Mobile Live Video Broadcasting

Server-based Integration

Product Introduction

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Server-based Integration guide

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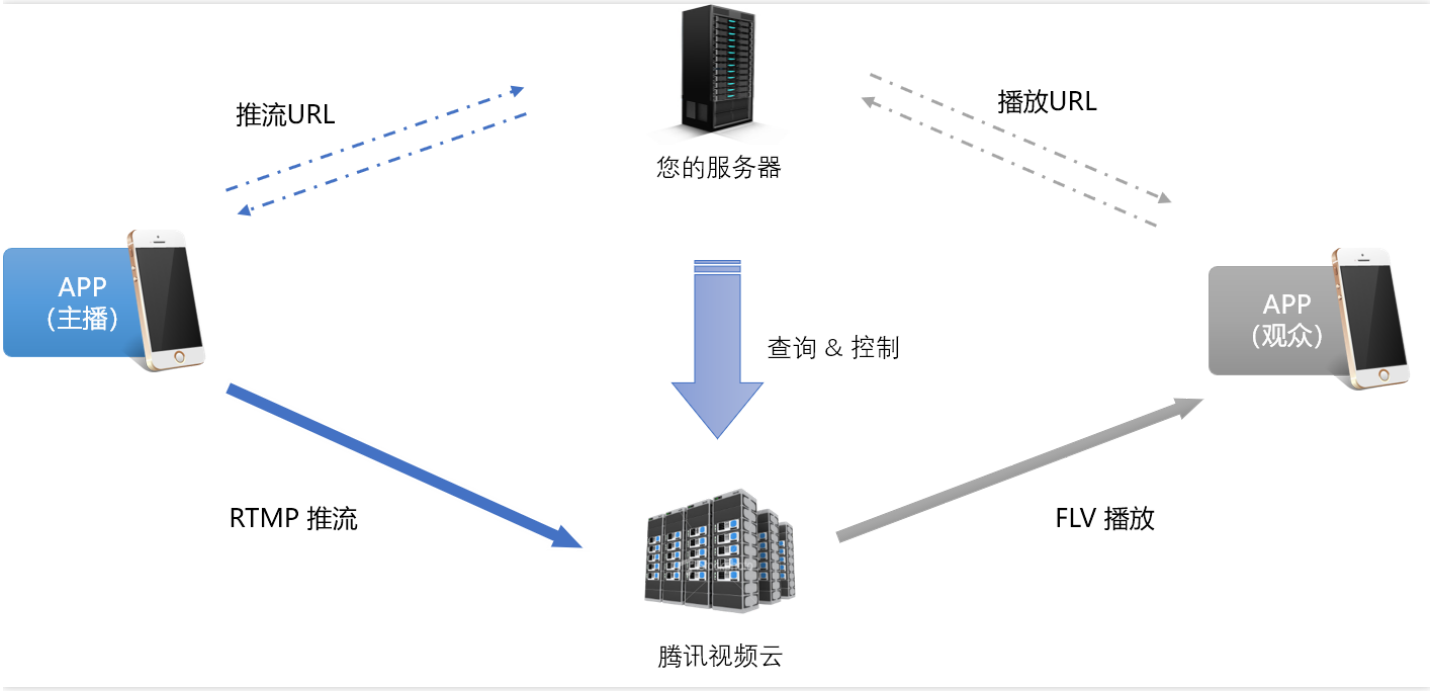
Tencent Video Cloud is PAAS rather than SAAS (in another word, it only provides a platform rather than specific business to clients), which requires your business backend engineers to participate in the integration process. Backend engineers' tasks are as follows:



Assigning URLs

For either single-session LVB or free-run LVB, assigning URLs at backend is more flexible than hardcoding URLs in your Apps.

Assigning URLs refers to the processes of returning push URLs to Apps when VJs are ready to push streams (iOS | Android) on Apps and returning playback URLs to Apps when viewers are ready to play back the streams (iOS | Android) on Apps.

For more information, please see Assigning URLs.

Assigning UserSig

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UserSig is a security credential for using Tencent Cloud Instant Messaging (IM). If you want use the chat room feature of Tencent Cloud IM service, you need to ask your backend engineer to generate a UserSig and return it to the terminal APP. If you already have an IM solution (that is, you already have your own chat room), skip this step.

For more information, please see Assigning UserSig.

Controlling LVB streams

If you want to query the quantity and status of LVB streams or manage them, use the following REST APIs to perform secondary development as needed:

API	Description
Get_LiveStat	Statistics query - query the push and playback information
Get_LivePushStat	Statistics query - query the push information
Get_LivePlayStat	Statistics query - query the playback information
Get_LivePushStatHistory	Obtain the history of push
Get_LivePushStatHistory	Obtain the history of playback statistics
Live_Channel_GetStatus	Query only status information of a stream (old version API)
Live_Channel_SetStatus	**Ban** an LVB stream, mainly used in porn detection
Live_Tape_GetFilelist	Query the list of videos **recorded** during LVB for a certain stream
Live_Queue_Get	Query the list of screenshots **captured** during LVB for a certain stream
Live_Channel_GetChannelList	Query channel list
Live_Channel_GetChannelList	Query LVB channel list
mix_streamv2.start_mix_stream_advanced	API for stream mixing on the cloud (used to mix screens with multiple LVB streams)
channel_manager	Stop pushing stream and delay the availability of API - It can disable push for a specified stream

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API	Description
Live_Tape_Start	Create a recording task. It supports scheduled recording and real-time recording
Live_Tape_Stop	End a recording task

For more information, please see Controlling LVB Streams.

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Hotlink Protection Signature

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Why should I assign URLs?

A push URL is required for LVB push, and a playback URL is required for LVB playback. For either single-session LVB or free-run LVB, assigning URLs at backend is more flexible than hardcoding URLs in your Apps.

Assigning URLs refers to the processes of returning push URLs to Apps when VJs are ready to push streams (iOS | Android) on Apps and returning playback URLs to Apps when viewers need to play back the streams (iOS | Android) on Apps.

Composition of URL

Composition of playback URL

A standard push URL is shown below, which consists of three parts:

- **LVB Code**
  It is also called room ID. Random numbers or user ID is recommended. BIZID prefix is required in a valid LVB code.

- **txTime**
  It refers to the time when the URL expires. The format is UNIX time stamp in hexadecimal notation, for example, 5867D600 means that the URL will expire at 00:00:00 AM on Jan. 1, 2017. Generally, txTime is set to a time which is 24 hours later than the current time. It is not recommended to set a too short

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validity period to avoid the inability of VJ to restore push in case of a flash breakdown of network during the broadcasting.

- **txSecret**
  This refers to hotlink protection signature, which is used to prevent attackers from simulating your backend server to generate push URL. For more information about computing method, please see Computing of Hotlink Protection.

- **Sample Code**
  Go to **LVB Console -> LVB Code Access -> Push Generator**. In the lower part of the page, the sample code (PHP and Java) is provided to show how to generate a hotlink protection URL.

Composition of playback URL

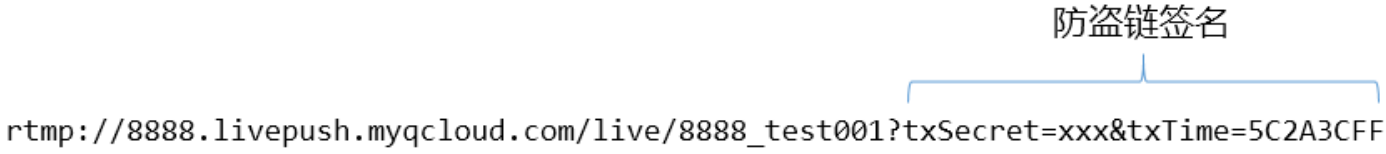
Constructing a playback URL is as simple as constructing a push URL, except that the sub-domain name needs to be changed from **livepush** to **liveplay**:

rtmp	rtmp://8888.liveplay.myqcloud.com/live/8888_test_123
flv	http://8888.liveplay.myqcloud.com/live/8888_test_123.flv
hls	http://8888.liveplay.myqcloud.com/live/8888_test_123.m3u8

Hotlink protection signature

What is hotlink protection signature?

Hotlink protection signature refers to **txTime** and **txSecret** in the push and playback URLs. It helps protect your traffic from being sucked up by attackers who fake your LVB URL.



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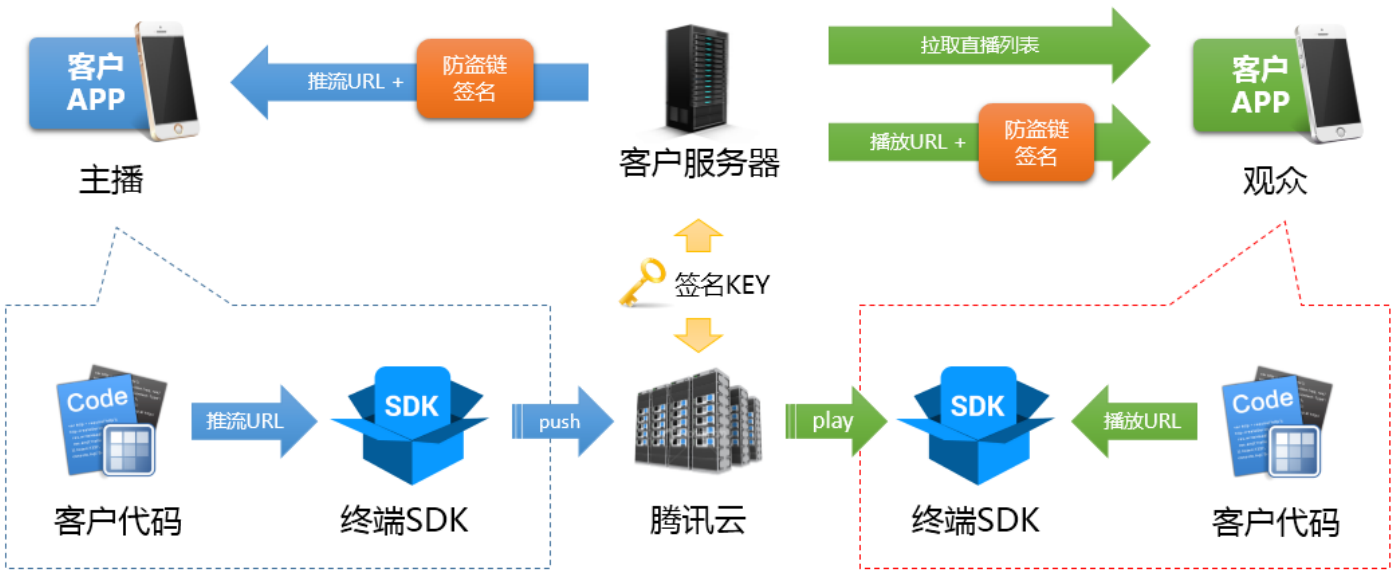
How it works

To prevent attackers from simulating your server to generate push URL, you need to configure in LVB console a **hotlink protection encryption key** that is unlikely to be obtained by attackers for faking a valid push URL. The figure below shows how it works.



How do I calculate the hotlink protection signature?

Step1: Exchange the key

First, set an "encryption key" in the LVB Console to calculate the hotlink protection signature on you server. As Tencent Cloud has the same key, Tencent Cloud can verify the validity of your hotlink protection signature.

Keys are classified into **push hotlink protection keys** and **playback hotlink protection keys**. The former are used to generate the push hotlink protection URLs and the latter are used to generate the playback hotlink protection URLs. In LVB Console, you can configure the push hotlink protection key, as shown

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below:

The playback hotlink protection cannot be configured.

Since the configuration of playback hotlink protection key needs to be synchronized to thousands of CDN clusters, the key cannot be frequently modified in the debugging phase due to a long synchronization period. Contact us if you need to configure the playback hotlink protection by calling our customer service. It generally takes 1 to 3 days to complete the configurations for all of the CDN clusters.

step2 : txTime

In the signature, the plaintext is txTime, which indicates the URL validity period. For example, if the current time is 2016-07-29 11:13:45 and the generated URL is expected to expire after 24 hours, txTime can be set to 2016-07-30 11:13:45.

To shorten the URL string, "2016-07-30 11:13:45" is first converted to a Unix timestamp (1469848425) and then a hexadecimal string. That is, txTime = 1469848425 (decimal) = 579C1B69 (hexadecimal).

Generally, txTime is set to a time which is 12 hours later than the current time. It is not recommended to set a too short validity period to avoid the inability of VJ to restore push in case of a flash breakdown of network during the broadcasting.

step3 : txSecret

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txSecret = MD5 (KEY + stream_id + txTime)

Here, the **KEY** is the encryption key you configured in Step 1. The **stream_id** is the LVB code (or stream ID). The **txTime** is 579C1B69 as calculated above. The **MD5** is the standard MD5 hash algorithm.

Step 4: Combine to obtain a URL

Combine the push (or playback) URL, the txTime indicating the expiration time of the URL and the txSecret that can be decrypted and verified only by Tencent Cloud to generate a secure hotlink protection URL.

rtmp://8888.livepush.myqcloud.com/live/8888_test001?txSecret=xxx&txTime=5C2A3CFF

Go to **LVB Console** -> **LVB Code Access** -> **Push Generator**. In the lower part of the page, the sample code (PHP and Java) is provided to show how to generate a hotlink protection URL.

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