

Alibaba Cloud ApsaraVideo for Live

API Reference

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	It is used for commands.	Run the <code>cd /d C:/windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>swich {stand slave}</code>

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1 API authentication rules

Introduction

Use RAM to give a subaccount access to its primary account' s live video resources.

- You can activate the Live service through an Alibaba Cloud account and create a CDN domain name, then all the live functions and CDN domain names are held as resources of this account. By default, accounts have full operation permissions on their resources.
- If you want to use Alibaba Cloud Resource Access Management (RAM) service, you can grant RAM sub-users the permission to access and manage the resources under your Alibaba Cloud account.
- Read Set subaccounts to log on to the ApsaraVideo Live console by using RAM set carefully before learning how to use RAM to grant authorization and access to live service.
- If you do not need to use RAM, skip this section.

Authentication rules

When a subaccount uses live service APIs to access live resources of primary account , the live service background performs RAM access examination to make sure the resource owner grants the caller the relevant access to relevant resources.

Each different live service API determines the permissions of which resources are to be examined according to the involved resources and the meaning of API. The authentication rules of each API are listed as follows.

Action-name	Resource
DescribeLiveStreamsPublishList	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamsOnlineList	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamsBlockList	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamsControlHistory	acs:cdn:*\$accountid:domain/\$domainName

Action-name	Resource
DescribeLiveStreamOnlineUserNum	acs:cdn:*\$accountid:domain/\$domainName
ForbidLiveStream	acs:cdn:*\$accountid:domain/\$domainName
ResumeLiveStream	acs:cdn:*\$accountid:domain/\$domainName
SetLiveStreamsNotifyUrlConfig	acs:cdn:*\$accountid:domain/\$domainName
AddLiveAppRecordConfig	acs:cdn:*\$accountid:domain/\$domainName
CreateLiveStreamRecordIndexFiles	acs:cdn:*\$accountid:domain/\$domainName
DeleteLiveAppRecordConfig	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveRecordConfig	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamRecordContent	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamRecordIndexFile	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamRecordIndexFiles	acs:cdn:*\$accountid:domain/\$domainName
AddLiveStreamTranscode	acs:cdn:*\$accountid:domain/\$domainName
DeleteLiveStreamTranscode	acs:cdn:*\$accountid:domain/\$domainName
DescribeLiveStreamTranscodeInfo	acs:cdn:*\$accountid:domain/\$domainName
AddLiveAppSnapshotConfig	acs:cdn:*\$accountid:domain/\$domainName
DeleteLiveAppSnapshotConfig	acs:cdn:*\$accountid:domain/\$domainName
UpdateLiveAppSnapshotConfig	acs:cdn:*\$accountid:domain/\$domainName

Action-name	Resource
DescribeLiveSnapshotConfig	acs:cdn:*:\$accountid:domain/\$domainName
DescribeLiveStreamSnapshotInfo	acs:cdn:*:\$accountid:domain/\$domainName
AddLiveSnapshotDetectPornConfig	acs:cdn:*:\$accountid:domain/\$domainName
AddLiveDetectNotifyConfig	acs:cdn:*:\$accountid:domain/\$domainName
DescribeLiveSnapshotDetectPornConfig	acs:cdn:*:\$accountid:domain/\$domainName
DescribeLiveDetectNotifyConfig.md	acs:cdn:*:\$accountid:domain/\$domainName
UpdateLiveSnapshotDetectPornConfig	acs:cdn:*:\$accountid:domain/\$domainName
UpdateLiveDetectNotifyConfig	acs:cdn:*:\$accountid:domain/\$domainName
DeleteLiveSnapshotDetectPornConfig	acs:cdn:*:\$accountid:domain/\$domainName
DeleteLiveDetectNotifyConfig	acs:cdn:*:\$accountid:domain/\$domainName
DescribeLiveStreamsFrameRateAndBitRate	acs:cdn:*:\$accountid:domain/\$domainName

2 APIs invoke

2.1 Call an API

You can call an ApsaraVideo Live API by sending an HTTP GET request to the ApsaraVideo Live API server and adding relevant request parameters to the request according to the interface instructions. The system returns the result based on the processing of the request.

The instructions for the four aspects are as follows:

- [Request structure](#)
- [Public parameter](#)
- [Returned result](#)
- [Signature](#)

2.2 Request structure

Service address

The API service access address is as follows:

Region	Service address
China East 2	live.aliyuncs.com
China North 2	
Singapore	

Communication protocol

We recommend that you send requests using the HTTPS channel for enhanced security.

Character encoding

Both requests and returned results are encoded using the UTF-8 character set.

2.3 Public parameters

Public parameters refers to the parameters that every interface call uses, including public request parameters and public response parameters.

Public request parameters

Public request parameters refer to the request parameters that every interface uses.

Parameters	Type	Required	Description
Version	String	Yes	API version. <ul style="list-style-type: none">· The format is YYYY-MM-DD.· The current version is 2016-11-01.
AccessKeyId	String	Yes	The Key ID provided by Alibaba Cloud for you to access services.
Signature	String	Yes	The request signature. See Signature for the signature calculation method.
SignatureMethod	String	Yes	The mode of the signature. HMAC-SHA1 is supported currently.

Parameters	Type	Required	Description
Timestamp	String	Yes	<p>The timestamp to request.</p> <ul style="list-style-type: none">• The date format follows the ISO8601 standard and uses UTC time.• Format: YYYY-MM-DDThh:mm:ssZ.• Example: 2014-11-11T12:00:00Z (equivalent to 20:00:00 on November 11, 2014, Beijing time).
SignatureVersion	String	Yes	Signature algorithm version. The current version is 1.0.
SignatureNonce	String	Yes	The unique random number that is used to prevent network replay attacks. You must use different random numbers for different requests.

Parameters	Type	Required	Description
ResourceOwnerAccount	String	No	The resource owner account for this API request, that is the login user name. For more information about using this parameter, see RAM resource authorization . (You can only use this parameter in the Action of the RAM in which the live resources can be authorized, or the request is rejected.)
Format	String	No	Type of value returned, JSON and XML supported. Default value: XML.

Examples

```
https://live.aliyuncs.com/
? Format=xml
&Version=2016-11-01
&Signature=Pc5WB8gokVn0xfeu%2FZV%2BiNM1dgI%3D
&SignatureMethod=HMAC-SHA1
&SignatureNonce=15215528852396
&SignatureVersion=1.0
&AccessKeyId=key-test
&Timestamp=2012-06-01T12:00:00Z
...
```

Public response parameters

Each time you make a call to an API, the system returns a unique identification code (**RequestId**), regardless whether the request is successful.

Examples

- XML example

```
<? xml version="1.0" encoding="UTF-8"? >
<! --Result Root Node-->
<Interface Name+Response>
<! --Return Request Tag-->
```

```
<RequestId>4C467B38-3910-447D-87BC-AC049166F216</RequestId>  
<! --Response Result Data-->  
</Interface Name+Response>
```

- JSON example

```
{  
  "RequestId": "4C467B38-3910-447D-87BC-AC049166F216",  
  /* Returned data*/  
}
```

2.4 Return result

The data returned after the API service call adopts a uniform format:

If the returned HTTP status code is 2xx, it indicates the call is a success. If the returned HTTP status code is 4xx or 5xx, then it is a failed call. The two primary formats for the data returned after a successful call are XML and JSON. The external system can customize the returned data format by passing in a parameter in the request, and XML is adopted by default.



Note:

In the returned examples in this document, we adjusted the format of returned result to make it easier for you to view the content. The actual returned result does not go through the line breaks, indentation, or other layouts.

Successful results

JSON example

```
{  
  "RequestId": "16A96B9A-F203-4EC5-8E43-CB92E68F4CD8"  
}
```

Error results

When an error occurs in an interface call, no result data is returned. You can see the error code corresponding to each interface and the Error Code Table as follows to locate the cause of the error. When an error occurs in a call, an HTTP status code of 4xx or 5xx is returned for the HTTP request. The returned message body contains the specific error code and error message. The message body also contains a globally unique RequestId and the requested HostId. If you fail to locate the cause of the error, contact our customer service and provide the HostId and RequestId for us to solve the problem as quickly as possible.

JSON example

```
{
  "Code": "InternalError",
  "HostId": "live.aliyuncs.com",
  "Message": "The request processing has failed due to some unknown error.",
  "RequestId": "6EBD1AC4-C34D-4AE1-963E-B688A228BE31"
}
```

Public error code table

For more information about error code, see [API error center](#).

2.5 Signature

Alibaba Cloud performs identity authentication for every access request. Therefore, you must contain the signature information in the request no matter whether you submit a request through the HTTP or HTTPS protocol. The requester identity is verified using symmetric encryption of the `Access Key ID` and `Access Key Secret`. The `Access Key ID` and `Access Key Secret` are officially issued to visitors by Alibaba Cloud (you can apply for and manage them on the Alibaba Cloud official website). In specific, the `Access Key ID` indicates the identity of the visitor. The `Access Key Secret` is the secret key used to encrypt the signature string and to verify the signature string on the server. It must be kept strictly confidential and only be known to Alibaba Cloud and the user.



Note:

Alibaba Cloud offers SDKs and third-party SDKs in different languages, which free you of the trouble of coding the signature algorithm. For more information about Alibaba SDK, see [Alibaba Cloud SDK](#).

Signature operation

During access, use the following methods to sign a request.

1. Use request parameters to construct the canonicalized query string.
 - a. Sort parameters.

All the request parameters (including the public request parameters and user-defined parameters with given request interfaces, but excluding the

Signature parameter mentioned in the public request parameters) are sorted alphabetically by the parameter name.

**Note:**

Note: When a request is submitted using the GET method, these parameters are the parameter section of the request URI (that is, the section in the URI following `?` and connected by `&`).

b. Encode parameters.

The name and value of each request parameter are encoded. The names and values must adopt UTF-8 characters for URL encoding. The URL encoding rules are as follows:

- The characters A-Z, a-z, 0-9, and -, _, ., ~ are not encoded.
- Other characters are encoded into the `%XY` format, with `XY` representing the characters' ASCII code in hexadecimal notation. For example, the English double quotation marks (`"`) are encoded as `%22`.
- Extended UTF-8 characters are encoded into the `%XY%ZA...` format.
- The English space () is encoded as `%20`, rather than the plus sign (+).

This encoding method and the commonly-used `application/x-www-form-urlencoded` MIME type (such as `java.net.URLEncoder` in Java library) are similar, but have differences. If this encoding method is used, use the method of standard library to encode, and then replace the plus signs (+) in the encoded strings with `%20`, the asterisks (*) with `%2A`, and change `%7E` back to the tilde (~) to get the encoded string described in the previous rules. This algorithm can be achieved by using the following method:

```
private static final String ENCODING = "UTF-8";

private static String percentEncode(String value) throws
UnsupportedEncodingException {
    return value != null ? URLEncoder.encode(value, ENCODING).
    replace("+", "%20").replace("*", "%2A").replace("%7E", "~") :
    null;
}
```

c. Connect the encoded parameter names and values with the English equals sign (=).

- d. Then, sort the parameter name and value pairs connected by equal signs in alphabetical order and connect them with the `&` symbol to produce the Canonicalized Query String.
2. Construct the string for signature calculation using the canonicalized query string in the previous step according to the following rules.

```
StringToSign=
HTTPMethod + "&" +
percentEncode("/") + "&" +
percentEncode(CanonicalizedQueryString)
```

Wherein,

- `HTTPMethod` is the HTTP method used for request submission, for example, GET.
 - `percentEncode("/")` is the encoded value (%2F) of the character /, which is obtained according to the URL encoding rules described in 1.ii.
 - `percentEncode(CanonicalizedQueryString)` is the Canonicalized Query String (constructed in Step 1) that is encoded according to the URL encoding rules described in 1.ii.
3. Use the previous signature string to calculate the signature's HMAC value based on RFC2104 definitions.



Note:

Note: The key used for signature calculation is the Access Key Secret held by the user plus the `&` character (ASCII:38), and the SHA1 hashing algorithm is used.

4. Encode the previous HMAC value into a string based on Base64 encoding rules to obtain the signature value (Signature).
5. Add the obtained signature value to the request parameters as the Signature parameter to sign the request.



Note:

Note: URL encoding is required to be performed for the obtained signature value based on the [RFC3986](#) rule, like in the case of other parameters, before the signature value is submitted to the live server as the final request parameter value.

Examples

Take DescribeLiveSnapshotConfig as an example, the request URL before signing is as follows:

```
http://live.aliyuncs.com/?Format=XML&SignatureMethod=HMAC-SHA1&Action=DescribeLiveSnapshotConfig&AccessKeyId=testid&RegionId=cn-shanghai&ServiceCode=live&DomainName=test.com&AppName=test&SignatureNonce=c2fe8fbb-2977-4414-8d39-348d02419c1c&Version=2016-11-01&SignatureVersion=1.0&Timestamp=2017-06-14T09:51:14Z
```

The StringToSign is:

```
GET&%2F&AccessKeyId%3Dtestid&Action%3DDescribeLiveSnapshotConfig&AppName%3Dtest&DomainName%3Dtest.com&Format%3DXML&RegionId%3Dcn-shanghai&ServiceCode%3Dlive&SignatureMethod%3DHMAC-SHA1&SignatureNonce%3Dc2fe8fbb-2977-4414-8d39-348d02419c1c&SignatureVersion%3D1.0&Timestamp%3D2017-06-14T09:51:14Z&Version%3D2016-11-01
```

Assume the Access Key Id is testid, the Access Key Secret is testsecret, and the Key used for HMAC calculation is testsecret, the calculated signature value is:

```
3I5a3myPjp8FXWT4rvxX5pKb/aw=
```

The signed request URL is (note the added Signature parameter):

```
http://live.aliyuncs.com/?Format=XML&SignatureMethod=HMAC-SHA1&Signature=3I5a3myPjp8FXWT4rvxX5pKb%2Faw%3D&Timestamp=2017-06-14T09:51:14Z&Action=DescribeLiveSnapshotConfig&AccessKeyId=testid&RegionId=cn-shanghai&ServiceCode=live&DomainName=test.com&AppName=test&SignatureNonce=c2fe8fbb-2977-4414-8d39-348d02419c1c&Version=2016-11-01&SignatureVersion=1.0
```

3 Streams management

3.1 DescribeLiveStreamsOnlineList

View the information of all the streams being pushed under a specific domain name (or an app under a specified domain name).




Note:

The access frequency of DescribeLiveStreamsOnlineList is limited to 1,000 times per minute. We recommend that you do not call it frequently, so as not to cause the business to be unavailable.

Request parameters

Parameters	Type	Required	Example values	Description
Action	String	Yes	DescribeLiveStreamsOnlineList	The same of this interface. Value: DescribeLiveStreamsOnlineList
DomainName	String	Yes	play. yourdomain. com	Your Live domain name.
AppName	String	No	testApp	Name of the app. <div data-bbox="1209 1429 1278 1496" data-label="Image"> </div> Note: AppName does not support wildcard query (*) and fuzzy query.

Parameters	Type	Required	Example values	Description
StreamName	String	No	livestream	Stream name.  Note: StreamName does not support wildcard (*) queries, but supports fuzzy queries.
StreamType	String	No	all	Stream type. Valid values: <ul style="list-style-type: none"> · all · raw · trans Correspondingly check all the streams, raw streams and transcoding streams. Default: all means returning all the stream information.
QueryType	String	No	fuzzy	Specifies whether the stream name is fuzzy matching. Value: <ul style="list-style-type: none"> · fuzzy: fuzzy matching · strict: precise matching

Parameters	Type	Required	Example values	Description
StartTime	String	No	2016-06-29T19:00:00Z	Start time. <ul style="list-style-type: none"> UTC format Example : 2016-06-29T19:00:00Z
EndTime	String	No	2016-06-30T19:00:00Z	EndTime. <ul style="list-style-type: none"> UTC format Example : 2016-06-30T19:00:00Z The interval between EndTime and StartTime cannot exceed 30 days.
PageNum	Integer	No	1	The page number. Default value: 1.
PageSize	Integer	No	1,500	Size of each page. Maximum value: 3000. Value: Any integer between 1 and 3000. Default value: 2000

Response parameters

Parameters	Type	Example values	Description
OnlineInfo			Information of the stream being pushed.

Parameters	Type	Example values	Description
LDomainName	String	play.yourdomain.com	The Live domain name, which the stream belongs to.
LAppName	String	AppName	Name of the app, which the stream belongs to.
LStreamName	String	StreamName	Name of the stream.
LPublishTime	String	2015-12-02T06:58:04Z	The time when stream ingest starts in UTC.
LPublishUrl	String	rtmp://play.aliyunlive.com/AppName/StreamName	The full ingest URL.
LPublishDomain	String	push.aliyunlive.com	The ingest domain. If using the live center ingest, you can enter the streaming domain directly.
RequestId	String	40A4F36D-A7CC-473A-88E7-154F92242566	The ID of the job request.
PageNum	Integer	1	The page number.
PageSize	Integer	10	The page size.
TotalNum	Integer	10	The total number that conforms with the conditions.
TotalPage	Integer	100	The total number of pages.

Example

Request example

```
https://live.aliyuncs.com/?Action=DescribeLiveStreamsOnlineList&
DomainName=test101.aliyunlive.com&PageSize=10&PageNum=2<Public
Request Parameter>
```



Note:

For more information, see [Public Request Parameter](#).

Normal response example

JSON format

```
{
  "OnlineInfo":{
    "LiveStreamOnlineInfo":[{
      "AppName":"xchen",
      "DomainName":"test101.cdnpe.com",
      "PublishTime":"2015-12-02T06:58:04Z",
      "PublishUrl":"rtmp://test101.cdnpe.com/xchen",
      "StreamName":"testxchen"
    }]
  },
  "PageNum":2,
  "PageSize":10,
  "RequestId":"0D70427D-91E4-4349-AAD3-5511A5BB823B",
  "TotalNum":11,
  "TotalPage":2
}
```

Exception response example

JSON format

```
{
  "Code":"InternalError",
  "HostId":"live.aliyuncs.com",
  "Message":"The request processing has failed due to some unknown
error.",
  "RequestId":"6EBD1AC4-C34D-4AE1-963E-B688A228BE31"
}
```

Error code

For more information about error code of this product, see [Error code](#).