Missing neighbor x.x.x.x update-source Loopback10 when upgrade 16.12.4 to 17.3.2 w/0 intent template
<a href="#">CSCvx55541</a>	MAC-theft mitigation not working in SDA setup
<a href="#">CSCvx57833</a>	QFP crash due to IPv6 DNS ALG processing
<a href="#">CSCvx58789</a>	sysDescr not showing up in "show cable modem subscriber / show cable modem verbose" for D31 modems
<a href="#">CSCvx59619</a>	Port-channel-subinterface cannot configure ISIS
<a href="#">CSCvx59898</a>	Bias-free changes for connection trunk CLI and show command
<a href="#">CSCvx61610</a>	Device reload after execute command "show lldp neighbor [int] detail
<a href="#">CSCvx61981</a>	MTT: memory allocation failed after rebooting CSR8000v and fman_fp crash
<a href="#">CSCvx63341</a>	IR1101 router running in sdwan mode has consistent increase of memory
<a href="#">CSCvx64756</a>	RIP MD5 Authentication failure when authentication key length is 16 characters.
<a href="#">CSCvx65789</a>	Unexpected reload generating pttcd and pubd cores
<a href="#">CSCvx66277</a>	Active RP crashed with 'no ip routing' in Palamino testbed with 2k isis peers
<a href="#">CSCvx66393</a>	Memory leak in Palamino setup with 2k isis peers
<a href="#">CSCvx67019</a>	High QFP utilization with stateless static bind
<a href="#">CSCvx69292</a>	CFM config loss when the new config conflict with the old one after reloading
<a href="#">CSCvx69830</a>	ASR1k: BQS crash seen at cpp_qm_event_proc_defer_cb
<a href="#">CSCvx70044</a>	Memory leak in Crimson Database in the tbl_platform_properties_record
<a href="#">CSCvx71564</a>	Cable LC reloaded after vdman and veman processes have been heldown
<a href="#">CSCvx71735</a>	"SNMP ENGINE" Crashes When Polling cEigrpInterfaceEntry MIB
<a href="#">CSCvx74212</a>	IKEv1 IPSec CAC (Call Admission Control) counter leak leading to %CRYPTO-4-IKE_DENY_SA_REQ
<a href="#">CSCvx75330</a>	fman_rp memory leak in acl_config_bind_v4_acl_message function.
<a href="#">CSCvx75572</a>	Anycast sid entries in 2 different areas - Flex algo entry does not look correct with tilfa

Caveat ID Number	Description
<a href="#">CSCvx75602</a>	SISF memory leak in AR-relay and ND-suppression
<a href="#">CSCvx75982</a>	ISIS Level-2 SPF not triggered after adjacency going down but physical interface up
<a href="#">CSCvx77203</a>	[17.5] Router crashed when sending traffic through non-SDWAN interface with DIA NAT + debug enabled
<a href="#">CSCvx78054</a>	tcp key chain not getting deleted from running config when it is used for SXP session bring up
<a href="#">CSCvx78068</a>	9800 AAA needs to free context even if IDB mismatch occurs in local-auth due to roam
<a href="#">CSCvx79188</a>	C9800:IOSD crash observed on C9800-80 active@st_ap_staggered_upg_missing_ap_to_properties
<a href="#">CSCvx82128</a>	cEdge object-group is not in sync between IOS and ConfD.
<a href="#">CSCvx82754</a>	Evaluation of all for OpenSSL March 2021 vulnerabilities
<a href="#">CSCvx83301</a>	"insufficient resources" NHRP-ERROR while receiving small rate of NHRP Resolution Requests/second
<a href="#">CSCvx83791</a>	bgp [17.6] distribute-list prefix out bgp under ospfv3 is not proper
<a href="#">CSCvx83801</a>	isis [17.6] distribute-list out isis under ospfv3 is not proper
<a href="#">CSCvx83868</a>	After reload VPLS vcs to Juniper are going DOWN
<a href="#">CSCvx88061</a>	Extended PAT not allowing more than 1k translations
<a href="#">CSCvx89710</a>	SCEP: CA server fails to rollover CA certificate with error: "Storage not accessible"
<a href="#">CSCvx89805</a>	while polling BGP Neighbours under VRF getting all ip instead of associated ip.
<a href="#">CSCvx90862</a>	Guest users are not getting expired in Prime Infrastructure after they expire in 9800 controller
<a href="#">CSCvx90991</a>	Flex algo repair path on ABR points to older area when we toggle loopback interface area
<a href="#">CSCvx91242</a>	Crash due to memory leak under "sessmgrd" process
<a href="#">CSCvx94323</a>	NHRP messages tagged with incorrect MPLS labels - unable to establish shortcut
<a href="#">CSCvx94722</a>	IOS-XE version 16.12.5 does generate jumbo frames for dot1x packets
<a href="#">CSCvx97160</a>	CBR8 ignore partial service TLV if CM sends incorrect vendor specific TLV inside REG-ACK after DBC
<a href="#">CSCvx97465</a>	IOS-XE Device Unexpected Reset due to Segmentation fault in IPv6 ICMP
<a href="#">CSCvx97490</a>	ISR4321   After enabling "cts manual" the interfaces start flapping

Caveat ID Number	Description
<a href="#">CSCvx97589</a>	Cannot add more than 8 WLCs to an Anchor CP
<a href="#">CSCvy00963</a>	On vManage 20.4.1, traceroute on cEdge leads to outage at the site
<a href="#">CSCvy01592</a>	OFDMA modems get stuck on IUC13 after sending O-INIT-RNG-REQ while online
<a href="#">CSCvy02145</a>	Malformed BMP peer-up message generated
<a href="#">CSCvy03774</a>	XE box is participating in FAD which it doesnt support
<a href="#">CSCvy04600</a>	Video sessions are in 'off' state due to Source IP mismatch between Supervisor and Cable Line card
<a href="#">CSCvy04606</a>	BGP BMP CPUHOG causing router reloaded with VRF scale deletion
<a href="#">CSCvy07261</a>	SNMP mib target list my_list vfr vrf_name command in Cisco IOS 16.12.4 not working
<a href="#">CSCvy08748</a>	OSPF summary-address isn't generated though candidate exists
<a href="#">CSCvy10159</a>	Software MTP should support encrypted TLS connection
<a href="#">CSCvy10584</a>	Missing information in show cable modem phy ofdm-profile upstream after ISSU upgrade
<a href="#">CSCvy12075</a>	Binding label is not associated for the routes associated with VRF
<a href="#">CSCvy15202</a>	cBR8 OSPF Inter and Intra Area prefixes are missing after adjusting OSPF max-path from 12 to 16
<a href="#">CSCvy16042</a>	Users Unable to get ip address after Modem Reset
<a href="#">CSCvy16531</a>	VG400 ENVIRONMENTAL-1-ALERT: RPM: fan1, Location: P2, State: Warning, Reading: 3240 RPM
<a href="#">CSCvy17757</a>	A crash due to issue with internal QOS policy specific to EPC
<a href="#">CSCvy17869</a>	Unexpected Reboot in ISDN L2 Process on IOS-XE Router
<a href="#">CSCvy17941</a>	High memory utilization observed due to NAT/ALG
<a href="#">CSCvy18284</a>	Poor IPsec throughput performance with IPsec throughput license on IOS-XE routers
<a href="#">CSCvy20588</a>	CSDL failure when it should be allowing RSA keys with 1024 length.
<a href="#">CSCvy21990</a>	ipv6 default route ::/0 point to interface which is down on border
<a href="#">CSCvy23297</a>	IOSXE : L2VPN : High CPU for AToM/AC-Mgr when MTU mismatch between the L2VPN-AC end points
<a href="#">CSCvy23674</a>	End-clients may not recover out of CA after switch is rebooted
<a href="#">CSCvy24571</a>	Static NAT conflicts/overwrites with Port-forwarding
<a href="#">CSCvy25057</a>	OFDMA RxMER OIDs return value 0

Caveat ID Number	Description
<a href="#">CSCvy27394</a>	17.6 - AP 9124 crashed due to oom (SF 05220527)
<a href="#">CSCvy29036</a>	PMIPv6 binding not coming up if the MAG is reachable using VASI interface.
<a href="#">CSCvy29106</a>	ASR1K crashed on a Eigrp enabled device when Netconf get operation was used
<a href="#">CSCvy30606</a>	Device: sdn-network-infra-iwan key does not update successfully under network disruption situation
<a href="#">CSCvy31684</a>	WNCD table records in pending destroy are not being cleaned up
<a href="#">CSCvy32673</a>	GD/1hx-Interface doesn't come up when reboot/upgrade device with autoneg enabled on 10G SFP+ Port
<a href="#">CSCvy32935</a>	UTD: Pickup latest SPPI library with fix for CSCvy00963
<a href="#">CSCvy34863</a>	Active RP crashed with 'no ip routing' in testbed with 2k isis peers sometimes
<a href="#">CSCvy35853</a>	ASR1k- egress byte counter on MIP100 10GE interface is inaccurate
<a href="#">CSCvy36287</a>	When trying to authenticate, method status list show as Empty
<a href="#">CSCvy39195</a>	ESP200-X crash PA2_CSR32_TOP_CSR_PA_ERR_LEAF_INT__INT_PPE_INT1 with PPPoE/L2TP sessions
<a href="#">CSCvy40807</a>	Upstream CPE traffic will be dropped on last 16 of 32 mac-domains when source-verify enabled
<a href="#">CSCvy41182</a>	ASR1k/ISG wrong mac-address in CoA after CoA-Account Logon
<a href="#">CSCvy43545</a>	Anycast SID prefix TILFA: Unnecessary label of source added to backup tunnel
<a href="#">CSCvy44918</a>	A PCMM Gate-Set to a previously created GateID, for classifier modification, is failing.
<a href="#">CSCvy45095</a>	ipv6 ebgp multihop session remains in "idle" state after removal and recreation of the config
<a href="#">CSCvy50758</a>	ISG IPv6 prefix valid time configuration not taken into account
<a href="#">CSCvy51108</a>	Dual SUP reload after issuing 'clear cable video snmp-alarm-table' on Active SUP
<a href="#">CSCvy53210</a>	ASR1002-HX running ISG w/ IOS v17.3.3 Crashed and caused a major outage of 40K EoGRE sessions
<a href="#">CSCvy54970</a>	ISIS keeps advertising prefix after `default interface` command applied
<a href="#">CSCvy58514</a>	Accounting stop message does not proper Acct-Terminate-Cause (49) for idle timeout or Admin Reset
<a href="#">CSCvy64468</a>	ASR1002-HX crashed after removing then applying the ZBF configuration.
<a href="#">CSCvy64796</a>	RIP Yang [17.7] offset-list with interface config not shown in ios running-config
<a href="#">CSCvy65140</a>	Linecard restart after clear cable modem all delete



Caveat ID Number	Description
<a href="#">CSCvy67657</a>	crypto ipsec security-association dummy leads to packet loss
<a href="#">CSCvy67720</a>	[FNF] Need to force DTL read after PLU lookup in fnf_build_do_ipv4_fast
<a href="#">CSCvy69496</a>	Remote address attribute missing when accessing controller through GUI using TACACS+ Credentials
<a href="#">CSCvy69910</a>	CBR-SUP-SSD missing from "show inventory" and harddisk: inaccessible
<a href="#">CSCvy78087</a>	Qos download failed with FW policy when rebooting device
<a href="#">CSCvy79601</a>	ASR1001X gets rebooted when Tunnel move across two egress interfaces with QoS MPoL policy config
<a href="#">CSCvy84535</a>	cable upstream resiliency recover retries didn't work

## Cisco Bug Search

Use the [Cisco Bug Search Tool](#) to access open and resolved bugs for a release.

The tool allows you to search for a specific bug ID, or for all bugs specific to a product and a release.

You can filter the search results by last modified date, bug status (open, resolved), severity, rating, and support cases.

### Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see [What's New in Cisco Product Documentation](#).

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.





# CHAPTER 3

## Supported Packages and System Requirements

- [Memory Requirements, on page 31](#)
- [Supported Hardware, on page 33](#)
- [Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1z1, on page 34](#)
- [Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1z, on page 35](#)
- [Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1x, on page 36](#)
- [Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1w, on page 37](#)
- [Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1a, on page 38](#)
- [Determine Firmware Support, on page 40](#)

### Memory Requirements

The following table displays the memory recommendations for the Cisco cBR-8 routers with Cisco IOS XE Bengaluru 17.6 feature sets.

**Table 1: Memory Recommendations for the Cisco cBR-8 Routers with Cisco IOS XE Bengaluru 17.6.1z1**

Feature Set	Cisco cBR-8 Route Processor	Software Image	Recommended Flash Memory	Recommended DRAM Memory	Runs From
CISCO IOS-XE universalk9	Cisco cBR-8 (CBR) Processor	cbrsup-universalk9.17.6.1z1.SPA.bin	8G	48G	Bootflash:
CISCO IOS-XE CLC K9	Cisco cBR-8 (CYLONS) Processor	cbrsup-universalk9.17.6.1z1.SPA.bin	8G	16G	Supervisor
CISCO IOS-XE Kobl-R	Cisco cBR-8 (Kobl-R) Processor	cbrsup-universalk9.17.6.1z1.SPA.bin	8G	64G	Supervisor

**Table 2: Memory Recommendations for the Cisco cBR-8 Routers with Cisco IOS XE Bengaluru 17.6.1z**

Feature Set	Cisco cBR-8 Route Processor	Software Image	Recommended Flash Memory	Recommended DRAM Memory	Runs From
CISCO IOS-XE universalk9	Cisco cBR-8 (CBR) Processor	cbrsup-universalk9.17.6.1z.SPA.bin	8G	48G	Bootflash:
CISCO IOS-XE CLC K9	Cisco cBR-8 (CYLONS) Processor	cbrsup-universalk9.17.6.1z.SPA.bin	8G	16G	Supervisor
CISCO IOS-XE Kobol-R	Cisco cBR-8 (Kobol-R) Processor	cbrsup-universalk9.17.6.1z.SPA.bin	8G	64G	Supervisor

**Table 3: Memory Recommendations for the Cisco cBR-8 Routers with Cisco IOS XE Bengaluru 17.6.1x**

Feature Set	Cisco cBR-8 Route Processor	Software Image	Recommended Flash Memory	Recommended DRAM Memory	Runs From
CISCO IOS-XE universalk9	Cisco cBR-8 (CBR) Processor	cbrsup-universalk9.17.6.1x.SPA.bin	8G	48G	Bootflash:
CISCO IOS-XE CLC K9	Cisco cBR-8 (CYLONS) Processor	cbrsup-universalk9.17.6.1x.SPA.bin	8G	16G	Supervisor
CISCO IOS-XE Kobol-R	Cisco cBR-8 (Kobol-R) Processor	cbrsup-universalk9.17.6.1x.SPA.bin	8G	64G	Supervisor

**Table 4: Memory Recommendations for the Cisco cBR-8 Routers with Cisco IOS XE Bengaluru 17.6.1w**

Feature Set	Cisco cBR-8 Route Processor	Software Image	Recommended Flash Memory	Recommended DRAM Memory	Runs From
CISCO IOS-XE universalk9	Cisco cBR-8 (CBR) Processor	cbrsup-universalk9.17.6.1w.SPA.bin	8G	48G	Bootflash:
CISCO IOS-XE CLC K9	Cisco cBR-8 (CYLONS) Processor	cbrsup-universalk9.17.6.1w.SPA.bin	8G	16G	Supervisor
CISCO IOS-XE Kobol-R	Cisco cBR-8 (Kobol-R) Processor	cbrsup-universalk9.17.6.1w.SPA.bin	8G	64G	Supervisor

**Table 5: Memory Recommendations for the Cisco cBR-8 Routers with Cisco IOS XE Bengaluru 17.6.1a**

Feature Set	Cisco cBR-8 Route Processor	Software Image	Recommended Flash Memory	Recommended DRAM Memory	Runs From
CISCO IOS-XE universalk9	Cisco cBR-8 (CBR) Processor	cbrsup-universalk9.17.6.1.SPA.bin	8G	48G	Bootflash:
CISCO IOS-XE CLC K9	Cisco cBR-8 (CYLONS) Processor	cbrsup-universalk9.17.6.1.SPA.bin	8G	16G	Supervisor
CISCO IOS-XE Kobol-R	Cisco cBR-8 (Kobol-R) Processor	cbrsup-universalk9.17.6.1.SPA.bin	8G	64G	Supervisor

## Supported Hardware

For detailed information about the hardware supported in Cisco IOS XE Bengaluru 17.6 and its maintenance releases, see: [How and What to Order](#).

Cisco announced September 18, 2020, as the end-of-sale date for the Cisco cBR-8 Leoben1 based DOCSIS line cards (CBR-LC-\*-16U30) and SUP60 (CBR-CCAP-SUP-60G).

For further information regarding end-of-sale and end-of-life announcements, see <https://www.cisco.com/c/en/us/products/video/cbr-series-converged-broadband-routers/eos-eol-notice-listing.html>.

## Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1z1

To determine the version of the Cisco IOS XE software running on your Cisco cBR Series Converged Broadband Router, log in and enter the **show ver** EXEC command:

```
Router# show ver
Load for five secs: 11%/1%; one minute: 11%; five minutes: 11%
Time source is NTP, 13:21:51.230 EST Tue Oct 25 2022
Cisco IOS XE Software, Version 17.06.01z1
Cisco IOS Software [Bengaluru], cBR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version
17.6.1z1, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2022 by Cisco Systems, Inc.
Compiled Mon 10-Oct-22 19:32 by mcpre
```

```
Cisco IOS-XE software, Copyright (c) 2005-2022 by cisco Systems, Inc.
All rights reserved. Certain components of Cisco IOS-XE software are
licensed under the GNU General Public License ("GPL") Version 2.0. The
software code licensed under GPL Version 2.0 is free software that comes
with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0. For more details, see the
documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.
```

```
ROM: 16.7(8r)s
```

```
video-LWR-G-I10 uptime is 1 day, 1 hour, 7 minutes
Uptime for this control processor is 4 hours, 2 minutes
System returned to ROM by SSO Switchover at 09:12:32 EST Tue Oct 25 2022
System restarted at 09:24:26 EST Tue Oct 25 2022
System image file is "harddisk:cbrsup-universalk9.17.06.01z1.SPA.bin"
Last reload reason: Force Failover
```

```
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.
```

```
A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html
```

```
If you require further assistance please contact us by sending email to
export@cisco.com.
```

```
Smart Licensing Status: UNREGISTERED/EVAL MODE
```

```
Cisco cBR-8 (CBR) processor (revision CBRVE) with 11293417K/6147K bytes of memory.
Processor board ID FXS2038Q3GW
64 Gigabit Ethernet interfaces
16 Ten Gigabit Ethernet interfaces
4 Hundred Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
50331648K bytes of physical memory.
7649279K bytes of eUSB flash at bootflash:.
234365527K bytes of SATA hard disk at harddisk:.

Configuration register is 0x1820

Router#
```

## Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1z

To determine the version of the Cisco IOS XE software running on your Cisco cBR Series Converged Broadband Router, log in and enter the **show version EXEC** command:

```
Router# show version
Load for five secs: 30%/2%; one minute: 40%; five minutes: 40%
Time source is NTP, 23:15:11.564 PDT Thu Jul 28 2022
Cisco IOS XE Software, Version 17.06.01z
Cisco IOS Software [Bengaluru], cBR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version
17.6.1z, RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2022 by Cisco Systems, Inc.
Compiled Wed 27-Jul-22 11:13 by mcpre
```

```
Cisco IOS-XE software, Copyright (c) 2005-2022 by cisco Systems, Inc.
All rights reserved. Certain components of Cisco IOS-XE software are
licensed under the GNU General Public License ("GPL") Version 2.0. The
software code licensed under GPL Version 2.0 is free software that comes
with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0. For more details, see the
documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.
```

```
ROM: 16.7(8r)S
```

```
CST_RPHY_LS uptime is 13 hours, 40 minutes
Uptime for this control processor is 13 hours, 47 minutes
System returned to ROM by reload at 09:23:45 PDT Thu Jul 28 2022
System restarted at 09:34:12 PDT Thu Jul 28 2022
System image file is "harddisk:cbrsup-universalk9.17.06.01z.SPA.bin"
Last reload reason: Reload Command
```

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you

agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: <http://www.cisco.com/wvl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to [export@cisco.com](mailto:export@cisco.com).

Smart Licensing Status: REGISTERED/OUT OF COMPLIANCE

Cisco cBR-8 (CBR) processor (revision CBRVE) with 15199675K/6147K bytes of memory.  
 Processor board ID FXS2024Q7DJ  
 64 Gigabit Ethernet interfaces  
 16 Ten Gigabit Ethernet interfaces  
 4 Hundred Gigabit Ethernet interfaces  
 32768K bytes of non-volatile configuration memory.  
 50331648K bytes of physical memory.  
 7649279K bytes of eUSB flash at bootflash:.  
 234365527K bytes of SATA hard disk at harddisk:.

Configuration register is 0x2

Router#

## Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1x

To determine the version of the Cisco IOS XE software running on your Cisco cBR Series Converged Broadband Router, log in and enter the **show version EXEC** command:

```
Router#show version
Load for five secs: 13%/2%; one minute: 29%; five minutes: 19%
Time source is NTP, 14:23:27.711 CST Thu Jan 27 2022
Cisco IOS XE Software, Version 17.06.01x
Cisco IOS Software [Bengaluru], cBR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version
17.6.1x, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2022 by Cisco Systems, Inc.
Compiled Fri 21-Jan-22 17:32 by mcpre
```

Cisco IOS-XE software, Copyright (c) 2005-2022 by cisco Systems, Inc.  
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ROM: 16.7(8r)s

Router uptime is 2 hours, 53 minutes  
 Uptime for this control processor is 3 hours, 1 minute  
 System returned to ROM by reload at 14:39:19 CST Tue Jan 25 2022  
 System restarted at 11:29:51 CST Thu Jan 27 2022



```
System image file is "harddisk:cbrsup-universalk9.17.06.01x.SPA.bin"  
Last reload reason: PowerOn
```

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Smart Licensing Status: UNREGISTERED/EVAL MODE

```
Cisco cBR-8 (CBR) processor (revision CBRVE) with 12330259K/6147K bytes of memory.  
Processor board ID FXS17440AT7  
40 Gigabit Ethernet interfaces  
16 Ten Gigabit Ethernet interfaces  
4 Hundred Gigabit Ethernet interfaces  
32768K bytes of non-volatile configuration memory.  
50331648K bytes of physical memory.  
7649279K bytes of eUSB flash at bootflash:.  
117155287K bytes of SATA hard disk at harddisk:.
```

Configuration register is 0x2

## Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1w

To determine the version of the Cisco IOS XE software running on your Cisco cBR Series Converged Broadband Router, log in and enter the **show version EXEC** command:

```
Router#show version  
Load for five secs: 100%/2%; one minute: 44%; five minutes: 11%  
Time source is NTP, *09:47:41.000 CST Fri Oct 29 2021  
Cisco IOS XE Software, Version 17.06.01w  
Cisco IOS Software [Bengaluru], cBR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version  
17.6.1w, RELEASE SOFTWARE (fc2)  
Technical Support: http://www.cisco.com/techsupport  
Copyright (c) 1986-2021 by Cisco Systems, Inc.  
Compiled Thu 28-Oct-21 12:07 by mcpre
```

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or the applicable URL provided on the flyer accompanying the IOS-XE software.

ROM: 16.7(8r)s

Router uptime is 4 minutes  
 Uptime for this control processor is 10 minutes  
 System returned to ROM by reload at 09:33:06 CST Fri Oct 29 2021  
 System image file is "harddisk:cbrsup-universalk9.17.06.01w.SPA.bin"  
 Last reload reason: Reload Command

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Smart Licensing Status: UNREGISTERED/EVAL MODE

Cisco cBR-8 (CBR) processor (revision CBRVE) with 12330310K/6147K bytes of memory.  
 Processor board ID FXS1849Q1F7  
 64 Gigabit Ethernet interfaces  
 16 Ten Gigabit Ethernet interfaces  
 4 Hundred Gigabit Ethernet interfaces  
 32768K bytes of non-volatile configuration memory.  
 50331648K bytes of physical memory.  
 7649279K bytes of eUSB flash at bootflash:.  
 234365527K bytes of SATA hard disk at harddisk:.

Configuration register is 0x1820

## Determining the Software Version for Cisco IOS XE Bengaluru 17.6.1a

To determine the version of the Cisco IOS XE software running on your Cisco cBR Series Converged Broadband Router, log in and enter the **show version EXEC** command:

```
Router#show version
```

```
Load for five secs: 9%/1%; one minute: 9%; five minutes: 10%
```

```
Time source is NTP, 00:16:53.754 EDT Sun Aug 22 2021
```

```
Cisco IOS XE Software, Version 17.06.01a
```

```
Cisco IOS Software [Bengaluru], cBR Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version
```

17.6.1a, RELEASE SOFTWARE (fc2)

Technical Support: <http://www.cisco.com/techsupport>

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Compiled Sat 21-Aug-21 03:17 by mcpre

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ROM: 16.7(8r)S

Router uptime is 22 minutes

Uptime for this control processor is 29 minutes

System returned to ROM by reload at 20:48:00 EDT Sat Aug 21 2021

System restarted at 23:54:05 EDT Sat Aug 21 2021

System image file is "bootflash:cbrsup-universalk9.17.06.01a.SPA.bin"

Last reload reason: Reload Command

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<http://www.cisco.com/wvl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to [export@cisco.com](mailto:export@cisco.com).

Smart Licensing Status: UNREGISTERED/EVAL MODE

Cisco cBR-8 (CBR) processor (revision CBR) with 8424246K/6147K bytes of memory.

Processor board ID FXS1924Q2E2

52 Gigabit Ethernet interfaces

32768K bytes of non-volatile configuration memory.

50331648K bytes of physical memory.

7743487K bytes of eUSB flash at bootflash:.

117155287K bytes of SATA hard disk at harddisk:.

3911744K bytes of USB flash at usb0:.

Configuration register is 0x2102

## Determine Firmware Support

This section describes firmware that is supported for the Cisco cBR-8 Converged Broadband Routers.

For more information, see the [Install and Upgrade Guides](#).



---

**Note** If you want to upgrade to one of the Supervisor CPLD versions mentioned in the table, the chassis must have Cisco IOS XE Bengaluru 17.6.1a or later.

---

Table 6: Firmware Packages and Versions Supported in Cisco IOS XE Bengaluru 17.6.1z1

Internal Name	Component Name	Required Minimum Version	Command
Supervisor CPLD	CBR-CCAP-SUP-160G CPLD	16052011 19071712 (optional)	show platform
	CBR-CCAP-SUP-250G CPLD	170724E0 190717E1 (optional)	show platform
Supervisor ROMMON	CBR-CCAP-SUP-160G ROMMON and CBR-CCAP-SUP-250G ROMMON	16.7(2r)S	show platform
Line Card CPLD	CBR-CCAP-LC-40G CPLD	00000026	show platform diag
DOCSIS 3.1 downstream module Micro	CBR-CCAP-LC-40G Gemini2 Micro	3.1A	show platform diag
DOCSIS 3.1 downstream module FPGA	CBR-CCAP-LC-40G Gemini2 Apollo	4.484F	show platform diag
DPIC Uboot and FPGA	CBR-DPIC-8X10G Firmware	00010001	show platform diag
DPIC 100G Uboot and FPGA	CBR-DPIC-2X100G Firmware	00020006	show platform diag
RF-PROT-PIC Firmware	CBR-RF-PROT-PIC Firmware	00000721	show platform diag

Table 7: Firmware Packages and Versions Supported in Cisco IOS XE Bengaluru 17.6.1z

Internal Name	Component Name	Required Minimum Version	Command
Supervisor CPLD	CBR-CCAP-SUP-160G CPLD	16052011 19071712 (optional)	show platform
	CBR-CCAP-SUP-250G CPLD	170724E0 190717E1 (optional)	show platform
Supervisor ROMMON	CBR-CCAP-SUP-160G ROMMON and CBR-CCAP-SUP-250G ROMMON	16.7(2r)S	show platform
Line Card CPLD	CBR-CCAP-LC-40G CPLD	00000026	show platform diag

Internal Name	Component Name	Required Minimum Version	Command
DOCSIS 3.1 downstream module Micro	CBR-CCAP-LC-40G Gemini2 Micro	3.1A	show platform diag
DOCSIS 3.1 downstream module FPGA	CBR-CCAP-LC-40G Gemini2 Apollo	4.484F	show platform diag
DPIC Uboot and FPGA	CBR-DPIC-8X10G Firmware	00010001	show platform diag
DPIC 100G Uboot and FPGA	CBR-DPIC-2X100G Firmware	00020006	show platform diag
RF-PROT-PIC Firmware	CBR-RF-PROT-PIC Firmware	00000721	show platform diag

**Table 8: Firmware Packages and Versions Supported in Cisco IOS XE Bengaluru 17.6.1x**

Internal Name	Component Name	Required Minimum Version	Command
Supervisor CPLD	CBR-CCAP-SUP-160G CPLD	16052011 19071712 (optional)	show platform
	CBR-CCAP-SUP-250G CPLD	170724E0 190717E1 (optional)	show platform
Supervisor ROMMON	CBR-CCAP-SUP-160G ROMMON and CBR-CCAP-SUP-250G ROMMON	16.7(2r)S	show platform
Line Card CPLD	CBR-CCAP-LC-40G CPLD	00000026	show platform diag
DOCSIS 3.1 downstream module Micro	CBR-CCAP-LC-40G Gemini2 Micro	3.1A	show platform diag
DOCSIS 3.1 downstream module FPGA	CBR-CCAP-LC-40G Gemini2 Apollo	4.484F	show platform diag
DPIC Uboot and FPGA	CBR-DPIC-8X10G Firmware	00010001	show platform diag
DPIC 100G Uboot and FPGA	CBR-DPIC-2X100G Firmware	00020006	show platform diag
RF-PROT-PIC Firmware	CBR-RF-PROT-PIC Firmware	00000721	show platform diag

Table 9: Firmware Packages and Versions Supported in Cisco IOS XE Bengaluru 17.6.1w

Internal Name	Component Name	Required Minimum Version	Command
Supervisor CPLD	CBR-CCAP-SUP-160G CPLD	16052011 19071712 (optional)	show platform
	CBR-CCAP-SUP-250G CPLD	170724E0 190717E1 (optional)	show platform
Supervisor ROMMON	CBR-CCAP-SUP-160G ROMMON and CBR-CCAP-SUP-250G ROMMON	16.7(2r)S	show platform
Line Card CPLD	CBR-CCAP-LC-40G CPLD	00000026	show platform diag
DOCSIS 3.1 downstream module Micro	CBR-CCAP-LC-40G Gemini2 Micro	3.1A	show platform diag
DOCSIS 3.1 downstream module FPGA	CBR-CCAP-LC-40G Gemini2 Apollo	4.484F	show platform diag
DPIC Uboot and FPGA	CBR-DPIC-8X10G Firmware	00010001	show platform diag
DPIC 100G Uboot and FPGA	CBR-DPIC-2X100G Firmware	00020006	show platform diag
RF-PROT-PIC Firmware	CBR-RF-PROT-PIC Firmware	00000721	show platform diag

Table 10: Firmware Packages and Versions Supported in Cisco IOS XE Bengaluru 17.6.1a

Internal Name	Component Name	Required Minimum Version	Command
Supervisor CPLD	CBR-CCAP-SUP-160G CPLD	16052011 19071712 (optional)	show platform
	CBR-CCAP-SUP-250G CPLD	170724E0 190717E1 (optional)	show platform
Supervisor ROMMON	CBR-CCAP-SUP-160G ROMMON and CBR-CCAP-SUP-250G ROMMON	16.7(2r)S	show platform
Line Card CPLD	CBR-CCAP-LC-40G CPLD	00000026	show platform diag

## Determine Firmware Support

Internal Name	Component Name	Required Minimum Version	Command
DOCSIS 3.1 downstream module Micro	CBR-CCAP-LC-40G Gemini2 Micro	3.1A	<b>show platform diag</b>
DOCSIS 3.1 downstream module FPGA	CBR-CCAP-LC-40G Gemini2 Apollo	4.484F	<b>show platform diag</b>
DPIC Uboot and FPGA	CBR-DPIC-8X10G Firmware	00010001	<b>show platform diag</b>
DPIC 100G Uboot and FPGA	CBR-DPIC-2X100G Firmware	00020005	<b>show platform diag</b>
RF-PROT-PIC Firmware	CBR-RF-PROT-PIC Firmware	00000721	<b>show platform diag</b>

Upgrade Cisco cBR-8 to the minimum supported firmware revisions for the Cisco IOS XE Bengaluru 17.6.1a.





## CHAPTER 4

# Other Important Information

- [Feature Support](#), on page 45
- [Cisco cBR-8 Software Compatibility](#), on page 45
- [MIBs](#), on page 46
- [Supported Transceiver Modules](#), on page 47
- [Best Practice Manual of Procedure for Cisco IOS XE Bengaluru 17.6.1a Upgrade](#), on page 47
- [Mapping CBR-DPIC-8X10G 10-Gigabit Ethernet Interface to downstream controllers](#), on page 47
- [Cisco cBR-8 Documentation References](#), on page 48

## Feature Support

Cisco IOS XE software is packaged in feature sets that consist of software images that support specific platforms. The feature sets available for a specific platform depend on which Cisco IOS XE software images are included in a release. Each feature set contains a specific set of Cisco IOS XE features.



### Caution

Cisco IOS XE images with strong encryption (including, but not limited to 168-bit [3DES] data encryption feature sets) are subject to U.S. government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders may be denied or subject to delay because of U.S. government regulations. When applicable, the purchaser or user must obtain local import and use authorizations for all encryption strengths. Please contact your sales representative or distributor for more information, or send an e-mail to [export@cisco.com](mailto:export@cisco.com).

## Cisco cBR-8 Software Compatibility

The Cisco cBR-8 software must be compatible with Cisco RPD and SmartPHY software. Otherwise the RPD remains in the **init(gcp)** state. The following table provides details of the compatible software versions:

Cisco cBR-8 Software Version	Compatible Cisco RPD Software Version	Compatible SmartPHY Software Version
Cisco IOS XE Bengaluru 17.6.1z1	Cisco 1x2 / Compact Shelf RPD Software 10.4	SmartPHY v22.2

Cisco cBR-8 Software Version	Compatible Cisco RPD Software Version	Compatible SmartPHY Software Version
Cisco IOS XE Bengaluru 17.6.1z	Cisco 1x2 / Compact Shelf RPD Software 10.4	SmartPHY v22.2
Cisco IOS XE Bengaluru 17.6.1x	Cisco 1x2 / Compact Shelf RPD Software 10.3	SmartPHY v22.1
Cisco IOS XE Bengaluru 17.6.1w	Cisco 1x2 / Compact Shelf RPD Software 10.2	SmartPHY v21.3
Cisco IOS XE Bengaluru 17.6.1a	Cisco 1x2 / Compact Shelf RPD Software 10.1	SmartPHY v22.1

## MIBs

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

<https://mibs.cloudapps.cisco.com/ITDIT/MIBS/servlet/index>

### New and Changed MIB Information in Cisco IOS-XE Bengaluru 17.6.1z

There are no new or updated MIBs in the Cisco IOS XE Bengaluru 17.6.1z release for Cisco cBR-8 series routers.

### New and Changed MIB Information in Cisco IOS-XE Bengaluru 17.6.1x

DOCS-IF31-MIB was updated to version 2020-11-05 in the Cisco IOS XE Bengaluru 17.6.1x release.

The following new OIDs in DOCS-IF31-MIB are supported:

- docsIf31CmtsUsOfdmaDataIucStatsIucAverageMer
- docsIf31CmtsUsOfdmaDataIucStatsAssignedCmCt
- docsIf31CmtsDsOfdmProfileStatsAssignedCmCt

The following OIDs in DOCS-IF31-MIB are supported for RPHY mode:

- docsIf31CmtsUsOfdmaDataIucStatsTotalCodewords
- docsIf31CmtsUsOfdmaDataIucStatsUnreliableCodewords
- docsIf31CmtsUsOfdmaDataIucStatsCorrectedCodewords

The following new OIDs in DOCS-RPHY-STATS-MIB are supported:

- docsRphyStatsRpdUsOfdmaLowIucPerfStatsNumPredecodePass
- docsRphyStatsRpdUsOfdmaLowIucPerfStatsNumPostdecodePass

- docsRphyStatsRpdUsOfdmaLowIucPerfStatsNumPostdecodeFail
- docsRphyStatsRpdUsOfdmaHighIucPerfStatsAverageMer
- docsRphyStatsRpdUsOfdmaHighIucPerfStatsNumPredecodePass
- docsRphyStatsRpdUsOfdmaHighIucPerfStatsNumPostdecodePass
- docsRphyStatsRpdUsOfdmaHighIucPerfStatsNumPostdecodeFail

## New and Changed MIB Information in Cisco IOS-XE Bengaluru 17.6.1w

There are no new or updated MIBs in the Cisco IOS XE Bengaluru 17.6.1w release for Cisco cBR-8 series routers.

## New and Changed MIB Information in Cisco IOS-XE Bengaluru 17.6.1a

There are no new or updated MIBs in the Cisco IOS XE Bengaluru 17.6.1a release for Cisco cBR-8 series routers.

## Supported Transceiver Modules

For more information on the supported transceiver modules, see [Transceiver Module Group \(TMG\) Compatibility Matrix](#).

## Best Practice Manual of Procedure for Cisco IOS XE Bengaluru 17.6.1a Upgrade

See the *Upgrading the Cisco cBR Converged Broadband Routers for Cisco IOS XE Bengaluru 17.6.1a* document at the [Install and Upgrade Guides](#) page.

## Mapping CBR-DPIC-8X10G 10-Gigabit Ethernet Interface to downstream controllers

Starting from Cisco IOS XE Bengaluru 17.6.1a, when you configure the RPD with CBR-CCAP-LC-G2-R, note that the CBR-DPIC-8X10G 10-Gigabit Ethernet Interface to downstream controllers mapping has changed.

Following are the new mapping values:

10-Gigabit Ethernet Interface	Downstream Controller
<slot>/1/0 ~ 1	0..7
<slot>/1/2 ~ 3	8..15
<slot>/1/4 ~ 5	16..23

10-Gigabit Ethernet Interface	Downstream Controller
<slot>/1/6 ~ 7	24..31

The mapping changes are also for valid downstream-video controllers.



**Note** The mapping changes does not apply to the CBR-DPIC-2x100G.

The previous mapping values are:

10-Gigabit Ethernet Interface	Downstream Controller
<slot>/1/0 ~ 3	0..15
<slot>/1/4 ~ 7	16..31

Ensure that you have correctly configured the mapping to avoid error logs and error messages. Following is an example of a wrong manual configuration:

```
Router(config)#cab rpd test1
Router(config-rpd)#core-interface tenGigabitEthernet 8/1/0
Router(config-rpd-core)#rpd-ds 0 downstream-cable 8/0/9 profile 0
For RPD aaaa.bbbb.aaaa, DPIC TE interface Te8/1/0 and DS controller 9 mismatch, TE interface
Te*/1/0 can only be associated with DS controller */*/0~7, configuration failed.
Router(config-rpd-core)#rpd-ds 0 downstream-video 8/0/9 profile 1
For RPD aaaa.bbbb.aaaa, DPIC TE interface Te8/1/0 and Video controller 9 mismatch, TE
interface Te*/1/0 can only be associated with Video controller */*/0~7, configuration failed.
Router(config-rpd-core)#
```

Following is an example of a bootup error message:

```
*Jun 10 15:53:29.108 CST: %CBR-3-TE_CONTROLLER_MISMATCH: For RPD aaaa.bbbb.aaaa, DPIC TE
interface Te8/1/0 and DS controller 9 mismatch, TE interface Te*/1/0 can only be associated
with DS controller */*/0~7, configuration failed.

*Jun 10 15:53:29.110 CST: %CBR-3-TE_CONTROLLER_MISMATCH: For RPD aaaa.bbbb.aaaa, DPIC TE
interface Te8/1/0 and Video controller 9 mismatch, TE interface Te*/1/0 can only be associated
with Video controller */*/0~7, configuration failed.
```

## Cisco cBR-8 Documentation References

We recommend that you view the field notices for this release to see if your software or hardware platforms are affected. If you have an account at Cisco.com, you can find the field notices at [http://www.cisco.com/en/US/customer/support/tsd\\_products\\_field\\_notice\\_summary.html](http://www.cisco.com/en/US/customer/support/tsd_products_field_notice_summary.html).

If you do not have an account at Cisco.com, you can find the field notices at [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).



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**Note** Cisco IOS XE Bengaluru 17.6.1z is generally available for field deployment. However, we recommend that you validate and qualify Cisco IOS XE Bengaluru 17.6.1z in a limited field trial with your specific network configuration requirements. This process ensures a smoother, faster, and successful field deployment.

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For information on Cisco cBR-8, go through the following links:

- [Cisco cBR-8 Documentation for Cisco IOS XE Bengaluru 17.6.1](#)
- [Cisco cBR-8 DOCSIS Software Configuration Guide for Cisco IOS XE Bengaluru 17.6.1](#)

