Release Notes for Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Everest 16.5.1

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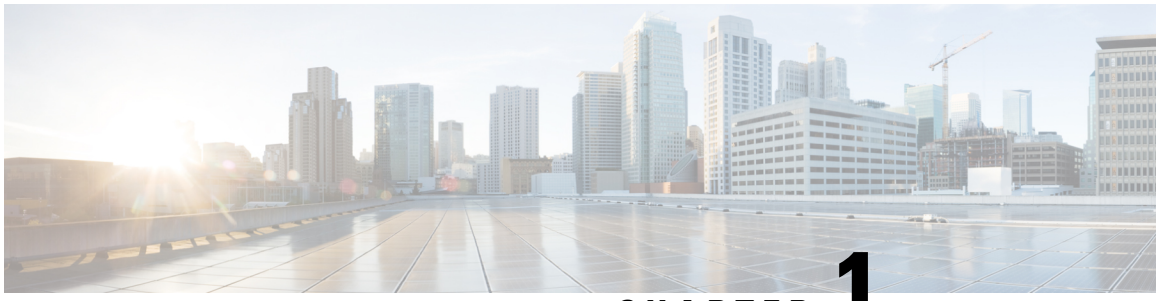


CHAPTER 1

Introduction

This release notes contain information about downloading and installing Cisco IOS XE Release 16.5.1 and its maintenance releases. It also provides new and changed information, hardware support, limitations and restrictions, and caveats for Cisco IOS XE Release 16.5.1 and its maintenance releases.

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 on Cisco.com, you can find field notices at http://www.cisco.com/en/US/customer/support/tsd_products_field_notice_summary.html .

If you do not have a Cisco.com login account, you can find field notices at http://www.cisco.com/en/US/support/tsd_products_field_notice_summary.html .

Note Cisco IOS XE Release 16.5.1 is generally available for field deployment. However, we recommend that you validate and qualify Cisco IOS XE Release 16.5.1 in a limited field trial with your specific network configuration requirements in order to ensure a smoother, faster, and successful field deployment.

This chapter includes the following sections:

- System Requirements, on page 1
- New and Changed Information, on page 4
- MIBs, on page 5
- Best Practice Manual of Procedure for Cisco IOS XE Everest 16.5.1 Upgrade, on page 6
- Cisco cBR Series Converged Broadband Routers Documentation References, on page 6
- Obtaining Documentation and Submitting a Service Request, on page 6

System Requirements

These sections describe the system requirements for Cisco IOS XE Everest 16.6.x:

Memory Requirements

The following table displays the memory recommendations for the Cisco cBR Series Converged Broadband Routers with Cisco IOS XE Release 16.5.1 feature sets.

Table 1: Memory Recommendations for the Cisco cBR Series Converged Broadband Routers

Feature Set	Cisco cBR Route Processor	Software Image	RecommendedFlash Memory	RecommendedDRAM Memory	RunsFrom
CISCO IOS-XE universalk9	Cisco cBR8 (CBR) Processor	cbrsup-universalk9.03.15.00.S.155-2.S-std.SPA.bin	8G	48G	Bootflash:
CISCO IOS-XE CLC K9	Cisco cBR8 (CYLONS) Processor	cbrsup-universalk9.03.15.00.S.155-2.S-std.SPA.bin	8G	16G	Supervisor

Hardware Supported

For detailed information about the hardware supported in Cisco IOS XE Release 16.5.1 and its maintenance releases, see:

http://www.cisco.com/c/en/us/td/docs/cable/cbr/installation/guide/b_cbr_how_and_what_to_order.html.

Note The Cisco cBR chassis must house line cards with either Downstream DOCSIS 3.0 PHY modules or Downstream DOCSIS 3.1 PHY modules. Mixed configuration is not supported.

Determining the Software Version

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

```
Router# show version
Load for five secs: 3%/0%; one minute: 3%; five minutes: 0%
Time source is NTP, *16:28:17.679 PDT Thu Apr 6 2017
Cisco IOS XE Software, Version 16.05.01
Cisco IOS Software [Everest], cBR  Software (X86_64_LINUX_IOSD-UNIVERSALK9-M), Version
16.5.1, RELEASE SOFTWARE (fc3)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2017 by Cisco Systems, Inc.
Compiled Sun 02-Apr-17 21:15 by mcpre


Cisco IOS-XE software, Copyright (c) 2005-2017 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: IOS-XE ROMMON
```

```
Router uptime is 2 minutes
Uptime for this control processor is 6 minutes
System returned to ROM by reload at 16:19:37 PDT Thu Apr 6 2017
System image file is "harddisk:cbrsup-universalk9.16.05.01.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/wwl/export/crypto/tool/stqrg.html

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

Cisco cBR-8 (RP1) processor (revision RP1) with 7508482K/6147K bytes of memory.
Processor board ID FXS1921Q1XR
16 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
50331648K bytes of physical memory.
7743487K bytes of eUSB flash at bootflash:.
97620247K bytes of SATA hard disk at harddisk:.
30659088K bytes of USB flash at usb0:.

Configuration register is 0x0

Router#
```

Microcode Software

This section describes microcode software that is supported for the Cisco cBR Series Converged Broadband Routers.

For more information, see the Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Everest 16.5.1 guide.

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.

New and Changed Information

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

New Hardware Features in Cisco IOS XE Everest 16.5.1

Cisco CCAP RF Line Card for Remote-PHY

The Cisco CCAP RF line card with no downstream and upstream PHY modules is connected with the Cisco 1.2GHz GS7000 SHO Node (Cisco GS7000 node). The PID of the line card is CBR-CCAP-LC-40G-R.

New Software Features in Cisco IOS XE Everest 16.5.1

MAC Filtering

This feature enables/disables MAC address filter on the backhaul interface. It supports 32 unicast filter entries per interface.

For more information, see the Cisco cBR Series Converged Broadband Routers Security and Cable Monitoring Configuration Guide.

DualCrypt Encryption Mode Support

This feature enables SRM to configure PowerKey and DVB CAS sessions on the same line card of the Cisco cBR-8 Converged Broadband Router.

For more information, see the Cisco cBR Converged Broadband Routers Video Features guide.

Fail-to-Clear

This feature enables the operator to control the configured DVB-encrypted sessions to function without encryption for a configured duration, when encryption for a session fails in Cisco cBR-8.

For more information, see the Cisco cBR Converged Broadband Routers Video Features guide.

OFDM Channel Power Profile

This feature helps in adjusting the power-level of 6 MHz bands in a DOCSIS 3.1 downstream OFDM channel.

For more information, see the Cisco cBR Converged Broadband Routers Layer 2 and DOCSIS 3.1 Configuration Guide.

Segment Routing

This feature allows you to enable segment routing mode on Cisco Converged Broadband Router, as an option for IPv6 address configurations under the sub mode.

For more information, see the Cisco cBR Series Converged Broadband Routers Layer 3 Configuration Guide for Cisco IOS XE Everest 16.5.1 guide.

Modified Software Features in Cisco IOS XE Everest 16.5.1

DOCSIS 3.1 OFDM Primary Channel

This feature allows the user to configure RF-channels 158 to 162 under the mac-domain as primary channel.

For more information, see the Cisco cBR Converged Broadband Routers Layer 2 and DOCSIS 3.1 Configuration Guide.

Integrated Software Features in Cisco IOS XE Everest 16.5.1

AES Encryption with EAE Support

This feature allows DOCSIS3.0 cable modem working on non-MTC mode to use AES-128 as BPI encryption Algorithms. It also allows DOCSIS3.0 cable modem to use AES-128 as encryption algorithms when EAE is enabled.

For more information, see the Cisco cBR Series Converged Broadband Routers Security and Cable Monitoring Configuration Guide.

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

MIBs in Cisco IOS XE Everest 16.5.1

Following are the new MIBs in Cisco IOS XE Everest 16.5.1:

- docsRphyRpdDevInfoTable
- docsRphyRpdDevIdentificationTable
- docsRphyRpdDevCapabilitiesTable
- docsRphyCcapL2tpSessionInfoTable
- docsRphyRpdDevDsUsRfPortAllocTable

- docsRphyRpdIpAddressTable

Best Practice Manual of Procedure for Cisco IOS XE Everest 16.5.1 Upgrade

See the Upgrading the Cisco cBR Series Converged Broadband Routers for Cisco IOS XE Everest 16.5.1 guide.

Cisco cBR Series Converged Broadband Routers Documentation References

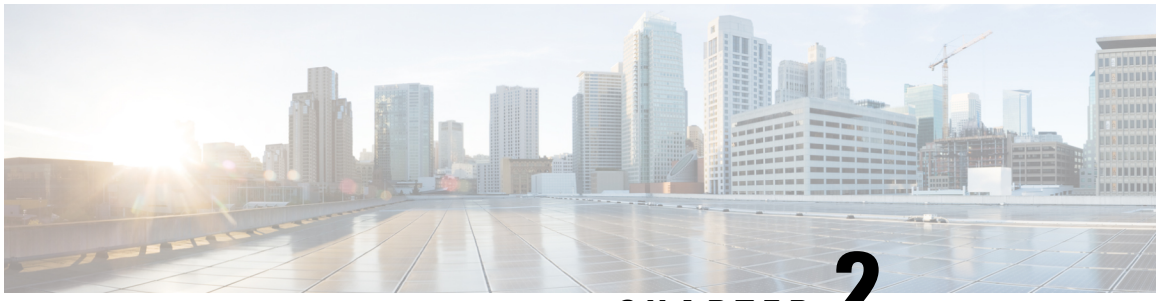
Go to the following link to access the technical documents:

http://www.cisco.com/c/en/us/support/video/cbr-series-converged-broadband-routers/tsd-products-support-series-home.html

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 2

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.

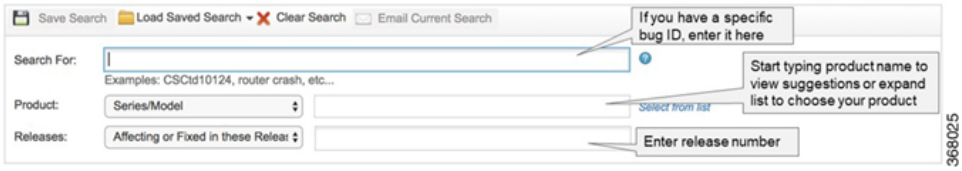
Note The *Caveats* section includes the bug ID and a short description of the bug. For details on the symptoms, conditions, and workaround for a specific caveat you must use the Bug Search Tool.

- Cisco Bug Search, on page 7
- Open Caveats Cisco IOS XE Everest 16.5.1, on page 8
- Resolved Caveats Cisco IOS XE Everest 16.5.1 – Patch 1, on page 9
- Resolved Caveats Cisco IOS XE Everest 16.5.1, on page 9

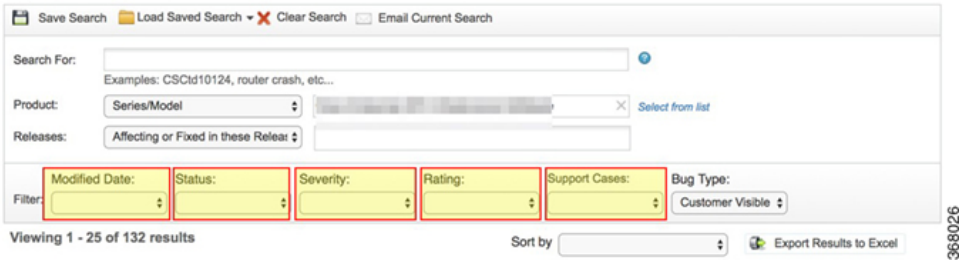
Cisco Bug Search

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

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Open Caveats Cisco IOS XE Everest 16.5.1

Caveat ID Number	Description
CSCvb97854	CBR-4-BADTXOFFSET: Bad timing offset 20548 detected for cable modem
CSCvb68603	DS-JIB Non-Critical [PHY0_XFI01:High-Pri:xfi1 lost block lock tdiff
CSCvc82872	OFDM Channel unable to send low-prio traffic after ofdm config change
CSCvc78820	RPHY: Modem offline after LCPR with config slot0&ds controller 0&ds chan 0
CSCvc95607	Cable modems fall offline with FMFP-3-OBJ_DWNLD_TO_CPP_FAILED: CLC4: fman_fp_image: qos hqf:
CSCvd23187	DBS on OFDM is not working as expected
CSCva13481	fman object download failure , lots of tracebacks and error messages
CSCvc21981	One way Audio, problem on the Upstream path on the CBR8.
CSCvd28724	03.18.00a.S - Wideband interfaces not added in RCC list
CSCvd30132	cBR8-Traffic counters are not increasing in wideband interfaces
CSCvd11246	RPHY: Display issue regarding to primary channel number above 99
CSCvc54131	cmcc CPUHOG @cbr_esi4_link_counters_update detect after SUP boot up
CSCvb47406	iosd-clc crash at __pthread_mutex_lock_full during LCPR
CSCvd07563	RPHY SUPHA:stby SUP reload due to configuration mismatch when configure cable rpd
CSCvd21132	RPHY: duplicated session found error, lcha-core stuck in l2tp after LCHA or OIR DPIC

Caveat ID Number	Description
CSCvd09878	RPHY: rpd-ds port shutdown should be reject when RPD on standby LC
CSCvc68214	RPHY: No packets/video outputs on 2nd RPD after adding a 'dup-controller' to it [DS Sharing case]
CSCvd56178	Additional rf-chans removed from config when deleting an intermediate rf-channel from a range
CSCvd36352	DVB: some of the DVB "Fail to Black" session output status are showing as "ON"
CSCvd60427	need to restrict the configuration first and second IP of VPG subnet as LED mgmt-ip
CSCvd43325	unable to remove route-ecmg on specific configuration
CSCvd12595	IP header checksum calculated incorrectly at boundary condition

Resolved Caveats Cisco IOS XE Everest 16.5.1 – Patch 1

Caveat ID Number	Description
CSCve26644	US data SNR degrades over time.

Resolved Caveats Cisco IOS XE Everest 16.5.1

Caveat ID Number	Description
CSCvc81242	10K and cBR8 behave differently for IPDR Code
CSCvb85260	CM reset does not clear tag after config is modified
CSCvb32949	Bandwidth Requests/grant counters are incorrect when MD upstream != controller upstream
CSCvb25615	Basestar Partial Reset after LCPR
CSCvc12937	cbr-8 Upstream Spectrum reporting is not accurate and displays artifacts from aliasing
CSCvc27210	cBR-8:CLC crash on CMTS MAC Parser process
CSCvd02953	CBR8 shows increased latency for traffic on UGS
CSCvc16907	CCF Lockup workaround did not execute
CSCva02675	D3.1 modem p-online on hybrid WB interface and ping fail
CSCvb79058	D3.1 modems show N/A for current data profile resulting in low speeds

Caveat ID Number	Description
CSCvb66487	D31 CM goes to p-online due to OFDM down after LCSO with BW change above 96MHz
CSCva77731	D31: OFDM down with width as 148Mhz with user picked PLC
CSCva48237	D31: OFDM wideband status down if OFDM channel width x(ex: 103-Mhz)
CSCvc06802	DSJIB BG has wrong JIB channels after multiple controller shut/no shut with video config changes
CSCvb39445	Gemini1 DSJIB-3-CRIT_REC_INT;replication chan is invalid after upgrade
CSCvb07277	JIB4US Partial Reset and recovery modems not pingable
CSCva97648	Modems transmitting 2dB higher on Leoben3
CSCvb78656	OFDM channel not function after sub package installs and LC SO
CSCvc09005	OFDM down with subcarrier spacing 25Khz and roll-off as 256
CSCvb98095	Shut/no shut Controller followed by shut/no shut ofdm causes OFDM to be down in scm wideband rcs
CSCvc66320	Threshold configuration under upstream controller is partially duplicated.
CSCva38424	CBR-8 SUP Modems offline due to %FMFP-3-OBJ_DWNLD_TO_CPP_FAILED: qos hqf:
CSCvb56725	cBR8 high latency issues
CSCvb50464	IPv6 echo request packets go into l3 inject and get skipped for address resolution
CSCvb67308	Traceback@cpp_vbuginf_flags_error after show pl ha qf ac infra punt st
CSCvc31986	after repeatedly shut/shut OFDM channel without proper delay, scm prof-mgmt crashes the CLC
CSCvc98395	cBR-8: cable cm-status not working after reload
CSCvc32010	cbr8 does not do ofdm profile recommendation for channel widths less than 79 MHz
CSCvc08946	CBR8: CABLE_IPCCL_LIB-5-SVC_LOW_WATERMARK:
CSCvc35190	cbr8: some DS channels are marked as impaired during DS path selection
CSCvb54886	cdxCmtsMtcCmTotal uses incorrect TCS id/ cdxCmtsUscbSfPri not accounting single channel CMs
CSCuv30942	CM offline after A/C power up, if use cross-controller DBG enter 1x1
CSCvb65547	CM still join the multicast group after enter in BM mode
CSCvc55488	DOCS-IF31-MIB docsIf31CmtsCmRegStatusDsProfileIdList not reporting all 3.1 Profiles

Caveat ID Number	Description
CSCvb32272	DOCS-LOADBAL3-MIB showing wrong value for D2.0 modems
CSCuz62815	line vty are added automatically
CSCvb92235	Mismatched WB RCC detection and recovering after LCHA/LCPR
CSCvc65483	OFDM profiles in DBC-REQ are the same profiles that were sent in REG-RSP-MP
CSCut58615	Ranging Status showing STA when the modem is offline
CSCvb59310	Seeing levels 10 db hot after adding patch:
CSCvb03115	ubr_ucm_get_registered_card() Err and traceback
CSCvb19276	US Bonded Modem does not recover from partial mode after LCSO and revert
CSCvb84601	BPI encryption missing after LCHA
CSCvc06297	Patch upgrade with LCHA method didn't support rollback
CSCvc62294	Secondary LC can't bootup after reset under 7+1 with over 60K CM
CSCvb40290	CBR8 - ucode crash with cable_output_qos_prepare
CSCva58284	CBR8 input queue stuck on tengig, Triggered by IPv6 nd queue packet
CSCvc85324	CBR8 not passing COS for L2VPN dot1q
CSCva58124	D31: exempt subcarrier config does not affect the profile order
CSCva84605	EROUTER appears as MTA
CSCvc35255	Losing startup-config after writing the nvram:/docsBpi2_mib via SNMP set
CSCvb17352	sup crash when doing IPv4 DHCP transaction for CPE
CSCvc32015	SUP Crashed due to IPv6 list freed during v6list removing
CSCvb69550	[cBR] DHCP renew failed if "giaddr-as-server-id" flag enabled on server
CSCvb37852	3.18.0SP ipdr sflog sup ha support
CSCva77912	3.18.0SP snmp-server enable traps hccp-failover rfswitch-polling
CSCvb45600	Bad RF PIC result in SNMP-3-INPUT_QFULL_ERR on LC after revert back
CSCvb31704	Caprica top interrupt disabled after multiple cdman restart
CSCvb73491	cBR-8 May See "SUP_dSUM" Alerts w/ Value of 190-199. Threshold Needs to be Adjusted to >200.
CSCvc88451	CBR-LC-8D31-16U31 linecard crashed due to corrupted pointer to Packet buffer,memory corruption
CSCvb14655	cBR8 CLC Crashinfo Thread ID: CDM_PKTIO_08 Exception:Segmentation Fault

Caveat ID Number	Description
CSCux07657	cBR8 never advances past first boot statement on failure
CSCvd02176	CmtsMdIfIndex field not match with CmtsMdIfName after LCSO
CSCuz89734	cylons line card i2c communication lost after bootup
CSCvb81157	ISSU upgrade error after patch upgrade w/o SUP reload
CSCvb81398	LC crash(ubr_map_builder) during switch LC under 7+1 LCHA
CSCvb82866	Patch with ISSU LCHA way will fail with DOCSIS_CFG_DNLD
CSCvb17509	queue stuck, CM not pingable or can't online after LCHA
CSCvc10140	show platform diag not display Power-Supply version
CSCvc96923	some CEF mibs are not supported on polaris and its branch
CSCvc69040	SUP crash in cmts_snmp_get_dti_idb when SUP HA with cable downstream resiliency
CSCvb77445	The cdman crash is happened immediately after patch upgrade trigger cdman restart.
CSCva58189	2nd Sup flooded w/ASSERT:"Unable to allocate memory" w/extended src loss
CSCva18487	Database mismatch Btwn LC & SUP on creating cloned sessions on 2nd LED
CSCvc99485	Decoupling of D6 from LED
CSCvc81434	CBR-8 PCR drift causing loss of audio on some subscriber channels
CSCvc30168	CDMAN-0-LOW_FPA_FATAL LC reset - free buffers low, video top user
CSCuz23330	Delay in getting PAT in the Output
CSCvc84996	KBRO reported Vidman crash once MPEG video traffic is detected
CSCvb95374	mpegInputProgNo table returns no value
CSCva87804	PSIT:cdman DS-JIB Non-Critical"Double encryption error on pipe" on boot
CSCuy11118	dsgIfDownVendorParamId configuration not synced to protect LC