

Alibaba Cloud Object Storage Service

API Reference

Issue: 20200320

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Document conventions

Style	Description	Example
	A danger notice 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.
	A warning notice 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 restart an instance.
	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings > Network > Set network type.
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	Courier font is used for commands.	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <code>Instance_ID</code>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
{} or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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1 Overview

The Object Storage Service (OSS) is a cloud storage service provided by Alibaba Cloud, featuring a massive capacity, security, a low cost, and high reliability. You can upload and download data anytime, anywhere, and on any Internet device through a simple RESTful interface described herein. With the OSS, you can develop a diverse range of massive data-based services such as multimedia sharing websites, online storage, personal data backups, and corporate data backups.

Limits

Different OSS resources and functions have different limits. For more information, see [Limits](#).

Usage

This topic describes the request syntax, request samples and return samples for each interface. If you want to perform additional development, we recommend you use OSS SDKs. For more information about the installation and usage of OSS SDKs, see [OSS SDK introduction](#).

Pricing

For more information about the price of OSS, see [OSS pricing page](#).

Terms

Term	Description
Bucket	A bucket is a resource in Alibaba Cloud that operates similar to a container and is used to store objects in OSS. Every object is contained in a bucket.
Object	An object (sometimes referred to as a file) is the fundamental storage resource in Alibaba Cloud OSS. An object is composed of metadata, data, and a key, in which the key is a unique name for the object.
Region	A region indicates the physical location of an Alibaba Cloud data center. You can choose the region in which the buckets you create are stored based on your costs and the geographic area from where requests to your resources are coming from. For more information, see Regions and endpoints .

Term	Description
Endpoint	An endpoint is a domain name used to access OSS. OSS provides external services through HTTP RESTful APIs. You must use different endpoints to access different OSS regions, or access the same OSS region through the intranet and the Internet. For more information, see Regions and endpoints.
AccessKey	An AccessKey (AK) is composed of an AccessKeyId and an AccessKeySecret, and is used to verify the identity of an entity that requests access to resources . OSS verifies the identity of a request sender by using symmetric encryption. The AccessKeyId is used to identify a user, and the AccessKeySecret is used by the user to encrypt the signature, and for OSS to verify the signature. The AccessKeySecret must be kept confidential.

2 API overview

OSS provides the following APIs:

Service-related operations

API	Description
GetService	Obtains all buckets owned by a specified account.

Bucket-related operations

API	Description
PutBucket	Creates a bucket.
PutBucketACL	Sets the ACL for a bucket.
PutBucketLogging	Enables the logging function for a bucket.
PutBucketWebsite	Sets a bucket to static website hosting mode.
PutBucketReferer	Configures hotlink protection rules for a bucket.
PutBucketLifecycle	Configures lifecycle rules for the objects in a bucket.
GetBucket (ListObject)	Gets the information about all objects in a bucket.
GetBucketAcl	Gets the ACL for a bucket.
GetBucketLocation	Gets the location information about the data center to which a bucket belongs.
GetBucketInfo	Obtains the information about a bucket.
GetBucketLogging	Views the configuration of the logging function for a bucket.
GetBucketWebsite	Views the static website hosting status of a bucket.
GetBucketReferer	Views the hotlink protection rules for a bucket.

API	Description
GetBucketLifecycle	Views the lifecycle rules for the objects in a bucket.
DeleteBucket	Deletes a bucket.
DeleteBucketLogging	Disables the logging function for a bucket.
DeleteBucketWebsite	Disables the static website hosting mode for a bucket.
DeleteBucketLifecycle	Deletes the lifecycle rules for the objects in a bucket.

Object-related operations

API	Description
PutObject	Uploads an object
CopyObject	Copies an object to another object.
GetObject	Gets an object.
AppendObject	Appends the upload data to the end of an object.
DeleteObject	Deletes an object
DeleteMultiple Objects	Deletes multiple objects.
HeadObject	Returns only the metadata of an object but not the object content.
GetObjectMeta	Returns the metadata of an object, including the ETag, Size (object size), and LastModified and does not return the object content.
PostObject	Uploads an object in Post mode.
PutObjectACL	Sets the ACL for an object.
GetObjectACL	Gets the ACL for an object.
Callback	Enables the callback function.
PutSymlink	Creates a symbol link.
GetSymlink	Obtains a symbol link.
RestoreObject	Restores an object.

API	Description
<i>SelectObject</i>	Queries objects using SQL statements.

Operations related to multipart upload

API	Description
<i>InitiateMultipartUpload</i>	Initializes a MultipartUpload event.
<i>UploadPart</i>	Uploads an object in multiple parts.
<i>UploadPartCopy</i>	Uploads and copies an object in multiple parts.
<i>CompleteMultipartUpload</i>	Complete the MultipartUpload event for an object.
<i>AbortMultipartUpload</i>	Cancels a MultipartUpload event.
<i>ListMultipartUploads</i>	Lists all ongoing MultipartUpload events.
<i>ListParts</i>	Lists all parts successfully uploaded in a MultipartUpload event with a specified upload ID.

Cross-Origin Resource Sharing (CORS)

API	Description
<i>PutBucketcors</i>	Sets a CORS rule for a specified bucket.
<i>GetBucketcors</i>	Gets the current CORS rules for a specified bucket.
<i>DeleteBucketcors</i>	Disables the CORS function for a specified bucket and clears all the CORS rules.
<i>OptionObject</i>	Specifies the preflight request for cross-region access.

Operations related to LiveChannel

API	Description
<i>PutLiveChannelStatus</i>	Switches the status of LiveChannel.
<i>PutLiveChannel</i>	Creates a LiveChannel.
<i>GetVodPlaylist</i>	Gets the specified playlist.

API	Description
<i>PostVodPlaylist</i>	Generates a playlist.
<i>GetLiveChannelStat</i>	Gets the stream pushing status of a LiveChannel.
<i>GetLiveChannelInfo</i>	Gets the configurations of a LiveChannel.
<i>GetLiveChannelHistory</i>	Gets the stream pushing record of a LiveChannel.
<i>ListLiveChannel</i>	Lists LiveChannels.
<i>DeleteLiveChannel</i>	Deletes a LiveChannel.

3 Definitions of common HTTP headers

Common request headers

Some common request headers are used in the OSS RESTful interfaces. These request headers can be used by all the OSS requests. The following table lists the specific definitions of the request headers:

Name	Type	Description
Authorization	string	The verification information used to verify the validity of a request. Default value: none Usage scenario: non-anonymous requests
Content-Length	string	Content length of an HTTP request, which is defined in RFC2616. Default value: none Usage scenario: requests that need to submit data to OSS
Content-Type	string	Content type of an HTTP request, which is defined in RFC2616. Default value: none Usage scenario: requests that need to submit data to OSS
date	string	The GMT time stipulated in the HTTP 1.1 protocol, for example, Wed, 05 Sep. 2012 23:00:00 GMT Default value: none

Name	Type	Description
Host	string	<p>The access host value.</p> <p>Format: <bucketname>.oss-cn-hangzhou.aliyuncs.com.</p> <p>Default value: none</p>

Common response headers

Some common response headers are used in the OSS RESTful interfaces. These response headers can be used by all the OSS requests. The following table lists the specific definitions of the response headers:

Name	Type	Description
Content-Length	string	<p>Content length of an HTTP request, which is defined in RFC2616.</p> <p>Default value: none</p> <p>Usage scenario: requests that need to submit data to OSS</p>
Connection	enumerative	<p>The connection status between the client and the OSS server.</p> <p>Valid values: open or close</p> <p>Default value: none</p>
Date	string	<p>The GMT time stipulated in the HTTP 1.1 protocol, for example, Wed, 05 Sep. 2012 23:00:00 GMT</p> <p>Default value: none</p>

Name	Type	Description
Etag	string	<p>The ETag (entity tag) is created when an object is generated and is used to indicate the content of the object. For an object created for a Put Object request, the value of ETag is the value of MD5 in the content of the object. For an object created in other approaches, the value of ETag is the UUID in the content of the object. The value of ETag can be used to check whether the content of the object is changed.</p> <p>Default value: none</p>
Server	string	<p>The server that generates the response.</p> <p>Default value: AliyunOSS</p>
x-oss-request-id	string	<p>The UUID of the response. It is created by Alibaba Cloud OSS. In case of any issues when using the OSS service, you can contact OSS support personnel using this field to rapidly locate the issue.</p> <p>Default value: none</p>

4 Access control

4.1 User signature authentication

OSS verifies the identity of a request sender by using the `AccessKeyId/AccessKeySecret` symmetric encryption method. The `AccessKeyId` is used to identify a user. The `AccessKeySecret` is used by the user to encrypt the signature and used by OSS to verify the signature. The `AccessKeySecret` must be kept confidential. Based on the account types, `AccessKeys` can be categorized as follows:

- **AccessKey of an Alibaba Cloud account:** The `AccessKey` of a Alibaba Cloud account has full permissions on its resources.
- **AccessKey of a RAM user:** A RAM user is generated under the authorization of an Alibaba Cloud account. The `AccessKey` of a RAM user has limited permissions on specified resources.
- **STS temporary access credential:** The STS access credential is a temporary credential generated by an Alibaba Cloud account or a RAM user. The `AccessKey` of the temporary credential has limited permissions on specified resources for a specified period of time. The permissions of the credential are withdrawn once the credential expires.

For more information, see [Access control](#).

Before sending a request to OSS as an individual user, you must first generate a signature string in the specified format for the request. Then you must encrypt the signature string using your `AccessKeySecret` to generate a verification code. After receiving the request, OSS finds the `AccessKeySecret` based on the `AccessKeyId`, and extracts the signature string and verification code in the same way. If the calculated verification code is the same as the verification code provided, OSS determines that the request is valid. Otherwise, OSS rejects the request and returns an 403 HTTP status code.

4.2 Add signatures to headers

You can include the `Authorization` header in the HTTP request to carry signature information to indicate that the request has been authorized.

SDK implementation

OSS SDKs automatically implements signatures in your requests. You do not need to manually calculate your signature when you use OSS SDKs. For more information about the signature implementations in specific programming languages, see the OSS SDK code. The following table describes the sample code used to implement signatures in various SDKs.

SDK	Signature implementation
Java SDK	OSSRequestSigner.java
Python SDK	auth.py
.NET SDK	OssRequestSigner.cs
PHP SDK	OssClient.php
C SDK	oss_auth.c
JavaScript SDK	client.js
Go SDK	auth.go
Ruby SDK	util.rb
iOS SDK	OSSModel.m
Android SDK	OSSUtils.java

Calculation of the Authorization header

```
Authorization = "OSS " + AccessKeyId + ":" + Signature
Signature = base64(hmac-sha1(AccessKeySecret,
    VERB + "\n"
    + Content-MD5 + "\n"
    + Content-Type + "\n"
    + Date + "\n"
    + CanonicalizedOSSHeaders
    + CanonicalizedResource))
```

Detail analysis:

- `AccessKeySecret` specifies the key required for a signature.
- `VERB` specifies the HTTP request method such as PUT, GET, POST, HEAD, and DELETE.

- `\n` specifies a line break.
- `Content-MD5` specifies the MD5 value of the request. The MD5 value is obtained by calculating the message content (excluding the header) and then encoding the resulting 128-bit number in Base64. This header can be used to check the validity of a message. It provides a checking mechanism for whether the message content is consistent with the sent content, such as "eB5eJF1ptWaXm4bijSPyxw==". This header may be left empty. For more information, visit [RFC 2616 Content-MD5](#).
- `Content-Type` specifies the type of the request content, such as `application/octet-stream`. This header may be left empty.
- `Date` specifies the operation time in GMT format, such as `Sun, 22 Nov 2015 08:16:38 GMT`.
- `CanonicalizedOSSHeaders` specifies an assembly of HTTP headers that are sorted in alphabetical order and whose prefixes are `x-oss-`.
- `CanonicalizedResource` specifies the OSS resources you want to access.

**Note:**

The values of `Date` and `CanonicalizedResource` cannot be left empty. If the difference between the value of `Date` in the request and the current time of the OSS server is greater than 15 minutes, the OSS server denies the request and returns an HTTP 403 error.

Construct CanonicalizedOSSHeaders

All the HTTP headers whose prefixes are `x-oss-` are called `CanonicalizedOSSHeaders`. You can construct `CanonicalizedOSSHeaders` as follows:

1. Convert the names of all HTTP request headers whose prefixes are `x-oss-` into lowercase letters. For example, convert `X-OSS-Meta-Name: TaoBao` into `x-oss-meta-name: TaoBao`.
2. If the request is sent by using the `AccessKey ID` and `AccessKey secret` obtained by STS, you must add the obtained security-token value to the signature string in `x-oss-security-token:security-token` format.
3. Sort all the obtained HTTP request headers in alphabetical order.
4. Delete any spaces on either end of the delimiter between the header and content of each request. For example, convert `x-oss-meta-name: TaoBao` into `x-oss-meta-name:TaoBao`.

5. Separate the header and content of each request with the `\n` delimiter to form the final CanonicalizedOSSHeaders.

**Note:**

- CanonicalizedOSSHeaders can be left empty, and the `\n` delimiter at the end can be removed.
- To construct only one CanonicalizedOSSHeaders, you must add the `\n` delimiter to the end of the header. Example: `x-oss-meta-a\n`.
- To construct multiple CanonicalizedOSSHeaders, you must add the `\n` delimiter to the end of each header. Example: `x-oss-meta-a:a\nx-oss-meta-b:b\nx-oss-meta-c:c\n`.

Construct CanonicalizedResource

The target OSS resource specified in the request sent by the user is called a CanonicalizedResource. You can construct a CanonicalizedResource as follows:

1. Set CanonicalizedResource to a null character string `""`.
2. Specify the OSS resource you want to access in the following format: `/BucketName/ObjectName`. If `ObjectName` does not exist, CanonicalizedResource is `/BucketName/`. If `BucketName` does not exist either, CanonicalizedResource is a forward slash (`/`).
3. If the requested resource includes subresources (SubResource), sort all subresources in alphabetical order and separate the subresources with the ampersand (`&`) delimiter to generate a subresource string. Add a question mark (`?`) and the subresource string to the end of the CanonicalizedResource string. In this case, CanonicalizedResource is `/BucketName/ObjectName?acl&uploadId=UploadId`.

**Note:**

- The subresources supported by OSS currently include: `acl`, `uploads`, `location`, `cors`, `logging`, `website`, `referer`, `lifecycle`, `delete`, `append`, `tagging`, `objectMeta`, `uploadId`, `partNumber`, `security-token`, `position`, `img`, `style`, `styleName`, `replication`, `replicationProgress`, `replicationLocation`, `cname`, `bucketInfo`, `comp`, `qos`, `live`, `status`, `vod`, `startTime`, `endTime`, `symlink`, `x-oss-process`, `response-`

`content-type`, `response-content-language`, `response-expires`, `response-cache-control`, `response-content-disposition`, and `response-content-encoding`.

- **Three types of subresources are available:**
 - **Resource identifiers** such as `acl`, `append`, `uploadId`, and `symlink` subresources. For more information, see [Bucket operations](#) and [Object operations](#).
 - **Subresources that specify the response header fields**, such as `response-***` subresources. For more information, see the `Request parameters` section in [GetObject](#).
 - **Object processing methods** such as `x-oss-process`. For more information, see [Image Processing](#).

Rules to calculate a signature header

- **A signature string must be in UTF-8 format.** A signature string that contains Chinese characters must be encoded in UTF-8. The encoded signature string is used together with `AccessKeySecret` to calculate the final signature.
- **The HMAC-SHA1 method defined in RFC 2104 is used to calculate the final signature.** In this method, the Key is `AccessKeySecret`.
- **`Content-Type` and `Content-MD5` are not required in a request.** If the request requires signature verification, null values must be replaced with a line break (`\n`).
- **Among non-HTTP headers, only the headers starting with `x-oss-` require signature strings.** Other non-HTTP headers are ignored by OSS. For example, the `x-oss-magic` header in the following example must include a signature string.



Note:

Headers starting with `x-oss-` must comply with the following specifications before signature verification:

- The header name is converted to lowercase letters.
- The headers are sorted in alphabetical order.
- No space exists before or after the colon (`:`) that separates the header name and value.
- Each header is followed by a line break (`\n`). If no header is used, set `CanonicalizedOSSHeaders` to null.

Examples

Request	Signature string calculation formula	Signature string
PUT /nelson HTTP/1.0 Content-MD5: eB5eJF1ptWaXm4bijSPyxw== Content-Type: text/html Date: Thu, 17 Nov 2005 18:49:58 GMT Host: oss-example.oss-cn-hangzhou.aliyuncs.com X-OSS-Meta-Author: foo@bar.com X-OSS-Magic: abracadabra	Signature = base64(hmac-sha1(AccessKeySecret, VERB + "\n" + Content-MD5 + "\n" + Content-Type + "\n" + Date + "\n" + CanonicalizedOSSHeaders + CanonicalizedResource))	"PUT\n eB5eJF1ptWaXm4bijSPyxw==\n text/html\n Thu, 17 Nov 2005 18:49:58 GMT\n x-oss-magic:abracadabra\n x-oss-meta-author:foo@bar.com\n/oss-example/nels

If AccessKeyId is "44CF959*****252F707" and AccessKeySecret is "OtxrzxIsfpFjA7Sw*****8Bw21TLhqhboDYROV", you can use the following method to calculate the signature in Python:

```
import base64
import hmac
import sha
h = hmac.new("OtxrzxIsfpFjA7Sw*****8Bw21TLhqhboDYROV",
            "PUT\nODBGOERFMDMzQTczRUY3NUE3NzA5QzdFNUYzMDQxNEM=\ntext/html\nThu, 17 Nov 2005 18:49:58 GMT\nx-oss-magic:abracadabra\nx-oss-meta-author:foo@bar.com\n/oss-example/nelson", sha)
Signature = base64.b64encode(h.digest())
print("Signature: %s" % Signature)
```

The signature calculation result is 26NBxoKd*****Dv6inkoDft/yA=. Based on the formula Authorization = "OSS" + AccessKeyId + ":" + Signature, the value of Authorization is OSS 44CF95900***BF252F707:26NBxoKd*****Dv6inkoDft/yA=. The value is added with the Authorization header to form the message to be sent:

```
PUT /nelson HTTP/1.0
Authorization:OSS 44CF95900***BF252F707:26NBxoKd*****Dv6inkoDft/yA=
Content-Md5: eB5eJF1ptWaXm4bijSPyxw==
Content-Type: text/html
Date: Thu, 17 Nov 2005 18:49:58 GMT
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
X-OSS-Meta-Author: foo@bar.com
X-OSS-Magic: abracadabra
```

Detail analysis:

- If the entered AccessKey ID does not exist or is not activated, 403 Forbidden is returned. Error code: InvalidAccessKeyId.

- If the value of the Authorization header in the request is in an invalid format, 400 Bad Request is returned. Error code: InvalidArgument.
- All OSS requests must use the GMT time format provided in HTTP 1.1. The format is as follows:

```
date1 = 2DIGIT SP month SP 4DIGIT; day month year (e.g., 02 Jun 1982
).
```



Note:

In this format, day is in 2-digit form. Therefore, "Jun 2", "2 Jun 1982", and "2-Jun-1982" are all invalid formats.

- If no date is entered or the date is in the invalid format during signature verification, 403 Forbidden is returned. Error code: AccessDenied.
- The request must be entered within 15 minutes after the current time of the OSS server. Otherwise, 403 Forbidden is returned. Error code: RequestTimeTooSkewed.
- If the AccessKey ID is activated but OSS determines that the signature of the user request is incorrect, 403 Forbidden is returned. The correct signature string for verification and encryption is returned to the user in the response message. You can check whether the signature string is correct based on the response of OSS.

Sample responses:

```
<? xml version="1.0" ? >
<Error>
  <Code>
    SignatureDoesNotMatch
  </Code>
  <Message>
    The request signature we calculated does not match the
    signature you provided. Check your key and signing method.
  </Message>
  <StringToSignBytes>
    47 45 54 0a 0a 0a 57 65 64 2c 20 31 31 20 4d 61 79 20 32 30 31
    31 20 30 37 3a 35 39 3a 32 35 20 47 4d 54 0a 2f 75 73 72 65 61 6c 74
    65 73 74 3f 61 63 6c
  </StringToSignBytes>
  <RequestId>
    1E446260FF9B****
  </RequestId>
  <HostId>
    oss-cn-hangzhou.aliyuncs. ***
  </HostId>
  <SignatureProvided>
    y5H7yzPsA/tP4+0tH1HHvPEwUv8=
  </SignatureProvided>
  <StringToSign>
    GET
    Wed, 11 May 2011 07:59:25 GMT
```

```

/oss-example? aCl
</StringToSign>
<OSSAccessKeyId>
    AKIAIVAKMSMOY7V0****
</OSSAccessKeyId>
</Error>

```

Calculate the Content-MD5 value

The message content "123456789" is used as an example. The following section provides a detailed description about the correct and incorrect methods to calculate the Content-MD5 value of the string.

- **Correct method**

1. Calculate the MD5-encrypted 128-bit binary array.
2. Encode the binary array (instead of the 32-bit string) in Base64.

The following code provides an example on how to calculate the Content-MD5 value in Python:

```

>>> import base64,hashlib
>>> hash = hashlib.md5()
>>> hash.update("0123456789")
>>> base64.b64encode(hash.digest())
'eB5eJF1ptWaXm4bijSPyxw=='

```

Call the hash.digest() function to obtain a 128-bit binary array.

```

>>> hash.digest()
'x\x1e^$]i\xb5f\x97\x9b\x86\xe2\x8d#\xf2\xc7'

```

- **Incorrect method**



Note:

A common incorrect method is to directly encode the 32-bit string in Base64.

```

# Call the hash.hexdigest() function to obtain a visible 32-bit
string.
>>> hash.hexdigest()
'781e5e245d69b566979b86e28d23f2c7'
# Result of encoding the MD5 value in Base64:
>>> base64.b64encode(hash.hexdigest())

```

```
'NzgxZTVlMjQ1ZDY5YjU2Njk3OWI4NmUyOGQyM2YyYzc='
```

4.3 Generate a signed URL

In addition to including the Authorization header in the request, you can also add signature information to a URL so that you can forward the URL to a third party for authorized access.



Notice:

- If you generate a signed URL, the data that is authorized will be exposed to the Internet as long as the authorization is valid. We recommend that you assess the risks in advance.
- A signature cannot be included in a URL and a header at the same time.
- You can add a signature to a URL in PUT and GET requests.

Sample code

The following code provides an example on how to generate a signed URL in Python :

```
import base64
import hmac
import sha
import urllib
h = hmac.new("0txrzxIsfpFjA7SwPzILWy8Bw21TLhquhboDYROV",
            "GET\n\n1141889120\n/oss-example/oss-api.pdf",
            sha)
urllib.quote (base64.encodestring(h.digest()).strip())
```

OSS SDKs provide methods on how to generate a signed URL. For more information, see [SDK reference](#).

For more information about how to generate a signed URL for OSS SDKs, see the following table.

SDK	URL signature method	Implementation file
Java SDK	<code>OSSClient.generatePresignedUrl</code>	OSSClient.java
Python SDK	<code>Bucket.sign_url</code>	api.py
.NET SDK	<code>OssClient.GeneratePresignedUri</code>	OssClient.cs
PHP SDK	<code>OssClient.signUrl</code>	OssClient.php

SDK	URL signature method	Implementation file
JavaScript SDK	signatureUrl	object.js
C SDK	oss_gen_signed_url	oss_object.c
C++ SDK	OssClient::GeneratePresignedUrl	OssClient.cc

Implementation

The following code provides an example on how to generate a signed URL:

```
http://oss-example.oss-cn-hangzhou.aliyuncs.com/oss-api.pdf?OSSAccessKeyId=nz2pc56s936**9l&Expires=1141889120&Signature=vjbyPxybdZaNmGa%2ByT272YEAiv4%3D
```

A signed URL must include the following three parameters: Signature, Expires, and OSSAccessKeyId. When you generate the signature string, replace Date with Expires, but include the headers such as Content-Type and Content-MD5 defined in [Add signatures to headers](#). (Although Date still exists in the request header, you do not need to add it to the signature string.)

- Expires specifies the validity period of the URL. The value of this parameter is in [UNIX time](#) format. The value is the number of seconds that elapsed since January 1, 1970 UTC. If the time OSS receives the URL request is later than the value of Expires that is included in the signature, a request timeout error is returned. For example, the current time is 1141889060. To create a URL that is scheduled to expire in 60 seconds, you can set the value of Expires to 1141889120.



Note:

For security reasons, the default validity period of a URL is 3,600 seconds. The maximum validity period of a URL is 32,400 seconds.

- OSSAccessKeyId specifies the AccessKey ID of a key.
- Signature specifies the signature information. For all requests and headers that OSS supports, the signature algorithm for a URL is basically the same as that for a header in [Add signatures to headers](#).

```
Signature = urlencode(base64(hmac-sha1(AccessKeySecret,
  VERB + "\n"
  + CONTENT-MD5 + "\n"
  + CONTENT-TYPE + "\n"
  + EXPIRES + "\n"
  + CanonicalizedOSSHeaders
```

```
+ CanonicalizedResource)))
```

For more information about values of the `CONTENT-MD5`, `CanonicalizedOSSHeaders`, and `CONTENT-TYPE` headers, see [Add signatures to headers](#).



Note:

The difference is listed as follows:

- When a signed URL is created, the Expires parameter replaces the Date parameter.
 - If more than one Signature, Expires, or OSSAccessKeyId value is imported, the first input value is used.
 - Before verifying the signature of a request, OSS checks the request time to determine whether it is later than the time specified in Expires.
 - When you add a signature string to a URL, you must encode the URL.
- When you add a signature to a temporary user URL, you must include `security-token`. The format is as follows:

```
http://oss-example.oss-cn-hangzhou.aliyuncs.com/oss-api.pdf?
OSSAccessKeyId=nz2pc56s936**9l&Expires=1141889120&Signature=
vjbyPxybdZaNmGa%2ByT272YEAiv4%3D&security-token=SecurityToken
```

Error codes


Error code	Error message	Description
AccessDenied	403 Forbidden	The error message returned because one or more of the Signature, Expires, and OSSAccessKeyId parameters are missing. When a signature is added to a URL, the sequence of the Signature, Expires, and OSSAccessKeyId parameters can be swapped.


Error code	Error message	Description
AccessDenied	403 Forbidden	The error message returned because the current access time is later than the Expires value set in the request, or the time is in a wrong format.
InvalidArgument	400 Bad Request	The error message returned because a URL includes one or more of the Signature, Expires, and OSSAccessKeyId parameters and the header also includes the signature information.

4.4 Bucket access control

OSS provides an Access Control List (ACL) for bucket-level access control.

Currently, three ACLs are available for a bucket: public-read-write, public-read, and private.

ACL	Permission	Description
public-read-write	Public read and write	<p>Any user (including anonymous users) can perform read/write operations, and delete operations on objects in the bucket.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Warning: We recommend you that do not set the ACL of a bucket to public-read-write to avoid incurring excessive fees or having your account suspended due to malicious or illegal activities of another user. </div>

ACL	Permission	Description
public-read	Public read and private write	<p>Only the owner of the bucket can perform write operations on objects in the bucket. All other users (including anonymous users) can only perform read operations on objects in the bucket.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Warning: We recommend that you exercise caution when setting this ACL because it authorizes any user to perform read operations on objects in the bucket through the Internet, which may incur excessive fees. </div>
private	Private read and write	<p>Only the owner of the bucket can perform read/write operations on the objects in the bucket. Other users cannot access the objects.</p>

**Note:**

- If you do not set an ACL for a bucket when you create it, its ACL is set to private automatically.
- If the ACL rule of the bucket is set to private, only authorized users can access and operate on objects in the bucket. For more information about access control, see [Access control](#).
- Only the creator of an existing bucket can modify the ACL for the bucket by using the PutBucketACL API.

5 Service operations

5.1 GetService (ListBuckets)

You can call this operation to obtain all buckets that you own. The forward slash (/) in the request syntax represents the root directory.

**Note:**

The GetService (ListBuckets) operation is valid only for authenticated users.

Request syntax

```
GET / HTTP/1.1
Host: oss.example.com
Date: GMT Date
Authorization: SignatureValue
```

Request parameters

**Note:**

When using GetService(ListBuckets), you can set the parameters described in the following table to limit the list of buckets returned so that only specified results are returned.

Parameter	Type	Required	Description
prefix	String	No	Specifies the prefix that returned bucket names must contain. If this parameter is not specified, prefix information is not used to filter the returned buckets. Default value: null
marker	String	No	Specifies the name of the bucket after which the list begins. If this parameter is not specified, all results are returned. Default value: null

Parameter	Type	Required	Description
max-keys	String	No	Specifies the maximum number of buckets that can be returned each time. If this parameter is not specified, default value 100 is used. The maximum value is 1000. Default value: 100

Response elements

**Note:**

When all buckets are returned, the returned XML does not contain Prefix, Marker, MaxKeys, IsTruncated, and NextMarker. If some results are not returned, the preceding nodes are added.

Element	Type	Description
ListAllMyBucketsResult	Container	Indicates the container used to store results of the GetService request. Child node: Owner and Buckets Parent node: none
Prefix	String	Indicates the prefix that the returned object names must contain. Parent node: ListAllMyBucketsResult
Marker	String	Indicates the name of the bucket after which the list begins. Parent node: ListAllMyBucketsResult
MaxKeys	String	Indicates the maximum number of buckets returned each time. Parent node: ListAllMyBucketsResult

Element	Type	Description
IsTruncated	Boolean	<p>Indicates whether all results have been returned.</p> <p>Valid values: true and false</p> <ul style="list-style-type: none"> • true indicates that not all results are returned this time. • false indicates that all results have been returned this time. <p>Parent node: ListAllMyBucketsResult</p>
NextMarker	String	<p>Indicates the marker for the next GetService(ListBuckets) request, which can be used to return the results that are not returned this time.</p> <p>Parent node: ListAllMyBucketsResult</p>
Owner	Container	<p>Indicates the container used to store the information about the bucket owner.</p> <p>Parent node: ListAllMyBucketsResult</p>
ID	String	<p>Indicates the user ID of the bucket owner.</p> <p>Parent node: ListAllMyBucketsResult.</p> <p>Owner</p>
DisplayName	String	<p>Indicates the name of the bucket owner, which is currently the same as the user ID.</p> <p>Parent node: ListAllMyBucketsResult.</p> <p>Owner</p>
Buckets	Container	<p>Indicates the container that stores the information about multiple buckets.</p> <p>Child node: Bucket</p> <p>Parent node: ListAllMyBucketsResult</p>

Element	Type	Description
Bucket	Container	Indicates the container used to store the bucket information. Child node: Name, CreationDate, and Location Parent node: ListAllMyBucketsResult. Buckets
Name	String	Indicates the name of the bucket. Parent node: ListAllMyBucketsResult. Buckets.Bucket
CreateDate	Time (Format: yyyy-mm-ddThh:mm:ss.timezone. Example: 2011-12-01T12:27:13.000Z)	Indicates the time when the bucket is created. Parent node: ListAllMyBucketsResult. Buckets.Bucket
Location	String	Indicates the data center in which the bucket is located. Parent node: ListAllMyBucketsResult. Buckets.Bucket
ExtranetEndpoint	String	Indicates the public endpoint used to access the bucket over the Internet. Parent node: ListAllMyBucketsResult. Buckets.Bucket
IntranetEndpoint	String	Indicates the internal endpoint used to access the bucket from ECS instances in the same region. Parent node: ListAllMyBucketsResult. Buckets.Bucket
StorageClass	String	Indicates the storage class of the bucket. Valid values: Standard, IA, and Archive. Parent node: ListAllMyBucketsResult. Buckets.Bucket

Element	Type	Description
Comment	String	Indicates the comments on the bucket. Parent node: ListAllMyBucketsResult. Buckets.Bucket

Examples

• Sample request 1

```
GET / HTTP/1.1
Date: Thu, 15 May 2014 11:18:32 GMT
Host: oss-cn-hangzhou.aliyuncs.com
Authorization: OSS nxj7dtlhcy15hpnhi: COS30QkfQPnKmYZTEHYv2*****
```

Sample response 1

```
HTTP/1.1 200 OK
Date: Thu, 15 May 2014 11:18:32 GMT
Content-Type: application/xml
Content-Length: 556
Connection: keep-alive
Server: AliyunOSS
x-oss-request-id: 5374A2880232A65C2300****
<?xml version="1.0" encoding="UTF-8"?>
<ListAllMyBucketsResult>
  <Owner>
    <ID>512**</ID>
    <DisplayName>51264</DisplayName>
  </Owner>
  <Buckets>
    <Bucket>
      <CreationDate>2015-12-17T18:12:43.000Z</CreationDate>
      <ExtranetEndpoint>oss-cn-shanghai.aliyuncs.com</ExtranetEn
dpoint>
      <IntranetEndpoint>oss-cn-shanghai-internal.aliyuncs.com</
IntranetEndpoint>
      <Location>oss-cn-shanghai</Location>
      <Name>app-base-oss</Name>
      <Region>cn-shanghai</Region>
      <StorageClass>Standard</StorageClass>
    </Bucket>
    <Bucket>
      <CreationDate>2014-12-25T11:21:04.000Z</CreationDate>
      <ExtranetEndpoint>oss-cn-hangzhou.aliyuncs.com</ExtranetEn
dpoint>
      <IntranetEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</
IntranetEndpoint>
      <Location>oss-cn-hangzhou</Location>
      <Name>atestleo23</Name>
      <Region>cn-hangzhou</Region>
      <StorageClass>IA</StorageClass>
    </Bucket>
  </Buckets>
```

```
</ListAllMyBucketsResult>
```

- **Sample request 2**

```
GET /? prefix=xz02tphky6fjfiuc&max-keys=1 HTTP/1.1
Date: Thu, 15 May 2014 11:18:32 GMT
Host: oss-cn-hangzhou.aliyuncs.com
Authorization: OSS nxj7dtwhcyl5hpnhi:CO530QkfQPnKmYZTEHYv2****
```

Sample response 2

```
HTTP/1.1 200 OK
Date: Thu, 15 May 2014 11:18:32 GMT
Content-Type: application/xml
Content-Length: 545
Connection: keep-alive
Server: AliyunOSS
x-oss-request-id: 5374A2880232A65C2300****
<?xml version="1.0" encoding="UTF-8"?>
<ListAllMyBucketsResult>
  <Prefix>xz02tphky6fjfiuc</Prefix>
  <Marker></Marker>
  <MaxKeys>1</MaxKeys>
  <IsTruncated>true</IsTruncated>
  <NextMarker>xz02tphky6fjfiuc0</NextMarker>
  <Owner>
    <ID>ut_test_put_bucket</ID>
    <DisplayName>ut_test_put_bucket</DisplayName>
  </Owner>
  <Buckets>
    <Bucket>
      <CreationDate>2014-05-15T11:18:32.000Z</CreationDate>
      <ExtranetEndpoint>oss-cn-hangzhou.aliyuncs.com</ExtranetEn
dpoint>
      <IntranetEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</
IntranetEndpoint>
      <Location>oss-cn-hangzhou</Location>
      <Name>xz02tphky6fjfiuc0</Name>
      <Region>cn-hangzhou</Region>
      <StorageClass>Standard</StorageClass>
    </Bucket>
  </Buckets>
</ListAllMyBucketsResult>
```

SDKs

The SDKs of the GetService operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

- [iOS](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because the request is from anonymous access and includes no user authentication information.

6 Bucket operations

6.1 PutBucket

You can call this operation to create a bucket.



Note:

- **Anonymous access is not supported.**
- **You can create up to 100 buckets in the same region with an Alibaba Cloud account.**
- **Each region has corresponding endpoints. For more information about the mappings between regions and endpoints, see [Regions and endpoints](#).**


Request syntax

```
PUT / HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
x-oss-acl: Permission
Authorization: SignatureValue
<? xml version="1.0" encoding="UTF-8"? >
<CreateBucketConfiguration>
  <StorageClass>Standard</StorageClass>
</CreateBucketConfiguration>
```

Request headers

Header	Type	Required	Description
x-oss-acl	String	No	<p>Specifies the bucket ACL.</p> <p>Valid values: public read/write, public read, and private</p> <div> </div> <p>Note: If no ACL is specified for the created bucket, the bucket ACL is set to private by default.</p>

Request elements

Element	Type	Required	Description
StorageClass	String	No	<p>Specifies the storage class of the bucket.</p> <p>Valid values:</p> <ul style="list-style-type: none"> Standard IA (Infrequent Access) Archive <div style="background-color: #f0f0f0; padding: 5px;">  Note: If no storage class is specified for the bucket, the storage class is set to Standard by default. </div>
DataRedundancyType	String	No	<p>Specifies the type of disaster recovery for a bucket.</p> <p>Valid values:</p> <ul style="list-style-type: none"> LRS (local disaster recovery, default value) ZRS (zone disaster recovery)

Examples

Sample requests

```
PUT / HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2017 03:15:40 GMT
x-oss-acl: private
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:77Dvh5wQgIjWjw0/KyRt8d0P
****
<? xml version="1.0" encoding="UTF-8"? >
<CreateBucketConfiguration>
  <StorageClass>Standard</StorageClass>
</CreateBucketConfiguration>
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Fri, 24 Feb 2017 03:15:40 GMT
```

```
Location: /oss-example
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDKs

The SDKs of the PutBucket operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Android](#)
- [iOS](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
InvalidBucketName	400	The error message returned because the bucket name does not comply with the naming conventions.
AccessDenied	403	<ul style="list-style-type: none">• The error message returned because the information for user authentication is not imported when you initiate a PutBucket request.• The error message returned because you are not authorized to perform this operation.
TooManyBuckets	400	The error message returned because the number of buckets to be created exceeds the upper limit. You can create up to 100 buckets in a region.

6.2 DeleteBucket

Deletes a bucket.



Note:

- **Only the owner of a bucket can delete the bucket.**
- **To prevent accidental deletion, users are not allowed to delete a bucket that is not empty.**

Request syntax

```
DELETE / HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

- **Delete a bucket normally.**

Request example:

```
DELETE / HTTP/1.1
Host: test.oss-cn-hangzhou.aliyuncs.com
Accept-Encoding: identity
User-Agent: aliyun-sdk-python/2.6.0(Windows/7/AMD64;3.7.0)
Accept: */*
Connection: keep-alive
date: Tue, 15 Jan 2019 08:19:04 GMT
authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ce0EyZavKY4QcjoUWYSp
YbJ3naA=
Content-Length: 0
```

Response example:

```
HTTP/1.1 204 No Content
Server: AliyunOSS
Date: Tue, 15 Jan 2019 08:19:04 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5C3D9778CC1C2AEDF85BD9B7
x-oss-server-time: 190
```

- **The bucket to be deleted does not exist.**

Request example:

```
DELETE / HTTP/1.1
Host: test.oss-cn-hangzhou.aliyuncs.com
Accept-Encoding: identity
User-Agent: aliyun-sdk-python/2.6.0(Windows/7/AMD64;3.7.0)
Accept: */*
Connection: keep-alive
```

```
date: Tue, 15 Jan 2019 07:53:24 GMT
authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ce0EyZavKY4QcjoUWYSp
YbJ3naA=
Content-Length: 0
```

Response example:

```
HTTP/1.1 404 Not Found
Server: AliyunOSS
Date: Tue, 15 Jan 2019 07:53:25 GMT
Content-Type: application/xml
Content-Length: 288
Connection: keep-alive
x-oss-request-id: 5C3D9175B6FC201293AD4890

<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>NoSuchBucket</Code>
  <Message>The specified bucket does not exist. </Message>
  <RequestId>5C3D9175B6FC201293AD4890</RequestId>
  <HostId>test.oss-cn-hangzhou.aliyuncs.com</HostId>
  <BucketName>test</BucketName>
</Error>
```

- **The bucket to be deleted is not empty.**

Request example:

```
DELETE / HTTP/1.1
Host: test.oss-cn-hangzhou.aliyuncs.com
Accept-Encoding: identity
User-Agent: aliyun-sdk-python/2.6.0(Windows/7/AMD64;3.7.0)
Accept: */*
Connection: keep-alive
date: Tue, 15 Jan 2019 07:35:06 GMT
authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ce0EyZavKY4QcjoUWYSp
YbJ3naA=
Content-Length: 0
```

Response example:

```
HTTP/1.1 409 Conflict
Server: AliyunOSS
Date: Tue, 15 Jan 2019 07:35:06 GMT
Content-Type: application/xml
Content-Length: 296
Connection: keep-alive
x-oss-request-id: 5C3D8D2A0ACA54D87B43C048
x-oss-server-time: 16

<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>BucketNotEmpty</Code>
  <Message>The bucket you tried to delete is not empty. </Message>
  <RequestId>5C3D8D2A0ACA54D87B43C048</RequestId>
  <HostId>test.oss-cn-hangzhou.aliyuncs.com</HostId>
  <BucketName>test</BucketName>
```

```
</Error>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Android](#)
- [iOS](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403 Forbidden	You do not have the permission to delete the bucket. Only the owner of a bucket can delete the bucket.

6.3 PutBucketACL

Modifies the ACL for a bucket. Only the bucket owner can perform this operation.



Note:

When the bucket owner initiates a PutBucketACL request:

- The ACL is updated if the bucket already exists and has a different ACL.
- A bucket with the requested ACL is created if the requested bucket does not exist.

Request syntax

```
PUT /? acl HTTP/1.1
x-oss-acl: Permission
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```

Authorization: SignatureValue

Request header

Parameter	Type	Required	Description
x-oss-acl	String	Yes	<p>Specifies the ACL for the bucket.</p> <p>This parameter is included in the PutBucketACL request to set the ACL for the bucket. If this header is not included, the ACL settings do not take effect.</p> <p>Valid values: public-read-write, public-read, and private</p>

Examples

Request example:

```
PUT /? acl HTTP/1.1
x-oss-acl: public-read
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3J
xrTzHiA=
```

Normal response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 24 Feb 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

Response example that indicates that the ACL settings do not take effect:

```
HTTP/1.1 400 Bad Request
x-oss-request-id: 56594298207FB304438516F9
Date: Fri, 24 Feb 2012 03:55:00 GMT
Content-Length: 309
Content-Type: text/xml; charset=UTF-8
Connection: keep-alive
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>InvalidArgument</Code>
  <Message>no such bucket access control exists</Message>
  <RequestId>5***9</RequestId>
  <HostId>***-test.example.com</HostId>
  <ArgumentName>x-oss-acl</ArgumentName>
  <ArgumentValue>error-acl</ArgumentValue>
```

```
</Error>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error code

Error code	HTTP status code	Description
AccessDenied	403	<ul style="list-style-type: none">• Authentication information about the user is not included in the PutBucketACL request.• You do not have the permission to initiate a PutBucketACL request. Only the bucket owner can perform this operation.

6.4 GetBucketAcl

Obtains the ACL for a bucket. Only the owner of a bucket can obtain the ACL for the bucket.

Request syntax

```
GET /? acl HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```

Authorization: SignatureValue

Response elements

Elements	Type	Description
Accesscontrollist	Container	Specifies the container used to store the ACL information. Parent node: AccessControlPolicy
AccessControlPolicy	Container	Specifies the container that stores the result to the GetBucketACL request. Parent node: None
Displayname	String	Indicates the name of the bucket owner, which is the same as the value of ID. Parent Node: AccessControlPolicy.Owner
Grant	Enumerated string	Indicates the ACL for the bucket. Valid values: private, public-read, and public-read-write Parent node: AccessControlPolicy.AccessControlList
ID	String	Indicates the user ID of the bucket owner. Parent node: AccessControlPolicy.Owner
Owner	Container	Indicates the container used to store the information about the bucket owner. Parent node: AccessControlPolicy

Examples

Request example:

```
GET /? acl HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 04:11:23 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAI4XZ+WwIfNm0FmgbrQ0=
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
```



```

Date: Fri, 24 Feb 2012 04:11:23 GMT
Content-Length: 253
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS

<? xml version="1.0" ? >
<AccessControlPolicy>
  <Owner>
    <ID>00220120222</ID>
    <DisplayName>user_example</DisplayName>
  </Owner>
  <AccessControlList>
    <Grant>public-read</Grant>
  </AccessControlList>
</AccessControlPolicy>

```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist.
AccessDenied	403	You do not have the permission to perform this operation. Only the owner of a bucket can obtain the ACL for the bucket.

6.5 PutBucketLifecycle

You can call this operation to configure lifecycle rules for a bucket. After you configure lifecycle rules for a bucket, OSS automatically deletes the

objects that match the lifecycle rules. Only the owner of a bucket can initiate a **PutBucketLifecycle** request for the bucket.

**Note:**

- If no lifecycle rules have been configured for a bucket, the **PutBucketLifecycle** operation creates a lifecycle rule for the bucket. If a lifecycle rule has been configured for the bucket, this operation creates a lifecycle rule that overwrites the existing one.
- **PutBucketLifecycle** uses the overwriting semantics. A new lifecycle rule overwrites the existing rule. If you want to configure a new lifecycle rule for a bucket, you must call the **GetBucketLifecycle** operation to obtain the current lifecycle configurations of the bucket, add a new lifecycle configuration, and call the **PutBucketLifecycle** operation to update the lifecycle configurations for the bucket.
- You can call the **PutBucketLifecycle** operation to set a validity period for an object or a part that is generated in an incomplete multipart upload task.


Request syntax


```
PUT /? lifecycle HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Authorization: SignatureValue
Host: BucketName.oss.aliyuncs.com
<? xml version="1.0" encoding="UTF-8"? >
<LifecycleConfiguration>
  <Rule>
    <ID>RuleID</ID>
    <Prefix>Prefix</Prefix>
    <Status>Status</Status>
    <Expiration>
      <Days>Days</Days>
    </Expiration>
    <Transition>
      <Days>Days</Days>
      <StorageClass>StorageClass</StorageClass>
    </Transition>
    <AbortMultipartUpload>
      <Days>Days</Days>
    </AbortMultipartUpload>
  </Rule>
```



```
</LifecycleConfiguration>
```


Request elements

Element	Type	Required	Description
CreatedBeforeDate	String	Days or CreatedBeforeDate	<p>Specifies a date. OSS runs lifecycle rules for objects that are last modified before this date. The date must conform to the ISO 8601 standard. The time must be in UTC. For example, 2002-10-11T00:00:00.000Z indicates that objects last updated before 2002-10-11T00:00:00.000Z are deleted or the storage classes of these objects are converted to another storage class. Objects last updated at or after this time are not deleted or their storage classes are not converted to another storage class.</p> <p>Parent node: Expiration or AbortMulti partUpload</p>
Days	Positive integer	Days or CreatedBeforeDate	<p>Specifies the number of days within which objects can be retained after they are last modified.</p> <p>Parent node: Expiration</p>

Element	Type	Required	Description
Expiration	Container	No	<p>Specifies the operation on the objects for the lifecycle rule.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: For an object in a versioning-enabled bucket, this element only specifies the validity period of the current version of the object. </div> <p>Child node: Days or CreatedBeforeDate, or ExpiredObjectDeleteMarker Parent node: Rule</p>
AbortMulti partUpload	Container	No	<p>Specifies the operation on the multipart upload tasks that are not complete.</p> <p>Child node: Days or CreatedBeforeDate Parent node: Rule</p>
ID	String	No	<p>Specifies the unique ID of a lifecycle rule. An ID is composed of up to 255 bytes. If the value of this parameter is null or not specified, OSS automatically generates a unique ID for the lifecycle rule.</p> <p>Child node: none Parent node: Rule</p>
LifecycleC onfiguration	Container	Yes	<p>Specifies the container used to store lifecycle configurations. The container can contain up to 1,000 rules.</p> <p>Chile node: Rule Parent node: none</p>

Element	Type	Required	Description
Prefix	String	Yes	<p>Specifies the prefix for a rule. The rule applies only to objects whose names contain the specified prefix. The prefixes specified by different rules cannot overlap.</p> <p>Child node: none</p> <p>Parent node: Rule</p>
Rule	Container	Yes	<p>Specifies a rule.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p> Note:</p> <ul style="list-style-type: none"> • You cannot create a rule to convert the storage class of objects for an archive bucket. • The validity period specified for Expiration must be longer than that specified for Transition. Likewise, the expire time specified for Expiration must be later than that specified for Transition. </div> <p>Child node: ID, Prefix, Status, and Expiration</p> <p>Parent node: LifecycleConfiguration</p>
Status	String	Yes	<p>The value of Enabled indicates that OSS runs the rule. The value of Disabled indicates that OSS ignores the rule.</p> <p>Parent node: Rule</p> <p>Valid values: Enabled and Disabled</p>

Element	Type	Required	Description
StorageClass	String	Yes if Transition or NoncurrentVersionTransition is configured	<p>Specifies the current storage class of the object.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: You can convert the storage class of an object in an IA bucket to Archive, but not Standard. </div> <p>Valid values: IA and Archive</p> <p>Parent node: Transition</p>
Transition	Container	No	<p>Specifies the validity period within which objects can be retained and the conversion operation on the objects . After the validity period expires, the storage class of the objects can be converted to IA or Archive.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: The storage class of standard objects can be converted to IA or Archive. Note that the validity period for conversion to Archive must be longer than that for conversion to IA. For example, if the validity period is set to 30 for objects whose storage classes are converted to IA after the validity period expires, the validity period must be set to a value greater than 30 for objects whose storage classes are converted to Archive. </div>
Tag	Container	No	<p>Specifies the object tag for a rule. You can set multiple tags.</p> <p>Parent node: Rule</p> <p>Child node: Key and Value</p>

Element	Type	Required	Description
Key	String	Yes if Tag is configured	Specifies the tag key. Parent node: Tag
Value	String	Yes if Tag is configured	Specifies the tag value. Parent node: Tag
Noncurrent Days	String	Yes if Noncurrent VersionTransition or Noncurrent VersionExpiration is configured	Specifies the number of days within which the previous versions can be retained. When the current versions expire, they roll back to the previous versions. Parent node: NoncurrentVersionTransition and NoncurrentVersionExpiration
Noncurrent VersionTransition	Container	No	Specifies the validity period within which previous versions can be retained and the conversion operation on the previous versions. After the validity period expires, the storage class of the previous versions can be converted to IA or Archive. <div style="background-color: #f0f0f0; padding: 10px;">  Note: The storage class of standard objects can be converted to IA or Archive. Note that the validity period for conversion to Archive must be longer than that for conversion to IA. For example, if the validity period is set to 30 for previous versions whose storage classes are converted to IA after the validity period expires, the validity period must be set to a value greater than 30 for previous versions whose storage classes are converted to Archive. </div> Child node: NoncurrentDays and StorageClass

Element	Type	Required	Description
NoncurrentVersionExpiration	Container	No	Specifies the operation on the previous versions of the object. Child node: NoncurrentDays
ExpiredObjectDeleteMarker	String	No	Specifies whether expired delete markers are automatically removed. Valid values: <ul style="list-style-type: none"> • True: indicates that expired delete markers are automatically removed. • False: indicates that expired delete markers are not automatically removed. Parent node: Expiration

Examples

- **Request example for an unversioned bucket**

```

PUT /? lifecycle HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Content-Length: 443
Date: Thu , 8 Jun 2017 13:08:38 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:PYbzsdWAIWAlMW8luk*****
<? xml version="1.0" encoding="UTF-8"? >
<LifecycleConfiguration>
  <Rule>
    <ID>delete objects and parts after one day</ID>
    <Prefix>logs/</Prefix>
    <Status>Enabled</Status>
    <Expiration>
      <Days>1</Days>
    </Expiration>
    <AbortMultipartUpload>
      <Days>1</Days>
    </AbortMultipartUpload>
  </Rule>
  <Rule>
    <ID>transit objects to IA after 30, to Archive 60, expire after
10 years</ID>
    <Prefix>data/</Prefix>
    <Status>Enabled</Status>
    <Transition>
      <Days>30</Days>
      <StorageClass>IA</StorageClass>
    </Transition>
    <Transition>
      <Days>60</Days>
      <StorageClass>Archive</StorageClass>
    </Transition>
  </Rule>
</LifecycleConfiguration>

```



```

    <Expiration>
      <Days>3600</Days>
    </Expiration>
  </Rule>
  <Rule>
    <ID>transit objects to Archive after 60 days</ID>
    <Prefix>important</Prefix>
    <Status>Enabled</Status>
    <Transition>
      <Days>6</Days>
      <StorageClass>Archive</StorageClass>
    </Transition>
  </Rule>
  <Rule>
    <ID>delete created before date</ID>
    <Prefix>backup</Prefix>
    <Status>Enabled</Status>
    <Expiration>
      <CreatedBeforeDate>2017-01-01T00:00:00.000Z</CreatedBeforeDate>
    </Expiration>
    <AbortMultipartUpload>
      <CreatedBeforeDate>2017-01-01T00:00:00.000Z</CreatedBeforeDate>
    </AbortMultipartUpload>
  </Rule>
  <Rule>
    <ID>r1</ID>
    <Prefix>rule1</Prefix>
    <Tag><Key>xx</Key><Value>1</Value></Tag>
    <Tag><Key>yy</Key><Value>2</Value></Tag>
    <Status>Enabled</Status>
    <Expiration>
      <Days>30</Days>
    </Expiration>
  </Rule>
  <Rule>
    <ID>r2</ID>
    <Prefix>rule2</Prefix>
    <Tag><Key>xx</Key><Value>1</Value></Tag>
    <Status>Enabled</Status>
    <Transition>
      <Days>60</Days>
      <StorageClass>Archive</StorageClass>
    </Transition>
  </Rule>
</LifecycleConfiguration>

```

Sample response

```

HTTP/1.1 200 OK
x-oss-request-id: 534B371674A4D890*****
Date: Thu , 8 Jun 2017 13:08:38 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS

```

- **Sample request for a versioning-enabled bucket**

```

PUT /? lifecycle HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Content-Length: 336

```

```
Date: Mon , 6 May 2019 15:23:20 GMT
Authorization: OSSWnj13fg9fdv8fg4b8sdf:Phuu8bBhS8dsff2a*****
<? xml version="1.0" encoding="UTF-8"? >
<LifecycleConfiguration>
  <Rule>
    <ID>delete example</ID>
    <Prefix>logs/</Prefix>
    <Status>Enabled</Status>
    <Expiration>
      <ExpiredObjectDeleteMarker>>true</ExpiredObjectDeleteMarker>
    </Expiration>
    <NoncurrentVersionExpiration>
      <NoncurrentDays>5</NoncurrentDays>
    </NoncurrentVersionExpiration>
    <AbortMultipartUpload>
      <Days>1</Days>
    </AbortMultipartUpload>
  </Rule>
  <Rule>
    <ID>transit example</ID>
    <Prefix>data/</Prefix>
    <Status>Enabled</Status>
    <Transition>
      <Days>30</Days>
      <StorageClass>IA</StorageClass>
    </Transition>
    <NoncurrentVersionTransition>
      <NoncurrentDays>10</NoncurrentDays>
      <StorageClass>IA</StorageClass>
    </NoncurrentVersionTransition>
  </Rule>
</LifecycleConfiguration>
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 7D3435J59A9812B*****
Date: Mon , 6 May 2019 15:23:20 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDKs

The SDKs of the PutBucketLifecycle operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you are not authorized to perform this operation. Only the owner of a bucket can initiate the PutBucketLifecycle request for the bucket.
InvalidArgument	400	<ul style="list-style-type: none"> • The storage class of standard objects can be converted to IA or Archive. The storage class of standard objects can be converted to IA or Archive . Note that the validity period for conversion to Archive must be longer than that for conversion to IA. • The validity period specified for Expiration must be longer than that specified for Transition. Likewise, the expire time specified for Expiration must be later than that specified for Transition.

6.6 GetBucketLifecycle

Views the lifecycle rules for a bucket. Only the owner of a bucket can view the lifecycle rules for the bucket.

Request syntax

```
GET /? lifecycle HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Request example:

```
Get /? lifecycle HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Date: Mon, 14 Apr 2014 01:17:29 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ce0EyZavKY4QcjoUWYSp
YbJ3naA=
```

Response example returned when lifecycle rules are configured for the bucket:

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Mon, 14 Apr 2014 01:17:29 GMT
Connection: keep-alive
Content-Length: 255
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<LifecycleConfiguration>
  <Rule>
    <ID>delete after one day</ID>
    <Prefix>logs/</Prefix>
    <Status>Enabled</Status>
    <Expiration>
      <Days>1</Days>
    </Expiration>
  </Rule>
</LifecycleConfiguration>
```

Response example returned when no bucket lifecycle rules are configured for the bucket:

```
HTTP/1.1 404
x-oss-request-id: 534B371674E88A4D8906****
Date: Mon, 14 Apr 2014 01:17:29 GMT
Connection: keep-alive
Content-Length: 278
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <BucketName>oss-example</BucketName>
  <Code>NoSuchLifecycle</Code>
  <Message>No Row found in Lifecycle Table.</Message>
  <RequestId>534B372974E88A4D8906****</RequestId>
  <HostId> BucketName.oss.example.com</HostId>
</Error>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403 Forbidden	You do not have the permission to view the lifecycle rules for the bucket. Only the owner of a bucket can view the lifecycle rules for the bucket.
NoSuchBucket or NoSuchLifecycle	404 Not Found	The bucket does not exist or no lifecycle rules are configured for the bucket.

6.7 DeleteBucketLifecycle

Deletes the lifecycle rules for a specified bucket. After you delete all lifecycle rules for a specified bucket by using this API, the objects stored in the bucket are no longer automatically deleted because of the lifecycle rules. Only the owner of a bucket can delete the lifecycle rules for the bucket.

Request syntax

```
DELETE /?lifecycle HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Request example:

```
DELETE /?lifecycle HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: Mon, 14 Apr 2014 01:17:35 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:6ZVH0ehYzxoC1yxRydPQs/Cn
****
```

Response example:

```
HTTP/1.1 204 No Content
x-oss-request-id: 534B371674E88A4D8906****
Date: Mon, 14 Apr 2014 01:17:35 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist.
AccessDenied	403 Forbidden	You do not have the permission to delete the lifecycle rules for the bucket. Only the owner of a bucket can delete the lifecycle rules for the bucket.

6.8 GetBucket (ListObject)

Lists the information about all objects in a bucket.


Request syntax

```
GET / HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Request elements

When you initiate a GetBucket (ListObject) request, you can use prefix, marker, delimiter, and max-keys to prescribe a limit to the ListObject operation to return partial results.

Element	Type	Required	Description
delimiter	String	No	<p>Specifies a character used to group object names. All the names of the objects that contain a specified prefix and after which the delimiter occurs for the first time, act as a group of elements, that is, CommonPrefixes.</p> <p>Default value: None</p>
marker	String	No	<p>Sets the returned results to begin from the first entry after the marker in alphabetical order.</p> <p>Default value: None</p>
max-keys	String	No	<p>Limits the maximum number of objects returned for one request. The max-keys value cannot exceed 1000.</p> <p>Default value: 100</p> <p>If the listing operation cannot be completed at one time because of the limits set by max-keys. A <NextMarker> is included in the response to indicates the marker for the next listing operation.</p>
prefix	String	No	<p>Limits that the returned object key must be prefixed accordingly. Note that the keys returned from queries using a prefix still contain the prefix.</p> <p>Default value: None</p>

Element	Type	Required	Description
encoding-type	String	No	<p>Encodes the returned results and specifies the encoding type. Parameters delimiter, marker, prefix, NextMarker, and key use UTF-8 characters, but the XML 1.0 Standard does not support parsing certain control characters, such as characters with ASCII values ranging from 0 to 10. If some elements in the returned results contain characters that are not supported by the XML 1.0 Standard, encoding-type can be specified to encode these elements, such as delimiter, marker, prefix, NextMarker, and key.</p> <p>Default value: None</p> <p>Optional value: url</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p> Note: XML 1.0 does not support parsing certain control characters, such as characters with ASCII values ranging from 0 to 10. If some elements in the returned results contain characters that are not supported by XML 1.0, you can set the value of encoding-type to encode these elements, such as delimiter, marker, prefix, NextMarker, and key.</p> </div>

Response elements

Element	Type	Description
Contents	Container	<p>Indicates the container used to store every returned object meta.</p> <p>Parent node: ListBucketResult</p>
CommonPrefixes	String	<p>If the delimiter parameter is specified in the request, the response returned by OSS contains the CommonPrefixes element. This element indicates the set of objects which ends with a delimiter and have a common prefix.</p> <p>Parent node: ListBucketResult</p>

Element	Type	Description
Delimiter	String	<p>Indicates a character used to group object names. All those objects whose names contain the specified prefix and after which the delimiter occurs for the first time, act as a group of elements, that is, CommonPrefixes.</p> <p>Parent node: ListBucketResult</p>
EncodingType	String	<p>Indicates the encoding type for the returned results. If encoding-type is specified in a request, the following elements in the returned results are encoded: delimiter, marker, prefix, NextMarker, and key.</p> <p>Parent node: ListBucketResult</p>
DisplayName	String	<p>Indicates the name of the object owner.</p> <p>Parent node: ListBucketResult.Contents.Owner</p>
ETag	String	<p>The ETag (entity tag) is created when an object is generated and is used to indicate the content of the object.</p> <p>Parent node: ListBucketResult.Contents</p> <p>For an object created by a PutObject request, the value of ETag is the value of MD5 in the content of the object. For an object created in other way, the value of ETag is the UUID in the content of the object. The value of ETag can be used to check whether the content of the object is changed. We recommend that the ETag be used as the MD5 value of the object content to verify data integrity.</p>
ID	String	<p>User ID of the bucket owner.</p> <p>Parent node: ListBucketResult.Contents.Owner</p>

Element	Type	Description
IsTruncated	Enumerated string	<p>Indicates whether all results are returned.</p> <p>Valid values: true and false</p> <ul style="list-style-type: none"> • true indicates that not all results are returned for the request. • false indicates that all results are returned for the request. <p>Parent node: ListBucketResult</p>
Key	String	<p>Indicates the key of an object</p> <p>Parent node: ListBucketResult.Contents</p>
LastModified	Time	<p>Indicates the time when the object is last modified.</p> <p>Parent node: ListBucketResult.Contents</p>
ListBucket Result	Container	<p>Indicates the container used to store the results of the GetBucket (ListObject) request.</p> <p>Sub-node: Name, Prefix, Marker, MaxKeys, Delimiter, IsTruncated, Nextmarker, and Contents</p> <p>Parent node: None</p>
Marker	String	<p>Marks the position where the current GetBucket (ListObject) operation starts.</p> <p>Parent node: ListBucketResult</p>
MaxKeys	String	<p>Indicates the maximum number of returned results in the response to the request.</p> <p>Parent node: ListBucketResult</p>
Name	String	<p>Indicates the name of the bucket.</p> <p>Parent node: ListBucketResult</p>
Owner	Container	<p>Indicates the container used to store the information about the bucket owner.</p> <p>Sub-node: DisplayName and ID</p> <p>Parent node: ListBucketResult</p>

Element	Type	Description
Prefix	String	Indicates the prefix of results returned for the request. Parent node: ListBucketResult
Size	String	Indicates the number of bytes of the object. Parent node: ListBucketResult.Contents
StorageClass	String	Indicates the storage class of an object. Only the Standard storage class is supported. Parent node: ListBucketResult.Contents

Detail analysis

- The custom meta in the object is not returned during the GetBucket request.
- If the bucket to be accessed does not exist, a 404 Not Found error is returned with the error code NoSuchBucket.
- If you have no permission to access the bucket, OSS returns a 403 Forbidden error with the error code AccessDenied.
- During a conditional query, even if the marker does not exist in the list, the results are printed starting from the letter next to marker in alphabetical order . If the value of max-keys is less than 0 or greater than 1000, a 400 Bad Request error is returned with the error code InvalidArgument.
- If the length of the Prefix, Marker, and Delimiter parameters does not meet the requirement, a 400 Bad Request error is returned with the error code InvalidArgument.
- The Prefix and Marker parameters are used to display the results by pages, and the parameter length must be less than 1024 bytes.
- If you set the value of Prefix to a directory name, you can list all objects with the prefix, that is, all objects and sub-directories in the directory.

If you set the Prefix and set Delimiter to “/”, only the objects in the directory are returned. Sub-directories in the directory are returned in CommonPrefixes. All objects and directories in the sub-directories are not displayed.

For example, the following three objects are stored in a bucket: fun/test.jpg, fun/movie/001.avi, and fun/movie/007.avi. If the Prefix is set to “fun/”, all three

objects are returned. If the delimiter is set to “/” additionally, “fun/test.jpg” and “fun/movie/” are returned.

Examples

Simple request example:

```
GET / HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0y
kbo04M=
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 24 Feb 2012 08:43:27 GMT
Content-Type: application/xml
Content-Length: 1866
Connection: keep-alive
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<ListBucketResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Name>oss-example</Name>
  <Prefix></Prefix>
  <Marker></Marker>
  <MaxKeys>100</MaxKeys>
  <Delimiter></Delimiter>
  <IsTruncated>>false</IsTruncated>
  <Contents>
    <Key>fun/movie/001.avi</Key>
    <LastModified>2012-02-24T08:43:07.000Z</LastModified>
    <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE";</ETag>
    <Type>Normal</Type>
    <Size>344606</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>00220120222</ID>
      <DisplayName>user-example</DisplayName>
    </Owner>
  </Contents>
  <Contents>
    <Key>fun/movie/007.avi</Key>
    <LastModified>2012-02-24T08:43:27.000Z</LastModified>
    <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE";</ETag>
    <Type>Normal</Type>
    <Size>344606</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>00220120222</ID>
      <DisplayName>user-example</DisplayName>
    </Owner>
  </Contents>
  <Contents>
    <Key>fun/test.jpg</Key>
    <LastModified>2012-02-24T08:42:32.000Z</LastModified>
    <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE";</ETag>
    <Type>Normal</Type>
    <Size>344606</Size>
```

```

    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>00220120222</ID>
      <DisplayName>user-example</DisplayName>
    </Owner>
  </Contents>
<Contents>
  <Key>oss.jpg</Key>
  <LastModified>2012-02-24T06:07:48.000Z</LastModified>
  <ETag>&quot;5B3C1A2E053D763E1B002CC607C5A0FE&quot;</ETag>
  <Type>Normal</Type>
  <Size>344606</Size>
  <StorageClass>Standard</StorageClass>
  <Owner>
    <ID>00220120222</ID>
    <DisplayName>user-example</DisplayName>
  </Owner>
</Contents>
</ListBucketResult>

```

Example of a request including the prefix parameter:

```

GET /? prefix=fun HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0y
kbo04M=

```

Response example:

```

HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 24 Feb 2012 08:43:27 GMT
Content-Type: application/xml
Content-Length: 1464
Connection: keep-alive
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<ListBucketResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Name>oss-example</Name>
  <Prefix>fun</Prefix>
  <Marker></Marker>
  <MaxKeys>100</MaxKeys>
  <Delimiter></Delimiter>
  <IsTruncated>>false</IsTruncated>
  <Contents>
    <Key>fun/movie/001.avi</Key>
    <LastModified>2012-02-24T08:43:07.000Z</LastModified>
    <ETag>&quot;5B3C1A2E053D763E1B002CC607C5A0FE&quot;</ETag>
    <Type>Normal</Type>
    <Size>344606</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>00220120222</ID>
      <DisplayName>user_example</DisplayName>
    </Owner>
  </Contents>
  <Contents>
    <Key>fun/movie/007.avi</Key>
    <LastModified>2012-02-24T08:43:27.000Z</LastModified>
    <ETag>&quot;5B3C1A2E053D763E1B002CC607C5A0FE&quot;</ETag>
    <Type>Normal</Type>

```

```

    <Size>344606</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>00220120222</ID>
      <DisplayName>user_example</DisplayName>
    </Owner>
  </Contents>
  <Contents>
    <Key>fun/test.jpg</Key>
    <LastModified>2012-02-24T08:42:32.000Z</LastModified>
    <ETag>&quot;5B3C1A2E053D763E1B002CC607C5A0FE&quot;</ETag>
    <Type>Normal</Type>
    <Size>344606</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>00220120222</ID>
      <DisplayName>user_example</DisplayName>
    </Owner>
  </Contents>
</ListBucketResult>

```

Example of a request including the prefix and delimiter parameters:

```

GET /? prefix=fun/&delimiter=/ HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:DNrn7xHk3sgysx7I8U9
I9IY1vY=

```

Response example:

```

HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 24 Feb 2012 08:43:27 GMT
Content-Type: application/xml
Content-Length: 712
Connection: keep-alive
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<ListBucketResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Name>oss-example</Name>
  <Prefix>fun/</Prefix>
  <Marker></Marker>
  <MaxKeys>100</MaxKeys>
  <Delimiter></Delimiter>
    <IsTruncated>>false</IsTruncated>
    <Contents>
      <Key>fun/test.jpg</Key>
      <LastModified>2012-02-24T08:42:32.000Z</LastModified>
      <ETag>&quot;5B3C1A2E053D763E1B002CC607C5A0FE&quot;</ETag>
      <Type>Normal</Type>
      <Size>344606</Size>
      <StorageClass>Standard</StorageClass>
      <Owner>
        <ID>00220120222</ID>
        <DisplayName>user_example</DisplayName>
      </Owner>
    </Contents>
  <CommonPrefixes>
    <Prefix>fun/movie/</Prefix>
  </CommonPrefixes>

```

```
</ListBucketResult>
```

6.9 PutBucketVersioning

Configures the versioning state of a specified bucket. Only the bucket owner can perform the PutBucketVersioning operation.

**Note:**

Versioning is not enabled for all buckets by default.

You can enable or suspend versioning for a bucket. When versioning is enabled for a bucket, each object uploaded to the bucket has a unique version ID, and different versions of the same object are all stored. When versioning is suspended, the version ID of all uploaded objects is null, and no more versions are stored for the objects of which the version ID is null.

Request syntax

```
PUT /?versioning HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
<?xml version="1.0" encoding="UTF-8"?>
<VersioningConfiguration>
  <Status>Enabled</Status>
</VersioningConfiguration>
```

**Note:**

- **The versioning state of a bucket can only be set to Enabled or Suspended. Otherwise, the 400 Bad Request error is returned.**
- **Versioning cannot be disabled after it is enabled for a bucket. However, you can suspend versioning to stop storing more object versions.**

Examples

- **Enable versioning.**

Request example:

```
PUT /?versioning HTTP/1.1
Host: bucket-versioning.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 02:20:12 GMT
Authorization: OSS e7thre3jj5mlvqk:12ztpkaR8a74gIGFz0aZZQe****
<?xml version="1.0" encoding="UTF-8"?>
<VersioningConfiguration>
  <Status>Enabled</Status>
```

```
<VersioningConfiguration>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC015CB7AEADE01700****
Date: Tue, 09 Apr 2019 02:20:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

- **Suspend versioning.**

Request example:

```
PUT /?versioning HTTP/1.1
Host: bucket-versioning.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 02:28:18 GMT
Authorization: OSS m2qa99e9tpkaehr:DWAZr2EkqDwFJNke1Nuaogn7****
<?xml version="1.0" encoding="UTF-8"?>
<VersioningConfiguration>
  <Status>Suspended</Status>
</VersioningConfiguration>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC0342B7AEADE01700****
Date: Tue, 09 Apr 2019 02:28:18 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

Error code

Error code	HTTP status code	Description
AccessDenied	403	You do not have the permission to perform this operation. Only the bucket owner can initiate a PutBucketVersioning request.
InvalidArgument	400	The versioning state is invalid. The versioning state of a bucket can only be set to Enabled or Suspended.

6.10 GetBucketVersioning

Obtains the versioning state of a specified bucket.

Request syntax

```
GET /?versioning HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Response elements

Element	Type	Description
VersioningConfiguration	Container	<p>Indicates the container used to store the versioning state of the bucket.</p> <p>Sub-node: Status</p> <p>Parent node: None</p>
Status	String	<p>Indicates the versioning state of the bucket.</p> <p>Parent node: Versioning Configuration</p> <p>Values:</p> <ul style="list-style-type: none"> • Enabled: Indicates that versioning is enabled for the bucket. • Suspended: Indicates that versioning is suspended for the bucket.



Note:

If versioning has not been enabled for the requested bucket, Status is not included in the responded XML.

Examples

Request example:

```
GET /?versioning HTTP/1.1
Host: bucket-versioning.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 02:28:18 GMT
Authorization: OSS pu4kyewh6qk6nut:2TeHBmWY36GwdwS0JFiRb+NV****
```

Response example:

- **If versioning is enabled for the bucket, the response example is as follows:**

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC0342B7AEADE01700****
Date: Tue, 09 Apr 2019 02:28:18 GMT
Content-Length: 121
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<VersioningConfiguration>
  <Status>Enabled</Status>
</VersioningConfiguration>
```

- **If versioning has not been enabled for the bucket, the response example is as follows:**

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC015CB7AEADE01700****
Date: Tue, 09 Apr 2019 02:20:12 GMT
Content-Length: 74
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<VersioningConfiguration xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com"/>
```

Error codes

Error code	HTTP status code	Description
AccessDenied	403	You do not have the permission to perform this operation. Only the owner of a bucket can obtain the versioning status of the bucket.
NoSuchBucket	404	The target bucket does not exist.

6.11 GetBucketVersions (ListObjectVersions)

Lists the information about all versions (including delete markers) of all objects in a bucket.





Note:


If you perform the `GetBucket (ListObjects)` operation on a bucket with versioning enabled, only the current versions of the objects (which are not delete markers) in the bucket are returned. To list all versions of all objects in the bucket, you must call the `GetBucketVersions` interface.

Request parameters

When calling `GetBucketVersions`, you can limit the information included in the returned list by setting the following parameters: `Prefix`, `Key-marker`, `Version-id-marker`, `Delimiter` and `Max-keys`.

Parameter	Type	Required?	Description
<code>Delimiter</code>	String	No	Specifies a character used to group object names. All the names of the objects that contain a specified prefix and after which the delimiter occurs for the first time, act as a group of elements, that is, <code>CommonPrefixes</code> . Default value: None
<code>Key-marker</code>	String	Required if the <code>version-id-marker</code> is not null.	Specifies that the results after the <code>Key-marker</code> are returned in alphabetical order. This parameter must be configured together with <code>Version-id-marker</code> . The size of this parameter must be less than 1,024 bytes. Default value: None

Parameter	Type	Required?	Description
Version-id-marker	String	No	<p>Specifies that the results after the Version-id-marker of the Key-marker are returned in the creation time order of the versions. However, the version specified in this parameter is not returned. If this parameter is not specified, the results are returned from the version after Key-marker in alphabetical order by default.</p> <p>Default value: None</p> <p>Valid value: Valid version IDs</p>
Max-keys	String	No	<p>Limits the maximum number of objects returned for one request. The max-keys value cannot exceed 1000.</p> <p>Default value: 100</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: If the results cannot be completely listed because of the setting of Max-keys, the NextKeyMarker and NextVersionIdMarker are added in the results as the Marker for the next ListObjectVersions operation. </div>
Prefix	String	No	<p>Limits that the returned object key must be prefixed accordingly.</p> <p>Default value: None</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: <ul style="list-style-type: none"> • The size of this parameter must be less than 1,024 bytes. • The keys returned for requests using a prefix still contain the prefix. </div>


Parameter	Type	Required?	Description
Encoding-type	String	No	<p>Encodes the returned results and specifies the encoding type.</p> <p>Default value: None</p> <p>Valid value: url</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: Parameters Delimiter, Key-Marker, Prefix, NextKeyMarker, and Key use UTF-8 characters, but the XML 1.0 Standard does not support parsing certain control characters. If some parameters in the returned results contain characters that are not supported by the XML 1.0 Standard, encoding-type can be specified to encode these parameters, such as Delimiter, Key-Marker, Prefix, NextKeyMarker, and Key. </div>

Response elements

Element	Type	Description
ListVersionsResult	Container	<p>Indicates the container used to store the results returned for the GetBucketVersions request.</p> <p>Sub-nodes: Name, Prefix, Marker, MaxKeys, Delimiter, IsTruncated, Nextmarker, Version , DeleteMarker</p> <p>Parent node: None</p>

Element	Type	Description
CommonPrefixes	String	<p>If the delimiter parameter is specified in the request, the response returned by OSS contains the CommonPrefixes element. This element indicates the set of objects which ends with a delimiter and have a common prefix.</p> <p>Parent node: ListVersionsResult</p>
Delimiter	String	<p>Indicates a character used to group object names. All those objects whose names contain the specified prefix and after which the delimiter occurs for the first time, act as a group of elements, that is, CommonPrefixes.</p> <p>Parent node: ListVersionsResult</p>
EncodingType	String	<p>Indicates the encoding type for the returned results. If encoding-type is specified in a request, the following elements in the returned results are encoded: Delimiter, Marker, Prefix, NextMarker, and Key.</p> <p>Parent node: ListVersionsResult</p>
IsTruncated	String	<p>Indicates whether all results are returned.</p> <ul style="list-style-type: none"> • true: indicates that not all results are returned for the request. • false: indicates that all results are returned for the request. <p>Valid value: true, false</p> <p>Parent node: ListVersionsResult</p>

Element	Type	Description
KeyMarker	String	Marks the object where the current GetBucketVersions operation starts. Parent node: ListVersionsResult
VersionIdMarker	String	Used together with KeyMarker to specify the version of the object where the GetBucketVersions operation starts. Parent node: ListVersionsResult
NextKeyMarker	String	If not all results are returned, this element is included in the response to indicate the Key-marker for the next request. Parent node: ListVersionsResult
NextVersionIdMarker	String	If not all results are returned, this element is included in the response to indicate the Version-id-marker for the next request. Parent node: ListVersionsResult
MaxKeys	String	Indicates the maximum number of returned results in the response to the request. Parent node: ListVersionsResult
Name	String	Indicates the name of the bucket. Parent node: ListVersionsResult
Owner	Container	Indicates the container used to store the information about the bucket owner. Parent node: ListVersionsResult
Prefix	String	Indicates the prefix of results returned for the request. Parent node: ListVersionsResult

Element	Type	Description
Version	Container	<p>Indicates the container used to store object versions rather than delete markers.</p> <p>Parent node: ListVersionsResult</p>
DeleteMarker	Container	<p>Indicates the container used to store delete markers.</p> <p>Parent node: ListVersionsResult</p>
ETag	String	<p>Indicates the ETag (entity tag) which is created when an object is generated to indicate the content of the object.</p> <ul style="list-style-type: none"> For an object created by a PutObject request, the value of ETag is the MD5 value of the content of the object. For an object created in other ways, the value of ETag is the UUID of the content of the object. <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  Note: The value of ETag can be used to check whether the content of the object is changed. We recommend that the ETag should not be used as the MD5 value of the object content to verify data integrity. </div> <p>Parent node: ListVersionsResult.Version</p>
Key	String	<p>Indicates the key of an object.</p> <p>Parent node: ListVersionsResult.Version ListVersionsResult.DeleteMarker</p>

Element	Type	Description
LastModified	Time	Indicates the time when the object is last modified. Parent node: ListVersionsResult.Version ListVersionsResult.DeleteMarker
VersionId	String	Indicates the version ID of an object. Parent node: ListVersionsResult.Version ListVersionsResult.DeleteMarker
IsLatest	String	Indicates whether a version is the current version. <ul style="list-style-type: none"> • true: The version is the current version. • false: The version is not the current version. Parent node: ListVersionsResult.Version ListVersionsResult.DeleteMarker
Size	String	Indicates the size of an object in bytes. Parent node: ListVersionsResult.Version ListVersionsResult.DeleteMarker
StorageClass	String	Indicates the storage class of an object. Parent node: ListVersionsResult.Version ListVersionsResult.DeleteMarker
DisplayName	String	Indicates the name of the object owner. Parent node: ListVersionsResult.Version. Owner ListVersionsResult.DeleteMarker. Owner

Element	Type	Description
ID	String	Indicates the user ID of the bucket owner. Parent node: ListVersionsResult.Version. Owner ListVersionsResult.DeleteMarker. Owner

Detail analysis

- Different objects are returned in alphabetical order. Different version of an object is returned in the creation time order.
- The custom metadata of objects are not returned in the response for the GetBucketVersions request.
- If the results cannot be completely listed because of the setting of Max-keys, the values of NextKeyMarker and NextVersionIdMarker are added in the results as the Marker for the next ListObjectVersions operation.
- The Prefix and Marker parameters are set to display results in multiple pages. The size of these two parameters must be less than 1,024 bytes.
- If you set the value of Prefix to a folder name, all objects prefixed with the folder name, that is, all objects and sub-folders under the folder are recursively listed.

If you set the value of Prefix to a folder name and the value of Delimiter to a forward slash (/), only the objects in the folder are returned. Names of the sub-folders under the folder is returned in CommonPrefixes. Objects and folders in the sub-folders are not displayed.

Assume that the following three objects are stored in a bucket: *fun/test.jpg*, *fun/movie/001.avi*, and *fun/movie/007.avi*, in which:

- *fun/test.jpg* has two versions: V111111 and V222222.
- *fun/movie/001.avi* has only one version: V121212.
- *fun/movie/007.avi* has only one version: V212121.

If you set the value of Prefix to *fun/*, the following four results are returned: *fun/test.jpg* (V111111), *fun/test.jpg* (V222222), *fun/movie/001.avi* (V121212), and *fun/movie/007.avi* (V212121). If you further set the value of Delimiter to a forward slash (/), *fun/test.jpg* (V111111), *fun/test.jpg* (V222222), and *fun/movie/* are returned.

Examples

Assume that the following two objects are stored in a bucket named *oss example*: *example* and *pic.jpg*. The object named *example* has three versions (in the creation time order): 111222, 000123 (delete marker), and 222333. The object named *pic.jpg* only has one version: 232323.

If you set the value of Key-Marker to *example* and the value of Version-id-marker to 111222, the results are returned in the following order: *example* (000123), *example* (222333), and *pic.jpg* (232323).

Request example:

```
GET /?versions&key-marker=example&version-id-marker=CAEQMxiBgI
Cbof2D0BYiIGRhZjgwMzJiMjA3MjQ0ODE5MWYxZDYwMzJlZjU1YmMy HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 07:27:48 GMT
Authorization: OSS ami4tq0x76ov9cu:WFx4kLpx+e7Rc0jawCsh7h1k****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC4974B7AEADE01700****
Date: Tue, 09 Apr 2019 07:27:48 GMT
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<ListVersionsResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Name>oss-example</Name>
  <Prefix></Prefix>
  <KeyMarker>example</KeyMarker>
  <VersionIdMarker>CAEQMxiBgICbof2D0BYiIGRhZjgwMzJiMjA3MjQ0
ODE5MWYxZDYwMzJlZjU1****</VersionIdMarker>
  <MaxKeys>100</MaxKeys>
  <Delimiter></Delimiter>
  <IsTruncated>>false</IsTruncated>
  <DeleteMarker>
    <Key>example</Key>
    <VersionId>CAEQMxiBgICAof2D0BYiIDJhMGE3N2M1YTI1NDQz0GY5NTkyNT
I3MGYyMzJm****</VersionId>
    <IsLatest>>false</IsLatest>
    <LastModified>2019-04-09T07:27:28.000Z</LastModified>
    <Owner>
      <ID>1234512528586****</ID>
      <DisplayName>12345125285864390</DisplayName>
    </Owner>
  </DeleteMarker>
  <Version>
    <Key>example</Key>
    <VersionId>CAEQMxiBgMDNoP2D0BYiIDE3MWUxNzgxZDQxNTRiODI5OGYwZG
MwNGY3MzZjN****</VersionId>
    <IsLatest>>false</IsLatest>
    <LastModified>2019-04-09T07:27:28.000Z</LastModified>
    <ETag>"250F8A0AE989679A22926A875F0A2****"</ETag>
    <Type>Normal</Type>
```

```

    <Size>93731</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>1234512528586****</ID>
      <DisplayName>12345125285864390</DisplayName>
    </Owner>
  </Version>
  <Version>
    <Key>pic.jpg</Key>
    <VersionId>CAEQMxiBgMCZov2D0BYiIDY4MD1l0Tc2YmY5MjQxMzdi0GI3OT
lhNTU00DIx****</VersionId>
    <IsLatest>>true</IsLatest>
    <LastModified>2019-04-09T07:27:28.000Z</LastModified>
    <ETag>"3663F7B0B9D3153F884C821E7CF4****"</ETag>
    <Type>Normal</Type>
    <Size>574768</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>1234512528586****</ID>
      <DisplayName>12345125285864390</DisplayName>
    </Owner>
  </Version>
</ListVersionsResult>

```

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist. The bucket that you access may cannot be created because of the invalid name.
AccessDenied	403	You do not have the permission to access the bucket.
InvalidArgument	400	<ul style="list-style-type: none"> • The value of Max-keys is smaller than 0 or larger than 1000. • The size of Prefix, Marker, or Delimiter is invalid. • The value of Version-id-marker is an invalid version ID.

6.12 PutBucketLogging

Enables the access logging function for a bucket. When this function is enabled, OSS automatically records the details about the requests to this bucket, and follows

the user-specified rules to write the access logs as an object into a user-specified bucket on an hourly basis.

**Note:**

- When the source bucket is deleted, the corresponding logging rules are also deleted.
- OSS generates a bucket access log file every hour. However, all requests during the hour may not be recorded in the log file, but may get recorded in the previous or next log file.
- Each time OSS generates a bucket access log file, this is considered a PUT operation and the occupied space is recorded, but the generated traffic is not recorded. After log files are generated, you can operate these log files as common objects.
- OSS ignores all query-string parameters prefixed by “x- “ but such query-string parameters are recorded in access logs. If you want to mark a special request from massive access logs, you can add a query-string parameter prefixed by “x- “ to the URL. For example, you can add mark `http://oss-example.regionid.example.com/aliyun-logo.png` by adding a parameter prefixed by “x- “ as follows: `http://oss-example.regionid.example.com/aliyun-logo.png?x-user=admin`. The added parameter is ignored. However, you can locate the request by searching “x-user=admin”.

Request syntax

```
PUT /? logging HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Authorization: SignatureValue
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
<? xml version="1.0" encoding="UTF-8"? >
<BucketLoggingStatus>
  <LoggingEnabled>
    <TargetBucket>TargetBucket</TargetBucket>
    <TargetPrefix>TargetPrefix</TargetPrefix>
  </LoggingEnabled>
</BucketLoggingStatus>
```

Request elements

**Note:**

All PutBucketLogging requests must signed because the anonymous access is not supported.

Element	Type	Required	Description
BucketLoggingStatus	Container	Yes	Specifies the container for storing access log status information Sub-node: LoggingEnabled Parent node: None
LoggingEnabled	Container	No	Specifies the container for storing access log information. This element is required only when server access logging is enabled. Sub-node: TargetBucket, TargetPrefix Parent node: BucketLoggingStatus
TargetBucket	String	This element is required when server access logging is enabled	Specifies the bucket for storing access logs. The source bucket and target bucket can be the same or different buckets. You can save logs from multiple source buckets to the same target bucket (in this case, we recommend that you assign different values to TargetPrefix). Sub-node: None Parent node: BucketLoggingStatus. LoggingEnabled
TargetPrefix	String	No	Specifies the prefix of the names of saved access log files, which can be null. Sub-node: None Parent node: BucketLoggingStatus. LoggingEnabled

Naming rules for the objects storing access logs

The format of an object name is as follows:

```
<TargetPrefix><SourceBucket>-YYYY-mm-DD-HH-MM-SS-UniqueString
```

The following table describes the parameters in an object name:

Parameter	Description
TargetPrefix	Specifies the prefix of the object name.
YYYY-mm-DD-HH-MM-SS	Indicates the time when the object is created. YYYY, mm, DD, HH, MM, and SS indicate the year, month, day, hour, minutes, and seconds individually. For example: 2012-09-10-04-00-00.
UniqueString	Indicates the unique UUID generated by OSS to identify a log.

An example object name is as follows:

```
MyLog-oss-example-2012-09-10-04-00-00-0000
```

In the preceding example, `MyLog-` is the prefix specified by the user, `oss-example` is the name of the source bucket, `2012-09-10-04-00-00` is the time when the object is created, and `0000` is the UUID string generated by OSS.

Log file format



Note:

- You may see “- “ in any field of OSS logs. It indicates that data is unknown or the field is invalid for the current request.
- Certain fields are added to the end of OSS log files in future based on the requirements. We recommend that developers consider compatibility issues when developing log processing tools.

Field	Example	Description
Remote IP	119.140.142.11	IP address from which the request is initiated (the proxy or user firewall may block this field)
Reserved	-	Reserved field
Reserved	-	Reserved field
Time	[02/May/2012:00:00:04 +0800]	Time when OSS receives the request
Request-URL	“GET /aliyun-logo.png HTTP/1.1 “	User-Requested URL (including query-string)
HTTP Status	200	HTTP status code returned by OSS

Field	Example	Description
SentBytes	5576	Traffic that the user downloads from OSS
RequestTime (ms)	71	Time utilized in completing this request (in ms)
Referer	http://www.aliyun.com/product/oss	HTTP Referer in the request
User-Agent	curl/7.15.5	HTTP User-Agent header
HostName	oss-example.regionid.example.com	Domain name for access request
Request ID	505B01695037C2AF032593A4	UUID used to uniquely identify this request
LoggingFlag	true	Whether the access logging function is enabled
Requester Aliyun ID	16571*****83691	Alibaba Cloud ID of the requester, “- “ for an anonymous access
Operation	GetObject	Request type
Bucket	oss-example	Name of the bucket requested for access
Key	/aliyun-logo.png	Key of user request
ObjectSize	5576	Object size
Server Cost Time (ms)	17	Time utilized by OSS server to process this request (in ms)
Error Code	NoSuchBucket	Error code returned by OSS
Request Length	302	Length of user request (byte)
UserID	16571*****83691	ID of the bucket owner
Delta DataSize	280	Bucket size variation, “- “ for no change
Sync Request	-	Whether this is an origin retrieval request from CDN, “- “ for no
Reserved	-	Reserved field

Examples

Example of a request for enabling bucket access logging:

```
PUT /? logging HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 186
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3J
xrTzHiA=
<? xml version="1.0" encoding="UTF-8"? >
<BucketLoggingStatus>
<LoggingEnabled>
<TargetBucket>doc-log</TargetBucket>
<TargetPrefix>MyLog-</TargetPrefix>
</LoggingEnabled>
</BucketLoggingStatus>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 04 May 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

Example of a request for disabling bucket access logging:

```
PUT /? logging HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 86
Date: Fri, 04 May 2012 04:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3J
xrTzHiA=
<? xml version="1.0" encoding="UTF-8"? >
<BucketLoggingStatus>
</BucketLoggingStatus>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 04 May 2012 04:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)

- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The source bucket does not exist. The source bucket and the target bucket must be owned by the same user.
InvalidTargetBucketForLogging	400	The source bucket and the target bucket are in different regions.
InvalidDigest	400	If you include the Content-MD5 header in the request, OSS calculates the Content-MD5 of the request body and checks if the two are the same. If the two values are different, this error is returned.
MalformedXML	400	The XML file in the request is invalid.
InvalidTargetBucketForLogging	403	The user who initiates the request is not the owner of the target bucket.
AccessDenied	403	The user who initiates the request is not the owner of the source bucket,

6.13 GetBucketLogging


Views the access logging configuration of a bucket. Only the owner of a bucket can view the access logging configuration of the bucket.

Request syntax

```
GET /? logging HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```

Authorization: SignatureValue

Response elements

Name	Type	Description
BucketLoggingStatus	Container	<p>Indicates the container used to store access logging configuration of a bucket.</p> <p>Sub-node: LoggingEnabled</p> <p>Parent node: None</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;">  Note: If no logging rules are set for the source bucket, OSS returns an XML message body in which the value of BucketLoggingStatus is null. </div>
LoggingEnabled	Container	<p>Indicates the container used to store access logging information. This element is returned if it is enabled and is not returned if it is disabled.</p> <p>Sub-node: TargetBucket and TargetPrefix</p> <p>Parent node: BucketLoggingStatus</p>
TargetBucket	Character	<p>Indicates the bucket that stores access logs.</p> <p>Sub-node: None</p> <p>Parent node: BucketLoggingStatus. LoggingEnabled</p>
TargetPrefix	Character	<p>Indicates the prefix of the names of stored access log files.</p> <p>Sub-node: None</p> <p>Parent node: BucketLoggingStatus. LoggingEnabled</p>

Examples

Request example:

```
Get /? logging HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 04 May 2012 05:31:04 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ce0EyZavKY4QcjoUWYSp
YbJ3naA=
```

Response example returned when logging rules are set for the bucket:

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 04 May 2012 05:31:04 GMT
Connection: keep-alive
Content-Length: 210
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<BucketLoggingStatus xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <LoggingEnabled>
    <TargetBucket>mybucketlogs</TargetBucket>
    <TargetPrefix>mybucket-access_log</TargetPrefix>
  </LoggingEnabled>
</BucketLoggingStatus>
```

Response example returned when no logging rules are set for the bucket:

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 04 May 2012 05:31:04 GMT
Connection: keep-alive
Content-Length: 110
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<BucketLoggingStatus xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
</BucketLoggingStatus>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist.
AccessDenied	403	You do not have the permission to view the access logging configuration of a bucket. Only the owner of a bucket can view the access logging configuration of the bucket.

6.14 DeleteBucketLogging

Disables the access logging function of a bucket. Only the owner of a bucket can disable the access logging function of the bucket.

Request syntax

```
DELETE /? logging HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Request example:

```
DELETE /? logging HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 05:35:24 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:6ZVH0ehYzxoC1yxRydPQs/CnMZU=
```

Response example:

```
HTTP/1.1 204 No Content
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 24 Feb 2012 05:35:24 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)

- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist.
AccessDenied	403	You do not have the permission to disable the access logging function of the bucket. Only the owner of a bucket can disable the access logging function of the bucket.

6.15 PutBucketWebsite

You can call this operation to set a bucket to the static website hosting mode and set redirection rules.

**Note:**

- **Static websites are websites where all web pages consist of only static content, including scripts such as JavaScript running on the client. OSS does not support content that needs to be processed by the server, such as PHP, JSP, and ASP.NET content.**
- **To use your own domain name to access bucket-based static websites, you can use CNAME. For more information, see [Bind a custom domain name](#).**
- **When setting a bucket to the static website hosting mode, you must specify the index page. The error page is optional. The specified index document and error document must be objects in the bucket.**
- **After a bucket is set to the static website hosting mode, OSS returns the index page for anonymous access to the root domain name of the static website, and returns the result of GetBucket for signed access to the root domain name of the static website.**

website

The PutBucketWebsite operation has two main functions:

- Configure the default homepage and the default 404 page.
- Configure RoutingRule. RoutingRule is used to specify the 3xx routing rules and mirroring-based back-to-origin rules.



Note:

Mirroring-based back-to-origin supports Alibaba Cloud public cloud and Finance Cloud.

The following code provides an example of the website field:

```
<WebsiteConfiguration>
  <IndexDocument>
    <Suffix>index.html</Suffix>
    <SupportSubDir>>true</SupportSubDir>
    <Type>0</Type>
  </IndexDocument>
  <ErrorDocument>
    <Key>error.html</Key>
  </ErrorDocument>
  <RoutingRules>
    <RoutingRule>
      <RuleNumber>1</RuleNumber>
      <Condition>
        <KeyPrefixEquals>abc/</KeyPrefixEquals>
        <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
      </Condition>
      <Redirect>
        <RedirectType>Mirror</RedirectType>
        <PassQueryString>true</PassQueryString>
        <MirrorURL>http://www.test.com/</MirrorURL>
        <MirrorPassQueryString>true</MirrorPassQueryString>
        <MirrorFollowRedirect>true</MirrorFollowRedirect>
        <MirrorCheckMd5>>false</MirrorCheckMd5>
        <MirrorHeaders>
          <PassAll>true</PassAll>
          <Pass>myheader-key1</Pass>
          <Pass>myheader-key2</Pass>
          <Remove>myheader-key3</Remove>
          <Remove>myheader-key4</Remove>
          <Set>
            <Key>myheader-key5</Key>
            <Value>myheader-value5</Value>
          </Set>
        </MirrorHeaders>
      </Redirect>
    </RoutingRule>
    <RoutingRule>
      <RuleNumber>2</RuleNumber>
      <Condition>
        <KeyPrefixEquals>abc/</KeyPrefixEquals>
        <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
      <IncludeHeader>
        <Key>host</Key>
      </IncludeHeader>
    </RoutingRule>
  </RoutingRules>
</WebsiteConfiguration>
```

```

    <Equals>test.oss-cn-beijing-internal.aliyuncs.com</Equals>
  </IncludeHeader>
</Condition>
<Redirect>
  <RedirectType>AliCDN</RedirectType>
  <Protocol>http</Protocol>
  <HostName>www.test.com</HostName>
  <PassQueryString>>false</PassQueryString>
  <ReplaceKeyWith>prefix/${key}.suffix</ReplaceKeyWith>
  <HttpRedirectCode>301</HttpRedirectCode>
</Redirect>
</RoutingRule>
</RoutingRules>
</WebsiteConfiguration>

```

Request syntax

```

PUT /? website HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue

<? xml version="1.0" encoding="UTF-8"? >
<WebsiteConfiguration>
  <IndexDocument>
    <Suffix>index.html</Suffix>
  </IndexDocument>
  <ErrorDocument>
    <Key>errorDocument.html</Key>
  </ErrorDocument>
</WebsiteConfiguration>


```

Request elements

Element	Type	Description	Required
WebsiteCon figuration	Container	Specifies the root node. Parent node: none	Yes
IndexDocument	Container	Specifies the container for the default homepage. Parent node: WebsiteConfiguration	Conditional. You must specify at least one of the following containers: IndexDocument , ErrorDocument , and RoutingRul es.

Element	Type	Description	Required
Suffix	String	<p>Specifies the default homepage.</p> <p>If this element is set, the default homepage is returned for access to objects whose names end with a forward slash (/).</p> <p>Parent node: IndexDocument</p>	Conditional. This element must be specified if its parent node IndexDocument is specified.
ErrorDocument	Container	<p>Specifies the container for the default 404 page.</p> <p>Parent node: WebsiteConfiguration</p>	Conditional. You must specify at least one of the following containers: IndexDocument, ErrorDocument, and RoutingRules.
Key	Container	<p>Specifies the default 404 page.</p> <p>If this element is specified, the 404 page is returned when the target object does not exist.</p> <p>Parent node: ErrorDocument</p>	Conditional. This element must be specified if its parent node ErrorDocument is specified.
RoutingRules	Container	<p>Specifies the container for RoutingRule.</p> <p>Parent node: WebsiteConfiguration</p>	Conditional. You must specify at least one of the following containers: IndexDocument, ErrorDocument, and RoutingRules.
RoutingRule	Container	<p>Specifies routing rules or mirroring-based back-to-origin rules. You can specify a maximum of five routing rules.</p> <p>Parent node: RoutingRules</p>	No

Element	Type	Description	Required
SupportSubDir	String	<p>Specifies whether to search for the default homepage of a subfolder when you access the subfolder.</p> <p>A value of false indicates that the request is redirected to the default homepage of the root folder instead of that of the subfolder. A value of true indicates that the request is redirected to the default homepage of the subfolder.</p> <p>Assume that the default homepage for access to <code>bucket.oss-cn-hangzhou.aliyuncs.com/subdir/</code> is set to <code>index.html</code>. A value of false indicates that the request is redirected to <code>bucket.oss-cn-hangzhou.aliyuncs.com/index.html</code>, and a value of true indicates that the request is redirected to <code>bucket.oss-cn-hangzhou.aliyuncs.com/subdir/index.html</code>.</p> <p>Default value: false</p> <p>Parent node: IndexDocument</p>	No

Element	Type	Description	Required
Type	HTTP status code	<p>Specifies the operation to perform when the default homepage is set, the name of the accessed object does not end with a forward slash (/), and the object does not exist.</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;">  Note: This element takes effect only when SupportSubDir is set to true. It takes effect after RoutingRule and before ErrorFile. </div> <p>Assume that the default homepage for access to bucket.oss-cn-hangzhou.aliyuncs.com/abc is set to index.html and the object abc does not exist. The operations corresponding to the valid values of Type are as follows:</p> <ul style="list-style-type: none"> • 0: checks whether abc/index.html (in object + slash (/) + homepage format) exists. If it exists, OSS returns 302 and the Location header /abc/ (in forward slash (/) + object + forward slash (/) format) in the response is URL-encoded. If it does not exist, OSS returns 404 and continues to check ErrorFile. • 1: OSS returns 404 and error message NoSuchKey and continues to check ErrorFile. • 2: checks whether abc/index.html exists. If it exists, the content of the object is returned. If it does not exist, OSS returns 404 and continues to check ErrorFile. <p>Default value: 0</p> <p>Parent node: IndexDocument</p>	No

Element	Type	Description	Required
RuleNumber	Positive integer	Specifies the sequence number used to match and execute routing rules. Routing rules are matched based on this sequence number. If a match succeeds, the rule is executed and the subsequent rules are not executed. Parent node: RoutingRule	Conditional. This element must be specified if its parent node RoutingRule is specified.
Condition	Container	Specifies the matching conditions. If all of the specified conditions are met, the rule is executed. The nodes in the container are in the AND relationship, that is, a request must meet all the conditions to be considered a match. Parent node: RoutingRule	Conditional. This element must be specified if its parent node RoutingRule is specified.
KeyPrefixEquals	String	Specifies that objects whose names contain the specified prefix can match the rule. Parent node: Condition	No
HttpErrorC odeReturne dEquals	HTTP status code	Specifies that the rule is matched only when the specified object is accessed and the specified status code is returned. If the routing rule is the mirroring-based back-to-origin rule, the element value must be 404. Parent node: Condition	No
IncludeHeader	Container	Specifies that the rule is matched only when the specified header is included in the request and the header value equals the specified value. A maximum of five containers can be specified. Parent node: Condition	No

Element	Type	Description	Required
Key	String	Specifies that the rule is matched only when the specified header is included in the request and the header value equals the value specified by Equals. Parent node: IncludeHeader	Conditional. This element must be specified if its parent node IncludeHeader is specified.
Equals	String	Specifies that the rule is matched only when the header specified by Key is included in the request and the header value equals the specified value. Parent node: IncludeHeader	Conditional. This element must be specified if its parent node IncludeHeader is specified.
Redirect	Container	Specifies the operation to perform after the rule is matched. Parent node: RoutingRule	Conditional. This element must be specified if its parent node RoutingRule is specified.

Element	Type	Description	Required
RedirectType	String	<p>Specifies the redirecting type. Valid values:</p> <ul style="list-style-type: none"> • Mirror: back-to-origin • External: external redirection . OSS returns a 3xx request to redirect the access to another IP address. • Internal: internal redirection. OSS redirects the access from object1 to object2 based on the rule. In this case, the user accesses object2 instead of object1. • AliCDN: Alibaba Cloud CDN redirection. Unlike the External type, OSS adds an additional header to the request. After identifying the header, CDN redirects the access to the specified IP address and returns the obtained data instead of the 3xx redirecting request to the user. <p>Parent node: Redirect</p>	<p>Conditional. This element must be specified if its parent node Redirect is specified.</p>

Element	Type	Description	Required
PassQueryString	Boolean	<p>Specifies whether the request parameter is carried when the redirection or mirroring-based back-to-origin is performed.</p> <p>For example, if the parameter "?a=b&c=d" is carried in a request sent to OSS and this element is set to true, this parameter is added to the Location header when the rule is 302 redirection. For example, if the request is "Location: www.test.com?a=b&c=d" and the redirecting type is mirroring-based back-to-origin, the parameter "a=b&c=d" is also carried in the back-to-origin request.</p> <p>Default value: false</p> <p>Valid values: true and false</p> <p>Parent node: Redirect</p>	No

Element	Type	Description	Required
MirrorURL	String	<p>Specifies the IP address of the origin for mirroring-based back-to-origin. This element takes effect only when the value of RedirectType is Mirror.</p> <p>URLs start with http:// or https:// must end with a forward slash (/). OSS adds the object to the string to form the back-to-origin URL. For example, the object to access is myobject. If the specified URL is http://www.test.com/, the back-to-origin URL is http://www.test.com/myobject. If the specified URL is http://www.test.com/dir1/, the back-to-origin URL is http://www.test.com/dir1/myobject.</p> <p>Parent node: Redirect</p>	Conditional. This element must be specified if RedirectType is set to Mirror.
MirrorPassQueryString	Boolean	<p>This element plays the same role as PassQueryString and has a higher priority than PassQueryString. However, this element take effects only when RedirectType is set to Mirror.</p> <p>Default value: false</p> <p>Parent node: Redirect</p>	No


Element	Type	Description	Required
MirrorFollowRedirect	Boolean	<p>Specifies whether the access is redirected to the specified Location if the origin returns a 3xx status code when receiving a mirroring-based back-to-origin request.</p> <p>For example, when a mirroring-based back-to-origin request is initiated, the origin returns 302 and Location is specified. In this case, if the value of MirrorFollowRedirect is true, OSS continues to send requests to the IP address specified by Location. A request can be redirected for a maximum of 10 times. If a request is redirected for more than 10 times, a mirroring-based back-to-origin failure is returned. If the value of MirrorFollowRedirect is false, OSS returns 302 and passes through the Location. This element takes effect only when the value of RedirectType is Mirror.</p> <p>•</p> <p>Default value: true</p> <p>Parent node: Redirect</p>	No


Element	Type	Description	Required
MirrorCheckMd5	Boolean	<p>Specifies whether OSS checks the MD5 checksum on the body of the response returned by the origin.</p> <p>When the value of this element is true and the response returned by the origin includes a Content-Md5 header, OSS checks whether the MD5 checksum of the obtained data matches the header. If it is not matched, OSS does not store the data. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Default value: false</p> <p>Parent node: Redirect</p>	No
MirrorHeaders	Container	<p>Specifies the headers carried in the response that is returned when you use mirroring-based back-to-origin. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: Redirect</p>	No
PassAll	Boolean	<p>Specifies whether OSS passes through all request headers (except for reserved headers and headers that start with oss-, x-oss-, and x-drs-) to the origin. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Default value: false</p> <p>Parent node: MirrorHeaders</p>	No

Element	Type	Description	Required
Pass	String	<p>Specifies the headers to pass through to the origin. A maximum of 10 headers can be specified. The header can be a maximum of 1,024 bytes in length. The element can contain only letters, digits, and hyphens (-). This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: MirrorHeaders</p>	No
Remove	String	<p>Specifies the headers that are not allowed to be passed through to the origin. A maximum of 10 headers can be specified, including repeated headers. This element is used together with PassAll. The header can be a maximum of 1,024 bytes in length. The character set of this element is the same as that of Pass. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: MirrorHeaders</p>	No
Set	Container	<p>Specifies the headers that are sent to the origin. The specified headers are configured in the data returned by the origin regardless of whether they are carried in the request. A maximum of 10 containers can be specified. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: MirrorHeaders</p>	No

Element	Type	Description	Required
Key	String	Specifies the key of the header. The key can be a maximum of 1,024 bytes in length. The character set of this element is the same as that of Pass. This element takes effect only when the value of RedirectType is Mirror. Parent node: Set	Conditional. This element must be specified if its parent node Set is specified.
Value	String	Specifies the value of the header. The value can be a maximum of 1,024 bytes in length and cannot contain "\r\n". This element takes effect only when the value of RedirectType is Mirror. Parent node: Set	Conditional. This element must be specified if its parent node Set is specified.
Protocol	String	Specifies the protocol used for redirection. For example, if you access the object test, and Protocol is set to https, and Hostname is set to www.test.com, the Location header is https://www.test.com/test. This element takes effect only when the value of RedirectType is External or AliCDN. Valid values: http and https. Parent node: Redirect	Conditional. This element must be specified if the value of RedirectType is External or AliCDN.

Element	Type	Description	Required
HostName	String	<p>Specifies the domain name used for redirection. It must comply with the naming conventions for domain names. For example, if you access the object test, Protocol is set to https, and Hostname is set to <code>www.test.com</code>, the Location header is <code>https://www.test.com/test</code>. This element takes effect only when the value of RedirectType is External or AliCDN.</p> <p>Parent node: Redirect</p>	Conditional. This element must be specified if the value of RedirectType is External or AliCDN.
HttpRedirectCode	HTTP status code	<p>Specifies the returned status code in redirections. This element takes effect only when the value of RedirectType is External or AliCDN.</p> <p>Valid values: 301, 302, and 307.</p> <p>Parent node: Redirect</p>	Conditional. This element must be specified if the value of RedirectType is External or AliCDN.

Element	Type	Description	Required
ReplaceKey PrefixWith	String	<p>Specifies the string to replace the prefix of the requested object name in redirection. If the prefix of the object is empty, this string is added before the object name.</p> <div style="background-color: #f0f0f0; padding: 5px; margin: 10px 0;">  Note: Only ReplaceKeyWith or ReplaceKeyPrefixWith is allowed. </div> <p>Assume that KeyPrefixEquals is set to abc/and ReplaceKeyPrefixWith is set to def/. If you access the object abc/test.txt, the Location header is http://www.test.com/def/test.txt. This element takes effect only when the value of RedirectType is External or AliCDN.</p> <p>Parent node: Redirect</p>	Conditional. This element must be specified if the value of RedirectType is Internal, External, or AliCDN.

Element	Type	Description	Required
ReplaceKeyWith	String	<p>Specifies the string to replace the requested object name in redirections. This element can be a variable. The <code>\${key}</code> variable that indicates the object name in the request is supported.</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;">  Note: Only ReplaceKeyWith or ReplaceKeyPrefixWith is allowed. </div> <p>Assume that <code>ReplaceKeyWith</code> is set to <code>prefix/\${key}.suffix</code>. If you access the object <code>test</code>, the Location header is <code>http://www.test.com/prefix/test.suffix</code>. This element takes effect only when the value of <code>RedirectType</code> is <code>External</code> or <code>AliCDN</code>.</p> <p>Parent node: <code>Redirect</code></p>	Conditional. This element must be specified if the value of <code>RedirectType</code> is <code>Internal</code> , <code>External</code> , or <code>AliCDN</code> .

Examples

- **Sample requests**

```
PUT /? website HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 209
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqx*****k53otfjbyc:KU5h8YM*****0dXqf3JxrT
ZHIA=

<? xml version="1.0" encoding="UTF-8"? >
<WebsiteConfiguration>
  <IndexDocument>
    <Suffix>index.html</Suffix>
    <SupportSubDir>true</SupportSubDir>
    <Type>0</Type>
  </IndexDocument>
  <ErrorDocument>
    <Key>error.html</Key>
  </ErrorDocument>
</WebsiteConfiguration>
```

- **Sample responses**

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 04 May 2012 03:21:12 GMT
```

```
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

- **Example**

```
PUT /?website HTTP/1.1
Date: Fri, 27 Jul 2018 09:03:18 GMT
Content-Length: 2064
Host: test.oss-cn-hangzhou-internal.aliyuncs.com
Authorization: OSS a1nBN*****QMf8u:sNKIHT6ci/z231yIT5vYnetDLu4=
User-Agent: aliyun-sdk-python-test/0.4.0

<WebsiteConfiguration>
  <IndexDocument>
    <Suffix>index.html</Suffix>
    <SupportSubDir>true</SupportSubDir>
    <Type>0</Type>
  </IndexDocument>
  <ErrorDocument>
    <Key>error.html</Key>
  </ErrorDocument>
  <RoutingRules>
    <RoutingRule>
      <RuleNumber>1</RuleNumber>
      <Condition>
        <KeyPrefixEquals>abc/</KeyPrefixEquals>
        <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturne
dEquals>
      </Condition>
      <Redirect>
        <RedirectType>Mirror</RedirectType>
        <PassQueryString>true</PassQueryString>
        <MirrorURL>http://www.test.com/</MirrorURL>
        <MirrorPassQueryString>true</MirrorPassQueryString>
        <MirrorFollowRedirect>true</MirrorFollowRedirect>
        <MirrorCheckMd5>>false</MirrorCheckMd5>
        <MirrorHeaders>
          <PassAll>true</PassAll>
          <Pass>myheader-key1</Pass>
          <Pass>myheader-key2</Pass>
          <Remove>myheader-key3</Remove>
          <Remove>myheader-key4</Remove>
          <Set>
            <Key>myheader-key5</Key>
            <Value>myheader-value5</Value>
          </Set>
        </MirrorHeaders>
      </Redirect>
    </RoutingRule>
    <RoutingRule>
      <RuleNumber>2</RuleNumber>
      <Condition>
        <KeyPrefixEquals>abc/</KeyPrefixEquals>
        <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturne
dEquals>
      <IncludeHeader>
        <Key>host</Key>
        <Equals>test.oss-cn-beijing-internal.aliyuncs.com</Equals>
      </IncludeHeader>
    </Condition>
    <Redirect>
      <RedirectType>AliCDN</RedirectType>
```



```

    <Protocol>http</Protocol>
    <HostName>www.test.com</HostName>
    <PassQueryString>>false</PassQueryString>
    <ReplaceKeyWith>prefix/${key}.suffix</ReplaceKeyWith>
    <HttpRedirectCode>301</HttpRedirectCode>
  </Redirect>
</RoutingRule>
</RoutingRules>
</WebsiteConfiguration>

HTTP/1.1 200 OK
Server: AliyunOSS
Date: Fri, 27 Jul 2018 09:03:18 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5B5ADFD6ED3CC49176CBE29D
x-oss-server-time: 47

```

SDKs

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)
- [PHP](#)
- [C](#)
- [.NET](#)
- [Node.js](#)

Error codes

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value of the message body is inconsistent with the Content-MD5 value in the request header.

6.16 GetBucketWebsite

Queries the static website hosting status and routing rules for a bucket.

Request syntax

```

GET /? website HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date

```

Authorization: SignatureValue

Response elements

Element	Type	Description
WebsiteCon figuration	Container	Root node Parent node: None
IndexDocument	Container	Specifies the container for the default home page. Parent node: WebsiteConfiguration
Suffix	String	Specifies the default home page. Parent node: IndexDocument
ErrorDocument	Container	Specifies the container for the 404 page. Parent node: WebsiteConfiguration
Key	Container	404 page Parent node: ErrorDocument
RoutingRules	Container	Specifies the container for the RoutingRule. Parent node: WebsiteConfiguration
RoutingRule	Container	Specifies routing rules or mirroring back-to-origin rules. Parent node: RoutingRules
RuleNumber	Positive integer	Specifies the sequence number used to match and execute routing rules. Routing rules are matched according to the sequence numbers . A routing rule that matches the number is executed and the following rules are not executed. Parent node: RoutingRule

Condition	Container	<p>Specifies the matching conditions.</p> <p>If a routing rule meets all the conditions, it is executed. The elements in the bucket are in the AND relationship, that is, a routing rule must meet all the conditions before it can be considered matched.</p> <p>Parent node: RoutingRule</p>
KeyPrefixEquals	String	<p>Indicates that only objects that match the prefix can match the rule.</p> <p>Parent node: Condition</p>
HttpErrorC odeReturnedEquals	HTTP status code	<p>Indicates that the rule can be matched only when the object returns the specified status code when being accessed. If the routing rule is a mirroring back-to-source rule, this status code must be 404.</p> <p>Parent node: Condition</p>
IncludeHeader	Container	<p>Indicates that the routing rule can be matched only when the specified header is included in the request and the header equals the specified value. You can specify a maximum 5 of the same container.</p> <p>Parent node: Condition</p>
Key	String	<p>Indicates that the rule is matched only when this header is included in the request and the header value equals the value specified by Equals.</p> <p>Parent node: IncludeHeader</p>

Equals	String	<p>Indicates that the rule can be matched only when the header specified by Key is included in the request and the header value equals the specified value.</p> <p>Parent node: IncludeHeader</p>
Redirect	Container	<p>Specifies the actions to perform after the rule is matched.</p> <p>Parent node: RoutingRule</p>
RedirectType	String	<p>Specifies the redirecting type, which has the following available values:</p> <ul style="list-style-type: none"> • Mirror (mirroring back-to-origin) • External (external redirection, that is, OSS returns a 3xx request which redirects the access to another IP address.) • Internal (internal redirection, that is, OSS redirects the access from object1 to object2 based on the rule. In this case, the user accesses object2 but not object1.) • AliCDN (AliCDN redirection, which is used for AliCDN. Unlike the External type, OSS adds an additional header to the request . After identifying the header, AliCDN redirects the access to the specified IP address and returns the obtained data but not the 3xx redirecting request to the user.) <p>Parent node: Redirect</p>

<p>PassQueryString</p>	<p>Bool</p>	<p>Indicates whether the request parameter is carried when the redirection or mirroring back-to-origin is performed.</p> <p>For example, if the parameter "?a=b&c=d" is carried in a request to OSS and this element is set to true, this parameter is added to the Location header when the rule is 302 redirection. For example, if the request includes "Location:www.test.com ?a=b&c=d" and the redirecting type is mirroring back-to-origin, the parameter "a=b&c=d" is also carried in the back-to-origin request.</p> <p>Default value: false</p> <p>Parent node: Redirect</p>
<p>MirrorURL</p>	<p>String</p>	<p>Indicates the IP address of the origin site in the mirroring back-to-origin. This element takes effect only when the value of RedirectType is Mirror.</p> <p>If the MirrorURL starts with http:// or https://, it must be ended with a slash (/). OSS constructs the back-to-origin URL by adding the target object to the MirrorURL. For example, if MirrorURL is set to http://www.test.com/ and the object to be accessed is "myobject", the back-to-origin URL is http://www.test.com/dir1/myobject. If MirrorURL is set to http://www.test.com/dir1/, the back-to-origin URL is http://www.test.com/dir1/myobject.</p> <p>Parent node: Redirect</p>

MirrorPass QueryString	Bool	<p>This element plays the same role as PassQueryString and has a higher priority than PassQueryString. However, this element take effects only when the RedirectType is Mirror.</p> <p>Default value: false</p> <p>Parent node: Redirect</p>
MirrorFollowRedirect	Bool	<p>Indicates whether the access is redirected to the specified Location if the origin site returns a 3xx status code when receiving a back-to-origin request.</p> <p>For example, the origin site returns a 302 status code and specifies the Location when receiving a mirroring back-to-origin request. In this case, if the value of MirrorFollowRedirect is true, OSS continues to send requests to the IP address specified by the Location. (A request can be redirected for a maximum of 10 times. If the request is redirected for more than 10 times, a mirroring back-to-origin failure message is returned.) If the value of MirrorFollowRedirect is false, OSS returns a 302 status code and passes through the Location. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Default value: true</p> <p>Parent node: Redirect</p>

MirrorCheckMd5	Bool	<p>Indicates whether OSS performs an MD5 check on the body of the response returned by the origin site.</p> <p>When the value of this element is true and the response returned by the origin site includes a Content-Md5 header, OSS checks whether the MD5 checksum of the obtained data matches the header. If not, OSS does not store the data. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Default value: false</p> <p>Parent node: Redirect</p>
MirrorHeaders	Container	<p>Specifies the header carried in the response returned by the origin site. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: Redirect</p>
PassAll	Bool	<p>Indicates whether OSS passes through all headers (except for reserved headers and the headers starting with oss-/x-oss-/x-drs-) to the origin site. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Default value: false</p> <p>Parent node: MirrorHeaders</p>

Pass	String	<p>Specifies the headers that are passed through to the origin site. A maximum of 10 headers can be specified. The maximum length of a header is 1,024 bytes. The character set of this element is: 0-9, A-Z, a-z, and dash. This element takes effect only when the value of <code>RedirectType</code> is <code>Mirror</code>.</p> <p>Parent node: <code>MirrorHeaders</code></p>
Remove	String	<p>Specifies the headers that cannot to be passed through to the origin site. A maximum of 10 headers can be specified (including repeated headers). This element is used together with <code>PassAll</code>. The maximum length of a header is 1,024 bytes. The character set of this element is the same as that of <code>Pass</code>. This element takes effect only when the value of <code>RedirectType</code> is <code>Mirror</code>.</p> <p>Parent node: <code>MirrorHeaders</code></p>
Set	Container	<p>Specifies headers that are sent to the origin site. The specified headers are configured in the data returned by the origin site no matter whether they are carried in the request. A maximum of 10 groups of headers can be configured (including repeated headers). This element takes effect only when the value of <code>RedirectType</code> is <code>Mirror</code>.</p> <p>Parent node: <code>MirrorHeaders</code></p>

Key	String	<p>Specifies the key of the header. The maximum length of a key is 1,024 bytes. The character set of this element is the same as that of Pass. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: Set</p>
Value	String	<p>Specifies the value of the header. The maximum length of the value is 1,024 bytes. The character "\r\n" is not allowed in the element. This element takes effect only when the value of RedirectType is Mirror.</p> <p>Parent node: Set</p>
Protocol	String	<p>Specifies the protocol used for redirections. For example, the Location header is <code>https://www.test.com/test</code> if the requested object is test, the request is redirected to <code>www.test.com</code>, and the value of Protocol is https.</p> <p>This element takes effect only when the value of RedirectType is External or AliCDN.</p> <p>Values: http, https</p> <p>Parent node: Redirect</p>

HostName	String	<p>Specifies the domain name used in redirections, which must comply with the specifications for domain names. For example, the Location header is <code>https://www.test.com/test</code> if the requested object is <code>test</code>, the value of Protocol is <code>https</code>, and the Hostname is specified to <code>www.test.com</code>. This element takes effect only when the value of RedirectType is External or AliCDN.</p> <p>Parent node: Redirect</p>
HttpRedirectCode	HTTP status code	<p>Specifies the returned status code in redirections. This element takes effect only when the value of RedirectType is External or AliCDN.</p> <p>Values: 301, 302, 307</p> <p>Parent node: Redirect</p>
ReplaceKey PrefixWith	String	<p>Indicates the string used to replace the prefix of the requested object name in redirections. If the prefix of the object name is empty, this string is added before the object name. The ReplaceKeyWith and ReplaceKeyPrefixWith elements cannot be set simultaneously.</p> <p>For example, if KeyPrefixEquals is set to <code>abc/</code> and ReplaceKeyPrefixWith is set to <code>def/</code>, the Location header for an object named <code>abc/test.txt</code> is <code>http://www.test.com/def/test.txt</code>.</p> <p>This element takes effect only when the value of RedirectType is Internal, External, or AliCDN.</p> <p>Parent node: Redirect</p>

ReplaceKeyWith	String	<p>Indicates the string used to replace the requested object name in redirections. This element can be a variable. (The <code>\${key}</code> variable indicating the object name in the request is supported.) The <code>ReplaceKeyWith</code> and <code>ReplaceKeyPrefixWith</code> elements cannot be set simultaneously.</p> <p>For example, if <code>ReplaceKeyWith</code> is set to <code>prefix/\${key}.suffix</code>, the <code>Location</code> header for an object named <code>test</code> is <code>http://www.test.com/prefix/test.suffix</code>.</p> <p>This element takes effect only when the value of <code>RedirectType</code> is <code>Internal</code>, <code>External</code>, or <code>AliCDN</code>.</p> <p>Parent node: Redirect</p>
----------------	---------------	--

Examples

Request example

```
Get /? website HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 13 Sep 2012 07:51:28 GMT
Authorization: OSS qn6qrrqx*****k53otfjbyc: BuG4rRK+zNh*****
1NNHD39zXw=
```

Response example with logging rules configured

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Thu, 13 Sep 2012 07:51:28 GMT
Connection: keep-alive
Content-Length: 218
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<WebsiteConfiguration xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
<IndexDocument>
<Suffix>index.html</Suffix>
</IndexDocument>
<ErrorDocument>
<Key>error.html</Key>
</ErrorDocument>
```

```
</WebsiteConfiguration>
```

Return example with logging rules not set

```
HTTP/1.1 404
x-oss-request-id: 534B371674E88A4D8906008B
Date: Thu, 13 Sep 2012 07:56:46 GMT
Connection: keep-alive
Content-Length: 308
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<Error xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Code>NoSuchWebsiteConfiguration</Code>
  <Message>The specified bucket does not have a website configuration. </Message>
  <BucketName>oss-example</BucketName>
  <RequestId>505191BEC4689A033D00236F</RequestId>
  <HostId>oss-example.oss-cn-hangzhou.aliyuncs.com</HostId>
</Error>
```

Complete code

```
GET /? website HTTP/1.1
Date: Fri, 27 Jul 2018 09:07:41 GMT
Host: test.oss-cn-hangzhou-internal.aliyuncs.com
Authorization: OSS a1nBN*****QMf8u:0Jzamofmy*****sU9HUUWomxsus=
User-Agent: aliyun-sdk-python-test/0.4.0

HTTP/1.1 200 OK
Server: AliyunOSS
Date: Fri, 27 Jul 2018 09:07:41 GMT
Content-Type: application/xml
Content-Length: 2102
Connection: keep-alive
x-oss-request-id: 5B5AE0DD2F7938C45FCED4BA
x-oss-server-time: 47

<? xml version="1.0" encoding="UTF-8"? >
<WebsiteConfiguration>
<IndexDocument>
<Suffix>index.html</Suffix>
</IndexDocument>
<ErrorDocument>
<Key>error.html</Key>
</ErrorDocument>
<RoutingRules>
<RoutingRule>
<RuleNumber>1</RuleNumber>
<Condition>
<KeyPrefixEquals>abc</KeyPrefixEquals>
<HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
</Condition>
<Redirect>
<RedirectType>Mirror</RedirectType>
<PassQueryString>true</PassQueryString>
<MirrorURL>http://www.test.com</MirrorURL>
<MirrorPassQueryString>true</MirrorPassQueryString>
<MirrorFollowRedirect>true</MirrorFollowRedirect>
<MirrorCheckMd5>false</MirrorCheckMd5>
<MirrorHeaders>
<PassAll>true</PassAll>
```

```
<Pass>myheader-key1</Pass>
<Pass>myheader-key2</Pass>
<Remove>myheader-key3</Remove>
<Remove>myheader-key4</Remove>
<Set>
<Key>myheader-key5</Key>
<Value>myheader-value5</Value>
</Set>
</MirrorHeaders>
</Redirect>
</RoutingRule>
<RoutingRule>
<RuleNumber>2</RuleNumber>
<Condition>
<IncludeHeader>
<Key>host</Key>
<Equals>test.oss-cn-beijing-internal.aliyuncs.com</Equals>
</IncludeHeader>
<KeyPrefixEquals>abc</KeyPrefixEquals>
<HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
</Condition>
<Redirect>
<RedirectType>AliCDN</RedirectType>
<Protocol>http</Protocol>
<HostName>www.test.com</HostName>
<PassQueryString>>false</PassQueryString>
<ReplaceKeyWith>prefix/${key}.suffix</ReplaceKeyWith>
<HttpRedirectCode>301</HttpRedirectCode>
</Redirect>
</RoutingRule>
</RoutingRules>
</WebsiteConfiguration>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C++](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist.
AccessDenied	403	You do not have the permission to view the static website hosting status of the bucket. Only the owner of a bucket can view the static website hosting status of the bucket.
NoSuchWebsiteConfiguration	404	Static website hosting is not configured for the target bucket.

6.17 DeleteBucketWebsite

Disables the static website hosting mode and clears the redirection rules for a bucket. Only the owner of a bucket can disable the static website hosting mode for the bucket.

Request syntax

```
DELETE /?website HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Request example

```
DELETE /?website HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 05:45:34 GMT
Authorization: OSS qn6q*****tfjbyc:LnM4AZ10eIduZF5vGFWi
cOMEkVg=
```

Response example

```
HTTP/1.1 204 No Content
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 24 Feb 2012 05:45:34 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

Complete code

```
DELETE /?website HTTP/1.1
Date: Fri, 27 Jul 2018 09:10:52 GMT
```

```
Host: test.oss-cn-hangzhou-internal.aliyuncs.com
Authorization: OSS a1nB*****cQMf8u:qPrKwuMaarA4Tfk1pqTCylFs1jY=
User-Agent: aliyun-sdk-python-test/0.4.0

HTTP/1.1 204 No Content
Server: AliyunOSS
Date: Fri, 27 Jul 2018 09:10:52 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5B5AE19C188DC1CE81DAD7C8
```

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404 Not Found	The bucket that you want to disable the static website hosting mode for does not exist.
AccessDenied	403 Forbidden	You do not have the permission to disable the static website hosting mode for the bucket. Only the owner of a bucket can disable the static website hosting mode for a bucket.

6.18 PutBucketReferer

Sets the referer access whitelist of a bucket and configures whether a request in which the referer field is null is allowed.


Request syntax

```
PUT /? referer HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue

<? xml version="1.0" encoding="UTF-8"? >
<RefererConfiguration>
<AllowEmptyReferer>true</AllowEmptyReferer >
  <RefererList>
    <Referer> http://www.aliyun.com</Referer>
    <Referer> https://www.aliyun.com</Referer>
    <Referer> http://www. *.com</Referer>
    <Referer> https://www.?.aliyuncs.com</Referer>
  </RefererList>
```

```
</RefererConfiguration>
```

Request elements

Element	Type	Required	Description
RefererCon figuration	Container	Yes	<p>Specifies the container that stores the referer settings.</p> <p>Sub-nodes: AllowEmptyReferer and RefererList</p> <p>Parent node: None</p>
AllowEmpty Referer	Enumerated string	Yes	<p>Specifies whether a request in which the referer field is null is allowed. The specified value replaces the previous AllowEmptyReferer setting .</p> <p>Valid value: true or false</p> <p>Default value: true</p> <p>Parent node: RefererConfiguration</p>
RefererLis t	Container	Yes	<p>Specifies the container that stores the referer access whitelist.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p> Note: The PutBucketReferer operation replaces the configured whitelist with the whitelist specified in RefererList. If the value of RefererList is null (that is, Referer is not included) in the request, this operation replaces the configured whitelist with a null value, that is, deletes the configured RefererList.</p> </div> <p>Parent node: RefererConfiguration</p> <p>Sub-node: Referer</p>
Referer	String	No	<p>Specifies a referer access whitelist.</p> <p>Parent node: RefererList</p>

Detail analysis

- **Only the bucket owner can initiate a Put Bucket Referer request. Otherwise, the message of 403 Forbidden is returned. Error code: AccessDenied.**

- The configuration specified in `AllowEmptyReferer` replaces the previous `AllowEmptyReferer` configuration. This field is required. By default, `AllowEmptyReferer` in the system is configured as `true`.
- This operation overwrites the previously configured whitelist with the whitelist in the `RefererList`. When the user-uploaded `RefererList` is empty (containing no referer request element), this operation overwrites the configured whitelist, that is, the previously configured `RefererList` is deleted.
- If you have uploaded the `Content-MD5` request header, OSS calculates the body's `Content-MD5` and checks if the two are the same. If the two are different, the error code: `InvalidDigest` is returned.

Examples

Example of a request with no referer contained:

```
PUT /? referer HTTP/1.1
Host: BucketName.oss.example.com
Content-Length: 247
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3J
xrTZHiA=

<? xml version="1.0" encoding="UTF-8"? >
<RefererConfiguration>
<AllowEmptyReferer>true</AllowEmptyReferer >
< RefererList />
</RefererConfiguration>
```

Example of a request with referer contained:

```
PUT /? referer HTTP/1.1
Host: BucketName.oss.example.com
Content-Length: 247
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3J
xrTZHiA=

<? xml version="1.0" encoding="UTF-8"? >
<RefererConfiguration>
<AllowEmptyReferer>true</AllowEmptyReferer >
< RefererList>
<Referer> http://www.aliyun.com</Referer>
<Referer> https://www.aliyun.com</Referer>
<Referer> http://www. *.com</Referer>
<Referer> https://www.?.aliyuncs.com</Referer>
</ RefererList>
</RefererConfiguration>
```

Response example:

```
HTTP/1.1 200 OK
```

```
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 04 May 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403	You do not have the permission to perform this operation. Only the bucket owner can initiate a PutBucketReferer request.
InvalidDigest	400	If you include the Content-MD5 header in the request, OSS calculates the Content-MD5 of the request body and checks if the two are the same. If the two values are different, this error is returned.

6.19 GetBucketReferer

Views the referer configuration of a bucket. Only the owner of a bucket can view the referer configuration of the bucket.

Request syntax

```
GET /? referer HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: GMT Date
```

Authorization: SignatureValue

Response elements

Element	Type	Description
RefererCon figuration	Container	<p>Indicates the container that stores the referer configuration of the bucket.</p> <p>Sub-node: AllowEmptyReferer and RefererList</p> <p>Parent node: None</p>
AllowEmpty Referer	Enumerated string	<p>Specifies whether the access request in which the referer field is null is allowed.</p> <p>Valid value: true or false</p> <p>Default value: true</p> <p>Parent node: RefererConfiguration</p>
RefererList	Container	<p>Indicates the container that stores the referer access whitelist for the bucket.</p> <p>Sub-node: Referer</p> <p>Parent node: RefererConfiguration</p>
Referer	String	<p>Specifies a referer access whitelist.</p> <p>Parent node: RefererList</p>

Detail analysis

- **If the bucket does not exist, error 404 is returned. Error code: NoSuchBucket.**
- **Only the owner of a bucket can view the referer configuration of the bucket. If other users attempt to access the configuration, the error 403 Forbidden with the error code: AccessDenied is returned.**
- **If no referer configuration has been conducted for the bucket, OSS returns the default AllowEmptyReferer value and an empty RefererList.**

Examples

Request example:

```
Get /? referer HTTP/1.1
Host: oss-example.oss.aliyuncs.com
```

```
Date: Thu, 13 Sep 2012 07:51:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc: BuG4rRK+zNhH1AcF51
NNHD39zXw=
```

Response example returned when a referer rule is configured for the bucket:

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Thu, 13 Sep 2012 07:51:28 GMT
Connection: keep-alive
Content-Length: 218
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<RefererConfiguration>
<Allowemptyreferer> true </allowemptyreferer>
  <RefererList>
    <Referer> http://www.aliyun.com</Referer>
    <Referer> https://www.aliyun.com</Referer>
    <Referer> http://www. *.com</Referer>
    <Referer> https://www.?.aliyuncs.com</Referer>
  </RefererList>
</RefererConfiguration>
```

Response example returned when no referer rule is configured for the bucket:

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Thu, 13 Sep 2012 07:56:46 GMT
Connection: keep-alive
Content-Length: 308
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<RefererConfiguration>
<AllowEmptyReferer>true</AllowEmptyReferer >
< RefererList />
</RefererConfiguration>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The target bucket does not exist.
AccessDenied	403	You do not have the permission to view the referer configuration of a bucket. Only the owner of a bucket can view the referer configuration of the bucket.

6.2.0 GetBucketLocation

Views the location information about the data center (region) to which a bucket belongs. Only the owner of a bucket can view the region of the bucket.

Request syntax

```
GET /? Location HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Response elements

Element	Type	Description
Locationconstraint	String	Indicates the region where a bucket is located. Valid values: oss-cn-hangzhou, oss-cn-qingdao, oss-cn-beijing, oss-cn-hongkong, oss-cn-shenzhen, oss-cn-shanghai, oss-us-west-1, oss-us-east-1, and oss-ap-southeast-1

**Note:**

For more information about the regions and the locations where the Alibaba Cloud data centers are located, see [Regions and endpoints](#).

Examples

Request example:

```
Get /? location HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 04 May 2012 05:31:04 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ce0EyZavKY4QcjoUWYSpYbJ3naA=
```

Response example:

```

HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906008B
Date: Fri, 15 Mar 2013 05:31:04 GMT
Connection: keep-alive
Content-Length: 90
Server: AliyunOSS

<? xml version="1.0" encoding="UTF-8"? >
<LocationConstraint xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
oss-cn-hangzhou</LocationConstraint >

```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [PHP](#)
- [Go](#)
- [C](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403	You do not have the permission to view the region of a bucket. Only the owner of a bucket can view the region of the bucket.

6.21 GetBucketInfo

You can call this operation to view information about a bucket. Only the bucket owner can view information about a bucket.

**Note:**

The request can be initiated from any OSS endpoint.

Request syntax

```

GET /? bucketInfo HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: GMT Date

```

Authorization: SignatureValue

Response elements

Element	Type	Description
BucketInfo	Container	The container that stores the bucket information content. Child node: Bucket Parent node: none
Bucket	Container	The container that stores the specific information about the bucket. Parent node: BucketInfo
CreationDate	Time	The time when the bucket was created. Time format: 2013-07-31T10:56:21.000Z . The time follows the ISO 8601 standard in the yyyy-MM-ddTHH:mm:ssZ format. Parent node: BucketInfo.Bucket
ExtranetEndpoint	String	The OSS domain name to access the bucket over the public network. Parent node: BucketInfo.Bucket
IntranetEndpoint	String	The OSS domain name to access the bucket from ECS within the same region over the internal network. Parent node: BucketInfo.Bucket
Location	String	The region where the bucket is located. Parent node: BucketInfo.Bucket
Name	String	The bucket name. Parent node: BucketInfo.Bucket

Element	Type	Description
Owner	Container	The container that stores the information about the bucket owner. Parent node: BucketInfo.Bucket
ID	String	The user ID of the bucket owner. Parent node: BucketInfo.Bucket.Owner
DisplayName	String	The name of the bucket owner, which is currently the same as the user ID. Parent node: BucketInfo.Bucket.Owner
AccessControlList	Container	The container that stores the ACL information. Parent node: BucketInfo.Bucket
Grant	Enumerated string	The ACL for the bucket. Valid values: private, public-read, and public-read-write Parent node: BucketInfo.Bucket.AccessControlList
DataRedundancyType	Enumerated string	The type of disaster recovery. Valid values: LRS and ZRS Parent node: BucketInfo.Bucket
StorageClass	String	The bucket storage class. Valid values: Standard, IA, and Archive
Versioning	String	The status of versioning for the bucket. Valid values: Enabled and Suspended Parent node: BucketInfo.Bucket

Element	Type	Description
ServerSideEncryptionRule	Container	The container that stores server-side encryption rules. Parent node: BucketInfo.Bucket
ApplyServerSideEncryptionByDefault	Container	The container that stores the default server-side encryption method. Parent node: BucketInfo.Bucket
SSEAlgorithm	String	Displays the default server-side encryption method. Valid values: KMS and AES256
KMSMasterKeyID	String	Displays the currently used CMK ID. A valid value is returned only when you set SSEAlgorithm to KMS and specify the CMK ID. In other cases, null is returned.

Examples

Sample requests

```
Get /? bucketInfo HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Date: Sat, 12 Sep 2015 07:51:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc: BuG4rRK+zNhH1AcF51NNHD39
****
```

Sample responses

- **Sample success responses when information about the bucket is obtained**

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906****
Date: Sat, 12 Sep 2015 07:51:28 GMT
Connection: keep-alive
Content-Length: 531
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<BucketInfo>
  <Bucket>
    <CreationDate>2013-07-31T10:56:21.000Z</CreationDate>
```

```

    <ExtranetEndpoint>oss-cn-hangzhou.aliyuncs.com</ExtranetEndpoint
  >
    <IntranetEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</
IntranetEndpoint>
    <Location>oss-cn-hangzhou</Location>
    <Name>oss-example</Name>
    <Owner>
      <DisplayName>username</DisplayName>
      <ID>27183473914****</ID>
    </Owner>
    <AccessControlList>
      <Grant>private</Grant>
    </AccessControlList>
    <Comment>test</Comment>
  </Bucket>
</BucketInfo>

```

- **Sample error responses when a specified bucket is not found**

```

HTTP/1.1 404
x-oss-request-id: 534B371674E88A4D8906****
Date: Sat, 12 Sep 2015 07:51:28 GMT
Connection: keep-alive
Content-Length: 308
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>NoSuchBucket</Code>
  <Message>The specified bucket does not exist. </Message>
  <RequestId>568D547F31243C673BA1****</RequestId>
  <HostId>nosuchbucket.oss.aliyuncs.com</HostId>
  <BucketName>nosuchbucket</BucketName>
</Error>

```

- **Sample error responses when you are not authorized to access information about the bucket**

```

HTTP/1.1 403
x-oss-request-id: 534B371674E88A4D8906****
Date: Sat, 12 Sep 2015 07:51:28 GMT
Connection: keep-alive
Content-Length: 209
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>AccessDenied</Code>
  <Message>AccessDenied</Message>
  <RequestId>568D5566F2D0F89F5C0E****</RequestId>
  <HostId>test.oss.aliyuncs.com</HostId>
</Error>

```

SDKs

You can call this operation when you use SDK demos in any of the following programming languages:

- [Java](#)
- [Python](#)

- [Go](#)
- [C](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because no such bucket is found.
AccessDenied	403	The error message returned because you are not authorized to view information about the bucket. Only the bucket owner can view information about a bucket.

6.22 PutBucketTags

Adds tags for a bucket or modify the tags for a bucket.



Note:

- Only the bucket owner or authorized RAM users can add tags for a bucket. Otherwise, the 403 Forbidden error is returned with the error code: Access Denied.
- You can add a maximum of 20 tags (key-value pairs) for a bucket.
- If you call PutBucketTags to add tags for a bucket, the original tags added for the bucket are completely overwritten.

Request syntax

```
PUT /?tagging HTTP/1.1
Date: GMT Date
Content-Length: ContentLengt
Authorization: SignatureValue
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
<?xml version="1.0" encoding="UTF-8"?>
<Tagging>
  <TagSet>
    <Tag>
      <Key>key1</Key>
      <Value>value1</Value>
    </Tag>
    <Tag>
      <Key>key2</Key>
      <Value>value2</Value>
    </Tag>
  </TagSet>
```

```
</Tagging>
```

Request elements

Element	Type	Required?	Description
Tagging	Container	Yes	<p>Specifies the container used to configure the TagSet for the bucket.</p> <p>Sub-node: TagSet</p> <p>Parent node: None</p>
TagSet	Container	Yes	<p>Specifies the container used to store a set of tags for the bucket .</p> <p>Sub-node: Tag</p> <p>Parent node: Tagging</p>
Tag	Container	Yes	<p>Specifies the container used to configure a tag for the bucket.</p> <p>Sub-node: Key, Value</p> <p>Parent node: TagSet</p>

Element	Type	Required?	Description
Key	String	Yes	<p>Specifies the key of a tag for the bucket.</p> <ul style="list-style-type: none"> • The maximum size of a key is 64 bytes. • The key of a tag cannot be prefixed with <code>http://</code>, <code>https://</code>, or <code>Aliyun</code>. • The key of a tag must be UTF-8 encoded. • The key of a tag cannot be null. <p>Parent node: Tag</p> <p>Sub-node: None</p>
Value	String	No	<p>Specifies the value of a tag for the bucket.</p> <ul style="list-style-type: none"> • The maximum size of a tag value is 128 bytes. • The value of a tag must be UTF-8 encoded. • The value of a tag can be null. <p>Sub-node: None</p> <p>Parent node: Tag</p>

Examples

- **Request example:**

```
PUT /?tagging
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 20 Dec 2018 11:49:13 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ce0EyZavKY4QcjoUWYSpYbJ3
****
<Tagging>
  <TagSet>
    <Tag>
      <Key>testa</Key>
```

```

    <Value>testv1</Value>
  </Tag>
  <Tag>
    <Key>testb</Key>
    <Value>testv2</Value>
  </Tag>
</TagSet>
</Tagging>

```

- **Response example:**

```

200 (OK)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5C1B138A109F4E405B2D8AEF
date: Thu, 20 Dec 2018 11:59:06 GMT
x-oss-server-time: 148
connection: keep-alive

```

6.23 GetBucketTags

Obtains the tags for a bucket.

Request syntax

```

GET /?tagging
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue

```

Response elements

Element	Type	Description
Tagging	Container	Indicates the container used to store the returned tags for a bucket. Parent node: None
TagSet	Container	Indicates the container used to store the returned tags for a bucket. Parent node: Tagging
Tag	Container	Indicates the container used to store the returned tags for a bucket. Parent node: TagSet

Element	Type	Description
Key	String	Indicates the key of a tag. Parent node: Tag
Value	String	Indicates the value of a tag. Parent node: Tag

Detail analysis

- If the target bucket does not exist, the 404 No Content error is returned with the error code: **NoSuchBucket**.
- Only the bucket owner and authorized RAM users can view the tags for a bucket . Otherwise, the 403 Forbidden error is returned with the error code: **AccessDenied**.
- If no tags are added for the bucket, OSS returns an XML message body in which value of **Tagging** is **null**.

Examples

- **Request example:**

```
GET /?tagging
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 20 Dec 2018 13:09:13 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ce0EyZavKY4QcjoUWYSpYbJ3
****
```

- **Response example:**

```
200 (OK)
content-length: 237
server: AliyunOSS
x-oss-request-id: 5C1B2D24B90AD5490CFE368E
date: Thu, 20 Dec 2018 13:12:21 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<Tagging>
  <TagSet>
    <Tag>
      <Key>testa</Key>
      <Value>value1-test</Value>
    </Tag>
    <Tag>
      <Key>testb</Key>
      <Value>value2-test</Value>
    </Tag>
  </TagSet>
```

```
</Tagging>
```

6.24 DeleteBucketTags

Deletes the tags added for a bucket.

Request syntax

```
DELETE /?tagging HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Detail analysis

- **If the target bucket does not exist, the 404 No Content error is returned with the error code: NoSuchBucket.**
- **Only the bucket owner can delete the tags added for a bucket. If you try to delete the tags for a bucket owned by another user, the 403 Forbidden error is returned with the error code: AccessDenied.**
- **If no tags are added for the bucket or the key of the specified tag does not exist, the HTTP status code 204 is returned.**

Examples

- **Request example 1 (Delete all tags for a bucket):**

```
DELETE /?tagging HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 25 Dec 2018 17:35:24 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:6ZVH0ehYzxoC1yxRydPQs/Cn
****
```

Response example:

```
HTTP/1.1 204 No Content
x-oss-request-id: 5C22E0EFD127F6810B1A92A8
Date: Tue, 25 Dec 2018 17:35:24 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

- **Request example 2 (Delete specified tags for a bucket, for example, tags of which the keys are k1 and k2):**

```
DELETE /?tagging=k1,k2 HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 25 Dec 2018 17:35:24 GMT
```



```
Authorization: OSS qn6qrrqxo2oawuk53otf****:6ZVH0ehYzxoC1yxRydPQs/Cn
****
```

Response example:

```
HTTP/1.1 204 No Content
x-oss-request-id: 5C22E0EFD127F6810B1A92A8
Date: Tue, 25 Dec 2018 17:35:24 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

6.25 PutBucketEncryption

Configures the encryption rule for a bucket.

Request syntax

```
PUT /?encryption HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue
<?xml version="1.0" encoding="UTF-8"?>
<ServerSideEncryptionRule>
  <ApplyServerSideEncryptionByDefault>
    <SSEAlgorithm>AES256</SSEAlgorithm>
    <KMSMasterKeyID></KMSMasterKeyID>
  </ApplyServerSideEncryptionByDefault>
</ServerSideEncryptionRule>
```

Request elements

Element	Type	Required?	Description
ServerSideEncryptionRule	Container	Yes	Specifies the container used to store the server-side encryption rule. Sub-node: ApplyServerSideEncryptionByDefault
ApplyServerSideEncryptionByDefault	Container	Yes	Specifies the container used to store the default server-side encryption method. Sub-element: SSEAlgorithm, KMSMasterKeyID

Element	Type	Required?	Description
SSEAlgorithm	String	Yes	Specifies the default server-side encryption method. Valid value: KMS, AES256
KMSMasterKeyID	String	No	Specifies the CMK ID when the value of SSEAlgorithm is KMS and a specified CMK is used for encryption. If the value of SSEAlgorithm is not KMS, this element must be null.

Detail analysis

- Only the bucket owner and authorized RAM users can configure encryption rules for a bucket. Otherwise, the 403 Forbidden error is returned.
- API calling fees may incur when you use the CMK for encryption.
- If the value of SSEAlgorithm is not KMS or AES256, the 400 InvalidEncryptionAlgorithm error is returned with the following error message:
The Encryption request you specified is not valid. Supported value: AES256/KMS.
- If the value of SSEAlgorithm is AES256 and KMSMasterKeyID is not null, the 400 InvalidArgument error is returned with the following error message:
KMSMasterKeyID is not applicable if the default sse algorithm is not KMS.

Examples

- Request example:

```
PUT /?encryption HTTP/1.1
Date: Tue, 20 Dec 2018 11:09:13 GMT
Content-Length: ContentLength
Content-Type: application/xml
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS qn6qrrqxo2oawuk53otf****:ce0EyZavKY4QcjoUWYSpYbJ3
****
<?xml version="1.0" encoding="UTF-8"?>
<ServerSideEncryptionRule>
  <ApplyServerSideEncryptionByDefault>
    <SSEAlgorithm>KMS</SSEAlgorithm>
    <KMSMasterKeyID>9468da86-3509-4f8d-a61e-6eab1eac****</KMSMasterKeyID>
  </ApplyServerSideEncryptionByDefault>
```

```
</ServerSideEncryptionRule>
```

- **Response example:**

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D8AEF
Date: Thu, 20 Dec 2018 11:11:06 GMT
```

6.26 GetBucketEncryption

Obtains the encryption rule for a bucket.

Request syntax

```
Get /?encryption HTTP/1.1
Date: GMT Date
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue
```

Response elements

Element	Type	Required?	Description
ServerSideEncryptionRule	Container	Yes	<p>Indicates the container used to store the server-side encryption rule.</p> <p>Sub-node: ApplyServerSideEncryptionByDefault</p>
ApplyServerSideEncryptionByDefault	Container	Yes	<p>Indicates the container used to store the default server-side encryption method.</p> <p>Sub-node: SSEAlgorithm, KMSMasterKeyID</p>
SSEAlgorithm	String	Yes	<p>Indicates the default server-side encryption method.</p> <p>Valid value: KMS, AES256</p>

Element	Type	Required?	Description
KMSMasterKeyID	String	No	Indicates the ID of CMK that is currently used. This element is only returned when the value of SSEAlgorithm is KMS and the CMK ID is specified. In other cases, the value of this element is null.

Detail analysis

- Only the bucket owner and authorized RAM users can view the encryption rule for a bucket. Otherwise, the 403 Forbidden error is returned with the error code: **AccessDenied**.
- If the target bucket does not exist, the 404 error is returned with the error code: **NoSuchBucket**.
- If no encryption rule is configured for the bucket, the 404 error is returned with the error code: **NoSuchServerSideEncryptionRule**.

Examples

- **Request example:**

```
Get /?encryption HTTP/1.1
Date: Tue, 20 Dec 2018 11:20:10 GMT
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS qn6qrrqxo2oawuk53otf****:ce0EyZavKY4QcjoUWYSpYbJ3
****
```

- **Response example:**

```
HTTP/1.1 204 NoContent
x-oss-request-id: 5C1B138A109F4E405B2D8AEF
Date: Tue, 20 Dec 2018 11:22:05 GMT
<?xml version="1.0" encoding="UTF-8"?>
<ServerSideEncryptionRule>
  <ApplyServerSideEncryptionByDefault>
    <SSEAlgorithm>KMS</SSEAlgorithm>
    <KMSMasterKeyID>9468da86-3509-4f8d-a61e-6eab1eac****</KMSMasterKeyID>
  </ApplyServerSideEncryptionByDefault>
```

```
</ServerSideEncryptionRule>
```

6.27 DeleteBucketEncryption

Deletes the encryption rule for a bucket.

Request syntax

```
DELETE /?encryption HTTP/1.1
Date: GMT Date
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue
```

Detail analysis

- **Only the bucket owner and authorized RAM users can delete the encryption rule for a bucket. Otherwise, the 403 Forbidden error is returned with the error code : AccessDenied.**
- **If the target bucket does not exist, the 404 error is returned with the error code: NoSuchBucket.**

Examples

- **Request example:**

```
DELETE /?encryption HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 20 Dec 2018 11:35:24 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:6ZVH0ehYzxoC1yxRydPQs/Cn
****
```

- **Response example:**

```
HTTP/1.1 204 OK
x-oss-request-id: 5C22E0EFD127F6810B1A92A8
Date: Tue, 20 Dec 2018 11:37:05 GMT
Connection: keep-alive
Content-Length: 0
```

6.28 PutBucketRequestPayment

You can call this operation to configure pay-by-requester mode for a bucket.



Note:

You can set the payer to BucketOwner or Requester.

- **If the bucket has pay-by-requester mode enabled, access from anonymous users is denied.**

- **If the bucket has pay-by-requester mode enabled and the requester is not the bucket owner, the requester must include the `x-oss-request-payer: requester` request header. This way, the requester understands that their requests and data downloads incur fees. `x-oss-request-charged: requester` is included in the server response. If the `oss-request-payer: requester` request header is not included, the access is denied.**

Request syntax

```
PUT /? requestPayment HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue
<? xml version="1.0" encoding="UTF-8"? >
<RequestPaymentConfiguration>
  <Payer>Requester</Payer>
</RequestPaymentConfiguration>
```

Request elements

Element	Type	Required	Description
RequestPaymentConfiguration	Container	Yes	Specifies the container for the payer. Child: Payer
Payer	String	Yes	Specifies who pays the download and request fees. Valid values: BucketOwner and Requester Parent: RequestPaymentConfiguration

Examples

Request sample

```
PUT /? requestPayment
Content-Length: 83
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 23 Jul 2019 01:33:47 GMT
```

```
Authorization: OSS LTAIC*****:FsDgQi0+RMwLq*****
<RequestPaymentConfiguration><Payer>Requester</Payer></RequestPay
mentConfiguration>
```

Response sample

```
200 (OK)
content-length: 0
x-oss-request-id: 5D3663FBB007B79097FC****
date: Tue, 23 Jul 2019 01:33:47 GMT
```

SDKs

SDKs that support this operation use the following languages:

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the specified bucket does not exist.

6.29 GetBucketRequestPayment

You can call this operation to obtain pay-by-requester configurations for a bucket.

Request syntax

```
GET /? requestPayment HTTP/1.1
Date: GMT Date
Host: BucketName.oss.aliyuncs.com
Authorization: authorization string
```

Response elements

Element	Type	Description
RequestPaymentConfiguration	Container	Indicates the container for the payer. Child: Payer

Element	Type	Description
Payer	String	<p>Indicates who pays the download and request fees.</p> <p>Valid values: BucketOwner and Requester</p> <p>Parent: RequestPaymentConfiguration</p>

Examples

Request sample

```
GET /? requestPayment
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 23 Jul 2019 01:23:20 GMT
Authorization: OSS LTAICQmy1*****:Rk7tT30yhD03D*****
```

Response sample

```
200 (OK)
content-length: 129
server: AliyunOSS
x-oss-request-id: 5D366188B007B79097EC****
date: Tue, 23 Jul 2019 01:23:20 GMT
content-type: application/xml
<? xml version="1.0" encoding="UTF-8"? >
<RequestPaymentConfiguration>
  <Payer>BucketOwner</Payer>
</RequestPaymentConfiguration>
```

SDKs

SDKs that support this operation use the following languages:

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the specified bucket does not exist.

6.30 PutBucketPolicy

You can call `PutBucketPolicy` to configure policies for a specified bucket.

Bucket policies provide resource-based authorization for users. Bucket policies apply to the following scenarios:

- Authorize RAM users of other accounts to access your OSS resources.

You can authorize RAM users of other accounts to access your OSS resources.

- Authorize anonymous users to access your OSS resources using specific IP addresses or IP ranges.

In some cases, you must authorize anonymous users to access OSS resources using specific IP addresses or IP ranges. For example, confidential documents of an enterprise are only allowed to be accessed within the enterprise but not in other regions. Previously, configuring RAM policies for every user was a tedious and complex task because of the potential for a large number of internal users. To resolve this issue, you can configure access policies with IP restrictions based on bucket policies to authorize a large number of users easily and efficiently.

For more information about bucket policy configurations and use cases, see [#unique_149](#). For more information about bucket policy syntax, see [#unique_150](#).

Request syntax

```
PUT /? policy
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 13 Nov 2018 09:09:13 GMT
Authorization: OSS xxxxxxxxxxx:xxxxxxxxxxxx
Policy written in JSON
```

Examples

- Sample requests

```
PUT /? policy
Content-Length: 230
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
```

```
Date: Thu, 21 Feb 2019 12:51:09 GMT
Authorization: OSS xxxxxxxx:xxxxxxxxxxxxxx
{
  "Version":"1",
  "Statement":[
    {
      "Action":[
        "oss:PutObject",
        "oss:GetObject"
      ],
      "Effect":"Deny",
      "Principal":["1234567890"],
      "Resource":["acs:oss:*:1234567890:*/*"]
    }
  ]
}
```

- **Sample responses**

```
200 (OK)
content-length: 0
server: AliyunOSS
x-oss-server-time: 87
connection: keep-alive
x-oss-request-id: 5C6E9EBD5CC26B28EE41****
date: Thu, 21 Feb 2019 12:51:09 GMT
```

6.31 GetBucketPolicy

You can call `GetBucketPolicy` to query the policies configured for a specified bucket.

Bucket policies provide resource-based authorization for users. Bucket policies apply to the following scenarios:

For more information about bucket policy configurations and use cases, see [#unique_149](#). For more information about bucket policy syntax, see [#unique_150](#).

Request syntax

```
GET /? policy
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

- **Sample requests**

```
GET /? policy
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 13 Nov 2018 09:09:13 GMT
```

```
Authorization: OSS xxxxxxxxxx:xxxxxxxxxxxx
```

- **Sample responses**

```
200 (OK)
server: AliyunOSS
x-oss-server-time: 24
connection: keep-alive
x-oss-request-id: 5C6E9847BE0EBCD13DA90C11
date: Thu, 21 Feb 2019 12:23:35 GMT
content-type: application/json
{
  "Version": "1",
  "Statement": [
    {
      "Action": [
        "oss:PutObject",
        "oss:GetObject"
      ],
      "Effect": "Deny",
      "Principal": ["1234567890"],
      "Resource": ["acs:oss:*:1234567890:*/*"]
    }
  ]
}
```

Error codes

Error code	HTTP status code	Description
NoSuchBucketPolicy	404	No policy is configured for the requested bucket.

6.32 DeleteBucketPolicy

You can call `DeleteBucketPolicy` to delete the policies configured for a specified bucket.

Bucket policies provide resource-based authorization for users. Bucket policies apply to the following scenarios:

For more information about bucket policy configurations and use cases, see [#unique_149](#). For more information about bucket policy syntax, see [#unique_150](#).

Examples

- **Sample requests**

```
DELETE /? policy
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 21 Feb 2019 12:55:10 GMT
```

```
Authorization: OSS xxxxxxxx:xxxxxxxxxxxxxxxx
```

- **Sample responses**

```
204 (No Content)
content-length: 0
server: AliyunOSS
x-oss-server-time: 31
connection: keep-alive
x-oss-request-id: 5C6E9FAF31A13327124B****
date: Thu, 21 Feb 2019 12:55:11 GMT
```

7 Object operations

7.1 PutObject

Uploads objects.



Note:

- The size of the object to be uploaded cannot exceed 5 GB.
- If an object with the same name as an existing object, and you have access to it, the existing object is overwritten by the uploaded object, and the status code 200 OK is returned.
- OSS does not have a folder. All the data is stored as objects. You can create an empty object as a folder.

Versioning

In a bucket with versioning enabled, OSS generates a unique version ID for a newly uploaded object, and returns the version ID in the `x-oss-version-id` field in the response header. In a bucket with versioning suspended, the version ID for a newly uploaded object is null. Each object can only has one version of which the version ID is null.

Request syntax

```
PUT /ObjectName HTTP/1.1
Content-Length: ContentLength
Content-Type: ContentType
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```


Request header




Note:


OSS supports the following five header fields defined in HTTP: Cache-Control, Expires, Content-Encoding, Content-Disposition, and Content-Type. If these headers are set when you upload an object, the header values are automatically set to the corresponding values when the object is downloaded.

Header	Type	Required ?	Description
Authorization	String	No	<p>Indicates that the request is authorized. For more information, see RFC2616.</p> <p>Generally, the Authorization request header is required. This header is optional if the URL you use contains a signature. For more information, see Generate a signed URL.</p> <p>Default value: None</p>
Cache-control	String	No	<p>Specifies the Web page caching behavior when the object is downloaded. For more information, see RFC2616.</p> <p>Default value: None</p>
Content-Disposition	String	No	<p>Specifies the name of the object when the object is downloaded. For more information, see RFC2616.</p> <p>Default value: None</p>
Content-Encoding	String	No	<p>Specifies the content encoding format when the object is downloaded. For more information, see RFC2616.</p> <p>Default value: None</p>
Content-MD5	String	No	<p>Checks whether the message content is consistent with the sent content. The value of Content-MD5 is calculated based on the MD5 algorithm. After the Content-MD5 request header is uploaded, OSS calculates Content-MD5 and checks the consistency.</p> <p>Default value: None</p>

Header	Type	Required ?	Description
Content- Length	String	No	<p>Specifies the data length in the HTTP request body.</p> <p>If the value of Content-Length in the request header is smaller than the data length in the request body, OSS can still create the object successfully. However, the object size is the value of Content-Length, and the data that exceeds the value is discarded.</p>
ETag	String	No	<p>An entity tag (ETag) is created to identify the content of an object when the object is created.</p> <ul style="list-style-type: none"> • For an object created with the PutObject request, its ETag is the MD5 value of the object content. • For an object created by using other methods, its ETag is the UUID of the object content. <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p> Note: The ETag value of an object can be used to check whether the object content has changed. However, we recommend that you not use the ETag of an object as the MD5 value of the object to verify data integrity.</p> </div> <p>Default value: None</p>

Header	Type	Required ?	Description
Expires	String	No	<p>Specifies the expiration time. For more information, see RFC2616.</p> <p>Default value: None</p>
x-oss-server-side-encryption	String	No	<p>Specifies the server-side encryption algorithm when OSS creates an object.</p> <p>Valid values: AES256 and KMS</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p> Note: You must enable Key Management Service (KMS) in the console before you can use the KMS encryption algorithm. Otherwise, a KmsServiceNotEnabled error code is reported.</p> </div> <p>After this header is specified, it will be returned in the response header, and OSS will encrypt and store the uploaded object. When the object is downloaded, the response header will contain x-oss-server-side-encryption and the value will be set to the encryption algorithm of the object.</p>
x-oss-server-side-encryption-key-id	String	No	<p>Specifies the primary key managed by KMS.</p> <p>This parameter is valid when the value of x-oss-server-side-encryption is set to KMS.</p>

Header	Type	Required ?	Description
x-oss-object-acl	String	No	<p>Specifies the access permission when OSS creates an object.</p> <p>Valid values: public-read, private, and public-read-write</p>
x-oss-storage-class	String	No	<p>Specifies the storage class of the object.</p> <p>If you specify the value of x-oss-storage-class when uploading an object to a bucket, the storage class of the uploaded object is the specified value. For example, if you specify the value of x-oss-storage-class to Standard when uploading an object to a bucket of the IA storage class, the storage class of the object is Standard.</p> <p>Valid values: Standard, IA, and Archive</p> <p>Supported APIs: PutObject, InitMultipartUpload, AppendObject, PutObjectSymlink, and CopyObject</p>

Header	Type	Required ?	Description
x-oss-meta-*	String	No	<p>When you use the PutObject API, if you configure a parameter prefixed with x-oss-meta-*, this parameter then works as the metadata, such as x-oss-meta-location. An object can have multiple similar parameters. However, the total size of all metadata cannot exceed 8 KB.</p> <p>The metadata can be numbers, hyphens (-), and lowercase letters. Other characters such as underscores (_) are not supported. Uppercase letters are converted to lowercase letters automatically.</p>
x-oss-tagging	String	No	<p>Specifies the tag of the object. You can set multiple tags at the same time, for example, TagA=A&TagB=B.</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  Note: You must perform URL encoding for the tag key and value in advance. If a tag does not contain an equal sign (=), this string does not have a value. </div>

Examples

- **Request example in simple upload:**

```
PUT /test.txt HTTP/1.1
Host: test.oss-cn-zhangjiakou.aliyuncs.com
User-Agent: aliyun-sdk-python/2.6.0(Windows/7/AMD64;3.7.0)
Accept: */*
Connection: keep-alive
Content-Type: text/plain
date: Tue, 04 Dec 2018 15:56:37 GMT
authorization: OSS qn6qrrqxo2oawuk53otf****:kZoYNv66bsmc10+dcGKw5x2P
****
```

```
Transfer-Encoding: chunked
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 04 Dec 2018 15:56:38 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5C06A3B67B8B5A3DA422****
ETag: "D41D8CD98F00B204E9800998ECF8427E"
x-oss-hash-crc64ecma: 0
Content-MD5: 1B2M2Y8AsgTpgAmY7PhCfg==
x-oss-server-time: 7
```

• Request example in which the storage class is specified as Archive:

```
PUT /oss.jpg HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com Cache-control: no-cache
Expires: Fri, 28 Feb 2012 05:38:42 GMT
Content-Encoding: utf-8
Content-Disposition: attachment;filename=oss_download.jpg
Date: Fri, 24 Feb 2012 06:03:28 GMT
Content-Type: image/jpg
Content-Length: 344606
x-oss-storage-class: Archive
Authorization: OSS qn6qrrqxo2oawuk53otf****:kZoYNv66bsmc10+dcGKw5x2P****
[344606 bytes of object data]
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Sat, 21 Nov 2015 18:52:34 GMT
Content-Type: image/jpg
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5650BD72207FB3044396****
x-oss-bucket-version: 1418321259
ETag: "A797938C31D59EDD08D86188F6D5B872"
```

• Request example when versioning is enabled for the target bucket:

```
PUT /test HTTP/1.1
Content-Length: 362149
Content-Type: text/html
Host: versioning-put.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 02:53:24 GMT
Authorization: OSS lkojgn8y1ex****:6yYhX+BuuEqzI1tAMW0wgIyL****
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 09 Apr 2019 02:53:24 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5CAC0A3DB7AEADE01700****
```

```
x-oss-version-id: CAEQNhiBgMDJgZCA0BYiIDc4MGZjZGI2OTBjOTRmNTE5NmU5Nm
FhZjhjYmY0MWM2
ETag: "4F345B1F066DB1444775AA97D5D26ADA"
```

SDK

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [iOS](#)
- [Node.js](#)
- [Browser.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
MissingContentLength	411	The request header is not encoded according to <i>chunked encoding</i> and does not contain the Content-Length parameter.
InvalidEncryptionAlgorithmError	400	The value of x-oss-server-side-encryption is invalid. The valid value is AES256 or KMS.
AccessDenied	403	You do not have the permission to access the bucket to which you want to add an object.
NoSuchBucket	404	The bucket to which you want to add an object does not exist.
InvalidObjectName	400	The length of the uploaded object key exceeds 1,023 bytes.
InvalidArgument	400	<ul style="list-style-type: none"> • The uploaded object exceeds 5 GB. • Values of the parameters such as x-oss-storage-class are invalid.

Error code	HTTP status code	Description
RequestTimeout	400	The Content-Length parameter is specified, but the message body is not sent. Or the sent message body is smaller than the specified size. In this case, the sever keeps waiting until times out.
KmsService NotEnabled	403	The x-oss-server-side-encryption is specified to KMS. However, you do not enable KMS in advance.

7.2 CopyObject

Copies objects within a bucket or between buckets in the same region. By calling CopyObject, you can send a PUT request to OSS. OSS automatically recognizes the request as a copy operation and perform it on the server.

Versioning

CopyObject copies the current version of an object by default. If the current version of the target object is a delete marker, the 404 Not Found error is returned to indicate that the object does not exist. You can specify the versionId in a CopyObject request to copy a specified version of the target object. However, a delete marker cannot be copied.

You can copy a historical version of an object to the bucket that stores the object. The copied historical version becomes the current version of a new object. You can use this method to restore a historical version of an object.

If versioning is enabled for the bucket that stores the target object is enabled, OSS generates a unique version ID for the copied object, which is returned in the `x-oss-version-id` field in the response header. If versioning is suspended or not enabled for the bucket that stores the target object, OSS generates a version of which the ID is null for the copied object and overwrite overwrites the original version of which the ID is null.

Limits

- CopyObject only supports objects smaller than 1 GB. To copy objects larger than 1 GB, you must use [UploadPartCopy](#).

- You can call `CopyObject` to modify the metadata of an object that equals to or smaller than 48.8 TB (by setting the source object and target object to the same object).
- To use `CopyObject`, you must have the read permission on the source object.
- The source object and the target object must be in the same region.
- You cannot copy objects created by `AppendObject`.
- If the source object is a symbolic link, only the symbolic link (instead of the content that the link directs to) is copied.

Billing items

- A GET request is billed according to the bucket where the source object is stored.
- A PUT request is billed according to the bucket where the target object is stored.
- The used storage capacity is billed according to the bucket where the target object is stored.
- If you change the storage class of an object by calling `CopyObject`, the object is considered as overwritten and will incur charges. An object of the IA or Archive storage class will be charged if it is overwritten within 30 and 60 days respectively after it is created. For example, if you change the storage class of an object from IA to Archive or Standard 10 days after the object is created, early deletion fees for 20 days will be charged.

Request syntax

```
PUT /DestObjectName HTTP/1.1
Host: DestBucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
x-oss-copy-source: /SourceBucketName/SourceObjectName
```

Request header





Note:

The request headers used in copy operations start with `x-oss-`. Therefore, these headers must be added into the signature string.


Header	Type	Required	Description
<code>x-oss-copy-source</code>	String	Yes	Specifies the address of the source object. Default value: None.


Header	Type	Required	Description
x-oss-copy-source-if-match	String	No	If the ETag of the source object is the same as the ETag provided by the user, the copy operation is performed and a 200 OK message is returned. Otherwise, a 412 Precondition Failed error code (preprocessing failed) is returned. Default value: None.
x-oss-copy-source-if-none-match	String	No	If the ETag of the source object is different from the ETag provided by the user, the copy operation is performed and a 200 OK message is returned. Otherwise, a 304 Not Modified error code (preprocessing failed) is returned. Default value: None.
x-oss-copy-source-if-unmodified-since	String	No	If the specified time is the same as or later than the modification time of the object, the object is copied normally and a 200 OK message is returned. Otherwise, a 412 Precondition Failed error code (preprocessing failed) is returned. Default value: None.
x-oss-copy-source-if-modified-since	String	No	If the source object is modified after the time specified by the user, the copy operation is performed. Otherwise, a 304 Not Modified error code (preprocessing failed) is returned. Default value: None.

Header	Type	Required	Description
x-oss-metadata-directive	String	No	<p>Specifies how to set the metadata of the target object. The valid values are COPY and REPLACE.</p> <ul style="list-style-type: none"> • COPY (default): The metadata of the source object is copied to the target object. The x-oss-server-side-encryption of the source object is not copied. That is, server-side encryption is performed on the target object only if the x-oss-server-side-encryption header is specified in the COPY request. • REPLACE: The metadata of the target object is set to the metadata specified in the user's request instead of the metadata of the source object. <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p> Note: If the source object and the target object have the same address, the metadata of the target object is replaced with the metadata of the source object regardless of the value of x-oss-metadata-directive.</p> </div>

Header	Type	Required	Description
<p>x-oss-server-side-encryption</p>	<p>String</p>	<p>No</p>	<p>Specifies the server-side entropy encoding encryption algorithm when OSS creates the target object.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • AES256 • KMS (You must enable KMS in the console before you can use the KMS encryption algorithm. Otherwise, a KmsServiceNotEnabled error code is returned.) <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • If the x-oss-server-side-encryption header is not specified in the copy operation, the target object is not encrypted on the server side no matter whether server-side encryption has been performed on the source object. • If you specify the x-oss-server-side-encryption header, server-side encryption is performed on the target object no matter whether the encryption has been performed on the source object. In addition, the response header for the copy request includes the x-oss-server-side-encryption header, and the value of the header is the encryption algorithm of the target object. When the target object is downloaded, the response header also includes the x-oss-server-side-encryption header, and the value of the header is the encryption algorithm of the target </div>

Header	Type	Required	Description
x-oss-server-side-encryption-key-id	String	No	Indicates the primary key managed by KMS. This parameter is valid when the value of x-oss-server-side-encryption is KMS.
x-oss-object-acl	String	No	Specifies the ACL for the target object when it is created. Valid values: public-read, private, public-read-write and default

Header	Type	Required	Description
<p>x-oss-storage-class</p>	<p>String</p>	<p>No</p>	<p>Specifies the storage class of the object.</p> <p>Valid values: Standard, IA and Archive</p> <p>Supported interfaces: PutObject, InitMultipartUpload, AppendObject, PutObjectSymlink, and CopyObject</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p> Note:</p> <ul style="list-style-type: none"> • If the value of StorageClass is invalid, a 400 error message is returned with an error code: InvalidArgument. • We recommend that you do not set the storage class to IA or Archive when calling CopyObject because an IA or Archive object smaller than 64 KB is billed at 64 KB. • If you specify the value of x-oss-storage-class when uploading an object to a bucket, the storage class of the uploaded object is the specified value of x-oss-storage-class. For example, if you specify the value of x-oss-storage-class to Standard when uploading an object to a bucket of the IA storage class, the storage class of the object is Standard. • If you change the storage class of an object, the object is considered as overwritten and will incur charges. An object of the IA or Archive class will be charged if it is overwritten within 30 and 60 days respectively after it is created. </div>

Header	Type	Required	Description
x-oss-tagging	String	No	<p>Specifies the tag of the object. You can set multiple tags at the same time, for example, TagA=A&TagB=B.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: You must perform URL encoding for the tag key and value in advance. If a tag does not contain an equal sign (=), this string does not have a value. </div>
x-oss-tagging-directive	String	No	<p>Specifies how to set the tag of the target object. The valid values are Copy and Replace.</p> <ul style="list-style-type: none"> • Copy (default): The tag of the source object is copied to the target object. • Replace: The tag of the target object is set to the tag specified in the request instead of the tag of the source object.

Response elements

Table 7-1: Response elements

Name	Type	Description
CopyObjectResult	String	<p>Indicates the result of CopyObject.</p> <p>Default value: None.</p>
ETag	String	<p>Indicates the ETag of the target object.</p> <p>Parent node: CopyObjectResult</p>
LastModified	String	<p>Indicates the time when the target object is last modified.</p> <p>Parent node: CopyObjectResult</p>

Examples

• **Example 1****Request example:**

```
PUT /copy_oss.jpg HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 07:18:48 GMT
x-oss-storage-class: Archive
x-oss-copy-source: /oss-example/oss.jpg
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:gmwPKuu20LQEjd+iPkL259A
****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Content-Type: application/xml
Content-Length: 193
Connection: keep-alive
Date: Fri, 24 Feb 2012 07:18:48 GMT
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<CopyObjectResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <LastModified>Fri, 24 Feb 2012 07:18:48 GMT</LastModified>
  <ETag>"5B3C1A2E053D763E1B002CC607C5****"</ETag>
</CopyObjectResult>
```

• **Example 2****Request example:**

```
PUT /test%2FAK.txt HTTP/1.1
Host: tesx.oss-cn-zhangjiakou.aliyuncs.com
Accept-Encoding: identity
User-Agent: aliyun-sdk-python/2.6.0(Windows/7/AMD64;3.7.0)
Accept: */*
Connection: keep-alive
x-oss-copy-source: /test/AK.txt
date: Fri, 28 Dec 2018 09:41:55 GMT
authorization: OSS qn6qrrqxo2oawuk53otfjbyc:gmwPKuu20LQEjd+iPkL259A
****
Content-Length: 0
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Fri, 28 Dec 2018 09:41:56 GMT
Content-Type: application/xml
Content-Length: 184
Connection: keep-alive
x-oss-request-id: 5C25EFE4462CE00EC6D87156
ETag: "F2064A169EE92E9775EE5324D0B1****"
x-oss-hash-crc64ecma: 12753002859196105360
x-oss-server-time: 150
<?xml version="1.0" encoding="UTF-8"?>
<CopyObjectResult>
```

```
<ETag>"F2064A169EE92E9775EE5324D0B1****"</ETag>
<LastModified>2018-12-28T09:41:56.000Z</LastModified>
</CopyObjectResult>
```

**Note:**

x-oss-hash-crc64ecma indicates the 64-bit CRC value of the object. This value is calculated based on the [ECMA-182](#) standard. An object generated in a CopyObject operation may not have this value.

- **Example of a request in which the versionId is not specified:**

```
PUT /dest-object-example HTTP/1.1
Host: versioning-copy.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 03:45:32 GMT
Authorization: OSS qeyxjc9arppwa0t:Qqw0jq7U7j04NVpPqdfcVk0I****
x-oss-copy-source: /versioning-copy-source/source-object
```

Response example:

```
HTTP/1.1 200 OK
x-oss-copy-source-version-id: CAEQNRiBgIC28uaA0BYiIDY50GIwNm
NlNjYyMTRjNTc4N2M2OGNiMjZkZTQ2ZTRi
x-oss-version-id: CAEQNxiBgIDG8uaA0BYiIGZhZDRkZTk5Zjg3YzRhNzdiMWEwZG
ViNDM1NTFhNGQw
x-oss-request-id: 5CAC155CB7AEADE0170002DF
Content-Type: application/xml
Content-Length: 184
Connection: keep-alive
Date: Tue, 09 Apr 2019 03:45:32 GMT
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<CopyObjectResult>
  <ETag>"C81E728D9D4C2F636F067F89CC14****"</ETag>
  <LastModified>2019-04-09T03:45:32.000Z</LastModified>
</CopyObjectResult>
```

**Note:**

The x-oss-copy-source-version-id field in the response example indicates the ID of the copied version of the target object, that is, the current version in this example. The x-oss-version-id field indicates the version ID of the new object generated by the CopyObject operation.

- **Example of a request in which the versionId is specified:**

```
PUT /dest-object-example HTTP/1.1
Host: versioning-copy.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 03:45:32 GMT
Authorization: OSS qeyxjc9arppwa0t:5qG4DLahjxDpTpLlf2e8fBfX****
```

```
x-oss-copy-source: /versioning-copy-source/source-object?versionId=CAEQNRiBgICv8uaA0BYiIDliZDc3MTc1NjE5MjRkMDI4ZGU4MTZkYjY1ZDgyYzdI
```

Response example:

```
HTTP/1.1 200 OK
x-oss-copy-source-version-id: CAEQNRiBgICv8uaA0BYiIDliZDc3MTc1NjE5MjRkMDI4ZGU4MTZkYjY1ZDgyYzdI
x-oss-version-id: CAEQNxiBgMDP8uaA0BYiIDIyNGNhZDQ1M2M3NzRkZThiNzE0N2I3ZDkxOWY4NGRj
x-oss-request-id: 5CAC155CB7AEADE0170002E1
Content-Type: application/xml
Content-Length: 184
Connection: keep-alive
Date: Tue, 09 Apr 2019 03:45:32 GMT
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<CopyObjectResult>
  <ETag>"C4CA4238A0B923820DCC509A6F75****"</ETag>
  <LastModified>2019-04-09T03:45:32.000Z</LastModified>
</CopyObjectResult>
```

**Note:**

The `x-oss-copy-source-version-id` field in the response example indicates the ID of the copied version of the target object, that is, the version specified by the `x-oss-copy-source` parameter in the request. The `x-oss-version-id` field indicates the version ID of the new object generated by the `CopyObject` operation.

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [iOS](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The values of parameters, such as <code>x-oss-storage-class</code> are invalid.
Precondition Failed	412	<ul style="list-style-type: none"> The <code>x-oss-copy-source-if-match</code> header is specified in the request, but the provided ETag is different from the ETag of the source object. The <code>x-oss-copy-source-if-unmodified-since</code> header is specified in the request, but the time specified in the request is earlier than the modification time of the object.
Not Modified	304	<ul style="list-style-type: none"> The <code>x-oss-copy-source-if-none-match</code> header is specified in the request, and the provided ETag is the same as the ETag of the source object. The <code>x-oss-copy-source-if-modified-since</code> header is specified in the request, but the source object has not been modified after the time specified in the request.
KmsService NotEnabled	403	The <code>x-oss-server-side-encryption</code> header is set to KMS, but the KMS service is not enabled.

7.3 GetObject

You can call this operation to obtain an object. To perform the `GetObject` operation, you must have the read permissions on the object.



Notice:

- The `GetObject` API operation can be called by HTTP and HTTPS requests by default. To specify that the API operation can be called only by HTTPS requests, configure the access method in the bucket policy. For more information, see [#unique_149](#).

- **If the storage class of the object is Archive, you must send a RestoreObject request to restore the object before you call the GetObject operation.**

Versioning

By default, the `GetObject` operation returns only the current version of an object.



Note:

When you perform the `GetObject` operation on an object in a bucket:

- **If the current version of the object is a delete marker, OSS returns 404 Not Found**
- **If the version ID of the object is specified in the request, OSS returns the specified version of the object. If the version ID is specified as null in the request, OSS returns the version whose version ID is null.**
- **If the version ID is specified as a delete marker, OSS returns 405 Method Not Allowed.**

Request syntax

```
GET /ObjectName HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
Range: bytes=ByteRange (Optional)
```

When you are downloading an object larger than 100 MB from OSS, transmission may fail due to the network environment. You can specify the HTTP Range header to query data of the large object.



Note:

OSS does not support multiple range parameters. You can only query one range at a time. ByteRange specifies the range of data that you request, in bytes. The valid values of ByteRange are from 0 to object size - 1. Examples are as follows:

- **Range: bytes=0-499 specifies the first 500 bytes.**
- **Range: bytes=500-999 specifies the second 500 bytes.**
- **Range: bytes=-500 specifies the last 500 bytes.**
- **Range: bytes=500- specifies data from the 500th byte to the end of the object.**
- **Range: bytes=0- specifies data from the first byte to the last byte, that is, the entire object.**

Request headers


**Note:**

- When you initiate a GET request in OSS, you can set headers in the request to customize some headers in the response. However, the headers in the response are set to the values specified in the headers in the request only when the request is successful (the 200 OK code is returned).
- When you initiate a GET request in OSS as an anonymous user, you cannot set headers in the request to customize headers in the response.
- You must sign the GET request before sending it.


Header	Type	Required	Description
response-content-type	String	No	Specifies the content-type header in the response returned by OSS. Default value: null.
response-content-language	String	No	Specifies the content-language header in the response returned by OSS. Default value: null.
response-expires	String	No	Specifies the expires header in the response returned by OSS. Default value: null.
response-cache-control	String	No	Specifies the cache-control header in the response returned by OSS. Default value: null.
response-content-disposition	String	No	Specifies the content-disposition header in the response returned by OSS. Default value: null.

Header	Type	Required	Description
response-content-encoding	String	No	<p>Specifies the content-encoding header in the response returned by OSS.</p> <p>Default value: null.</p>
Range	String	No	<p>Specifies the range of data to be returned.</p> <p>Default value: null.</p> <ul style="list-style-type: none"> • If the value of Range is valid, the response returned by OSS includes the total size of the object and the range of data returned. For example , "Content-Range: bytes 0-9/44" indicates that the total size of the object is 44 bytes, and the range of data returned is the first 10 bytes. • If the value of Range is invalid, the entire object is returned and the response returned by OSS does not include Content-Range.
If-Modified-Since	String	No	<p>If the time specified in this header is earlier than the object modification time or does not conform to the standards, OSS returns the object and 200 OK. Otherwise, OSS returns 304 Not Modified.</p> <p>Default value: null.</p> <p>Time format: GMT, for example, <code>Fri, 13 Nov 2015 14:47:53 GMT</code></p>

Header	Type	Required	Description
If- Unmodified -Since	String	No	<p>If the time specified in this header is the same as or later than the object modification time, OSS returns the object and 200 OK. Otherwise, OSS returns 412 Precondition Failed.</p> <p>Default value: null.</p> <p>Time format: GMT, for example, Fri, 13 Nov 2015 14:47:53 GMT</p> <p>You can specify the If-Modified-Since and If-Unmodified-Since headers in a request at the same time.</p>
If-Match	String	No	<p>Specifies the object returning condition . If the ETag value specified in the request matches the ETag value of the object, OSS returns the object and 200 OK. Otherwise, OSS returns 412 Precondition Failed.</p> <p>Default value: null.</p>
If-None- Match	String	No	<p>Specifies the object returning condition . If the ETag value specified in the request does not match the ETag value of the object, OSS returns the object and 200 OK. Otherwise, OSS returns 304 Not Modified.</p> <p>Default value: null.</p> <p>You can specify the If-Match and If-None-Match headers in a request at the same time.</p>

Header	Type	Required	Description
Accept-Encoding	String	No	<p>Specifies the encoding type at the client side.</p> <p>If you want an object to be returned in GZIP format, you must include the Accept-Encoding:gzip header in your request. OSS determines whether to return the object compressed in GZIP format based on the Content-Type header and the size of the object (larger than or equal to 1 KB).</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • If an object is compressed in GZIP format, the response returned by OSS does not include the ETag value of the object. • OSS supports GZIP compression for objects whose Content-Type header is one of the following values: HTML, JavaScript, CSS, XML, RSS, and JSON. </div>

Response headers

 **Note:**

If the requested object is a symbolic link, the content of the object is returned. Response headers Content-Length, ETag, and Content-Md5 indicate the metadata of the requested object. The Last-Modified header indicates the later one of the time points when the requested object and the symbolic link are last modified. All other headers indicate the metadata of the symbolic link.

Header	Type	Description
x-oss-server-side-encryption	String	If the requested object is entropy encrypted on the server, OSS automatically decrypts and returns the object after receiving the GetObject request. OSS includes x-oss-server-side-encryption in the response to indicate the encryption algorithm that is used to encrypt the object on the server.
x-oss-tagging-count	String	Indicates the number of tags associated with the object. This header is returned only if you have the read permissions on tags.

Examples

- **Sample request for simple GetObject**

```
GET /oss.jpg HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 06:38:30 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:UNQDb7GapEgJkcde60hZ9J
*****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 3a8f-2e2d-7965-3ff9-51c875b*****
x-oss-object-type: Normal
Date: Fri, 24 Feb 2012 06:38:30 GMT
Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
ETag: "5B3C1A2E0563E1B002CC607C*****"
Content-Type: image/jpg
Content-Length: 344606
Server: AliyunOSS
[344606 bytes of object data]
```

- **Sample request with a Range header**

```
GET /oss.jpg HTTP/1.1
Host:oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 28 Feb 2012 05:38:42 GMT
Range: bytes=100-900
```

```
Authorization: OSS qn6qrrqxo2oawuk5jbyc:qZzjF3DUtd+yK16BdhGtFc*****
```

Sample response

```
HTTP/1.1 206 Partial Content
x-oss-request-id: 28f6-15ea-8224-234e-c0ce407*****
x-oss-object-type: Normal
Date: Fri, 28 Feb 2012 05:38:42 GMT
Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
ETag: "5B3C1A2E05E1B002CC607C*****"
Accept-Ranges: bytes
Content-Range: bytes 100-900/344606
Content-Type: image/jpg
Content-Length: 801
Server: AliyunOSS
[801 bytes of object data]
```

- **Sample request with response headers customized**

```
GET /oss.jpg? response-expires=Thu%2C%2001%20Feb%202012%2017%3A00%3A00%20GMT& response-content-type=text&response-cache-control=No-cache&response-content-disposition=attachment%253B%2520filename%253Dtesting.txt&response-content-encoding=utf-8&response-content-language=%E4%B8%AD%E6%96%87 HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com:
Date: Fri, 24 Feb 2012 06:09:48 GMT
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC75A644*****
x-oss-object-type: Normal
Date: Fri, 24 Feb 2012 06:09:48 GMT
Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
ETag: "5B3C1A2E053D1B002CC607*****"
Content-Length: 344606
Connection: keep-alive
Content-disposition: attachment; filename:testing.txt
Content-language: Chinese
Content-encoding: utf-8
Content-type: text
Cache-control: no-cache
Expires: Fri, 24 Feb 2012 17:00:00 GMT
Server: AliyunOSS
[344606 bytes of object data]
```

- **Sample request with the object type specified as symbolic link**

```
GET /link-to-oss.jpg HTTP/1.1
Accept-Encoding: identity
Date: Tue, 08 Nov 2016 03:17:58 GMT
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS qn6qrrqxok53otfjbyc:qZzjF3DUtd+yK16BdhGtFc*****
```

Sample response

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 08 Nov 2016 03:17:58 GMT
Content-Type: application/octet-stream
```

```
Content-Length: 20
Connection: keep-alive
x-oss-request-id: 582143E6A212AD*****
Accept-Ranges: bytes
ETag: "8086265EFC021F9A2F09BF4*****"
Last-Modified: Tue, 08 Nov 2016 03:17:58 GMT
x-oss-object-type: Symlink
Content-MD5: gIYmXvwCEe0fmi8Jv0Y*****
```

- **Sample request for an object that is restored**

```
GET /oss.jpg HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Sat, 15 Apr 2017 09:38:30 GMT
Authorization: OSS qn6qrrqxo2o***k53otfjbyc:zUglwRPGkbByZxm1+y4eyu
*****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 58F723829F29F18D7F00*****
x-oss-object-type: Normal
x-oss-restore: ongoing-request="false", expiry-date="Sun, 16 Apr
2017 08:12:33 GMT"
Date: Sat, 15 Apr 2017 09:38:30 GMT
Last-Modified: Sat, 15 Apr 2017 06:07:48 GMT
ETag: "5B3C1A2E0763E1B002CC607C*****"
Content-Type: image/jpg
Content-Length: 344606
Server: AliyunOSS
[354606 bytes of object data]
```

- **Sample request with the version ID of the requested object specified**

```
GET /example? versionId=CAEQNhiBgMDJgZCA0BYiIDc4MGZjZGI2OTBjOTRm
NTE5NmU5NmFhZjhjYmY0***** HTTP/1.1
Host: versioning-get.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 02:58:06 GMT
Authorization: OSS lkojgxic6e:8wcOrEDt4iSxpBPfQW90JNw*****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC0A3EDE0170*****
x-oss-version-id: CAEQNhiBgM0BYiIDc4MGZjZGI2OTBjOTRmNTE5NmU5NmFhZjhj
YmY0*****
x-oss-object-type: Normal
Date: Tue, 09 Apr 2019 02:58:06 GMT
Last-Modified: Fri, 22 Mar 2018 08:07:50 GMT
ETag: "5B3C1A2E053D7002CC607C5A*****"
Content-Type: text/html
Content-Length: 362149
Server: AliyunOSS
[362149 bytes of object data]
```

- **Sample request with the version ID not specified and the current version specified as a delete marker**

```
GET /example HTTP/1.1
```



```
Host: versioning-get.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 03:22:33 GMT
Authorization: OSS duagpvtn35:taVlDvAJMhEumrR+oLMWtQp*****
```

Sample response

```
HTTP/1.1 404 Not Found
x-oss-request-id: 5CAC0FEADE0170*****
x-oss-delete-marker: true
x-oss-version-id: CAEQNxiBgyA0BYiIDc4ZDdmNTA2MGViZTRiNjE5NzZlZWm4OWM5OT*****
Date: Tue, 09 Apr 2019 03:22:33 GMT
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>NoSuchKey</Code>
  <Message>The specified key does not exist. </Message>
  <RequestId>5CAC0FEADE0170*****</RequestId>
  <HostId>versioning-get.oss-cn-hangzhou.aliyun*****</HostId>
  <Key>example</Key>
</Error>
```

- **Sample request with the version ID specified as a delete marker**

```
GET /example? versionId=CAEQMxiBgMcfqaWA0BYiIDliMWI4MGQ0MTVmMjQ3MmE5MDNlMmY4YmFkYTk3***** HTTP/1.1
Host: versioning-get.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 03:09:44 GMT
Authorization: OSS tvqm50uz4y:51UaP+wQt5k1RQang/U6Eeq*****
```

Sample response

```
HTTP/1.1 405 Method Not Allowed
x-oss-request-id: 5CAC0CF8DE01700*****
x-oss-delete-marker: true
x-oss-version-id: CAEQMxiBgMcfqaWADliMWI4MGQ0MTVmMjQ3MmE5MDNlMmY4YmFkYTk*****
Allow: DELETE
Date: Tue, 09 Apr 2019 03:09:44 GMT
Content-Type: application/xml
Content-Length: 318
Connection: keep-alive
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<Error>
  <Code>MethodNotAllowed</Code>
  <Message>The specified method is not allowed against this resource . </Message>
  <RequestId>5CAC0CF8DE0170*****</RequestId>
  <HostId>versioning-get.oss-cn-hangzhou.aliyunc*****</HostId>
  <Method>GET</Method>
  <ResourceType>DeleteMarker</ResourceType>
```

```
</Error>
```

SDKs

The SDKs of the `GetObject` operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Browser.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
<code>NoSuchKey</code>	404	The error message returned because the requested object does not exist.
<code>SymlinkTargetNotExist</code>	404	The error message returned because the requested object is a symbolic link, and the object that the symbolic link directs to does not exist.
<code>InvalidTargetType</code>	400	The error message returned because the requested object is a symbolic link, and the object that the symbolic link directs to is still a symbolic link.
<code>InvalidObjectState</code>	403	The error message returned because the storage class of the requested object is Archive and: <ul style="list-style-type: none"> • The <code>RestoreObject</code> request for the object is not initiated or timed out. • The <code>RestoreObject</code> request for the object has been initiated but the object is not restored yet.

Error code	HTTP status code	Description
Not Modified	304	<ul style="list-style-type: none"> • The error message returned because the <code>If-Modified-Since</code> header is specified in the request, but the requested object has not been modified since the time specified in the request. • The error message returned because the <code>If-None-Match</code> header is specified in the request, and the ETag value provided in the request is the same as the ETag value of the requested object.
Precondition Failed	412	<ul style="list-style-type: none"> • The error message returned because the <code>If-Unmodified-Since</code> header is specified in the request, but the specified time is earlier than the modification time of the requested object. • The error message returned because the <code>If-Match</code> header is specified in the request, but the ETag value provided in the request is different from the ETag value of the requested object.

7.4 AppendObject

Uploads a file by appending the file to an existing object. An object created by the `AppendObject` operation is an appendable object, and an object uploaded by the `PutObject` operation is a normal object.

Versioning

The `AppendObject` operation can be performed only on objects of which the current version is an appendable object.



Note:

- When you perform the `AppendObject` operation on an object of which the current version is an appendable object, OSS does not generate historical version for the appendable object.
- When you perform the `PutObject` or `DeleteObject` operation on an object of which the current version is an appendable object, OSS stores the appendable object as a historical version and prevents the object from being further appended.
- You cannot perform the `AppendObject` operation on objects of which the current version is not an appendable object (such as a normal object or a delete marker).
- If versioning is enabled or suspended for a bucket, you cannot perform the `CopyObject` operation on appendable objects in the bucket.

Limits

- The maximum size of an object generated by the `AppendObject` operation is 5 GB.
- You cannot use `AppendObject` to upload a file to an object protected by the compliant retention strategy.
- You cannot use KMS to encrypt appendable objects on the server by specifying CMK IDs for the objects.

Request syntax

```
POST /ObjectName?append&position=Position HTTP/1.1
Content-Length: ContentLength
Content-Type: ContentType
Host: BucketName.oss.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```


Request headers




Note:


An `AppendObject` request must include the `append` and `position` parameters, which are both `CanonicalizedResource` and must be included in the signature.


Header	Type	Required?	Description
<code>Append</code>	String	Yes	Indicates that the request is sent to perform an <code>AppendObject</code> operation.

Header	Type	Required?	Description
Position	String	Yes	<p>Specifies the position from where the AppendObject operation starts.</p> <p>The value of position in the first AppendObject operation must be 0, and the value of position in the subsequent operation is the current object length. For example, if the value of position specified in the first AppendObject request is 0, and the value of content-length is 65536, the value of position specified in the second AppendObject request must be set to 65536.</p> <p>Each time after an AppendObject operation succeeds, x-oss-next-append-position in the response header specifies the position of the next AppendObject request.</p> <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • If the value of position is 0 and an object with the same name does not exist, you can set headers (such as x-oss-server-side-encryption) in the AppendObject request in the same way as you do in a PutObject request. If you add a correct x-oss-server-side-encryption header in an AppendObject request in which the value of position is 0, the x-oss-server-side-encryption header is also included in the response header. You can initiate a CopyObject request to modify the metadata of the object in subsequent operations. • Each time after an AppendObject operation is performed, the last modification time of this object is updated. • If the position value is correct and content with a length of 0 is appended to an existing appendable object, the status of the object does not change. </div>

Header	Type	Required?	Description
Cache-Control	String	No	<p>Specifies the Web page caching behavior for the object. For more information, see RFC2616.</p> <p>Default value: none</p>
Content-Disposition	String		<p>Specifies the name of the object when the object is downloaded. For more information, see RFC2616.</p> <p>Default value: none</p>
Content-Encoding	String		<p>Specifies the content encoding format of the object. For more information, see RFC2616.</p> <p>Default value: none</p>
Content-MD5	String		<p>Content-MD5 is a string calculated by the MD5 algorithm. This header is used to check whether the message content is consistent with the sent content.</p> <p>The value of Content-MD5 can be obtained as follows: Calculate a 128-bit number based on the message content, rather than the header, and then base64-encode the number.</p> <p>Default value: none</p> <p>Restriction: none</p>
Expires	Integer		<p>Specifies the expiration time. For more information, see RFC2616.</p> <p>Default value: none</p>

Header	Type	Required?	Description
x-oss-server-side-encryption	String		<p>Specifies the server-side encryption algorithm.</p> <p>Valid values: AES256 or KMS</p> <div style="background-color: #f0f0f0; padding: 10px;"><p> Note:</p><p>You must enable KMS (Key Management Service) in the console before you can use the KMS encryption algorithm. Otherwise, a KmsServiceNotEnabled error is returned.</p></div>
x-oss-object-acl	String		<p>Specifies the ACL for the object.</p> <p>Valid values: public-read, private, and public-read-write</p>

Header	Type	Required?	Description
x-oss-storage-class	String		<p>Specifies the storage class of the object.</p> <p>Values:</p> <ul style="list-style-type: none"> • Standard • IA • Archive <p>Supported APIs: PutObject, InitMultiPartUpload, AppendObject, PutObjectSymlink, and CopyObject</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p> Note:</p> <ul style="list-style-type: none"> • If you specify the value of x-oss-storage-class when uploading an object to a bucket, the storage class of the uploaded object is the specified value of x-oss-storage-class regardless of the storage class of the bucket. For example , if you specify the value of x-oss-storage-class to Standard when uploading an object to a bucket of the IA storage class, the storage class of the object is Standard. • This header takes effect only if you specify it when you perform the AppendObject operation for the first time. </div>

 **Note:**

- **When you call AppendObject, parameters prefixed by x-oss-meta-*, such as x-oss-meta-location, are processed as metadata of the object. An object can have multiple metadata parameters. However, the total size of the metadata cannot exceed 8 KB. The name of a metadata parameter supports dashes (-), numbers, and letters (uppercase letters are converted to lowercase letters) but does not support underscores (_).**
- **You can add parameters prefixed with x-oss-meta-* when creating a new appendable object by performing the AppendObject operation. However, you**

cannot add these parameters when appending files to an existing appendable object.

Response headers

Header	Type	Description
x-oss-next-append-position	64-bit integer	Specifies the position that must be provided in the next request, that is, the current object length. This header is returned when a successful message is returned for an AppendObject request, or when a 409 error occurs because the position and the object length do not match.
x-oss-hash-crc64ecma	64-bit integer	Specifies the 64-bit CRC value of the object. This value is calculated according to the ECMA-182 .

CRC64 calculation method

The CRC value of an appendable object is calculated according to [ECMA-182](#). You can calculate the CRC64 in the following methods:

- Calculate using boost CRC module:

```
typedef boost::crc_optimal<64, 0x42F0E1EBA9EA3693ULL, 0xffffffff
ffffffffULL, 0xffffffffffffffffULL, true, true> boost_ecma;

uint64_t do_boost_crc(const char* buffer, int length)
{
    boost_ecma crc;
    crc.process_bytes(buffer, length);
    return crc.checksum();
}
```

- Calculate using the crcmod function in Python:

```
do_crc64 = crcmod.mkCrcFun(0x142F0E1EBA9EA3693L, initCrc=0L, xorOut=
0xffffffffffffffffL, rev=True)

print do_crc64("123456789")
```

Examples

- Normal request example:

```
POST /oss.jpg?append&position=0 HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Cache-control: no-cache
```

```
Expires: Wed, 08 Jul 2015 16:57:01 GMT
Content-Encoding: utf-8
x-oss-storage-class: Archive
Content-Disposition: attachment;filename=oss_download.jpg
Date: Wed, 08 Jul 2015 06:57:01 GMT
Content-Type: image/jpeg
Content-Length: 1717
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:kZoYNv66bsmc10+dcGKw5x2P
****
[1717 bytes of object data]
```

Response example:

```
HTTP/1.1 200 OK
Date: Wed, 08 Jul 2015 06:57:01 GMT
ETag: "0F7230CAA4BE94CCBDC99C550000****"
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
x-oss-hash-crc64ecma: 14741617095266562575
x-oss-next-append-position: 1717
x-oss-request-id: 559CC9BDC755F95A64485981
```

- **Example of a request initiated to append a file to an existing object in a bucket with versioning enabled or suspended:**

```
POST /example?append&position=0 HTTP/1.1
Host: versioning-append.oss.aliyuncs.com
Date: Tue, 09 Apr 2019 03:59:33 GMT
Content-Length: 3
Content-Type: application/octet-stream
Authorization: OSS bwo4j5l8d3jou9u:MCY5nnfgfJU/f3Xe0odqBtG5****
```

Response example:

```
HTTP/1.1 200 OK
Date: Tue, 09 Apr 2019 03:59:33 GMT
ETag: "2776271A4A09D82CA518AC5C0000****"
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
x-oss-version-id: null
x-oss-hash-crc64ecma: 3231342946509354535
x-oss-next-append-position: 3
x-oss-request-id: 5CAC18A5B7AEADE0170002F7
```

**Note:**

If you perform the AppendObject operation on an object in a bucket with versioning enabled or suspended, the `x-oss-version-id` header is included in the response and its version can only be null.

SDK

The SDKs of this API are as follows:


- *Java*
- *Python*
- *PHP*
- *Go*
- *C*
- *.NET*
- *iOS*
- *Ruby*

Association with other operations

Operations	Relationship
<i>PutObject</i>	If you perform a PutObject operation on an existing appendable object, the appendable object is overwritten by a new normal object.
<i>HeadObject</i>	If you perform a HeadObject operation on an existing appendable object, then x-oss-next-append-position, x-oss-hash-crc64ecma, and x-oss-object-type are returned. The x-oss-object-type of the appendable object is Appendable.
<i>GetBucket</i>	In the response to a GetBucket request, the x-oss-object-type of the appendable object is set to Appendable.
<i>CopyObject</i>	You can neither use CopyObject to copy an appendable object, nor change the server-side encryption method of this object. However, you can use CopyObject to modify the custom metadata of an object.

Error codes

Error code	HTTP status code	Description
ObjectNotAppendable	409	You cannot perform AppendObject operations on a non-appendable object.

Error code	HTTP status code	Description
PositionNotEqualToLength	409	<ul style="list-style-type: none"> The value of position does not match the current object length. <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;">  Note: You can obtain the position for the next operation from the response header <code>x-oss-next-append-position</code> and initiate a request again. Although multiple requests may be sent concurrently, even if you set the value of <code>x-oss-next-append-position</code> in one request, the request may still fail because the value is not updated immediately. </div> <ul style="list-style-type: none"> The request is successful when the value of position is 0 and the length of an appendable object with the same name is 0. or the appendable object with the same name does not exist. In other cases, this error code is returned because the position and the length of the object do not match.
InvalidArgument	400	The value of a parameter, such as <code>x-oss-storage-class</code> , is invalid.

7.5 DeleteObject

You can call the `DeleteObject` operation to delete an object. To perform the `DeleteObject` operation on an object, you must have the write permissions on the object.



Note:

- HTTP status code 204 is returned when the `DeleteObject` operation succeeds, regardless of whether the object exists.
- If the requested object is a symbolic link, the `DeleteObject` operation only deletes the symbolic link but not the content that the link directs to.

Versioning

If you do not specify the object version ID when performing the `DeleteObject` operation on an object in a versioning-enabled bucket, OSS inserts a delete marker as the current object version instead of deleting the object permanently. If you specify the object version ID, the specified version of the object is permanently deleted.



Note:

- If you do not specify the object version ID when performing the `DeleteObject` operation:

By default, the `DeleteObject` operation is performed on the current version of the target object. The current version is kept but not deleted and a delete marker is inserted as the new current version of the object. When the `GetObject` operation is performed on the object, OSS identifies that the current version of the object is a delete marker and returns 404 Not Found. Additionally, the `x-oss-delete-marker = true` and `x-oss-version-id` (indicating the version ID of the generated delete marker) headers are included in the response.

If the value of the `x-oss-delete-marker` field is true, the version specified in the `x-oss-version-id` field is a delete marker.

- If you specify the object version ID when performing the `DeleteObject` operation:

OSS permanently deletes the object version specified by the `versionid` parameter. For example, to delete an object whose version ID is null, you must specify the value of `versionId` in the request as null. OSS identifies the string null as a version ID and deletes the object whose version ID is null.

Response headers

Header	Type	Description
x-oss-delete-marker	Boolean	<ul style="list-style-type: none"> • If you do not specify the object version ID when performing the DeleteObject operation, OSS creates a delete marker as the current version and includes this header with the "true" value in the response. • If you specify the object version ID to permanently delete a version of the target object and the specified version is a delete marker, OSS includes this header with the "true" value in the response. <p>Valid value: true</p>
x-oss-version-id	String	<ul style="list-style-type: none"> • If you do not specify the object version ID when performing the DeleteObject operation, OSS creates a delete marker as the current version and includes this header in the response to indicate the version ID of the created delete marker. • If you specify the object version ID to permanently delete a version of the target object, OSS includes this header in the response to indicate the ID of the deleted object version.

Request syntax

```
DELETE /ObjectName HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Sample requests

```
DELETE /AK.txt HTTP/1.1
Host: test.oss-cn-zhangjiakou.aliyuncs.com
Accept-Encoding: identity
User-Agent: aliyun-sdk-python/2.6.0(Windows/7/AMD64;3.7.0)
Accept: */*
Connection: keep-alive
date: Wed, 02 Jan 2019 13:28:38 GMT
```

```
authorization: OSS qn6qrrqxo2oawuk53otfjbyc:zUglwRPGkbByZxm1+y4eyu+
NIUs=zV0****
Content-Length: 0
```

Sample responses

```
HTTP/1.1 204 No Content
Server: AliyunOSS
Date: Wed, 02 Jan 2019 13:28:38 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5C2CBC8653718B5511EF4535
x-oss-server-time: 134
```

- **Sample requests when the object version ID is not specified**

In this case, OSS inserts a delete marker. The `x-oss-delete-marker=true` field is included in the response.

```
DELETE /example HTTP/1.1
Host: versioning-delete.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 04:08:23 GMT
Authorization: OSS twnetzwjkqr9eq6:z73SSKA6t2tNTP4GuPjPiyV/****
```

Sample responses

```
HTTP/1.1 204 No Content
x-oss-delete-marker: true
x-oss-version-id: CAEQMxiBgIDh3ZCB0BYiIGE4YjIyMjExZDhhYjQxNzZiNGUyZT
I4ZjljZDcz****
x-oss-request-id: 5CAC1AB7B7AEADE01700****
Date: Tue, 09 Apr 2019 04:08:23 GMT
Connection: keep-alive
Server: AliyunOSS
```

- **Sample requests when the object version ID is specified**

In this case, the object with the specified version ID is permanently deleted.

```
DELETE /example? versionId=CAEQ0BiBgIDNlJeB0BYiIDAwYjJlNDQ4YjJkMzQx
MmY5NTM5N2UzZWNiZTQ2**** HTTP/1.1
Host: versioning-delete.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 04:11:54 GMT
Authorization: OSS gb3m2qiwirupd6v:Uj0XBmIbJD3qXL+DP1EDNyCI****
```

Sample responses

```
HTTP/1.1 204 No Content
x-oss-version-id: CAEQ0BiBgIDNlJeB0BYiIDAwYjJlNDQ4YjJkMzQxMmY5NTM5N2
UzZWNiZTQ2****
x-oss-request-id: 5CAC1B8AB7AEADE01700****
Date: Tue, 09 Apr 2019 04:11:54 GMT
Content-Length: 0
Connection: keep-alive
```

Server: AliyunOSS

- **Sample requests when the object version ID is specified to delete a delete marker**



Note:

You can only delete a delete marker.

In the following example, the specified version is a delete marker. The `x-oss-delete-marker=true` field is included in the response.

```
DELETE /example? versionId=CAEQ0BiBgIDNlJeB0BYiIDAwYjJlNDQ4YjJkMzQxMmY5NTM5N2UzZWNiZTQ2**** HTTP/1.1
Host: versioning-delete.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 04:16:25 GMT
Authorization: OSS jh475i54ffozhoy:4tX6Z+fnhtINhp0g+sRiLEQb****
```

Sample responses

```
HTTP/1.1 204 No Content
x-oss-delete-marker: true
x-oss-version-id: CAEQNhiBgIDFtp.B0BYiIDk4NzgwMmU4NDMyOTQyM2NiMDQxOTcxYWVhMjc1****
x-oss-request-id: 5CAC1C99B7AEADE01700****
Date: Tue, 09 Apr 2019 04:16:25 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDKs

You can call the `DeleteObject` operation when you use the SDK of any of the following programming languages:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [iOS](#)
- [Node.js](#)
- [Browser.js](#)
- [Ruby](#)

7.6 DeleteMultipleObjects

Deletes multiple objects from the same bucket.



Note:

You can delete a maximum of 1,000 objects at one time by calling DeleteMultipleObjects.

Versioning


You can use DeleteMultipleObjects to delete multiple objects in a bucket with versioning enabled. If you do not specify the versionId in the request, delete markers are added to the objects that you want to delete. If you specify the versionId in the request, the specified versions of the objects that you want to delete are permanently deleted.

Request syntax

```
POST /?delete HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Content-Length: ContentLength
Content-MD5: MD5Value
Authorization: SignatureValue
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>true</Quiet>
  <Object>
    <Key>key</Key>
  </Object>
  ...
</Delete>
```

Request headers

OSS verifies the received message body based on the following headers, and deletes the object only when the attributes of the message body conform to the headers.

Header	Type	Required?	Description
Encoding-type	String	No	<p>The Key parameter is UTF-8 encoded. If the Key parameter includes control characters which are not supported by the XML 1.0 standard, you can specify this header to encode the Key parameter in the returned result.</p> <p>Default value: None</p> <p>Valid value: url</p>
Content-Length	String	Yes	<p>Indicates the length of the HTTP message body.</p> <p>OSS verifies the received message body based on this header, and deletes the object only when the length of the message body is the same as this header.</p>
Content-MD5	String	Yes	<p>Content-MD5 is a string calculated with the MD5 algorithm. This header is used to check whether the content of the received message is consistent with that of the sent message. If this header is included in the request, OSS calculates the Content-MD5 of the received message body and compares it with the value of this header.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p> Note: To obtain the value of this header, encrypt the message body of the DeleteMultipleObjects request using the MD5 algorithm to get a 128-bit byte array, and then base64-encode the byte array.</p> </div>


Request elements

Element	Type	Required?	Description
Delete	Container	Yes	<p>Specifies the container that stores the DeleteMultipleObjects request.</p> <p>Sub-node: One or more Objects, Quiet</p> <p>Parent node: None</p>
Key	String	Yes	<p>Specifies the name of the object to be deleted.</p> <p>Parent node: Object</p>
Object	Container	Yes	<p>Specifies the container that stores the information about the object.</p> <p>Sub-node: Key</p> <p>Parent node: Delete</p>

Element	Type	Required?	Description
Quiet	Enumerated string	Yes	<p>Enables the Quiet response mode.</p> <p>DeleteMultipleObjects provides the following two response modes:</p> <ul style="list-style-type: none"> • Quiet: The message body of the response returned by OSS only includes objects that fail to be deleted. If all objects are deleted successfully, the response does not include a message body. • Verbose: The message body of the response returned by OSS includes the results of all deleted objects. This mode is used by default. <p>Valid value: true (enables Quiet mode), false (enables Verbose mode)</p> <p>Default value: false</p> <p>Parent node: Delete</p>
VersionId	String	No	<p>Indicates the version of the object that you want to delete.</p> <p>Parent node: Object</p>

Response elements

Element	Type	Description
Deleted	Container	<p>Specifies the container that stores the successfully deleted objects.</p> <p>Sub-node: Key</p> <p>Parent node: DeleteResult</p>
DeleteResult	Container	<p>Specifies the container that stores the returned results of the DeleteMultipleObjects request.</p> <p>Sub-node: Deleted</p> <p>Parent node: None</p>
Key	String	<p>Specifies the name of the deleted object.</p> <p>Parent node: Deleted</p>
EncodingType	String	<p>Specifies the encoding type for the returned results. If encoding-type is specified in the request, the Key is encoded in the returned result.</p> <p>Parent node: Container</p>

Element	Type	Description
DeleteMarker	Boolean	<p>Indicates whether the specified version is a delete marker.</p> <p>Values:</p> <ul style="list-style-type: none"> • true: The specified version is a delete marker. • false: The specified version is not a delete marker. <div style="background-color: #f0f0f0; padding: 5px;">  Note: This element is returned only when a delete marker is created or permanently deleted, and the value is true. </div>
DeleteMarkerVersionId	String	<p>Indicates the version ID of the delete marker.</p> <p>Parent node: Deleted</p>

Examples

- **Request example with Quiet mode disabled:**

```

POST /?delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 29 Feb 2012 12:26:16 GMT
Content-Length:151
Content-MD5: ohhnqLBJFiKkPSB01eNaUA==
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:+z3gBfnFAxBcBDgx27Y/jEfb
****
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>>false</Quiet>
  <Object>
    <Key>multipart.data</Key>
  </Object>
  <Object>
    <Key>test.jpg</Key>
  </Object>
  <Object>
    <Key>demo.jpg</Key>
  </Object>

```

```
</Delete>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 78320852-7eee-b697-75e1-b6db0f4849e7
Date: Wed, 29 Feb 2012 12:26:16 GMT
Content-Length: 244
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<DeleteResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Deleted>
    <Key>multipart.data</Key>
  </Deleted>
  <Deleted>
    <Key>test.jpg</Key>
  </Deleted>
  <Deleted>
    <Key>demo.jpg</Key>
  </Deleted>
</DeleteResult>
```

- **Request example with Quiet mode enabled:**

```
POST /?delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 29 Feb 2012 12:33:45 GMT
Content-Length:151
Content-MD5: ohhnqLBJFiKkPSB01eNaUA==
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:WuV0Jks8RyGSNQRbca64kEEEx
****
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>true</Quiet>
  <Object>
    <Key>multipart.data</Key>
  </Object>
  <Object>
    <Key>test.jpg</Key>
  </Object>
  <Object>
    <Key>demo.jpg</Key>
  </Object>
</Delete>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Wed, 29 Feb 2012 12:33:45 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

- **Request example when the versionId is not specified in the DeleteMultipartObject request:**

```
POST /?delete HTTP/1.1
```

```
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 04:20:03 GMT
Content-MD5: xSLOYWaPC86RPwWXNiFeXg==
Authorization: OSS xq39jyxyrddzvvh:/G5kxMIw1iLMQjPp2HkJEp5q****
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>>false</Quiet>
  <Object>
    <Key>multipart.data</Key>
  </Object>
  <Object>
    <Key>test.jpg</Key>
  </Object>
</Delete>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC1D73B7AEADE01700044F
Date: Tue, 09 Apr 2019 04:20:03 GMT
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<DeleteResult>
  <Deleted>
    <Key>multipart.data</Key>
    <DeleteMarker>>true</DeleteMarker>
    <DeleteMarkerVersionId>CAEQMhiBgIDXiaaB0BYiIGQzYmRkZG
UxMTM1ZDRjOTZhNjk4YjRjMTAyZjhl****</DeleteMarkerVersionId>
  </Deleted>
  <Deleted>
    <Key>test.jpg</Key>
    <DeleteMarker>>true</DeleteMarker>
    <DeleteMarkerVersionId>CAEQMhiBgIDB3aWB0BYiIGUzYTA3Yz
liMzVmNzRkZGM5NjllYTVlMjYyYWEy****</DeleteMarkerVersionId>
  </Deleted>
</DeleteResult>
```



Note:

In the preceding example, the version IDs of the two objects to be deleted (*multipart.dat* and *test.jpg*) are not specified. Therefore, OSS adds delete markers for the two objects, and returns `<DeleteMarker>>true</DeleteMarker>` and `<DeleteMarkerVersionId>XXXXXX</DeleteMarkerVersionId>`.

- **Request example when the versionId is specified to delete the specified version of the object:**

You must specify the key of the object when specifying the versionId.

```
POST /?delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:09:34 GMT
Content-Length:151
Content-MD5: 2Tpk+dL/tGyuSA+YCEuSVg==
Authorization: OSS qac50zy2vbbvq4z:/pingCxyqfxc0+50Bfi2SX9c****
```



```
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>>false</Quiet>
  <Object>
    <Key>multipart.data</Key>
    <VersionId>CAEQNRiBgIDyz.6C0BYiIGQ2NWEwNmVhNTA3ZTQ3MzM5
ODliYjM1ZTdjYjA4*****</VersionId>
  </Object>
</Delete>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC371EB7AEADE0170004BF
Date: Tue, 09 Apr 2019 06:09:34 GMT
Content-Length: 244
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<DeleteResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Deleted>
    <Key>multipart.data</Key>
    <VersionId>CAEQNRiBgIDyz.6C0BYiIGQ2NWEwNmVhNTA3ZTQ3MzM5
ODliYjM1ZTdjYjA4*****</VersionId>
  </Deleted>
</DeleteResult>
```

**Note:**

In the preceding example, the key and the version ID of the object to be deleted are returned.

- **Request example when the versionId is specified to delete a delete marker:**

```
POST /?delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:14:50 GMT
Content-Length: 178
Content-MD5: dX9IFePFgYhmINvAhG30Bg==
Authorization: OSS 9dfwrokza5gf1p7:iyl6IU6TcFFXcu5p0ds5dUdo*****
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>>false</Quiet>
  <Object>
    <Key>multipart.data</Key>
    <VersionId>CAEQNRiBgICEoPiC0BYiIGMxZWJmYmMzYjE0OTQ0ZmZhYjgzNz
kzYjc2NjZk*****</VersionId>
  </Object>
</Delete>
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC385AB7AEADE01700052F
Date: Tue, 09 Apr 2019 06:14:50 GMT
Content-Length: 364
Content-Type: application/xml
Connection: keep-alive
```

```
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<DeleteResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Deleted>
    <Key>demo.jpg</Key>
    <VersionId>CAEQNRiBgICEoPiC0BYiIGMxZWJmYmMzYjE0OTQ0ZmZhYjgzNz
kzYjc2NjZk****</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>111111</DeleteMarkerVersionId>
  </Deleted>
</DeleteResult>
```

**Note:**

- In the preceding example, the returned **Key** indicates the key of the deleted object and the returned **VersionId** indicates the deleted version of the object.
- **DeleteMarker** indicates that the deleted version is a delete marker. **DeleteMarkerVersionId** indicates the ID of the deleted version. In this case, the values of **VersionId** and **DeleteMarkerVersionId** are the same, and **DeleteMarker** and **DeleteMarkerVersionId** are returned together.

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [iOS](#)
- [Node.js](#)
- [Browser.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
InvalidDigest	400	If you specify the Content-MD5 header in the request, OSS calculates the Content-MD5 of the message body and compares it with this header. If the two values are different, this error code is returned.
MalformedXML	400	<ul style="list-style-type: none">• A DeleteMultipleObjects request can contain a message body of up to 2 MB. If the size of the message body exceeds 2 MB, this error code is returned.• A DeleteMultipleObjects request can be used to delete up to 1,000 objects at a time. If the number of objects to be deleted at a time exceeds 1,000, this error code is returned.

7.7 HeadObject

Obtains the meta information about an object without returning the object content.

**Note:**

If you upload the user meta information prefixed with `x-oss-meta-` when sending a `PutObject` request, for example, `x-oss-meta-location`, the user meta information is returned.

Versioning

By default, `HeadObject` obtains the meta information about the current version of an object. If the current version of the target object is a delete marker, the 404 Not Found error is returned. You can specify the `versionId` to obtain the meta information about a specified version of the target object.

Request syntax

```
HEAD /ObjectName HTTP/1.1
Host: BucketName/oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```

Authorization: SignatureValue

Request header

Header	Type	Required?	Description
If-Modified-Since	String	No	If the time specified in the parameter is earlier than the modification time, OSS returns the 200 OK message and the object meta information. Otherwise, the 304 Not Modified message is returned. Default value: None
If-Unmodified-Since	String	No	If the time specified in the parameter is the same as or later than the object modification time, OSS returns the 200 OK message and the object meta information. Otherwise, the 412 Precondition Failed message is returned. Default value: None
If-Match	String	No	If the introduced ETag matches the ETag of the object, OSS returns the 200 OK message and the object meta information. Otherwise, the 412 Precondition Failed message is returned. Default value: None
If-None-Match	String	No	If the introduced ETag does not match the ETag of the object, OSS returns the 200 OK message and the object meta information. Otherwise, the 304 Not Modified message is returned. Default value: None

Response header

**Note:**

If the type of the requested object is symbol link, the content of the object is returned. In the response header, Content-Length, ETag, and Content-Md5 are the meta information of the requested object, Last-Modified is the maximum value of the requested object and symbol link (that is, the later modification time), and other parameters are the meta information of the symbol link.

Header	Type	Description
x-oss-meta-*	String	Indicates a custom meta header. If you upload the user meta information prefixed with x-oss-meta- when sending a PutObject request, the user meta information is returned.
Custom header with a prefix excluding x-oss-meta-	String	Indicates a custom header with a prefix excluding x-oss-meta-. If you upload the user meta information with a prefix (excluding x-oss-meta-), for example, x-oss-persistent-headers key1:base64_encode(value1),key2:base64_encode(value2).... when sending a PutObject request, the user meta information prefixed with the corresponding custom headers is returned.
x-oss-server-side-encryption	String	If the requested object is encrypted with the entropy coding algorithm on the server, OSS decrypts the object and includes this header in the response to indicate the encryption algorithm used to encrypt the object on the server.
x-oss-server-side-encryption-key-id	String	Indicates the Key Management Service (KMS) key ID of a user. This header is returned if you use KMS to encrypt an object when crating the object.
x-oss-storage-class	String	Indicates the storage class of an object. The storage class includes Standard, Infrequent Access, and Archive. <ul style="list-style-type: none"> Standard storage provides highly reliable, highly available, and high-performance object storage services that support frequent data access. Infrequent Access storage is applicable to the scenario where data needs to be stored for a long time and is not frequently accessed. (The monthly access frequency is 1 to 2 times on average.) Archive storage is applicable to the scenario where data needs to be stored for more than six months and is rarely accessed during the storage period. The stored data takes about one minute to become readable.

Header	Type	Description
x-oss-object-type	String	<p>Indicates the object type.</p> <ul style="list-style-type: none"> The type of objects that are uploaded through PutObject is Normal. The type of objects that are uploaded through AppendObject is Appendable. The type of objects that are uploaded through MultipartUpload is Multipart.
x-oss-next-append-position	String	Specifies the position to be provided for the next request. This header is returned for Appendable objects.
x-oss-hash-crc64ecma	String	Indicates the 64-bit CRC value of the object. This value is calculated based on the ECMA-182 standard. An existing object may not have this value.
x-oss-expiration	String	If the lifecycle rule is configured for the object, the x-oss-expiration header is returned. In the returned header, the value of expiry-date is the expiration date of the object, and the value of rule-id is the corresponding rule ID.
x-oss-restore	String	<p>If the bucket type is Archive and the Restore request is submitted, the Restore state of the object is indicated by x-oss-restore in the response header.</p> <ul style="list-style-type: none"> If the Restore request is not submitted or times out, the field is not returned. If the Restore request is submitted and does not time out, the value of x-oss-restore returned is ongoing-request=" true" . If the Restore request is submitted and completed , the value of x-oss-restore returned is ongoing-request=" false" , expiry-date=" Sun, 16 Apr 2017 08:12:33 GMT" . In the returned value, the value of expiry-date is the expiration date of the readable state of the restored file.
x-oss-process-status	String	After you create an OSS event notification through MNS and send a request to perform OSS operations, if a matching event notification rule is detected, this header is returned. In this case, the value is the event notification result in the Base64 encoded JSON format.

Header	Type	Description
x-oss-request-charged	String	If fees of the bucket to which the object belongs is paid by the requester, not the bucket owner, this header is returned with the value of requester.
Content-Md5	String	The message content (excluding headers) of Normal objects is calculated based on the RFC 1864 standard , and a 128-bit number is obtained. The Content-Md5 value of a message is obtained after the 128-bit number is encoded based on Base64. This header is not returned in Multipart and Appendable objects.
Last-Modified	String	Indicates the latest time when the object is modified. The time is in the GMT format specified in HTTP 1.1.
Access-Control-Allow-Origin	String	When the CORS rule is configured for the bucket to which the object belongs, if the requested origin meets the specified CORS rule, the origin is returned.
Access-Control-Allow-Methods	String	When the CORS rule is configured for the bucket to which the object belongs, if the requested Access-Control-Request-Method meets the specified CORS rule, the corresponding methods are returned.
Access-Control-Max-Age	String	When the CORS rule is configured for the bucket to which the object belongs, if a request meets the specified CORS rule, the value of MaxAgeSeconds is returned.
Access-Control-Allow-Headers	String	When the CORS rule is configured for the bucket to which the object belongs, if a request meets the specified CORS rule, the headers are returned.
Access-Control-Expose-Headers	String	Indicates the list of headers that can access the client JavaScript. When the CORS rule is configured for the bucket to which the object belongs, if a request meets the specified CORS rule, the ExposeHeader is returned .
x-oss-tagging-count	String	Specifies the number of tags associated with the object. The value of this parameter returns only if the user has permission to read tags.

Examples

- **Normal request example:**

```
HEAD /oss.jpg HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 07:32:52 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:JbzF2LxZUtanlJ5dLA092wpD
****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A6448****
x-oss-object-type: Normal
x-oss-storage-class: Archive
Date: Fri, 24 Feb 2012 07:32:52 GMT
Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a39863328"
Content-Length: 344606
Content-Type: image/jpeg
Connection: keep-alive
Server: AliyunOSS
```

- **Example of a request when the Restore request has been submitted but not completed:**

```
HEAD /oss.jpg HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Sat, 15 Apr 2017 07:32:52 GMT
Authorization: OSS e1Unnbm1rg****:KKxkdNrUBu2t1kqlDh0MLbDb****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 58F71A164529F18D7F00****
x-oss-object-type: Normal
x-oss-storage-class: Archive
x-oss-restore: ongoing-request="true"
Date: Sat, 15 Apr 2017 07:32:52 GMT
Last-Modified: Sat, 15 Apr 2017 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a39863328"
Content-Length: 344606
Content-Type: image/jpeg
Connection: keep-alive
Server: AliyunOSS
```

- **Example of a request when the Restore request has been submitted and completed:**

```
HEAD /oss.jpg HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Sat, 15 Apr 2017 09:35:51 GMT
```



```
Authorization: OSS e1Unnbm1rg****:21qtGJ+ykDVmdu606FMJnn+W****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 58F725344529F18D7F00****
x-oss-object-type: Normal
x-oss-storage-class: Archive
x-oss-restore: ongoing-request="false", expiry-date="Sun, 16 Apr 2017 08:12:33 GMT"
Date: Sat, 15 Apr 2017 09:35:51 GMT
Last-Modified: Sat, 15 Apr 2017 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a39863328"
Content-Length: 344606
```

- **Example of a request initiated to obtain the meta information about the current version of an object:**

```
HEAD /example?versionId=CAEQNRiBgICb8o6D0BYiIDNlnzk5NGE2M2Y3ZjRhZTViYTAxZGE0ZTEyMWYyNDFm
Host: versioning-test.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:27:12 GMT
Authorization: OSS ryghu9rp3mq****:RvyjGvKxaUhdF0ibyEwX5m0M****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-versionId: CAEQNRiBgICb8o6D0BYiIDNlnzk5NGE2M2Y3ZjRhZTViYTAxZGE0ZTEyMWYyNDFm
x-oss-request-id: 5CAC3B40B7AEADE01700****
x-oss-object-type: Normal
x-oss-storage-class: Archive
Date: Tue, 09 Apr 2019 06:27:12 GMT
Last-Modified: Tue, 09 Apr 2019 06:27:12 GMT
ETag: "A082B659EF78733A5A042FA253B19BA4"
Content-Length: 481827
Content-Type: text/html
Connection: keep-alive
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
NoSuchKey	404	The request object does not exist.
SymlinkTar getNotExist	404	The requested object is a symbol link.
InvalidTar getType	400	The requested and the target objects are a symbol link is a symbol link and the target.

Error code	HTTP status code	Description
Not Modified	304	<ul style="list-style-type: none"> The If-Modified-Since header is specified in the request, but the source object has not been modified after the time specified in the request. The If-None-Match header is specified in the request, and the ETag provided in the request is the same as the ETag of the source object.
Precondition Failed	412	<ul style="list-style-type: none"> The If-Unmodified-Since header is specified, but the time specified in the request is earlier than the object modification time. The If-Match header is specified, but the provided ETag is different from the ETag of the source object.

7.8 GetObjectMeta

Obtains the metadata of an object in a bucket, including the ETag, Size, and LastModified. The content of the object is not returned.



Note:

- If the requested object is a symbol link, the information of the symbol link is returned.
- The response to a GetObjectMeta request does not include a message body whether the request is successful.

Versioning

GetObjectMeta obtains the metadata of the current version of the target object by default. If the current version of the target object is a delete marker, the 404 Not Found error is returned. You can specify the versionId in the request to obtain the metadata of a specified version of the target object.

Request syntax

```
HEAD /ObjectName?objectMeta HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```

Authorization: SignatureValue

Response headers

Header	Type	Description
Content-Length	String	Indicates the size of the object.
ETag	String	<p>Indicates the ETag of the object, which is generated when an object is created to identify the content of the object.</p> <p>For an object created by a PutObject request, its ETag is the MD5 value of its content. For an object created in other methods, its ETag is the UUID of its content. The ETag of an object can be used to check whether the content of the object changes. We recommend you do not use ETag as the MD5 value of an object to verify data integrity.</p> <p>Default value: None</p>

Examples

- **Normal request example:**

```
HEAD /oss.jpg?objectMeta HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 29 Apr 2015 05:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAI4XZ+WwIfNm0Fmgb
****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Wed, 29 Apr 2015 05:21:12 GMT
ETag: "5B3C1A2E053D763E1B002CC607C5*****"
Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
Content-Length: 344606
Connection: keep-alive
```

```
Server: AliyunOSS
```

- **Example of a request initiated to obtain the metadata of a specified version of the target object:**

```
GET /example?objectMeta&versionId=CAEQNRiBgIDMh4mD0BYiIDUzNDA40G
NmZjBjYTQ0YmI4Y2I4ZmVlYzJlNGVk**** HTTP/1.1
Host: versioning-test.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:24:00 GMT
Authorization: OSS 5n4nrhyrcs6ngn:i/M/c36Kzr0EA/bBSHLLlIAt****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-version-id: CAEQNRiBgIDMh4mD0BYiIDUzNDA40GNmZjBjYTQ0YmI4Y2I4Zm
VlYzJlNGVk****
x-oss-request-id: 5CAC3A80B7AEADE0170005F6
Date: Tue, 09 Apr 2019 06:24:00 GMT
ETag: "1CF5A685959CA2ED8DE6E5F8ACC2****"
Last-Modified: Tue, 09 Apr 2019 06:24:00 GMT
Content-Length: 119914
Connection: keep-alive
Server: AliyunOSS
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [iOS](#)

Error codes

Error code	HTTP status code	Description
Not Found	404	The requested object does not exist.

7.9 PutObjectACL

Modifies the ACL for an object. Only the bucket owner who has the write permission on the requested object can perform PutObjectACL operations.

Versioning

PutObjectACL sets the ACL for the current version of the target object by default. If the current version of the target object is a delete marker, the 404 Not Found error is returned. You can set the versionId in the request to set the ACL for a specified version of the target object.



Note:

- **The object ACL takes precedence over the bucket ACL. For example, if the bucket ACL is private and the object ACL is public-read-write, OSS first checks the ACL for the object when a user accesses the object. As a result, all users can access this object even if the ACL for the bucket is a private. If the ACL for an object has never been set, the ACL for this object is same as that for the bucket where the object is located.**
- **Read operations to an object include: the read operations to the source object in GetObject, HeadObject, CopyObject, and UploadPartCopy Write operations to an object include: the write operations on a new object in PutObject, PostObject, AppendObject, DeleteObject, DeleteMultipleObjects, CompleteMultipartUpload, and CopyObject.**
- **You can also include the x-oss-object-acl header in the request to set the ACL for an object when performing write operations on the object. For example, if you include the x-oss-object-acl header in the PutObject request, you can set the ACL for the object while uploading it.**

ACL overview

You can specify the x-oss-object-acl header in the PutObjectACL request to set the ACL for an object. The following table describes the four ACLs that can be set for an object.

ACL	Description
private	This ACL indicates that an object is a private resource. Only the owner of this object has the permission to read or write this object.
public-read	This ACL indicates that an object is a resource that can be read by the public . Only the owner of this object has the permission to read and write this object . Other users only have the permission to read this object.
public-read-write	This ACL indicates that an object is a resource that can be read and written by the public. All users have the permission to read and write this object.
default	This ACL indicates an object is a resource inheriting the read-write permissions of the bucket. That is, the bucket and the object have the same permissions.

Request syntax

```
PUT /ObjectName?acl HTTP/1.1
x-oss-object-acl: Permission
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

- **Normal request example:**

```
PUT /test-object?acl HTTP/1.1
x-oss-object-acl: public-read
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 29 Apr 2015 05:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3JxrTZ
****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Wed, 29 Apr 2015 05:21:12 GMT
Content-Length: 0
Connection: keep-alive
```

```
Server: AliyunOSS
```

- **Example of a request initiated to set the ACL for a specified version of the target object:**

```
PUT /example?acl&versionId=CAEQMhiBgIC3rpSD0BYiIDBjYTk5MmIzN2JlNjQxZTFiNGIzM2E3OTliODA0**** HTTP/1.1
x-oss-object-acl: public-read
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:30:11 GMT
Authorization: OSS qctg2ns3l8u51iu:UTsv3F7L34v+ECq52vURdCSv****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-version-id: CAEQMhiBgIC3rpSD0BYiIDBjYTk5MmIzN2JlNjQxZTFiNGIzM2E3OTliODA0****
x-oss-request-id: 5CAC3BF3B7AEADE017000624
Date: Tue, 09 Apr 2019 06:30:11 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Browser.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The user is not the bucket owner or does not have the read and write permissions on the object.
InvalidArgument	400	The value of x-oss-object-acl is invalid.

7.10 GetObjectACL

Obtains the ACL for an object in a bucket.

Versioning

`GetObjectACL` obtains the ACL for the current version of the target object by default. If the current version of the object is a delete marker, the 404 Not Found error is returned. You can specify the `versionId` in the request to obtain the ACL for a specified version of the target object.



Note:

If the ACL for an object has not been set, the `ObjectACL` in the response to the `GetObjectACL` request is default, which indicates that the ACL for the object is the same as that for the bucket. For example, if the ACL for the bucket is private, the ACL for the object is also private.

Request syntax

```
GET /ObjectName?acl HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Response elements

Element	Type	Description
<code>AccessControlList</code>	Container	Specifies the container used to store the ACL information. Parent node: <code>AccessControlPolicy</code>
<code>AccessControlPolicy</code>	Container	Specifies the container that stores the returned result of the <code>GetObjectACL</code> request. Parent node: <code>None</code>

Element	Type	Description
DisplayName	String	Indicates the name of the bucket owner, which is the same as the value of ID. Parent node: AccessControlPolicy.Owner
Grant	Enumerated string	Indicates the ACL for the object. Valid values: private, public-read, and public-read-write Parent node: AccessControlPolicy.AccessControlList
ID	String	Indicates the user ID of the bucket owner. Parent node: AccessControlPolicy.Owner
Owner	Container	Specifies the container used to store the information about the bucket owner. Parent node: AccessControlPolicy

Examples

• Normal request example:

```
GET /test-object?acl HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 29 Apr 2015 05:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAI4XZ+WwIFNm0Fmgb
****
```

Response example:

```
HTTP/1.1 200 OK
```

```
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Wed, 29 Apr 2015 05:21:12 GMT
Content-Length: 253
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" ?>
<AccessControlPolicy>
  <Owner>
    <ID>00220120222</ID>
    <DisplayName>00220120222</DisplayName>
  </Owner>
  <AccessControlList>
    <Grant>public-read </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

- **Example of a request initiated to obtain the ACL for a specified version of the target object:**

```
GET /example?acl&versionId=CAEQMhiBgMC1qpSD0BYiIGQ0ZmI5ZDEyYWVvKNTQwMjBiNTliY2NjNmY3ZTVk**** HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:30:10 GMT
Authorization: OSS qctg2ns3l8u51iu:w4DK66Kb/0M9GJKdsrpNs8l1****
```

Response example:

```
HTTP/1.1 200 OK
x-oss-version-id: CAEQMhiBgMC1qpSD0BYiIGQ0ZmI5ZDEyYWVvKNTQwMjBiNTliY2NjNmY3ZTVk****
x-oss-request-id: 5CAC3BF2B7AEADE017000621
Date: Tue, 09 Apr 2019 06:30:10 GMT
Content-Length: 261
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<AccessControlPolicy>
  <Owner>
    <ID>1234513715092****</ID>
    <DisplayName>1234513715092****</DisplayName>
  </Owner>
  <AccessControlList>
    <Grant>public-read</Grant>
  </AccessControlList>
</AccessControlPolicy>
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)

- [.NET](#)

Error codes

Error code	HTTP Status code	Error message	Description
AccessDenied	403	You do not have read acl permission on this object.	You do not have the permission to perform the GetObjectACL operation. Only the bucket owner can call GetObjectACL to obtain the ACL for an object in the bucket.

7.11 PostObject

You can call this operation to upload an object to a specific bucket by using HTML form upload.



Note:

- To perform the PostObject operation on a bucket, you must have the write permissions on the bucket. If the ACL of the bucket is public read/write, you do not need to upload the signature information. If the ACL of the bucket is not public read/write, signature verification is required for this operation. Unlike PutObject, PostObject uses an AccessKey secret to calculate the signature for policy. The calculated signature string is used as the value for the Signature form field. OSS checks this value to verify the validity of the signature.
- The URL of the submitted form can be the domain name of the bucket. You do not need to specify the object in the URL. In other words, the request line is in format of POST/HTTP/1.1 instead of POST/ObjectName HTTP/1.1.
- If the PostObject request contains the Header signature or URL signature, OSS does not check these signatures.

Versioning

If you initiate a PostObject request to a versioning-enabled bucket, OSS automatically generates a unique version ID for the uploaded object and includes the version ID in the x-oss-version-id response header.

If you initiate a PostObject request to a versioning-suspended bucket, OSS automatically generates a null version ID for the uploaded object and includes the version ID in the x-oss-version-id response header. An object can only have one null version ID.

PostObject

- **Request syntax**

```
POST / HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
User-Agent: browser_data
Content-Length: ContentLength
Content-Type: multipart/form-data; boundary=9431149156168
--9431149156168
Content-Disposition: form-data; name="key"
key
--9431149156168
Content-Disposition: form-data; name="success_action_redirect"
success_redirect
--9431149156168
Content-Disposition: form-data; name="Content-Disposition"
attachment;filename=oss_download.jpg
--9431149156168
Content-Disposition: form-data; name="x-oss-meta-uuid"
myuuid
--9431149156168
Content-Disposition: form-data; name="x-oss-meta-tag"
mytag
--9431149156168
Content-Disposition: form-data; name="OSSAccessKeyId"
access-key-id
--9431149156168
Content-Disposition: form-data; name="policy"
encoded_policy
--9431149156168
Content-Disposition: form-data; name="Signature"
signature
--9431149156168
Content-Disposition: form-data; name="file"; filename="MyFilename.
jpg"
Content-Type: image/jpeg
file_content
--9431149156168
Content-Disposition: form-data; name="submit"
Upload to OSS
```


--9431149156168--


- Request headers

**Note:**


The message body of a PostObject request is encoded in multipart/form-data format. In PostObject operations, parameters are passed as form fields in the request message body, which are different from the parameters passed by HTTP request headers in PutObject operations.


Header	Type	Description	Required
OSSAccessKeyId	String	<p>Specifies the AccessKey ID of the bucket owner.</p> <p>Default value: null.</p> <p>Constraint: This form field is required when the bucket ACL is not public read/write or when the policy (or Signature) form field is provided.</p>	Conditional

Header	Type	Description	Required
policy	String	<p>Specifies the validity of the form fields in the request. A request that does not contain the policy form field is considered as an anonymous request, and can only be used to access buckets whose ACLs are public read/write.</p> <p>Default value: null.</p> <p>Constraint: This form field is required when the bucket ACL is not public read/write or when the OSSAccessKeyId (or Signature) form field is provided.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: The form and the policy form field must be encoded in UTF-8. </div>	Conditional

Header	Type	Description	Required
Signature	String	<p>Specifies the signature information obtained after calculation based on the AccessKey secret and the policy form field. OSS checks the signature information to verify validity of the PostObject request. For more information, see the Post Signature section in this topic.</p> <p>Default value: null.</p> <p>Constraint: This form field is required when the bucket ACL is not public read/write or when the OSSAccessKeyId (or Policy) form field is provided.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: Form fields are case-insensitive, but their values are case-sensitive. </div>	Conditional
Cache-Control, Content-Type, Content-Disposition, Content-Encoding, Expires	String	<p>Specifies the HTTP request headers. For more information, see PutObject.</p> <p>Default value: null.</p> <p>The form submitted by the PostObject operation must be encoded in multipart/form-data format. For example, the Content-Type header must be in multipart/form-data; boundary=xxxxxx format, where boundary is a boundary string.</p>	No

Header	Type	Description	Required
file	String	Specifies the file or text content. It must be the last field in the form. The browser automatically sets the Content-Type header based on the file type and overwrites the user setting. Only one file can be uploaded to OSS at a time. Default value: null.	Yes
key	String	Specifies the name of the uploaded object. If the object name includes a path, such as a/b/c/b.jpg, OSS automatically creates the corresponding directory. Default value: null.	Yes
success_action_redirect	String	Specifies the URL to which the client is redirected after the object is uploaded. If this form field is not specified, the returned result is specified by success_action_status. If the upload fails, OSS returns an error code, and the client is not redirected to any URL. Default value: null.	No

Header	Type	Description	Required
<p>success_action_status</p>	<p>String</p>	<p>Specifies the status code returned to the client after the object is uploaded if the success_action_redirect form field is not specified.</p> <p>Default value: null.</p> <p>Valid values: 200, 201, and 204 (default)</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p> Note:</p> <ul style="list-style-type: none"> - If the value of this form field is set to 200 or 204, OSS returns an empty file and the 200 or 204 status code. - If the value of this form field is set to 201, OSS returns an XML file and the 201 status code. - If the value of this form field is not specified or set to an invalid value, OSS returns an empty file and the 204 status code. </div>	<p>No</p>

Header	Type	Description	Required
x-oss-meta-*	String	<p>Specifies the metadata customized by the user.</p> <p>Default value: null.</p> <p>If the request contains a form field prefixed with x-oss-meta-, the form field is considered as the metadata.</p> <p>Example: x-oss-meta-location.</p> <div style="background-color: #f0f0f0; padding: 5px;"><p> Note:</p><p>An object may have multiple similar parameters, but the total size of all metadata cannot exceed 8 KB.</p></div>	No

Header	Type	Description	Required
x-oss-server-side-encryption	String	<p>Specifies the server-side encryption algorithm used when OSS creates the object.</p> <p>Valid values: AES256 or KMS. You must purchase KMS before using the KMS-based encryption algorithm. Otherwise, a <code>KmsServiceNotEnabled</code> error code is returned.</p> <p>If you specify this parameter , it is returned in the response header and the uploaded object is encrypted . When you download the encrypted object, the x-oss-server-side-encryption field is included in the response header and its value is set to the algorithm used to encrypt the object.</p>	No
x-oss-server-side-encryption-key-id	String	<p>Specifies the ID of the customer master key (CMK) hosted in KMS.</p> <p>This parameter is valid only when the value of x-oss-server-side-encryption is set to KMS.</p>	No

Header	Type	Description	Required
x-oss-object-acl	String	<p>Specifies the ACL configured when OSS creates the object.</p> <p>Valid values: <code>public read</code>, <code>private</code>, and <code>public read/write</code></p>	No
x-oss-security-token	String	<p>If an STS temporary security credential is used for this access, you must set this field to the SecurityToken value and set OSSAccessKeyId to the value of the paired temporary AccessKey ID. The method of calculating a signature based on a temporary AccessKey ID is the same as that based on a typical AccessKey ID.</p> <p>Default value: <code>null</code>.</p>	No
x-oss-forbid-overwrite	String	<p>Specifies whether the PostObject operation overwrites the object with the same object name.</p> <ul style="list-style-type: none"> - If <code>x-oss-forbid-overwrite</code> is not specified, the object with the same object name is overwritten. - If the value of <code>x-oss-forbid-overwrite</code> is set to <code>true</code>, the object with the same object name cannot be overwritten. If the value of <code>x-oss-forbid-overwrite</code> is set to <code>false</code>, the object with the same object name can be overwritten. 	No

- **Response headers**

Header	Type	Description
x-oss-server-side-encryption	String	If x-oss-server-side-encryption is specified in the request, the response header contains this field to indicate the encryption algorithm used.

- **Response elements**

Element	Type	Description
PostResponse	Container	Specifies the container that stores the result of the PostObject request. Child node: Bucket, ETag, Key, and Location
Bucket	String	Specifies the bucket name. Parent node: PostResponse
ETag	String	Specifies the entity tag (ETag) that is created when an object is generated. For an object created by using PostObject, the ETag value is the UUID of the object and can be used to check whether the content of the object has changed. Parent node: PostResponse
Location	String	Specifies the URL of the newly created object. Parent node: PostResponse

- **Examples**

- **Sample requests**

```
POST / HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 344606
Content-Type: multipart/form-data; boundary=9431149156168
--9431149156168
Content-Disposition: form-data; name="key"
/user/a/objectName.txt
--9431149156168
Content-Disposition: form-data; name="success_action_status"
200
--9431149156168
Content-Disposition: form-data; name="Content-Disposition"
content_disposition
--9431149156168
```

```

Content-Disposition: form-data; name="x-oss-meta-uuid"
uuid
--9431149156168
Content-Disposition: form-data; name="x-oss-meta-tag"
metadata
--9431149156168
Content-Disposition: form-data; name="OSSAccessKeyId"
44CF9590006BF252F707
--9431149156168
Content-Disposition: form-data; name="policy"
eyJleHBpcmF0aW9uIjoimjAxMy0xMi0wMVQxMjowMDowMFoiLCJjb25kaXRp
b25zIjpbWyJjb250ZW50LWxlbmd0aC1yYW5nZSIsIDAsIDEwNDg1NzYwXSx7
ImJlY2tldCI6ImFoYWhhIn0sIHsiQSI6ICJhIn0seyJrZXkiOiAiQUJDIn1dfQ==
--9431149156168
Content-Disposition: form-data; name="Signature"
kZoYNv66bsmc10+dcGKw5x2PRrk=
--9431149156168
Content-Disposition: form-data; name="file"; filename="MyFilename.
txt"
Content-Type: text/plain
abcdefg
--9431149156168
Content-Disposition: form-data; name="submit"
Upload to OSS
--9431149156168--

```

- **Sample responses:**

```

HTTP/1.1 200 OK
x-oss-request-id: 61d2042d-1b68-6708-5906-33d81921362e
Date: Fri, 24 Feb 2014 06:03:28 GMT
ETag: "5B3C1A2E053D763E1B002CC607C5****"
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS

```

• **Error codes**

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because when any one of the OSSAccessKeyId, Policy, and Signature form fields is uploaded, the remaining two form fields that are required are missing, regardless of whether the bucket ACL is public read/write.

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value of the request body that is calculated by OSS is not the same as the value of the Content-MD5 header field in the request.
EntityTooLarge	400	The error message returned because the total size of the PostObject request body is greater than 5 GB.
InvalidEncryptionAlgorithmError	400	The error message returned because a value other than AES256 or KMS is set for the x-oss-server-side-encryption header field.
FileAlreadyExists	409	The error message returned because an object with the same object name already exists when the request contains an x-oss-forbid-overwrite header and the value of this header is set to true.

Policy

The policy form field in a PostObject request is used to verify the validity of the request. The policy is a JSON text encoded in UTF-8 and Base64. It states the conditions that a PostObject request must meet. Although the policy form field is optional for uploading objects to a bucket whose ACL is public read/write, we recommend that you use this field to limit PostObject requests.

Example

```
{ "expiration": "2014-12-01T12:00:00.000Z",
  "conditions": [
    {"bucket": "johnsmith" },
    ["starts-with", "$key", "user/eric/"]
  ]
}
```

}

The policy form field must contain the expiration and conditions parameters.

- **Expiration**

Expiration specifies the expiration time of the policy. The time follows the ISO 8601 standard. The time must be GMT. For example, `2014-12-01T12:00:00.000Z` indicates that the PostObject request must be sent before 12:00 on December 1, 2014.

- **Conditions**


Conditions is a list that specifies the valid values of form fields in the PostObject request.



Note:

The value of a form field is extended after OSS checks the policy. Therefore, the valid value of the form field set in the policy is equivalent to the value of the form field before extension.

The following table lists the conditions supported by the policy.

Parameter	Description
content-length-range	Specifies the minimum and maximum allowed sizes of the uploaded object. This condition supports the content-length-range match mode.
Cache-Control, Content-Type, Content-Disposition, Content-Encoding, Expires	<p>Specifies the HTTP request headers. This condition supports the exact match and starts-with match modes.</p> <div style="background-color: #f0f0f0; padding: 5px;">  <p>Notice: We recommend that you include the Content-Type parameter in the policy form field to prevent malicious modification of the Content-Type header during form upload.</p> </div>
key	Specifies the name of the object to upload. This condition supports the exact match and starts-with match modes.

Parameter	Description
success_action_redirect	Specifies the URL to which the client is redirected after the object is uploaded . This condition supports the exact match and starts-with match modes.
success_action_status	Specifies the status code returned after the object is uploaded if success_action_redirect is not specified. This condition supports the exact match and starts-with match modes.
x-oss-meta-*	Specifies the user meta set by the user . This condition supports the exact match and starts-with match modes.

If the PostObject request contains extra form fields, OSS adds these extra form fields to conditions of the policy and checks their validity.

- Condition match modes

Condition match modes	Description
Exact match	The value of a form field must be exactly the same as the value declared in the conditions. For example , if the value of the key form field must be a, the conditions must be ["eq", "\$key", "a"].
Starts with	The value of a form field must start with the specified value. For example, if the value of the key form field must start with user/user1, the conditions must be ["starts-with", "\$key", "user/user1"].
Specified file size	Specifies the range of the acceptable object size. For example, if the acceptable object size is 1 to 10 bytes , the conditions must be ["content-length-range", 1, 10].

Escape characters

In the policy form field of the PostObject request, \$ is used to indicate a variable . Therefore, to describe \$, the escape character must be used. In addition, some

characters in JSON strings are escaped. The following table describes characters in the JSON string of the policy form field of a PostObject request.

Escape character	Description
\/	Forward slash
\\	Backslash
\"	Double quote
\\$	Dollar sign
\b	Backspace
\f	Form feed
\n	Newline
\r	Carriage return
\t	Horizontal tab
\uxxxx	Unicode character

Signature

For a verified PostObject request, the HTML form must contain the policy and Signature form fields. The policy form field specifies which values are acceptable in the request.

The procedure for calculating the Signature form field is as follows:

1. Create a UTF-8 encoded policy.
2. Encode the policy in Base64. The encoding result is the value of the policy form field, and this value is used as the string to be signed.
3. Use AccessKeySecret to sign the string. The signing method is the same as the calculating method of the signature in the header; that is, by replacing the string to be signed with the policy form field. For more information, see [Add signatures to headers](#).

Demo

For the demo of directly transferring data from the web to OSS by using form upload, see [JavaScript-based signatures on the client for object uploads](#).

7.12 Callback

To enable OSS to return callback information of an object to an application server after the object is uploaded to OSS, you need only to include a callback parameter in the upload request sent to OSS. This topic describes how to implement upload callback in detail.

**Note:**

The API operations that support upload callback include *PutObject*, *PostObject*, and *CompleteMultipartUpload*. For more information about callback, see *Add signatures on the server, configure upload callback, and directly transfer data*.

Step 1: Construct parameters

- **Construct a callback parameter.**

A callback parameter is a Base64-encoded string (field) in JSON format. To construct a callback parameter, you must specify the URL (*callbackUrl*) of the

server to which the callback information is sent and the content (callbackBody) of the callback information.

The following table describes the JSON fields included in a callback parameter.

Field	Description	Required
callbackUrl	<ul style="list-style-type: none"> - After an object is uploaded, OSS sends a callback request by using the POST method to this URL. The body of the request is the content specified in callbackBody. In normal cases, the URL returns an HTTP/1.1 200 OK response. The response body must be in JSON format, and the Content-Length header of the response is a valid value that is not greater than 3 MB. - You can configure up to five URLs separated by semicolons (;) for a request. OSS sends requests to each URL until the first success response is returned. - If no URLs are configured or the value of this field is null, OSS determines that the callback function is not configured. - HTTPS-based URLs are supported. - To ensure that Chinese characters can be correctly processed, the callback URL must be encoded. For example, if the value of callbackUrl is <code>http://example.com/ChineseCharacters.php?key=value&ChineseName=ChineseValue</code>, the value must be encoded into <code>http://example.com/%E4%B8%AD%E6%96%87.php?key=value&%E4%B8%AD%E6%96%87%E5%90%8D%E7%A7%B0=%E4%B8%AD%E6%96%87%E5%80%BC</code>. 	Yes

Field	Description	Required
callbackHost	<ul style="list-style-type: none"> - The value of the Host header in the callback request. This field is valid only when callbackUrl is specified. - If callbackHost is not specified, the hosts are resolved from the URLs of the callbackUrl field and are specified as the value of callbackHost. 	No
callbackBody	<ul style="list-style-type: none"> - The value of the callback request body . Example: key=\$(key)&etag=\$(etag)&my_var=\$(x:my_var). - System variables, custom variables , and constants are supported for this field. The following table lists the supported system variables. Custom variables are passed by using the callback-var parameter in the PutObject and CompleteMultipart operations and by using form fields in the PostObject operation. 	Yes
callbackBodyType	<ul style="list-style-type: none"> - The Content-Type header in the callback request. Valid values: application/x-www-form-urlencoded and application/json. Default value: application/x-www-form-urlencoded. - If the value of callbackBodyType is application/x-www-form-urlencoded, variables in callbackBody are replaced by the encoded URLs. If the value of callbackBodyType is application/json , the variables are replaced in JSON format. 	No

Examples of the JSON fields in a callback parameter are as follows:

```
{
  "callbackUrl": "121.101.166.30/test.php",
  "callbackHost": "oss-cn-hangzhou.aliyuncs.com",
  "callbackBody": "{ \"mimeType\": \"${mimeType}\", \"size\": \"${size}\" }",
  "callbackBodyType": "application/json"
}
```

```
{
  "callbackUrl": "121.43.113.8:23456/index.html",
```

```
"callbackBody": "bucket=${bucket}&object=${object}&etag=${etag}&size=${size}&mimeType=${mimeType}&imageInfo.height=${imageInfo.height}&imageInfo.width=${imageInfo.width}&imageInfo.format=${imageInfo.format}&my_var=${x:my_var}"
}
```

The following table describes the system parameters you can configure for `callbackBody`.

System parameter	Description
<code>bucket</code>	The bucket that contains the requested object.
<code>object</code>	The name of the requested object.
<code>etag</code>	The ETag field configured for the object and returned to the requester.
<code>size</code>	The size of the requested object, which is the total size of the entire object in CompleteMultipartUpload operations.
<code>mimeType</code>	The resource type. For example, the resource type of JPEG images is <code>image/jpeg</code> .
<code>imageInfo.height</code>	The height of the image.
<code>imageInfo.width</code>	The width of the image.
<code>imageInfo.format</code>	The format of the image. Example: <code>JPG</code> or <code>PNG</code> .



Note:

Only an image object supports the `imageInfo` parameter. If the object is not an image, the values of `imageInfo.height`, `imageInfo.width`, and `imageInfo.format` are null.

- Construct custom parameters by using `callback-var`.

You can configure custom parameters by using the `callback-var` parameter.

Custom parameters are key-value pairs in `Map`. You can add required parameters to the map. When a POST callback request is initiated, OSS adds these custom parameters and the system parameters described in the preceding section to

the body of the POST request. This method allows these parameters to be easily obtained by the requester.

You can construct a custom parameter the way you construct a callback parameter. Each parameter has a key-value pair, which is a map that consists of key-value pairs of all custom parameters.

**Note:**

The key of a custom parameter must start with `x:` and be in lowercase letters. Otherwise, OSS returns an error.

Assume that you need to configure two custom parameters `x:var1` and `x:var2`. The value of `x:var1` is `value1`. The value of `x:var2` is `value2`. The constructed JSON string is as follows:

```
{
  "x:var1": "value1",
  "x:var2": "value2"
}
```

**Note:**

If the input callback parameter or callback-var parameter is invalid, HTTP status code 400 is returned with the `InvalidArgument` error code. This error occurs in the following scenarios:

- URLs and headers are passed in at the same time to the callback parameter (`x-oss-callback`) or the callback-var parameter (`x-oss-callback-var`) in `PutObject` and `CompleteMultipartUpload` operations.
- The size of the callback or callback-var parameter exceeds 5 KB. This does not occur in `PostObject` operations because the callback-var parameter is not available in `PostObject` operations.
- The callback or callback-var parameter is not Base64-encoded or is not in the valid JSON format after being decoded.
- The `callbackUrl` field decoded from the callback parameter includes more than five URLs, or the port in the URL is invalid. Example:

```
{"callbackUrl": "10.101.166.30:test",
  "callbackBody": "test"}
```

- The `callbackBody` field decoded from the callback parameter is null.

- The value of the `callbackBodyType` field decoded from the `callback` parameter is **not** `application/x-www-form-urlencoded` or `application/json`.
- The variables in the `callbackBody` field decoded from the `callback` parameter are not in the valid format of `${var}`.
- The variables in the `callbackBody` field decoded from the `callback-var` parameter are not in the expected JSON format of `{"x:var1":"value1","x:var2":"value2"...}`.

Step 2: Construct a callback request

After you construct the `callback` and `callback-var` parameters, you must add the parameters to the callback request sent to OSS.

You can use the following methods to add parameters:

- Add the parameters to the URL.
- Add the parameters to the header.
- Add the parameters to the form fields in the body of a POST request.



Note:

You can use only this method to specify callback parameters when you upload objects by using POST requests.

You can only use one of the preceding three methods at a time. If you use more than one method, OSS returns the `InvalidArgument` error code.

To add the parameters to a request sent to OSS, you must use Base64 to encode the JSON string constructed in the preceding section, and then add the parameters as follows:

- To add the parameters to the URL, add `callback=[CallBack]` or `callback-var=[CallBackVar]` to the request as a URL parameter. When the `CanonicalizedResource` field in the signature is calculated, `callback` or `callback-var` is used as a subresource.
- To add the parameters to the header, add `x-oss-callback=[CallBack]` or `x-oss-callback-var=[CallBackVar]` to the request as a header. When the `CanonicalizedOSSHeaders` field in the signature is calculated, include `x-oss-callback-var` and `x-oss-callback`. Examples:

```
PUT /test.txt HTTP/1.1
Host: callback-test.oss-test.aliyun-inc.com
```



```

Accept-encoding: identity
Content-Length: 5
x-oss-callback-var: eyJ40m15X3ZhciI6ImZvcijYWxsYmFjay10ZXN0In0=
User-Agent: aliyun-sdk-python/0.4.0 (Linux/2.6.32-220.23.2.ali1089.
el5.x86_64/x86_64;2.5.4)
x-oss-callback: eyJjYWxsYmFja1VybCI6IjEyMS40My4xMTMuODoyMzQ1Ni9pbm
RleC5odG1sIiwgICJjYWxsYmFja0JvZWhki0iJidWNrZXQ9JHtidWNrZXR9Jm
9iamVjdD0ke29iamVjdH0mZXRhZz0ke2V0Ywd9JnNpemU9JHtzaXplfSZtaW
1lVHlwZT0ke21pbWVUeXB1fSZpbWFnZUluZm8uaGVpZ2h0PSR7aW1hZ2VJbm
ZvLmhlYWdodH0maW1hZ2VJbmZvLndpZHRoPSR7aW1hZ2VJbmZvLndpZHRofS
ZpbWFnZUluZm8uZm9ybWF0PSR7aW1hZ2VJbmZvLmZvcmlhdH0mbXlfdmFyPS
R7eDpteV92YXJ9In0=
Host: callback-test.oss-test.aliyun-inc.com
Expect: 100-Continue
Date: Mon, 14 Sep 2015 12:37:27 GMT
Content-Type: text/plain
Authorization: OSS mlepou3zr4u7b14:5a74vhd4UXpmyuudV14Kaen5****
Test

```

- **Add the parameters to the form fields in the body of a POST request.**
 - **It is slightly complicated to add the callback parameter when the POST method is used to upload an object because the callback parameter must be added by using a separate form field. Example:**

```

--9431149156168
Content-Disposition: form-data; name="callback"
eyJjYWxsYmFja1VybCI6IjEyMS40My4xMTMuODoyMzQ1Ni9pbm
aHAiLCJjYWxsYmFja0hvc3QiOiIxMC4xMDEuMTY2LjMwIiwiaW1hZ2VJbm
ZvLmhlYWdodH0maW1hZ2VJbmZvLndpZHRoPSR7aW1hZ2VJbmZvLndpZHRofS
ImNhbGxiYWNRQm9keVR5cGUiOiJhcHBsaWNhdGlvbi94LXd3dy1mb3JtLXVy
bGVuY29kZWQifQ==

```

- **Each custom parameter uses a separate form field. You cannot add the callback-var parameter to existing fields. For example, if the JSON string for the custom parameter is as follows:**

```

{
  "x:var1": "value1",
  "x:var2": "value2"
}

```

The form fields in the POST request are as follows:

```

--9431149156168
Content-Disposition: form-data; name="callback"
eyJjYWxsYmFja1VybCI6IjEyMS40My4xMTMuODoyMzQ1Ni9pbm
aHAiLCJjYWxsYmFja0hvc3QiOiIxMC4xMDEuMTY2LjMwIiwiaW1hZ2VJbm
ZvLmhlYWdodH0maW1hZ2VJbmZvLndpZHRoPSR7aW1hZ2VJbmZvLndpZHRofS
ImNhbGxiYWNRQm9keVR5cGUiOiJhcHBsaWNhdGlvbi94LXd3dy1mb3JtLXVy
bGVuY29kZWQifQ==
--9431149156168
Content-Disposition: form-data; name="x:var1"
value1
--9431149156168
Content-Disposition: form-data; name="x:var2"

```

```
value2
```

You can also add callback conditions in the policy (if callback parameters are not added, upload verification is not performed on policy). Example:

```
{ "expiration": "2014-12-01T12:00:00.000Z",
  "conditions": [
    {"bucket": "johnsmith" },
    {"callback": "eyJjYWxsYmFja1VybCI6IjEwLjEwMS4xNjYuMzA6
ODA4My9jYWxsYmFjay5waHAiLCJjYWxsYmFja0hvc3QiOiIxMC4xMDEuMTY2
LjMwIiwiaWY2FsbGJhY2tCb2R5IjoiaWZmZmZmZW5hbWU9JChmaWxlbmFtZSkiLCJj
YWxsYmFja0JvZlUeXBlIjoiaWYxYXBwGljYXRpb24veC13d3ctZm9ybS11cmxlbmNvZGVkIn0="},
    ["starts-with", "$key", "user/eric/"],
  ]
}
```

Step 3: Initiate a callback request

If an object is uploaded, OSS sends the content specified by the callback and callback-var parameters in the request to the application server by using the POST method. Example:

```
POST /index.html HTTP/1.0
Host: 121.43.113.8
Connection: close
Content-Length: 181
Content-Type: application/x-www-form-urlencoded
User-Agent: http-client/0.0.1
bucket=callback-test&object=test.txt&etag=D8E8FCA2DC0F896FD7CB
4CB0031BA249&size=5&mimeType=text%2Fplain&imageInfo.height=&imageInfo.
width=&imageInfo.format=&x:var1=for-callback-test
```

Step 4 (optional): Sign the callback request

If the callback parameter is configured in the request, OSS uses POST to send a callback request to the application server based on the specified callback URL. To verify whether the callback request received by the application server is initiated by OSS, you can sign the callback request.

- **Generate a signature.**

A callback request is signed by OSS by using the RSA asymmetric algorithm.

To generate a signature, encrypt the callback string with a private key. Example:

```
authorization = base64_encode(rsa_sign(private_key, url_decode(path)
+ query_string + '\n' + body, md5))
```



Note:

In the preceding code, `private_key` is a private key only known by OSS, `path` is the resource path included in the callback request, `query_string` is the query string, and `body` is the message body specified in the callback request.

A callback request is signed in the following steps:

1. Obtain the callback string to sign, which consists of the resource path that is obtained by decoding the URL, the original query string, a carriage return, and the callback message body.
2. Sign the callback string by using the RSA encryption algorithm. Use the private key to encrypt the signature string. The hash function used for the signature is MD5.
3. Use Base64 to encode the signed result to obtain the final signature and add the signature to the Authorization header in the callback request.

Example:

```
POST /index.php? id=1&index=2 HTTP/1.0
Host: 121.43.113.8
Connection: close
Content-Length: 18
authorization: kKQeGTRccDKyHB3H9vF+xYMSrmhMZjzzl2/kdD1ktNVgb
WEfYTQG0G2SU/RaHBovRCE8OkQDjC3uG33esH2t****
Content-Type: application/x-www-form-urlencoded
User-Agent: http-client/0.0.1
x-oss-pub-key-url: aHR0cDovL2dvc3NwdWJsaWMuYWxpY2RuLmNvbS9j
YWxsYmFja19wdWJfa2V5X3YxLnBlbQ==
bucket=yonghu-test
```

In the preceding code, `path` is set to `/index.php`, `query_string` is set to `? id=1&index=2`, the `body` is set to `bucket=yonghu-test`. The final signature is `kKQeGTRccDKyHB3H9vF+xYMSrmhMZjzzl2/kdD1ktNVgbWEfYTQG0G2SU/RaHBovRCE8OkQDjC3uG33esH2txA==`.

- **Verify the signature.**

Signature verification is an inverse process of signing a request. The signature is verified by the application server as follows:

```
Result = rsa_verify(public_key, md5(url_decode(path) + query_string + '\n' + body), base64_decode(authorization))
```

The fields in the preceding code have the same meanings as they are used to sign the request. `public_key` indicates the public key and `authorization` indicates the signature in the callback request header. The signature is verified as follows:

1. **The `x-oss-pub-key-url` header in the callback request stores the Base64-encoded URL of the public key. Therefore, you must decode the Base64-encoded URL to obtain the public key.**

```
public_key = urlopen(base64_decode(x-oss-pub-key-url header))
```



Note:

To ensure that the public key is issued by OSS, you must verify whether the value of the `x-oss-pub-key-url` header starts with `http://gosspublic.alicdn.com/` or `https://gosspublic.alicdn.com/`.

2. Obtain the signature decoded in Base64.

```
signature = base64_decode(authorization header)
```

3. Obtain the string to sign the way described in the process of signing the callback request.

```
sign_str = url_decode(path) + query_string + '\n' + body
```

4. Verify the signature.

```
result = rsa_verify(public_key, md5(sign_str), signature)
```

The preceding code is used as an example:

1. Obtain the URL of the public key by decoding `aHR0cDovL2dvc3NwdWJs`

`aWMuYWxpY2RuLmNvbS9jYWxsYmFja19wdWJfa2V5X3YxLnBlbQ==` in Base64. The decoded URL is `http://gosspublic.alicdn.com/callback_pub_key_v1.pem`.

2. Decode signature header `kKQeGTRccDKyHB3H9vF+xYMSrmhMZjzzl2/kdD1ktNVgb`

`WEfYTQG0G2SU/RaHBovRCE80kQDjC3uG33esH2txA==` in Base64. The decoded result cannot be displayed because it is a nonprintable string.

3. Obtain the string to sign, which is `url_decode("index.php") + "? id=1&index=2" + "\n" + "bucket=yonghu-test"`, and perform MD5 verification on the string.

4. Verify the signature.

• Application server example

The following Python code shows you how an application server verifies a signature. Before you run the code, the M2Crypto library must be installed.

```
import httplib
import base64
import md5
import urllib2
from BaseHTTPServer import BaseHTTPRequestHandler, HTTPServer
from M2Crypto import RSA
from M2Crypto import BIO
def get_local_ip():
    try:
        csock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
        csock.connect(('8.8.8.8', 80))
        (addr, port) = csock.getsockname()
        csock.close()
        return addr
    except socket.error:
```

```

        return ""
class MyHTTPRequestHandler(BaseHTTPRequestHandler):
    '''
    def log_message(self, format, *args):
        return
    '''
    def do_POST(self):
        #get public key
        pub_key_url = ''
        try:
            pub_key_url_base64 = self.headers['x-oss-pub-key-url']
            pub_key_url = pub_key_url_base64.decode('base64')
            if not pub_key_url.startswith("http://gosspublic.alicdn.
com/") and not pub_key_url.startswith("https://gosspublic.alicdn.com
/"):
                self.send_response(400)
                self.end_headers()
                return
            url_reader = urllib2.urlopen(pub_key_url)
            #you can cache it
            pub_key = url_reader.read()
        except:
            print 'pub_key_url : ' + pub_key_url
            print 'Get pub key failed!'
            self.send_response(400)
            self.end_headers()
            return
        #get authorization
        authorization_base64 = self.headers['authorization']
        authorization = authorization_base64.decode('base64')
        #get callback body
        content_length = self.headers['content-length']
        callback_body = self.rfile.read(int(content_length))
        #compose authorization string
        auth_str = ''
        pos = self.path.find('?')
        if -1 == pos:
            auth_str = urllib2.unquote(self.path) + '\n' +
callback_body
        else:
            auth_str = urllib2.unquote(self.path[0:pos]) + self.path
[pos:] + '\n' + callback_body
        print auth_str
        #verify authorization
        auth_md5 = md5.new(auth_str).digest()
        bio = BIO.MemoryBuffer(pub_key)
        rsa_pub = RSA.load_pub_key_bio(bio)
        try:
            result = rsa_pub.verify(auth_md5, authorization, 'md5')
        except:
            result = False
        if not result:
            print 'Authorization verify failed!'
            print 'Public key : %s' % (pub_key)
            print 'Auth string : %s' % (auth_str)
            self.send_response(400)
            self.end_headers()
            return
        #do something according to callback_body
        #response to OSS
        resp_body = '{"Status":"OK"}'
        self.send_response(200)
        self.send_header('Content-Type', 'application/json')
        self.send_header('Content-Length', str(len(resp_body)))

```

```
        self.end_headers()
        self.wfile.write(resp_body)
class MyHTTPServer(HTTPServer):
    def __init__(self, host, port):
        HTTPServer.__init__(self, (host, port), MyHTTPRequestHandler
)
if '__main__' == __name__:
    server_ip = get_local_ip()
    server_port = 23451
    server = MyHTTPServer(server_ip, server_port)
    server.serve_forever()
```

The code for the server in other programming languages is as follows:

Java:

- Click [here](#) to download the code.
- **Running method:** Decompress the package and run `java -jar oss-callback-server-demo.jar 9000`. 9000 is the port number and can be specified as needed.

PHP:

- Click [here](#) to download the code.
- **Running method:** Deploy the code to an Apache environment because some headers in the PHP code depend on the environment. You can modify the example code based on the environment.

Python:

- Click [here](#) to download the code.
- **Running method:** Decompress the package and run `python callback_app_server.py`. Before you run the code, RSA dependencies must be installed.

.NET:

- Click [here](#) to download the code.
- **Running method:** Decompress the package and follow `README.md`.

Go:

- Click [here](#) to download the code.
- **Running method:** Decompress the package and follow `README.md`.

Ruby:

- Click [here](#) to download the code.
- **Running method:** Run the ruby `aliyun_oss_callback_server.rb` command.

Step 5: Return the callback result

The application server returns the response to OSS.

The response to the callback request is as follows:

```
HTTP/1.0 200 OK
Server: BaseHTTP/0.3 Python/2.7.6
Date: Mon, 14 Sep 2015 12:37:27 GMT
Content-Type: application/json
Content-Length: 9
{"a":"b"}
```



Note:

The response returned by the application server to OSS must contain the Content-Length header. The size of the response body cannot exceed 1 MB.

Step 6: Return the upload result

OSS returns the information that is returned by the application server to the user.

An example of the returned response is as follows:

```
HTTP/1.1 200 OK
Date: Mon, 14 Sep 2015 12:37:27 GMT
Content-Type: application/json
Content-Length: 9
Connection: keep-alive
ETag: "D8E8FCA2DC0F896FD7CB4CB0031BA249"
Server: AliyunOSS
x-oss-bucket-version: 1442231779
x-oss-request-id: 55F6BF87207FB30F2640C548
{"a":"b"}
```



Note:

- **The body of responses for some requests such as CompleteMultipartUpload contains content, such as information in XML format. If you use the upload callback function, the original body content is overwritten such as {"a":"b"}. Exercise caution when you implement upload callback.**
- **If the upload callback fails, HTTP status code 203 is returned with error code CallbackFailed. This response indicates that the object is successfully uploaded to OSS, but the callback fails. A callback failure only indicates that OSS does not receive the expected callback response. It does not indicate that the application server does not receive a callback request. For example, a callback failure will occur if the response returned by the application server is not in JSON format.**

7.13 PutSymlink

Creates a symbol link directing to the target object. You can use the symbol link to access the target object.



Note:

- When a symbolic link is created, the following checks are not performed:
 - Whether the target object exists.
 - Whether the storage class of the target object is valid.
 - Whether the user has permission to access the target object.

These checks are performed by APIs that access the target object, such as `GetObject`.

- If the object that you want to add already exists and you can access the object, the existing object is overwritten by the added object and a 200 OK message is returned.
- If a `PutSymlink` request carries a parameter with the `x-oss-meta-` prefix, the parameter is considered as user meta, such as `x-oss-meta-location`. An object can have multiple parameters with the `x-oss-meta-` prefix. However, the total size of all user meta cannot exceed 8 KB.

Versioning

You can direct a symbol link to the current version of the target object.


A symbol link can have multiple versions that direct to different target objects. The version ID of the symbol link is automatically generated and is returned as `x-oss-version-id` in the response header.


Request syntax

```
PUT /ObjectName?symlink HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

```
x-oss-symlink-target: TargetObjectName
```

Request headers

Header	Type	Required	Description
x-oss-symlink-target	String	Yes	<p>Indicates the target object that the symbolic link directs to.</p> <p>Valid value: The naming conventions are the same as those for objects.</p> <p> Note:</p> <ul style="list-style-type: none">• Similar to <code>ObjectName</code>, <code>TargetObjectName</code> must be URL-encoded.• The target object that a symbolic link directs to cannot be a symbolic link.

Header	Type	Required	Description
x-oss-storage-class	String	No	<p>Specifies the storage class of the target object.</p> <p>Valid values:</p> <ul style="list-style-type: none"> Standard IA Archive <p>Supported APIs: PutObject, InitMultipartUpload, AppendObject, PutObjectSymlink, and CopyObject</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> We recommend that you do not set the storage class in PutObjectSymlink to IA or Archive because an IA or Archive object smaller than 64 KB is billed at 64 KB. If you specify the value of x-oss-storage-class when uploading an object to a bucket, the storage class of the uploaded object is the specified value of x-oss-storage-class regardless of the storage class of the bucket. For example, if you specify the value of x-oss-storage-class to Standard when uploading an object to a bucket of the IA storage class, the storage class of the object is Standard. </div>

Examples

- **Normal Request example:**

```
PUT /link-to-oss.jpg?symlink HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Cache-control: no-cache
Content-Disposition: attachment;filename=oss_download.jpg
```

```
Date: Tue, 08 Nov 2016 02:00:25 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:kZoYNv66bsmc10+dcGKw5x2
****= x-oss-symlink-target: oss****
x-oss-storage-class: Standard
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 08 Nov 2016 02:00:25 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 582131B9109F4EE66CDE56A5
ETag: "0A477B89B4602AA8DECB8E19BFD4****"
```

- **Example of a request initiated to create a symbol link that directs to a specified version of the target object:**

```
PUT /link-to-oss.jpg?symlink HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:50:48 GMT
Authorization: OSS o3shiyktjw16xw1:NVXXKiyUJ2tg07PxINinU0e0****
x-oss-symlink-target: oss.jpg
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 09 Apr 2019 06:50:48 GMT
Content-Length: 0
Connection: keep-alive
x-oss-version-id: CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2
U3MWRiNGRh****
x-oss-request-id: 5CAC40C8B7AEADE01700064B
ETag: "136A5E127272200EDAB170DD84DE****"
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The value of x-oss-storage-class is invalid.

7.14 GetSymlink

Obtains a symbol link. To perform GetSymlink operations, you must have the read permission on the symbol link.

Versioning

GetSymlink obtains the current version of the target symbol link by default. You can specify the versionId in the request to obtain the specified version of a symbol link. If the current version of the target symbol link is a delete marker, OSS returns the 404 Not Found error and includes `x-oss-delete-marker = true` and `x-oss-version-id` in the response header. A delete marker does not contain any data.

Therefore, the information about the target object that the symbol link directs to is not included in the response.

Request syntax

```
GET /ObjectName?symlink HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Response headers

Header	Type	Description
x-oss-symlink-target	String	Indicates the target object that the symbol link directs to.

Examples

- Normal request example:

```
GET /link-to-oss.jpg?symlink HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 06:38:30 GMT
```

```
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:UNQDb7GapEgJCZkcde60hZ9J
****
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Fri, 24 Feb 2012 06:38:30 GMT
Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5650BD72207FB30443962F9A
x-oss-symlink-target: oss.jpg
ETag: "A797938C31D59EDD08D86188F6D5****"
```

- **Example of a request initiated with a specified versionId to obtain the specified version of a symbol link:**

```
GET /link-to-oss.jpg?symlink&versionId=CAEQNRiBgMClj7qD0BYi
IDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3MWRiNGRh**** HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:50:48 GMT
Authorization: OSS o3shiyktjw16xw1:LfKjDsA81MCTcBKV6h+Z/95f****
```

Response example:

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 09 Apr 2019 06:50:48 GMT
Last-Modified: Tue, 09 Apr 2019 06:50:48 GMT
Content-Length: 0
Connection: keep-alive
x-oss-version-id: CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2
U3MWRiNGRh****
x-oss-request-id: 5CAC40C8B7AEADE01700064D
x-oss-symlink-target: oss.jpg
ETag: "40CF4D450730DCCD1A78566FAE35****"
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

Error codes

Error code	HTTP status code	Description
NoSuchKey	404	The requested symbol link does not exist.

7.15 RestoreObject

Restores an object of the Archive storage class.

Versioning

The storage class of each version of an object can be different. `RestoreObject` restores the current version of the target object by default. You can specify the `versionId` in the request to restore the specified version of the object.

**Note:**

- `RestoreObject` only applies to objects of the Archive storage class but not those of the Standard and IA storage classes.
- A 202 status code is returned if you call `RestoreObject` to restore an object for the first time.
- If you have restored an object by calling `RestoreObject`, a 200 OK message is returned if you call the API again.

Restore process

An object of the Archive storage class is restored as follows:

1. The object is in the frozen status.
2. After you initiate a restore request, the object is in the restoring state. It generally takes 1 minute for the object to be restored. However, the maximum time period required to restore an object is 4 hours.
3. After the restore tasks is finished, the object is in the restored state for 24 hours by default. During this period, you can read the object. If you call `RestoreObject` again during this period, the restore state of the object prolongs for 24 hours. The restored period can be prolonged to a maximum of 7 days.
4. After the restored period, the object returns to the frozen state.

Billing methods

The following fees are incurred when the status of an object is changed:

- **Data retrieval fees are incurred if you restore an archived object.**
- **The restored state of an object can be prolonged to a maximum of seven days. No fees are incurred during this period.**
- **After a restored object returns to the frozen state, data retrieval fees are incurred if you restore it again.**

Request syntax

```
POST /ObjectName?restore HTTP/1.1
Host: archive-bucket.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

- **Example of request initiated to restore a archived object for the first time:**

```
POST /oss.jpg?restore HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Sat, 15 Apr 2017 07:45:28 GMT
Authorization: OSS e1Unnbm1rgdnpI:y4eyu+4yje5ioRCr****
```

Response example

```
HTTP/1.1 202 Accepted
Date: Sat, 15 Apr 2017 07:45:28 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
x-oss-request-id: 5374A2880232A65C23002D74
```

- **Example of a request initiated to restore an object being restored:**

```
POST /oss.jpg?restore HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Sat, 15 Apr 2017 07:45:29 GMT
Authorization: OSS e1Unnbm1rgdnpI:21qtGJ+ykDVmdy4eyu+N****
```

Response example

```
HTTP/1.1 409 Conflict
Date: Sat, 15 Apr 2017 07:45:29 GMT
Content-Length: 556
Connection: keep-alive
Server: AliyunOSS
x-oss-request-id: 5374A2880232A65C23002D74
<?xml version="1.0" encoding="UTF-8"?>
<Error>
  <Code>RestoreAlreadyInProgress</Code>
  <Message>The restore operation is in progress.</Message>
```



```
<RequestId>58EAF141461FB42C2B000008</RequestId>  
<HostId>10.101.200.***</HostId>  
</Error>
```

- **Example of a request initiated to restore a restored object:**

```
POST /oss.jpg?restore HTTP/1.1  
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com  
Date: Sat, 15 Apr 2017 07:45:29 GMT  
Authorization: OSS e1Unnbm1rgdnpI:u606FMJnn+WuBwbByZxm1+y4eyu+N****
```

Response example

```
HTTP/1.1 200 Ok  
Date: Sat, 15 Apr 2017 07:45:30 GMT  
Content-Length: 0  
Connection: keep-alive  
Server: AliyunOSS  
x-oss-request-id: 5374A2880232A65C23002D74
```

- **Example of a request initiated with a specified versionId to restore the specified version of an object:**

```
POST /oss.jpg?restore&versionId=CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3MWRiNGRh**** HTTP/1.1  
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com  
Date: Tue, 09 Apr 2019 06:50:48 GMT  
Authorization: OSS o3shiyktjw16xw1:2JND5qqLA1aA1/kL04kBbGTw****
```

Response example

```
HTTP/1.1 202 Accepted  
Date: Tue, 09 Apr 2019 06:50:48 GMT  
Content-Length: 0  
Connection: keep-alive  
Server: AliyunOSS  
x-oss-version-id: CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3MWRiNGRh****  
x-oss-request-id: 5CAC40C8B7AEADE017000653
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

Error codes

Error code	HTTP status code	Description
NoSuchKey	404	The requested object does not exist.
OperationNotSupported	400	The storage class of the requested object is not Archive.
RestoreAlreadyInProgress	409	You have called RestoreObject successfully and the object is being restored. Do not initiate RestoreObject requests repeatedly.

7.16 SelectObject

You can call this operation to execute the SQL statement on the target object and obtain the query result.

**Note:**

- You must have the read permissions on the object.
- HTTP status code 206 is returned if the operation is successfully performed. If the SQL statements are not valid or cannot match any objects, HTTP status code 400 is returned.
- For more information about the functions of SelectObject, see [SelectObject](#) in OSS Developer Guide.

Request syntax

Request syntax for either CSV or JSON objects.

- **Request syntax for CSV objects**

```
POST /object? x-oss-process=csv/select HTTP/1.1
HOST: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: time GMT
Content-Length: ContentLength
Content-MD5: MD5Value
Authorization: Signature
<? xml version="1.0" encoding="UTF-8"? >
<SelectRequest>
  <Expression>base64 encode(Select * from OSSObject where ...) </
Expression>
  <InputSerialization>
    <CompressionType>None|GZIP</CompressionType>
    <CSV>
      <FileHeaderInfo>
        NONE|IGNORE|USE
      </FileHeaderInfo>
```

```

        <RecordDelimiter>base64 encode</RecordDelimiter>
        <FieldDelimiter>base64 encode</FieldDelimiter>
        <QuoteCharacter>base64 encode</QuoteCharacter>
        <CommentCharacter>base64 encode</CommentCharacter>
        <Range>line-range=start-end|split-range=start-end</Range>
    >
        <AllowQuotedRecordDelimiter>>true|false</AllowQuote
dRecordDelimiter>
    </CSV>
</InputSerialization>
<OutputSerialization>
    <CSV>
        <RecordDelimiter>base64 encode</RecordDelimiter>
        <FieldDelimiter>base64 encode</FieldDelimiter>

    </CSV>
    <KeepAllColumns>>false|true</KeepAllColumns>
    <OutputRawData>>false|true</OutputRawData>
    <EnablePayloadCrc>>true</EnablePayloadCrc>
    <OutputHeader>>false</OutputHeader>
</OutputSerialization>
<Options>
    <SkipPartialDataRecord>>false</SkipPartialDataRecord>
    <MaxSkippedRecordsAllowed>
        max allowed number of records skipped
    </MaxSkippedRecordsAllowed>
</Options>
</SelectRequest>

```

- **Request syntax for JSON objects**

```

POST /object? x-oss-process=json/select HTTP/1.1
HOST: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: time GMT
Content-Length: ContentLength
Content-MD5: MD5Value
Authorization: Signature
<? xml version="1.0" encoding="UTF-8"? >
<SelectRequest>
    <Expression>
        Base64 encode of sql such as (select * from ossobject)
    </Expression>
    <InputSerialization>
        <CompressionType>None|GZIP</CompressionType>
        <JSON>
            <Type>DOCUMENT|LINES</Type>
            <Range>
                line-range=start-end|split-range=start-end
            </Range>
            <ParseJsonNumberAsString> true|false
        </ParseJsonNumberAsString>
        </JSON>
    </InputSerialization>
    <OutputSerialization>
        <JSON>
            <RecordDelimiter>
                Base64 of record delimiter
            </RecordDelimiter>
        </JSON>
        <OutputRawData>>false|true</OutputRawData>
        <EnablePayloadCrc>true</EnablePayloadCrc>
    </OutputSerialization>
    <Options>

```


```

        <SkipPartialDataRecord>
            false|true
        </SkipPartialDataRecord>
        <MaxSkippedRecordsAllowed>
            max allowed number of records skipped
        </MaxSkippedRecordsAllowed>
    </Options>
</SelectRequest>
    
```

Request elements


Element	Type	Description
SelectRequest	Container	<p>Specifies the container that stores the SelectObject request.</p> <p>Child node: Expression, InputSerialization, and OutputSerialization</p> <p>Parent node: none</p>
Expression	String	<p>The Base64-encoded SQL statement.</p> <p>Child node: none</p> <p>Parent node: SelectRequest</p>
InputSerialization	Container	<p>Optional. This element specifies the input serialization parameters.</p> <p>Child node: CompressionType, CSV, and JSON</p> <p>Parent node: SelectRequest</p>
OutputSerialization	Container	<p>Optional. This element specifies the output serialization parameters.</p> <p>Child node: CSV, JSON, and OutputRawData</p> <p>Parent node: SelectRequest</p>

Element	Type	Description
CSV(InputSerialization)	Container	<p>Optional. This element specifies the input serialization parameters when the CSV object is queried.</p> <p>Child node: FileHeaderInfo, RecordDelimiter, FieldDelimiter, QuoteCharacter, CommentCharacter, and Range</p> <p>Parent node: InputSerialization</p>
CSV(OutputSerialization)	Container	<p>Optional. This element specifies the output serialization parameters when the CSV object is queried.</p> <p>Child node: RecordDelimiter and FieldDelimiter</p> <p>Parent node: OutputSerialization</p>
JSON(InputSerialization)	Container	<p>Optional. This element specifies the input serialization parameters when the JSON object is queried.</p> <p>Child node: Type, Range, and ParseJsonNumberAsString</p>
JSON(OutputSerialization)	Container	<p>Optional. This element specifies the output serialization parameters when the JSON object is queried.</p> <p>Child node: RecordDelimiter</p>
Type	Enumeration	Specifies the type of the input JSON object: DOCUMENT or LINES.

Element	Type	Description
<p>OutputRawData</p>	<p>Boolean (false by default)</p>	<p>Optional. This element specifies the output data as raw data.</p> <p>Child node: none</p> <p>Parent node: OutputSerialization</p> <div style="background-color: #f0f0f0; padding: 5px; border: 1px solid #ccc;"> <p> Note:</p> <ul style="list-style-type: none"> • If OutputRawData is specified in the request, OSS returns data accordingly. • If OutputRawData is not specified in the request, OSS automatically selects a format and returns it in the response. • If OutputRawData is set to True and the SQL statement takes a long time to return data, the HTTP request may time out. </div>
<p>CompressionType</p>	<p>Enumeration</p>	<p>Specifies the compression type of the object: None GZIP.</p> <p>Child node: none</p> <p>Parent node: InputSerialization</p>


Element	Type	Description
FileHeaderInfo	Enumeration	<p>Optional. This element specifies the header information of the CSV object.</p> <p>Valid values:</p> <ul style="list-style-type: none"> • Use: indicates that the CSV object contains header information. You can use the column name in the CSV object as the column name in the SelectObject operation. • Ignore: indicates that the CSV object contains header information. However, you cannot use the column name in the CSV object as the column name in the SelectObject operation. • None: the default value, indicating that the CSV object does not contain header information. <p>Child node: none</p> <p>Parent node: CSV (input)</p>
RecordDelimiter	String	<p>Optional. This element specifies a Base64-encoded delimiter. Default value: <code>\n</code>. The value of this element before being encoded can be an ANSI value of up to two characters in length. For example, <code>\n</code> is used to indicate a line break in Java code.</p> <p>Child node: none</p> <p>Parent node: CSV (input and output) and JSON (output)</p>

Element	Type	Description
FieldDelimiter	String	<p>Optional. This element specifies a Base64-encoded delimiter used to separate columns in the CSV object. Default value: <code>,</code>. The value of this element before being encoded must be a one-character ANSI value. For example, <code>,</code> is used to indicate a comma in Java code.</p> <p>Child node: none</p> <p>Parent node: CSV (input and output)</p>
QuoteCharacter	String	<p>Optional. This element specifies a Base64-encoded quote character used in the CSV object. Default value: <code>\</code>". In a CSV object, line breaks and column delimiters enclosed in quotation marks are processed as normal characters. The value of this element before being encoded must be a one-character ANSI value. For example, <code>\</code>" is used to indicate a quote character in Java code.</p> <p>Child node: none</p> <p>Parent node: CSV (input)</p>
CommentCharacter	String	<p>Specifies the comment character used in the CSV object. The value of this element must be Base64-encoded. The default value is null.</p>

Element	Type	Description
Range	String	<p>Optional. This element specifies the query range. The following two query methods are supported:</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p> Note: Select Meta must be created for objects that are queried based on Range. For more information about Select Meta, see #unique_220.</p> </div> <ul style="list-style-type: none"> • Query by row: line-range=start-end . For example, line-range=10-20 indicates that rows 10 to 20 will be scanned. • Query by split: split-range=start-end. For example, split-range=10-20 indicates that splits 10 to 20 will be scanned. <p>The start and end parameters of the preceding functions are both inclusive . The two preceding parameters have the same format as that of the range parameter in the range get function.</p> <p>This parameter can only be used when the object is in CSV format or when the JSON Type is LINES.</p> <p>Child node: none</p> <p>Parent node: CSV (input) and JSON (output)</p>

Element	Type	Description
<p>KeepAllColumns</p>	<p>Boolean</p>	<p>Optional. A value of true indicates that all columns in the CSV object are included in the returned result. The default value is false. However, only columns included in the SELECT clause have values. The columns in the returned result are sorted in ascending order of the column numbers. For example:</p> <pre>select _5, _1 from ossobject.</pre> <p>If you set KeepAllColumn to true and six columns are included in the CSV object , the following result is returned for the preceding SELECT clause:</p> <p>Value of 1st column,,,Value of 5th column,\n</p> <p>Child node: none</p> <p>Parent node: OutputSerialization (CSV)</p>
<p>EnablePayloadCrc</p>	<p>Boolean</p>	<p>Indicates that each frame includes a CRC-32 value for verification. The client can calculate the CRC-32 value of each payload and compare it with the included CRC-32 value to verify data integrity.</p> <p>Child node: none</p> <p>Parent node: OutputSerialization</p>

Element	Type	Description
Options	Container	<p>Specifies other optional parameters.</p> <p>Type: container</p> <p>Child node: SkipPartialDataRecord and MaxSkippedRecordsAllowed</p> <p>Parent node: SelectRequest</p>
OutputHeader	Boolean	<p>A value of true indicates that the header information of the CSV object is included in the beginning of the returned result.</p> <p>Type: Boolean. Default value: false.</p> <p>Child node: none</p> <p>Parent node: OutputSerialization</p>
SkipPartialDataRecord	Boolean	<p>Specifies whether to ignore rows without data. If this parameter is set to false, OSS will process the row data as null without reporting errors. If this parameter is set to true, rows without data are skipped. If the number of skipped rows has exceeded the maximum allowed number, OSS reports an error and stops processing the data.</p> <p>Type: Boolean. Default value: false.</p> <p>Child node: none</p> <p>Parent node: Options</p>

Element	Type	Description
<p>MaxSkippedRecordsAllowed</p>	<p>Int</p>	<p>Specifies the maximum allowed number of skipped rows. If a row does not match the type specified in the SQL statement, or if one or more columns in a row are missing and the value of <code>SkipPartialDataRecord</code> is <code>True</code>, the row is skipped. If the number of skipped rows has exceeded the value of this parameter, OSS reports an error and stops processing the data.</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p> Note: If a row in a CSV object is not properly formatted, OSS stops processing the data and reports an error because this format error may result in incorrect resolution to the CSV object. For example, a column in the row includes continual odd numbered quote characters. This parameter can be used to adjust the tolerance for irregular data but cannot be applied to invalid CSV objects.</p> </div> <p>Type: int. Default value: 0.</p> <p>Child node: none</p> <p>Parent node: Options</p>

Element	Type	Description
ParseJsonNumberAsString	Boolean	<p>Parses integer and floating-point numbers in a JSON object into strings. The precision of floating-point numbers in a JSON object degrades when the numbers are parsed. Therefore, we recommend that you set the value of this parameter to true if you want to retain the raw data. To use the parsed numbers in calculations, you can use the CAST function in an SQL statement to convert the parsed data into the required type, such as int, double, or decimal.</p> <p>Default value: false</p> <p>Child node: none</p> <p>Parent node: JSON</p>
AllowQuotedRecordDelimiter	Boolean	<p>Specifies whether the CSV object contains line breaks in quotation marks (").</p> <p>For example, the value of a column is "abc\ndef" and \n is a line break, you must set this value to true. If this parameter is set to false, SelectObject allows you to specify a range in the request header for more efficient multipart query.</p> <p>Default value: true</p> <p>Child node: none</p> <p>Parent node: InputSerialization</p>

Response body

- If the HTTP status code included in the response is 4xx, it indicates that the request has not passed the SQL syntax check or that the request contains error. In this case, the body format of the returned error message is the same as that of the error message returned for a GetObject request.
- If the HTTP status code included in the response is 5xx, it indicates that an error occurs in the server. In this case, the body format of the returned error message is the same as that of the error message returned for a GetObject request.
- HTTP status code 206 is returned when the operation is successfully performed. In this case:
 - If the value of header `x-oss-select-output-raw` is true, it indicates that the object data (not including frame-based data) was successfully returned. The client can obtain the data in the same manner as the GetObject operation.
 - If the value of `x-oss-select-output-raw` is false, the result is returned as frames.
- A returned frame is in `Version|Frame-Type | Payload Length | Header Checksum | Payload | Payload Checksum<1 byte><---3 bytes--><---4 bytes-----><-----4 bytes--><variable><---4bytes----->` format.

**Note:**



The Checksum is CRC-32 in all frames. All integers in a frame are big-endian. Currently, the value of Version is 1.

Frame type

The following table describes three frame types supported by SelectObject.

Frame type	Value	Payload format	Description
Data Frame	8388609	offset data<-8 bytes><---variable->	A data frame includes the data returned for the SelectObject request. The offset parameter is an 8-bit integer that indicates the current scanning location (the offset from the file header) and is used to report the progress of the operation.

Frame type	Value	Payload format	Description
Continuous Frame	8388612	offset<----8 bytes-->	A continuous frame is used to report the progress of an operation and keep an HTTP connection. If no data is returned for a query request within 5 seconds, a continuous frame is returned.

Frame type	Value	Payload format	Description
End Frame	8388613	offset total scanned bytes http status code error message<--8bytes-><--8bytes-----><----4 bytes-----><-variable----->	<p>An end frame is used to return the final status of an operation, including the scanned bytes and the possible error messages.</p> <ul style="list-style-type: none"> • The offset parameter indicates the final location offset after scanning. • The total scanned bytes parameter indicates the size of the scanned data. • The http status code parameter indicates the final status of the operation. <div style="background-color: #f0f0f0; padding: 10px; margin-bottom: 10px;"> <p> Note: SelectObject is a stream operation. Only the first data block is processed when the response header is sent. If the first data block matches the SQL statement, the HTTP status code in the response header is 206, which indicates that the operation was successful. However, the final status code may not be 206 because the subsequent data blocks may be invalid. The status code in the response header cannot be modified. Therefore, HTTP status code is included in the end frame to indicate the final status of the operation. The client uses the status code included in the end frame to determine whether the operation is successful.</p> </div> <ul style="list-style-type: none"> • The error message parameter includes error messages, including the number of each skipped row and the total number of skipped rows. <div style="background-color: #f0f0f0; padding: 10px;"> <p> Note: The format of error messages included in an end frame is <code>ErrorCodes.DetailMessage</code>. The ErrorCodes section contains one or more ErrorCodes separated by commas (,). The ErrorCodes and DetailMessage are separated by a</p> </div>
270			<p>ErrorCodes section contains one or more ErrorCodes separated by commas (,). The ErrorCodes and DetailMessage are separated by a</p>

Sample requests

Sample requests for either CSV or JSON objects.• **Sample request for CSV objects**

```

POST /oss-select/bigcsv_normal.csv? x-oss-process=csv%2Fselect HTTP/
1.1
Date: Fri, 25 May 2018 22:11:39 GMT
Content-Type:
Authorization: OSS LTAIJPLocA0fD:FC/9JRbBGRw4o2QqdaL246Px****
User-Agent: aliyun-sdk-dotnet/2.8.0.0(windows 16.7/16.7.0.0/x86;4.0.
30319.42000)
Content-Length: 748
Expect: 100-continue
Connection: keep-alive
Host: host name
<? xml version="1.0"? >
<SelectRequest>
  <Expression>c2VsZWN0IGNvdW50KCopIGZyb20gb3Nzb2JqZWN0IHdoZXJlIF
80ID4gNDU=
  </Expression>
  <InputSerialization>
    <Compression>None</Compression>
    <CSV>
      <FileHeaderInfo>Ignore</FileHeaderInfo>
      <RecordDelimiter>Cg==</RecordDelimiter>
      <FieldDelimiter>LA==</FieldDelimiter>
      <QuoteCharacter>Ig==</QuoteCharacter>
      <CommentCharacter>Iw==</CommentCharacter/>
    </CSV>
  </InputSerialization>
  <OutputSerialization>
    <CSV>
      <RecordDelimiter>Cg==</RecordDelimiter>
      <FieldDelimiter>LA==</FieldDelimiter>
      <QuoteCharacter>Ig==</QuoteCharacter>
    </CSV>
    <KeepAllColumns>>false</KeepAllColumns>
    <OutputRawData>>false</OutputRawData>
  </OutputSerialization>
</SelectRequest>

```

• **Sample request for JSON objects**

```

POST /oss-select/sample_json.json? x-oss-process=json%2Fselect HTTP/
1.1
Host: host name
Accept-Encoding: identity
User-Agent: aliyun-sdk-python/2.6.0(Darwin/16.7.0/x86_64;3.5.4)
Accept: */*
Connection: keep-alive
date: Mon, 10 Dec 2018 18:28:11 GMT
authorization: OSS AccessKeySignature
Content-Length: 317
<SelectRequest>
  <Expression>c2VsZWN0ICogZnJvbSBvc3NvYmplY3Qub2JqZWN0c1sqXSB3aG
VyZSBwYXJ0eSA9ICdEZW1vY3JhdCc=
  </Expression>
  <InputSerialization>
    <JSON>
      <Type>DOCUMENT</Type>

```

```

</JSON>
</InputSerialization>
<OutputSerialization>
<JSON>
  <RecordDelimiter>LA==</RecordDelimiter>
</JSON>
</OutputSerialization>
<Options />
</SelectRequest>

```

Regular expressions in an SQL statement

The regular expression in an SQL statement is `SELECT select-list from table where_opt limit_opt.`



Note:

SELECT, OSSOBJECT, and WHERE are keywords that cannot be modified.

```

select_list: column name
             | column index (example: _1, _2. column index applies only
             | to CSV objects)
             | json path (example: s.contacts.firstname. json path
             | applies only to JSON objects)
             | function(column index | column name)
             | function(json_path) (applies only to JSON objects)
             | select_list AS alias

```



Note:

The following functions are supported: AVG, SUM, MAX, MIN, COUNT, and CAST (type conversion function). You can use only the wildcard (*) after COUNT.

```

table: OSSOBJECT

```

```

  | OSSOBJECT json_path (applies only to JSON objects)

```

For CSV objects, the table must be OSSOBJECT. For JSON objects (including DOCUMENT and LINES type objects), you can specify a json_path after OSSOBJECT.

```

json_path: ['string '] (The quotation marks around string can be
                    deleted if the string does not include a space or a wildcard (*). In
                    this case, ['string '] is equivalent to .'string '.

```

```

                    | [n] (Used to indicate the nth element in an array. The
                    value of 0 is counted from 0.)

```

```

                    | [*] (Used to indicate any child element in an array or
                    object.)

```

```

                    | .'string ' (The quotation marks around string can be
                    deleted if the string does not include a space or a wildcard (*).)

```

| json_path jsonpath (You can concatenate multiple elements in a json path, such as [n].property1.attributes[*].)

```
Where_opt:
| WHERE expr
expr:
| literal value
| column name
| column index
| json path (applies only to JSON objects)
| expr op expr
| expr OR expr
| expr AND expr
| expr IS NULL
| expr IS NOT NULL
| (column name | column index | json path) IN (value1, value2,...)
| (column name | column index | json path) NOT in (value1, value2,...)
| (column name | column index | json path) between value1 and value2
| NOT (expr)
| expr op expr
| (expr)
| cast (column index | column name | json path | literal as INT|DOUBLE
| )
```

- **op: includes the following operators:** >, <, >=, <=, !=, =, ,, LIKE, +, -, *, /, %, and ||.
- **cast:** You can use the CAST function to convert data in a column from one type into another.
- **The combination of an aggregation function and limit:** `Select avg(cast(_1 as int)) from ossobject limit 100`. The preceding statement calculates the average values of the first columns in the first 100 rows. This function differs from the MySQL statement because only a single row is returned for an aggregation function in SelectObject operations. This makes it unnecessary to limit the output. Limit is performed before aggregation functions in SelectObject operations.

Limits for SQL statements

Limits for SQL statements are as follows:

- Only text objects encoded in UTF-8 and UTF-8 text objects compressed in GZIP format are supported. The deflate format is not supported for GZIP objects.
- An SQL statement can only query a single object. The following clauses are not supported: JOIN, ORDER BY, GROUP BY, and HAVING.
- A WHERE clause cannot include aggregation conditions. For example, the following clause is not allowed: `WHERE max(cast(age as int)) > 100`.

- A maximum of 1,000 columns can be specified for an SQL statement. The column name in an SQL statement can be up to 1,024 bytes in length.
- A maximum of five wildcards (%) are supported in a LIKE clause. Both the percent sign (%) and the asterisk (*) are wildcards that represent zero or more characters. The ESCAPE keyword is supported in SQL LIKE clauses, and is used to escape the special characters, such as percent signs (%), asterisks (*), and question marks (?), into normal strings.
- A maximum of 1,024 constants are supported in an IN clause.
- The Projection after SELECT can be a column name, a CSV column index (such as `_1` and `_2`), an aggregation function, or a CAST function. Other expressions are not supported, such as `select _1 + _2 from ossobject`.
- The maximum column size and row size for a CSV object are 256 KB.
- The json path after FROM supports a JSON node with a maximum size of 512 KB. The path can contain up to 10 levels, and an array can contain a maximum of 5,000 elements. The fields after SELECT and WHERE must be from the nodes corresponding to the json path after FROM.
- In SQL statements for a JSON object, the SELECT or WHERE expressions cannot include the array wildcard ([*]). The array wildcard ([*]) can only be included in the json path after FROM. For example, `select * from ossobject.contacts[*]` instead of `select s.contacts[*] from ossobject s` is supported.
- The maximum size of an SQL statement is 16 KB. A maximum of 20 expressions can be added after WHERE. Each statement supports up to 10 levels and 100 aggregation operations.

Data error handling

The following section lists common methods for handling data errors.

- Some columns are missing in some rows in a CSV object.

If the value of `SkipPartialDataRecord` is not specified or is set to `False`, OSS calculates the expressions in the SQL statement by processing the values of the missing columns as `null`.

If the value of `SkipPartialDataRecord` is set to `True`, OSS ignores the rows in which some columns are missing. In this case, if the value of `MaxSkippedRecordsAllowed` is not specified or is set to a value smaller than the number of

skipped rows, OSS reports an error by sending HTTP status code 400 or including status code 400 in the end frame.

Assume that the SQL statement is `select _1, _3 from ossobject` and the data in a row of the CSV object is "John, company A".

- If the value of `SkipPartialDataRecord` is set to `False`, "John,\n" is returned.
- If the value of `SkipPartialDataRecord` is set to `True`, this row is skipped.
- Some keys are missing in a JSON object.

Some objects in the JSON object may not include the keys specified in the SQL statement.

- If the value of `SkipPartialDataRecord` is not specified or is set to `False`, OSS calculates the expressions in the SQL statement by processing the missing keys as null.
- If the value of `SkipPartialDataRecord` is `True`, OSS skips the data in the JSON node. In this case, if the value of `MaxSkippedRecordsAllowed` is not specified or is set to a value smaller than the number of skipped rows, OSS reports an error by sending HTTP status code 400 or including status code 400 in the end frame.

Assume that the SQL statement is `select s.firstName, s.lastName , s.age from ossobject.contacts[*] s` and the value of a JSON node is `{"firstName":"John", "lastName":"Smith"}`.

- If the value of `SkipPartialDataRecord` is not specified or is set to `False`, `{"firstName":"John", "lastName":"Smith"}` is returned.
- If the value of `SkipPartialDataRecord` is set to `True`, this row is skipped.



Note:

For keys in the returned data of a request for JSON objects, the output JSON objects can only be LINES. The Key value in the output result is determined based on the following rules.

- Assume that the SQL statement is `select * from ossobject...`. If * corresponds to a JSON object ({...}), it is returned. If * corresponds to a String or an Array, it is returned as a DummyKey _1.

When the data is `{"Age":5}` `select * from ossobject.Age s where s = 5, {"_1":5}` is returned because 5 that corresponds to * is not a JSON object. When the SQL statement is `select * from ossobject s where s.Age = 5, {"Age":5}` corresponding to * is returned.

- If the SQL statement does not use `select *` but specifies columns, the returned content is in `{"{Column 1}": Value, "{Column 2}": Value...}` format. {Column n} can be generated in the following ways:

- If the Alias of the column is specified in the SELECT clause, the Alias applies.
- If the column is the key of a JSON object, this key is used as the output key value.
- If the column is an element of a JSON array or an aggregate function, prefix the column with serial number (starting from 1) plus _ as the output key value.

Assume that the data is `{"contacts":{"Age":35, "Children":["child1", "child2", "child3"]}}`:

- When the SQL statement is `select s.contacts.Age, s.contacts.Children[0] from ossobject`, Age is the key of the input JSON object, and Children[0] indicates the first element of Children of the array type and is the second column in the output content. `{"Age":35, "_2":"child1"}` is returned.
- When the SQL statement is `select max(cast(s.Age as int)) from ossobject.contacts s`, and the selected column is an aggregate function, the column is prefixed with _1 plus its serial number in the output. `{"_1":35}` is returned.
- When the Alias of the column is specified in the SQL statement `select s.contacts.Age, s.contacts.Children[0] as firstChild from ossobject`, `{"Age":35, "firstChild":"child1"}` is returned.

- Keys matching in JSON objects and SQL statements are case-sensitive. For example, "select s. Age" and "select s. age" are different.

- The data type of some columns in a CSV object does not match the SQL statement.

If the data type of a row in a CSV object does not match the type specified in the SQL statement, the row is skipped. If the number of skipped rows has exceeded the value of `MaxSkippedRecordsAllowed`, OSS stops processing data and returns HTTP status code 400.

Assume that the SQL statement is `select _1, _3 from ossobject where _3 > 5`. If the value of a row in the CSV object is John, Company A, To be hired, this row is skipped because the third column in the row is not of the integer type.

- The data type of some keys in a JSON object does not match the SQL statement.

Assume that the SQL statement is `select s.name from ossobject s where s.aliren_age > 5`. If the value of a JSON node is `{"Name": "John", "aliren_age": "To be hired"}`, this node is skipped.

CreateSelectObjectMeta

You can call this operation to obtain information about the target CSV object, such as the total number of rows, the total number of columns in CSV objects, and the number of splits. If the information does not exist in the object, the whole CSV object is scanned to analyze and record the preceding information. The information obtained in the first API call is used when the API is called again, so that the entire CSV object does not need to be scanned again.



Note:

- You must have the write permissions on the target object before performing the `CreateSelectObjectMeta` operation.
- HTTP status code 200 is returned if the operation is successfully performed. If the target object is not a valid CSV or JSON LINES object, or the specified delimiter does not match any CSV objects, HTTP status code 400 is returned.

- Request syntax

- Request syntax for CSV objects

```
POST /samplecsv? x-oss-process=csv/meta
```

```
<CsvMetaRequest>
  <InputSerialization>
    <CompressionType>None</CompressionType>
    <CSV>
      <RecordDelimiter>base64 encode</RecordDelimiter>
      <FieldDelimiter>base64 encode</FieldDelimiter>
      <QuoteCharacter>base64 encode</QuoteCharacter>
    </CSV>
  </InputSerialization>
  <OverwriteIfExists>>false|true</OverwriteIfExists>
</CsvMetaRequest>
```

- Request syntax for JSON objects

```
POST /samplecsv? x-oss-process=json/meta
<JsonMetaRequest>
  <InputSerialization>
    <CompressionType>None</CompressionType>
    <JSON>
      <Type>LINES</Type>
    </JSON>
  </InputSerialization>
  <OverwriteIfExists>>false|true</OverwriteIfExists>
</JsonMetaRequest>
```

• Request elements

Element	Type	Description
CsvMetaRequest	Container	<p>Specifies the container that stores the Select csv Meta request.</p> <p>Child node: InputSerialization</p> <p>Parent node: none</p>
JsonMetaRequest	Container	<p>Specifies the container that stores the Select json Meta request.</p> <p>Child node: InputSerialization</p> <p>Parent node: none</p>
InputSerialization	Container	<p>Optional. This element specifies the input serialization parameters.</p> <p>Child node: CompressionType, CSV, and JSON</p> <p>Parent node: CsvMetaRequest and JsonMetaRequest</p>

Element	Type	Description
OverwriteIfExists	Boolean	<p>Optional. This element specifies whether to recalculate the SelectMeta and overwrite the existing data. A value of false indicates that the result is directly returned if the Select Meta already exists. The default value is false.</p> <p>Child node: none</p> <p>Parent node: CsvMetaRequest and JsonMetaRequest</p>
CompressionType	Enumeration	<p>Optional. This element specifies the compression type of the object. Only None is supported currently.</p> <p>Child node: none</p> <p>Parent node: InputSerialization</p>
RecordDelimiter	String	<p>Optional. This element specifies a Base64-encoded delimiter used to separate rows in the CSV object. The default value is \n. The value of this element before being encoded can be an ANSI value of up to two characters. For example, \n is used to indicate a line break in Java code.</p> <p>Child node: none</p> <p>Parent node: CSV</p>

Element	Type	Description
FieldDelimiter	String	<p>Optional. This element specifies a Base64-encoded delimiter used to separate columns in the CSV object. Default value: <code>,</code>.</p> <p>The value of this element before being encoded must be a one-character ANSI value. For example, <code>,</code> is used to indicate a comma in Java code.</p> <p>Child node: none</p> <p>Parent node: CSV (input and output)</p>
QuoteCharacter	String	<p>Optional. This element specifies a Base64-encoded quote character used in the CSV object. Default value: <code>\"</code>. In a CSV object, line breaks and column delimiters enclosed in quotation marks are processed as normal characters. The value of this element before being encoded must be a one-character ANSI value. For example, <code>\"</code> is used to indicate a quote character in Java code.</p> <p>Child node: none</p> <p>Parent node: CSV (input)</p>
CSV	Container	<p>Specifies the format of the input CSV object.</p> <p>Child node: RecordDelimiter, FieldDelimiter, and QuoteCharacter</p> <p>Parent node: InputSerialization</p>
JSON	Container	<p>Specifies the format of the input JSON object.</p> <p>Child node: Type</p> <p>Parent node: InputSerialization</p>

Element	Type	Description
Type	Enumeration	Specifies the type of the JSON object. Valid values: LINES

- Response body

Similar to SelectObject, the results for CreateSelectObjectMeta are also returned as frames.

Frame type	Value	Payload format	Description
Meta End Frame (CSV)	8388614	offset total scanned bytes status splits count rows count columns count error message <-8 bytes><-----8 bytes -----><--4bytes><--4 bytes--><--8 bytes><--4 bytes---><variable size>	<p>Reports the final status of the CreateSelectObjectMeta operation.</p> <ul style="list-style-type: none"> - offset: an 8-bit integer, indicates the offset when the scanning is complete. - total scanned bytes: an 8-bit integer, indicates the size of the scanned data. - status: a 4-bit integer, indicates the final status of the operation. - splits_count: a 4-bit integer, indicates the total number of splits. - rows_count: an 8-bit integer, indicates the total number of rows. - cols_count: a 4-bit integer, indicates the total number of columns. - error_message: includes detailed error messages. If no error occurs, the value of this parameter is null.

Frame type	Value	Payload format	Description
Meta End Frame (JSON)	8388615	offset total scanned bytes status splits count rows count error message <-8 bytes><-----8 bytes -----><--4bytes><--4 bytes--><--8 bytes>< variable size>	Reports the final status of the CreateSelectObjectMeta operation. <ul style="list-style-type: none"> - offset: an 8-bit integer, indicates the offset when the scanning is complete. - total scanned bytes: an 8-bit integer, indicates the size of the scanned data. - status: a 4-bit integer, indicates the final status of the operation. - splits_count: a 4-bit integer, indicates the total number of splits. - rows_count: an 8-bit integer, indicates the total number of rows. - error_message: includes detailed error messages. If no error occurs, the value of this parameter is null.

- **Sample requests**

- **Sample request for CSV objects**

```

POST /oss-select/bigcsv_normal.csv? x-oss-process=csv%2Fmeta HTTP/
1.1
Date: Fri, 25 May 2018 23:06:41 GMT
Content-Type:
Authorization: OSS AccessKeySignature
User-Agent: aliyun-sdk-dotnet/2.8.0.0(windows 16.7/16.7.0.0/x86;4.
0.30319.42000)
Content-Length: 309
Expect: 100-continue
Connection: keep-alive
Host: Host
<? xml version="1.0"? >
<CsvMetaRequest>
  <InputSerialization>
    <CSV>
      <RecordDelimiter>Cg==</RecordDelimiter>
      <FieldDelimiter>LA==</FieldDelimiter>
      <QuoteCharacter>Ig==</QuoteCharacter>
    </CSV>
  </InputSerialization>
  <OverwriteIfExists>>false</OverwriteIfExists>

```

```
</CsvMetaRequest>
```

- **Sample request for JSON objects**

```
POST /oss-select/sample.json? x-oss-process=json%2Fmeta HTTP/1.1
Date: Fri, 25 May 2018 23:06:41 GMT
Content-Type:
Authorization: OSS AccessKeySignature
User-Agent: aliyun-sdk-dotnet/2.8.0.0(windows 16.7/16.7.0.0/x86;4.0.30319.42000)
Content-Length: 309
Expect: 100-continue
Connection: keep-alive
Host: Host
<? xml version="1.0"? >
<JsonMetaRequest>
  <InputSerialization>
    <JSON>
      <Type>LINES</Type>
    </JSON>
  </InputSerialization>
  <OverwriteIfExists>false</OverwriteIfExists>
</JsonMetaRequest>
```

Supported time formats

You can convert any of the following listed formats into a timestamp without specifying the time format. For example, the string cast(' 20121201' as timestamp) is automatically parsed as a timestamp: December 1, 2012.

The following table describes the recognized time formats.

Format	Description
YYYYMMDD	year month day
YYYY/MM/DD	year/month/day
DD/MM/YYYY/	day/month/year
YYYY-MM-DD	year-month-day
DD-MM-YY	day-month-year
DD.MM.YY	day.month.year
HH:MM:SS.mss	hour:minute:second.millisecond
HH:MM:SS	hour:minute:second
HH MM SS mss	hour minute second millisecond
HH.MM.SS.mss	hour. minute. second.millisecond
HHMM	hour minute
HHMMSSmss	hour minute second millisecond

Format	Description
YYYYMMDD HH:MM:SS.mss	year month day hour:minute:second. millisecond
YYYY/MM/DD HH:MM:SS.mss	year/month/day hour:minute:second. millisecond
DD/MM/YYYY HH:MM:SS.mss	day/month/year hour:minute:second. millisecond
YYYYMMDD HH:MM:SS	year month day hour:minute:second
YYYY/MM/DD HH:MM:SS	year/month/day hour:minute:second
DD/MM/YYYY HH:MM:SS	day/month/year hour:minute:second
YYYY-MM-DD HH:MM:SS.mss	year-month-day hour:minute:second. millisecond
DD-MM-YYYY HH:MM:SS.mss	day-month-year hour:minute:second. millisecond
YYYY-MM-DD HH:MM:SS	year-month-day hour:minute:second
YYYYMMDDTHH:MM:SS	year month day T hour:minute:second
YYYYMMDDTHH:MM:SS.mss	year month day T hour:minute:second. millisecond
DD-MM-YYYYTHH:MM:SS.mss	day-month-year T hour:minute:second. millisecond
DD-MM-YYYYTHH:MM:SS	day-month-year T hour:minute:second
YYYYMMDDTHHMM	year month day T hour minute
YYYYMMDDTHHMMSS	year month day T hour minute second
YYYYMMDDTHHMMSSMSS	year month day T hour minute second millisecond

Format	Description
ISO8601-0	<p>year-month-day T hour:minute+hour:minute, or year-month-day T hour:minute-hour:minute</p> <p>"+" indicates that the time in the current time zone is ahead of standard UTC time. "-" indicates that the time in the current time zone is behind the standard UTC time. In this format, ISO 8601-0 can be used.</p>
ISO8601-1	<p>year-month-day T hour:minute+hour:minute, or year-month-day T hour:minute-hour:minute</p> <p>"+" indicates that the time in the current time zone is in front of standard UTC time. "-" indicates that the time in the current time zone is behind the stand UTC time. In this format, ISO 8601-1 can be used.</p>
CommonLog	Example: 28/Feb/2017:12:30:51 +0700
RFC822	Example: Tue, 28 Feb 2017 12:30:51 GMT
?D/?M/YY	day/month/year, in which the day and month can be one or two digits.
?D/?M/YY ?H:?M	day month year hour:minute, in which the day, month, hour, and minute can be one or two digits.
?D/?M/YY ?H:?M:?S	day month year hour:minute:second, in which the day, month, hour, minute, and second can be one or two digits.

The formats in the following table are ambiguous. You must specify a time format when using strings in these formats. For example, the cast('20121201' as timestamp format 'YYYYDDMM') statement incorrectly parses the string 20121201 as January 12, 2012.

Format	Description
YYYYDDMM	year day month
YYYY/DD/MM	year/day/month
MM/DD/YYYY	month/day/year
YYYY-DD-MM	year-day-month
MM-DD-YYYY	month-day-year
MM.DD.YYYY	month. day.year

Error codes

SelectObject returns error codes in the following two ways:

- The HTTP status code is included in the response header and the error code is included in the response body, which is the same as other OSS requests. Error code returned in this manner indicates that the SQL statement contained input or data errors, such as an invalid SQL statement.
- Error code is included in the end frame of the response body. Error code returned in this manner indicates that the data is not correct or does not match the SQL statement. For example, a string exists in a column of which the type is specified as integer in the SQL statement. In this case, a part of data is processed and returned to the client, and the HTTP status code is 206.

Some error codes such as InvalidCSVLine can be returned as an HTTP status code in the response header or the end frame based on the location of the error row within the CSV object.

Error code	Description	HTTP status code	HTTP status code in end frame
InvalidSql Parameter	Invalid SQL parameter. Indicates that the SQL statement in the request is null, the SQL statement size has exceeded the limit, or the SQL statement is not Base64-encoded.	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
InvalidInputFieldDelimiter	<p>Invalid column delimiter in the input CSV object.</p> <p>Indicates that the parameter is not Base64-encoded or that the size of the parameter is greater than 1 byte after being decoded.</p>	400	None
InvalidInputRecordDelimiter	<p>Invalid row delimiter in the input CSV object. Indicates that the parameter is not Base64-encoded or that the size of the parameter is greater than 2 bytes after being decoded.</p>	400	None
InvalidInputQuote	<p>Invalid quote character in the input CSV object. Indicates that the parameter is not Base64-encoded or that the size of the parameter is greater than 1 byte after being decoded.</p>	400	None
InvalidOutputFieldDelimiter	<p>Invalid column delimiter in the output CSV object. Indicates that the parameter is not Base64-encoded or that the size of the parameter is greater than 1 byte after being decoded.</p>	400	None
InvalidOutputRecordDelimiter	<p>Invalid column delimiter in the output CSV object. Indicates that the parameter is not Base64-encoded or that the size of the parameter is greater than 2 bytes after being decoded.</p>	400	None
UnsupportedCompressionFormat	<p>Invalid Compression parameter . Indicates that the value of the parameter is not NONE or GZIP (case-insensitive).</p>	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
InvalidCommentCharacter	Invalid comment character in the CSV object. Indicates that the parameter is not Base64-encoded or that the size of the parameter is greater than 1 byte after being decoded.	400	None
InvalidRange	Invalid Range parameter. Indicates that the parameter is not prefixed with line-range= or split-range=, or that the range value does not meet the HTTP standard for Range.	400	None
DecompressFailure	Indicates that the value of Compression is GZIP and that the object cannot be decompressed.	400	None
InvalidMaxSkippedRecordsAllowed	Indicates that the value of MaxSkippedRecordsAllowed is not an integer.	400	None
SelectCsvMetadataUnavailable	Indicates that the Range parameter is specified and the CreateSelectObjectMeta operation has been called, but the target object does not include CSV Meta.	400	None
InvalidTextEncoding	Indicates that the object is not UTF-8 encoded.	400	None
InvalidOSSSelectParameters	Indicates that the EnablePayloadCrc and OutputRawData parameters are both set to True, which results in conflicts.	400	None
InternalError	Indicates that an OSS system error has occurred.	500 or 206	None or 500
SqlSyntaxError	Indicates that the syntax of the Base64-decoded SQL statement is invalid.	400	None
SqlExceedsMaxInCount	Indicates that the number of values included in the SQL IN clause has exceeded 1,024.	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
SqlExceedsMaxColumnNameLength	Indicates that the size of the column name has exceeded 1,024 bytes.	400	None
SqlInvalidColumnIndex	Indicates that the column index in the SQL statement is less than 1 byte or greater than 1,000 bytes in length.	400	None
SqlAggregationOnNonNumericType	Indicates that an aggregation function is used in a non-numeric column.	400	None
SqlInvalidAggregationOnTimestamp	Indicates that the SUM or AVG aggregation function is used in the timestamp column.	400	None
SqlValueTypeOfInMustBeSame	Indicates that values of different types are included in the SQL IN clause.	400	None
SqlInvalidEscapeChar	Indicates that an invalid escape character such as a question mark (?), percent sign (%), or an asterisk (*) was specified in the SQL LIKE clause.	400	None
SqlOnlyOneEscapeCharIsAllowed	Indicates that the size of the escape character in the SQL LIKE clause is greater than 1 byte in length.	400	None
SqlNoCharAfterEscapeChar	Indicates that there are no characters after the escape character in the SQL LIKE clause.	400	None
SqlInvalidLimitValue	Indicates that the number after the SQL Limit clause is smaller than 1.	400	None
SqlExceedsMaxWildcardCount	Indicates that the number of wildcards, (*) or (%), has exceeded the limit in the SQL LIKE clause.	400	None
SqlExceedsMaxConditionCount	Indicates that the number of conditional expressions in the SQL WHERE clause has exceeded the limit.	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
SqlExceedsMaxConditionDepth	Indicates that the depth of the conditional tree in the SQL WHERE clause has exceeded the limit.	400	None
SqlOneColumnCastToDifferentTypes	Indicates that a column was converted into different types by including the CAST function in the SQL statement.	400	None
SqlOperationAppliedToDifferentTypes	Indicates that an operator was used for two objects of different types in the SQL statement. For example, this error code is returned if <code>col1 in _col1 > 3</code> is a string.	400	None
SqlInvalidColumnName	Indicates that a column name used in the SQL statement was not included in the header of the CSV object.	400	None
SqlNotSupportedTimestampFormat	Indicates that the timestamp format specified in the SQL CAST clause is not supported.	400	None
SqlNotMatchTimestampFormat	Indicates that the timestamp format specified in the SQL CAST clause does not match the timestamp string.	400	None
SqlInvalidTimestampValue	Indicates that no timestamp format is specified in the SQL CAST clause and that the provided string cannot be converted into a timestamp.	400	None
SqlInvalidLikeOperand	Indicates that column names or indexes are not specified in the SQL LIKE clause, that the specified column is not of the string type, or that the right column in the LIKE clause is of the string type.	400	None
SqlInvalidMixOfAggregationAndColumn	Indicates that the SQL SELECT clause includes column names and indexes for both aggregation functions and non-aggregation functions at the same time.	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
SqlExceedsMaxAggregationCount	Indicates that the number of aggregation functions included in the SQL SELECT clause has exceeded the limit.	400	None
SqlInvalidMixOfStarAndColumn	Indicates that an asterisk (*), a column name, and a column index are included within the same SQL statement.	400	None
SqlInvalidKeepAllColumnsWithAggregation	Indicates that the SQL statement includes aggregation functions while the KeepAllColumns parameter is set to True.	400	None
SqlInvalidKeepAllColumnsWithDuplicateColumn	Indicates that the SQL statement includes repeated column names or column indexes while the KeepAllColumns parameter is set to True.	400	None
SqlInvalidSqlAfterAnalysis	Indicates that the SQL statement is not supported because it is too complex to resolve.	400	None
InvalidArithmeticOperand	Indicates that the SQL statement contains arithmetical operations performed on non-numeric constants or columns.	400	None
SqlInvalidAndOperand	Indicates that the expressions connected by the AND operator in the SQL statement are not of the Boolean type.	400	None
SqlInvalidOrOperand	Indicates that the expressions connected by the OR operator in the SQL statement are not of the Boolean type.	400	None
SqlInvalidNotOperand	Indicates that the expressions connected by the NOT operator in the SQL statement are not of the Boolean type.	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
SqlInvalidIsNullOperand	Indicates that the SQL statement contains the IS NULL operator performed on a constant.	400	None
SqlCompareOperandTypeMismatch	Indicates that the SQL statement contains the comparison operator performed on two objects of different types.	400	None
SqlInvalidConcatOperand	Indicates that the SQL statement contains two constants connected by the concatenation operator ().	400	None
SqlUnsupportedSql	Indicates that the SQL statement is too complex so that the size of the generated SQL plan has exceeded the limit.	400	None
HeaderInfoExceedsMaxSize	Indicates that the size of the header information specified in the SQL statement has exceeded the limit.	400	None
OutputExceedsMaxSize	Indicates that a row of output results has exceeded the size limit.	400	None
InvalidCsvLine	Indicates that a row in the CSV object is invalid or has exceeded the size limit, or that the number of skipped rows has exceeded the value of MaxSkippedRecordsAllowed.	206 or 400	400 or None
NegativeRowIndex	Indicates that the value of the array index in the SQL statement is a negative number.	400	None
ExceedsMaxNestedColumnDepth	Indicates that the nested levels of the JSON object in the SQL statement have exceeded the level limit.	400	None
NestedColumnNotSupportedInCsv	Indicates that the SQL statement contains nested columns that include periods (.) or arrays with brackets ([]), which are not supported for SQL statements of CSV objects.	400	None

Error code	Description	HTTP status code	HTTP status code in end frame
TableRootNodeOnlySupportInJson	Indicates that the root node path can only be specified after From ossobject in JSON objects.	400	None
JsonNodeExceedsMaxSize	Indicates that the size of the root node in the JSON object has exceeded the limit.	400 or 206	None or 400
InvalidJsonData	Indicates that the JSON data is formatted incorrectly.	400 or 206	None or 400
ExceedsMaxJsonArraySize	Indicates that the number of elements in an array in the root node of the JSON object has exceeded the limit.	400 or 206	None or 400
WildcardNotAllowed	Indicates that the wildcard (*) cannot be used in SQL SELECT clauses or SQL WHERE clauses in the JSON object. For example, the following statement is not supported: <code>select s.a.b[*] from ossobject where a.c[*] > 0.</code>	400	None
JsonNodeExceedsMaxDepth	Indicates that the depth of the root node of the JSON object has exceeded the limit.	400 or 206	None or 400

7.17 PutObjectTagging

Configures or updates the tags of an object.

Request syntax

```
PUT /objectname?tagging
Content-Length: 114
Host: bucketname.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
<Tagging>
  <TagSet>
    <Tag>
      <Key>Key</Key>
      <Value>Value</Value>
    </Tag>
  </TagSet>
```

```
</Tagging>
```

Request elements

Element	Type	Required?	Description
Tagging	Container	Yes	Sub-node: TagSet
TagSet	Container	Yes	Parent node: Tagging Sub-node: Tag
Tag	Container	No	Parent node: TagSet Sub-node: Key, Value
Key	String	No	Parent node: Tag Sub-node: None
Value	String	No	Parent node: Tag Sub-node: None

Detail analysis

- **The requester must have the permission to perform the PutObjectTagging operation.**
- **The Last-Modified time of an object is not updated if the tag of the object is modified.**
- **A tag can contain letters, numbers, spaces, and the following symbols: plus sign (+), hyphen (-), equal sign (=), period (.), underscore (_), colon (:), and forward slash (/).**

Examples

- **Request example:**

```
PUT /objectname?tagging
Content-Length: 114
Host: bucketname.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 18 Mar 2019 08:25:17 GMT
Authorization: OSS *****:*****
```



```

<Tagging>
  <TagSet>
    <Tag>
      <Key>a</Key>
      <Value>1</Value>
    </Tag>
    <Tag>
      <Key>b</Key>
      <Value>2</Value>
    </Tag>
  </TagSet>
</Tagging>

```

- **Response example:**

```

200 (OK)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5C8F55ED461FB4A64C000004
date: Mon, 18 Mar 2019 08:25:17 GMT

```

7.18 GetObjectTagging

Obtains the tags of an object.

Request syntax

```

GET /objectname?tagging
Host: bucketname.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue

```

Response elements

Element	Type	Description
Tagging	Container	Sub-node: TagSet
TagSet	Container	Parent node: Tagging Sub-node: Tag
Tag	Container	Parent node: TagSet Sub-node: Key, Value
Key	String	Parent node: Tag Sub-node: None
Value	String	Parent node: Tag Sub-node: None

Examples

- **Request example:**

```
GET /objectname?tagging
Host: bucketname.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 20 Mar 2019 02:02:36 GMT
Authorization: OSS *****:*****
```

- **Response example:**

```
200 (OK)
content-length: 209
server: AliyunOSS
x-oss-request-id: 5C919F38461FB42826000002
date: Wed, 20 Mar 2019 02:02:32 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<Tagging>
  <TagSet>
    <Tag>
      <Key>a</Key>
      <Value>1</Value>
    </Tag>
    <Tag>
      <Key>b</Key>
      <Value>2</Value>
    </Tag>
  </TagSet>
</Tagging>
```

7.19 DeleteObjectTagging

Deletes the tag of a specified object.

Request syntax

```
DELETE /objectname?tagging
Host: bucketname.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

- **Request example:**

```
DELETE /objectname?tagging
Host: bucketname.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 03:00:33 GMT
Authorization: OSS LTAIbsTkySSptaz****/Zr0o6BKgAl7iiBtHN2JMC****
```

- **Response example:**

```
204 (No Content)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5CAC0AD16D0232E2051B****
```

date: Tue, 09 Apr 2019 03:00:33 GMT

8 Multipart upload operations

8.1 Introduction

In addition to PutObject, OSS also provides the multipart upload mode.

You can upload files in the multipart upload mode in the following scenarios (but not limited to the following):

- Resumable upload must be supported.
- The files to be uploaded are larger than 100 MB.
- The network conditions are poor, and the connection with the OSS server is frequently disconnected.
- Before a file is uploaded, the size of the file cannot be determined.

8.2 InitiateMultipartUpload

You must call this operation to require OSS to initiate a multipart upload task before data can be transmitted in multipart upload mode.



Note:

- The operation returns a globally unique upload ID created by the OSS server to identify the multipart upload task. You can initiate operations based on this upload ID, such as stopping or querying the multipart upload task.
- The InitiateMultipartUpload request does not affect existing objects of the same name.
- When performing this operation to calculate the signature for authentication, you must add "? uploads" to CanonicalizedResource.

Request syntax

```
POST /ObjectName?uploads HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT date
```

Authorization: SignatureValue

Request parameters

The **encoding-type** parameter can be specified in the **InitiateMultipartUpload** request. OSS uses the specified encoding type to encode the object name in the response.


Parameter	Type	Description
encoding-type	String	<p>The encoding type of the object name in the response. The object name can contain any characters encoded in UTF-8. However, the XML 1.0 standard cannot be used to parse certain control characters, such as characters with an ASCII value from 0 to 10. You can set the encoding-type parameter to encode the object name in the response. Set the value to <code>url</code>.</p> <p>Default value: null</p> <p>Valid value: <code>url</code></p>



Request headers



Note:

The **InitiateMultipartUpload** request supports the following standard HTTP request headers: **Cache-Control**, **Content-Disposition**, **Content-Encoding**, **Content-Type**, **Expires**, and custom headers that start with `x-oss-meta-`. For more information, see [PutObject](#).


Header	Type	Description
Cache-Control	String	<p>The Webpage caching behavior when the object is downloaded. For more information, see RFC 2616.</p> <p>Default value: null</p>
Content-Disposition	String	<p>The name of the object during the download. For more information, see RFC 2616.</p> <p>Default value: null</p>
Content-Encoding	String	<p>The content encoding format when the object is downloaded. For more information, see RFC 2616.</p> <p>Default value: null</p>
Expires	Integer	<p>The expiration time in ms. For more information, see RFC 2616.</p> <p>Default value: null</p>
x-oss-server-side-encryption	String	<p>The server-side encryption algorithm used to encrypt each part of the object. Each part is stored in OSS after encryption.</p> <p>Valid values: AES256 or KMS</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  Note: You can use Key Management Service (KMS) for encryption after you activate KMS in the console. </div>
x-oss-server-side-encryption-key-id	String	<p>The ID of the customer master key (CMK) hosted in KMS.</p> <p>This parameter takes effect only when <code>x-oss-server-side-encryption</code> is set to KMS.</p>

Header	Type	Description
x-oss-storage-class	String	<p>The storage class of the object.</p> <p>Valid values:</p> <ul style="list-style-type: none"> Standard IA Archive <p>Supported operations: PutObject, InitiateMultipartUpload, AppendObject, PutObjectSymlink, and CopyObject</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p> Note:</p> <ul style="list-style-type: none"> If the value of x-oss-storage-class is invalid, 400 is returned with error code InvalidArgument. If the storage class is specified when you upload the object, the specified storage class applies regardless of the storage class for the bucket to which the object belongs. If you set x-oss-storage-class to Standard when uploading an object that is in an IA bucket, the object is stored as a standard object. </div>
x-oss-tagging	String	<p>The tag for the object. You can set multiple tags for the object, such as TagA=A&TagB=B.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p> Note:</p> <p>The tag key and value must be URL-encoded. If a configuration does not contain equal signs (=), the value is considered as an empty string.</p> </div>

Response elements

**Note:**

After receiving the InitiateMultipartUpload request, the server returns a message body that is in the XML format. The message body contains the following elements: Bucket, Key, and UploadID.

Element	Type	Description
Bucket	String	The name of the bucket for which the multipart upload task is initiated. Parent node: InitiateMultipartUploadResult
InitiateMultipartUploadResult	Container	The container that contains the result of the InitiateMultipartUpload request. Child node: Bucket, Key, and UploadId Parent node: none
Key	String	The name of the object for which the multipart upload task is initiated. Parent node: InitiateMultipartUploadResult
UploadId	String	The unique ID of the multipart upload task. Parent node: InitiateMultipartUploadResult  Note: Make sure that the upload ID is recorded for subsequent multipart-related operations.
EncodingType	String	The encoding type of the object name in the response. If the encoding-type parameter is specified in the request, the object name is encoded in the response. Parent node: InitiateMultipartUploadResult

Examples

Sample requests

```
POST /multipart.data?uploads HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
```



```
Date: Wed, 22 Feb 2012 08:32:21 GMT
x-oss-storage-class: Archive
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:/cluRFtRwMTZpC2hTj4F67AG
****
```

Sample responses

```
HTTP/1.1 200 OK
Content-Length: 230
Server: AliyunOSS
Connection: keep-alive
x-oss-request-id: 42c25703-7503-fbd8-670a-bda01eae****
Date: Wed, 22 Feb 2012 08:32:21 GMT
Content-Type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<InitiateMultipartUploadResult xmlns="http://doc.oss-cn-hangzhou.
aliyuncs.com">
  <Bucket> multipart_upload</Bucket>
  <Key>multipart.data</Key>
  <UploadId>0004B9894A22E5B1888A1E29F823****</UploadId>
</InitiateMultipartUploadResult>
```

SDKs

You can call this operation when you use SDK demos in any of the following languages:

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)
- [PHP](#)
- [C](#)
- [.NET](#)
- [Node.js](#)

Error codes

Error code	HTTP status code	Description
InvalidEncryptionAlgorithmError	400	The error message returned because the server-side encryption method other than AES-256 or KMS is specified.
InvalidArgument	400	The error message returned because the x-oss-server-side-encryption request header is added each time a part is uploaded.

Error code	HTTP status code	Description
KmsServiceNotEnabled	403	The error message returned because KMS is specified as the server-side encryption method but KMS is not activated in the console.

8.3 UploadPart

You can call this operation to upload data in parts based on a specified object name and upload ID after initializing a multipart upload task.



Note:

- Before calling UploadPart to upload a part, you must call InitiateMultipartUpload to obtain an upload ID issued by the OSS server. The upload ID uniquely identifies which object the uploaded part belongs to.
- Each part has a part number that identifies the part. Part numbers can range from 1 to 10000. The size of each part ranges from 100 KB to 5 GB in size. In multipart upload mode, each part except the last part must be greater than 100 KB in size. The size of each part is not verified when you call UploadPart because not all parts are uploaded and the system does not know which part is the last part. The size of each part is verified only when you call CompleteMultipartUpload.
- If you use the same part number to upload new data, OSS overwrites the existing data identified by this part number.
- OSS includes the MD5 value of the part received by the server in the ETag header and returns the ETag header to the user.
- If the x-oss-server-side-encryption request header is specified when you call InitiateMultipartUpload, the uploaded part is encoded. The x-oss-server-side-encryption header is included in the response header of UploadPart, indicating the server-side encryption method of the part. For more information, see [InitiateMultipartUpload](#).

Request syntax

```
PUT /ObjectName?partNumber=PartNumber&uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Content-Length: Size
```

```
Authorization: SignatureValue
```

Examples

Sample requests

```
PUT /multipart.data?partNumber=1&uploadId=0004B9895DBBB6EC98E36 HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 6291456
Date: Wed, 22 Feb 2012 08:32:21 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:J/lICfXEvPmmSW86bBAfMmUm****
[6291456 bytes data]
```

Sample responses

```
HTTP/1.1 200 OK
Server: AliyunOSS
Connection: keep-alive
ETag: "7265F4D211B56873A381D321F586****"
x-oss-request-id: 3e6aba62-1eae-d246-6118-8ff42cd0****
Date: Wed, 22 Feb 2012 08:32:21 GMT
```

SDKs

You can call this operation when you use SDK demos in any of the following languages:

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)
- [PHP](#)
- [C](#)
- [.NET](#)
- [Node.js](#)

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because the part number is not within the range of 1 to 10000.

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value in the request and the MD5 value calculated by OSS are different. To make sure that no errors occur during data transmission over the network, you can include the Content-MD5 value in the request. OSS calculates the MD5 value of the uploaded data and compares it with the Content-MD5 value .

8.4 UploadPartCopy

You can call this operation to copy data from an existing object to upload a part.

Versioning

By default, UploadPartCopy is used to upload a part by copying data from an existing object of the current version. To copy data from an object of a specific version, include versionId in the x-oss-copy-source request header as a subcondition in the request. You can set x-oss-copy-source as follows: x-oss-copy-source : /SourceBucketName/SourceObjectName? versionId=111111.



Note:

The name of the source object must be URL-encoded. x-oss-copy-source-version-id is returned in the response, indicating the version ID of the source object.

If versionId is not specified and the current version of the source object is a delete marker, OSS returns 404 Not Found. If versionId is specified and the current version of the source object is a delete marker, OSS returns 400 Bad Request.

To call UploadPartCopy, you can add the x-oss-copy-source request header to the UploadPart request. To copy an object larger than 1 GB, use UploadPartCopy. For more information about how to copy objects smaller than 1 GB, see [CopyObject](#).



Note:

- You cannot call UploadPartCopy to copy data from appendable objects.
- When you call UploadPartCopy, the source and destination buckets must be located within the same region.

- Before calling `UploadPartCopy` to upload a part, you must call `InitiateMultipartUpload` to obtain an upload ID issued by the OSS server.
- If the `x-oss-server-side-encryption` request header is specified when you call `InitiateMultipartUpload`, the uploaded part is encoded. The `x-oss-server-side-encryption` header is included in the response header of `UploadPart`, indicating the server-side encryption method of the part. For more information, see [InitiateMultipartUpload](#).
- In multipart upload mode, each part except the last part must be greater than 100 KB in size. The size of each part is not verified when you call `UploadPart` because not all parts are uploaded and the system does not know which part is the last part. The size of each part is verified only when you call `CompleteMultipartUpload`.


Request syntax

```
PUT /ObjectName? partNumber=PartNumber&uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Content-Length: Size
Authorization: SignatureValue
x-oss-copy-source: /SourceBucketName/SourceObjectName
x-oss-copy-source-range: bytes=first-last
```

Request headers

The following table describes the request headers in addition to commonly used request headers in the `UploadPartCopy` request.

Header	Type	Description
<code>x-oss-copy-source</code>	String	The address to access the source object. You must have permissions to read the source object. Default value: null

Header	Type	Description
x-oss-copy-source-range	Integer	<p>The range of Bytes to copy data from the source object. For example, if you specify bytes=0-9, the system transfers Byte 0 to Byte 9, a total of 10 Bytes. This request header is not required when the entire source object is copied.</p> <p>Default value: null</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p> Note: If the x-oss-copy-source-range request header is not specified, the entire source object is copied. If the x-oss-copy-source-range request header is specified, the response contains the length of the entire object and the range of Bytes to be copied for this operation. For example, Content-Range: bytes 0-9/44 indicates that the length of the entire object is 44 Bytes. The range of Bytes to be copied is Byte 0 to Byte 9. If the specified range does not conform to the range conventions, OSS copies the entire object and does not include Content-Range in the response.</p> </div>

The following table describes request headers that are used for x-oss-copy-source to specify the source object.

Header	Type	Description
x-oss-copy-source-if-match	String	<p>The copy operation condition. If the ETag value of the source object is the same as the ETag value provided by the user, OSS copies data. Otherwise, OSS returns 412 Precondition Failed.</p> <p>Default value: null</p>
x-oss-copy-source-if-none-match	String	<p>The object transfer condition. If the input ETag value does not match the ETag value of the object, the system transfers the object normally and returns 200 OK. Otherwise, the system returns 304 Not Modified.</p> <p>Default value: null</p>
x-oss-copy-source-if-unmodified-since	String	<p>The object transfer condition. If the specified time is the same as or later than the actual object modification time, OSS transfers the object normally and returns 200 OK. Otherwise, OSS returns 412 Precondition Failed.</p> <p>Default value: null</p>
x-oss-copy-source-if-modified-since	String	<p>The object transfer condition. If the specified time is earlier than the actual object modification time, the system transfers the object normally and returns 200 OK. Otherwise, the system returns 304 Not Modified.</p> <p>Default value: null</p> <p>Time format: EEE, d MMM yyyy HH:mm:ss Z GMT. Example: Fri, 13 Nov 2015 14:47:53 GMT.</p>

Examples

• **Sample requests**

```
PUT /multipart.data?partNumber=1&uploadId=0004B9895DBBB6EC98E36
HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 6291456
Date: Wed, 22 Feb 2012 08:32:21 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:J/LICfXEvPmmSW86bBAfMmUm
****
x-oss-copy-source: /oss-example/src-object
x-oss-copy-source-range:bytes=100-6291756
```

Sample responses

```
HTTP/1.1 200 OK
Server: AliyunOSS
Connection: keep-alive
x-oss-request-id: 3e6aba62-1eae-d246-6118-8ff42cd0****
Date: Thu, 17 Jul 2014 06:27:54 GMT'
<?xml version="1.0" encoding="UTF-8"?>
<CopyPartResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <LastModified>2014-07-17T06:27:54.000Z </LastModified>
  <ETag>"5B3C1A2E053D763E1B002CC607C5****"</ETag>
</CopyPartResult>
```

• **Sample requests for specifying versionId for UploadPartCopy if a bucket has versioning enabled**

```
PUT /multipart.data?partNumber=2&uploadId=63C06A5CFF6F4AE4A6BB
3AD7F01C**** HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 07:01:56 GMT
Authorization: OSS 6jftttm6x6san0e:v/sJFtYvg7DTa4pJ2AMShZL/****
x-oss-copy-source: /oss-example/src-object?versionId=CAEQMxiBgM
C0vs6D0BYiIGJiZWRjOTRjNTg0NzQ1MTRiN2Y1OTYxMTdkYjQ0****
```

Sample responses

```
HTTP/1.1 200 OK
Server: AliyunOSS
Connection: keep-alive
x-oss-copy-source-version-id: CAEQMxiBgMC0vs6D0BYiIGJiZWRjOT
RjNTg0NzQ1MTRiN2Y1OTYxMTdkYjQ0****
x-oss-request-id: 5CAC4364B7AEADE017000660
Date: Tue, 09 Apr 2019 07:01:56 GMT
<?xml version="1.0" encoding="UTF-8"?>
<CopyPartResult>
  <LastModified>2019-04-09T07:01:56.000Z</LastModified>
  <ETag>"25A9F4ABFCC05743DF6E2C886C56****"</ETag>
</CopyPartResult>
```

SDKs

You can call this operation when you use SDK demos in any of the following languages:

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)
- [PHP](#)
- [C](#)
- [.NET](#)

Error codes

Error code	HTTP status code	Description
OperationNotSupported	400	The error message returned because UploadPartCopy does not support the storage class of Archive.

8.5 CompleteMultipartUpload

You can call this operation to complete multipart upload of an object.

Versioning

You can call this operation to complete multipart upload of an object when versioning is enabled. In this case, OSS generates a unique version ID for the object, adds the version ID to `x-oss-version-id`, and returns `x-oss-version-id` in the response header.

When you perform this operation, you must provide a complete list of parts. Information of each part must contain a part number and an entity tag (ETag). After OSS receives the list of parts, OSS verifies the validity of each part one by one. After all these parts have been verified, OSS combines these parts into a complete object.



Note:

- When you perform this operation, OSS checks whether the size of each part except the last part is larger than 100 KB and whether the part number and ETag are provided for each part in the list. When each part is uploaded, the client must record the part number and the ETag value returned from the server after each part is uploaded.

- It may take a while for OSS to process the CompleteMultipartUpload request. If the client is disconnected from OSS during this period, OSS continues to process the request.
- The part numbers listed in the request do not have to be consecutive. For example, the first part number can be 1 and the second part number can be 5.
- After OSS processes the CompleteMultipartUpload request, the upload ID of this task is no longer valid.
- An object may have different upload IDs that are independent of each other. When one upload task is complete, the corresponding upload ID becomes invalid and other upload IDs are not affected.
- If InitiateMultipartUpload is called and the x-oss-server-side-encryption request header is specified, the x-oss-server-side-encryption response header is returned in response to the CompleteMultipartUpload request. The x-oss-server-side-encryption response header indicates the server-side encryption method for the object.

Request syntax

```
POST /ObjectName? uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Content-Length: Size
Authorization: Signature
<CompleteMultipartUpload>
<Part>
<PartNumber>PartNumber</PartNumber>
<ETag>ETag</ETag>
</Part>
...
</CompleteMultipartUpload>
```

Request parameters

The Encoding-type parameter can be specified in the CompleteMultipartUpload request. OSS uses the specified encoding type to encode the object name in the response.

Parameter	Type	Description
Encoding-type	String	<p>The encoding type of the object name in the response. The object name can contain any characters encoded in UTF-8. However, the XML 1.0 standard cannot be used to parse certain control characters, such as characters with an ASCII value from 0 to 10. You can set the Encoding-type parameter to encode the returned object name. Set the value to url.</p> <p>Default value: none</p>

Request headers

Header	Type	Required	Description
x-oss-forbid-overwrite	String	No	<p>Specifies whether the object with the same object name is overwritten when you perform the CompleteMultipartUpload operation.</p> <ul style="list-style-type: none"> By default, if x-oss-forbid-overwrite is not specified, the object with the same name is overwritten. If x-oss-forbid-overwrite is set to true, the object with the same name is not overwritten. If x-oss-forbid-overwrite is set to false, the object with the same name is overwritten.

Request elements

Element	Type	Description
CompleteMultipartUpload	Container	<p>The container that stores the content of the CompleteMultipartUpload request.</p> <p>Child node: one or more part elements</p> <p>Parent node: none</p>
ETag	String	<p>The ETag value returned by OSS after the part is uploaded.</p> <p>Parent node: Part</p>
Part	Container	<p>The container that stores information about the uploaded part.</p> <p>Child node: ETag and PartNumber</p> <p>Parent node: CompleteMultipartUpload</p>
PartNumber	Integer	<p>The number of the parts.</p> <p>Parent node: Part</p>

Response elements

Element	Type	Description
Bucket	String	<p>The name of the bucket.</p> <p>Parent node: CompleteMultipartUploadResult</p>

Element	Type	Description
CompleteMultipartUploadResult	Container	<p>The container that stores the response to the CompleteMultipartUpload request.</p> <p>Child node: Bucket, Key, ETag, and Location</p> <p>Parent node: none</p>
ETag	String	<p>The ETag created to identify the content of the object when the object is created by using the CompleteMultipartUpload request. The ETag value is the UUID of the object content. The ETag value of the object can be used to check whether the object content is modified.</p> <p>Parent node: CompleteMultipartUploadResult</p>
Location	String	<p>The URL used to access the object.</p> <p>Parent node: CompleteMultipartUploadResult</p>
Key	String	<p>The name of the object.</p> <p>Parent node: CompleteMultipartUploadResult</p>
EncodingType	String	<p>The encoding type of the object name in the response. If the encoding-type parameter is specified in the request, the object name in the response is encoded.</p> <p>Parent node: Container</p>

Examples

- **Sample requests**

```
POST /multipart.data? uploadId=0004B9B2D2F7815C432C9057C03134D4
HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 1056
Date: Fri, 24 Feb 2012 10:19:18 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:8VwFhFUWmVecK6jQlHLXMK/z
****
<CompleteMultipartUpload>
  <Part>
    <PartNumber>1</PartNumber>
    <ETag>"3349DC700140D7F86A0784842780****"</ETag>
  </Part>
  <Part>
    <PartNumber>5</PartNumber>
    <ETag>"8EFDA8BE206636A695359836FE0A****"</ETag>
  </Part>
  <Part>
    <PartNumber>8</PartNumber>
    <ETag>"8C315065167132444177411FDA14****"</ETag>
  </Part>
</CompleteMultipartUpload>
```

- **Sample responses**

```
HTTP/1.1 200 OK
Server: AliyunOSS
Content-Length: 329
Content-Type: Application/xml
Connection: keep-alive
x-oss-request-id: 594f0751-3b1e-168f-4501-4ac71d21****
Date: Fri, 24 Feb 2012 10:19:18 GMT
<? xml version="1.0" encoding="UTF-8"? >
<CompleteMultipartUploadResult xmlns="http://doc.oss-cn-hangzhou.
aliyuncs.com">
  <Location>http://oss-example.oss-cn-hangzhou.aliyuncs.com /
multipart.data</Location>
  <Bucket>oss-example</Bucket>
  <Key>multipart.data</Key>
  <ETag>"B864DB6A936D376F9F8D3ED3BBE540****"</ETag>
</CompleteMultipartUploadResult>
```

- **Sample request for a versioning-enabled bucket**

```
POST /multipart.data? uploadId=63C06A5CFF6F4AE4A6BB3AD7F01C****
HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 223
Date: Tue, 09 Apr 2019 07:01:56 GMT
Authorization: OSS 6jftttm6x6san0e:XljBrYBYxDnxKdFMj9WYI6qu****
<CompleteMultipartUpload>
  <Part>
    <PartNumber>1</PartNumber>
    <ETag>"25A9F4ABFCC05743DF6E2C886C56****"</ETag>
  </Part>
  <Part>
    <PartNumber>5</PartNumber>
    <ETag>"25A9F4ABFCC05743DF6E2C886C56****"</ETag>
```

```
</Part>
</CompleteMultipartUpload>
```

Sample response

```
HTTP/1.1 200 OK
Server: AliyunOSS
Content-Length: 314
Content-Type: Application/xml
Connection: keep-alive
x-oss-version-id: CAEQMxiBgID6v86D0BYiIDc3ZDI0YTBjZGQzYjQ2Mjk4OWVjYW
NiMDljYzhln****
x-oss-request-id: 5CAC4364B7AEADE017000662
Date: Tue, 09 Apr 2019 07:01:56 GMT
<? xml version="1.0" encoding="UTF-8"? >
<CompleteMultipartUploadResult>
  <Location>http://oss-example.oss-cn-hangzhou.aliyuncs.com/
multipart.data</Location>
  <Bucket>oss-example</Bucket>
  <Key>multipart.data</Key>
  <ETag>"097DE458AD02B5F89F9D0530231876****"</ETag>
</CompleteMultipartUploadResult>
```

SDKs

The SDKs of the CompleteMultipartUpload operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [Go](#)
- [C++](#)
- [PHP](#)
- [C](#)
- [.NET](#)

Error codes

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value in the request and the MD5 value calculated by OSS are inconsistent. To ensure that no errors occur during data transmission over the network, you can include the Content-MD5 value in the request. OSS calculates the MD5 value of the uploaded data and compares it with the Content-MD5 value .
FileAlreadyExists	409	The error message returned because an object with the same object name already exists when the request contains an x-oss-forbid-overwrite header and the value of this header is set to true.

8.6 AbortMultipartUpload

Stops a MultipartUpload event. To perform an AbotMultipartUpload operation, you must provide the Upload ID of the MultipartUpload event you want to stop.

**Note:**

- After a MultipartUpload event is stopped, you cannot use this Upload ID to perform any operations, and the uploaded data parts are also deleted.
- After you stop a MultipartUpload event, if parts in this event is still being uploaded, they are not deleted. Therefore, if multiple MultipartUpload events are performed concurrently, you must call AbortMultipartUpload for multiple times to completely release the OSS storage spaces.

Request syntax

```
DELETE /ObjectName?uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```


Authorization: Signature

Examples

Request example:

```
Delete /multipart.data?&uploadId=0004B9895DBBB6EC98E HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 22 Feb 2012 08:32:21 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:J/LICfXEvPmmSW86bBAfMmUmWjI=
```

Response example:

```
HTTP/1.1 204
Server: AliyunOSS
Connection: keep-alive
x-oss-request-id: 059a22ba-6ba9-daed-5f3a-e48027df344d
Date: Wed, 22 Feb 2012 08:32:21 GMT
```

SDK

The SDKs of this API are as follows:

- [Java](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

Error codes

Error code	HTTP status code	Description
NoSuchUpload	404	The Upload ID does not exist.

8.7 ListMultipartUploads

You can call this operation to list all ongoing multipart upload tasks that have been initiated but canceled or not completed.

To specify the number of tasks that are returned in the response from OSS, you can add the `max-uploads` parameter to the request. The `IsTruncated` element indicates whether all required multipart upload tasks are returned.



Note:

- **The maximum value of `max-uploads` is 1000, indicating that a maximum of 1,000 multipart upload tasks can be returned in the response.**
- **The results returned by OSS are listed in ascending alphabetical order of object names. If multipart upload tasks involve the same object, the results are listed in ascending order of time when the multipart upload tasks were initiated.**

Request syntax

```
Get /?uploads HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: Signature
```


Request parameters

**Note:**

ListMultipartUploads supports the following parameters: `prefix`, `marker`, `delimiter`, `upload-id-marker`, and `max-uploads`. **You can use one or more of the preceding parameters to configure rules to query multipart upload tasks so that results that meet conditions are returned.**

Parameter	Type	Description
<code>delimiter</code>	String	The delimiter used to group objects by name. <code>CommonPrefixes</code> specifies a set of substrings of object names. The substrings start with the prefix and end with the next occurrence of the specified delimiter.
<code>max-uploads</code>	String	The maximum number of multipart upload tasks to be returned in a single request. The maximum value of this parameter is 1000. Default value: 1000.

Parameter	Type	Description
key-marker	String	<p>The name of the object corresponding to the multipart upload task after which the listing begins. This parameter is used together with the upload-id-marker parameter.</p> <ul style="list-style-type: none">• If the upload-id-marker parameter is not set, OSS returns all multipart upload tasks in which object names come after the key-marker value in alphabetical order.• If the upload-id-marker parameter is set, the response includes the following tasks:<ul style="list-style-type: none">- Multipart upload tasks in which object names come after the key-marker value in alphabetical order- Multipart upload tasks in which object names are equal to the key-marker parameter value in alphabetical order but upload IDs are greater than the upload-id-marker parameter value

Parameter	Type	Description
prefix	String	<p>The prefix to be contained in the names of returned objects so that only objects with the specified prefix are listed. Note that the returned object names contain the prefix that is specified in the request.</p> <div> Note: You can use prefixes to group and manage objects in bucket in the same way you manage a folder in a file system.</div>

Parameter	Type	Description
upload-id-marker	String	<p>The upload ID of the multipart upload task after which the listing begins.</p> <ul style="list-style-type: none">• If the key-marker parameter is not set, OSS ignores the upload-id-marker parameter.• If the key-marker parameter is set, the response includes the following tasks:<ul style="list-style-type: none">- Multipart upload tasks in which object names come after the key-marker value in alphabetical order- Multipart upload tasks in which object names are equal to the key-marker parameter value in alphabetical order but upload IDs are greater than the upload-id-marker parameter value

Parameter	Type	Description
encoding-type	String	<p>The encoding type of the object name in the response. Values of Delimiter, KeyMarker, Prefix, NextKeyMarker, and Key can be encoded in UTF-8. However, the XML 1.0 standard cannot be used to parse certain control characters, such as characters with an ASCII value 0 to 10. You can set the encoding-type parameter to encode values of Delimiter, KeyMarker, Prefix, NextKeyMarker, and Key in the response.</p> <p>Default value: null</p>

Response elements

Element	Type	Description
ListMultipartUploadsResult	Container	<p>The container that stores the response to the ListMultipartUpload request.</p> <p>Child node: Bucket, KeyMarker, UploadIdMarker, NextKeyMarker, NextUploadIdMarker, MasUploads, Delimiter, Prefix, CommonPrefixes, IsTruncated, and Upload</p> <p>Parent node: none</p>

Element	Type	Description
Bucket	String	<p>The name of the bucket.</p> <p>Parent node: ListMultipartUploadsResult</p>
EncodingType	String	<p>The encoding type of the object name in the response. If encoding-type is specified in the request, values of Delimiter, KeyMarker, Prefix, NextKeyMarker, and Key in the response are encoded.</p> <p>Parent node: ListMultipartUploadsResult</p>
KeyMarker	String	<p>The name of the object corresponding to the multipart upload task after which the listing begins.</p> <p>Parent node: ListMultipartUploadsResult</p>
UploadIdMarker	String	<p>The upload ID of the multipart upload task after which the listing begins.</p> <p>Parent node: ListMultipartUploadsResult</p>
NextKeyMarker	String	<p>The value that is used for the key-marker parameter in a subsequent request when the response does not contain all required results.</p> <p>Parent node: ListMultipartUploadsResult</p>

Element	Type	Description
NextUploadMarker	String	The value that is used for the upload-id-marker in a subsequent request when the response does not contain all required results. Parent node: ListMultipartUploadsResult
MaxUploads	Integer	The maximum number of upload tasks returned by OSS. Parent node: ListMultipartUploadsResult
IsTruncated	Boolean	Indicates whether the list of multipart upload tasks returned in the response is truncated. "true" indicates that the response does not contain all required results. "false" indicates that the response contains all required results. Valid values: false and true Default value: false Parent node: ListMultipartUploadsResult

Element	Type	Description
Upload	Container	The container that stores the information about multipart upload tasks. Child node: Key, UploadId, and Initiated Parent node: ListMultipartUploadsResult
Key	String	The object name in the initialized multipart upload task. Parent node: Upload
UploadId	String	The ID of the multipart upload task. Parent node: Upload
Initiated	Date	The time when the multipart upload task was initialized. Parent node: Upload

Examples

Sample requests

```
Get /?uploads HTTP/1.1
Host:oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 23 Feb 2012 06:14:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:JX75CtQqsmBBz+dcivn7kwBM
****
```

Sample responses

```
HTTP/1.1 200
Server: AliyunOSS
Connection: keep-alive
Content-length: 1839
Content-type: application/xml
x-oss-request-id: 58a41847-3d93-1905-20db-ba6f561c****
Date: Thu, 23 Feb 2012 06:14:27 GMT

<?xml version="1.0" encoding="UTF-8"?>
<ListMultipartUploadsResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Bucket>oss-example</Bucket>
```

```
<KeyMarker></KeyMarker>
<UploadIdMarker></UploadIdMarker>
<NextKeyMarker>oss.avi</NextKeyMarker>
<NextUploadIdMarker>0004B99B8E707874FC2D692FA5D77D3F</NextUpload
IdMarker>
<Delimiter></Delimiter>
<Prefix></Prefix>
<MaxUploads>1000</MaxUploads>
<IsTruncated>>false</IsTruncated>
<Upload>
  <Key>multipart.data</Key>
  <UploadId>0004B999EF518A1FE585B0C9360DC4C8</UploadId>
  <Initiated>2012-02-23T04:18:23.000Z</Initiated>
</Upload>
<Upload>
  <Key>multipart.data</Key>
  <UploadId>0004B999EF5A239BB9138C6227D6****</UploadId>
  <Initiated>2012-02-23T04:18:23.000Z</Initiated>
</Upload>
<Upload>
  <Key>oss.avi</Key>
  <UploadId>0004B99B8E707874FC2D692FA5D7****</UploadId>
  <Initiated>2012-02-23T06:14:27.000Z</Initiated>
</Upload>
</ListMultipartUploadsResult>
```

SDKs

You can call this operation when you use SDK demos in any of the following languages:

- [Java](#)
- [Go](#)
- [C++](#)
- [PHP](#)
- [.NET](#)

8.8 ListParts

You can call this operation to list all parts that have been uploaded using a specified upload ID.



Note:

- **The results returned by OSS are listed in ascending order of their part numbers.**
- **Errors may occur during network transmission. We recommend that you do not use the results (part numbers and ETag values) of ListParts to generate the final part list of CompleteMultipart.**

Request syntax

```
Get /ObjectName?uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: Signature
```

Request parameters

Parameter	Type	Description
uploadId	String	The ID of the multipart upload task. Default value: null
max-parts	Integer	The maximum number of parts to list in the OSS response. Default value: 1,000 Maximum value: 1,000
part-number-marker	Integer	The number of the part after which the listing begins. All parts with the part numbers greater than the value of this parameter are listed. Default value: null

Parameter	Type	Description
Encoding-type	String	<p>The encoding type of the object name in the response. The object name can contain any characters encoded in UTF-8. However, the XML 1.0 standard cannot be used to parse certain control characters, such as characters with an ASCII value from 0 to 10. You can set the Encoding-type parameter to encode the returned object name. Set the value to url.</p> <p>Default value: null</p> <p>Valid value: url</p>

Response elements

Element	Type	Description
ListPartsResult	Container	<p>The container that stores the response to the ListParts request.</p> <p>Child node: Bucket, Key, UploadId, PartNumberMarker, NextPartNumberMarker, MaxParts, IsTruncated, and Part</p> <p>Parent node: none</p>
Bucket	String	<p>The name of the bucket.</p> <p>Parent node: ListPartsResult</p>

Element	Type	Description
EncodingType	String	The encoding type of the object name in the response. If the Encoding-type parameter is specified in the request, the object name in the response is encoded. Parent node: ListPartsR result
Key	String	The name of the object Parent node: ListPartsR result
UploadId	String	The ID of the upload task. Parent node: ListPartsR result
PartNumberMarker	Integer	The number of the part after which the listing begins. All parts with the part numbers greater than the value of this parameter are listed. Parent node: ListPartsR result
NextPartNumberMarker	Integer	The number of the part after which the next listing begins. If the response does not contain all required results, all parts with the part numbers greater than the value of this parameter are listed. Parent node: ListPartsR result

Element	Type	Description
MaxParts	Integer	<p>The maximum number of parts in the response.</p> <p>Parent node: ListPartsR esult</p>
IsTruncated	Boolean	<p>Indicates whether the list of parts returned in the response has been truncated. "true" indicates that the response does not contain all required results. "false" indicates that the response contains all required results.</p> <p>Valid values: true and false</p> <p>Parent node: ListPartsR esult</p>
Part	String	<p>The container that stores information about the part.</p> <p>Child node: PartNumber , LastModified, ETag, and Size</p> <p>Parent node: ListPartsR esult</p>
PartNumber	Integer	<p>The number that identifies a part.</p> <p>Parent node: ListPartsR esult.Part</p>

Element	Type	Description
LastModified	Date	The time when the part was uploaded. Parent node: ListPartsResult.Part
ETag	String	The ETag value of the uploaded part. Parent node: ListPartsResult.Part
Size	Integer	The size of the uploaded part. Parent node: ListPartsResult.Part

Examples

Sample requests

```
Get /multipart.data?uploadId=0004B999EF5A239BB9138C6227D69F95 HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 23 Feb 2012 07:13:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:4qOnUMc9UQWqkz8wDqD3lIsa9P8=
```

Sample responses

```
HTTP/1.1 200
Server: AliyunOSS
Connection: keep-alive
Content-length: 1221
Content-type: application/xml
x-oss-request-id: 106452c8-10ff-812d-736e-c865294afc1c
Date: Thu, 23 Feb 2012 07:13:28 GMT

<?xml version="1.0" encoding="UTF-8"?>
<ListPartsResult xmlns="http://doc.oss-cn-hangzhou.aliyuncs.com">
  <Bucket>multipart_upload</Bucket>
  <Key>multipart.data</Key>
  <UploadId>0004B999EF5A239BB9138C6227D69F95</UploadId>
  <NextPartNumberMarker>5</NextPartNumberMarker>
  <MaxParts>1000</MaxParts>
  <IsTruncated>>false</IsTruncated>
  <Part>
    <PartNumber>1</PartNumber>
    <LastModified>2012-02-23T07:01:34.000Z</LastModified>
    <ETag>"3349DC700140D7F86A0784842780****"</ETag>
    <Size>6291456</Size>
```

```
</Part>
<Part>
  <PartNumber>2</PartNumber>
  <LastModified>2012-02-23T07:01:12.000Z</LastModified>
  <ETag>"3349DC700140D7F86A0784842780****"</ETag>
  <Size>6291456</Size>
</Part>
<Part>
  <PartNumber>5</PartNumber>
  <LastModified>2012-02-23T07:02:03.000Z</LastModified>
  <ETag>"7265F4D211B56873A381D321F586****"</ETag>
  <Size>1024</Size>
</Part>
</ListPartsResult>
```

SDKs

You can call this operation when you use SDK demos in any of the following languages:

- [Java](#)
- [PHP](#)
- [Go](#)
- [C](#)
- [.NET](#)

9 Cross-Origin Resource Sharing

9.1 Introduction

Cross-Origin Resource Sharing (CORS) allows web applications to access resources in other regions.

With the CORS support, OSS allows users to develop more flexible web applications . OSS provides interfaces for developers to easily control various permissions for cross-domain access.

9.2 PutBucketcors

Sets a CORS rule for a specified bucket. If a rule has been set for the bucket, it is overwritten.

Request syntax

```
PUT /?cors HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue
<?xml version="1.0" encoding="UTF-8"?>
<CORSConfiguration>
  <CORSRule>
    <AllowedOrigin>the origin you want allow CORS request from</
AllowedOrigin>
    <AllowedOrigin>...</AllowedOrigin>
    <AllowedMethod>HTTP method</AllowedMethod>
    <AllowedMethod>...</AllowedMethod>
    <AllowedHeader> headers that allowed browser to send</
AllowedHeader>
    <AllowedHeader>...</AllowedHeader>
    <ExposeHeader> headers in response that can access from
client app</ExposeHeader>
    <ExposeHeader>...</ExposeHeader>
    <MaxAgeSeconds>time to cache pre-flight response</MaxAgeSeco
nds>
  </CORSRule>
  <CORSRule>
    ...
  </CORSRule>
  ...
</CORSConfiguration>
```

```
</CORSConfiguration >
```

Request elements

Element	Type	Required	Description
CORSRule	Container	Yes	Specifies the container that stores CORS rules. A maximum of 10 rules can be set for a bucket. Parent node: CORSConfiguration
AllowedOrigin	String	Yes	Specifies the allowed origins from which the cross-domain requests are initiated. You can use multiple elements to specify multiple allowed origins. Each rule allows up to one wildcard (*), which indicates that cross-domain requests from all origins are allowed. Parent node: CORSRule
AllowedMethod	enumeration (GET, PUT, DELETE, POST, HEAD)	Yes	Specifies the allowed methods for cross-domain requests. Parent node: CORSRule

Element	Type	Required	Description
AllowedHeader	String	No	<p>Controls whether the headers specified by Access-Control-Request-Headers in the OPTIONS prefetch command are allowed. Each header specified by Access-Control-Request-Headers must match a value in AllowedHeader. Each rule allows up to one wildcard (*).</p> <p>Parent node: CORSRule</p>
ExposeHeader	String	No	<p>Specifies the response headers that can be accessed by from an application (for example, a Javascript XMLHttpRequest object). The wildcard (*) is not allowed.</p> <p>Parent node: CORSRule</p>

Element	Type	Required	Description
MaxAgeSeconds	Integer	No	Specifies the cache time (in seconds) of a browser used to respond a prefetch (OPTIONS) request to a specific resource. Only one of this parameter is allowed in a CORSRule. Parent node: CORSRule
CORSConfiguration	Container	Yes	Specifies the container that stores the CORS rules for a bucket. Parent node: None

Detail analysis

- CORS is disabled for buckets by default, that is, cross-domain requests from any origin are forbidden.
- To use CORS in applications, for example, accessing OSS from www.a.com through the XMLHttpRequest function of the browser, you must manually upload a CORS rule through this interface to enable CORS. This rule is described in an XML document.
- The CORS settings for each bucket is specified by multiple CORS rules. A maximum of 10 CORS rules can be set for a bucket. The uploaded XML document cannot be larger than 16 KB.
- When receiving a cross-domain request (or an OPTIONS request), OSS reads the CORS rules for the bucket and then checks related permissions. OSS checks each rule sequentially and uses the first rule that matches the request to approve the request and return the corresponding header. If none of the rules match the request, OSS does not include any CORS header in the response.

- The following conditions must be met before OSS determines that a CORS rule matches the request:
 - The origin from which the request is initiated must match the value of `AllowOrigin` of the CORS rule.
 - The method of the request (such as GET or PUT) or the method corresponding to the `Access-Control-Request-Method` header in an OPTIONS request must match the value of `AllowedMethod` of the CORS rule.
 - Each header included in the `Access-Control-Request-Headers` header in an OPTIONS request must match the value of `AllowedHeader` of the CORS rule.
- If you include the `Content-MD5` header in the request, OSS calculates the `Content-MD5` of the request body and checks whether the two values are the same. If the two values are different, the error code `InvalidDigest` is returned.

Examples

Request example of adding a bucket CORS rule:

```
PUT /?cors HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Length: 186
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:KU5h8YMUC78M30dXqf3JxrTZHiA=
<?xml version="1.0" encoding="UTF-8"?>
<CORSConfiguration>
  <CORSRule>
    <AllowedOrigin>*</AllowedOrigin>
    <AllowedMethod>PUT</AllowedMethod>
    <AllowedMethod>GET</AllowedMethod>
    <AllowedHeader>Authorization</AllowedHeader>
  </CORSRule>
  <CORSRule>
    <AllowedOrigin>http://www.a.com</AllowedOrigin>
    <AllowedOrigin>http://www.b.com</AllowedOrigin>
    <AllowedMethod>GET</AllowedMethod>
    <AllowedHeader> Authorization</AllowedHeader>
    <ExposeHeader>x-oss-test</ExposeHeader>
    <ExposeHeader>x-oss-test1</ExposeHeader>
    <MaxAgeSeconds>100</MaxAgeSeconds>
  </CORSRule>
</CORSConfiguration >
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 50519080C4689A033D00235F
Date: Fri, 04 May 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
```

```
Server: AliyunOSS
```

9.3 GetBucketCORS

You can call this operation to query the current cross-origin resource sharing (CORS) rules of a specific bucket.

Request syntax

```
GET /? cors HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Response elements

Element	Type	Description
CORSRule	Container	Indicates the container that stores CORS rules. A maximum of 10 rules can be configured for a bucket. Parent node: CORSConfiguration
AllowedOrigin	String	Indicates the sources from which cross-origin requests are allowed. If AllowedOrigin is set to an asterisk (*), cross-origin requests from all sources are allowed. Parent node: CORSRule
AllowedMethod	Enumeration (GET, PUT, DELETE, POST, and HEAD)	Indicates the cross-origin request methods that are allowed. Parent node: CORSRule
AllowedHeader	String	Indicates whether the headers specified by Access-Control-Request-Headers in the OPTIONS prefetch command are allowed. Each header specified by Access-Control-Request-Headers must match a value of AllowedHeader. Parent node: CORSRule

Element	Type	Description
ExposeHeader	String	Indicates the response headers for allowed access requests from applications, such as a JavaScript XMLHttpRequest object. Parent node: CORSRule
MaxAgeSeconds	Integer	Indicates the period of time that the browser can cache the response to a preflight (OPTIONS) request to a specific resource. Only one MaxAgeSeconds parameter is allowed in one CORS rule. Unit: seconds Parent node: CORSRule
CORSConfiguration	Container	Indicates the container that stores the CORS rules for a bucket. Parent node: none

Examples

Sample requests

```
Get /? cors HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 13 Sep 2012 07:51:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc: BuG4rRK+zNhH1AcF51NNHD39
****
```

Sample responses

```
HTTP/1.1 200
x-oss-request-id: 50519080C4689A033D00****
Date: Thu, 13 Sep 2012 07:51:28 GMT
Connection: keep-alive
Content-Length: 218
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<CORSConfiguration>
  <CORSRule>
    <AllowedOrigin>*</AllowedOrigin>
    <AllowedMethod>GET</AllowedMethod>
    <AllowedHeader>*</AllowedHeader>
    <ExposeHeader>x-oss-test</ExposeHeader>
    <MaxAgeSeconds>100</MaxAgeSeconds>
  </CORSRule>
```

```
</CORSConfiguration>
```

SDKs

The SDKs of the GetBucketCORS operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C++](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the specified bucket does not exist.
NoSuchCORS Configuration	404	The error message returned because the specified CORS rule does not exist.
AccessDenied	403	The error message returned because you are not authorized to perform this operation. Only the owner of a bucket can query the CORS rules configured for the bucket.

9.4 DeleteBucketCORS

You can call this operation to disable the cross-origin resource sharing (CORS) function for a specific bucket and clears all CORS rules.

Request syntax

```
DELETE /? cors HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
```



```
Authorization: SignatureValue
```

Examples

Sample requests

```
DELETE /? cors HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 05:45:34 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:LnM4AZ10eIduZF5vGFWicOME
****
```

Sample responses

```
HTTP/1.1 204 No Content
x-oss-request-id: 5051845BC4689A033D00****
Date: Fri, 24 Feb 2012 05:45:34 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

SDKs

The SDKs of the DeleteBucketCORS operation for various programming languages are as follows:

- [Java](#)
- [Python](#)
- [PHP](#)
- [Go](#)
- [C++](#)
- [C](#)
- [.NET](#)
- [Node.js](#)
- [Ruby](#)

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the specified bucket does not exist.

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you are not authorized to perform this operation. Only the owner of a bucket can delete the CORS rules configured for the bucket.

9.5 OptionObject

Before sending a cross-domain request, the browser sends a preflight request (OPTIONS) containing a specified origin, HTTP method, and header information to OSS to determine whether to send a real request.

OSS can enable CORS for a bucket through PutBucketcors. After CORS is enabled for a bucket, OSS determines whether to allow the preflight request sent from the browser based on the specified CORS rules. If OSS does not allow the request or CORS is disabled for the bucket, the 403 Forbidden error is returned.

Request syntax

```
OPTIONS /ObjectName HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Origin:Origin
Access-Control-Request-Method:HTTP method
Access-Control-Request-Headers:Request Headers
```

Request header

Header	Type	Description
Origin	String	Specifies the origin of a request, which is used to identify a cross-domain request. Default value: None
Access-Control-Request-Method	String	Specifies the methods to be used in a real request. Default value: None

Header	Type	Description
Access-Control-Request-Headers	String	Specifies the headers (except for simple headers) to be used in a real request. Default value: None

Response header

Header	Type	Description
Access-Control-Allow-Origin	String	Indicates the origin contained in the request . This header is not contained if the request is not allowed.
Access-Control-Allow-Methods	String	Indicates the HTTP method used by the request. This header is not contained if this request is not allowed.
Access-Control-Allow-Headers	String	Indicates the list of allowed headers in the request. If the request contains forbidden headers, this header is not contained and the request is rejected.
Access-Control-Expose-Headers	String	Indicates the list of headers that can be accessed by the client' s JavaScript application.
Access-Control-Max-Age	Integer	Indicates the allowed time duration (in seconds) required for the browser to buffer the preflight results.

Examples

Request example:

```
OPTIONS /testobject HTTP/1.1
```

```
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 05:45:34 GMT
Origin:http://www.example.com
Access-Control-Request-Method:PUT
Access-Control-Request-Headers:x-oss-test
```

Response example:

```
HTTP/1.1 200 OK
x-oss-request-id: 5051845BC4689A033D0022BC
Date: Fri, 24 Feb 2012 05:45:34 GMT
Access-Control-Allow-Origin: http://www.example.com
Access-Control-Allow-Methods: PUT
Access-Control-Expose-Headers: x-oss-test
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

10 LiveChannel-related operations

10.1 Overview

You can upload audio and video data to OSS through the RTMP protocol and store the data as audio and video files in specified formats. Before uploading audio and video data, you must create a LiveChannel to obtain the URL used to push video or audio streams.

When uploading audio and video data to OSS through the RTMP protocol, you must pay attention to the following limits:

- By using the RTMP protocol, you can only push video or audio streams but not pull the streams.
- A LiveChannel must include a video stream in H264 format.
- Audio streams are optional in a LiveChannel. Only audio streams in the AAC format are supported. Audio streams in other formats are discarded.
- Only the HLS protocol is supported to store the uploaded video and audio data as files in specified formats.
- Only one client can push streams to a LiveChannel at the same time.

10.2 RTMP ingest URLs and signatures

This topic describes RTMP ingest URLs and their signature method.



Note:


You must add a signature to a RTMP ingest URL only when the bucket ACL is not set to public-read-write. The signature method of RTMP ingest URLs is similar to that of OSS URLs.

A RTMP ingest URL must be in `rtmp://${bucket}.${host}/live/${channel}? ${params}` format. Example: `rtmp://your-bucket.oss-cn-hangzhou.aliyuncs.com/live/test-channel`.

- `live`: the name of the app for RTMP. OSS uses "live" for RTMP ingest.
- `params`: the ingest parameter. Its format must be the same as the query string of an HTTP request. Example: `varA=valueA&varB=valueB`.

RTMP ingest URL parameters


The following table describes the parameters in RTMP ingest URLs.

Parameter	Description
playlistName	<p>Specifies the name of the generated M3U8 file. The value of this parameter overwrites the value specified in the LiveChannel settings.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: The generated M3U8 file will still contain the <code>\${channel_name}/</code> prefix. </div>

Signature method of RTMP ingest URLs

A signed RTMP ingest URL is in `rtmp://${bucket}.${host}/live/${channel}?OSSAccessKeyId=xxx&Expires=yyy&Signature=zzz&${params}` format.


The following table describes the parameters in signed RTMP ingest URLs.

Parameter	Description
OSSAccessKeyId	Assumes the same role as the AccessKeyId in the signed HTTP request.
Expires	The expiration time of the URL. The timestamp follows the UNIX time format.
Signature	The signature string.
params	<p>Other parameters.</p> <div style="background-color: #f0f0f0; padding: 5px;">  Note: All parameters must be included in the signature. </div>

The signature calculation rules are as follows:

```
base64(hmac-sha1(AccessKeySecret,
+ Expires + "\n"
+ CanonicalizedParams
+ CanonicalizedResource))
```

The following table describes the parameters involved in the signature calculation.

Parameter	Description
CanonicalizedResource	The value of this parameter is in / BucketName/ChannelName format.
CanonicalizedParams	<p>The canonicalized query string created by arranging the parameter keys in alphabetical order. Parameters must be in key:value\n format.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • The value of this parameter is null if there are no parameters. • SecurityToken, OSSAccessKeyId, Expire, and Signature are not used for creating a canonicalized query string. • Every parameter key is used in the string only once. </div>

10.3 PutLiveChannel

Before uploading audio or video data to OSS through the RTMP protocol, you must use PutLiveChannel to create a LiveChannel. PutLiveChannel returns a URL used to push streams through the RTMP protocol and a URL used to play the uploaded data.

You can use the URLs returned by PutLiveChannel to push streams and play the uploaded data. In addition, you can perform operations on the created LiveChannel, such as query the stream pushing status, query stream pushing records, or disable stream pushing.

Request syntax

```
PUT /ChannelName?live HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT date
Content-Length: Size
Authorization: SignatureValue
<?xml version="1.0" encoding="UTF-8"?>
<LiveChannelConfiguration>
  <Description>ChannelDescription</Description>
  <Status>ChannelStatus</Status>
  <Target>
    <Type>HLS</Type>
    <FragDuration>FragDuration</FragDuration>
    <FragCount>FragCount</FragCount>
    <PlaylistName>PlaylistName</PlaylistName>
  </Target>
</LiveChannelConfiguration>
```

```

<Snapshot>
  <RoleName>Snapshot ram role</RoleName>
  <DestBucket>Snapshot dest bucket</DestBucket>
  <NotifyTopic>Notify topic of MNS</NotifyTopic>
  <Interval>Snapshot interval in second</Interval>
</Snapshot>
</LiveChannelConfiguration>

```

Request elements

Element	Type	Description	Required
LiveChannelConfiguration	Container	<p>Specifies the container used to store the settings of the LiveChannel.</p> <p>Sub-node: Description, Status, Target</p> <p>Parent node: None</p>	Yes
Description	String	<p>Specifies the description of the LiveChannel, which is 128 bytes in maximum.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelConfiguration</p>	No
Status	Enumerated string	<p>Specifies the status of the LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelConfiguration</p> <p>Valid values: enabled and disabled</p> <p>Default value: enabled</p>	No

Element	Type	Description	Required
Target	Container	<p>Specifies the container used to store the settings for storing uploaded data.</p> <p>Sub-node: Type, FragDuration, FragCount, and PlaylistName</p> <p>Parent node: LiveChannelConfiguration</p>	Yes
Type	Enumerated string	<p>Specifies the format that the uploaded data is stored as.</p> <p>Sub-node: None</p> <p>Parent node: Target</p> <p>Valid value: HLS</p>	Yes
FragDuration	String	<p>Specifies the duration (in seconds) of each ts file when the value of Type is HLS.</p> <p>Sub-node: None</p> <p>Parent node: Target</p> <p>Default value: 5</p> <p>Value range: [1, 100]</p>	No
FragCount	String	<p>Specifies the number of ts files included in the m3u8 file when the value of Type is HLS.</p> <p>Sub-node: None</p> <p>Parent node: Target</p> <p>Default value: 3</p> <p>Value range: [1, 100]</p>	No

Element	Type	Description	Required
PlaylistName	String	<p>Specifies the name of the m3u8 file generated when the value of Type is HLS. The name must be ended with ".m3u8" and in the following length range: [6, 128].</p> <p>Sub-node: None</p> <p>Parent node: Target</p> <p>Default value: playlist.m3u8</p> <p>Value range: [6, 128]</p>	No
Snapshot	Container	<p>Specifies the container used to store the Snapshot (high-frequent snapshot operation) options.</p> <p>Sub-node: RoleName, DestBucket, NotifyTopic, Interval, and PornRec</p> <p>Parent node: Snapshot</p>	No
RoleName	String	<p>Specifies the name of the role who performs the high-frequent snapshot operations. The role must have the permission to write data into DestBucket and send messages to NotifyTopic.</p> <p>Sub-node: None</p> <p>Parent node: Snapshot</p>	No
DestBucket	String	<p>Specifies the bucket where the snapshots are stored. The DestBucket and the current bucket must be owned by the same user.</p> <p>Sub-node: None</p> <p>Parent node: Snapshot</p>	No

Element	Type	Description	Required
NotifyTopic	String	<p>Specifies the topic of the MNS used to notify the user of the result of high-frequent snapshot operations.</p> <p>Sub-node: None</p> <p>Parent node: Snapshot</p>	No
Interval	Numeric	<p>Specifies the interval (in seconds) between each snapshot operation. If no key frame (I-frame) exists in an interval, no snapshot is captured in the interval.</p> <p>Sub-node: None</p> <p>Parent node: Snapshot</p> <p>Value range: [1, 100]</p>	No

Detail analysis

- ChannelName must conform to the naming conventions for objects and cannot include "/".
- The default values of FragDuration and FragCount take effect only when the values are both not specified. If you specify the value of one of the two parameters, the value of the other must also be specified.
- If the value of Type is HLS, OSS updates the generated m3u8 file each time when a ts file is generated. The number of newly-generated ts files included in the m3u8 file is specified by FragCount.
- If the value of Type is HLS, when the duration of the video or audio data in the current ts file reaches the value of FragDuration, OSS generates a new ts file when receiving the next key frame. If OSS does not receive the next key frame within a time period (calculated by $\max(2 * \text{FragDuration}, 60\text{s})$), a new ts file is generated, which results in lag in audio or video playing.

Response element

Element	Type	Description
CreateLiveChannelResult	Container	Specifies the container used to store the response fo the CreateLiveChannel request. Sub-nodes: PublishUrls and PlayUrls Parent node: None
PublishUrls	Container	Specifies the container used to store the stream pushing URL. Sub-node: Url Parent node: CreateLiveChannelResult
Url	String	Specifies the stream pushing URL. Sub-node: None Parent node: PublishUrls
PlayUrls	Container	Specifies the container used to store the stream pushing URL. Sub-node: Url Parent node: CreateLiveChannelResult
Url	String	Specifies the URL used to play the audio or video data. Sub-node: None Parent node: PlayUrls

Detail analysis

- The stream pushing URL is not signed. If the ACL for the bucket is not public-read-write, you must sign the URL before accessing it.

- **The URL used to play the audio or video data is not signed. If the ACL for the bucket is private, you must sign the URL before accessing it.**

Examples

Request example

```
PUT /test-channel?live HTTP/1.1
Date: Wed, 24 Aug 2016 11:11:28 GMT
Content-Length: 333
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKXv:hvwOZJRh8toAj3DZvtsuPgf+agA=
<?xml version="1.0" encoding="utf-8"?>
<LiveChannelConfiguration>
  <Description/>
  <Status>enabled</Status>
  <Target>
    <Type>HLS</Type>
    <FragDuration>2</FragDuration>
    <FragCount>3</FragCount>
  </Target>
  <Snapshot>
    <RoleName>role_for_snapshot</RoleName>
    <DestBucket>snapshotdest</DestBucket>
    <NotifyTopic>snapshotnotify</NotifyTopic>
    <Interval>1</Interval>
  </Snapshot>
</LiveChannelConfiguration>
```

Response example

```
HTTP/1.1 200
content-length: 259
server: AliyunOSS
x-oss-server-time: 4
connection: close
x-oss-request-id: 57BD8419B92475920B0002F1
date: Wed, 24 Aug 2016 11:11:28 GMT
x-oss-bucket-storage-type: standard
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<CreateLiveChannelResult>
  <PublishUrls>
    <Url>rtmp://test-bucket.oss-cn-hangzhou.aliyuncs.com/live/test-
channel</Url>
  </PublishUrls>
  <PlayUrls>
    <Url>http://test-bucket.oss-cn-hangzhou.aliyuncs.com/test-channel/
playlist.m3u8</Url>
  </PlayUrls>
```

```
</CreateLiveChannelResult>
```

10.4 ListLiveChannel

Lists specified LiveChannels.

Request syntax

```
GET /?live HTTP/1.1
Date: GMT date
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue
```

Request parameter

Parameter	Description	Required
marker	Indicates that the results after the marker are returned in alphabetical order.	No
max-keys	Specifies the maximum number of the returned LiveChannels. Default value: 100 Maximum value: 1000	No
prefix	Specifies that only LiveChannels with the prefix are returned. When you use the prefix parameter to query LiveChannels, it is also included in the returned keys.	No

Response elements

Element	Type	Description
ListLiveChannelResult	Container	<p>Specifies the container that stores the response to the ListLiveChannel request.</p> <p>Sub-node: Prefix, Marker, MaxKeys, and IsTruncated, NextMarker, and LiveChannel</p> <p>Parent node: None</p>
Prefix	String	<p>Specifies the prefix of the query result.</p> <p>Sub-node: None</p> <p>Parent node: ListLiveChannelResult</p>
Marker	String	<p>Indicates that the LiveChannels after the marker in alphabetical order are returned.</p> <p>Sub-node: None</p> <p>Parent node: ListLiveChannelResult</p>
MaxKeys	String	<p>Specifies the maximum number of returned LiveChannels in the response.</p> <p>Sub-node: None</p> <p>Parent node: ListLiveChannelResult</p>

Element	Type	Description
IsTruncated	String	<p>Indicates whether all results are returned. The value <code>true</code> indicates that not all results are returned, and value <code>false</code> indicates that all results are returned.</p> <p>Sub-node: None</p> <p>Parent node: ListLiveChannelResult</p>
NextMarker	String	<p>If not all results are returned, this element is included in the response to indicate the value of Marker for the next request.</p> <p>Sub-node: None</p> <p>Parent node: ListLiveChannelResult</p>
LiveChannel	Container	<p>Specifies the container that stores the information about a returned LiveChannel.</p> <p>Sub-node: Name, Description, Status, LastModified, PublishUrls, and PlayUrls</p> <p>Parent node: ListLiveChannelResult</p>
Name	String	<p>Indicates the name of the returned LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannel</p>

Element	Type	Description
Description	String	<p>Specifies the description of the returned LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannel</p>
Status	Enumerated string	<p>Indicates the status of the returned LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannel</p> <p>Valid value: disabled and enabled</p>
LastModified	String	<p>Indicates the last modification time of the returned LiveChannel. The value of this parameter is in ISO8601 format.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannel</p>
PublishUrls	Container	<p>Specifies the container that stores the URL used to push a stream to the LiveChannel.</p> <p>Sub-node: Url</p> <p>Parent node: LiveChannel</p>
Url	String	<p>Specifies the URL used to push a stream to the LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: PublishUrls</p>

Element	Type	Description
PlayUrls	Container	<p>Specifies the container that stores the URL used to play a stream pushed to the LiveChannel.</p> <p>Sub-node: Url</p> <p>Parent node: LiveChannel</p>
Url	String	<p>Specifies the URL used to play the stream pushed to the LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: PlayUrls</p>

Examples

Request example

```
GET /?live&max-keys=1 HTTP/1.1
Date: Thu, 25 Aug 2016 07:50:09 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKXv:TaX+tlc/Xsgpz6uRuqcbmUJsIHW=
```

Response example

```
HTTP/1.1 200
content-length: 656
server: AliyunOSS
connection: close
x-oss-request-id: 57BEA331B92475920B00245E
date: Thu, 25 Aug 2016 07:50:09 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<ListLiveChannelResult>
  <Prefix></Prefix>
  <Marker></Marker>
  <MaxKeys>1</MaxKeys>
  <IsTruncated>>true</IsTruncated>
  <NextMarker>channel-0</NextMarker>
  <LiveChannel>
    <Name>channel-0</Name>
    <Description></Description>
    <Status>disabled</Status>
    <LastModified>2016-07-30T01:54:21.000Z</LastModified>
    <PublishUrls>
      <Url>rtmp://test-bucket.oss-cn-hangzhou.aliyuncs.com/live/
channel-0</Url>
    </PublishUrls>
    <PlayUrls>
      <Url>http://test-bucket.oss-cn-hangzhou.aliyuncs.com/channel-0/
playlist.m3u8</Url>
```

```
</PlayUrls>  
</LiveChannel>
```

10.5 DeleteLiveChannel

Deletes the specified LiveChannel.

Request syntax

```
DELETE /ChannelName?live HTTP/1.1  
Date: GMT date  
Host: BucketName.oss-cn-hangzhou.aliyuncs.com  
Authorization: SignatureValue
```

Detail analysis

- **A DeleteLiveChannel request fails only when a client is pushing a stream to the LiveChannel.**
- **DeleteLiveChannel only deletes the LiveChannel but not the files generated by the streams pushed to the LiveChannel.**

Examples

Request example

```
DELETE /test-channel?live HTTP/1.1  
Date: Thu, 25 Aug 2016 07:32:26 GMT  
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com  
Authorization: OSS YJjHKOKWDWINLKXv:ZbfvQ3XwmYEE809CX8kwVQYNbzQ=
```

Response example

```
HTTP/1.1 204  
content-length: 0  
server: AliyunOSS  
connection: close  
x-oss-request-id: 57BE9F0AB92475920B0023E0  
date: Thu, 25 Aug 2016 07:32:26 GMT
```

10.6 PutLiveChannelStatus

A LiveChannel can be enabled or disabled. You can use PutLiveChannelStatus to switch the status of a LiveChannel.

If a LiveChannel is in the disabled status, you cannot push streams to the LiveChannel. If you are pushing a stream to a LiveChannel when the status of the LiveChannel is switched to disabled, your client is disconnected from the LiveChannel (there may be a delay of 10 seconds).

Request syntax

PUT /ChannelName?live&status=NewStatus HTTP/1.1
Date: GMT date
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue

Request parameter

Parameter	Description	Required
NewStatus	<p>Specifies the status of the LiveChannel.</p> <p>Valid values: enabled and disabled</p>	Yes

Detail analysis

- If no client is pushing streams to a LiveChannel, you can switch the status of the LiveChannel by using PutLiveChannel, which creates a new LiveChannel.
- If a stream is being pushed to a LiveChannel by other clients, you cannot use PutLiveChannel to create a new LiveChannel. You can switch the status of the LiveChannel to disabled only by using PutLiveChannelStatus.

Examples

Request example

```
PUT /test-channel?live&status=disabled HTTP/1.1
Date: Thu, 25 Aug 2016 05:37:38 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKKv:X/mBrSbkNoqM/JoAfRC0ytyQ5pY=
```

Response example

```
HTTP/1.1 200
content-length: 0
server: AliyunOSS
connection: close
x-oss-request-id: 57BE8422B92475920B002030
date: Thu, 25 Aug 2016 05:37:39 GMT
```

10.7 GetLiveChannelInfo

Obtains the configuration information about a specified LiveChannel.

Request syntax

```
GET /ChannelName?live HTTP/1.1
Date: GMT date
```

Host: BucketName.oss-cn-hangzhou.aliyuncs.com
 Authorization: SignatureValue

Response element

Element	Type	Description
LiveChannelConfiguration	Container	<p>Specifies the container that stores the response to the GetLiveChannelInfo request.</p> <p>Sub-node: Description, Status, and Target</p> <p>Parent node: None</p>
Description	String	<p>Specifies the description of the LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelConfiguration</p>
Status	Enumerated string	<p>Indicates the status of the LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelConfiguration</p> <p>Valid value: enabled and disabled</p>
Target	Container	<p>Specifies the container used to store the settings for storing uploaded data.</p> <p>Sub-node: Type, FragDuration, FragCount, and PlaylistName</p> <p>Parent node: LiveChannelConfiguration</p>

Element	Type	Description
Type	Enumerated string	<p>Specifies the format that the uploaded data is stored as when its value is HLS.</p> <p>Sub-node: None</p> <p>Parent-node: Target</p> <p>Valid value: HLS</p>
FragDuration	String	<p>Specifies the duration (in seconds) of each ts file when the value of Type is HLS.</p> <p>Sub-node: None</p> <p>Parent node: Target</p>
FragCount	String	<p>Specifies the number of ts files included in the m3u8 file when the value of Type is HLS.</p> <p>Sub-node: None</p> <p>Parent node: Target</p>
PlaylistName	String	<p>Specifies the name of the m3u8 file generated when the value of Type is HLS.</p> <p>Sub-node: None</p> <p>Parent node: Target</p>

Detail analysis

The sub-nodes of Target, including FragDuration, FragCount, and PlaylistName, are returned only when the value of Type is HLS.

Examples

Request example

```
GET /test-channel?live HTTP/1.1
Date: Thu, 25 Aug 2016 05:52:40 GMT
```

```
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHK0KWDWINLKXv:D6bDCRXKht58hin1BL83wxyGvl0=
```

Response example

```
HTTP/1.1 200
content-length: 475
server: AliyunOSS
connection: close
x-oss-request-id: 57BE87A8B92475920B002098
date: Thu, 25 Aug 2016 05:52:40 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<LiveChannelConfiguration>
  <Description></Description>
  <Status>enabled</Status>
  <Target>
    <Type>HLS</Type>
    <FragDuration>2</FragDuration>
    <FragCount>3</FragCount>
    <PlaylistName>playlist.m3u8</PlaylistName>
  </Target>
</LiveChannelConfiguration>
```

10.8 GetLiveChannelStat

Obtains the stream pushing status of a specified LiveChannel.

Request syntax

```
GET /ChannelName?live&comp=stat HTTP/1.1
Date: GMT date
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue
```

Response element

Element	Type	Description
LiveChannelStat	Container	<p>Specifies the container used to store the response to the GetLiveChannelStat request.</p> <p>Sub-node: Status, ConnectedTime, Video, and Audio</p> <p>Parent node: None</p>

Element	Type	Description
Status	Enumerated string	<p>Indicates the current stream pushing status of the LiveChannel.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelIStat</p> <p>Valid value: Disabled, Live, and Idle</p>
ConnectedTime	String	<p>If the value of Status is Live, this parameter indicates the time when the current client start to push streams. The value of this parameter is in the ISO8601 format.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelIStat</p>
RemoteAddr	String	<p>If the value of Status is Live, this parameter indicates the IP address of the current client that pushes streams.</p> <p>Sub-node: None</p> <p>Parent node: LiveChannelIStat</p>

Element	Type	Description
Video	Container	<p>If the value of Status is Live, this parameter specifies the container that stores the information about the video stream.</p> <p>Sub-node: Width, Height, FrameRate, Bandwidth, and Codec</p> <p>Parent node: LiveChannelStat</p>
Width	String	<p>Indicates the width (in pixels) of the current video stream.</p> <p>Sub-node: None</p> <p>Parent node: Video</p>
Height	String	<p>Indicates the height (in pixels) of the current video stream</p> <p>Sub-node: None</p> <p>Parent node: Video</p>
FrameRate	String	<p>Indicates the frame rate of the current video stream.</p> <p>Sub-node: None</p> <p>Parent node: Video</p>
Bandwidth	String	<p>Indicates the bit rate (bit/s) of the current video stream.</p> <p>Sub-node: None</p> <p>Parent node: Video</p>

Element	Type	Description
Codec	Enumerated string	Indicates the codec of the current video stream. Sub-node: None Parent node: Video
Audio	Container	If the value of Status is Live, this parameter specifies the container that stores the information about the audio stream. Sub-node: SampleRate, Bandwidth, and Codec Parent node: LiveChannelStat
SampleRate	String	Indicates the sampling rate of the current audio stream. Sub-node: None Parent node: Audio
Bandwidth	String	Indicates the bit rate (bit/s) of the current audio stream. Sub-node: None Parent node: Audio
Codec	Enumerated string	Indicates the codec of the current audio stream. Sub-node: None Parent node: Audio

Detail analysis

- **The Video and Audio containers are only returned when the value of Status is Live. However, they may not be returned even if the value of Status is Live. For**

example, the Video and Audio containers are not returned when the client is connected to the LiveChannel but does not start to send video and audio data.

- **Bandwidth** indicates the average bit rate of the video or audio stream in the recent period. The value of Bandwidth may be 0 immediately after the Status of the LiveChannel is switched to Live.

Examples

Request example 1

```
GET /test-channel?live&comp=stat HTTP/1.1
Date: Thu, 25 Aug 2016 06:22:01 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKXv:fOzwkAgVTVS01VKLPInQ0JYy0A=
```

Response example 1

```
HTTP/1.1 200
content-length: 100
server: AliyunOSS
connection: close
x-oss-request-id: 57BE8E89B92475920B002164
date: Thu, 25 Aug 2016 06:22:01 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<LiveChannelStat>
  <Status>Idle</Status>
</LiveChannelStat>
```

Request example 1

```
GET /test-channel?live&comp=stat HTTP/1.1
Date: Thu, 25 Aug 2016 06:25:26 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKXv:WeC5joEaRzfSSS8xK0tlo7WTK1I=
```

Response example 2

```
HTTP/1.1 200
content-length: 469
server: AliyunOSS
connection: close
x-oss-request-id: 57BE8F56B92475920B002187
date: Thu, 25 Aug 2016 06:25:26 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<LiveChannelStat>
  <Status>Live</Status>
  <ConnectedTime>2016-08-25T06:25:15.000Z</ConnectedTime>
  <RemoteAddr>10.1.2.3:47745</RemoteAddr>
  <Video>
    <Width>1280</Width>
    <Height>536</Height>
    <FrameRate>24</FrameRate>
    <Bandwidth>0</Bandwidth>
    <Codec>H264</Codec>
```

```

</Video>
<Audio>
  <Bandwidth>0</Bandwidth>
  <SampleRate>44100</SampleRate>
  <Codec>ADPCM</Codec>
</Audio>
</LiveChannelStat>

```

10.9 GetLiveChannelHistory

Obtains the stream pushing record of a LiveChannel.

Request syntax

```

GET /ChannelName?live&comp=history HTTP/1.1
Date: GMT date
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue

```

Response element

Element	Type	Description
LiveChannelHistory	Container	<p>\Specifies the container that stores the response to the GetLiveChannelHistory request.</p> <p>Sub-node: LiveRecord</p> <p>Parent node: None</p>
LiveRecord	Container	<p>Specifies the container that stores a stream pushing record.</p> <p>Sub-node: StartTime , EndTime, and RemoteAddr</p> <p>Parent node: LiveChanne lHistory</p>

Element	Type	Description
StartTime	String	Indicates the time when the client starts to push the stream. The value of this parameter is in ISO8601 format. Sub-node: None Parent node: LiveRecord
EndTime	String	Indicates the time when the client stops to push the stream. The value of this parameter is in ISO8601 format. Sub-node: None Parent node: LiveRecord
RemoteAddr	String	Indicates the IP address of the client that pushes the stream. Sub-node: None Parent node: LiveRecord

Detail analysis

A maximum of 10 records of the streams recently pushed to the specified LiveChannel is returned.

Examples

Request example

```
GET /test-channel?live&comp=history HTTP/1.1
Date: Thu, 25 Aug 2016 07:00:12 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKXv:pqgDBP8JXTxAytBoXpvNoZfo68k=
```

Response example

```
HTTP/1.1 200
content-length: 1892
server: AliyunOSS
connection: close
x-oss-request-id: 57BE977CB92475920B0022FB
```

```

date: Thu, 25 Aug 2016 07:00:12 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<LiveChannelHistory>
  <LiveRecord>
    <StartTime>2016-07-30T01:53:21.000Z</StartTime>
    <EndTime>2016-07-30T01:53:31.000Z</EndTime>
    <RemoteAddr>10.101.194.148:56861</RemoteAddr>
  </LiveRecord>
  <LiveRecord>
    <StartTime>2016-07-30T01:53:35.000Z</StartTime>
    <EndTime>2016-07-30T01:53:45.000Z</EndTime>
    <RemoteAddr>10.101.194.148:57126</RemoteAddr>
  </LiveRecord>
  <LiveRecord>
    <StartTime>2016-07-30T01:53:49.000Z</StartTime>
    <EndTime>2016-07-30T01:53:59.000Z</EndTime>
    <RemoteAddr>10.101.194.148:57577</RemoteAddr>
  </LiveRecord>
  <LiveRecord>
    <StartTime>2016-07-30T01:54:04.000Z</StartTime>
    <EndTime>2016-07-30T01:54:14.000Z</EndTime>
    <RemoteAddr>10.101.194.148:57632</RemoteAddr>
  </LiveRecord>
</LiveChannelHistory>

```

10.10 PostVodPlaylist

Generates a VoD playlist (m3u8 file) for the ts files generated by the streams pushed to a specified LiveChannel in a specified time period.

Request syntax

```

POST /ChannelName/PlaylistName?vod&endTime=EndTime&startTime=StartTime
HTTP/1.1
Date: GMT date
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue

```

Request elements

Element	Description	Required
ChannelName	Specifies the name of an existing LiveChannel.	Yes
PlaylistName	Specifies the name of the generated VoD playlist, which must be ended with ".m3u8".	Yes
StartTime	Specifies the start time of the ts file that you want to query, which is a Unix timestamp.	Yes

Element	Description	Required
EndTime	Specifies the end time of the ts file that you want to query, which is a Unix timestamp.	Yes

Detail analysis

- The value of EndTime must be later than that of StartTime. The period between the EndTime and StartTime must be shorter than one day.
- OSS queries all ts files generated by the streams pushed to the LiveChannel in a specified time period, and splices the files into a playlist.

Examples

Request example

```
POST /test-channel/vod.m3u8?vod&endTime=1472020226&startTime=
1472020031 HTTP/1.1
Date: Thu, 25 Aug 2016 07:13:26 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWINLKXv:ABIigvnLtCHK+7fMHLerl0Unzv0=
```

Response example

```
HTTP/1.1 200
content-length: 0
server: AliyunOSS
connection: close
etag: "9C6104DD9CF1A0C4D0CFD21F43905D59"
x-oss-request-id: 57BE9A96B92475920B002359
date: Thu, 25 Aug 2016 07:13:26 GMT
```

10.11 GetVodPlaylist


Queries for the playlist generated by the streams pushed to a specified LiveChannel in a specified time period.

Request syntax

```
GET /ChannelName?vod&endTime=EndTime&startTime=StartTime HTTP/1.1
Date: GMT date
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue
```

Request element

Element	Description	Required
---------	-------------	----------

ChannelName	Specifies the name of an existing LiveChannel.	Yes
StartTime	Specifies the start time of the ts file that you want to query, which is a Unix timestamp.	Yes
EndTime	Specifies the end time of the ts file that you want to query, which is a Unix timestamp.  Note: The value of EndTime must be later than that of StartTime. The period between the EndTime and StartTime must be shorter than one day.	Yes

Examples

Request example

```
GET /test-channel?vod&endTime=1472020226&startTime=1472020031 HTTP/1.1
Date: Thu, 25 Aug 2016 07:13:26 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YjJHKOKKWDWINLKXv:ABIigvnLtCHK+7fMHLerl0Unzv0=
```

Response example

```
HTTP/1.1 200
content-length: 312
server: AliyunOSS
connection: close
etag: "9C6104DD9CF1A0C4D0CFD21F43905D59"
x-oss-request-id: 57BE9A96B92475920B002359
date: Thu, 25 Aug 2016 07:13:26 GMT
Content-Type: application/x-mpegURL

#EXTM3U
#EXT-X-VERSION:3
#EXT-X-MEDIA-SEQUENCE:0
#EXT-X-TARGETDURATION:13
#EXTINF:7.120,
1543895706266.ts
#EXTINF:5.840,
1543895706323.ts
#EXTINF:6.400,
1543895706356.ts
#EXTINF:5.520,
1543895706389.ts
#EXTINF:5.240,
1543895706428.ts
#EXTINF:13.320,
1543895706468.ts
#EXTINF:5.960,
```



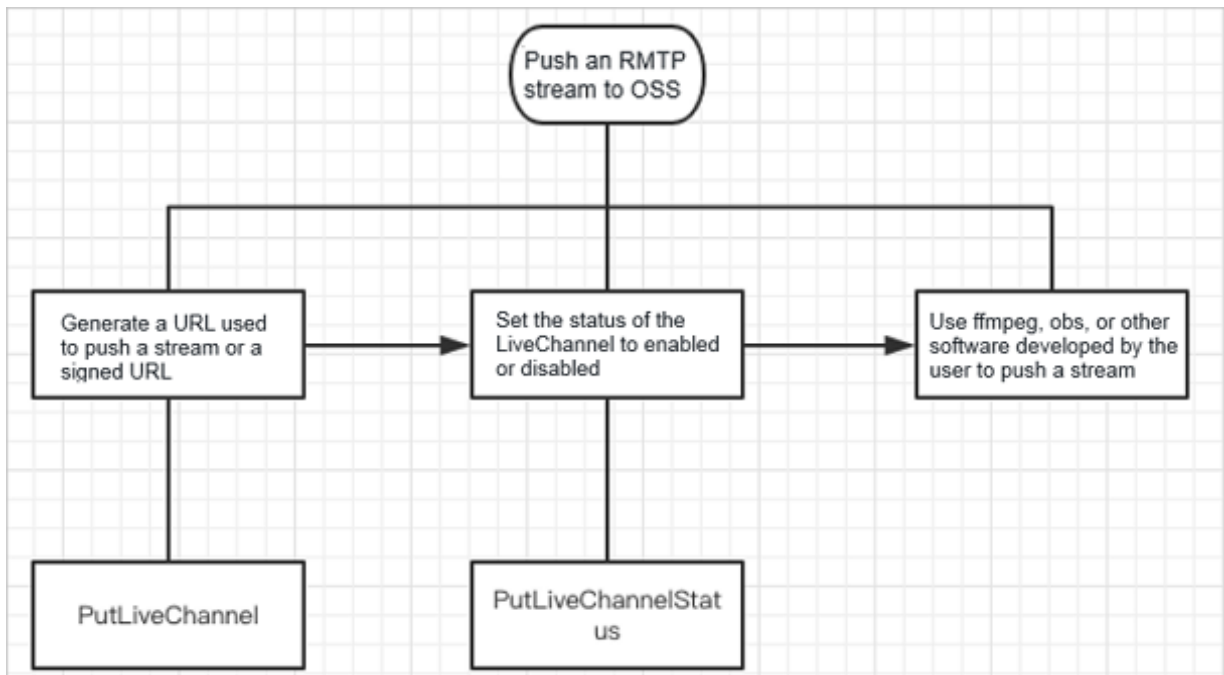
```
1543895706538.ts
#EXTINF:6.520,
1543895706561.ts
#EXT-X-ENDLIST
```

10.12 FAQ

This topic provides solutions for common problems that you may come across while you are using LiveChannel.

Push a stream to OSS LiveChannel

The following figure shows the process of pushing a stream to a LiveChannel, helping you investigate problems occurred when you push a stream to a LiveChannel.



For more information, see the following topics:

- [PutLiveChannel](#)
- [PutLiveChannelStatus](#)

Case 1: The m3u8 file is missing.

Problem: The generated m3u8 file only contains the last 3 ts files by default. The m3u8 file conforms to the default rules of the HLS protocol.

Solution: Use `PostVodPlaylist` to converge the ts files generated in the specified time period into a m3u8 index file.

**Note:**

- **The value of `EndTime` must be later than the value of `StartTime`. The duration between the `EndTime` and `StartTime` must be shorter than one day.**
- **OSS queries all the `ts` files generated by the streams pushed to the specified `LiveChannel` in the specified time range and converges these files into a playlist.**

Case 2: Failed to generate the m3u8 file

Problem: The m3u8 file is not successfully generated until the audio or video data is completely uploaded to OSS.

Solution: You can capture packets at the client side to check whether the "publish success" message is included, which indicates that the audio or video data is completely uploaded to OSS. If the message is included but the m3u8 file is not generated, you can analyze the packets sent from the client for root causes.

Case 3: The client cannot push a stream to OSS

Problem: The client fails to use `ffmpeg` to push a stream:

```
ffmpeg -re -i 0_20180525105430445.aac -acodec aac -strict -2 -f flv rtmp://xxx.oss-cn-beijing.aliyuncs.com/live/test_1000?Expires=1540458859&OSSAccessKeyId=LTAIujianb6C9z&Signature=qwh31xQsanmao6ygCFJgovNIg%3D&playlistName=playlist.m3u8
```

Solution:

- We recommend you use the original command to push a stream without setting additional parameters.
- If the "&" character is included in the URL used to push a stream, enclose the URL with quotation marks ("). For example: `ffmpeg -re -i 0_20180525105430445.aac -acodec aac -strict -2 -f flv "rtmp://xxx.oss-cn-beijing.aliyuncs.com/live/test_1000?Expires=1540458859&OSSAccessKeyId=LTAIujianb6C9z&Signature=qwh31xQsanmao6ygCFJgovNIg%3D&playlistName=playlist.m3u8"`
- Use OBS to push a stream to check whether the problem is caused by `ffmpeg`.

Case 4: Lag problems occur when the m3u8 file is generated.

If the value of `Type` is `HLS`, when the duration of the video or audio data in the current `ts` file reaches the value of `FragDuration`, OSS generates a new `ts` file when receiving the next key frame. If OSS does not receive the next key frame within a

time period (calculated by $\max(2 \times \text{FragDuration}, 60\text{s})$), a new ts file is generated, which results lag in audio or video playing.

Case 5: No audio or video data is included in the generated m3u8 file.

This problem may be caused by the following reasons:

- AVC header or AAC header is not sent. You can capture packets sent by the client to check whether the two headers are sent.
- The length of RTMP message is shorter than 2, or the length of sequence header is too short.
- The size of Message of the audio data exceeds the cache size.
- codec_ ctx is important for the codec. If the audio or video data included in the parameter is incorrect, the m3u8 file may fail to be generated.

Case 6: The data upload to OSS by ffmpeg does not include audio data.

- View the logs generated by ffmpeg to check whether aac_header is sent.
- Capture the RTMP packets sent by the client to check whether aac_header is sent.

```
2018-10-31T00:37:13+08:00      Stream #0:0, 0, 1/1000
2018-10-31T00:37:13+08:00 : Video: h264 (High), 1 reference fram
2018-10-31T00:37:13+08:00 18 fps, 18 tbr, 1k tbn,
2018-10-31T00:37:13+08:00 1k tbc
2018-10-31T00:37:13+08:00      Stream #0:1, 0, 1/1000: Audio: aac
2018-10-31T00:37:13+08:00 Stream mapping:
2018-10-31T00:37:13+08:00 (copy)
2018-10-31T00:37:13+08:00 cur_dts is invalid (this is harmless :
2018-10-31T00:37:14+08:00      Last message repeated 2 times
```