



Cisco Unified Border Element Feature Roadmap, Cisco IOS XE Releases

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CHAPTER 1

Read Me First

Important Information



Note For CUBE feature support information in Cisco IOS XE Bengaluru 17.6.1a and later releases, see [Cisco Unified Border Element IOS-XE Configuration Guide](#).



Note The documentation set for this product strives to use bias-free language. For purposes of this documentation set, bias-free is defined as language that does not imply discrimination based on age, disability, gender, racial identity, ethnic identity, sexual orientation, socioeconomic status, and intersectionality. Exceptions may be present in the documentation due to language that is hardcoded in the user interfaces of the product software, language used based on RFP documentation, or language that is used by a referenced third-party product.

Feature Information

Use [Cisco Feature Navigator](#) to find information about feature support, platform support, and Cisco software image support. An account on Cisco.com is not required.

Related References

- [Cisco IOS Command References, All Releases](#)

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- [Short Description, on page 2](#)

Short Description

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CHAPTER 2

Cisco Unified Border Element - Feature Roadmap

This roadmap lists the features introduced in Cisco Unified Border Element and maps them to the chapters in which they appear.



- Note**
- For the list of features introduced before Cisco IOS XE Denali 16.3.1, refer [Cisco Unified Border Element \(Enterprise\) Feature Roadmap, Cisco IOS XE Release 3S](#).
 - For CUBE feature support information for Cisco IOS XE Bengaluru 17.6.1a and later releases, see [Cisco Unified Border Element IOS-XE Configuration Guide](#).



Note Do not use Cisco Unified Border Element (CUBE) on Cisco IOS XE Gibraltar Release 16.11.1a version for Media Forking and call flows that include Multicast Music On Hold (MMOH).

Table 1: Cisco Unified Border Element Configuration Guide Feature Support

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
Secure SIP with TLS version 1.3 Support	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_sip_tls_support_cube.html https://www.cisco.com/c/en/us/td/docs/routers/sdwan/command/iosxe/qualified-cli-command-reference-guide/m-cube-commands.html https://www.cisco.com/c/en/us/td/docs/routers/sdwan/command/iosxe/qualified-cli-command-reference-guide/m-srst-map.html https://developer.cisco.com/docs/ios-xe-voip/	Cisco IOS XE 17.14.1a	14.9
NAT Traversal using RTP Keepalive	https://www.cisco.com/content/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m-nat-traversal-using-rtp-keepalives.html	Cisco IOS XE 17.13.1a Cisco IOS XE Dublin 17.12.2	14.8

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
IPv6 Flows in High Availability	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m-cube-ha-isr-g3.html https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m-cube-ha-csr.html https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m-cube-ha-asr.html	Cisco IOS XE Dublin 17.12.1a	14.7
GCM Ciphers for WebSocket-Based Media Forking	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/websocket-forking-for-cube.html	Cisco IOS XE Dublin 17.12.1a	14.7
Cover Buffer Enhancements for VoIP Trace	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_voip-trace-for-cube.html	Cisco IOS XE Dublin 17.12.1a	14.7
YANG Model enhancements for CUBE	https://developer.cisco.com/docs/ios-xe-voip/ https://www.cisco.com/c/en/us/td/docs/routers/sdwan/command/sdwan-cr-book.html	Cisco IOS XE Dublin 17.10.1a	14.6
CCE Survivability sRTP flows for Media Inject and CCB	https://www.cisco.com/content/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_courtesy-callback-support-for-srtp.html	Cisco IOS XE Cupertino 17.9.1a	14.6
Options Ping for DNS SRV Hosts	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_oodo-ping-group.html	Cisco IOS XE Cupertino 17.9.1a	14.6
Load Balancing for DNS SRV Hosts	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_oodo-ping-group.html	Cisco IOS XE Cupertino 17.9.1a	14.6
SFTP CDR transfer (CSCvx25938)	https://www.cisco.com/c/en/us/td/docs/ios/voice/cdr/developer/manual/cdrdev/cdover.html https://www.cisco.com/c/en/us/td/docs/ios/voice/cdr/developer/manual/cdrdev/cdrsv.html gw-accounting	Cisco IOS XE Cupertino 17.9.1a	14.6
Configurable SIP listen port per trunk (tenant)	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_sip_tls_support_cube.html	Cisco IOS XE Cupertino 17.8.1a	14.5
Configurable TLS policy per trunk (tenant)	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_sip_tls_support_cube.html	Cisco IOS XE Cupertino 17.8.1a	14.5
mTLS Client CN-SAN validation	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_sip_tls_support_cube.html	Cisco IOS XE Cupertino 17.8.1a	14.5

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
YANG Configuration Models for CUBE	https://developer.cisco.com/docs/ios-xe-voip/ https://www.cisco.com/c/en/us/td/docs/routers/sdwan/command/sdwan-cr-book.html	Cisco IOS XE Cupertino 17.7.1a	14.4
Secure WebSocket-based Media Forking on Cisco 4431, 4451-X, and 4461 Integrated Services Routers	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/websocket-forking-for-cube.html	Cisco IOS XE Bengaluru 17.6.2 Cisco IOS XE Cupertino 17.7.1a	14.4
Virtual CUBE in Microsoft Azure	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/supported-platforms.html	Cisco IOS XE Bengaluru 17.6.3a	14.4
Opus Transcoding	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_cube-codec-adv.html https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/m_transcoding.html	Cisco IOS XE Bengaluru 17.6.1a	14.4
Web Socket-based Media Forking	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/ios-xe/config/ios-xe-book/websocket-forking-for-cube.html	Cisco IOS XE Bengaluru 17.6.1a	14.4
Support for Catalyst Edge 8200L-1N-4T Platform	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Bengaluru 17.5.1a	14.3
Secure Forking of Nonsecure Calls through Media Proxy	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-media-proxy.html	Cisco IOS XE Bengaluru 17.5.1a	14.3
Clear RTP Ports	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voip-trace-for-cube.html	Cisco IOS XE Bengaluru 17.4.1a	14.2
Hunt Stop for Server Groups	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/multiple-server-groups.html	Cisco IOS XE Bengaluru 17.4.1a	14.2
Cisco Catalyst 8000V Edge Software (Catalyst 8000V) Platforms	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Bengaluru 17.4.1a	14.2
Support for Cisco 8200 Catalyst Edge Series Platforms	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Bengaluru 17.4.1a	14.2
Virtual CUBE in AWS	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-virtual-cube.html	Cisco IOS XE Bengaluru 17.4.1a Cisco IOS XE Gibraltar 16.12.4a	14.2 12.7

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
Support for VoIP Trace Serviceability Framework	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voip-trace-for-cube.html	Cisco IOS XE Bengaluru 17.4.1a, Cisco IOS XE Amsterdam 17.3.2	14.2 14.1
Smart Licensing Using Policy	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-cisco-smart-licensing.html	Cisco IOS XE Bengaluru 17.4.1a, Cisco IOS XE Amsterdam 17.3.2	14.2 14.1
Support for Cisco 8300 Catalyst Edge Series Platforms	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Amsterdam 17.3.2	14.1
Support for Cisco ASR1006-X Routers (RP3, ESP100X)	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Amsterdam 17.3.2	14.1
Media Proxy Multiforking using SIPREC	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-media-proxy.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
TLS Server Name Indication (SNI) - RFC6066	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-sip-tls.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
OPUS Codec Negotiation	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/cube-codec-adv.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
Dial Peer Binding with Live Traffic	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-sip-bind.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
Up to 100 VRF Instances	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
Support for Cisco ASR1006-X Routers (RP3, ESP100)	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
Consumption of INVITE with Replaces	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-midcall-reinvite.html	Cisco IOS XE Amsterdam 17.3.1a	14.0
Support for Cisco Unified Border Element on Cisco ISR 4461	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Amsterdam 17.2.1r	12.8.0
Support for YANG Models for SIP-FXS and FXO trunk	https://developer.cisco.com/docs/	Cisco IOS XE Amsterdam 17.2.1r	12.8.0

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
Support for Smart Licensing based on dynamic call counting	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-cisco-smart-licensing.html	Cisco IOS XE Amsterdam 17.2.1r	12.8.0
Support for fax detection for SIP calls and transfer with Cisco IOS XE platforms	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/cube-book_chapter_01010000.html	Cisco IOS XE Amsterdam 17.2.1r	12.8.0
Support for media flow-around using Multi-VRF	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html	Cisco IOS XE Gibraltar 16.12.2	12.7.0
show voip rtp connections command output was updated to show SRTP Rollover Count (ROC) information based on Remote IP address and Port	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/vcr4/vcr4-cr-book/vcr-s10.html	Cisco IOS XE Gibraltar 16.12.2	12.7.0
Support for Cisco 1000 Series Integrated Services Routers (ISR)	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/supported-platforms.html	Cisco IOS XE Gibraltar 16.12.1a	12.7.0
Cisco Specific License Reservation (SLR):	<p>CSCvw00301—For Cisco 4000 Series Integrated Services Routers in Specific License Reservation (SLR) mode, license status is displayed as AUTHORIZED though more license than reserved is consumed.</p> <p>CSCvq04430—For Cisco 4000 Series Integrated Services Routers in Specific License Reservation (SLR) mode, license status switches from AUTHORIZED to NOT IN USE and displays license count as zero, after router reload.</p>	Cisco IOS XE Gibraltar 16.12.1a	12.7.0

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
The output of following command were enhanced to display SRTP ROC information: <ul style="list-style-type: none"> • show voip fpi calls • show voip fpi stats • show voip rtp connections 	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/vcr4/vcr4-cr-book/vcr-s10.html	Cisco IOS XE Gibraltar 16.12.1a	12.7.0
Cisco Smart Licensing enhancements for CUBE	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-cisco-smart-licensing.html	Cisco IOS XE Gibraltar Release 16.11.1a	12.6.0
Server identity validation through Common Name and Subject Alternate Name (SAN)	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-sip-tls.html	Cisco IOS XE Gibraltar Release 16.11.1a	12.6.0
Security Readiness Criteria (SRC) Closure for CUBE	<ul style="list-style-type: none"> • https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/srtp-srtp-interworking.html#concept_ggm_zzb_nx • https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-ntwk-based.html • https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-overview.html#concept_8C91BF30C12F4EBAB33CF1FD6A401BA4 • https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/vcr1/vcr1-cr-book/vcr-a1.html • https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/vcr1/vcr1-cr-book/vcr-c6.html#wp3153621104 • https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/vcr4/vcr4-cr-book/vcr-s12.html#wp2717768569 	Cisco IOS XE Gibraltar Release 16.11.1a	12.6.0
CUBE Media Proxy	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-media-proxy.html	Cisco IOS XE Gibraltar 16.10.1a	12.5.0
Elliptical Curve Ciphers	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-sip-tls.html	Cisco IOS XE Gibraltar 16.10.1a	12.5.0

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
Common Criteria (CC) and The Federal Information Standards (FIPS) Certification.	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-cc-fips-compliance.html	Cisco IOS XE Fuji 16.9.1	12.1
For CUBE Licensing-related information, see Cisco Unified Border Element Data Sheet.	https://www.cisco.com/c/en/us/products/collateral/unified-communications/unified-border-element/data-sheet-c78-729692.html?cachemode=refresh	Cisco IOS XE Fuji 16.9.1	12.1
Change in the default SIP TLS Versions support on CUBE	https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-sip-tls.html	Cisco IOS XE Fuji 16.9.1	12.1
Support for DTMF interworking between sip-info and rtp-nte for sip-sip calls on DTMF Relay	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/dtmf-relay.html	Cisco IOS XE Everest 16.6.1	12.0
CUBE support for SRTP-SRTP and SRTP-RTP Interworking with NGE cipher suites (AES_AEAD_128_GCM and AES_AEAD_256_GCM)	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/srtp-srtp-interworking.html	Cisco IOS XE Everest 16.5.1b	11.6
Enhancement to support up to 54 VRF instances.	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html	Cisco IOS XE Denali 16.3.1	11.5.2
Support for Inbound Dial-peer Matching using VRF-ID	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html	Cisco IOS XE Denali 16.3.1	11.5.2
Consumption of Forked 18x Responses with SDP for CUBE	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-forked-18x-responses.html	Cisco IOS XE Denali 16.3.1	11.5.2
Support for Voice Quality Monitoring	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-voice-quality-monitoring.html	Cisco IOS XE Denali 16.3.1	11.5.2
Configuring Multi-Tenants on SIP Trunks	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-tenants.html	Cisco IOS XE Denali 16.3.1	11.5.2

Feature Name	Where Documented	Cisco IOS XE Release	CUBE Version
Support for Multi-VRF	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-multi-vrf.html	Cisco IOS XE Denali 16.3.1	11.5.2
CVP Survivability TCL support with High Availability	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-cvptcl-ha.html	Cisco IOS XE Denali 16.3.1	11.5.2
Support for video suppression	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-audio-forced.html	Cisco IOS XE Denali 16.3.1	11.5.2
Support for Session ID	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/voi-cube-session-id.html	Cisco IOS XE Denali 16.3.1	11.5.2
All Cisco Unified Border Element features supported up to and including Cisco IOS XE Release 3.17S are supported on Cisco IOS XE Denali 16.3 Release.	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/voice/cube/configuration/cube-book/read-me-first.html	Cisco IOS XE Denali 16.3.1	11.5.2