AAC-LD MP4A-LATM Codec Support on Cisco UBE

The AAC-LD MP4A-LATM codec is a wideband audio codec used by video endpoints. MP4A-LATM is an MPEG4 audio coding standard, where LATM is Low-Overhead MPEG-4 Audio Transport Multiplex. The Cisco Unified Border Element (Cisco UBE) supports MP4A-LATM to enable call flows involving endpoints that use this codec, especially for media recording.

For basic information on Codecs and how to configure them, refer to Codecs in the Cisco Unified Border Element Fundamentals and Basic Setup.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Restrictions for AAC-LD MP4A-LATM Codec Support on Cisco UBE

Cisco UBE does not support the following:

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- Codec transcoding between MP4A-LATM and other codecs
- Dual-tone Multifrequency (DTMF) interworking with MP4A-LATM codec
- Non-SIP-SIP, that is, SIP to other service provider interface (SPI) interworking with MP4A-LATM codec

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As part of this feature, Cisco UBE supports the following:

- Accept and send MP4A-LATM codec and corresponding FMTP profiles
- Configure MP4A-LATM under dial-peer or under voice-class codec as preferred codec
- Pass across real-time transport protocol (RTP) media for MP4A-LATM codec without any interworking
- Offer pre-configured FMTP profile for MP4A-LATM for DO-EO (Delayed-Offer to Early-Offer) calls
- Offer more than one FMTP profile (each with different payload type number) as mentioned by the offering endpoint, so that the answering endpoint can choose the best option.
- Offer only one instance of MP4A-LATM if media forking is applicable. The offered instance is the first one received in the offer.
- Calculate bandwidth for MP4A-LATM on the basis of either “b=TIAS” attribute or “bitrate” parameter in the FMTP attribute. If none of them are present in the session description protocol (SDP), the default maximum bandwidth, that is, 128 Kbps will be used for calculation.
- The following Cisco UBE features are supported with the MP4A-LATM codec:
    - Basic call (audio and video) flow-around and flow-through (FA and FT).
    - Voice Class Codec support in Cisco UBE with codec filtering
    - SRTP and SRCTP passthrough for SIP-to-SIP calls
    - Supplementary services
    - RSVP
    - Dynamic payload type interworking for DTMF and codec packets for SIP-to-SIP calls
    - Media Anti-Trombone with SIP signaling control on CUBE
    - Support for SIP UPDATE message per RFC 3311
    - RTP Media Loopback
    - Media forking for IP based calls using Zephyr recording server
    - Cisco UBE Mid-call Re-INVITE consumption
    - Signaling forking (Fastweb multile SIP Early Dialog Support, FA and FT)
    - Maximum bandwidth-based CAC
    - Media Policing
    - Box-to-Box High Availability (B2B HA)

◦ Inbox High Availability (Inbox HA)

How to Configure the MP4A-LATM Codec

Configuring the MP4A-LATM Codec on a Dial Peer

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **dial-peer voice** *tag* **voip**
4. **destination-pattern** [+] *string* [**T**]
5. **session protocol sipv2**
6. **session target ipv4:***destination-address*
7. **codec mp4a-latm** [**profile** *tag*]
8. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enters privileged EXEC mode or any other security level set by a system administrator. Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**dial-peer voice** *tag* **voip** **Example:** `Device(config)# dial-peer voice 24 voip`	Specifies the method of voice encapsulation and enters dial peer voice configuration mode for the specified dial peer.
Step 4	**destination-pattern** [+] *string* [**T**] **Example:** `Device(config-dial-peer)# destination-pattern 595959`	Specifies either the prefix or the full E.164 telephone number (depending on your dial plan) to be used for a dial peer. Keywords and arguments are as follows: • + --(Optional) Character that indicates an E.164 standard number.

	Command or Action	Purpose
		• *string* --Series of digits that specify the E.164 or private dialing plan telephone number. Valid entries are the digits 0 through 9, the letters A through D, and any special character. • **T** --(Optional) Control character indicating that the **destination-pattern** value is a variable-length dial string.
Step 5	**session protocol sipv2** **Example:** `Device(config-dial-peer)# session protocol sipv2`	Configures the VoIP dial peer to use Session Initiation Protocol (SIP).
Step 6	**session target ipv4:***destination-address* **Example:** `Device(config-dial-peer)# session target ipv4:10.42.29.7`	Specifies a network-specific address for a dial peer. Keyword and argument are as follows: • **ipv4:** *destination address* --IP address of the dial peer, in this format: *xxx.xxx.xxx.xxx*
Step 7	**codec mp4a-latm** [**profile** *tag*] **Example:** `Device(config-dial-peer)# codec mp4a-latm profile 5`	Configures the MP4A-LATM codec for the dial peer.
Step 8	**end** **Example:** `Device(config-dial-peer)# end`	Exits dial peer voice configuration mode.

Configuring the MP4A-LATM Codec under Voice Class Codec

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice class codec** *tag*
4. **codec preference** *value codec-type* [**profile** *tag*]
5. **exit**
6. **dial-peer voice** *tag* **voip**
7. **destination-pattern** [+] *string* [**T**]
8. **session protocol sipv2**
9. **session target ipv4:***destination-address*
10. **voice-class codec** *tag*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enters privileged EXEC mode or any other security level set by a system administrator. Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**voice class codec** *tag* **Example:** `Device(config)# voice class codec 1`	Enters voice-class configuration mode and assigns an identification tag number for a codec voice class.
Step 4	**codec preference** *value codec-type* [**profile** *tag*] **Example:** `Device(config-class)# codec preference 1 mp4a-latm profile 5`	Specifies the preferred codec (or codecs) to use on a dial peer.
Step 5	**exit** **Example:** `Device(config-class)# exit`	Exits voice-class configuration mode.

	Command or Action	Purpose
Step 6	**dial-peer voice** *tag* **voip** **Example:** `Device(config)# dial-peer voice 24 voip`	Specifies the method of voice encapsulation and enters dial peer voice configuration mode for the specified dial peer.
Step 7	**destination-pattern** [+] *string* [**T**] **Example:** `Device(config-dial-peer)# destination-pattern 595959`	Specifies either the prefix or the full E.164 telephone number (depending on your dial plan) to be used for a dial peer. Keywords and arguments are as follows: • + --(Optional) Character that indicates an E.164 standard number. • *string* --Series of digits that specify the E.164 or private dialing plan telephone number. Valid entries are the digits 0 through 9, the letters A through D, and any special character. • **T** --(Optional) Control character indicating that the **destination-pattern** value is a variable-length dial string.
Step 8	**session protocol sipv2** **Example:** `Device(config-dial-peer)# session protocol sipv2`	Configures the VoIP dial peer to use Session Initiation Protocol (SIP).
Step 9	**session target ipv4:***destination-address* **Example:** `Device(config-dial-peer)# session target ipv4:10.42.29.7`	Specifies a network-specific address for a dial peer. Keyword and argument are as follows: • **ipv4:** *destination address* --IP address of the dial peer, in this format: *xxx.xxx.xxx.xxx*
Step 10	**voice-class codec** *tag* **Example:** `Device(config-dial-peer)# voice-class codec 1`	Enters voice-class configuration mode and assigns an identification tag number for a codec voice class.

Verifying an Audio Call

SUMMARY STEPS

1. **show call active voice [compact]**

DETAILED STEPS

show call active voice [compact]
Displays a compact version of call information for voice calls in progress.

Example:

```
Device# show call active voice compact

 <callID>  A/O FAX T<sec> Codec       type        Peer Address       IP R<ip>:<udp>
Total call-legs: 2
        23 ANS     T3     mp4a-latm   VOIP        Psipp          9.45.33.11:57210
        24 ORG     T3     mp4a-latm   VOIP        P123           9.45.33.11:57210
```

Example:

```
Device# show call active voice compact

<callID>   A/O FAX T<sec> Codec    type    Peer Address    IP R<ip>:<udp>
Total call-legs: 2
58 ANS     T11          g711ulaw   VOIP     Psipp 2001:......:230A:6080
59 ORG     T11          g711ulaw   VOIP     P5000110011       10.13.37.150:6090
```

Configuration Examples for AAC-LD MP4A-LATM Codec Support on Cisco UBE

Example: Configuring the MP4A-LATM Codec under a Dial Peer

```
Device> enable
Device# configure terminal
Device(config)# dial-peer voice 24 voip
Device(config-dial-peer)# destination-pattern 595959
Device(config-dial-peer)# session protocol sipv2
Device(config-dial-peer)# session target ipv4:10.42.29.7
Device(config-dial-peer)# codec mp4a-latm profile 5
Device(config-dial-peer)# end
```

Example: Configuring the MP4A-LATM Codec under Voice Class Codec

```
Device> enable
Device# configure terminal
Device(config)# voice class codec 1
Device(config-class)# codec preference 1 mp4a-latm profile 5
Device(config-class)# exit
Device(config)# dial-peer voice 24 voip
Device(config-dial-peer)# destination-pattern 595959
Device(config-dial-peer)# session protocol sipv2
Device(config-dial-peer)# session target ipv4:10.42.29.7
Device(config-dial-peer)# voice-class codec 1
```

Feature Information for AAC-LD MP4A-LATM Codec Support on Cisco UBE

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to . An account on Cisco.com is not required.

Table 1: Feature Information for AAC-LD MP4A-LATM Codec Support on Cisco UBE

Feature Name	Releases	Feature Information
AAC-LD MP4A-LATM Codec Support on Cisco UBE	15.4(1)T	The AAC-LD MP4A-LATM codec is a wideband audio codec used by video endpoints. MP4A-LATM is an MPEG4 audio coding standard, where LATM is Low-Overhead MPEG-4 Audio Transport Multiplex. The Cisco Unified Border Element (Cisco UBE) supports MP4A-LATM to enable call flows involving endpoints that use this codec, especially for media recording. The following commands were introduced or modified: **codec mp4a-latm**, **codec preference** *tag* **mp4a-latm**