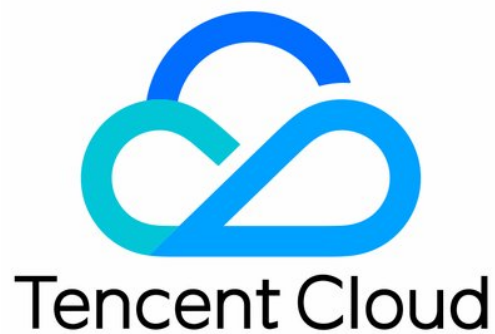


# **Mobile Live Video Broadcasting**

## **API Documentation**

### **Product Documentation**



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# API Documentation

## iOS

### Overview

Last updated : 2022-12-23 17:44:57

## V2TXLivePlayer

### Video player

For details, see [V2TXLivePlayer](#).

The player pulls audio/video data from the specified live streaming URL and plays the data after decoding and local rendering.

The player has the following capabilities:

- Playing over protocols including RTMP, HTTP-FLV, TRTC, and WebRTC
- Taking screenshots of streamed video
- Delay adjustment. You can set the minimum and maximum cache time for auto adjustment by the player.
- Custom video processing. You can process live video based on your project requirements before rendering and playback.

### Basic SDK APIs

| API                         | Description            |
|-----------------------------|------------------------|
| <a href="#">setObserver</a> | Sets player callbacks. |

### Basic playback APIs

| API                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">setRenderView</a> | Sets the player's rendering view.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <a href="#">startLivePlay</a> | Since v10.7, <code>startPlay</code> has been replaced by <code>startLivePlay</code> , and you need to call <code>V2TXLivePremier#setLicence</code> or <code>TXLiveBase#setLicence</code> to set the license to use the live playback feature (you only need to set the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the live playback feature. If you don't have any of the licenses, you can <a href="#">buy one</a> or <a href="#">apply for a trial license for free</a> to use the feature. |

| API                       | Description                       |
|---------------------------|-----------------------------------|
| <a href="#">stopPlay</a>  | Stops playback.                   |
| <a href="#">isPlaying</a> | Gets whether playback is ongoing. |

## Video APIs

| API                                   | Description                                   |
|---------------------------------------|-----------------------------------------------|
| <a href="#">setRenderRotation</a>     | Sets video rotation.                          |
| <a href="#">setRenderFillMode</a>     | Sets the fill mode.                           |
| <a href="#">pauseVideo</a>            | Pauses the player's video.                    |
| <a href="#">resumeVideo</a>           | Resumes the player's video.                   |
| <a href="#">snapshot</a>              | Takes a screenshot of the played video.       |
| <a href="#">enableCustomRendering</a> | Sets the callback for custom video rendering. |

## Audio APIs

| API                                    | Description                               |
|----------------------------------------|-------------------------------------------|
| <a href="#">pauseAudio</a>             | Pauses the player's audio.                |
| <a href="#">resumeAudio</a>            | Resumes the player's audio.               |
| <a href="#">setPlayoutVolume</a>       | Sets the volume.                          |
| <a href="#">enableVolumeEvaluation</a> | Enables the volume reminder for playback. |

## Other APIs

| API                            | Description                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------|
| <a href="#">setCacheParams</a> | Sets the minimum and maximum cache time (seconds) for auto adjustment by the player. |
| <a href="#">showDebugView</a>  | Sets whether to show the debug view of player status information.                    |

## V2TXLivePlayerObserver

## Player callbacks

**Basic SDK callback APIs**

| API                         | Description                                                                        |
|-----------------------------|------------------------------------------------------------------------------------|
| <a href="#">onError</a>     | Callback for error. This callback is returned when the player encounters an error. |
| <a href="#">onWarning</a>   | Callback for warning                                                               |
| <a href="#">onConnected</a> | Callback for successfully connecting to the server                                 |

**Video callback APIs**

| API                                      | Description                              |
|------------------------------------------|------------------------------------------|
| <a href="#">onVideoPlaying</a>           | Callback for video playback              |
| <a href="#">onVideoLoading</a>           | Callback for loading video               |
| <a href="#">onVideoResolutionChanged</a> | Callback for change of player resolution |
| <a href="#">onSnapshotComplete</a>       | Callback for a screenshot taken          |
| <a href="#">onRenderVideoFrame</a>       | Callback for custom video rendering      |

**Audio callback APIs**

| API                                   | Description                     |
|---------------------------------------|---------------------------------|
| <a href="#">onAudioPlaying</a>        | Callback for audio playback     |
| <a href="#">onAudioLoading</a>        | Callback for loading audio      |
| <a href="#">onPlayoutVolumeUpdate</a> | Callback of the player's volume |

**Statistics callback APIs**

| API                                | Description                   |
|------------------------------------|-------------------------------|
| <a href="#">onStatisticsUpdate</a> | Callback of player statistics |

## V2TXLivePusher

## Stream publisher

For details, see [V2TXLivePusher](#).

`V2TXLivePusher` encodes local audio/video and publishes the encoded data to a specified URL. It supports any publishing server.

It has the following capabilities:

- Custom video capturing. You can customize audio/video data sources based on your project requirements.
- Retouching, filters, and stickers. `V2TXLivePusher` integrates multiple retouching algorithms (natural & smooth) and color space filters (custom filters are supported).
- QoS control technology. `V2TXLivePusher` can adapt automatically to different upstream network conditions by controlling audio/video traffic in real time based on the network conditions of hosts.
- Facial feature adjustment and animated widgets. Powered by YouTu's AI facial recognition technology, `V2TXLivePusher` supports animated widgets and fine-tuning of facial features, such as eye enlarging, face slimming, and nose reshaping. You need to purchase a **YouTu license** to use these live streaming effects.

## Basic SDK APIs

| API                         | Description               |
|-----------------------------|---------------------------|
| <a href="#">setObserver</a> | Sets publisher callbacks. |

## Basic publishing APIs

| API                           | Description                                       |
|-------------------------------|---------------------------------------------------|
| <a href="#">setRenderView</a> | Sets the rendering view for local camera preview. |
| <a href="#">startPush</a>     | Starts publishing audio/video data.               |
| <a href="#">stopPush</a>      | Stops publishing audio/video data.                |
| <a href="#">isPushing</a>     | Gets whether publishing is ongoing.               |

## Video APIs

| API                               | Description                                    |
|-----------------------------------|------------------------------------------------|
| <a href="#">setVideoQuality</a>   | Sets video encoding parameters for publishing. |
| <a href="#">setRenderRotation</a> | Sets video rotation for local camera preview.  |
| <a href="#">setRenderMirror</a>   | Sets the mirror mode for local camera preview. |

| API                                      | Description                                                                  |
|------------------------------------------|------------------------------------------------------------------------------|
| <a href="#">startCamera</a>              | Turns the local camera on.                                                   |
| <a href="#">stopCamera</a>               | Turns the local camera off.                                                  |
| <a href="#">startVirtualCamera</a>       | Starts image publishing.                                                     |
| <a href="#">stopVirtualCamera</a>        | Stops image publishing.                                                      |
| <a href="#">startScreenCapture</a>       | Starts screen capturing.                                                     |
| <a href="#">stopScreenCapture</a>        | Stops screen capturing.                                                      |
| <a href="#">snapshot</a>                 | Takes a screenshot of the published video.                                   |
| <a href="#">setWatermark</a>             | Sets watermarks for the publisher. Watermarking is disabled by default.      |
| <a href="#">setEncoderMirror</a>         | Sets the mirror mode for encoded video.                                      |
| <a href="#">enableCustomVideoCapture</a> | Enables/Disables custom video capturing.                                     |
| <a href="#">sendCustomVideoFrame</a>     | Sends the captured video data to the SDK in the custom video capturing mode. |
| <a href="#">enableCustomVideoProcess</a> | Enables/Disables custom video processing.                                    |
| <a href="#">sendSeiMessage</a>           | Sends an SEI message.                                                        |

## Beauty filter APIs

| API                              | Description                                                                                    |
|----------------------------------|------------------------------------------------------------------------------------------------|
| <a href="#">getBeautyManager</a> | Gets the beauty filter management object TXBeautyManager, which is used to set beauty filters. |

## Audio APIs

| API                                    | Description                                |
|----------------------------------------|--------------------------------------------|
| <a href="#">startMicrophone</a>        | Turns the mic on.                          |
| <a href="#">stopMicrophone</a>         | Turns the mic off.                         |
| <a href="#">setAudioQuality</a>        | Sets the quality of published audio.       |
| <a href="#">enableVolumeEvaluation</a> | Enables the volume reminder for capturing. |



## Audio effect APIs

| API                                   | Description                              |
|---------------------------------------|------------------------------------------|
| <a href="#">getAudioEffectManager</a> | Gets the audio effect management object. |

## Device management APIs

| API                              | Description                        |
|----------------------------------|------------------------------------|
| <a href="#">getDeviceManager</a> | Gets the device management object. |

## Other APIs

| API                                     | Description                                            |
|-----------------------------------------|--------------------------------------------------------|
| <a href="#">setProperty</a>             | Calls an advanced API of <code>V2TXLivePusher</code> . |
| <a href="#">setMixTranscodingConfig</a> | Sets On-Cloud MixTranscoding parameters.               |
| <a href="#">showDebugView</a>           | Sets whether to display the dashboard.                 |

# V2TXLivePusherObserver

## Basic SDK callback APIs

| API                       | Description                                                                           |
|---------------------------|---------------------------------------------------------------------------------------|
| <a href="#">onError</a>   | Callback for error. This callback is returned when the publisher encounters an error. |
| <a href="#">onWarning</a> | Callback for warning                                                                  |

## Video callback APIs

| API                                  | Description                                           |
|--------------------------------------|-------------------------------------------------------|
| <a href="#">onPushStatusUpdate</a>   | Callback of the publisher's connection status         |
| <a href="#">onSnapshotComplete</a>   | Callback for a screenshot taken                       |
| <a href="#">onProcessVideoFrame</a>  | Callback for custom video processing                  |
| <a href="#">onGLContextDestroyed</a> | Callback for destroying the OpenGL context in the SDK |

| API                                      | Description                                  |
|------------------------------------------|----------------------------------------------|
| <a href="#">onCaptureFirstVideoFrame</a> | Callback for capturing the first video frame |

### Audio callback APIs

| API                                      | Description                                  |
|------------------------------------------|----------------------------------------------|
| <a href="#">onCaptureFirstAudioFrame</a> | Callback for capturing the first audio frame |
| <a href="#">onMicrophoneVolumeUpdate</a> | Callback of mic capturing volume             |

### Mixtranscoding callback APIs

| API                                       | Description                                             |
|-------------------------------------------|---------------------------------------------------------|
| <a href="#">onSetMixTranscodingConfig</a> | Callback for setting On-Cloud MixTranscoding parameters |

### Statistics callback APIs

| API                                | Description                      |
|------------------------------------|----------------------------------|
| <a href="#">onStatisticsUpdate</a> | Callback of publisher statistics |

# Publishing

## V2TXLivePusher

Last updated : 2022-10-13 11:40:06

### Overview

Tencent Cloud's live stream publisher

### Features

`V2TXLivePusher` encodes local audio/video and publishes the encoded data to a specified URL. It supports any publishing server.

It has the following capabilities:

- Custom video capturing. You can customize audio/video data sources based on your project requirements.
- Retouching, filters, and stickers. `V2TXLivePusher` integrates multiple retouching algorithms (natural & smooth) and color space filters (custom filters are supported).
- QoS control technology. `V2TXLivePusher` can adapt automatically to different upstream network conditions by controlling audio/video traffic in real time based on the network conditions of hosts.
- Facial feature adjustment and animated widgets. Powered by YouTu's AI facial recognition technology, `V2TXLivePusher` supports animated widgets and fine-tuning of facial features, such as eye enlarging, face slimming, and nose reshaping. You need to purchase a **YouTu license** to use these live streaming effects.

## Basic SDK APIs

### initWithLiveMode

This API is used to initialize the publisher.

```
- (instancetype) initWithLiveMode: (V2TXLiveMode) liveMode
```

### Parameters

| Parameter | Type         | Description                                 |
|-----------|--------------|---------------------------------------------|
| liveMode  | V2TXLiveMode | Publishing protocol: RTMP (default) or ROOM |

### setObserver

This API is used to set the callbacks of the publisher. After the setting, you can listen for callback events of `V2TXLivePusher`, including publisher status, volume, statistics, warning and error messages, etc.

```
- (void)setObserver:(id<V2TXLivePusherObserver>)observer
```

### Parameters

| Parameter | Type                   | Description                                                                                                            |
|-----------|------------------------|------------------------------------------------------------------------------------------------------------------------|
| observer  | V2TXLivePusherObserver | Target object for the publisher's callbacks. For more information, please see <a href="#">V2TXLivePusherObserver</a> . |

## Basic Publishing APIs

### setRenderView

This API is used to set the view for local camera preview. Images captured by the local camera are displayed on the view passed in after retouching, facial feature adjustments, and filter application.

```
- (V2TXLiveCode) setRenderView:(TXView *)view
```

### Parameters

| Parameter | Type     | Description                   |
|-----------|----------|-------------------------------|
| view      | TXView * | View for local camera preview |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

### startPush

This API is used to start publishing audio/video data.

```
- (V2TXLiveCode) startPush:(NSString *)url
```

### Parameters

| Parameter | Type       | Description                                         |
|-----------|------------|-----------------------------------------------------|
| url       | NSString * | Publishing URL. Any publishing server is supported. |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed because the URL is invalid.
- V2TXLIVE\_ERROR\_REFUSED : RTC does not support using the same stream ID for publishing and playback on the same device.

## stopPush

This API is used to stop publishing audio/video data.

```
- (V2TXLiveCode) stopPush
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## isPushing

This API is used to get whether the publisher is publishing streams.

```
- (int) isPushing
```

## Response

Whether streams are being played

- 1 : yes
- 0 : no

## Video APIs

## setVideoQuality

// Set video encoding parameters for publishing

```
- (V2TXLiveCode) setVideoQuality: (V2TXLiveVideoEncoderParam *)param;
```

### Parameters

| Parameter | Type                                      | Description               |
|-----------|-------------------------------------------|---------------------------|
| param     | <a href="#">V2TXLiveVideoEncoderParam</a> | Video encoding parameters |

## setRenderRotation

This API is used to set the rotation of local camera preview.

```
- (V2TXLiveCode) setRenderRotation: (V2TXLiveRotation) rotation
```

### Parameters

| Parameter | Type                             | Description                                                                             |
|-----------|----------------------------------|-----------------------------------------------------------------------------------------|
| rotation  | <a href="#">V2TXLiveRotation</a> | Degrees by which the image is rotated. Default value:<br><code>V2TXLiveRotation0</code> |

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

#### `V2TXLiveRotation` enumerated values

| Value                            | Description                  |
|----------------------------------|------------------------------|
| <code>V2TXLiveRotation0</code>   | No rotation                  |
| <code>V2TXLiveRotation90</code>  | Rotate 90 degrees clockwise  |
| <code>V2TXLiveRotation180</code> | Rotate 180 degrees clockwise |
| <code>V2TXLiveRotation270</code> | Rotate 270 degrees clockwise |

## setRenderMirror

This API is used to set the mirror mode of local camera preview.

```
- (V2TXLiveCode) setRenderMirror: (V2TXLiveMirrorType) mirrorType
```

### Parameters

| Parameter  | Type               | Description                                                         |
|------------|--------------------|---------------------------------------------------------------------|
| mirrorType | V2TXLiveMirrorType | Mirror mode of the camera. Default value:<br>V2TXLiveMirrorTypeAuto |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

#### V2TXLiveMirrorType enumerated values

| Value                     | Description                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------|
| V2TXLiveMirrorTypeAuto    | The default value. In this mode, the front camera is mirrored, but the rear camera is not. |
| V2TXLiveMirrorTypeEnable  | Both the front and rear cameras are mirrored.                                              |
| V2TXLiveMirrorTypeDisable | Neither the front nor rear camera is mirrored.                                             |

## startCamera

This API is used to turn the local camera on.

Note :

Among `startVirtualCamera` , `startCamera` , and `startScreenCapture` , only one can be used to publish data under the same pusher instance. If, for example, `startCamera` is called first and then `startVirtualCamera` , the SDK will pause the publishing of camera data and start image publishing.

```
- (V2TXLiveCode) startCamera: (BOOL) frontCamera
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## stopCamera

This API is used to turn the local camera off.

```
- (V2TXLiveCode) stopCamera
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startVirtualCamera

This API is used to start image publishing.

Note :

Among `startVirtualCamera` , `startCamera` , and `startScreenCapture` , only one can be used to publish data under the same pusher instance. If, for example, `startCamera` is called first and then `startVirtualCamera` , the SDK will pause the publishing of camera data and start image publishing.

```
- (V2TXLiveCode) startVirtualCamera:(TXImage *) image
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## stopVirtualCamera

This API is used to stop image publishing.

```
- (V2TXLiveCode) stopVirtualCamera
```



## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startScreenCapture

This API is used to start screen recording.

Note :

- To start screen recording on iOS, instead of using this API, you need to do the following.
- Among `startVirtualCamera` , `startCamera` , and `startScreenCapture` , only one can be used to publish data under the same pusher instance. If, for example, `startCamera` is called first and then `startVirtualCamera` , the SDK will pause the publishing of camera data and start image publishing.

1. First, use Broadcast Upload Extension to start screen recording.
2. Then, call `enableCustomVideoCapture` to enable custom capturing.
3. At last, call `sendCustomVideoFrame` to send the screen images captured by Broadcast Upload Extension.

```
- (V2TXLiveCode)startScreenCapture:(NSString *)appGroup
```

## Parameters

| Parameter | Type       | Description                                                                                                                                                                                        |
|-----------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| appGroup  | NSString * | The App Group ID shared by the host app and Broadcast Upload Extension. It can be set to <code>nil</code> , but setting it as instructed in our documentation will make the feature more reliable. |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## stopScreenCapture

This API is used to stop screen recording.

```
- (V2TXLiveCode) stopScreenCapture
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## snapshot

This API is used to take a screenshot of the local video while it is being published.

Note :

After V2TXLIVE\_OK is returned, you can get the screenshot taken in the  
V2TXLivePusherObserver#onSnapshotComplete:(TXImage \*)image callback.

```
- (V2TXLiveCode) snapshot
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_REFUSED : failed to take a screenshot because publishing has stopped.

## setWatermark

This API is used to set a watermark for the publisher. Watermarking is disabled by default.

```
- (V2TXLiveCode) setWatermark:(TXImage *)image x:(float)x y:(float)y scale:(float)scale
```

## Parameters

| Parameter | Type      | Description                                                                     |
|-----------|-----------|---------------------------------------------------------------------------------|
| image     | TXImage * | Watermark image. If this parameter is null , it means watermarking is disabled. |

| Parameter | Type  | Description                            |
|-----------|-------|----------------------------------------|
| x         | float | Horizontal coordinate of the watermark |
| y         | float | Vertical coordinate of the watermark   |
| scale     | float | Scale ratio of the watermark image     |

## setEncoderMirror

This API is used to set the mirror mode of encoded images.

```
- (V2TXLiveCode) setEncoderMirror: (BOOL) mirror
```

### Parameters

| Parameter | Type | Description                                         |
|-----------|------|-----------------------------------------------------|
| mirror    | BOOL | Whether to mirror encoded images. Default value: NO |

## enableCustomVideoCapture

This API is used to enable/disable custom video capturing. In the custom video capturing mode, the SDK stops capturing images from the camera, but continues to encode and send images.

```
- (V2TXLiveCode) enableCustomVideoCapture: (BOOL) enable
```

### Parameters

| Parameter | Type | Description                                           |
|-----------|------|-------------------------------------------------------|
| enable    | BOOL | Whether to enable custom capturing. Default value: NO |

## sendCustomVideoFrame

This API is used to send the custom video data captured to the SDK.

```
- (V2TXLiveCode) sendCustomVideoFrame: (V2TXLiveVideoFrame *) videoFrame
```

## Parameters

| Parameter  | Type                 | Description                  |
|------------|----------------------|------------------------------|
| videoFrame | V2TXLiveVideoFrame * | Video frames sent to the SDK |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed because the video data is invalid.
- V2TXLIVE\_ERROR\_REFUSED : failed. You must call `enableCustomVideoCapture` to enable custom video capturing first.

## enableCustomVideoProcess

This API is used to enable/disable custom video processing.

```
(V2TXLiveCode)enableCustomVideoProcess:(BOOL)enable pixelFormat:(V2TXLivePixelFormat)pixelFormat bufferType:(V2TXLiveBufferType)bufferType
```

## Parameters

| Parameter   | Type                | Description                                                  |
|-------------|---------------------|--------------------------------------------------------------|
| enable      | BOOL                | Whether to enable custom video processing. Default value: NO |
| pixelFormat | V2TXLivePixelFormat | Pixel format of video frames                                 |
| bufferType  | V2TXLiveBufferType  | Buffer type of video data                                    |

### V2TXLivePixelFormat enumerated values

| Value                        | Description       |
|------------------------------|-------------------|
| V2TXLivePixelFormatUnknown   | Unknown           |
| V2TXLivePixelFormatI420      | YUV420P (I420)    |
| V2TXLivePixelFormatTexture2D | OpenGL 2D texture |

### V2TXLiveBufferType enumerated values

| Value                        | Description                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveBufferTypeUnknown    | Unknown                                                                                                                   |
| V2TXLiveBufferTypeByteBuffer | <code>DirectBuffer</code> , which carries buffers in the format of I420 and others and is used at the native layer.       |
| V2TXLiveBufferTypeByteArray  | <code>byte[]</code> , which carries buffers in the format of I420 and others and is used at the Java layer.               |
| V2TXLiveBufferTypeTexture    | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

## sendSeiMessage

This API is used to send SEI messages. The player [V2TXLivePlayer](#) can receive SEI messages via the `onReceiveSeiMessage` callback in [V2TXLivePlayerObserver](#).

```
- (V2TXLiveCode) sendSeiMessage:(int)payloadType data:(NSData *)data;
```

### Parameters

| Parameter   | Type     | Description                                                              |
|-------------|----------|--------------------------------------------------------------------------|
| payloadType | int      | Data type. Valid values: <code>5</code> , <code>242</code> (recommended) |
| data        | NSData * | Data to send                                                             |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## Beauty Filter APIs

### getBeautyManager

This API is used to get the beauty filter management object [TXBeautyManager](#).

You can do the following using `TXBeautyManager` :

- Set the beauty filter style and apply effects including skin brightening, rosy skin, eye enlarging, face slimming, chin slimming, chin lengthening/shortening, face shortening, nose narrowing, eye brightening, teeth whitening, eye bag removal, wrinkle removal, and smile line removal.
- Adjust the hairline, eye spacing, eye corners, lip shape, nose wings, nose position, lip thickness, and face shape.
- Apply animated effects such as face widgets (materials).
- Add makeup effects.
- Recognize gestures.

```
- (TXBeautyManager *)getBeautyManager
```

## Audio APIs

### startMicrophone

This API is used to turn the mic on.

```
- (V2TXLiveCode) startMicrophone
```

#### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

### stopMicrophone

This API is used to turn the mic off.

```
- (V2TXLiveCode) stopMicrophone
```

#### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

### setAudioQuality

This API is used to set audio quality.

```
– (V2TXLiveCode) setAudioQuality:(V2TXLiveAudioQuality) quality
```

### Parameters

| Parameter | Type                 | Description   |
|-----------|----------------------|---------------|
| quality   | V2TXLiveAudioQuality | Audio quality |

### V2TXLiveAudioQuality enumerated values

| Value                       | Description                                                                                                                                                                                  |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveAudioQualitySpeech  | Speech. Audio sample rate: 16 kHz; sound channel: mono; bitrate: 16 Kbps<br>This is designed for speech-based call scenarios such as online conferencing and audio call.                     |
| V2TXLiveAudioQualityDefault | Default. Audio sample rate: 48 kHz; sound channel: mono; bitrate: 50 Kbps<br>This is the default audio quality of the SDK and is recommended.                                                |
| V2TXLiveAudioQualityMusic   | Music. Audio sample rate: 48 kHz; sound channel: dual; bitrate: 128 Kbps<br>This is designed for music-oriented scenarios with hi-fi requirements, such as karaoke and live music streaming. |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_REFUSED : you cannot change audio quality settings when streams are being published.

### enableVolumeEvaluation

This API is used to enable the volume reminder for audio capturing.

Note :

After enabling the volume reminder, you can get the SDK's volume evaluation through the

```
V2TXLivePusherObserver#onMicrophoneVolumeUpdate:(NSInteger) volume callback.
```

```
- (V2TXLiveCode)enableVolumeEvaluation:(NSInteger)intervalMs;
```

### Parameters

| Parameter  | Type      | Description                                                                                                                                                                                                                              |
|------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| intervalMs | NSInteger | Interval (ms) for triggering the <code>onMicrophoneVolumeUpdate</code> callback. The minimum interval allowed is 100 ms. If the value is <code>0</code> (default) or smaller, the callback is disabled. <code>300</code> is recommended. |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## Audio Effect APIs

### getAudioEffectManager

This API is used to get the audio effect management object [TXAudioEffectManager](#).

You can do the following using `TXAudioEffectManager` :

- Set the volume of audio captured by the mic.
- Set reverb and voice changing effects.
- Enable in-ear monitoring and set its volume.
- Add background music and specify how to play it.

```
- (TXAudioEffectManager *)getAudioEffectManager
```

## Device Management APIs

### getDeviceManager

This API is used to get the device management object [TXDeviceManager](#).

You can do the following using `TXDeviceManager` :

- Switch between the front and rear cameras.



- Enable autofocus.
- Set camera zoom level.
- Enable/Disable flashlight.

```
- (TXDeviceManager *)getDeviceManager;
```

## Other APIs

### setProperty

This API is used to call the advanced APIs of `V2TXLivePusher`.

```
- (V2TXLiveCode) setProperty:(NSString *)key value:(NSObject *)value
```

#### Parameters

| Parameter | Type       | Description                             |
|-----------|------------|-----------------------------------------|
| key       | NSString * | Key of the advanced API to call         |
| value     | NSObject * | Parameters required by the advanced API |

#### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

- `V2TXLIVE_ERROR_INVALID_PARAMETER` : operation failed because `key` is empty.

### setMixTranscodingConfig

This API is used to set On-Cloud MixTranscoding parameters. If you have enabled relayed push on the **Function Configuration** page of the [TRTC console](#), then each channel of image will have a default [CDN live streaming address](#). There may be multiple hosts in a room, each sending their own video and audio, but CDN audience needs only one live stream. Therefore, you need to mix multiple audio/video streams into one standard live stream, which requires MixTranscoding.

```
- (V2TXLiveCode) setMixTranscodingConfig:(V2TXLiveTranscodingConfig *)config
```

## Parameters

| Parameter | Type                        | Description                           |
|-----------|-----------------------------|---------------------------------------|
| config    | V2TXLiveTranscodingConfig * | On-Cloud MixTranscoding configuration |

## V2TXLiveTranscodingConfig

| Value                        | Description                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveBufferTypeUnknown    | Unknown                                                                                                                   |
| V2TXLiveBufferTypeByteBuffer | <code>DirectBuffer</code> , which carries buffers in the format of I420 and others and is used at the native layer.       |
| V2TXLiveBufferTypeByteArray  | <code>byte[]</code> , which carries buffers in the format of I420 and others and is used at the Java layer.               |
| V2TXLiveBufferTypeTexture    | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

## showDebugView

This API is used to set whether to display the dashboard.

```
- (void)showDebugView:(BOOL)isShow
```

## Parameters

| Parameter | Type | Description                                                    |
|-----------|------|----------------------------------------------------------------|
| isShow    | BOOL | Whether to show the debug view. Default value: <code>NO</code> |

# V2TXLivePusherObserver

Last updated : 2022-10-13 11:40:06

## Overview

Callback notifications for live stream publishing

## Features

You can use `V2TXLivePusherObserver` to receive notifications about [V2TXLivePusher](#), including publisher connection status, first audio/video frame, statistics, and warning and error messages.

## Basic Callback APIs

### onError

Callback for error. This callback is triggered when the publisher encounters an error.

```
- (void)onError:(V2TXLiveCode)code message:(NSString *)msg extraInfo:(NSDictionary *)extraInfo
```

### Parameters

| Parameter | Type           | Description       |
|-----------|----------------|-------------------|
| code      | V2TXLiveCode   | Error code        |
| msg       | NSString *     | Error message     |
| extraInfo | NSDictionary * | Extra information |

### onWarning

Callback for warning.

```
- (void)onWarning:(V2TXLiveCode)code message:(NSString *)msg extraInfo:(NSDictionary *)extraInfo
```

### Parameters

| Parameter | Type           | Description       |
|-----------|----------------|-------------------|
| code      | V2TXLiveCode   | Warning code      |
| msg       | NSString *     | Warning message   |
| extraInfo | NSDictionary * | Extra information |

## Video Callback APIs

### onPushStatusUpdate

Callback of the publisher's connection status.

```
- (void)onPushStatusUpdate:(V2TXLivePushStatus)status
message:(NSString *)msg
extraInfo:(NSDictionary *)extraInfo
```

#### Parameters

| Parameter | Type               | Description       |
|-----------|--------------------|-------------------|
| status    | V2TXLivePushStatus | Status code       |
| msg       | NSString *         | Status message    |
| extraInfo | NSDictionary *     | Extra information |

#### **V2TXLivePushStatus** enumerated values

| Value                            | Description                  |
|----------------------------------|------------------------------|
| V2TXLivePushStatusDisconnected   | Disconnected from the server |
| V2TXLivePushStatusConnecting     | Connecting to the server     |
| V2TXLivePushStatusConnectSuccess | Connected to the server      |
| V2TXLivePushStatusReconnecting   | Reconnecting to the server   |

### onSnapshotComplete

Callback for a screenshot taken.

```
- (void)onSnapshotComplete:(TXImage *)image
```

### Parameters

| Parameter | Type      | Description              |
|-----------|-----------|--------------------------|
| image     | TXImage * | The video image captured |

## onProcessVideoFrame

Callback for custom video processing.

Note :

You will receive this callback after you call `V2TXLivePusher#enableCustomVideoProcess:`

```
(BOOL)enable pixelFormat:(V2TXLivePixelFormat)pixelFormat bufferType:  
(V2TXLiveBufferType)bufferType to enable custom video processing.
```

```
- (void)onProcessVideoFrame:(V2TXLiveVideoFrame * _Nonnull)srcFrame dstFrame:(V2TXLiveVideoFrame * _Nonnull)dstFrame
```

### Parameters

| Parameter | Type                 | Description              |
|-----------|----------------------|--------------------------|
| srcFrame  | V2TXLiveVideoFrame * | Images before processing |
| dstFrame  | V2TXLiveVideoFrame * | Images after processing  |

## onGLContextDestroyed

Callback for a GL context for custom video processing being destroyed.

```
- (void)onGLContextDestroyed
```

## onCaptureFirstVideoFrame

Callback for capturing the first video frame.

```
- (void)onCaptureFirstVideoFrame
```

## Audio Callback APIs

### onCaptureFirstAudioFrame

Callback for capturing the first audio frame.

```
- (void)onCaptureFirstAudioFrame
```

### onMicrophoneVolumeUpdate

Callback of mic capturing volume.

```
- (void)onMicrophoneVolumeUpdate:(NSInteger) volume
```

## Statistics Callback API

### onStatisticsUpdate

Callback of publisher statistics.

```
- (void)onStatisticsUpdate:(V2TXLivePusherStatistics *)statistics
```

#### Parameters

| Parameter  | Type                       | Description          |
|------------|----------------------------|----------------------|
| statistics | V2TXLivePusherStatistics * | Publisher statistics |

# MixTranscoding Callback API

## onSetMixTranscodingConfig

Callback for setting On-Cloud MixTranscoding parameters.

Note :

You will receive this callback after you call `V2TXLivePusher#setMixTranscodingConfig:(V2TXLiveTranscodingConfig *)config` to set On-Cloud MixTranscoding parameters.

```
- (void)onSetMixTranscodingConfig:(V2TXLiveCode)code message:(NSString *)msg
```

| Parameter | Type         | Description                          |
|-----------|--------------|--------------------------------------|
| code      | V2TXLiveCode | 0 : successful; other values: failed |
| msg       | NSString *   | Error message                        |

# TXBeautyManager

Last updated : 2022-10-13 11:40:06

Basic APIs for beauty filter, makeup filter, and animated widgets.

## setBeautyStyle

This API is used to set the beauty filter type.

```
- (void)setBeautyStyle:(TXBeautyStyle)level
```

### Parameters

| Parameter | Type          | Description                                                                                                                                                                     |
|-----------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| level     | TXBeautyStyle | Beauty filter style. <code>TXBeautyStyleSmooth</code> indicates smooth; <code>TXBeautyStyleNature</code> indicates natural; and <code>TXBeautyStylePitu</code> indicates misty. |

## setFilter

This API is used to specify the material filter effect.

```
- (void)setFilter:(TXImage *)image
```

Note :

Filter images must be in the PNG format. The filter lookup table image used in the demo is located in

```
TXLiteAVDemo/Resource/Beauty/filter/FilterResource.bundle .
```

## setSpecialRatio

This API is used to set the strength of a filter.

```
- (void)setFilterStrength:(float)strength
```

### Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|



| Parameter | Type  | Description                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------|
| strength  | float | Value range: 0-1. The larger the value, the more obvious the effect. Default value: 0.5. |

## Introduction

In application scenarios such as shows, a high strength is required to highlight the characteristics of hosts. The default strength is 0.5, and if it is not sufficient, it can be adjusted with the following APIs.

## setGreenScreenFile

This API is used to set the green screen effect for videos. It works only in the Enterprise Edition.

```
- (void)setGreenScreenFile:(NSString *)file
```

## Parameters

| Parameter | Type       | Description                                                                  |
|-----------|------------|------------------------------------------------------------------------------|
| file      | NSString * | Path to the video file, which can be in MP4 format. nil: disable the effect. |

## Introduction

The green screen feature here is not intelligent keying. It requires that a green screen exists behind the recorded person or object for further chroma keying.

## setBeautyLevel

This API is used to set the strength of the beauty filter.

```
- (void)setBeautyLevel:(float)level
```

## Parameters

| Parameter | Type  | Description                                                                                                                       |
|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the beauty filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setWhitenessLevel

This API is used to set the strength of the skin brightening filter.

```
- (void)setWhitenessLevel:(float)level
```

#### Parameters

| Parameter | Type  | Description                                                                                                                                 |
|-----------|-------|---------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the skin brightening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

### setRuddyLevel

This API is used to set the strength of the rosy skin filter.

```
- (void)setRuddyLevel:(float)level
```

#### Parameters

| Parameter | Type  | Description                                                                                                                          |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the rosy skin filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

### setEyeScaleLevel

This API is used to set the strength of the eye enlarging filter. It works only in the Enterprise Edition.

```
- (void)setEyeScaleLevel:(float)level
```

#### Parameters

| Parameter | Type  | Description                                                                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the eye enlarging filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

### setFaceSlimLevel

This API is used to set the strength of the face slimming filter. It works only in the Enterprise Edition.

```
- (void)setFaceSlimLevel:(float)level
```

#### Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|

| Parameter | Type  | Description                                                                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the face slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setFaceVLevel

This API is used to set the strength of the chin slimming filter. It works only in the Enterprise Edition.

```
- (void) setFaceVLevel: (float) level
```

### Parameters

| Parameter | Type  | Description                                                                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the chin slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setChinLevel

This API is used to set the strength of the jaw shrinking or expanding filter. It works only in the Enterprise Edition.

```
- (void) setChinLevel: (float) level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                                                                         |
|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the jaw shrinking or expanding filter. Value range: -9 to 9. 0 means disabling the filter. Values less than 0 mean shrinking the jaw, and values greater than 0 mean expanding the jaw. |

## setFaceShortLevel

This API is used to set the strength of the face shortening filter. It works only in the Enterprise Edition.

```
- (void) setFaceShortLevel: (float) level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the face shortening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setNoseSlimLevel

This API is used to set the strength of the nose slimming filter. It works only in the Enterprise Edition.

```
- (void)setNoseSlimLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the nose slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setEyeLightenLevel

This API is used to set the strength of the eye brightening filter. It works only in the Enterprise Edition.

```
- (void)setEyeLightenLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the eye brightening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setToothWhitenLevel

This API is used to set the strength of the teeth whitening filter. It works only in the Enterprise Edition.

```
- (void)setToothWhitenLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the teeth whitening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setWrinkleRemoveLevel

This API is used to set the strength of the wrinkle removal filter. It works only in the Enterprise Edition.

```
- (void)setWrinkleRemoveLevel:(float)level
```

## Parameters

| Parameter | Type  | Description                                                                                                                                |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the wrinkle removal filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setPouchRemoveLevel

This API is used to set the strength of the eye bag removal filter. It works only in the Enterprise Edition.

```
- (void)setPouchRemoveLevel:(float)level
```

## Parameters

| Parameter | Type  | Description                                                                                                                                |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the eye bag removal filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setSmileLinesRemoveLevel

This API is used to set the strength of the smile line removal filter. It works only in the Enterprise Edition.

```
- (void)setSmileLinesRemoveLevel:(float)level
```

## Parameters

| Parameter | Type  | Description                                                                                                                                   |
|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the smile line removal filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setForeheadLevel

This API is used to set the strength of the hairline lowering filter. It works only in the Enterprise Edition.

```
- (void)setForeheadLevel:(float)level
```

## Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|

| Parameter | Type  | Description                                                                                                                             |
|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the hairline lowering filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the lower the hairline. |

## setEyeDistanceLevel

This API is used to set the strength of the eye distance shortening filter. It works only in the Enterprise Edition.

```
- (void)setEyeDistanceLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                         |
|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the eye distance shortening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the shorter the eye distance. |

## setEyeAngleLevel

This API is used to set the strength of the eye tilting filter. It works only in the Enterprise Edition.

```
- (void)setEyeAngleLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                                                                   |
|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the eye tilting filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more upward the outer eye corners, and the more downward the inner eye corners. |

## setMouthShapeLevel

This API is used to set the strength of the mouth narrowing filter. It works only in the Enterprise Edition.

```
- (void)setMouthShapeLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                          |
|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the mouth narrowing filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the smaller the mouth. |

## setNoseWingLevel

This API is used to set the strength of the nose wing narrowing filter. It works only in the Enterprise Edition.

```
- (void)setNoseWingLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                                  |
|-----------|-------|----------------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the nose wing narrowing filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the smaller the nose wing. |

## setNosePositionLevel

This API is used to set nose position. It works only in the Enterprise Edition.

```
- (void)setNosePositionLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                             |
|-----------|-------|-------------------------------------------------------------------------------------------------------------------------|
| level     | float | Nose position level. Value range: 0-9. 0 means disabling the filter. The larger the value, the lower the nose position. |

## setLipsThicknessLevel

This API is used to set the strength of the lip thickening filter. It works only in the Enterprise Edition.

```
- (void)setLipsThicknessLevel:(float)level
```

### Parameters

| Parameter | Type  | Description                                                                                                                        |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the lip thickening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the thicker the lips. |

## setFaceBeautyLevel

This API is used to set the strength of the face shape filter. It works only in the Enterprise Edition.

```
- (void)setFaceBeautyLevel:(float)level
```

## Parameters

| Parameter | Type  | Description                                                                                                                           |
|-----------|-------|---------------------------------------------------------------------------------------------------------------------------------------|
| level     | float | Strength of the face shape filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setMotionTpl

This API is used to select AI animated effect widgets. It works only in the Enterprise Edition.

```
- (void)setMotionTpl:(nullable NSString *)tplName inDir:(nullable NSString *)tm  
plDir
```

## Parameters

| Parameter | Type       | Description                       |
|-----------|------------|-----------------------------------|
| tplDir    | NSString * | Directory of the animated effect. |
| tplName   | NSString * | Animated effect name.             |

## setMotionMute

This API is used to mute animated effects. It works only in the Enterprise Edition. Some animated effects have audio effects, which can be disabled through this API when they are played back.

```
- (void)setMotionMute:(BOOL)motionMute
```

## Parameters

| Parameter  | Type | Description            |
|------------|------|------------------------|
| motionMute | BOOL | YES: mute. NO: unmute. |



# Playback

## V2TXLivePlayer

Last updated : 2022-10-20 15:57:07

### Overview

Tencent Cloud's live stream player

The player pulls audio/video data from the specified live streaming URL and plays the data after decoding and local rendering.

### Features

The player has the following capabilities:

- Playing over protocols including RTMP, HTTP-FLV, TRTC, and WebRTC
- Taking screenshots of streamed video
- Delay adjustment. You can set the minimum and maximum cache time for auto adjustment by the player.
- Custom video processing. You can process live video based on your project requirements before rendering and playback.

## Basic SDK APIs

### setObserver

This API is used to set the callbacks of the player. After setting, you can listen for callback events of

`V2TXLivePlayer`, including player status, playback volume, first audio/video frame, statistics, and warning and error messages.

```
- (void)setObserver:(id<V2TXLivePlayerObserver>) observer
```

### Parameters

| Parameter | Type                   | Description                                                                                                |
|-----------|------------------------|------------------------------------------------------------------------------------------------------------|
| observer  | V2TXLivePlayerObserver | Target object for the player's callbacks. For details, please see <a href="#">V2TXLivePlayerObserver</a> . |

## Basic Playback APIs

## setRenderView

This API is used to set the rendering view to display video.

```
- (V2TXLiveCode) setRenderView: (TXView *)view
```

### Parameters

| Parameter | Type     | Description                 |
|-----------|----------|-----------------------------|
| view      | TXView * | The player's rendering view |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startLivePlay

This API is used to start playing audio/video streams.

```
- (V2TXLiveCode) startLivePlay: (NSString *)url
```

Note :

Since v10.7, `startPlay` has been replaced by `startLivePlay`, and you need to call `V2TXLivePremier#setLicence` or `TXLiveBase#setLicence` to set the license to use the live playback feature (you only need to set the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the live playback feature. If you don't have any of the licenses, you can [buy one](#) or [apply for a trial license for free](#).

### Parameters

| Parameter | Type       | Description                                                                          |
|-----------|------------|--------------------------------------------------------------------------------------|
| url       | NSString * | Playback URL of audio/video streams, which supports RTMP, HTTP-FLV, TRTC, and WebRTC |

### Response

V2TXLiveCode:

- V2TXLIVE\_OK : successful

- `V2TXLIVE_ERROR_INVALID_PARAMETER` : operation failed because the URL is invalid.
- `V2TXLIVE_ERROR_REFUSED` : RTC does not support using the same stream ID for publishing and playback on the same device.

## stopPlay

This API is used to stop playing audio/video streams.

```
- (V2TXLiveCode) stopPlay;
```

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## isPlaying

This API is used to get whether the player is playing streams.

```
- (int) isPlaying
```

## Response

Whether streams are being played

- `1` : yes
- `0` : no

# Video APIs

## setRenderRotation

This API is used to set the rotation of images displayed by the player.

```
- (V2TXLiveCode) setRenderRotation:(V2TXLiveRotation) rotation
```

## Parameters

| Parameter | Type                             | Description                                                |
|-----------|----------------------------------|------------------------------------------------------------|
| rotation  | <a href="#">V2TXLiveRotation</a> | The degrees by which images are rotated. Default value: 0. |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### V2TXLiveRotation enumerated values

| Value               | Description                  |
|---------------------|------------------------------|
| V2TXLiveRotation0   | No rotation                  |
| V2TXLiveRotation90  | Rotate 90 degrees clockwise  |
| V2TXLiveRotation180 | Rotate 180 degrees clockwise |
| V2TXLiveRotation270 | Rotate 270 degrees clockwise |

## setRenderFillMode

This API is used to set the image fill mode.

```
- (V2TXLiveCode) setRenderFillMode:(V2TXLiveFillMode) mode
```

## Parameters

| Parameter | Type             | Description                                               |
|-----------|------------------|-----------------------------------------------------------|
| mode      | V2TXLiveFillMode | The image fill mode. Default value: V2TXLiveFillModeFit . |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### V2TXLiveFillMode enumerated values

| Value                | Description                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveFillModeFit  | The image fits the screen without cropping. If the aspect ratio of the image and the screen do not match, there will be black bars.                                     |
| V2TXLiveFillModeFill | The image fills the entire screen, without black bars. If the aspect ratio of the image and screen do not match, the parts of the image that don't fit will be cropped. |

## pauseVideo

This API is used to pause playing video streams.

```
- (V2TXLiveCode) pauseVideo
```

## Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

## resumeVideo

This API is used to resume playing video streams.

```
- (V2TXLiveCode) resumeVideo
```

## Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

## snapshot

This API is used to take a screenshot of streamed video.

Note :

After `V2TXLIVE_OK` is returned, you can get the screenshot taken in the `[V2TXLivePlayerObserver onSnapshotComplete: image:]` callback.

```
- (V2TXLiveCode) snapshot
```

## Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_REFUSED` : failed to take a screenshot because playback has stopped.

## enableCustomRendering

This API is used to set custom video rendering.

You can use this API to obtain each frame of decoded video for custom rendering.

**Note :**

After custom rendering is enabled, you can get video frames in the `[V2TXLivePlayerObserver onRenderVideoFrame:frame:]` callback.

```
- (V2TXLiveCode)enableCustomRendering:(BOOL)enable
pixelFormat:(V2TXLivePixelFormat)pixelFormat
bufferType:(V2TXLiveBufferType)bufferType
```

**Parameters**

| Parameter   | Type                | Description                                                          |
|-------------|---------------------|----------------------------------------------------------------------|
| enable      | BOOL                | Whether to enable custom rendering. Default value: <code>NO</code> . |
| pixelFormat | V2TXLivePixelFormat | Pixel format of the video called back for custom rendering           |
| bufferType  | V2TXLiveBufferType  | Buffer type of the video called back for custom rendering            |

**Response**

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_NOT_SUPPORTED` : unsupported pixel format or data format.

**V2TXLivePixelFormat enumerated values**

| Value                        | Description       |
|------------------------------|-------------------|
| V2TXLivePixelFormatUnknown   | Unknown           |
| V2TXLivePixelFormatI420      | YUV420P (I420)    |
| V2TXLivePixelFormatNV12      | YUV420SP (NV12)   |
| V2TXLivePixelFormatBGRA32    | BGRA8888          |
| V2TXLivePixelFormatTexture2D | OpenGL 2D texture |

**V2TXLiveBufferType enumerated values**

| Value | Description |
|-------|-------------|
|-------|-------------|

| Value                               | Description                                                                                                                                                                                            |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveBufferTypeUnknown           | Unknown                                                                                                                                                                                                |
| V2TXLiveBufferTypePixelFormatBuffer | This type can be used directly and is the most efficient. The iOS system provides various APIs to get or process pixel buffers.                                                                        |
| V2TXLiveBufferTypeNSData            | This type affects performance to some extent because the process of converting <code>NSData</code> to <code>PixelFormatBuffer</code> (the format the SDK can handle directly) involves memory copying. |
| V2TXLiveBufferTypeTexture           | Texture ID, which allows direct operation and delivers the best performance.                                                                                                                           |

## Audio APIs

### pauseAudio

This API is used to pause playing audio streams.

```
- (V2TXLiveCode) pauseAudio
```

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

### resumeAudio

This API is used to resume playing audio streams.

```
- (V2TXLiveCode) resumeAudio
```

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

### setPlayoutVolume

This API is used to set volume.

```
- (V2TXLiveCode) setPlayoutVolume:(NSInteger) volume;
```

## Parameters

| Parameter | Type      | Description                                      |
|-----------|-----------|--------------------------------------------------|
| volume    | NSInteger | Volume. Value range: 0-100. Default value: 100 . |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## enableVolumeEvaluation

This API is used to enable the volume reminder for playback.

Note :

After enabling the volume reminder, you can get the SDK's volume evaluation through the

[V2TXLivePlayerObserver onPlayoutVolumeUpdate:volume:] callback.

```
- (V2TXLiveCode)enableVolumeEvaluation:(NSInteger)intervalMs
```

## Parameters

| Parameter  | Type      | Description                                                                                                                                                                                    |
|------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| intervalMs | NSInteger | Interval (ms) for triggering the onPlayoutVolumeUpdate callback. The minimum interval allowed is 100 ms. If the value is 0 (default) or smaller, the callback is disabled. 300 is recommended. |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## Other APIs

### setCacheParams

This API is used to set the minimum and maximum cache time (seconds) for auto adjustment by the player.



```
- (V2TXLiveCode) setCacheParams:(CGFloat)minTime maxTime:(CGFloat)maxTime
```

### Parameters

| Parameter | Type    | Description                                                                                                   |
|-----------|---------|---------------------------------------------------------------------------------------------------------------|
| minTime   | CGFloat | The minimum cache time for auto adjustment by the player. The value must be greater than 0 . Default value: 1 |
| maxTime   | CGFloat | The maximum cache time for auto adjustment by the player. The value must be greater than 0 . Default value: 5 |

### Response

V2TXLiveCode:

- V2TXLIVE\_OK : successful
- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed. minTime and maxTime must be greater than 0 .
- V2TXLIVE\_ERROR\_REFUSED : you cannot change the cache policy while streams are being played.

### showDebugView

This API is used to set whether to show the debug view for the player status information.

```
- (void)showDebugView:(BOOL)isShow
```

### Parameters

| Parameter | Type | Description                                         |
|-----------|------|-----------------------------------------------------|
| isShow    | BOOL | Whether to show the debug view. Default value: NO . |

# V2TXLivePlayerObserver

Last updated : 2022-10-13 11:40:06

## Overview

Callbacks of Tencent Cloud's live stream player.

## Features

You can use `V2TXLivePlayerObserver` to receive callbacks of [V2TXLivePlayer](#), including player status, playback volume, first audio/video frame, statistics, warning and error messages, etc.

## Basic Callback APIs

### onError

Callback for error

```
- (void)onError: (id<V2TXLivePlayer>) player  
  code: (V2TXLiveCode) code  
  message: (NSString *) msg  
  extraInfo: (NSDictionary *) extraInfo
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| code      | V2TXLiveCode   | Error code                             |
| msg       | NSString *     | Error message                          |
| extraInfo | NSDictionary * | Extra information                      |

### onWarning

Callback for warning

```
- (void)onWarning: (id<V2TXLivePlayer>) player  
  code: (V2TXLiveCode) code
```

```
message: (NSString *)msg
extraInfo: (NSDictionary *)extraInfo
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| code      | V2TXLiveCode   | Warning code                           |
| msg       | NSString *     | Warning message                        |
| extraInfo | NSDictionary * | Extra information                      |

### onConnected

Callback for successfully connecting to the server

```
- (void)onConnected: (id<V2TXLivePlayer>)player
extraInfo: (NSDictionary *)extraInfo
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| extraInfo | NSDictionary * | Extra information                      |

## Video Callback APIs

### onVideoPlaying

Callback for video playback

```
- (void)onVideoPlaying: (id<V2TXLivePlayer>)player
firstPlay: (BOOL)firstPlay
extraInfo: (NSDictionary *)extraInfo
```

### Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| firstPlay | BOOL           | Whether it is the first playback       |
| extraInfo | NSDictionary * | Extra information                      |

## onVideoLoading

Callback for loading video

```
- (void)onVideoLoading:(id<V2TXLivePlayer>)player  
extraInfo:(NSDictionary *)extraInfo;
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| extraInfo | NSDictionary * | Extra information                      |

## onVideoResolutionChanged

Callback for change of player resolution

```
- (void)onVideoResolutionChanged:(id<V2TXLivePlayer>)player  
width:(NSInteger)width  
height:(NSInteger)height;
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| width     | NSInteger      | Video width                            |
| height    | NSInteger      | Video height                           |

## onSnapshotComplete

Callback for a screenshot taken

```
- (void)onSnapshotComplete:(id<V2TXLivePlayer>)player image:(TXImage *)image
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| image     | TXImage *      | The video image captured               |

## onRenderVideoFrame

Callback for custom video rendering

Note :

You will receive this callback after calling `[V2TXLivePlayer enableCustomRendering:pixelFormat:bufferType:]` to enable custom video rendering.

```
- (void)onRenderVideoFrame:(id<V2TXLivePlayer>)player  
frame:(V2TXLiveVideoFrame *)videoFrame
```

### Parameters

| Parameter  | Type                 | Description                            |
|------------|----------------------|----------------------------------------|
| player     | V2TXLivePlayer       | The player object sending the callback |
| videoFrame | V2TXLiveVideoFrame * | Video frame                            |

## Audio Callback APIs

### onAudioPlaying

Callback for audio playback

```
- (void)onAudioPlaying:(id<V2TXLivePlayer>)player  
firstPlay:(BOOL)firstPlay  
extraInfo:(NSDictionary *)extraInfo;
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| firstPlay | BOOL           | Whether it is the first playback       |
| extraInfo | NSDictionary * | Extra information                      |

## onAudioLoading

Callback for loading audio

```
- (void)onAudioLoading:(id<V2TXLivePlayer>)player  
extraInfo:(NSDictionary *)extraInfo;
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| extraInfo | NSDictionary * | Extra information                      |

## onPlaybackVolumeUpdate

Callback of the player's volume

```
- (void)onPlaybackVolumeUpdate:(id<V2TXLivePlayer>)player volume:(NSInteger)volume
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| volume    | NSInteger      | Volume. Value range: 0-100             |

# Statistics Callback API

## onStatisticsUpdate

Callback of the player's statistics

```
- (void)onStatisticsUpdate:(id<V2TXLivePlayer>)player  
statistics:(V2TXLivePlayerStatistics *)statistics
```

### Parameters

| Parameter  | Type                     | Description                            |
|------------|--------------------------|----------------------------------------|
| player     | V2TXLivePlayer           | The player object sending the callback |
| statistics | V2TXLivePlayerStatistics | Player statistics                      |

# Demo

Last updated : 2022-10-20 15:57:07

Tencent Cloud offers a straightforward and easy-to-understand API example project regarding frequently asked questions among developers. You can use it to quickly learn how to use different APIs.

## Download Address

| Platform | GitHub Address         |
|----------|------------------------|
| iOS      | <a href="#">GitHub</a> |

## Contents

The demo project covers the following features:

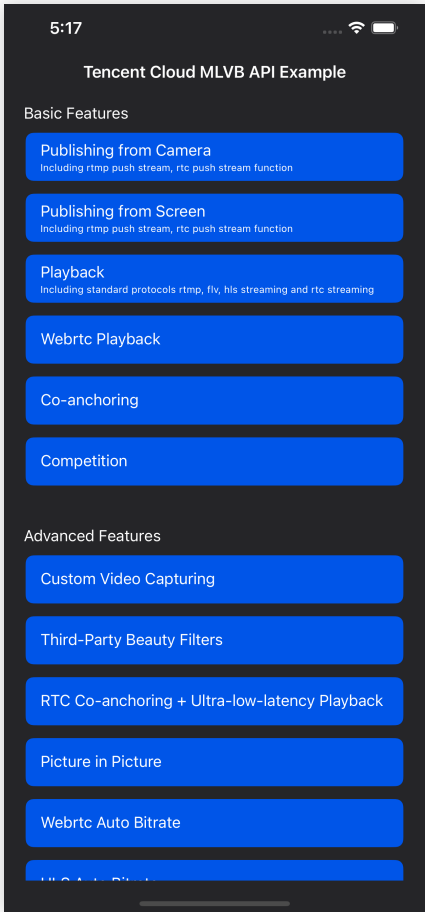
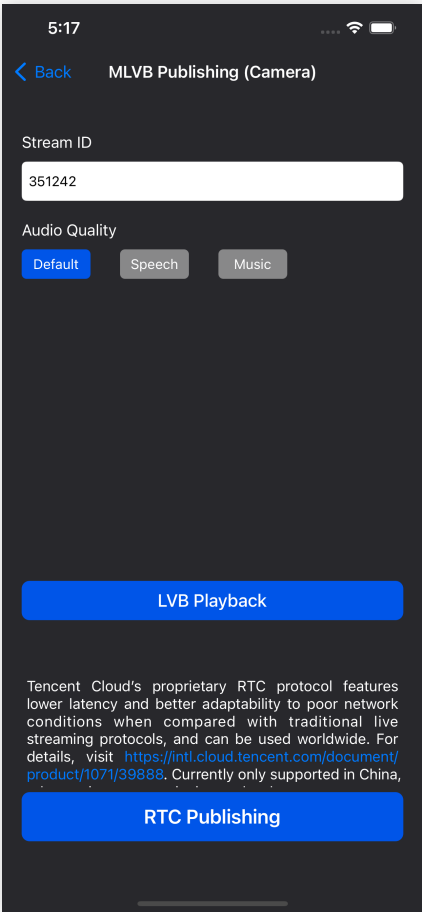
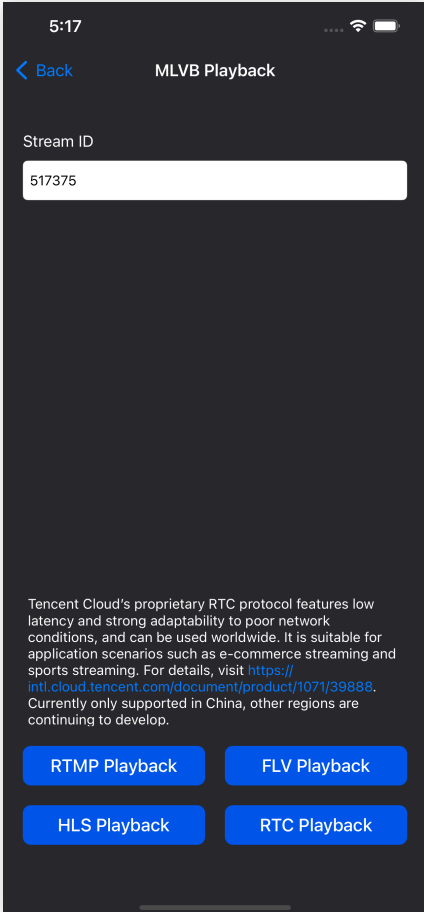
- **Basic Features:**
  - [Publishing from Camera](#)
  - [Publishing from Screen](#)
  - [Playback](#)
  - [Same-Room Communication](#)
  - [Cross-Room Communication](#)
- **Advanced Features:**
  - [Custom Video Capturing](#)
  - [Third-Party Beauty Filters](#)
  - [RTC-based Co-anchoring + Ultra-Low-Latency Playback](#)

Note :

For clarity purposes, the naming of folders in the project may differ slightly from a standard Xcode project in terms of letter case.



# UI Screenshots

| Main View                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Publishing View                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Playback View                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>The Main View UI shows the 'Tencent Cloud MLVB API Example' app. It features two sections: 'Basic Features' and 'Advanced Features'. Under 'Basic Features', there are buttons for 'Publishing from Camera' (including rtmp push stream, rtc push stream function), 'Publishing from Screen' (including rtmp push stream, rtc push stream function), 'Playback' (including standard protocols rtmp, flv, hls streaming and rtc streaming), 'Webrtc Playback', 'Co-anchoring', and 'Competition'. Under 'Advanced Features', there are buttons for 'Custom Video Capturing', 'Third-Party Beauty Filters', 'RTC Co-anchoring + Ultra-low-latency Playback', 'Picture in Picture', 'Webrtc Auto Bitrate', and 'Ultra-low-latency Playback'.</p> |  <p>The Publishing View UI shows the 'MLVB Publishing (Camera)' screen. It includes a 'Back' button, a 'Stream ID' input field with the value '351242', and an 'Audio Quality' section with buttons for 'Default', 'Speech', and 'Music'. At the bottom, there is a large blue button labeled 'LVB Playback'. Below this button, there is a paragraph of text: 'Tencent Cloud's proprietary RTC protocol features lower latency and better adaptability to poor network conditions when compared with traditional live streaming protocols, and can be used worldwide. For details, visit <a href="https://intl.cloud.tencent.com/document/product/1071/39888">https://intl.cloud.tencent.com/document/product/1071/39888</a>. Currently only supported in China, other regions are continuing to develop.' At the very bottom, there is a blue button labeled 'RTC Publishing'.</p> |  <p>The Playback View UI shows the 'MLVB Playback' screen. It includes a 'Back' button, a 'Stream ID' input field with the value '517375', and a paragraph of text: 'Tencent Cloud's proprietary RTC protocol features low latency and strong adaptability to poor network conditions, and can be used worldwide. It is suitable for application scenarios such as e-commerce streaming and sports streaming. For details, visit <a href="https://intl.cloud.tencent.com/document/product/1071/39888">https://intl.cloud.tencent.com/document/product/1071/39888</a>. Currently only supported in China, other regions are continuing to develop.' At the bottom, there are four blue buttons: 'RTMP Playback', 'FLV Playback', 'HLS Playback', and 'RTC Playback'.</p> |

# Android

## Overview

Last updated : 2022-10-20 15:57:07

### V2TXLivePlayer

#### Video player

For details, see [V2TXLivePlayer](#).

The player pulls audio/video data from the specified live streaming URL and plays the data after decoding and local rendering.

The player has the following capabilities:

- Playing over protocols including RTMP, HTTP-FLV, TRTC, and WebRTC
- Taking screenshots of streamed video
- Delay adjustment. You can set the minimum and maximum cache time for auto adjustment by the player.
- Custom video processing. You can process live video based on your project requirements before rendering and playback.

#### Basic SDK APIs

| API                         | Description            |
|-----------------------------|------------------------|
| <a href="#">setObserver</a> | Sets player callbacks. |

#### Basic playback APIs

| API                           | Description                                                      |
|-------------------------------|------------------------------------------------------------------|
| <a href="#">setRenderView</a> | Sets the player's rendering view <code>TXCloudVideoView</code> . |
| <a href="#">setRenderView</a> | Sets the player's rendering view <code>TextureView</code> .      |
| <a href="#">setRenderView</a> | Sets the player's rendering view <code>SurfaceView</code> .      |

| API                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">startLivePlay</a> | Since v10.7, <code>startPlay</code> has been replaced by <code>startLivePlay</code> , and you need to call <code>V2TXLivePremier#setLicence</code> or <code>TXLiveBase#setLicence</code> to set the license to use the live playback feature (you only need to set the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the live playback feature. If you don't have any of the licenses, you can <a href="#">buy one</a> or <a href="#">apply for a trial license for free</a> to use the feature. |
| <a href="#">stopPlay</a>      | Stops playback.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <a href="#">isPlaying</a>     | Gets whether playback is ongoing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Video APIs

| API                                     | Description                                   |
|-----------------------------------------|-----------------------------------------------|
| <a href="#">setRenderRotation</a>       | Sets video rotation.                          |
| <a href="#">setRenderFillMode</a>       | Sets the fill mode.                           |
| <a href="#">pauseVideo</a>              | Pauses the player's video.                    |
| <a href="#">resumeVideo</a>             | Resumes the player's video.                   |
| <a href="#">snapshot</a>                | Takes a screenshot of the played video.       |
| <a href="#">enableObserveVideoFrame</a> | Sets the callback for custom video rendering. |

## Audio APIs

| API                                    | Description                               |
|----------------------------------------|-------------------------------------------|
| <a href="#">pauseAudio</a>             | Pauses the player's audio.                |
| <a href="#">resumeAudio</a>            | Resumes the player's audio.               |
| <a href="#">setPlayoutVolume</a>       | Sets the volume.                          |
| <a href="#">enableVolumeEvaluation</a> | Enables the volume reminder for playback. |

## Other APIs

| API | Description |
|-----|-------------|
|-----|-------------|

| API                            | Description                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------|
| <a href="#">setCacheParams</a> | Sets the minimum and maximum cache time (seconds) for auto adjustment by the player. |
| <a href="#">showDebugView</a>  | Sets whether to show the debug view of player status information.                    |

## V2TXLivePlayerObserver

Player callbacks

### Basic SDK callback APIs

| API                         | Description                                                                        |
|-----------------------------|------------------------------------------------------------------------------------|
| <a href="#">onError</a>     | Callback for error. This callback is returned when the player encounters an error. |
| <a href="#">onWarning</a>   | Callback for warning                                                               |
| <a href="#">onConnected</a> | Callback for successfully connecting to the server                                 |

### Video callback APIs

| API                                      | Description                              |
|------------------------------------------|------------------------------------------|
| <a href="#">onVideoResolutionChanged</a> | Callback for change of player resolution |
| <a href="#">onVideoLoading</a>           | Callback for loading video               |
| <a href="#">onVideoPlaying</a>           | Callback for video playback              |
| <a href="#">onSnapshotComplete</a>       | Callback for a screenshot taken          |
| <a href="#">onRenderVideoFrame</a>       | Callback for custom video rendering      |

### Audio callback APIs

| API                                   | Description                     |
|---------------------------------------|---------------------------------|
| <a href="#">onAudioLoading</a>        | Callback for loading audio      |
| <a href="#">onAudioPlaying</a>        | Callback for audio playback     |
| <a href="#">onPlayoutVolumeUpdate</a> | Callback of the player's volume |

## Statistics callback APIs

| API                                | Description                   |
|------------------------------------|-------------------------------|
| <a href="#">onStatisticsUpdate</a> | Callback of player statistics |

## V2TXLivePusher

### Stream publisher

For details, see [V2TXLivePusher](#).

`V2TXLivePusher` encodes local audio/video and publishes the encoded data to a specified URL. It supports any publishing server.

It has the following capabilities:

- Custom video capturing. You can customize audio/video data sources based on your project requirements.
- Retouching, filters, and stickers. `V2TXLivePusher` integrates multiple retouching algorithms (natural & smooth) and color space filters (custom filters are supported).
- QoS control technology. `V2TXLivePusher` can adapt automatically to different upstream network conditions by controlling audio/video traffic in real time based on the network conditions of hosts.
- Facial feature adjustment and animated widgets. Powered by YouTu's AI facial recognition technology, `V2TXLivePusher` supports animated widgets and fine-tuning of facial features, such as eye enlarging, face slimming, and nose reshaping. You need to purchase a **YouTu license** to use these live streaming effects.

### Basic SDK APIs

| API                         | Description               |
|-----------------------------|---------------------------|
| <a href="#">setObserver</a> | Sets publisher callbacks. |

### Basic publishing APIs

| API                           | Description                                       |
|-------------------------------|---------------------------------------------------|
| <a href="#">setRenderView</a> | Sets the rendering view for local camera preview. |
| <a href="#">setRenderView</a> | Sets the rendering view for local camera preview. |
| <a href="#">setRenderView</a> | Sets the rendering view for local camera preview. |
| <a href="#">startPush</a>     | Starts publishing audio/video data.               |

| API                       | Description                         |
|---------------------------|-------------------------------------|
| <a href="#">stopPush</a>  | Stops publishing audio/video data.  |
| <a href="#">isPushing</a> | Gets whether publishing is ongoing. |

## Video APIs

| API                                      | Description                                                                  |
|------------------------------------------|------------------------------------------------------------------------------|
| <a href="#">setVideoQuality</a>          | Sets video encoding parameters for publishing.                               |
| <a href="#">setRenderRotation</a>        | Sets video rotation for local camera preview.                                |
| <a href="#">setRenderMirror</a>          | Sets the mirror mode for local camera preview.                               |
| <a href="#">startCamera</a>              | Turns the local camera on.                                                   |
| <a href="#">stopCamera</a>               | Turns the local camera off.                                                  |
| <a href="#">startVirtualCamera</a>       | Starts image publishing.                                                     |
| <a href="#">stopVirtualCamera</a>        | Stops image publishing.                                                      |
| <a href="#">startScreenCapture</a>       | Starts screen capturing.                                                     |
| <a href="#">stopScreenCapture</a>        | Stops screen capturing.                                                      |
| <a href="#">snapshot</a>                 | Takes a screenshot of the published video.                                   |
| <a href="#">setWatermark</a>             | Sets watermarks for the publisher. Watermarking is disabled by default.      |
| <a href="#">setEncoderMirror</a>         | Sets the mirror mode for encoded video.                                      |
| <a href="#">enableCustomVideoCapture</a> | Enables/Disables custom video capturing.                                     |
| <a href="#">sendCustomVideoFrame</a>     | Sends the captured video data to the SDK in the custom video capturing mode. |
| <a href="#">enableCustomVideoProcess</a> | Enables/Disables custom video processing.                                    |
| <a href="#">sendSeiMessage</a>           | Sends an SEI message.                                                        |

## Beauty filter APIs

| API | Description |
|-----|-------------|
|-----|-------------|

| API                              | Description                                                                                                     |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <a href="#">getBeautyManager</a> | Gets the beauty filter management object <a href="#">TXBeautyManager</a> , which is used to set beauty filters. |

## Audio APIs

| API                                    | Description                                |
|----------------------------------------|--------------------------------------------|
| <a href="#">startMicrophone</a>        | Turns the mic on.                          |
| <a href="#">stopMicrophone</a>         | Turns the mic off.                         |
| <a href="#">setAudioQuality</a>        | Sets the quality of published audio.       |
| <a href="#">enableVolumeEvaluation</a> | Enables the volume reminder for capturing. |

## Audio effect APIs

| API                                   | Description                              |
|---------------------------------------|------------------------------------------|
| <a href="#">getAudioEffectManager</a> | Gets the audio effect management object. |

## Device management APIs

| API                              | Description                        |
|----------------------------------|------------------------------------|
| <a href="#">getDeviceManager</a> | Gets the device management object. |

## Other APIs

| API                                     | Description                                            |
|-----------------------------------------|--------------------------------------------------------|
| <a href="#">setProperty</a>             | Calls an advanced API of <code>V2TXLivePusher</code> . |
| <a href="#">setMixTranscodingConfig</a> | Sets On-Cloud MixTranscoding parameters.               |
| <a href="#">showDebugView</a>           | Sets whether to display the dashboard.                 |

# V2TXLivePusherObserver

## Basic SDK callback APIs

| API                       | Description                                                                           |
|---------------------------|---------------------------------------------------------------------------------------|
| <a href="#">onError</a>   | Callback for error. This callback is returned when the publisher encounters an error. |
| <a href="#">onWarning</a> | Callback for warning                                                                  |

### Video callback APIs

| API                                      | Description                                           |
|------------------------------------------|-------------------------------------------------------|
| <a href="#">onPushStatusUpdate</a>       | Callback of the publisher's connection status         |
| <a href="#">onSnapshotComplete</a>       | Callback for a screenshot taken                       |
| <a href="#">onProcessVideoFrame</a>      | Callback for custom video processing                  |
| <a href="#">onGLContextCreated</a>       | Callback for creating an OpenGL context in the SDK    |
| <a href="#">onGLContextDestroyed</a>     | Callback for destroying the OpenGL context in the SDK |
| <a href="#">onCaptureFirstVideoFrame</a> | Callback for capturing the first video frame          |

### Audio callback APIs

| API                                      | Description                                  |
|------------------------------------------|----------------------------------------------|
| <a href="#">onCaptureFirstAudioFrame</a> | Callback for capturing the first audio frame |
| <a href="#">onMicrophoneVolumeUpdate</a> | Callback of mic capturing volume             |

### Mixtranscoding callback APIs

| API                                       | Description                                             |
|-------------------------------------------|---------------------------------------------------------|
| <a href="#">onSetMixTranscodingConfig</a> | Callback for setting On-Cloud MixTranscoding parameters |

### Statistics callback APIs

| API                                | Description                      |
|------------------------------------|----------------------------------|
| <a href="#">onStatisticsUpdate</a> | Callback of publisher statistics |



# Publishing

## V2TXLivePusher

Last updated : 2022-10-13 11:40:06

### Overview

Tencent Cloud's live stream publisher

### Features

`V2TXLivePusher` encodes local audio/video and publishes the encoded data to a specified URL. It supports any publishing server.

It has the following capabilities:

- Custom video capturing. You can customize audio and video data sources based on your project requirements.
- Retouching, filters, and stickers. `V2TXLivePusher` integrates multiple retouching algorithms (natural & smooth) and color space filters (custom filters are supported).
- QoS control technology. `V2TXLivePusher` can adapt automatically to different upstream network conditions by controlling audio/video traffic in real time based on the network conditions of hosts.
- Facial feature adjustment and animated widgets. Powered by YouTu's AI facial recognition technology, `V2TXLivePusher` supports animated widgets and fine-tuning of facial features, such as eye enlarging, face slimming, and nose reshaping. You need to purchase a **YouTu license** to use these live streaming effects.

## Basic SDK APIs

### setObserver

This API is used to set the callbacks of the publisher. After the setting, you can listen for the callback events of [V2TXLivePusher](#), including publisher status, volume, statistics, alerts, and error messages.

```
public abstract void setObserver(V2TXLivePusherObserver observer);
```

### Parameters

| Parameter | Type                   | Description                                                                                                            |
|-----------|------------------------|------------------------------------------------------------------------------------------------------------------------|
| observer  | V2TXLivePusherObserver | Target object for the publisher's callbacks. For more information, please see <a href="#">V2TXLivePusherObserver</a> . |

## Basic Publishing APIs

### setRenderView

This API is used to set the view for local camera preview. Images captured by the local camera are displayed on the view passed in after retouching, facial feature adjustments, and filter application.

```
public abstract int setRenderView(TXCloudVideoView view);
```

#### Parameters

| Parameter | Type             | Description                   |
|-----------|------------------|-------------------------------|
| view      | TXCloudVideoView | View for local camera preview |

#### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### setRenderView

This API is used to set the view for local camera preview. Images captured by the local camera are displayed on the view passed in after retouching, facial feature adjustments, and filter application.

```
public abstract int setRenderView(SurfaceView view);
```

#### Parameters

| Parameter | Type        | Description                   |
|-----------|-------------|-------------------------------|
| view      | SurfaceView | View for local camera preview |

#### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### setRenderView

This API is used to set the view for local camera preview. Images captured by the local camera are displayed on the view passed in after retouching, facial feature adjustments, and filter application.

```
public abstract int setRenderView(TextureView view);
```

### Parameters

| Parameter | Type        | Description                   |
|-----------|-------------|-------------------------------|
| view      | TextureView | View for local camera preview |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startPush

This API is used to start publishing audio/video data.

```
public abstract int startPush(String url);
```

### Parameters

| Parameter | Type   | Description                                                         |
|-----------|--------|---------------------------------------------------------------------|
| url       | String | URL to which data is published. Any publishing server is supported. |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed because the URL is invalid.
- V2TXLIVE\_ERROR\_REFUSED : RTC does not support using the same stream ID for publishing and playback on the same device.

## stopPush

This API is used to stop publishing audio/video data.

```
public abstract int stopPush();
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## isPushing

This API is used to get whether the publisher is publishing streams.

```
public abstract int isPushing();
```

## Response

Whether streams are being played

- 1 : yes
- 0 : no

# Video APIs

## setVideoQuality

// Set video encoding parameters for publishing

```
public abstract int setVideoQuality(V2TXLiveVideoEncoderParam param);
```

## Parameters

| Parameter | Type                                      | Description               |
|-----------|-------------------------------------------|---------------------------|
| param     | <a href="#">V2TXLiveVideoEncoderParam</a> | Video encoding parameters |

## setRenderRotation

This API is used to set the rotation of local camera preview.

```
public abstract int setRenderRotation(V2TXLiveRotation rotation);
```

## Parameters

| Parameter | Type             | Description                                                                |
|-----------|------------------|----------------------------------------------------------------------------|
| rotation  | V2TXLiveRotation | Degrees by which the image is rotated. Default value:<br>V2TXLiveRotation0 |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### V2TXLiveRotation enumerated values

| Value               | Description                  |
|---------------------|------------------------------|
| V2TXLiveRotation0   | No rotation                  |
| V2TXLiveRotation90  | Rotate 90 degrees clockwise  |
| V2TXLiveRotation180 | Rotate 180 degrees clockwise |
| V2TXLiveRotation270 | Rotate 270 degrees clockwise |

## setRenderMirror

This API is used to set the mirror mode of local camera preview.

```
public abstract int setRenderMirror(V2TXLiveMirrorType mirrorType);
```

## Parameters

| Parameter  | Type               | Description                                                         |
|------------|--------------------|---------------------------------------------------------------------|
| mirrorType | V2TXLiveMirrorType | Mirror mode of the camera. Default value:<br>V2TXLiveMirrorTypeAuto |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### V2TXLiveMirrorType enumerated values

| Value                     | Description                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------|
| V2TXLiveMirrorTypeAuto    | The default value. In this mode, the front camera is mirrored, but the rear camera is not. |
| V2TXLiveMirrorTypeEnable  | Both the front and rear cameras are mirrored.                                              |
| V2TXLiveMirrorTypeDisable | Neither the front nor rear camera is mirrored.                                             |

## startCamera

This API is used to turn the local camera on.

Note :

Among `startVirtualCamera` , `startCamera` , and `startScreenCapture` , only one can be used to publish data under the same pusher instance. If, for example, `startCamera` is called first and then `startVirtualCamera` , the SDK will pause the publishing of camera data and start image publishing.

```
public abstract int startCamera(boolean frontCamera);
```

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## stopCamera

This API is used to turn the local camera off.

```
public abstract int stopCamera();
```

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## startVirtualCamera

This API is used to start image publishing.

Note :

Among `startVirtualCamera` , `startCamera` , and `startScreenCapture` , only one can be used to publish data under the same pusher instance. If, for example, `startCamera` is called first and then `startVirtualCamera` , the SDK will pause the publishing of camera data and start image publishing.

```
public abstract int startVirtualCamera(Bitmap image);
```

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## stopVirtualCamera

This API is used to stop image publishing.

```
public abstract int stopVirtualCamera();
```

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## startScreenCapture

This API is used to start screen recording.

Note :

Among `startVirtualCamera` , `startCamera` , and `startScreenCapture` , only one can be used to publish data under the same pusher instance. If, for example, `startCamera` is called first and then `startVirtualCamera` , the SDK will pause the publishing of camera data and start image publishing.

```
public abstract int startScreenCapture();
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## stopScreenCapture

This API is used to stop screen recording.

```
public abstract int stopScreenCapture();
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## snapshot

This API is used to take a screenshot of the local video while it is being published.

Note :

After V2TXLIVE\_OK is returned, you can get the screenshot taken in the V2TXLivePusherObserver.onSnapshotComplete callback.

```
public abstract int snapshot();
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_REFUSED : failed to take a screenshot because publishing has stopped.

## setWatermark



This API is used to set a watermark for the publisher. Watermarking is disabled by default.

```
public abstract int setWatermark(Bitmap image, float x, float y, float scale);
```

### Parameters

| Parameter | Type   | Description                                                                                 |
|-----------|--------|---------------------------------------------------------------------------------------------|
| image     | Bitmap | Watermark image. If this parameter is <code>null</code> , it means watermarks are disabled. |
| x         | float  | Horizontal coordinate of the watermark                                                      |
| y         | float  | Vertical coordinate of the watermark                                                        |
| scale     | float  | Scale ratio of the watermark image                                                          |

### setEncoderMirror

This API is used to set the mirror mode of encoded images.

```
public abstract int setEncoderMirror(boolean mirror);
```

### Parameters

| Parameter | Type    | Description                                                         |
|-----------|---------|---------------------------------------------------------------------|
| mirror    | Boolean | Whether to mirror encoded images. Default value: <code>false</code> |

### enableCustomVideoCapture

This API is used to enable/disable custom video capturing. In the custom video capturing mode, the SDK stops capturing images from the camera, but continues to encode and send images.

```
public abstract int enableCustomVideoCapture(boolean enable);
```

### Parameters

| Parameter | Type    | Description                                                                   |
|-----------|---------|-------------------------------------------------------------------------------|
| enable    | Boolean | Whether to enable custom video capturing. Default value: <code>false</code> . |

## sendCustomVideoFrame

This API is used to send the custom video data captured to the SDK.

```
public abstract int sendCustomVideoFrame(V2TXLiveVideoFrame videoFrame);
```

### Parameters

| Parameter  | Type               | Description                 |
|------------|--------------------|-----------------------------|
| videoFrame | V2TXLiveVideoFrame | Video frame sent to the SDK |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed because the video data is invalid.
- V2TXLIVE\_ERROR\_REFUSED : failed. You must call `enableCustomVideoCapture` to enable custom video capturing first.

## enableCustomVideoProcess

This API is used to enable/disable custom video processing.

```
public abstract int enableCustomVideoProcess(boolean enable, V2TXLivePixelFormat pixelFormat, V2TXLiveBufferType bufferType);
```

### Parameters

| Parameter   | Type                | Description                                                                  |
|-------------|---------------------|------------------------------------------------------------------------------|
| enable      | Boolean             | Whether to enable custom video processing. Default value: <code>false</code> |
| pixelFormat | V2TXLivePixelFormat | Pixel format of video frames                                                 |
| bufferType  | V2TXLiveBufferType  | Video data buffer type                                                       |

**V2TXLivePixelFormat** enumerated values

| Value | Description |
|-------|-------------|
|-------|-------------|

| Value                        | Description       |
|------------------------------|-------------------|
| V2TXLivePixelFormatUnknown   | Unknown           |
| V2TXLivePixelFormatI420      | YUV420P (I420)    |
| V2TXLivePixelFormatTexture2D | OpenGL 2D texture |

#### **V2TXLiveBufferType** enumerated values

| Value                        | Description                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveBufferTypeUnknown    | Unknown                                                                                                                   |
| V2TXLiveBufferTypeByteBuffer | <code>DirectBuffer</code> , which carries buffers in the format of I420 and others and is used at the native layer.       |
| V2TXLiveBufferTypeByteArray  | <code>byte[]</code> , which carries buffers in the format of I420 and others and is used at the Java layer.               |
| V2TXLiveBufferTypeTexture    | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

## sendSeiMessage

This API is used to send SEI messages. The player [V2TXLivePlayer](#) can receive SEI messages via the `onReceiveSeiMessage` callback in [V2TXLivePlayerObserver](#).

```
public abstract int sendSeiMessage(int payloadType, byte[] data);
```

### Parameters

| Parameter   | Type   | Description                                                              |
|-------------|--------|--------------------------------------------------------------------------|
| payloadType | int    | Data type. Valid values: <code>5</code> , <code>242</code> (recommended) |
| data        | byte[] | Data to send                                                             |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## Beauty Filter APIs

### getBeautyManager

This API is used to get the beauty filter management object [TXBeautyManager](#).

You can do the following using `TXBeautyManager` :

- Set the beauty filter style and apply effects including skin brightening, rosy skin, eye enlarging, face slimming, chin slimming, chin lengthening/shortening, face shortening, nose narrowing, eye brightening, teeth whitening, eye bag removal, wrinkle removal, and smile line removal.
- Adjust the hairline, eye spacing, eye corners, lip shape, nose wings, nose position, lip thickness, and face shape.
- Apply animated effects such as face widgets (materials).
- Add makeup effects.
- Recognize gestures.

```
public TXBeautyManager getBeautyManager()
```

## Audio APIs

### startMicrophone

This API is used to turn the mic on.

```
public abstract int startMicrophone();
```

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

### stopMicrophone

This API is used to turn the mic off.

```
public abstract int stopMicrophone();
```

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

## setAudioQuality

This API is used to set audio quality.

```
public abstract int setAudioQuality(V2TXLiveAudioQuality quality);
```

### Parameters

| Parameter | Type                 | Description   |
|-----------|----------------------|---------------|
| quality   | V2TXLiveAudioQuality | Audio quality |

### V2TXLiveAudioQuality enumerated values

| Value                       | Description                                                                                                                                                                                  |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveAudioQualitySpeech  | Speech. Audio sample rate: 16 kHz; sound channel: mono; bitrate: 16 Kbps<br>This is designed for speech-based call scenarios such as online conferencing and audio call.                     |
| V2TXLiveAudioQualityDefault | Default. Audio sample rate: 48 kHz; sound channel: mono; bitrate: 50 Kbps<br>This is the default audio quality of the SDK and is recommended.                                                |
| V2TXLiveAudioQualityMusic   | Music. Audio sample rate: 48 kHz; sound channel: dual; bitrate: 128 Kbps<br>This is designed for music-oriented scenarios with hi-fi requirements, such as karaoke and live music streaming. |

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

- ```
V2TXLIVE_ERROR_REFUSED
```

 : you cannot change audio quality settings when streams are being published.

## enableVolumeEvaluation

This API is used to enable the volume reminder for audio capturing.

Note :

After enabling the volume reminder, you can get the volume measured by the SDK in the

```
V2TXLivePusherObserver#onMicrophoneVolumeUpdate(int) callback.
```

```
public abstract int enableVolumeEvaluation(int intervalMs);
```

### Parameters

| Parameter  | Type | Description                                                                                                                                                       |
|------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| intervalMs | int  | Interval (ms) for volume callbacks. The minimum interval allowed is 100 ms. If the value is 0 (default) or smaller, the callback is disabled. 300 is recommended. |

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

## Audio Effect APIs

### getAudioEffectManager

This API is used to get the audio effect management object [TXAudioEffectManager](#).

You can do the following using `TXAudioEffectManager` :

- Set the volume of audio captured by the mic.
- Set reverb and voice changing effects.
- Enable in-ear monitoring and set its volume.
- Add background music and specify how to play it.

```
public TXAudioEffectManager getAudioEffectManager ()
```

## Device Management APIs

## getDeviceManager

This API is used to get the device management object [TXDeviceManager](#).

You can do the following using `TXDeviceManager` :

- Switch between the front and rear cameras.
- Enable autofocus.
- Set camera zoom level.
- Enable/Disable flashlight.

```
public abstract TXDeviceManager getDeviceManager();
```

## Other APIs

### setProperty

This API is used to call the advanced APIs of `V2TXLivePusher` .

```
public abstract int setProperty(String key, Object value);
```

#### Parameters

| Parameter | Type   | Description                             |
|-----------|--------|-----------------------------------------|
| key       | String | Key of the advanced API to call         |
| value     | Object | Parameters required by the advanced API |

#### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

- `V2TXLIVE_ERROR_INVALID_PARAMETER` : operation failed because `key` is empty.

### setMixTranscodingConfig

This API is used to set On-Cloud MixTranscoding parameters. If you have enabled relayed push on the **Function Configuration** page of the [TRTC console](#), then each channel of image will have a default [CDN live streaming](#)

[address](#). There may be multiple hosts in a room, each sending their own video and audio, but CDN audience needs only one live stream. Therefore, you need to mix multiple audio/video streams into one standard live stream, which requires MixTranscoding.

```
public abstract int setMixTranscodingConfig(V2TXLiveTranscodingConfig config);
```

### Parameters

| Parameter | Type                                      | Description                           |
|-----------|-------------------------------------------|---------------------------------------|
| config    | <a href="#">V2TXLiveTranscodingConfig</a> | On-Cloud MixTranscoding configuration |

### V2TXLiveTranscodingConfig

| Value                        | Description                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveBufferTypeUnknown    | Unknown                                                                                                                   |
| V2TXLiveBufferTypeByteBuffer | <code>DirectBuffer</code> , which carries buffers in the format of I420 and others and is used at the native layer.       |
| V2TXLiveBufferTypeByteArray  | <code>byte[]</code> , which carries buffers in the format of I420 and others and is used at the Java layer.               |
| V2TXLiveBufferTypeTexture    | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

### showDebugView

This API is used to set whether to display the dashboard.

```
public abstract void showDebugView(boolean isShow);
```

### Parameters

| Parameter | Type    | Description                                                         |
|-----------|---------|---------------------------------------------------------------------|
| isShow    | boolean | Whether to display the dashboard. Default value: <code>false</code> |



# V2TXLivePusherObserver

Last updated : 2022-10-13 11:40:07

## Overview

Callback notifications for live stream publishing

## Features

You can use `V2TXLivePusherObserver` to receive notifications about [V2TXLivePusher](#), including publisher connection status, first audio/video frame, statistics, and warning and error messages.

## Basic Callback APIs

### onError

Callback for error. This callback is triggered when the publisher encounters an error.

```
public void onError(int code, String msg, Bundle extraInfo)
```

#### Parameters

| Parameter | Type   | Description       |
|-----------|--------|-------------------|
| code      | int    | Error code        |
| msg       | String | Error message     |
| extraInfo | Bundle | Extra information |

### onWarning

Callback for warning.

```
public void onWarning(int code, String msg, Bundle extraInfo)
```

#### Parameters

| Parameter | Type | Description  |
|-----------|------|--------------|
| code      | int  | Warning code |

| Parameter | Type   | Description       |
|-----------|--------|-------------------|
| msg       | String | Warning message   |
| extraInfo | Bundle | Extra information |

## Video Callback APIs

### onPushStatusUpdate

Callback of the publisher's connection status.

```
public void onPushStatusUpdate(V2TXLivePushStatus status, String msg, Bundle extraInfo)
```

#### Parameters

| Parameter | Type               | Description       |
|-----------|--------------------|-------------------|
| status    | V2TXLivePushStatus | Status code       |
| msg       | String             | Status message    |
| extraInfo | Bundle             | Extra information |

#### **V2TXLivePushStatus** enumerated values

| Value                            | Description                  |
|----------------------------------|------------------------------|
| V2TXLivePushStatusDisconnected   | Disconnected from the server |
| V2TXLivePushStatusConnecting     | Connecting to the server     |
| V2TXLivePushStatusConnectSuccess | Connected to the server      |
| V2TXLivePushStatusReconnecting   | Reconnecting to the server   |

### onSnapshotComplete

Callback for a screenshot taken.

```
public void onSnapshotComplete(Bitmap image)
```

### Parameters

| Parameter | Type     | Description              |
|-----------|----------|--------------------------|
| image     | Bitmap * | The video image captured |

## onProcessVideoFrame

Callback for custom video processing.

Note :

You will receive this callback after you call `V2TXLivePusher#enableCustomVideoProcess(boolean, V2TXLiveDef.V2TXLivePixelFormat, V2TXLiveDef.V2TXLiveBufferType)` to enable custom video processing.

```
public void onProcessVideoFrame(V2TXLiveVideoFrame srcFrame, V2TXLiveVideoFrame dstFrame)
```

### Parameters

| Parameter | Type               | Description              |
|-----------|--------------------|--------------------------|
| srcFrame  | V2TXLiveVideoFrame | Images before processing |
| dstFrame  | V2TXLiveVideoFrame | Images after processing  |

## onGLContextCreated

Callback for a GL context for custom video processing being created.

```
public void onGLContextCreated()
```

## onGLContextDestroyed

Callback for a GL context for custom video processing being destroyed.

```
public void onGLContextDestroyed()
```

## onCaptureFirstVideoFrame

Callback for capturing the first video frame.

```
public void onCaptureFirstVideoFrame()
```

# Audio Callback APIs

## onCaptureFirstAudioFrame

Callback for capturing the first audio frame.

```
public void onCaptureFirstAudioFrame()
```

## onMicrophoneVolumeUpdate

Callback of mic capturing volume.

```
public void onMicrophoneVolumeUpdate(int volume)
```

# Statistics Callback API

## onStatisticsUpdate

Callback of publisher statistics.

```
public void onStatisticsUpdate(V2TXLivePusherStatistics statistics)
```

## Parameters

| Parameter  | Type                     | Description          |
|------------|--------------------------|----------------------|
| statistics | V2TXLivePusherStatistics | Publisher statistics |

# MixTranscoding Callback API

## onSetMixTranscodingConfig

Callback for setting On-Cloud MixTranscoding parameters.

Note :

You will receive this callback after you call

```
V2TXLivePusher#setMixTranscodingConfig(V2TXLiveDef.V2TXLiveTranscodingConfig)
```

to set On-Cloud MixTranscoding parameters.

```
public void onSetMixTranscodingConfig(int code, String msg)
```

| Parameter | Type   | Description                          |
|-----------|--------|--------------------------------------|
| code      | int    | 0 : successful; other values: failed |
| msg       | String | Error message                        |

# TXBeautyManager

Last updated : 2022-10-13 11:40:07

Basic APIs for beauty filter, makeup filter, and animated widgets.

## setBeautyStyle

This API is used to set the beauty filter type.

```
void setBeautyStyle(int beautyStyle)
```

### Parameters

| Parameter   | Type | Description                                           |
|-------------|------|-------------------------------------------------------|
| beautyStyle | int  | Beauty filter style. 0: smooth; 1: natural; 2: misty. |

## setFilter

This API is used to specify the material filter effect.

```
void setFilter(Bitmap bmp)
```

### Parameters

| Parameter | Type   | Description   |
|-----------|--------|---------------|
| bmp       | Bitmap | Filter image. |

Note :

Filter images must be in the PNG format. The filter lookup table image used in the demo is located in `app/src/main/res/drawable-xxhdpi/` .

## setFilterStrength

This API is used to set the strength of a filter.

```
void setFilterStrength(float strength)
```

## Parameters

| Parameter | Type  | Description                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------|
| strength  | float | Value range: 0-1. The larger the value, the more obvious the effect. Default value: 0.5. |

## Introduction

In application scenarios such as shows, a high strength is required to highlight the characteristics of hosts. The default strength is 0.5, and if it is not sufficient, it can be adjusted with the following APIs.

## setGreenScreenFile

This API is used to set the green screen effect for videos. It works only in the Enterprise Edition.

```
boolean setGreenScreenFile(String path)
```

## Parameters

| Parameter | Type   | Description                                                                   |
|-----------|--------|-------------------------------------------------------------------------------|
| path      | String | Path to the video file, which can be in MP4 format. null: disable the effect. |

## Introduction

The green screen feature here is not intelligent keying. It requires that a green screen exists behind the recorded person or object for further chroma keying.

## setBeautyLevel

This API is used to set the strength of the beauty filter.

```
void setBeautyLevel(int beautyLevel)
```

## Parameters

| Parameter   | Type | Description                                                                                                                       |
|-------------|------|-----------------------------------------------------------------------------------------------------------------------------------|
| beautyLevel | int  | Strength of the beauty filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setWhitenessLevel

This API is used to set the strength of the skin brightening filter.

```
void setWhitenessLevel(int whitenessLevel)
```

#### Parameters

| Parameter      | Type | Description                                                                                                                                 |
|----------------|------|---------------------------------------------------------------------------------------------------------------------------------------------|
| whitenessLevel | int  | Strength of the skin brightening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

#### setRuddyLevel

This API is used to set the strength of the rosy skin filter.

```
void setRuddyLevel(int ruddyLevel)
```

#### Parameters

| Parameter  | Type | Description                                                                                                                          |
|------------|------|--------------------------------------------------------------------------------------------------------------------------------------|
| ruddyLevel | int  | Strength of the rosy skin filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

#### setEyeScaleLevel

This API is used to set the strength of the eye enlarging filter. It works only in the Enterprise Edition.

```
void setEyeScaleLevel(int eyeScaleLevel)
```

#### Parameters

| Parameter     | Type | Description                                                                                                                              |
|---------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| eyeScaleLevel | int  | Strength of the eye enlarging filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

#### setFaceSlimLevel

This API is used to set the strength of the face slimming filter. It works only in the Enterprise Edition.

```
void setFaceSlimLevel(int faceSlimLevel)
```

#### Parameters



| Parameter     | Type | Description                                                                                                                              |
|---------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| faceSlimLevel | int  | Strength of the face slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setFaceVLevel

This API is used to set the strength of the chin slimming filter. It works only in the Enterprise Edition.

```
void setFaceVLevel(int faceVLevel)
```

### Parameters

| Parameter  | Type | Description                                                                                                                              |
|------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| faceVLevel | int  | Strength of the chin slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setChinLevel

This API is used to set the strength of the jaw shrinking or expanding filter. It works only in the Enterprise Edition.

```
void setChinLevel(int chinLevel)
```

### Parameters

| Parameter | Type | Description                                                                                                                                                                                         |
|-----------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| chinLevel | int  | Strength of the jaw shrinking or expanding filter. Value range: -9 to 9. 0 means disabling the filter. Values less than 0 mean shrinking the jaw, and values greater than 0 mean expanding the jaw. |

## setFaceShortLevel

This API is used to set the strength of the face shortening filter. It works only in the Enterprise Edition.

```
void setFaceShortLevel(int faceShortlevel)
```

### Parameters

| Parameter      | Type | Description                                                                                                                              |
|----------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| faceShortlevel | int  | Strength of the face slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setNoseSlimLevel

This API is used to set the strength of the nose slimming filter. It works only in the Enterprise Edition.

```
void setNoseSlimLevel(int noseSlimLevel)
```

### Parameters

| Parameter     | Type | Description                                                                                                                              |
|---------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| noseSlimLevel | int  | Strength of the face slimming filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setEyeLightenLevel

This API is used to set the strength of the eye brightening filter. It works only in the Enterprise Edition.

```
void setEyeLightenLevel(int eyeLightenLevel)
```

### Parameters

| Parameter       | Type | Description                                                                                                                                |
|-----------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|
| eyeLightenLevel | int  | Strength of the eye brightening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setToothWhitenLevel

This API is used to set the strength of the teeth whitening filter. It works only in the Enterprise Edition.

```
void setToothWhitenLevel(int toothWhitenLevel)
```

### Parameters

| Parameter        | Type | Description                                                                                                                                |
|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|
| toothWhitenLevel | int  | Strength of the teeth whitening filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setWrinkleRemoveLevel

This API is used to set the strength of the wrinkle removal filter. It works only in the Enterprise Edition.

```
void setWrinkleRemoveLevel(int wrinkleRemoveLevel)
```

## Parameters

| Parameter          | Type | Description                                                                                                                                |
|--------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|
| wrinkleRemoveLevel | int  | Strength of the wrinkle removal filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setPouchRemoveLevel

This API is used to set the strength of the eye bag removal filter. It works only in the Enterprise Edition.

```
void setPouchRemoveLevel(int pouchRemoveLevel)
```

## Parameters

| Parameter        | Type | Description                                                                                                                                |
|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|
| pouchRemoveLevel | int  | Strength of the eye bag removal filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setSmileLinesRemoveLevel

This API is used to set the strength of the smile line removal filter. It works only in the Enterprise Edition.

```
void setSmileLinesRemoveLevel(int smileLinesRemoveLevel)
```

## Parameters

| Parameter             | Type | Description                                                                                                                                |
|-----------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|
| smileLinesRemoveLevel | int  | Strength of the wrinkle removal filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setForeheadLevel

This API is used to set the strength of the hairline lowering filter. It works only in the Enterprise Edition.

```
void setForeheadLevel(int foreheadLevel)
```

## Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|

| Parameter     | Type | Description                                                                                                                                     |
|---------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| foreheadLevel | int  | Strength of the hairline lowering filter. Value range: 0-9. 0 means disabling the filter. The greater the value of 1-9, the lower the hairline. |

## setEyeDistanceLevel

This API is used to set the strength of the eye distance shortening filter. It works only in the Enterprise Edition.

```
void setEyeDistanceLevel(int eyeDistanceLevel)
```

### Parameters

| Parameter        | Type | Description                                                                                                                                                 |
|------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eyeDistanceLevel | int  | Strength of the eye distance shortening filter. Value range: 0-9. 0 means disabling the filter. The greater the value of 1-9, the shorter the eye distance. |

## setEyeAngleLevel

This API is used to set the strength of the eye tilting filter. It works only in the Enterprise Edition.

```
void setEyeAngleLevel(int eyeAngleLevel)
```

### Parameters

| Parameter     | Type | Description                                                                                                                                                                                   |
|---------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eyeAngleLevel | int  | Strength of the eye tilting filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more upward the outer eye corners, and the more downward the inner eye corners. |

## setMouthShapeLevel

This API is used to set the strength of the mouth narrowing filter. It works only in the Enterprise Edition.

```
void setMouthShapeLevel(int mouthShapeLevel)
```

### Parameters

| Parameter       | Type | Description                                                                                                                                  |
|-----------------|------|----------------------------------------------------------------------------------------------------------------------------------------------|
| mouthShapeLevel | int  | Strength of the mouth narrowing filter. Value range: 0-9. 0 means disabling the filter. The greater the value of 1-9, the smaller the mouth. |

## setNoseWingLevel

This API is used to set the strength of the nose wing narrowing filter. It works only in the Enterprise Edition.

```
void setNoseWingLevel(int noseWingLevel)
```

### Parameters

| Parameter     | Type | Description                                                                                                                                          |
|---------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| noseWingLevel | int  | Strength of the nose wing narrowing filter. Value range: 0-9. 0 means disabling the filter. The greater the value of 1-9, the smaller the nose wing. |

## setNosePositionLevel

This API is used to set the nose position. It works only in the Enterprise Edition.

```
void setNosePositionLevel(int nosePositionLevel)
```

### Parameters

| Parameter         | Type | Description                                                                                                                     |
|-------------------|------|---------------------------------------------------------------------------------------------------------------------------------|
| nosePositionLevel | int  | Nose position level. Value range: 0-9. 0 means disabling the filter. The greater the value of 1-9, the lower the nose position. |

## setLipsThicknessLevel

This API is used to set the strength of the lip thickening filter. It works only in the Enterprise Edition.

```
void setLipsThicknessLevel(int lipsThicknessLevel)
```

### Parameters

| Parameter          | Type | Description                                                                                                                                |
|--------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------|
| lipsThicknessLevel | int  | Strength of the lip thickening filter. Value range: 0-9. 0 means disabling the filter. The greater the value of 1-9, the thicker the lips. |

## setFaceBeautyLevel

This API is used to set the strength of the face shape filter. It works only in the Enterprise Edition.

```
void setFaceBeautyLevel(int faceBeautyLevel)
```

## Parameters

| Parameter       | Type | Description                                                                                                                           |
|-----------------|------|---------------------------------------------------------------------------------------------------------------------------------------|
| faceBeautyLevel | int  | Strength of the face shape filter. Value range: 0-9. 0 means disabling the filter. The larger the value, the more obvious the effect. |

## setMotionTpl

This API is used to select AI animated effect widgets. It works only in the Enterprise Edition.

```
void setMotionTpl(String motionPath)
```

## Parameters

| Parameter  | Type   | Description                  |
|------------|--------|------------------------------|
| motionPath | String | Path to the animated effect. |

## setMotionMute

This API is used to mute or unmute animated effects. It works only in the Enterprise Edition. Some animated effects have audio effects, which can be disabled through this API when they are played back.

```
void setMotionMute(boolean motionMute)
```

## Parameters

| Parameter  | Type    | Description                |
|------------|---------|----------------------------|
| motionMute | boolean | true: mute. false: unmute. |

# Playback

## V2TXLivePlayer

Last updated : 2022-10-20 15:57:07

### Overview

Tencent Cloud's live stream player

The player pulls audio/video data from the specified live streaming URL and plays the data after decoding and local rendering.

### Features

The player has the following capabilities:

- Playing over protocols including RTMP, HTTP-FLV, TRTC, and WebRTC
- Taking screenshots of streamed video
- Delay adjustment. You can set the minimum and maximum cache time for auto adjustment by the player.
- Custom video processing. You can process live video based on your project requirements before rendering and playback.

## Basic SDK APIs

### setObserver

This API is used to set the callbacks of the player. After setting, you can listen for callback events of

`V2TXLivePlayer`, including player status, playback volume, first audio/video frame, statistics, and warning and error messages.

```
public abstract void setObserver(V2TXLivePlayerObserver observer);
```

### Parameters

| Parameter | Type                   | Description                                                                                         |
|-----------|------------------------|-----------------------------------------------------------------------------------------------------|
| observer  | V2TXLivePlayerObserver | Target object for the player's callbacks. For details, see <a href="#">V2TXLivePlayerObserver</a> . |

## Basic Playback APIs

## setRenderView

This API is used to set the rendering view to display video.

```
public abstract int setRenderView(TXCloudVideoView view);
```

### Parameters

| Parameter | Type             | Description                 |
|-----------|------------------|-----------------------------|
| view      | TXCloudVideoView | The player's rendering view |

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

## setRenderView

This API is used to set the rendering view to display video.

```
public abstract int setRenderView(SurfaceView view);
```

### Parameters

| Parameter | Type        | Description                 |
|-----------|-------------|-----------------------------|
| view      | SurfaceView | The player's rendering view |

### Response

V2TXLiveCode:

```
V2TXLIVE_OK : successful
```

## setRenderView

This API is used to set the rendering view to display video.

```
public abstract int setRenderView(TextureView view);
```

### Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|



| Parameter | Type        | Description                 |
|-----------|-------------|-----------------------------|
| view      | TextureView | The player's rendering view |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startLivePlay

This API is used to start playing audio/video streams.

```
public abstract int startLivePlay(String url);
```

Note :

Since v10.7, `startPlay` has been replaced by `startLivePlay`, and you need to call `V2TXLivePremier#setLicence` or `TXLiveBase#setLicence` to set the license to use the live playback feature (you only need to set the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the live playback feature. If you don't have any of the licenses, you can [buy one](#) or [apply for a trial license for free](#).

## Parameters

| Parameter | Type   | Description                                                                          |
|-----------|--------|--------------------------------------------------------------------------------------|
| url       | String | Playback URL of audio/video streams, which supports RTMP, HTTP-FLV, TRTC, and WebRTC |

## Response

V2TXLiveCode:

- V2TXLIVE\_OK : successful
- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed because the URL is invalid.
- V2TXLIVE\_ERROR\_REFUSED : RTC does not support using the same stream ID for publishing and playback on the same device.

## stopPlay

This API is used to stop playing audio/video streams.

```
public abstract int stopPlay();
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## isPlaying

This API is used to get whether the player is playing streams.

```
public abstract int isPlaying();
```

## Response

Whether streams are being played

- 1 : yes
- 0 : no

# Video APIs

## setRenderRotation

This API is used to set the rotation of images displayed by the player.

```
public abstract int setRenderRotation(V2TXLiveRotation rotation);
```

## Parameters

| Parameter | Type             | Description                                                                   |
|-----------|------------------|-------------------------------------------------------------------------------|
| rotation  | V2TXLiveRotation | The degrees by which the image is rotated. Default value: V2TXLiveRotation0 . |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

V2TXLiveRotation enumerated values

| Value               | Description                  |
|---------------------|------------------------------|
| V2TXLiveRotation0   | No rotation                  |
| V2TXLiveRotation90  | Rotate 90 degrees clockwise  |
| V2TXLiveRotation180 | Rotate 180 degrees clockwise |
| V2TXLiveRotation270 | Rotate 270 degrees clockwise |

## setRenderFillMode

This API is used to set the image fill mode.

```
public abstract int setRenderFillMode(V2TXLiveFillMode mode);
```

### Parameters

| Parameter | Type             | Description                                               |
|-----------|------------------|-----------------------------------------------------------|
| mode      | V2TXLiveFillMode | The image fill mode. Default value: V2TXLiveFillModeFit . |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

#### V2TXLiveFillMode enumerated values

| Value                | Description                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveFillModeFit  | The image fits the screen without cropping. If the aspect ratio of the image and the screen do not match, there will be black bars.                                     |
| V2TXLiveFillModeFill | The image fills the entire screen, without black bars. If the aspect ratio of the image and screen do not match, the parts of the image that don't fit will be cropped. |

## pauseVideo

This API is used to pause playing video streams.

```
public abstract int pauseVideo();
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## resumeVideo

This API is used to resume playing video streams.

```
public abstract int resumeVideo();
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## snapshot

This API is used to take a screenshot of streamed video.

Note :

After V2TXLIVE\_OK is returned, you can get the screenshot taken in the V2TXLivePlayerObserver.onSnapshotComplete callback.

```
public abstract int snapshot();
```

### Response

V2TXLiveCode:

- V2TXLIVE\_OK : successful
- V2TXLIVE\_ERROR\_REFUSED : failed to take a screenshot because playback has stopped.

## enableObserveVideoFrame

This API is used to set custom video rendering. You can use this API to obtain each frame of decoded video for custom rendering.

Note :

After custom rendering is enabled, you can get video frames in the V2TXLivePlayerObserver.onRenderVideoFrame callback.

```
public abstract int enableObserveVideoFrame(  
    boolean enable,  
    V2TXLivePixelFormat pixelFormat,  
    V2TXLiveBufferType bufferType);
```

## Parameters

| Parameter   | Type                                | Description                                                             |
|-------------|-------------------------------------|-------------------------------------------------------------------------|
| enable      | Boolean                             | Whether to enable custom rendering. Default value: <code>false</code> . |
| pixelFormat | <a href="#">V2TXLivePixelFormat</a> | Pixel format of the video called back for custom rendering              |
| bufferType  | <a href="#">V2TXLiveBufferType</a>  | Buffer type of the video called back for custom rendering               |

## Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_NOT_SUPPORTED` : unsupported pixel format or data format.

### `V2TXLivePixelFormat` enumerated values

| Value                                     | Description       |
|-------------------------------------------|-------------------|
| <code>V2TXLivePixelFormatUnknown</code>   | Unknown           |
| <code>V2TXLivePixelFormatI420</code>      | YUV420P (I420)    |
| <code>V2TXLivePixelFormatTexture2D</code> | OpenGL 2D texture |

### `V2TXLiveBufferType` enumerated values

| Value                                     | Description                                                                              |
|-------------------------------------------|------------------------------------------------------------------------------------------|
| <code>V2TXLiveBufferTypeUnknown</code>    | Unknown                                                                                  |
| <code>V2TXLiveBufferTypeByteBuffer</code> | Direct buffers. This type is for I420 and other buffers and is used at the native layer. |
| <code>V2TXLiveBufferTypeByteArray</code>  | Byte arrays. This type is for I420 and other buffers and is used at the Java layer.      |

| Value                     | Description                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------|
| V2TXLiveBufferTypeTexture | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

## Audio APIs

### pauseAudio

This API is used to pause playing audio streams.

```
public abstract int pauseAudio();
```

#### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### resumeAudio

This API is used to resume playing audio streams.

```
public abstract int resumeAudio();
```

#### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

### setPlayoutVolume

This API is used to set volume.

```
public abstract int setPlayoutVolume(int volume);
```

#### Parameters

| Parameter | Type | Description                                      |
|-----------|------|--------------------------------------------------|
| volume    | int  | Volume. Value range: 0-100. Default value: 100 . |

#### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## enableVolumeEvaluation

This API is used to enable the volume reminder for playback.

Note :

After enabling the volume reminder, you can get the SDK's volume evaluation through the

`V2TXLivePlayerObserver.onPlayoutVolumeUpdate` callback.

```
public abstract int enableVolumeEvaluation(int intervalMs);
```

### Parameters

| Parameter  | Type | Description                                                                                                                                                                                                 |
|------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| intervalMs | int  | Interval (ms) for triggering the <code>onPlayoutVolumeUpdate</code> callback. The minimum interval allowed is 100 ms. If the value is 0 (default) or smaller, the callback is disabled. 300 is recommended. |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## Other APIs

### setCacheParams

This API is used to set the minimum and maximum cache time (seconds) for auto adjustment by the player.

```
public abstract int setCacheParams(float minTime, float maxTime);
```

### Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|

| Parameter | Type  | Description                                                                                                                               |
|-----------|-------|-------------------------------------------------------------------------------------------------------------------------------------------|
| minTime   | float | The minimum cache time for auto adjustment by the player. The value must be greater than <code>0</code> . Default value: <code>1</code> . |
| maxTime   | float | The maximum cache time for auto adjustment by the player. The value must be greater than <code>0</code> . Default value: <code>5</code> . |

## Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_INVALID_PARAMETER` : operation failed. `minTime` and `maxTime` must be greater than `0` .
- `V2TXLIVE_ERROR_REFUSED` : you cannot change the cache policy while streams are being played.

## showDebugView

This API is used to set whether to show the debug view for the player status information.

```
public abstract void showDebugView(boolean isShow);
```

## Parameters

| Parameter | Type    | Description                                                      |
|-----------|---------|------------------------------------------------------------------|
| isShow    | boolean | Whether to show the debug view. Default value: <code>NO</code> . |



# V2TXLivePlayerObserver

Last updated : 2022-10-13 11:40:07

## Overview

Callbacks of Tencent Cloud's live stream player.

## Features

You can use `V2TXLivePlayerObserver` to receive callbacks of [V2TXLivePlayer](#) including player status, playback volume, first audio/video frame, statistics, warning and error messages, etc.

## Basic Callback APIs

### onError

Callback for error

```
public void onError(V2TXLivePlayer player, int code, String msg, Bundle extraInfo)
```

#### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| code      | int            | Error code                             |
| msg       | String         | Error message                          |
| extraInfo | Bundle         | Extra information                      |

### onWarning

Callback for warning

```
public void onWarning(V2TXLivePlayer player, int code, String msg, Bundle extraInfo)
```

#### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| code      | int            | Warning code                           |
| msg       | String         | Warning message                        |
| extraInfo | Bundle         | Extra information                      |

## onConnected

Callback for successfully connecting to the server

```
public void onConnected(V2TXLivePlayer player, Bundle extraInfo)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| extraInfo | Bundle         | Extra information                      |

## Video Callback APIs

### onVideoResolutionChanged

Callback for change of player resolution

```
public void onVideoResolutionChanged(V2TXLivePlayer player, int width, int height)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| width     | int            | Video width                            |

| Parameter | Type | Description  |
|-----------|------|--------------|
| height    | int  | Video height |

## onVideoLoading

Callback for loading video

```
public void onVideoLoading(V2TXLivePlayer player, Bundle extraInfo)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| extraInfo | Bundle         | Extra information                      |

## onVideoPlaying

Callback for video playback

```
public void onVideoPlaying(V2TXLivePlayer player, boolean firstPlay, Bundle extraInfo)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| firstPlay | boolean        | Whether it is the first playback       |
| extraInfo | Bundle         | Extra information                      |

## onSnapshotComplete

Callback for a screenshot taken

```
public void onSnapshotComplete(V2TXLivePlayer player, Bitmap image)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| image     | Bitmap *       | The video image captured               |

## onRenderVideoFrame

Callback for custom video rendering

Note :

You will receive this callback after calling `[V2TXLivePlayer enableCustomRendering:pixelFormat:bufferType:]` to enable custom video rendering.

```
public void onRenderVideoFrame(V2TXLivePlayer player, V2TXLiveVideoFrame videoFrame)
```

### Parameters

| Parameter  | Type               | Description                            |
|------------|--------------------|----------------------------------------|
| player     | V2TXLivePlayer     | The player object sending the callback |
| videoFrame | V2TXLiveVideoFrame | Video frame                            |

## Audio Callback APIs

### onAudioLoading

Callback for loading audio

```
public void onAudioLoading(V2TXLivePlayer player, Bundle extraInfo)
```

### Parameters

| Parameter | Type | Description |
|-----------|------|-------------|
|-----------|------|-------------|

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| extraInfo | Bundle         | Extra information                      |

## onAudioPlaying

Callback for audio playback

```
public void onAudioPlaying(V2TXLivePlayer player, boolean firstPlay, Bundle extraInfo)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| firstPlay | boolean        | Whether it is the first playback       |
| extraInfo | Bundle         | Extra information                      |

## onPlayoutVolumeUpdate

Callback of the player's volume

```
public void onPlayoutVolumeUpdate(V2TXLivePlayer player, int volume)
```

### Parameters

| Parameter | Type           | Description                            |
|-----------|----------------|----------------------------------------|
| player    | V2TXLivePlayer | The player object sending the callback |
| volume    | int            | Volume. Value range: 0-100             |

# Statistics Callback API

## onStatisticsUpdate

Callback of the player's statistics

```
public void onStatisticsUpdate(V2TXLivePlayer player, V2TXLivePlayerStatistics statistics)
```

### Parameters

| Parameter  | Type                     | Description                            |
|------------|--------------------------|----------------------------------------|
| player     | V2TXLivePlayer           | The player object sending the callback |
| statistics | V2TXLivePlayerStatistics | Player statistics                      |

# Demo

Last updated : 2022-10-20 15:57:07

Tencent Cloud offers a straightforward and easy-to-understand API example project regarding frequently asked questions among developers. You can use it to quickly learn how to use different APIs.

## Download Address

| Platform | GitHub Address         |
|----------|------------------------|
| Android  | <a href="#">GitHub</a> |

## Contents

The demo project covers the following features:

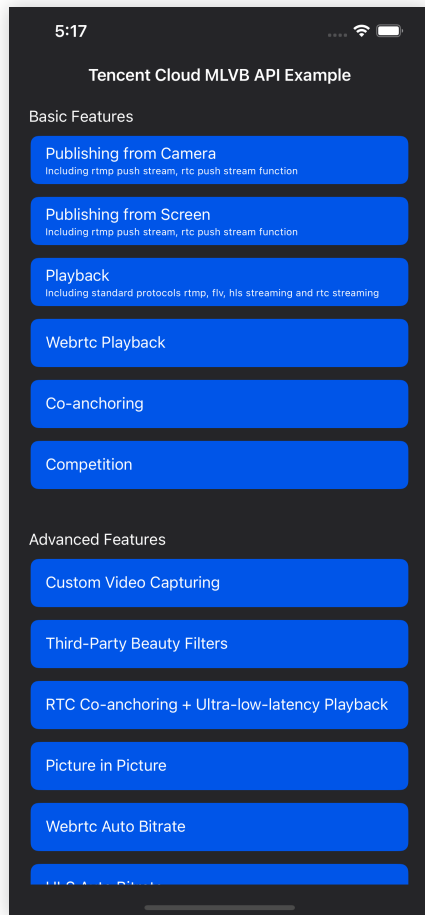
- **Basic Features:**
  - [Publishing from Camera](#)
  - [Publishing from Screen](#)
  - [Playback](#)
  - [Same-Room Communication](#)
  - [Cross-Room Communication](#)
- **Advanced Features:**
  - [Dynamically Switching Rendering Control](#)
  - [Custom Video Capturing](#)
  - [Third-Party Beauty Filters](#)
  - [RTC-Based Co-anchoring + Ultra-Low-Latency Playback](#)

Note :

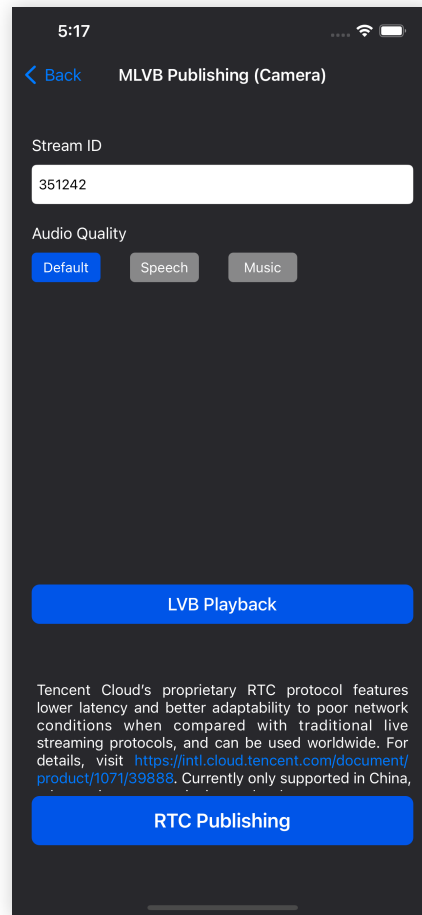
For clarity purposes, the naming of folders in the project may differ slightly from a standard Android Studio project in terms of letter case.

## UI Screenshots

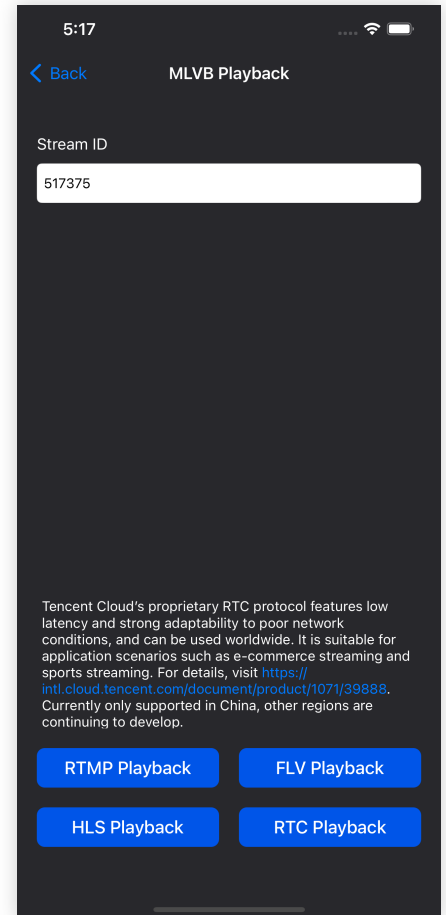
## Main View



## Publishing View



## Playback View





# Web

## TXLivePusherObserver

Last updated : 2022-10-13 11:40:07

Callbacks for publishing, including publisher status, statistics, warnings, and errors

### onError

Callback for error. This callback is triggered when the publisher encounters an error.

```
onError(code: number, msg: string, extraInfo: Object): void;
```

#### Parameters

- `code` : error code. For details, please see [Error codes for publishing](#).
- `msg` : error message
- `extraInfo` : extra information. This parameter is not used currently.

---

### onWarning

Callback for warning.

```
onWarning(code: number, msg: string, extraInfo: Object): void;
```

#### Parameters

- `code` : error code. For details, please see [Error codes for publishing](#).
- `msg` : error message
- `extraInfo` : extra information. This parameter is not used currently.

### Note

For the error information returned for failure to turn the camera or mic on or record the screen, please see [getUserMedia exceptions](#).

---

### onCaptureFirstAudioFrame

Callback for capturing the first audio frame.

```
onCaptureFirstAudioFrame(): void;
```

## onCaptureFirstVideoFrame

Callback for capturing the first video frame.

```
onCaptureFirstVideoFrame(): void;
```

## onPushStatusUpdate

Callback of the publisher's connection status.

```
onPushStatusUpdate(status: number, msg: string, extraInfo: Object): void;
```

### Parameters

- `status`: connection status code. For details, please see [Status codes for publishing](#).
- `msg`: connection status message
- `extraInfo`: extra information. This parameter is not used currently.

## onStatisticsUpdate

Callback of publisher statistics, primarily WebRTC-related statistics, which may vary from browser to browser.

```
onStatisticsUpdate(statistics: Object): void;
```

### Parameters

`statistics`: publishing statistics. For details, please see [Publishing statistics](#).

## Error codes for publishing

Below are the error codes returned by [onError](#) and [onWarning](#):

| Enumerated Value           | Code | Description                  |
|----------------------------|------|------------------------------|
| TXLIVE_ERROR_WEBRTC_FAILED | -1   | Failed to call a WebRTC API. |

| Enumerated Value                           | Code  | Description                                                                                                    |
|--------------------------------------------|-------|----------------------------------------------------------------------------------------------------------------|
| TXLIVE_ERROR_REQUEST_FAILED                | -2    | Error when requesting the server to publish streams.                                                           |
| TXLIVE_WARNING_CAMERA_START_FAILED         | -1001 | Failed to turn the camera on.                                                                                  |
| TXLIVE_WARNING_MICROPHONE_START_FAILED     | -1002 | Failed to turn the mic on.                                                                                     |
| TXLIVE_WARNING_SCREEN_CAPTURE_START_FAILED | -1003 | Failed to record the screen.                                                                                   |
| TXLIVE_WARNING_MEDIA_FILE_START_FAILED     | -1004 | Failed to open a local media file.                                                                             |
| TXLIVE_WARNING_CAMERA_INTERRUPTED          | -1005 | Capturing from the camera was interrupted (because the device was disconnected or the user denied the access). |
| TXLIVE_WARNING_MICROPHONE_INTERRUPTED      | -1006 | Capturing from the mic was interrupted (because the device was disconnected or the user denied the access).    |
| TXLIVE_WARNING_SCREEN_CAPTURE_INTERRUPTED  | -1007 | Screen recording was interrupted (because the user clicked Chrome's built-in stop-sharing button).             |

## Status codes for publishing

Below are the status codes returned by [onPushStatusUpdate](#):

| Enumerated Value                   | Code | Description                   |
|------------------------------------|------|-------------------------------|
| TXLIVE_PUSH_STATUS_DISCONNECTED    | 0    | Disconnected from the server. |
| TXLIVE_PUSH_STATUS_CONNECTING      | 1    | Connecting to the server.     |
| TXLIVE_PUSH_STATUS_CONNECT_SUCCESS | 2    | Connected to the server.      |
| TXLIVE_PUSH_STATUS_RECONNECTING    | 3    | Reconnecting to the server.   |

## Publishing statistics

The [onStatisticsUpdate](#) callback API keeps you up to date on WebRTC-related statistics during publishing. The SDK collects data once every second, and the structure of the object it returns is as follows:

| Parameter             | Description                                                                                                                       |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| timestamp             | Timestamp of data collection, i.e., seconds that have elapsed since 00:00:00 UTC, 1 January 1970 till the time of data collection |
| <a href="#">video</a> | Video statistics                                                                                                                  |
| <a href="#">audio</a> | Audio statistics                                                                                                                  |

**video**

| Parameter          | Description                                                                              |
|--------------------|------------------------------------------------------------------------------------------|
| bitrate            | Video bitrate (bit/s)                                                                    |
| framesPerSecond    | Video frame rate                                                                         |
| frameWidth         | Video width, invalid for Firefox                                                         |
| frameHeight        | Video height, invalid for Firefox                                                        |
| framesEncoded      | Number of encoded frames                                                                 |
| framesSent         | Number of published frames, invalid for Firefox                                          |
| packetsSent        | Number of data packets sent                                                              |
| nackCount          | Number of negative acknowledgements (NACK)                                               |
| firCount           | Number of Full Intra Requests (FIR)                                                      |
| pliCount           | Number of Picture Loss Indications (PLI)                                                 |
| frameEncodeAvgTime | Average encoding time (ms), invalid for Safari and Firefox                               |
| packetSendDelay    | Average time (ms) data packets are cached locally before being sent, invalid for Firefox |

**audio**

| Parameter | Description |
|-----------|-------------|
|-----------|-------------|

| Parameter   | Description                 |
|-------------|-----------------------------|
| bitrate     | Audio bitrate (bit/s)       |
| packetsSent | Number of data packets sent |

# Flutter

## Overview

Last updated : 2022-10-20 15:57:08

### V2TXLivePlayer

#### Video player

For details, see [V2TXLivePlayer](#).

The player pulls audio/video data from the specified live streaming URL and plays the data after decoding and local rendering.

The player has the following capabilities:

- Playing over protocols including RTMP, HTTP-FLV, TRTC, and WebRTC
- Taking screenshots of streamed video
- Delay adjustment. You can set the minimum and maximum cache time for auto adjustment by the player.
- Custom video processing. You can process live video based on your project requirements before rendering and playback.

#### Basic SDK APIs

| API                         | Description            |
|-----------------------------|------------------------|
| <a href="#">addListener</a> | Sets player callbacks. |

#### Basic playback APIs

| API                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">setRenderViewID</a> | Sets the player's rendering view ( <code>ViewID</code> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <a href="#">startLivePlay</a>   | Since v10.7, <code>startPlay</code> has been replaced by <code>startLivePlay</code> , and you need to call <code>V2TXLivePremier#setLicence</code> to set the license to use the live playback feature (you only need to set the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the live playback feature. If you don't have any of the licenses, you can <a href="#">buy one</a> or <a href="#">apply for a trial license for free</a> to use the feature. |
| <a href="#">stopPlay</a>        | Stops playback.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| API                       | Description                       |
|---------------------------|-----------------------------------|
| <a href="#">isPlaying</a> | Gets whether playback is ongoing. |

## Video APIs

| API                               | Description                             |
|-----------------------------------|-----------------------------------------|
| <a href="#">setRenderRotation</a> | Sets video rotation.                    |
| <a href="#">setRenderFillMode</a> | Sets the fill mode.                     |
| <a href="#">pauseVideo</a>        | Pauses the player's video.              |
| <a href="#">resumeVideo</a>       | Resumes the player's video.             |
| <a href="#">snapshot</a>          | Takes a screenshot of the played video. |

## Audio APIs

| API                                    | Description                               |
|----------------------------------------|-------------------------------------------|
| <a href="#">pauseAudio</a>             | Pauses the player's audio.                |
| <a href="#">resumeAudio</a>            | Resumes the player's audio.               |
| <a href="#">setPlayoutVolume</a>       | Sets the volume.                          |
| <a href="#">enableVolumeEvaluation</a> | Enables the volume reminder for playback. |

## Other APIs

| API                            | Description                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------|
| <a href="#">setCacheParams</a> | Sets the minimum and maximum cache time (seconds) for auto adjustment by the player. |
| <a href="#">showDebugView</a>  | Sets whether to show the debug view of player status information.                    |

# V2TXLivePlayerObserver

Player callbacks

## Basic SDK callback APIs

| API                         | Description                                                                        |
|-----------------------------|------------------------------------------------------------------------------------|
| <a href="#">onError</a>     | Callback for error. This callback is returned when the player encounters an error. |
| <a href="#">onWarning</a>   | Callback for warning                                                               |
| <a href="#">onConnected</a> | Callback for successfully connecting to the server                                 |

### Video callback APIs

| API                                      | Description                              |
|------------------------------------------|------------------------------------------|
| <a href="#">onVideoPlaying</a>           | Callback for video playback              |
| <a href="#">onVideoLoading</a>           | Callback for loading video               |
| <a href="#">onVideoResolutionChanged</a> | Callback for change of player resolution |
| <a href="#">onSnapshotComplete</a>       | Callback for a screenshot taken          |
| <a href="#">onRenderVideoFrame</a>       | Callback for custom video rendering      |

### Audio callback APIs

| API                                   | Description                     |
|---------------------------------------|---------------------------------|
| <a href="#">onAudioPlaying</a>        | Callback for audio playback     |
| <a href="#">onAudioLoading</a>        | Callback for loading audio      |
| <a href="#">onPlayoutVolumeUpdate</a> | Callback of the player's volume |

### Statistics callback APIs

| API                                | Description                   |
|------------------------------------|-------------------------------|
| <a href="#">onStatisticsUpdate</a> | Callback of player statistics |

## V2TXLivePusher

### Stream publisher

For details, see [V2TXLivePusher](#).



`V2TXLivePusher` encodes local audio/video and publishes the encoded data to a specified URL. It supports any publishing server.

It has the following capabilities:

- Custom video capturing. You can customize audio/video data sources based on your project requirements.
- Retouching, filters, and stickers. `V2TXLivePusher` integrates multiple retouching algorithms (natural & smooth) and color space filters (custom filters are supported).
- QoS control technology. `V2TXLivePusher` can adapt automatically to different upstream network conditions by controlling audio/video traffic in real time based on the network conditions of hosts.
- Facial feature adjustment and animated widgets. Powered by YouTu's AI facial recognition technology, `V2TXLivePusher` supports animated widgets and fine-tuning of facial features, such as eye enlarging, face slimming, and nose reshaping. You need to purchase a **YouTu license** to use these live streaming effects.

## Basic SDK APIs

| API                      | Description               |
|--------------------------|---------------------------|
| <code>addListener</code> | Sets publisher callbacks. |

## Basic publishing APIs

| API                          | Description                                       |
|------------------------------|---------------------------------------------------|
| <code>setRenderViewID</code> | Sets the rendering view for local camera preview. |
| <code>startPush</code>       | Starts publishing audio/video data.               |
| <code>stopPush</code>        | Stops publishing audio/video data.                |
| <code>isPushing</code>       | Gets whether publishing is ongoing.               |

## Video APIs

| API                            | Description                                    |
|--------------------------------|------------------------------------------------|
| <code>setVideoQuality</code>   | Sets video encoding parameters for publishing. |
| <code>setRenderRotation</code> | Sets video rotation for local camera preview.  |
| <code>setRenderMirror</code>   | Sets the mirror mode for local camera preview. |
| <code>startCamera</code>       | Turns the local camera on.                     |
| <code>stopCamera</code>        | Turns the local camera off.                    |

| API                                      | Description                                                                  |
|------------------------------------------|------------------------------------------------------------------------------|
| <a href="#">startVirtualCamera</a>       | Starts image publishing.                                                     |
| <a href="#">stopVirtualCamera</a>        | Stops image publishing.                                                      |
| <a href="#">startScreenCapture</a>       | Starts screen capturing.                                                     |
| <a href="#">stopScreenCapture</a>        | Stops screen capturing.                                                      |
| <a href="#">snapshot</a>                 | Takes a screenshot of the published video.                                   |
| <a href="#">setWatermark</a>             | Sets watermarks for the publisher. Watermarking is disabled by default.      |
| <a href="#">setEncoderMirror</a>         | Sets the mirror mode for encoded video.                                      |
| <a href="#">enableCustomVideoCapture</a> | Enables/Disables custom video capturing.                                     |
| <a href="#">sendCustomVideoFrame</a>     | Sends the captured video data to the SDK in the custom video capturing mode. |
| <a href="#">enableCustomVideoProcess</a> | Enables/Disables custom video processing.                                    |
| <a href="#">sendSeiMessage</a>           | Sends an SEI message.                                                        |

## Beauty filter APIs

| API                              | Description                                                                                                  |
|----------------------------------|--------------------------------------------------------------------------------------------------------------|
| <a href="#">getBeautyManager</a> | Gets the beauty filter management object <code>TXBeautyManager</code> , which is used to set beauty filters. |

## Audio APIs

| API                                    | Description                                |
|----------------------------------------|--------------------------------------------|
| <a href="#">startMicrophone</a>        | Turns the mic on.                          |
| <a href="#">stopMicrophone</a>         | Turns the mic off.                         |
| <a href="#">setAudioQuality</a>        | Sets the quality of published audio.       |
| <a href="#">enableVolumeEvaluation</a> | Enables the volume reminder for capturing. |

## Audio effect APIs

| API | Description |
|-----|-------------|
|-----|-------------|

| API                                   | Description                              |
|---------------------------------------|------------------------------------------|
| <a href="#">getAudioEffectManager</a> | Gets the audio effect management object. |

## Device management APIs

| API                              | Description                        |
|----------------------------------|------------------------------------|
| <a href="#">getDeviceManager</a> | Gets the device management object. |

## Other APIs

| API                                     | Description                                            |
|-----------------------------------------|--------------------------------------------------------|
| <a href="#">setProperty</a>             | Calls an advanced API of <code>V2TXLivePusher</code> . |
| <a href="#">setMixTranscodingConfig</a> | Sets On-Cloud MixTranscoding parameters.               |
| <a href="#">showDebugView</a>           | Sets whether to display the dashboard.                 |

# V2TXLivePusherObserver

## Basic SDK callback APIs

| API                       | Description                                                                           |
|---------------------------|---------------------------------------------------------------------------------------|
| <a href="#">onError</a>   | Callback for error. This callback is returned when the publisher encounters an error. |
| <a href="#">onWarning</a> | Callback for warning                                                                  |

## Video callback APIs

| API                                      | Description                                           |
|------------------------------------------|-------------------------------------------------------|
| <a href="#">onPushStatusUpdate</a>       | Callback of the publisher's connection status         |
| <a href="#">onSnapshotComplete</a>       | Callback for a screenshot taken                       |
| <a href="#">onProcessVideoFrame</a>      | Callback for custom video processing                  |
| <a href="#">onGLContextDestroyed</a>     | Callback for destroying the OpenGL context in the SDK |
| <a href="#">onCaptureFirstVideoFrame</a> | Callback for capturing the first video frame          |

## Audio callback APIs

| API                                      | Description                                  |
|------------------------------------------|----------------------------------------------|
| <a href="#">onCaptureFirstAudioFrame</a> | Callback for capturing the first audio frame |
| <a href="#">onMicrophoneVolumeUpdate</a> | Callback of mic capturing volume             |

## Mixtranscoding callback APIs

| API                                       | Description                                             |
|-------------------------------------------|---------------------------------------------------------|
| <a href="#">onSetMixTranscodingConfig</a> | Callback for setting On-Cloud MixTranscoding parameters |

## Statistics callback APIs

| API                                | Description                      |
|------------------------------------|----------------------------------|
| <a href="#">onStatisticsUpdate</a> | Callback of publisher statistics |

# Publishing

## V2TXLivePusher

Last updated : 2022-10-20 15:57:08

### Overview

Tencent Cloud's live stream publisher

### Features

`V2TXLivePusher` encodes local audio/video and publishes the encoded data to a specified URL. It supports any publishing server.

It has the following capabilities:

- Custom video capturing. You can customize audio/video data sources based on your project requirements.
- Retouching, filters, and stickers. `V2TXLivePusher` integrates multiple retouching algorithms (natural & smooth) and color space filters (custom filters are supported).
- QoS control technology. `V2TXLivePusher` can adapt automatically to different upstream network conditions by controlling audio/video traffic in real time based on the network conditions of hosts.
- Facial feature adjustment and animated widgets. Powered by YouTu's AI facial recognition technology, `V2TXLivePusher` supports animated widgets and fine-tuning of facial features, such as eye enlarging, face slimming, and nose reshaping. You need to purchase a **YouTu license** to use these live streaming effects.

## Basic SDK APIs

### initWithLiveMode

This API is used to initialize the publisher.

```
V2TXLivePusher(V2TXLiveMode liveMode)
```

### Parameters

| Parameter | Type         | Description                                 |
|-----------|--------------|---------------------------------------------|
| liveMode  | V2TXLiveMode | Publishing protocol: RTMP (default) or ROOM |

### addListener

This API is used to set the callbacks of the publisher. After the setting, you can listen for callback events of `V2TXLivePusher` , including publisher status, volume, statistics, warning and error messages, etc.

```
void addListener(V2TXLivePusherObserver func)
```

### Parameters

| Parameter | Type                   | Description                                                                                            |
|-----------|------------------------|--------------------------------------------------------------------------------------------------------|
| observer  | V2TXLivePusherObserver | Target object for the publisher's callbacks. For details, see <a href="#">V2TXLivePusherObserver</a> . |

## Basic Publishing APIs

### setRenderViewID

This API is used to set the view for local camera preview. Images captured by the local camera are displayed on the view passed in after retouching, facial feature adjustments, and filter application.

```
Future<V2TXLiveCode> setRenderViewID(int viewID)
```

### Parameters

| Parameter | Type | Description                                                                                    |
|-----------|------|------------------------------------------------------------------------------------------------|
| viewID    | int  | The view ID, which is returned by <code>V2TXLiveVideoWidget.onViewCreated(int viewID)</code> . |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

### startPush

This API is used to start publishing audio/video data.

```
Future<V2TXLiveCode> startPush(String url)
```

### Parameters

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| url       | String | The URL to which data is published. Any publishing server is supported. |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

- V2TXLIVE\_ERROR\_INVALID\_PARAMETER : operation failed because the URL is invalid.
- V2TXLIVE\_ERROR\_REFUSED : you cannot use the same stream ID for publishing and playback on the same device.

## stopPush

This API is used to stop publishing audio/video data.

```
Future<V2TXLiveCode> stopPush()
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## isPushing

This API is used to get whether the publisher is publishing streams.

```
Future<V2TXLiveCode> isPushing()
```

## Response

Whether streams are being played

- 1 : yes
- 0 : no

# Video APIs

## setVideoQuality

This API is used to set the video encoding parameters for publishing.

```
Future<V2TXLiveCode> setVideoQuality(V2TXLiveVideoEncoderParam param)
```

### Parameters

| Parameter | Type                                      | Description               |
|-----------|-------------------------------------------|---------------------------|
| param     | <a href="#">V2TXLiveVideoEncoderParam</a> | Video encoding parameters |

### setRenderRotation

This API is used to set the rotation of local camera preview.

```
Future<V2TXLiveCode> setRenderRotation(V2TXLiveRotation rotation)
```

### Parameters

| Parameter | Type                             | Description                                                                                |
|-----------|----------------------------------|--------------------------------------------------------------------------------------------|
| rotation  | <a href="#">V2TXLiveRotation</a> | The degrees by which the image is rotated. Default value: <code>v2TXLiveRotation0</code> . |

### Response

V2TXLiveCode:

`V2TXLIVE_OK`: successful

#### `V2TXLiveRotation` enumerated values

| Value                            | Description                  |
|----------------------------------|------------------------------|
| <code>v2TXLiveRotation0</code>   | No rotation                  |
| <code>v2TXLiveRotation90</code>  | Rotate 90 degrees clockwise  |
| <code>v2TXLiveRotation180</code> | Rotate 180 degrees clockwise |
| <code>v2TXLiveRotation270</code> | Rotate 270 degrees clockwise |

### setRenderMirror

This API is used to set the mirror mode of local camera preview.

```
Future<V2TXLiveCode> setRenderMirror(V2TXLiveMirrorType mirrorType)
```



## Parameters

| Parameter  | Type               | Description                                                                         |
|------------|--------------------|-------------------------------------------------------------------------------------|
| mirrorType | V2TXLiveMirrorType | The mirror mode of the camera. Default value: <code>v2TXLiveMirrorTypeAuto</code> . |

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

### V2TXLiveMirrorType enumerated values

| Value                                  | Description                                                                                |
|----------------------------------------|--------------------------------------------------------------------------------------------|
| <code>v2TXLiveMirrorTypeAuto</code>    | The default value. In this mode, the front camera is mirrored, but the rear camera is not. |
| <code>v2TXLiveMirrorTypeEnable</code>  | Both the front and rear cameras are mirrored.                                              |
| <code>v2TXLiveMirrorTypeDisable</code> | Neither the front nor rear camera is mirrored.                                             |

## startCamera

This API is used to turn the local camera on.

Note :

The `startVirtualCamera` , `startCamera` , and `startScreenCapture` APIs are mutually exclusive when you use them with the same pusher instance. For example, if you call `startCamera` first and then call `startVirtualCamera` , the SDK will stop publishing camera data and publish an image instead.

```
Future<V2TXLiveCode> startCamera (bool frontCamera)
```

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## stopCamera

This API is used to turn the local camera off.

```
Future<void> stopCamera()
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startVirtualCamera

This API is used to publish an image.

Note :

The `startVirtualCamera` , `startCamera` , and `startScreenCapture` APIs are mutually exclusive when you use them with the same pusher instance. For example, if you call `startCamera` first and then call `startVirtualCamera` , the SDK will stop publishing camera data and publish an image instead.

```
Future<V2TXLiveCode> startVirtualCamera(String type, String imageUrl)
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

| Parameter | Type   | Description                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------|
| type      | String | Valid values: <code>network</code> (an image from the internet), <code>file</code> (a local image). |
| imageUrl  | String | Image URL                                                                                           |

## stopVirtualCamera

This API is used to stop publishing images.

```
Future<V2TXLiveCode> stopVirtualCamera()
```

## Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## startScreenCapture

This API is used to start screen recording.

Note :

- To start screen recording on iOS, instead of using this API, you need to do the following.
- The `startVirtualCamera` , `startCamera` , and `startScreenCapture` APIs are mutually exclusive when you use them with the same pusher instance. For example, if you call `startCamera` first and then call `startVirtualCamera` , the SDK will stop publishing camera data and publish an image instead.

1. First, use Broadcast Upload Extension to start screen recording.
2. Then, call `enableCustomVideoCapture` to enable custom capturing.
3. At last, call `sendCustomVideoFrame` to send the screen images captured by Broadcast Upload Extension.

```
Future<V2TXLiveCode> startScreenCapture(String appGroup)
```

### Parameters

| Parameter | Type   | Description                                                                                                                                                                                          |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| appGroup  | String | The App Group ID shared by the host app and Broadcast Upload Extension. You can set it to <code>nil</code> , but for better reliability, we recommend you set it as instructed in our documentation. |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## stopScreenCapture

This API is used to stop screen recording.

```
Future<V2TXLiveCode> stopScreenCapture()
```

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## snapshot

This API is used to take a screenshot of the local video while it is being published.

Note :

After `V2TXLIVE_OK` is returned, you can get the screenshot taken in the `V2TXLivePusherObserver.onSnapshotComplete` callback.

```
Future<V2TXLiveCode> snapshot()
```

## Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_REFUSED` : failed to take a screenshot because publishing has stopped.

## setWatermark

This API is used to set a watermark for the publisher. Watermarking is disabled by default.

```
Future<V2TXLiveCode> setWatermark(String type, String image, double x, double y, double scale)
```

## Parameters

| Parameter | Type   | Description                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------|
| type      | String | Valid values: <code>network</code> (an image from the internet), <code>file</code> (a local image). |
| image     | String | Image URL                                                                                           |
| x         | double | Watermark coordinate                                                                                |
| y         | double | Watermark coordinate                                                                                |
| scale     | double | Percentage by which the image is resized                                                            |

## setEncoderMirror

This API is used to set the mirror mode of encoded images.

```
Future<V2TXLiveCode> setEncoderMirror (bool mirror)
```

### Parameters

| Parameter | Type    | Description                                                           |
|-----------|---------|-----------------------------------------------------------------------|
| mirror    | Boolean | Whether to mirror encoded images. Default value: <code>false</code> . |

## enableCustomVideoCapture

This API is used to enable/disable custom video capturing. In the custom video capturing mode, the SDK stops capturing images from the camera, but continues to encode and send images.

```
Future<V2TXLiveCode> enableCustomVideoCapture (bool enable)
```

### Parameters

| Parameter | Type | Description                                                                   |
|-----------|------|-------------------------------------------------------------------------------|
| enable    | bool | Whether to enable custom video capturing. Default value: <code>false</code> . |

## sendCustomVideoFrame

This API is used to send the captured custom video data to the SDK.

```
Future<V2TXLiveCode> sendCustomVideoFrame (V2TXLiveVideoFrame videoFrame)
```

### Parameters

| Parameter  | Type               | Description                  |
|------------|--------------------|------------------------------|
| videoFrame | V2TXLiveVideoFrame | Video frames sent to the SDK |

### Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_INVALID_PARAMETER` : operation failed because the video data is invalid.

- `V2TXLIVE_ERROR_REFUSED` : failed. You must call `enableCustomVideoCapture` to enable custom video capturing first.

## enableCustomVideoProcess

This API is used to enable/disable custom video processing.

```
Future<V2TXLiveCode> enableCustomVideoProcess(bool enable,
V2TXLivePixelFormat pixelFormat, V2TXLiveBufferType bufferType)
```

### Parameters

| Parameter   | Type                | Description                                                                    |
|-------------|---------------------|--------------------------------------------------------------------------------|
| enable      | bool                | Whether to enable custom video processing. Default value: <code>false</code> . |
| pixelFormat | V2TXLivePixelFormat | Pixel format of video frames                                                   |
| bufferType  | V2TXLiveBufferType  | Buffer type of video data                                                      |

### V2TXLivePixelFormat enumerated values

| Value                        | Description       |
|------------------------------|-------------------|
| v2TXLivePixelFormatUnknown   | Unknown           |
| v2TXLivePixelFormatI420      | YUV420P (I420)    |
| v2TXLivePixelFormatTexture2D | OpenGL 2D texture |

### V2TXLiveBufferType enumerated values

| Value                        | Description                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| v2TXLiveBufferTypeUnknown    | Unknown                                                                                                                   |
| v2TXLiveBufferTypeByteBuffer | Direct buffers. This type is for I420 and other buffers and is used at the native layer.                                  |
| v2TXLiveBufferTypeByteArray  | Byte arrays. This type is for I420 and other buffers and is used at the Java layer.                                       |
| v2TXLiveBufferTypeTexture    | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

## sendSeiMessage

This API is used to send an SEI message. [V2TXLivePlayer](#) can receive SEI messages via the `onReceiveSeiMessage` callback of [V2TXLivePlayerObserver](#).

```
Future<V2TXLiveCode> sendSeiMessage(int payloadType, Uint8List data)
```

### Parameters

| Parameter   | Type      | Description                                     |
|-------------|-----------|-------------------------------------------------|
| payloadType | int       | Data type. Valid values: 5 , 242 (recommended). |
| data        | Uint8List | Data to be sent                                 |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## Beauty Filter APIs

### getBeautyManager

This API is used to get the beauty filter manager [TXBeautyManager](#).

You can do the following using the beauty filter manger:

- Set the beauty filter style and apply effects including skin brightening, rosy skin, eye enlarging, face slimming, chin slimming, chin lengthening/shortening, face shortening, nose narrowing, eye brightening, teeth whitening, eye bag removal, wrinkle removal, and smile line removal.
- Adjust the hairline, eye spacing, eye corners, lip shape, nose wings, nose position, lip thickness, and face shape.
- Apply animated effects such as face widgets (resources).
- Add makeup effects.
- Recognize gestures.

```
TXBeautyManager getBeautyManager()
```

## Audio APIs

## startMicrophone

This API is used to turn the mic on.

```
Future<V2TXLiveCode> startMicrophone()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## stopMicrophone

This API is used to turn the mic off.

```
Future<V2TXLiveCode> stopMicrophone()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : successful

## setAudioQuality

This API is used to set audio quality.

```
Future<V2TXLiveCode> setAudioQuality(V2TXLiveAudioQuality quality)
```

### Parameters

| Parameter | Type                 | Description   |
|-----------|----------------------|---------------|
| quality   | V2TXLiveAudioQuality | Audio quality |

#### V2TXLiveAudioQuality enumerated values

| Value                       | Description                                                                                                                                                  |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| v2TXLiveAudioQualitySpeech  | Speech. Audio sample rate: 16 kHz; sound channel: mono; bitrate: 16 Kbps<br>This is designed for call scenarios such as online conferencing and audio calls. |
| v2TXLiveAudioQualityDefault | Default. Audio sample rate: 48 kHz; sound channel: mono; bitrate: 50 Kbps<br>This is the default audio quality of the SDK and is recommended.                |



| Value                     | Description                                                                                                                                                                                  |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| v2TXLiveAudioQualityMusic | Music. Audio sample rate: 48 kHz; sound channel: dual; bitrate: 128 Kbps<br>This is designed for music-oriented scenarios with hi-fi requirements, such as karaoke and live music streaming. |

## Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_REFUSED` : you cannot change audio quality settings when streams are being published.

## enableVolumeEvaluation

This API is used to enable the volume reminder for audio capturing.

Note :

After enabling the volume reminder, you can get the volume measured by the SDK in the `V2TXLivePusherObserver.onMicrophoneVolumeUpdate` callback.

```
Future<V2TXLiveCode> enableVolumeEvaluation(int intervalMs)
```

## Parameters

| Parameter  | Type | Description                                                                                                                                                                                 |
|------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| intervalMs | int  | Interval (ms) for volume callbacks. The minimum interval allowed is 100 ms. If the value is <code>0</code> (default) or smaller, the callback is disabled. <code>300</code> is recommended. |

## Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

# Audio Effect APIs

## getAudioEffectManager

This API is used to get the audio effect manager [TXAudioEffectManager](#).

You can do the following using `TXAudioEffectManager` :

- Set the volume of audio captured by the mic.
- Set reverb and voice changing effects.
- Enable in-ear monitoring and set its volume.
- Add background music and specify how to play it.

```
TXAudioEffectManager getAudioEffectManager()
```

## Device Management APIs

### getDeviceManager

This API is used to get the device manager [TXDeviceManager](#).

You can do the following using `TXDeviceManager` :

- Switch between the front and rear cameras.
- Enable autofocus.
- Set camera zoom level.
- Enable/Disable flashlight.

```
TXDeviceManager getDeviceManager()
```

## Other APIs

### setProperty

This API is used to call the advanced APIs of `V2TXLivePusher` .

```
Future<V2TXLiveCode> setProperty(String key, String value)
```

#### Parameters

| Parameter | Type   | Description                     |
|-----------|--------|---------------------------------|
| key       | String | Key of the advanced API to call |

| Parameter | Type   | Description                             |
|-----------|--------|-----------------------------------------|
| value     | String | Parameters required by the advanced API |

## Response

V2TXLiveCode:

- `V2TXLIVE_OK` : successful
- `V2TXLIVE_ERROR_INVALID_PARAMETER` : operation failed because `key` is empty.

## setMixTranscodingConfig

This API is used to set On-Cloud MixTranscoding parameters. If you have enabled relay to CDN on the **Function Configuration** page of the [TRTC console](#), each anchor will have a default [CDN address](#). There may be multiple anchors in a room, each sending their own video and audio, but the audience needs only one live stream. Therefore, you need to mix multiple audio/video streams into one standard live stream. This is MixTranscoding.

```
Future<V2TXLiveCode> setMixTranscodingConfig(V2TXLiveTranscodingConfig? config)
```

## Parameters

| Parameter | Type                      | Description                           |
|-----------|---------------------------|---------------------------------------|
| config    | V2TXLiveTranscodingConfig | On-Cloud MixTranscoding configuration |

## V2TXLiveTranscodingConfig

| Value                                     | Description                                                                                                               |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <code>v2TXLiveBufferTypeUnknown</code>    | Unknown                                                                                                                   |
| <code>v2TXLiveBufferTypeByteBuffer</code> | Direct buffers. This type is for I420 and other buffers and is used at the native layer.                                  |
| <code>v2TXLiveBufferTypeByteArray</code>  | Byte arrays. This type is for I420 and other buffers and is used at the Java layer.                                       |
| <code>v2TXLiveBufferTypeTexture</code>    | Texture ID, which allows direct operation. It delivers the best performance and has the smallest impact on video quality. |

## showDebugView

This API is used to set whether to display the dashboard.

```
Future<V2TXLiveCode> showDebugView(bool isShow)
```

### Parameters

| Parameter | Type | Description                                                           |
|-----------|------|-----------------------------------------------------------------------|
| isShow    | bool | Whether to display the dashboard. Default value: <code>false</code> . |

# V2TXLivePusherObserver

Last updated : 2022-10-20 15:57:08

## Overview

Callbacks of Tencent Cloud's live stream publisher

## Features

You can use `V2TXLivePusherObserver` to receive callbacks of [V2TXLivePusher](#), including the publisher status, first audio/video frame, statistics, and warning and error messages.

## Basic Callback APIs

### onError

Callback for error. This callback is triggered when the publisher encounters an error.

```
V2TXLivePusherListenerType.onError
```

### Parameters

| Parameter | Type         | Description       |
|-----------|--------------|-------------------|
| code      | V2TXLiveCode | Error code        |
| msg       | String       | Error message     |
| extraInfo | Map          | Extra information |

### onWarning

Callback for warning.

```
V2TXLivePusherListenerType.onWarning
```

### Parameters

| Parameter | Type         | Description  |
|-----------|--------------|--------------|
| code      | V2TXLiveCode | Warning code |

| Parameter | Type   | Description       |
|-----------|--------|-------------------|
| msg       | String | Warning message   |
| extraInfo | Map    | Extra information |

## Video Callback APIs

### onPushStatusUpdate

Callback of the publisher's connection status.

```
V2TXLivePusherListenerType.onPushStatusUpdate
```

#### Parameters

| Parameter | Type               | Description       |
|-----------|--------------------|-------------------|
| status    | V2TXLivePushStatus | Status code       |
| msg       | String             | Status message    |
| extraInfo | Map                | Extra information |

#### **V2TXLivePushStatus** enumerated values

| Value                               | Description                  |
|-------------------------------------|------------------------------|
| V2TXLivePushStatusDisconnected: 0   | Disconnected from the server |
| V2TXLivePushStatusConnecting: 1     | Connecting to the server     |
| V2TXLivePushStatusConnectSuccess: 2 | Connected to the server      |
| V2TXLivePushStatusReconnecting: 3   | Reconnecting to the server   |

### onSnapshotComplete

Callback for a screenshot taken

```
V2TXLivePusherListenerType.onSnapshotComplete
```

#### Parameters

| Parameter | Type      | Description      |
|-----------|-----------|------------------|
| image     | UInt8List | Screenshot taken |

## onProcessVideoFrame

Callback for custom video processing.

Note :

You will receive this callback after you call `V2TXLivePusher.enableCustomVideoProcess (bool enable, V2TXLivePixelFormat pixelFormat, V2TXLiveBufferType bufferType)` to enable custom video processing.

```
V2TXLivePusherListenerType.onProcessVideoFrame
```

## Parameters

| Parameter | Type | Description                  |
|-----------|------|------------------------------|
| srcFrame  | Map  | For images before processing |
| dstFrame  | Map  | For images after processing  |

## onGLContextDestroyed

Callback for a GL context for custom video processing being destroyed.

```
V2TXLivePusherListenerType.onGLContextDestroyed
```

## onCaptureFirstVideoFrame

Callback for capturing the first video frame.

```
V2TXLivePusherListenerType.onCaptureFirstVideoFrame
```

# Audio Callback APIs

## onCaptureFirstAudioFrame

Callback for capturing the first audio frame.

```
V2TXLivePusherListenerType.onCaptureFirstAudioFrame
```

### onMicrophoneVolumeUpdate

Callback of mic capturing volume.

```
V2TXLivePusherListenerType.onMicrophoneVolumeUpdate
```

## Statistics Callback API

### onStatisticsUpdate

Callback of publisher statistics.

```
V2TXLivePusherListenerType.onStatisticsUpdate
```

#### Parameters

| Parameter  | Type | Description          |
|------------|------|----------------------|
| statistics | Map  | Publisher statistics |

## MixTranscoding Callback API

### onSetMixTranscodingConfig

Callback for setting On-Cloud MixTranscoding parameters.

Note :

You will receive this callback after you call

```
V2TXLivePusher.setMixTranscodingConfig(V2TXLiveTranscodingConfig config)
```

 to set On-Cloud MixTranscoding parameters.

```
V2TXLivePusherListenerType.onSetMixTranscodingConfig
```



| Parameter | Type         | Description                          |
|-----------|--------------|--------------------------------------|
| code      | V2TXLiveCode | 0 : successful; other values: failed |
| msg       | String       | Error message                        |

# Playback

## V2TXLivePlayer

Last updated : 2022-10-20 15:57:08

### Overview

Tencent Cloud's live stream player

The player pulls audio/video data from the specified live streaming URL and plays the data after decoding and local rendering.

### Features

The player has the following capabilities:

- Playing over protocols including RTMP, HTTP-FLV, TRTC, and WebRTC
- Taking screenshots of streamed video
- Delay adjustment. You can set the minimum and maximum cache time for auto adjustment by the player.
- Custom video processing. You can process live video based on your project requirements before rendering and playback.

## Basic SDK APIs

### addListener

This API is used to set the callbacks of the player. After setting, you can listen for callback events of

`V2TXLivePlayer`, including player status, playback volume, first audio/video frame, statistics, warning and error messages, etc.

```
void addListener(V2TXLivePlayerObserver func)
```

### Parameters

| Parameter | Type                   | Description                                                                                             |
|-----------|------------------------|---------------------------------------------------------------------------------------------------------|
| observer  | V2TXLivePlayerObserver | The target object for the player's callbacks. For details, see <a href="#">V2TXLivePlayerObserver</a> . |

## Basic Playback APIs

## setRenderViewID

This API is used to set the rendering view to display video.

```
Future<V2TXLiveCode> setRenderViewID(int viewID)
```

### Parameters

| Parameter | Type | Description                                                                                  |
|-----------|------|----------------------------------------------------------------------------------------------|
| viewID    | int  | The rendering view ID, which is returned by <code>V2TXLiveVideoWidget.onViewCreated</code> . |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : Successful

## startLivePlay

This API is used to start playing audio/video streams.

```
Future<V2TXLiveCode> startLivePlay(String url)
```

Note :

Since v10.7, `startPlay` has been replaced by `startLivePlay` , and you need to call `V2TXLivePremier#setLicence` or `TXLiveBase#setLicence` to set the license to use the live playback feature (you only need to set the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the live playback feature. If you don't have any of the licenses, you can [buy one](#) or [apply for a trial license for free](#) to use the feature.

### Parameters

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| url       | String | The playback URL, which supports RTMP, HTTP-FLV, TRTC, and WebRTC. |

### Response

V2TXLiveCode:

- `V2TXLIVE_OK` : Successful
- `V2TXLIVE_ERROR_INVALID_PARAMETER` : Operation failed because the URL is invalid.
- `V2TXLIVE_ERROR_REFUSED` : RTC does not support using the same stream ID for publishing and playback on the same device.

## stopPlay

This API is used to stop playing audio/video streams.

```
Future<V2TXLiveCode> stopPlay()
```

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : successful

## isPlaying

This API is used to get whether the player is playing streams.

```
Future<int> isPlaying()
```

### Response

Whether streams are being played

- `1` : yes
- `0` : no

# Video APIs

## setRenderRotation

This API is used to set the rotation of images displayed by the player.

```
Future<V2TXLiveCode> setRenderRotation(V2TXLiveRotation rotation)
```

### Parameters

| Parameter | Type                             | Description                                                |
|-----------|----------------------------------|------------------------------------------------------------|
| rotation  | <a href="#">V2TXLiveRotation</a> | The degrees by which images are rotated. Default value: 0. |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### V2TXLiveRotation enumerated values

| Value               | Description                  |
|---------------------|------------------------------|
| v2TXLiveRotation0   | No rotation                  |
| v2TXLiveRotation90  | Rotate 90 degrees clockwise  |
| v2TXLiveRotation180 | Rotate 180 degrees clockwise |
| v2TXLiveRotation270 | Rotate 270 degrees clockwise |

## setRenderFillMode

This API is used to set the image fill mode.

```
Future<V2TXLiveCode> setRenderFillMode(V2TXLiveFillMode mode)
```

## Parameters

| Parameter | Type             | Description                                               |
|-----------|------------------|-----------------------------------------------------------|
| mode      | V2TXLiveFillMode | The image fill mode. Default value: V2TXLiveFillModeFit . |

## Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### V2TXLiveFillMode enumerated values

| Value                | Description                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| v2TXLiveFillModeFit  | The image fits the screen without cropping. If the aspect ratio of the image and the screen do not match, there will be black bars.                                     |
| v2TXLiveFillModeFill | The image fills the entire screen, without black bars. If the aspect ratio of the image and screen do not match, the parts of the image that don't fit will be cropped. |

## pauseVideo

This API is used to pause playing video streams.

```
Future<V2TXLiveCode> pauseVideo()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### resumeVideo

This API is used to resume playing video streams.

```
Future<V2TXLiveCode> resumeVideo()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### snapshot

This API is used to take a screenshot of streamed video.

Note :

After V2TXLIVE\_OK is returned, you can get the screenshot taken in the V2TXLivePlayerObserver.onSnapshotComplete callback.

```
Future<V2TXLiveCode> snapshot()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

- V2TXLIVE\_ERROR\_REFUSED : Failed to take a screenshot because playback has stopped.

## Audio APIs

### pauseAudio

This API is used to pause playing audio streams.

```
Future<V2TXLiveCode> pauseAudio()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### resumeAudio

This API is used to resume playing audio streams.

```
Future<V2TXLiveCode> resumeAudio()
```

### Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### setPlayoutVolume

This API is used to set the volume.

```
Future<V2TXLiveCode> setPlayoutVolume(int volume)
```

### Parameters

| Parameter | Type | Description                                          |
|-----------|------|------------------------------------------------------|
| volume    | int  | The volume. Value range: 0-100. Default value: 100 . |

### Response

V2TXLiveCode:

V2TXLIVE\_OK : Successful

### enableVolumeEvaluation

This API is used to enable the volume reminder for playback.

Note :

After enabling the volume reminder, you can get the SDK's volume evaluation through the `V2TXLivePlayerObserver.onPlayoutVolumeUpdate` callback.

```
Future<V2TXLiveCode> enableVolumeEvaluation(int intervalMs)
```

### Parameters

| Parameter  | Type | Description                                                                                                                                                                                                                               |
|------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| intervalMs | int  | The interval (ms) for triggering the <code>onPlayoutVolumeUpdate</code> callback. The minimum interval allowed is 100 ms. If the value is <code>0</code> (default) or smaller, the callback is disabled. <code>300</code> is recommended. |

### Response

V2TXLiveCode:

`V2TXLIVE_OK` : Successful

## Other APIs

### setCacheParams

This API is used to set the minimum and maximum cache time (seconds) for auto adjustment by the player.

```
Future<V2TXLiveCode> setCacheParams(double minTime, double maxTime)
```

### Parameters

| Parameter | Type   | Description                                                                                                                               |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------|
| minTime   | double | The minimum cache time for auto adjustment by the player. The value must be greater than <code>0</code> . Default value: <code>1</code> . |
| maxTime   | double | The maximum cache time for auto adjustment by the player. The value must be greater than <code>0</code> . Default value: <code>5</code> . |

### Response

V2TXLiveCode:

- `V2TXLIVE_OK` : Successful



- `V2TXLIVE_ERROR_INVALID_PARAMETER` : Operation failed. `minTime` and `maxTime` must be greater than `0` .
- `V2TXLIVE_ERROR_REFUSED` : You cannot change the cache policy while streams are being played.

## showDebugView

This API is used to set whether to show the debug view for the player status information.

```
Future<void> showDebugView(bool isShow)
```

### Parameters

| Parameter | Type | Description                                                         |
|-----------|------|---------------------------------------------------------------------|
| isShow    | bool | Whether to show the debug view. Default value: <code>false</code> . |

# V2TXLivePlayerObserver

Last updated : 2022-10-20 15:57:08

## Overview

Callbacks of Tencent Cloud's live stream player.

## Features

You can use `V2TXLivePlayerObserver` to receive callbacks of [V2TXLivePlayer](#), including the player status, playback volume, first audio/video frame, statistics, and warning and error messages.

## Basic Callback APIs

### onError

Callback for error

```
V2TXLivePlayerListenerType.onError
```

#### Parameters

| Parameter | Type         | Description       |
|-----------|--------------|-------------------|
| code      | V2TXLiveCode | Error code        |
| msg       | String       | Error message     |
| extraInfo | Map          | Extra information |

### onWarning

Callback for warning

```
V2TXLivePlayerListenerType.onWarning
```

#### Parameters

| Parameter | Type         | Description     |
|-----------|--------------|-----------------|
| code      | V2TXLiveCode | Warning code    |
| msg       | String       | Warning message |

| Parameter | Type | Description       |
|-----------|------|-------------------|
| extraInfo | Map  | Extra information |

## onConnected

Callback for successfully connecting to the server

```
V2TXLivePlayerListenerType.onConnected
```

### Parameters

| Parameter | Type | Description       |
|-----------|------|-------------------|
| extraInfo | Map  | Extra information |

## Video Callback APIs

## onVideoPlaying

Callback for video playback

```
V2TXLivePlayerListenerType.onVideoPlaying
```

### Parameters

| Parameter | Type | Description                      |
|-----------|------|----------------------------------|
| firstPlay | bool | Whether it is the first playback |
| extraInfo | Map  | Extra information                |

## onVideoLoading

Callback for loading video

```
V2TXLivePlayerListenerType.onVideoLoading
```

### Parameters

| Parameter | Type | Description       |
|-----------|------|-------------------|
| extraInfo | Map  | Extra information |

## onVideoResolutionChanged

Callback for change of player resolution

```
V2TXLivePlayerListenerType.onVideoResolutionChanged
```

### Parameters

| Parameter | Type | Description  |
|-----------|------|--------------|
| width     | int  | Video width  |
| height    | int  | Video height |

## onSnapshotComplete

Callback for a screenshot taken

```
V2TXLivePlayerListenerType.onSnapshotComplete
```

### Parameters

| Parameter | Type      | Description      |
|-----------|-----------|------------------|
| image     | Uint8List | Screenshot taken |

## onRenderVideoFrame

Callback for custom video rendering

Note :

You will receive this callback after calling

```
V2TXLivePlayer.enableCustomRendering(pixelFormat:bufferType:)
```

 to enable custom video rendering.

```
V2TXLivePlayerListenerType.onRenderVideoFrame
```

### Parameters

| Parameter  | Type | Description  |
|------------|------|--------------|
| videoFrame | Map  | Video frames |

## Audio Callback APIs

### onAudioPlaying

Callback for audio playback

```
V2TXLivePlayerListenerType.onAudioPlaying
```

#### Parameters

| Parameter | Type | Description                      |
|-----------|------|----------------------------------|
| firstPlay | bool | Whether it is the first playback |
| extraInfo | Map  | Extra information                |

### onAudioLoading

Callback for loading audio

```
V2TXLivePlayerListenerType.onAudioLoading
```

#### Parameters

| Parameter | Type | Description       |
|-----------|------|-------------------|
| extraInfo | Map  | Extra information |

### onPlayoutVolumeUpdate

Callback of the player's volume

```
V2TXLivePlayerListenerType.onPlayoutVolumeUpdate
```

#### Parameters

| Parameter | Type | Description                 |
|-----------|------|-----------------------------|
| volume    | int  | Volume. Value range: 0-100. |

## Statistics Callback API

### onStatisticsUpdate

## Callback of the player's statistics

```
V2TXLivePlayerListenerType.onStatisticsUpdate
```

**Parameters**

| Parameter  | Type | Description       |
|------------|------|-------------------|
| statistics | Map  | Player statistics |

# Demo

Last updated : 2022-10-20 15:57:08

Tencent Cloud offers a straightforward and easy-to-understand API example project regarding frequently asked questions among developers. You can use it to quickly learn how to use different APIs.

## Download Address

| Platform | GitHub Address         |
|----------|------------------------|
| Flutter  | <a href="#">GitHub</a> |

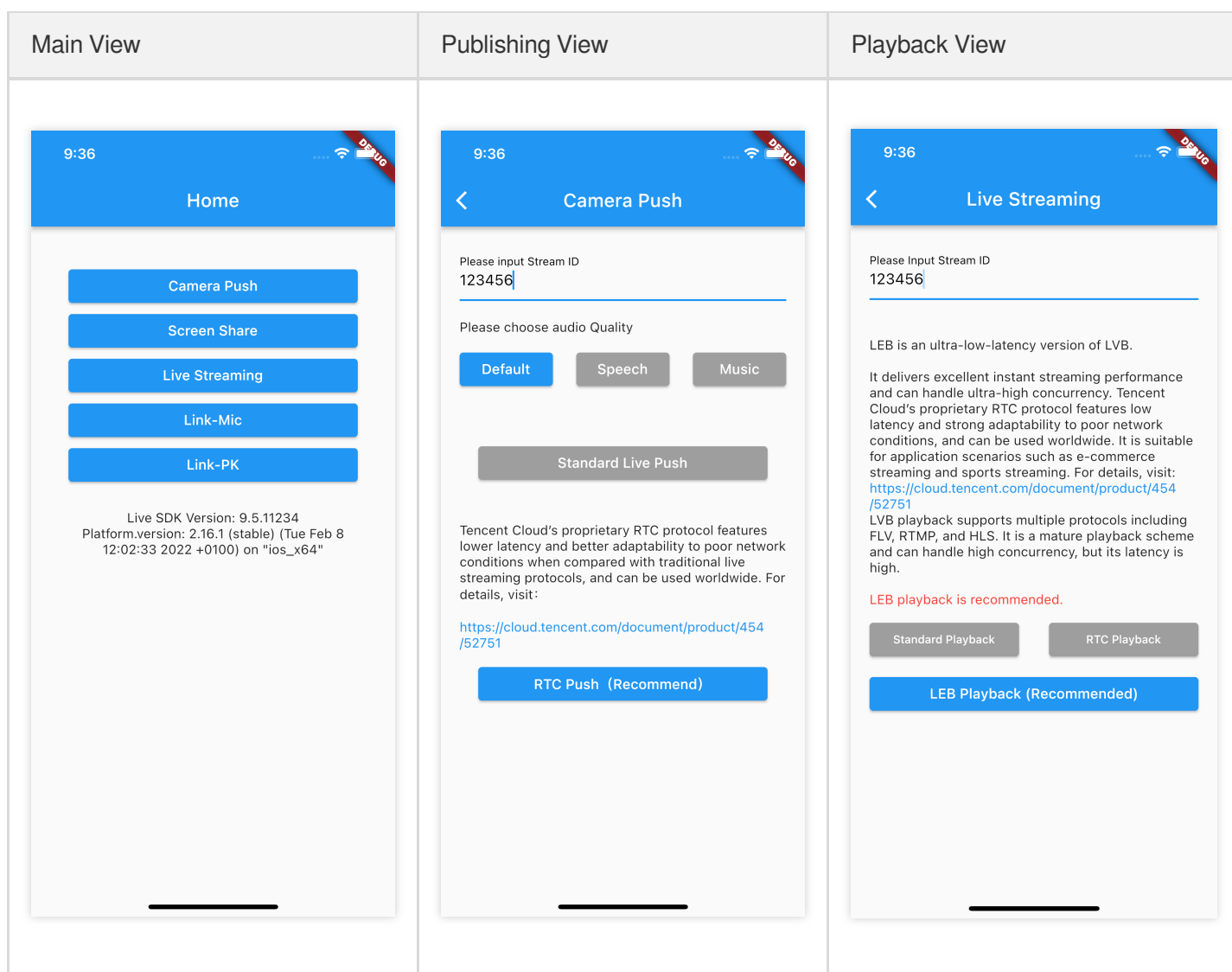
## Contents

The demo project covers the following features:

- [Publishing from Camera](#)
- [Publishing from Screen](#)
- [Playback](#)
- [Same-Room Communication](#)
- [Cross-Room Communication](#)

## UI Screenshots

|           |                 |               |
|-----------|-----------------|---------------|
| Main View | Publishing View | Playback View |
|-----------|-----------------|---------------|





# Error Codes

Last updated : 2022-10-20 15:57:08

## onError

The SDK encountered a severe error (for example, invalid license or API call failure) that makes it impossible for stream publishing to continue.

Note :

Video encoding failure does not affect publishing. The SDK will handle the issue automatically to ensure successful encoding of subsequent frames.

| Error Code | Event                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0          | V2TXLIVE_OK                      | No error                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| -1         | V2TXLIVE_ERROR_FAILED            | A common error not yet classified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| -2         | V2TXLIVE_ERROR_INVALID_PARAMETER | An invalid parameter was passed to the API.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| -3         | V2TXLIVE_ERROR_REFUSED           | The API call was rejected.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| -4         | V2TXLIVE_ERROR_NOT_SUPPORTED     | The API cannot be called.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| -5         | V2TXLIVE_ERROR_INVALID_LICENSE   | Failed to call the API because the license is invalid. Note: Before calling <code>startLivePlay</code> , you need to call <code>V2TXLivePremier#setLicence</code> to configure the license (you only need to configure the license once). Otherwise, playback will fail (black screen). You can use a live stream publishing license, UGSV license, or video playback license to activate the playback feature. If you don't have any of the licenses, you can <a href="#">buy one</a> or <a href="#">apply for a trial license for free</a> . |

| Error Code | Event                                     | Description                                                                                                                                                       |
|------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -6         | V2TXLIVE_ERROR_REQUEST_TIMEOUT            | The request timed out.                                                                                                                                            |
| -7         | V2TXLIVE_ERROR_SERVER_PROCESS_FAILED      | The server denied the request.                                                                                                                                    |
| -8         | V2TXLIVE_ERROR_DISCONNECTED               | The SDK was disconnected.                                                                                                                                         |
| -2304      | V2TXLIVE_ERROR_NO_AVAILABLE_HEVC_DECODERS | Could not find an available HEVC decoder. This error code indicates that the current device does not support H.265 decoding. Please switch to H.264 for playback. |

## onWarning

Most warning events trigger protection or recovery logic that involves retries. In most cases, the problems can be fixed by the SDK itself. However, some warning events still need to be handled manually. Warnings serve the purpose of reminding you or your end users that an error occurred.

| Error Code | Event                                    | Description                                                                                                   |
|------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1101       | V2TXLIVE_WARNING_NETWORK_BUSY            | Bad network connection: Data upload blocked due to limited upstream bandwidth.                                |
| 2105       | V2TXLIVE_WARNING_VIDEO_BLOCK             | Stuttering during video playback.                                                                             |
| -1301      | V2TXLIVE_WARNING_CAMERA_START_FAILED     | Failed to turn the camera on.                                                                                 |
| -1316      | V2TXLIVE_WARNING_CAMERA_OCCUPIED         | The camera is occupied. Try a different camera.                                                               |
| -1314      | V2TXLIVE_WARNING_CAMERA_NO_PERMISSION    | No access to the camera. This usually occurs on mobile devices and may be because the user denied the access. |
| -1302      | V2TXLIVE_WARNING_MICROPHONE_START_FAILED | Failed to turn the mic on.                                                                                    |

| Error Code | Event                                         | Description                                                                                                        |
|------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| -1319      | V2TXLIVE_WARNING_MICROPHONE_OCCUPIED          | The mic is occupied. This occurs when, for example, the user is having a call on the mobile device.                |
| -1317      | V2TXLIVE_WARNING_MICROPHONE_NO_PERMISSION     | No access to the mic. This usually occurs on mobile devices and may be because the user denied the access.         |
| -1309      | V2TXLIVE_WARNING_SCREEN_CAPTURE_NOT_SUPPORTED | The system does not support screen sharing.                                                                        |
| -1308      | V2TXLIVE_WARNING_SCREEN_CAPTURE_START_FAILED  | Failed to start screen recording. If this occurs on a mobile device, it may be because the user denied the access. |
| -7001      | V2TXLIVE_WARNING_SCREEN_CAPTURE_INTERRUPTED   | Screen recording was stopped by the system.                                                                        |