



Agora Android SDK Reference

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Required Libraries

If you need these libraries from the libs folder in the SDK, copy them to project libs folder:

- armeabi-v7a
- agoravoice-sdk.jar

Required Permissions

In AndroidManifest.xml you need:

```
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.RECORD_AUDIO" />
<uses-permission
android:name="android.permission.MODIFY_AUDIO_SETTINGS" />
<uses-permission
android:name="android.permission.ACCESS_NETWORK_STATE" />
```

Class Reference

AgoraAudio

Package: io.agoravoice.voiceengine

All of these methods can be called on the UI thread.

Name	Description
Initialization	Constructor. Creates AgoraAudio instance.
Join Channel	Join a channel, meaning join a call.
Leave Channel	Leave a channel, meaning leave a call.
Start Echo Test	Launch an echo test.
Stop Echo Test	Stop the echo test.
Enable Network Test	Enable the network test.
Disable Network Test	Disable the network test.
Mute	Mute the client itself by calling mute(true) to mute the microphone and mute(false) to turn it back on.

Set Speaker	Switch between speaker and earpiece.
Get Voip Stats	Get call information such as duration, tx/rx bytes.
Set Parameters	Set parameter for the Agora Audio Engine.
Get Parameters	Retrieve current parameter setting.
Start Recording	Start recording conversation to file specified by the file path
Stop Recording	Stop recording conversation.
Get Call ID	Retrieve current call ID.
Rate the Call	Rate the call between 1 and 10.
Complain the Call	Complain about the call quality by call ID.
Make Call Quality Report Url	Let user to retrieve call quality report.

Initialization

```
public AgoraAudio(final Context context, IAudioEventHandler handler, boolean videoEnabled);
```

This initializes the AgoraAudio class.

Name	Description
context	Android activity context.
handler	IAudioEventHandler is an interface whose methods the programmer must implement. It has callback methods to provide status as to whether there was an error joining the call as well as call quality and other information.
videoEnabled	
Return Value	

Join Channel

```
public int joinChannel(String vendorKey, String channelName, String optionalInfo, int optionalUid);
```

users join a channel. Think of that as a chat room, except that it is a multi-party phone call. This method is asynchronous, so it can be called on the main UI thread.

Name	Description
vendorKey	Account credentials issued by Agora Voice to app developer, i.e., a user license.
channelName	Channel name. Any descriptive name like “game1” or “call2”.
optionalInfo	Whatever the additional information the programmer wants to add.
optionalUid	User id. If you do not set one the SDK supplies one.
Return Value	0 : successful method call. -1: method call failed.

Leave Channel

public int leaveChannel();

Leave channel, meaning hang up or exit call.

Name	Description
Return Value	0 : successful method call. -1: method call failed.

Start Echo Test

public int startEchoTest(String vendorKey);

This method lets user to launch an echo test, paired with StopEchoTest, notice that echo test should be stopped before starting a call.

Name	Description
vendorKey	Account credentials issued by Agora Voice to app developer, i.e., a user license.
Return Value	0 : successful method call. -1: method call failed.

Stop Echo Test

public int stopEchoTest();

This method stops an echo test.

Name	Description
Return Value	0 : successful method call. -1: method call failed.

Enable Network Test

public int enableNetworkTest(String vendorKey);

This method launches a network test to monitor the real time user network quality, it stops when the app switches to the backend. Network testing is turned off by default

Name	Description
vendorKey	Account credentials issued by Agora Voice to app developer, i.e., a user license.
Return Value	0 : successful method call. -1: method call failed.

Disable Network Test

public int disableNetworkTest();

This method disables the network test.

Name	Description
Return Value	0 : successful method call. -1: method call failed.

Mute

public int mute(boolean on);

Turns off microphone.

Name	Description
on	True to mute the call. False to unmute.
Return Value	0 : successful method call. -1: method call failed.

Set Speaker

public int setSpeaker(boolean speakerOn);

Switch audio output between microphone and earphone.

Name	Description
speakerOn	False means output audio to earphone. True means output audio to speaker.
Return Value	0 : successful method call. -1: method call failed.

Get Voip Stats

public synchronized SessionStats getVoipStats();

This method lets user to retrieve real time voip statistics.

Name	Description
Return Value	SessionStats class object (See table below)

SessionStats	Description
String codec	Codec name
int rtDelay	Realtime delay in ms
int rtJitter	Max jitter in ms
int rtLost	Realtime packet loss rate in percent
int avgDelay	Average delay in ms
int avgLost	Average packet loss rate in percent
int totalBytes	Total tx/rx bytes
int KBitRate	Total tx/rx bitrate in kbps
int networkQuality	Network quality index
int totalDuration	Total call duration
int totalSetupTime	Total setup time
double cpuTotalUsage	Total CPU usage percent
double cpuAppUsage	App CPU usage percent

Set Parameters

public int setParameters(String parameters);

Set parameters for the Agora Audio engine. The input argument is in JSON format specifying new parameters to set.

Name	Description
parameters	Parameters in JSON format: mute mutePeers speakerOn

	speakerVolume micVolume enableVolumeReport volumeSmoothFactor logFilter
Return Value	0 : successful method call. -1: method call failed

Get Parameters

public String getParameters(String parameters);

Retrieve current parameters settings.

Name	Description
parameters	Indicate which parameters to retrieve.
Return Value	Specified parameter value.

Start Recording

public int startRecording(String filePath);

Start recording conversation to file specified by the file path.

Name	Description
filePath	File path to store the recorded file.
Return Value	0 : successful method call. -1: method call failed

Stop Recording

public int stopRecording();

Stop recording.

Name	Description
Return Value	0 : successful method call. -1: method call failed

Get Call ID

public String getCallId();

Retrieve current call ID.

Name	Description
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Return Value	Call ID.
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Rate the Call

public int rate(String callId, int rating);

This method lets user rate the call.

Name	Description
callId	Call ID got from getCallId function
rating	Rating for the call, range from 1(min) to 10(max)
Return Value	0 : successful method call. -1: method call failed

Complain the Call

public int complain(String callId);

This method lets user to complain about the call quality.

Name	Description
callId	Call ID got from getCallId function
Return Value	0 : successful method call. -1: method call failed

Make Call Quality Report Url

public String makeQualityReportUrl(String vendorKey, String channel, int listenerUid, int speakerUid);

This method lets user retrieve the url for call quality report.

Name	Description
vendorKey	Account credentials issued by Agora Voice to app developer, i.e., a user
channel	The channel number specified in joinChannel method.
listenerUid	The user ID, could be the uid specified in joinChannel method. If it is not set, SDK will allocate one and user can retrieve from onJoinSuccess callback (see below).
speakerUid	The speaker ID, user can retrieve it from onUserJoined callback (see below). If it is not set, means to subscribe report for all speakers in chat room.
Return Value	Report url.

IAudioEventHandler Interface

Package: io.agoravoice.voiceengine

This event handler is called when the app joins the channel or leaves the channel. These are callback methods that provide status information.

Name	Description
onLoadAudioEngineSuccess	Indicate the audio engine is loaded correctly, meaning the app was able to connect to audio server.
onJoinSuccess	Indicate specific user joined the room.
onError	Indicate audio engine and connection error.
onLeaveChannel	Indicate client left channel successfully.
onRejoinSuccess	Indicate user rejoined channel successfully.
onAudioQuality	Notify real time audio quality.
onUserJoined	Indicate specific user joined the call.
onUserOffline	Indicate specific user left the call.
onUserMuteAudio	Indicate specific user muted the call.
Update Session Status	Notify the updated session statistics information.
Network Quality	Notify the network quality information.

onLoadAudioEngineSuccess

public void onLoadAudioEngineSuccess();

User implements this method to indicate what to do when the Agora audio engine is loaded correctly. This means the app was able to connect to an available audio server. From this point the audio engine is working, meaning it is in communication mode. Usually the app can start a timer here to record the call duration.

onJoinSuccess

public void onJoinSuccess(String sid, int uid, int elapsed);

Indicates the client has logged into the server and the channel id and user id are allocated. The channel id is assign based on channel name specified by join() API. If the user id was not specified with the call to join(), the server will allocate one.

Name	Description
sid	Session id. This is an integer representation of the channel.
uid	User id. Create automatically if not supplied by the user.
elapsed	Delay in ms

OnError

public void onError(int arg0)

Indicates audio engine and connection errors.

Name	Description
arg0	See error codes below: EVENT_LOAD_AUDIO_ENGINE_ERROR = 1001: failed to initialize audio engine. EVENT_START_CALL_ERROR = 1003: failed to start audio engine. Typically this is caused because the audio device is in use by another app. EVENT_JOIN_GET_AUDIO_ADDR_TIMEOUT = 11002: voice server list timeout. EVENT_JOIN_GET_AUDIO_ADDR_FAILED = 11003: error code received when requesting voice server list.

	<p>EVENT_JOIN_GET_AUDIO_ADDR_ZERO_ADDR = 11004: The Voice Center Server (acts as a gateway, like DNS) responded that there is no voice server available.</p> <p>EVENT_JOIN_CONNECT_MEDIA_TIMEOUT = 12002: connect to voice server timeout.</p> <p>EVENT_JOIN_LOGIN_MEDIA_TIMEOUT_ALL = 13003: login voice server timeout.</p> <p>EVENT_JOIN_LOGIN_MEDIA_FAILED = 13004: Failed to login voice sever, server ACKed with error code</p> <p>EVENT_JOIN_LOGIN_REGET_AUDIO_ADDR = 13005: the voice central server (acts as a gateway, like DNS) tried all available voice servers but none is able to handle this call.</p>
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onLeaveChannel

public void onLeaveChannel(SessionStats sessionStats);

Indicates user leaves channel, supplies the session statistics information include call duration and tx/rx bytes.

Name	Description
sessionStats	See SessionStats class definition above.

onRejoinSuccess

public void onRejoinSuccess(String sid, int uid, int elapsed);

Indicates the client has rejoined to the server and the channel id and user id are allocated.

Name	Description
sid	Session id. This is an integer representation of the channel.
uid	User id. Create automatically if not supplied by the user.
elapsed	Delay in ms

onAudioQuality

```
public void onAudioQuality(int uid, int quality, short delay, short jitter,  
short lost, short lost2);
```

Reports audio quality, this callback function will be triggered every 2 seconds.

Name	Description
uid	User id of this user (There can be multiple people on one call.).
quality	Voice quality rating between 1 and 6.
delay	Delay in microseconds.
jitter	Means variation in the delay of received packets due to network congestion or queuing issues.
lost	Lost packet ratio as a percentage, 0 to 100.
lost2	Number of times that 2 consecutive packets were lost.

onUserJoined

```
public void onUserJoined(int uid, int elapsed);
```

Indicates specific user joined, supplies the user id and join delay in ms.

Name	Description
uid	User id.
elapsed	Delay in ms

onUserOffline

```
public void onUserOffline(int uid);
```

Indicates specific user left the call.

Name	Description
uid	User id.

onUserMuteAudio

```
public void onUserMuteAudio(int uid, boolean muted);
```

Indicates specific user muted/unmute the call.

Name	Description
uid	User id.
muted	True means mute. False means unmute.

onUpdateSessionStats

public void onUpdateSessionStats(SessionStats sessionStats)

Reports the updated session statistics information, this callback function will be triggered every 2 seconds.

Name	Description
sessionStats	See SessionStats class definition above.

onNetworkQuality

public void onNetworkQuality(int quality);

Reports network quality, this callback function will be triggered every 2 seconds.

Name	Description
quality	Network quality rating between 1 and 6.