

Amazon Chime SDK Voice Connector

Engineer's Pre-Installation Checklist

October 2022



Notices

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About Amazon Chime SDK Voice Connector

Amazon Chime SDK Voice Connector is a pay-as-you-go SIP Trunking service with two key features that may be used together or individually.

Firstly, it enables companies to make or receive secure phone calls over the Internet, or via Amazon Direct Connect, from their existing telephone system or session border controller (SBC). The service has no upfront fees, elastically scales based on demand, supports calling both landline and mobile phone numbers in over 100 countries, and gives customers the option to enable inbound calling, outbound calling, or both. Secondly, the SIP Trunking service can act as an audio gateway from a corporation's SIP platform, or SIPREC compatible system, into AWS. This enables real-time and post-call analysis to be performed on audio sent through the Amazon Chime SDK Voice Connector. The audio can be forwarded to AWS services such as Amazon Lex, Amazon Transcribe, Amazon Comprehend, and other machine learning services. The Amazon Chime SDK Voice Connector service is limited to specific AWS regions.

You can manage your Amazon Chime SDK Voice Connector from the Amazon Chime console.

Purpose of Document

The purpose of this document is to help technical staff to capture the prerequisite information required for a successful deployment of the Amazon Chime SDK Voice Connector service.

The document should be read in conjunction with the [Leveraging Amazon Chime Voice Connector for SIP Trunking](#) white paper and the most relevant [Configuration Guide](#).

Intended Audience

The document is intended for use by technical staff at organizations that are self-installing Amazon Chime SDK Voice Connector.

Supported Platforms

Amazon Chime SDK Voice Connector is regularly tested against many common private branch exchange (PBX), contact center (CC), and session border controller (SBC) platforms. For a current list please see the [Configuration Guides](#) section of the Amazon Chime SDK website.

Note that unlisted platforms have not specifically been tested and support cannot be guaranteed. It is strongly recommended that customers connecting untested platforms carry out user acceptance testing prior to full enablement of the service. A UAT test plan is available.

If in doubt, please [contact](#) the Amazon Chime SDK team to discuss your specific requirements.

Intended Use of the SIP Trunking Service

Select the primary purposes of the SIP trunking service (tick all that apply).

- Inbound only. See [Origination](#)
- Outbound only. See [Termination](#)
- Both Inbound and Outbound. See [Origination](#) and [Termination](#)
- Connection to/from Private Branch Exchange (PBX)
PBX model and version: _____
- Connection to/from Session Border Controller (SBC)
SBC model and version: _____
- Contact Center / IVR / ACD
Model and version: _____
- Intending to use media streaming to Amazon Kinesis. See [Streaming](#)
- Intending to use SIPREC to stream media from a third-party system to Amazon Kinesis. See [SIPREC](#) and [Streaming](#)
- Intending to send logs to Amazon CloudWatch
- Intending to create Voice Trunk Groups¹
- Requirement to access CDR records
- DID/DDI numbers to be provisioned from AWS pool
- DID/DDI numbers to be ported from existing provider

Notes

1. You can create an Amazon Chime SDK Voice Connector group and add Amazon Chime SDK Voice Connectors to it that are created in different AWS Regions. This allows incoming calls to fail over across Regions, which creates a fault-tolerant mechanism for fall-back in case of availability issues in a specific region.

Amazon Chime SDK Voice Connector Prerequisite Data

It is possible to create one or more SIP trunks. If more than one is required, replicate the following page for each SIP trunk

Intended name of Amazon Chime SDK Voice Connector: _____

Intended AWS region: _____

- Encryption¹ to be enabled
- Termination² to be enabled (complete [subsection](#) below if enabling)
- Origination³ to be enabled (complete [subsection](#) below if enabling)
- Emergency Calling support to be configured (complete [subsection](#) below if enabling)
- Streaming⁴ to be enabled (complete [subsection](#) below if enabling)

Notes

1. Encryption configures your Amazon Chime SDK Voice Connector to use TLS transport for SIP signaling and Secure RTP (SRTP) for media. Enabling encryption causes inbound calls to use TLS transport, and blocks unencrypted outbound calls.

2. Termination is the routing of calls from your SIP infrastructure and terminating in the PSTN network.

3. Origination is the routing of calls originating from the PSTN network and routing to your SIP infrastructure.

4. Amazon Kinesis Video Streams is an AWS service that stores, encrypts and indexes audio data in streams from Amazon Chime SDK Voice Connector for analytics and machine learning, playback and other purposes. This feature generally requires Customer development resource to access the data using the Amazon Kinesis Video Streams API. Note that this feature may incur additional AWS charges.

Termination (Optional)

Allowed hosts list (maximum of 10 entries). Lists IP addresses and IP address ranges permitted to make calls using your Amazon Chime SDK Voice Connector.

First IP or Network address: _____

Second IP or Network address: _____

Third IP or Network address: _____

Add entries as required up to a maximum of ten.

Calls Per Second – contact the Amazon Chime team if more than one call per second is required per trunk.

International outbound calling – contact the Amazon Chime team if international calling is required.

Outbound authentication credentials:² _____

Caller ID Override:³ _____

2. Up to ten credentials can be used to authenticate outbound calls. If left blank authentication will not be required.

3. Use the listed Caller ID for calls from this Amazon Chime SDK Voice Connector that have no caller ID. Outbound calls without a valid E.164 phone number as caller ID are blocked.

Origination (Optional)

Inbound routes are required to point SIP traffic to your host system(s). You can create up to 10 routes.

	IP address	Port	Protocol (UDP/TCP)	Priority ⁴	Weight ⁴
First host					
Second host					
Third host					

Add entries as required up to a maximum of ten.

4. Calls are routed to hosts in priority order, with 1 as the highest priority. If hosts are equal in priority, calls are distributed among them based on their relative weight.

Emergency Calling (Optional)

If you would like to contact emergency services in the U.S. with Amazon Chime, you have the option of obtaining an emergency call routing number from a third-party emergency services provider and providing it to Amazon Chime. When you place a call to emergency services (e.g., 911 calls), Amazon Chime will use your emergency call routing number to route your call to your emergency services provider, who will then route your call to emergency services.

Amazon Chime is not responsible for routing calls to emergency services. You must enable and configure both Origination and Termination to use this feature.

Emergency Call Routing Number: _____

Test Routing Number: _____

Note that Call Send Method is restricted to DNIS and the Country is restricted to USA only.

Streaming (Optional)

Streaming notifications target:

- None
- SNS¹
- SQS¹
- EventBridge²

Data Retention Period³:

- None, OR
- Hours (specify number of hours) _____ OR
- Days (specify number of days) _____ OR
- Years (specify number of years) _____

Notes

1. Amazon Simple Notification Service (SNS) and Amazon Message Queuing Service (SQS) are encrypted notification services automatically enabled during AWS account setup.

2. Amazon EventBridge is a serverless event bus that makes it easier to build event-driven applications at scale using events generated from your applications, integrated Software-as-a-Service (SaaS) applications, and AWS services, including Amazon Chime SDK Voice Connector. There may be an additional charge for using this service.

3. Amazon Kinesis Video Streams can store data for hours, days, or years. If you choose No data retention, data is not retained and can be used only for immediate consumption. Cost is based on bandwidth and total storage used. You can modify data retention at any time.

SIPREC Streaming (Optional)

The Streaming feature can be used to stream audio from a PBX or SBC to Amazon Kinesis for real-time analysis. The PBX or SBC must support SIPREC, or be a Cisco Unified Border Element (CUBE) with network-based recording enabled.

Amazon Chime SDK Voice Connector Outbound host name:^{1,2} _____

1. The outbound host name is automatically created when setting up the Amazon Chime SDK Voice Connector. It is required when configuring SIPREC on the source PBX or SBC. An example host name is *abcdef1ghij2klmno3pqr4.voiceconnector.chime.aws*.

2. For a CUBE network-based recording stream, the CUBE must send an additional header or URI parameter of *X-Voice-Connector-Record-Only* with the value *true* in the SIP INVITE.

PBX and SBC Configuration Guides

Configuration guides are available for a number of PBX, fax and SBC. They include configuration steps to setup systems to work with Amazon Chime SDK Voice Connectors.

The most current guides are available on the Amazon Chime SDK Voice Connector [website](#).

PBX and SBC Guides

The following guides were available at time of publication.

- 3CX only
- 3CX and AudioCodes Mediant 1000 B SBC
- Atos OpenScape Business
- Atos OpenScape Voice with Atos OpenScape SBC
- Avaya Aura Communication Manager and Session Manager with Avaya Session Border Controller for Enterprise (SBCe)
- Cisco BroadWorks and Cisco Unified Border Element (CUBE)
- Cisco Unified Communications Manager (CUCM) and Cisco Unified Border Element (CUBE)
- Cisco Unified Communications Manager (CUCM) and Oracle Acme Packet 4600 (Oracle AP4600) SBC
- Fonality and Ribbon SWe SBC
- FreePBX (Asterisk)
- FreeSWITCH
- Genesys Cloud and Ribbon SWe SBC
- Microsoft Skype for Business 2015 and AudioCodes Mediant Cloud Edition
- Microsoft Teams Direct Routing and AudioCodes Mediant Cloud Edition
- Microsoft Teams Direct Routing and Ribbon SBC SWe Lite
- Mitel MiVoice Business and Mitel Border Gateway
- NEC UNIVERGE 3C and AudioCodes Mediant 1000 B SBC
- Switchvox and Sangoma SBC

SIPREC and Network-based Recording Guides

- Cisco Unified Communications Manager (CUCM) and Cisco Unified Border Element (CUBE) network-based recording guide
- Cisco Unified Communications Manager (CUCM) and Cisco Unified Border Element (CUBE) SIPREC guide
- Avaya Aura Communication Manager and Session Manager with Sonus SBC 5210 SIPREC guide

FAX Guides

- OpenText RightFax and Cisco Unified Border Element (CUBE)
- XMedius Fax XM Fax) and Cisco Unified Border Element (CUBE)