Alibaba Cloud

Object Storage Service

API Reference

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Document conventions

Style	Description	Example
⚠ Danger	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.
🔔 Warning	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.
🔊 Notice	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.
❓ Note	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 `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

Table of Contents

1.Description

Object Storage Service (OSS) is a secure, cost-effective, and highly reliable services provided by Alibaba Cloud to store large amounts of data. You can call RESTful APIs over the Internet on devices to upload data to and download data from OSS anytime and anywhere. OSS enables you to develop a variety of services that are capable of processing large amounts of data. These services include multimedia sharing websites, online storage, and personal and corporate data backups.

Limits

OSS imposes limits on the resources and features that you use. For more information, see Limits.

Usage notes

OSS API Reference describes the request syntax, parameters, sample requests, and sample responses. If you want to perform additional development, we recommend that you use OSS SDKs. For more information about the installation and usage of OSS SDKs, see Overview.

Pricing

For more information about OSS pricing, see Object Storage Service Pricing.

Terms

Term	Term	Description
Bucket	Bucket	The container that is used to store objects in OSS. Every object is contained in a bucket.
Object	Object	The fundamental entities that are stored in OSS. Objects are also known as files. An object consists of object metadata, object data, and an object key. The key of an object is unique and identifies the object in a bucket.
Region	Region	The physical location of OSS resources. You can select a region for data storage based on costs and request sources. For more information, see Regions and endpoints.
Endpoint	Endpoint	The domain name used to access OSS. OSS provides external services by using HTTP-based RESTful APIs. Different regions use different endpoints. For the same region, access over the internal network and access over the Internet also use different endpoints. For more information, see Regions and endpoints.

Term	Term	Description
AccessKey	AccessKey	An AccessKey (AK) pair consists of an AccessKey ID and an AccessKey secret. The AccessKey pair is used to authenticate a requester. OSS uses an AccessKey pair, which includes an AccessKey ID and an AccessKey secret, to implement symmetric encryption and verify the identity of a requester. The AccessKey ID is used to verify the identity of the user, while the AccessKey secret is used to encrypt and verify the signature string. You must keep your AccessKey secret strictly confidential.

2.List of operations by function

The following tables list API operations available for use in Object Storage Service (OSS).

Service operation

Operation	Description
GetService (ListBuckets)	Queries all buckets that are owned by the requester.

Region operation

Operation	Description
DescribeRegions	Queries the endpoints of all supported regions or the endpoints of a specific region.

Bucket operations

Category	Operation	Description
Basic operations	PutBucket	Creates a bucket.
	DeleteBucket	Deletes a bucket.
	GetBucket(ListObject)	Queries the information about all objects in a bucket.
	GetBucketV2 (ListObjectsV2)	
	GetBucketInfo	Queries bucket information.
	GetBucketLocation	Queries the region in which a bucket is located.
Retention policy	InitiateBucketWorm	Creates a retention policy.
	AbortBucketWorm	Deletes an unlocked retention policy.
	CompleteBucketWorm	Locks a retention policy.
	ExtendBucketWorm	Extends the retention period (days) of objects in a bucket for which a retention policy is locked.
	GetBucketWorm	Queries the retention policies that are configured for a bucket.
Access control list (ACL)	PutBucketAcl	Configures the ACL for a bucket.
	GetBucketAcl	Queries the bucket ACL.
	PutBucketLifecycle	Configures lifecycle rules for objects in a bucket.

Category Lifecycle	Operation	Description
	GetBucketLifecycle	Queries the lifecycle rules that are configured for objects in a bucket.
	DeleteBucketLifecycle	Deletes the lifecycle rules that are configured for objects in a bucket.
Transfer acceleration	PutBucketTransferAcceleration	Configures transfer acceleration for a bucket.
	GetBucketTransferAcceleration	Queries the transfer acceleration configurations of a bucket.
Versioning	PutBucketVersioning	Configures the versioning status of a bucket.
	GetBucketVersioning	Queries the versioning status of a bucket.
	GetBucketVersions(ListObjectVersions)	Queries the versions of all objects in a bucket.
Data replication	PutBucketReplication	Configures data replication rules for a bucket.
	GetBucketReplication	Queries the data replication rules that are configured for a bucket.
	GetBucketReplicationLocation	Queries the regions in which the destination bucket can be located.
	GetBucketReplicationProgress	Queries the data replication progress of a bucket.
	DeleteBucketReplication	Stops the data replication tasks of a bucket and deletes the data replication configurations of the bucket.
Bucket policy	PutBucketPolicy	Configures a bucket policy.
	GetBucketPolicy	Queries the policies that are configured for a bucket.
	DeleteBucketPolicy	Deletes a bucket policy.
Inventory	PutBucketInventory	Configures inventories for a bucket.
	GetBucketInventory	Queries specific inventories that are configured for a bucket.
	ListBucketInventory	Queries all inventories that are configured for a bucket.
	DeleteBucketInventory	Deletes specific inventories that are configured for a bucket.
	PutBucketLogging	Enables logging for a bucket.

Category	Operation	Description
Logging	GetBucketLogging	Queries the logging configurations of a bucket.
	DeleteBucketLogging	Disables the logging feature for a bucket.
Static website hosting	PutBucketWebsite	Enables static website hosting for a bucket.
	GetBucketWebsite	Queries the status of static website hosting for a bucket.
	DeleteBucketWebsite	Disables static website hosting for a bucket.
Hotlink protection	PutBucketReferer	Configures hotlink protection for a bucket.
	GetBucketReferer	Queries the hotlink protection information about a bucket.
Tags	PutBucketTags	Adds tags to or modifies the tags of a bucket.
	GetBucketTags	Queries the tags of a bucket.
	DeleteBucketTags	Deletes the tags of a bucket.
Encryption	PutBucketEncryption	Configures encryption rules for a bucket.
	GetBucketEncryption	Queries the encryption rules that are configured for a bucket.
	DeleteBucketEncryption	Deletes the encryption rules that are configured for a bucket.
Pay-by-requester	PutBucketRequestPayment	Enables pay-by-requester for a bucket.
	GetBucketRequestPayment	Queries the pay-by-requester configurations of a bucket.
Cross-origin resource sharing (CORS)	PutBucketCors	Configures CORS rules for a bucket.
	GetBucketCors	Queries the CORS rules that are configured for a bucket.
	DeleteBucketCors	Disables the CORS feature for a bucket and deletes all CORS rules.
	Options	Before a cross-origin request is sent, the browser sends a preflight (OPTIONS) request that includes a specific origin, HTTP method, and header information to OSS to determine whether to send the cross-origin request.
	OpenMetaQuery	Enables the metadata management feature for a bucket.

Category	Operation	Description
Metadata indexing	GetMetaQueryStatus	Queries the metadata index library of a bucket.
	DoMetaQuery	Queries objects that meet specified conditions and lists the object information based on the specified fields and sorting methods.
	CloseMetaQuery	Disables the metadata management feature for a bucket.

Object operations

Category	Operation	Description
Basic operations	PutObject	Uploads an object.
	GetObject	Queries an object.
	CopyObject	Copies an object.
	AppendObject	Uploads an object by appending the content of the object to an existing object.
	DeleteObject	Deletes a single object.
	DeleteMultipleObjects	Deletes multiple objects.
	HeadObject	Queries only the metadata of an object.
	GetObjectMeta	Queries only the basic metadata of an object, including ETag, Size, and LastModified.
	PostObject	Uploads an object by using an HTML form.
	Callback	Implements callback by sending a request that contains callback parameters to OSS.
	RestoreObject	Restores Archive or Cold Archive objects.
	SelectObject	Executes SQL statements on an object and queries the execution results.
Directory management	CreateDirectory	Creates a directory.
	Rename	Renames a directory or an object.
	DeleteDirectory	Deletes a directory.
	InitiateMultipartUpload	Initiates a multipart upload task.
	UploadPart	Uploads an object by part based on the specified object name and the upload ID.

Category	Operation	Description
Multipart upload	UploadPartCopy	Copies data from an existing object to upload a part by adding the x-oss-copy-source request header to UploadPart and calling the UploadPartCopy operation.
	CompleteMultipartUpload	Completes the multipart upload task of an object by calling the CompleteMultipartUpload operation.
	AbortMultipartUpload	Cancels a multipart upload task and deletes the uploaded parts.
	ListMultipartUploads	Lists all ongoing multipart upload tasks, including the tasks that have been initiated but are not completed or canceled.
	ListParts	Lists all parts that are uploaded by using a specified upload ID.
ACL	PutObjectACL	Modifies the ACL of an object.
	GetObjectACL	Queries the ACL of an object.
Symbolic link	PutSymlink	Creates a symbolic link.
	GetSymlink	Queries a symbolic link.
Tagging	PutObjectTagging	Configures tags for or updates the tags of an object.
	GetObjectTagging	Queries the tags of an object.
	DeleteObjectTagging	Deletes the tags of an object.

LiveChannel operations

Operation	Description
PutLiveChannelStatus	Switches the status of a LiveChannel.
PutLiveChannel	Creates a LiveChannel.
GetVodPlaylist	Queries the playlist of a LiveChannel.
PostVodPlaylist	Creates a playlist for a LiveChannel.
GetLiveChannelStat	Queries the ingestion status of a LiveChannel.
GetLiveChannelInfo	Queries the configuration information about a LiveChannel.
GetLiveChannelHistory	Queries the ingestion history of a LiveChannel.
ListLiveChannel	Lists LiveChannels.

Operation	Description
DeleteLiveChannel	Deletes a LiveChannel.

3.List of supported API operations

This topic describes the API operations supported when the hierarchical namespace feature is disabled or enabled for a bucket.

> ? Note
>
> In the following table, a check sign (√) indicates that the feature is supported. A cross sign (×) indicates that the feature is not supported.

Service operations

API	Hierarchical namespace disabled	Hierarchical namespace enabled
GetService (ListBuckets)	√	√

Bucket operations

	API	Hierarchical namespace disabled	Hierarchical namespace enabled
Basic operation	PutBucket	√	√
	DeleteBucket	√	√
	GetBucket (ListObjects)	√	√
	GetBucketV2 (ListObjectsV2)	√	√
	GetBucketInfo	√	√
	GetBucketLocation	√	√
	InitiateBucketWorm	√	×
	AbortBucketWorm	√	×

Retention policy	API	Hierarchical namespace disabled	Hierarchical namespace enabled
	CompleteBucketWorm	√	×
	ExtendBucketWorm	√	×
	GetBucketWorm	√	×
Access control list (ACL)	PutBucketAcl	√	√
	GetBucketAcl	√	√
Lifecycle	PutBucketLifecycle	√	×
	GetBucketLifecycle	√	×
	DeleteBucketLifecycle	√	×
Versioning	PutBucketVersioning	√	×
	GetBucketVersioning	√	×
	GetBucketVersions(ListObjectVersions)	√	×
Cross-region replication (CRR)	PutBucketReplication	√	×
	GetBucketReplication	√	×
	GetBucketReplicationLocation	√	×
	GetBucketReplicationProgress	√	×
	DeleteBucketReplication	√	×
	PutBucketPolicy	√	√

Bucket policy	API	Hierarchical namespace disabled	Hierarchical namespace enabled
	GetBucketPolicy	√	√
	DeleteBucketPolicy	√	√
Inventory	PutBucketInventory	√	×
	GetBucketInventory	√	×
	ListBucketInventory	√	×
	DeleteBucketInventory	√	×
Logging	PutBucketLogging	√	√
	GetBucketLogging	√	√
	DeleteBucketLogging	√	√
Static website hosting	PutBucketWebsite	√	×
	GetBucketWebsite	√	×
	DeleteBucketWebsite	√	×
Hotlink protection	PutBucketReferer	√	√
	GetBucketReferer	√	√
Tagging	PutBucketTags	√	√
	GetObjectTagging	√	√
	DeleteBucketTags	√	√

	API	Hierarchical namespace disabled	Hierarchical namespace enabled
Encryption	PutBucketEncryption	√	√
	GetBucketEncryption	√	√
	DeleteBucketEncryption	√	√
Pay-by-requester	PutBucketRequestPayment	√	√
	GetBucketRequestPayment	√	√
Cross-origin resource sharing (CORS)	PutBucketCors	√	×
	GetBucketCors	√	×
	DeleteBucketCors	√	×
	OptionObject	√	×

Object operations

	API	Hierarchical namespace disabled	Hierarchical namespace enabled
	PutObject	√	√
	GetObject	√	√
	CopyObject	√	√
	AppendObject	√	×
	DeleteObject	√	√

Basic operation	API	Hierarchical namespace disabled	Hierarchical namespace enabled
	DeleteMultipleObjects	√	×
	HeadObject	√	√
	GetObjectMeta	√	√
	PostObject	√	√
	Callback	√	×
	RestoreObject	√	×
	SelectObject	√	×
Directory management	CreateDirectory	×	√
	Rename	×	√
	DeleteDirectory	×	√
Multipart upload	InitiateMultipartUpload	√	√
	UploadPart	√	√
	UploadPartCopy	√	√
	CompleteMultipartUpload	√	√
	AbortMultipartUpload	√	√
	ListMultipartUploads	√	√
	ListParts	√	√

	API	Hierarchical namespace disabled	Hierarchical namespace enabled
ACL	PutObjectACL	√	√
	GetObjectACL	√	√
Symbolic link	PutSymlink	√	×
	GetSymlink	√	×
Tagging	PutObjectTagging	√	√
	GetObjectTagging	√	√
	DeleteObjectTagging	√	√

LiveChannel operations

API	Hierarchical namespace disabled	Hierarchical namespace enabled
PutLiveChannel	√	×
ListLiveChannel	√	×
DeleteLiveChannel	√	×
PutLiveChannelStatus	√	×
GetLiveChannelInfo	√	×
GetLiveChannelStat	√	×
GetLiveChannelHistory	√	×

API	Hierarchical namespace disabled	Hierarchical namespace enabled
PostVodPlaylist	√	×
GetVodPlaylist	√	×

For more information about the hierarchical namespace feature, see Hierarchical namespace.

4.Common HTTP headers

This topic describes common HTTP request and response headers.

Common request headers

In Object Storage Service (OSS), common HTTP request headers are used for RESTful APIs. These request headers can be used in all OSS requests. The following table describes the request headers.

Header	Type	Description
Authorization	String	The verification information used to verify the validity of a request. Default value: null Scenario: non-anonymous requests
Content-Length	String	The content length of an HTTP request that is defined in RFC 2616. For more information, visit RFC 2616. Default value: null Scenario: requests that need to submit data to OSS
Content-Type	String	The content type of an HTTP request that is defined in RFC 2616. For more information, visit RFC 2616. Default value: null Scenario: requests that need to submit data to OSS
Date	String	The GMT time specified in the HTTP/1.1 protocol. Example: Sun, 05 Sep 2021 23:00:00 GMT. Default value: null
Host	String	The value of the host to access. Format: `<bucketname>.oss-cn-hangzhou.aliyuncs.com`. Default value: null

Common response headers

In OSS, common HTTP response headers are used for RESTful APIs. These response headers can be used in all the OSS requests. The following table describes the response headers.

Header	Type	Description
Content-Length	String	The content length of an HTTP request that is defined in RFC 2616. For more information, visit RFC 2616. Default value: null Scenario: requests that need to submit data to OSS
Connection	Enumeration	The connection status between the client and the OSS server. Valid values: *keep-alive* and *close*. Default value: null
Date	String	The GMT time specified in the HTTP/1.1 protocol. Example: Sun, 05 Sep 2021 23:00:00 GMT. Default value: null
ETag	String	The ETag that is created to identify the content of the object when the object is created. If an object is created by using a PutObject request, the ETag of the object is the MD5 hash of the object content. If an object is created by using other methods, the ETag of the object is not the MD5 hash of the object content but a unique value calculated based on the object. The ETag value of an object can be used to check whether the object content is modified. Default value: null
Server	String	The server that generates a response. Default value: AliyunOSS
x-oss-request-id	String	The universally unique identifier (UUID) that is created by the OSS server to identify the response. If you encounter an issue when you use OSS, you can contact OSS support personnel and provide them this field to locate the issue. Default value: null

5.Service operations
5.1. GetService (ListBuckets)

Lists all buckets owned by your Alibaba Cloud account. You can specify the prefix, marker, or max-keys parameter to list buckets that meet specific conditions.

Usage notes

To list buckets, you must have the `oss:GetService (ListBuckets)` permission. For more information, see Attach a custom policy to a RAM user.

Request syntax

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

Request parameters

Parameter	Type	Required	Example	Description
prefix	String	No	my	The prefix that the names of returned buckets must contain. If this parameter is not specified, prefixes are not used to filter returned buckets. Default value: null
marker	String	No	mybucket10	The name of the bucket from which the list operation begins. Buckets whose names are alphabetically greater than the marker parameter value are returned. If this parameter is not specified, all buckets are returned. Default value: null
max-keys	Integer	No	10	The maximum number of buckets that can be returned in the single query. Valid values: 1 to 1000. Default value: 100.

Response elements

> ? **Note** When you call the GetService (ListBuckets) operation, the XML body of the response does not include the Prefix, Marker, MaxKeys, IsTruncated, or NextMarker element if all buckets are returned.

Element	Type	Example	Description
ListAllMyBuckets Result	Container	N/A	The container used to store the results of the GetService (ListBuckets) request. Child nodes: Owner and Buckets Parent nodes: none
Prefix	String	my	The prefix that the returned bucket names must contain in the single query. Parent nodes: ListAllMyBucketsResult
Marker	String	mybucket	The name of the bucket after which the list operation begins in the single query. Parent nodes: ListAllMyBucketsResult
MaxKeys	String	10	The maximum number of buckets returned in the single query. Parent nodes: ListAllMyBucketsResult
IsTruncated	Enumerated string	true	Indicates whether all results are returned. Valid values: • *true*: Only part of the results are returned in the single query. • *false*: All of the results are returned in the single query. Parent nodes: ListAllMyBucketsResult
NextMarker	String	mybucket10	The marker for the next GetService (ListBuckets) request. The element indicates the position from which the next list operation starts. Parent nodes: ListAllMyBucketsResult
Owner	Container	N/A	The container that stores the information about the bucket owner. Parent nodes: ListAllMyBucketsResult
ID	String	ut_test_put_bucket	The user ID of the bucket owner. Parent nodes: ListAllMyBucketsResult and Owner
DisplayName	String	ut_test_put_bucket	The name of the bucket owner. The name of the bucket owner is the same as the user ID. Parent nodes: ListAllMyBucketsResult and Owner

Element	Type	Example	Description
Buckets	Container	N/A	The container that stores the information of multiple buckets. Child nodes: Bucket Parent nodes: ListAllMyBucketsResult
Bucket	Container	N/A	The container that stores the bucket information. Child nodes: Name, CreationDate, and Location Parent nodes: ListAllMyBucketsResult and Buckets
Name	String	mybucket01	The name of the bucket. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket
CreateDate	Time	2014-05-15T11:18:32.000Z	The time when the bucket was created. Format: yyyy-mm-ddThh:mm:ss.timezone. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket
Location	String	oss-cn-hangzhou	The data center in which the bucket is located. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket
ExtranetEndpoint	String	oss-cn-hangzhou.aliyuncs.com	The public endpoint used to access the bucket over the Internet. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket
IntranetEndpoint	String	oss-cn-hangzhou-internal.aliyuncs.com	The internal endpoint that is used to access the bucket from Elastic Compute Service (ECS) instances in the same region as the bucket. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket
Region	String	cn-hangzhou	The region in which the bucket is located. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket
StorageClass	String	Standard	The storage class of the bucket. Valid values: *Standard*, *IA*, *Archive*, and *ColdArchive*. Parent nodes: ListAllMyBucketsResult, Buckets, and Bucket

Examples

- Query all buckets owned by the requester

    Sample requests

    ```
    GET / HTTP/1.1
    Date: Thu, 15 May 2014 11:18:32 GMT
    Host: oss-cn-hangzhou.aliyuncs.com
    Authorization: OSS nxj7dtlhcyl5hpvnhi:COS3OQkfQPnKmYZTEHYv2******
    ```

    Sample responses

    ```
    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>2014-02-17T18:12:43.000Z</CreationDate>
          <ExtranetEndpoint>oss-cn-shanghai.aliyuncs.com</ExtranetEndpoint>
          <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>2014-02-25T11:21:04.000Z</CreationDate>
          <ExtranetEndpoint>oss-cn-hangzhou.aliyuncs.com</ExtranetEndpoint>
          <IntranetEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</IntranetEndpoint>
          <Location>oss-cn-hangzhou</Location>
          <Name>mybucket</Name>
          <Region>cn-hangzhou</Region>
          <StorageClass>IA</StorageClass>
        </Bucket>
      </Buckets>
    </ListAllMyBucketsResult>
    ```

- Query buckets by specifying a prefix and the maximum number of returned buckets

    Sample requests

    ```
    GET /?prefix=my&max-keys=10 HTTP/1.1
    Date: Thu, 15 May 2014 11:18:32 GMT
    Host: oss-cn-hangzhou.aliyuncs.com
    Authorization: OSS nxj7dtwhcyl5hpvnhi:COS3OQkfQPnKmYZTEHYv2****
    ```

Sample responses

```
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>my</Prefix>
  <Marker>mybucket</Marker>
  <MaxKeys>10</MaxKeys>
  <IsTruncated>true</IsTruncated>
  <NextMarker>mybucket10</NextMarker>
  <Owner>
    <ID>ut_test_put_bucket</ID>
    <DisplayName>ut_test_put_bucket</DisplayName>
  </Owner>
  <Buckets>
    <Bucket>
      <CreationDate>2014-05-14T11:18:32.000Z</CreationDate>
      <ExtranetEndpoint>oss-cn-hangzhou.aliyuncs.com</ExtranetEndpoint>
      <IntranetEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</IntranetEndpoint>
      <Location>oss-cn-hangzhou</Location>
      <Name>mybucket01</Name>
      <Region>cn-hangzhou</Region>
      <StorageClass>Standard</StorageClass>
    </Bucket>
  </Buckets>
</ListAllMyBucketsResult>
```

SDK

You can use OSS SDKs for the following programming languages to call the GetBucket (ListObjects) operation:

- Java
- Python
- PHP
- Go
- C
- 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.Region operations

6.1. DescribeRegions

Queries the endpoints of all regions supported by Object Storage Service (OSS) or a specific region, including public endpoints, internal endpoints, and accelerate endpoints.

Usage notes

- To query the endpoints of a region, you must have the `oss:DescribeRegions` permission. For more information, see Attach a custom policy to a RAM user.
- Requests initiated by calling the DescribeRegions operation can contain only second-level domains, such as oss-cn-hangzhou.aliyuncs.com.

Request syntax

> ⑦ **Note**   For more information about supported regions, see Regions and OSS endpoints for access in the public cloud.

- Query the endpoints of all supported regions

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

- Query the endpoints of a specific region

```
GET /?regions=oss-cn-hangzhou HTTP/1.1
Host: oss.example.com
Date: GMT Date
Authorization: SignatureValue
```

Request headers

A DescribeRegions request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a DescribeRegions request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description
RegionInfoList	Container	N/A	The list of region information. Child nodes: RegionInfo Parent nodes: none

Element	Type	Example	Description
RegionInfo	Container	N/A	The region information. Child nodes: Region, InternetEndpoint, InternalEndpoint, and AccelerateEndpoint Parent nodes: RegionInfoList
Region	String	oss-cn-hangzhou	The ID of the region. Parent nodes: RegionInfo
InternetEndpoint	String	oss-cn-hangzhou.aliyuncs.com	The public endpoint of the region. Parent nodes: RegionInfo
InternalEndpoint	String	oss-cn-hangzhou-internal.aliyuncs.com	The internal endpoint of the region. Parent nodes: RegionInfo
AccelerateEndpoint	String	oss-accelerate.aliyuncs.com	The accelerate endpoint of the region. The value is fixed as oss-accelerate.aliyuncs.com. Parent nodes: RegionInfo

Examples

- Query the endpoints of all supported regions
  - Sample requests

```
GET /?regions HTTP/1.1
Host: oss-cn-hangzhou.aliyuncs.com
Date: Fri, 20 Aug 2021 06:38:30 GMT
Authorization: SignatureValue
```

○ Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 3a8f-2e2d-7965-3ff9-51c875b*****
Date: Fri, 20 Aug 2021 06:38:30 GMT
Content-Type: application/xml
Content-Length: 344606
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<RegionInfoList>
  <RegionInfo>
     <Region>oss-cn-hangzhou</Region>
     <InternetEndpoint>oss-cn-hangzhou.aliyuncs.com</InternetEndpoint>
     <InternalEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</InternalEndpoint>
     <AccelerateEndpoint>oss-accelerate.aliyuncs.com</AccelerateEndpoint>
  </RegionInfo>
  <RegionInfo>
     <Region>oss-cn-shanghai</Region>
     <InternetEndpoint>oss-cn-shanghai.aliyuncs.com</InternetEndpoint>
     <InternalEndpoint>oss-cn-shanghai-internal.aliyuncs.com</InternalEndpoint>
     <AccelerateEndpoint>oss-accelerate.aliyuncs.com</AccelerateEndpoint>
  </RegionInfo>
</RegionInfoList>
```

• Query the endpoints of a specific region

   ○ Sample requests

```
GET /?regions=oss-cn-hangzhou HTTP/1.1
Host: oss-cn-hangzhou.aliyuncs.com
Date: Fri, 20 Aug 2021 06:40:30 GMT
Authorization: SignatureValue
```

   ○ Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 3a8f-2e2d-7965-3ff9-51c875b*****
Date: Fri, 20 Aug 2021 06:40:30 GMT
Content-Type: application/xml
Content-Length: 3446
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<RegionInfoList>
  <RegionInfo>
    <Region>oss-cn-hangzhou</Region>
    <InternetEndpoint>oss-cn-hangzhou.aliyuncs.com</InternetEndpoint>
    <InternalEndpoint>oss-cn-hangzhou-internal.aliyuncs.com</InternalEndpoint>
    <AccelerateEndpoint>oss-accelerate.aliyuncs.com</AccelerateEndpoint>
  </RegionInfo>
</RegionInfoList>
```

Error codes

Error code	HTTP status code	Description
AccessDenied	403	Possible causes: • The information that is required for user authentication is not passed to or is incorrect in the DescribeRegions request. • You do not have the `oss:DescribeRegions` permission. You can configure a custom policy in the Script configuration mode to grant the permission to the specified RAM user. For more information, see Attach a custom policy to a RAM user.
InvalidArgument	400	The error message returned because a specified parameter is invalid.
NoSuchRegion	404	The error message returned because the specified region does not exist.

7.Bucket operations
7.1. Basic operations

7.1.1. PutBucket

Creates a bucket.

Usage notes

- To create a bucket, you must have the PutBucket permission.

- You can create up to 100 buckets within the same region by using an Alibaba Cloud account.

- Each region can be accessed by using the endpoints of the region. For more information about regions and their endpoints, see Regions and endpoints.

Request structure

```
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	Example	Description
x-oss-acl	String	No	private	The access control list (ACL) of the bucket that you want to create. Default value: private. Valid values: - *public-read-write* - *public-read* - *private* For more information about how to configure the ACL feature for a bucket, see Set the ACL for a bucket.

Header	Type	Required	Example	Description
x-oss-resource-group-id	String	No	rg-aek27tc*********	The ID of the resource group. • If you include the header in the request and specify the ID of the resource group, the bucket belongs to the resource group. If the ID of the resource group is set to rg-default-id, the created bucket belongs to the default resource group. • If you do not include the header in the request, the created bucket belongs to the default resource group. To obtain the ID of a resource group, you can use the Resource Management console or call the ListResourceGroups operation. For more information about specific operations, see View basic information of a resource group and ListResourceGroups.
x-oss-hns-status	String	No	disabled	Specifies whether to enable the hierarchical namespace feature for the bucket. You can enable or disable the hierarchical namespace feature for a bucket only when you create the bucket. The hierarchical namespace feature cannot be enabled or disabled for existing buckets. Default value: disabled. • *enabled*: The hierarchical namespace feature is enabled for the bucket. After the hierarchical namespace feature is enabled for the bucket, you can create, delete, and rename directories. • *disabled*: The hierarchical namespace feature is disabled for the bucket.

The request headers involved in this API operation also contain common request headers. For more information, see Common request headers.

Request elements

Element	Type	Required	Example	Description

Element	Type	Required	Example	Description
StorageClass	String	No	Standard	The storage class of the bucket. Default value: Standard. Valid values: • *Standard* • *IA* • *Archive* • *Cold Archive*
DataRedundancyType	String	No	LRS	The redundancy option for the bucket. Default value: LRS. Valid values: • *LRS* Object Storage Service (OSS) stores the copies of each object across different devices within the same zone. This way, OSS ensures data reliability and availability when hardware failures occur. • *ZRS* Zone-redundant storage (ZRS) uses the multi-zone mechanism to distribute user data across three zones within the same region. Even if a zone becomes unavailable due to unexpected events such as power outages and fires, the data can still be accessed.

For more information about the storage classes and redundancy options for buckets, see Overview.

Response headers

The response headers involved in this API operation contain only common response headers. For more information, see Common response headers.

Examples

• Create a bucket in the default resource group

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:77Dvh5wQgIjWjwO/KyRt8dOP****
<?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
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

- Create a bucket in the specified resource group

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
x-oss-resource-group-id: rg-aek27tc********
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:77Dvh5wQgIjWjwO/KyRt8dOP****
<?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
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDKs

You can use OSS SDKs for the following programming languages to call the PutBucket operation:

- Java
- Python
- PHP
- Go
- C
- .NET
- Android
- iOS
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description

Error code	HTTP status code	Description
InvalidBucketName	400	The error message returned because the bucket name does not conform to the naming conventions.
AccessDenied	403	Possible causes: • The information for user authentication is not imported when you initiate the PutBucket request. • You are not authorized to perform the PutBucket operation.
TooManyBuckets	400	The error message returned because the maximum number of buckets has been reached. You can use an Alibaba Cloud account to create up to 100 buckets within the same region.
BucketAlreadyExists	409	Possible causes: • The specified bucket already exists or is owned by another user. Specify a bucket name that conforms to the naming conventions when you create the bucket. • The status of the hierarchical namespace feature can not be modified for the existing bucket. You can enable or disable the hierarchical namespace feature for a bucket only when you create the bucket.
ResourceGroupIdPreCheckError	400	The error message returned because the specified ID of the resource group is invalid or does not exist when you create the bucket. The ID of the resource group fails the precheck.

7.1.2. DeleteBucket

Deletes a bucket.

> **Note**
> • Only the owner of a bucket has the permissions to delete the bucket.
> • To prevent unexpected deletion, Object Storage Service (OSS) does not allow you to delete a non-empty bucket.

Request syntax

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

Request headers

A DeleteObject request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a PutObject request contains only common response headers. For more information, see Common response headers.

Examples

- Sample requests for deleting an empty bucket

```
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:ceOEyZavKY4QcjoUWYSpYbJ3****
Content-Length: 0
```

Sample responses

```
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: 5C3D9778CC1C2AEDF85B****
x-oss-server-time: 190
```

- Sample requests for deleting a bucket that does not exist

```
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:ceOEyZavKY4QcjoUWYSpYbJ3****
Content-Length: 0
```

Sample responses

```
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: 5C3D9175B6FC201293AD****
<?xml version="1.0" encoding="UTF-8"?>
<Error>
  <Code>NoSuchBucket</Code>
  <Message>The specified bucket does not exist.</Message>
  <RequestId>5C3D9175B6FC201293AD****</RequestId>
  <HostId>test.oss-cn-hangzhou.aliyuncs.com</HostId>
  <BucketName>test</BucketName>
</Error>
```

- Sample requests for deleting a non-empty bucket

```
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:ceOEyZavKY4QcjoUWYSpYbJ3****
Content-Length: 0
```

Sample responses

```
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: 5C3D8D2A0ACA54D87B43****
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>5C3D8D2A0ACA54D87B43****</RequestId>
  <HostId>test.oss-cn-hangzhou.aliyuncs.com</HostId>
  <BucketName>test</BucketName>
</Error>
```

SDK

You can use OSS SDKs for the following programming languages to call DeleteBucket:

- Java
- Python
- PHP

- Go
- C
- C++
- .NET
- Android
- iOS
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
AccessDenied	403 Forbidden	The error message returned because you do not have the permissions to delete the bucket. Only the bucket owner can delete the bucket.

7.1.3. GetBucket (ListObjects)

Lists the information about all objects in a bucket.

Usage notes

- The GetBucket (ListObjects) operation has been updated to GetBucketV2 (ListObjectsV2). We recommend that you use GetBucketV2 (ListObjectsV2) when you develop your applications. To provide backward compatibility, Object Storage Service (OSS) continues to support the GetBucket (ListObjects) operation. For more information about GetBucketV2 (ListObjectsV2), see GetBucketV2 (ListObjectsV2).

- The user metadata of objects is not returned for GetBucket (ListObjects) requests.

Request syntax

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

Request headers

A GetBucket (ListObjects) request contains only common request headers such as `Authorization` and `Host` . For more information, see Common request headers.

Request parameters

Parameter	Type	Required	Example	Description

Paramete r	Type	Required	Example	Description
delimiter	String	No	/	The character that is used to group objects by name. If you specify the delimiter parameter in the request, the response contains the CommonPrefixes element. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. This parameter is empty by default.
marker	String	No	test1.txt	The name of the object after which the list begins. If this parameter is specified, objects whose names are alphabetically greater than the marker value are returned. The marker parameter is used to list the returned objects by page, and the marker value must be smaller than 1,024 bytes in length. Even if the specified marker does not exist in the list during a conditional query, the list starts from the object whose name is alphabetically greater than the marker value. This parameter is empty by default.
max-keys	String	No	200	The maximum number of objects to return. If the list operation cannot be complete at a time because max-keys is specified, the NextMarker element is included in the response as the marker for the next list operation. Valid values: 1 to 1000 Default value: 100

Paramete r	Type	Required	Example	Description
prefix	String	No	fun	The prefix that the names of the returned objects must contain. • The prefix value must be smaller than 1,024 bytes in length. • If you specify a prefix to query objects, the names of the returned objects still contain the prefix. If prefix is set to a directory name in the request, the objects whose names contain this prefix are listed, which includes all objects and subdirectories in the directory. If prefix is specified and delimiter is set to a forward slash (/), only objects in the directory are listed. The names of the subdirectories within the directory are returned in the CommonPrefixes element. However, objects and directories within the subdirectories are not listed. For example, a bucket contains the following three objects: fun/test.jpg, fun/movie/001.avi, and fun/movie/007.avi. If prefix is set to fun/, the three objects are returned. If prefix is set to fun/ and delimiter is set to a forward slash (/), fun/test.jpg and fun/movie/ are returned. This parameter is empty by default.
encoding -type	String	No	URL	The encoding type of the object name in the response. This parameter is empty by default. Valid value: URL 🔊 Notice The delimiter, marker, prefix, NextMarker, and Key values are UTF-8 encoded. If the delimiter, marker, prefix, NextMarker, or Key value contains a control character that is not supported by the XML 1.0 standard, you can specify encoding-type to encode the value in the response.

Response elements

Element	Type	Example	Description
Contents	Container	N/A	The container that stores the returned object metadata. Parent nodes: ListBucketResult

Element	Type	Example	Description
CommonPrefixes	String	N/A	If the delimiter parameter is specified in the request, the response contains the CommonPrefixes element. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Parent nodes: ListBucketResult
Delimiter	String	/	The character that is used to group objects by name. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Parent nodes: ListBucketResult
EncodingType	String	N/A	The encoding type of the object name in the response. In addition, if you specify the encoding-type parameter in the request, the following elements in the response are encoded: Delimiter, Marker, Prefix, NextMarker, and Key. Parent nodes: ListBucketResult
DisplayName	String	user_example	The name of the object owner. Parent nodes: ListBucketResult.Contents.Owner
ETag	String	5B3C1A2E053D763E1B002CC607C5A0FE1****	The entity tag (ETag). An ETag is created when an object is created to identify the content of the object. • If an object is created by calling the PutObject operation, the ETag value of the object is the MD5 hash of the object content. • If an object is created by using another method, the ETag value is not the MD5 hash of the object content but a unique value calculated based on a specific rule. • The ETag value of an object can be used to check whether the object content is modified. However, we recommend that you use the MD5 hash of an object rather than the ETag value of the object to verify data integrity. Parent nodes: ListBucketResult.Contents
ID	String	0022012****	The user ID of the bucket owner. Parent nodes: ListBucketResult.Contents.Owner

Element	Type	Example	Description
IsTruncated	Enumerated string	false	Indicates whether the returned results are truncated. Valid values: *true* and *false* • true indicates that not all of the results are returned this time. • false indicates that all of the results are returned this time. Parent nodes: ListBucketResult
Key	String	fun/test.jpg	The key of the object. Parent nodes: ListBucketResult.Contents
LastModified	Time	2012-02-24T08:42:32.000Z	The last modified time of the object. Parent nodes: ListBucketResult.Contents
ListBucketResult	Container	N/A	The container that stores the result of the GetBucket request. Child nodes: Name, Prefix, Marker, MaxKeys, Delimiter, IsTruncated, NextMarker, and Contents Parent nodes: none
Marker	String	test1.txt	The name of the object after which the list operation begins. Parent nodes: ListBucketResult
MaxKeys	String	100	The maximum number of returned objects in the response. Parent nodes: ListBucketResult
Name	String	oss-example	The name of the bucket. Parent nodes: ListBucketResult
Owner	Container	N/A	The container that stores the information about the bucket owner. Child nodes: DisplayName and ID Parent nodes: Contents
Prefix	String	fun/	The prefix contained in the returned object names. Parent nodes: ListBucketResult
Size	String	344606	The size of the returned object. Unit: bytes. Parent nodes: ListBucketResult.Contents

Element	Type	Example	Description
StorageClass	String	Standard	The storage class of the object. Parent nodes: ListBucketResult.Contents
RestoreInfo	String	ongoing-request="true"	The restoration status of the object. • If no RestoreObject requests are sent or the requests expire, this field is not included in the response. • If a RestoreObject request is sent and the object is still being restored, the returned RestoreInfo value is `ongoing-request="true"`. • If a RestoreObject request is sent and the object is restored, the returned RestoreInfo value is in the following format: `ongoing-request="false", expiry-date="Thr, 24 Mon 2020 12:40:33 GMT"`. In this returned RestoreInfo value, the `expiry-date` field indicates the time before which the restored object can be read.

For more information about the common response headers such as `x-oss-request-id` and `Content-Type` contained in the response to a GetBucket (ListObjects) request, see Common response headers.

Examples

• Sample requests for simple GetBucket (ListObjects) operations

```
GET / HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0ykbo****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</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>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
     <Type>Normal</Type>
```

```
                                    <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>Standard</StorageClass>
        <Owner>
            <ID>0022012****</ID>
            <DisplayName>user-example</DisplayName>
        </Owner>
    </Contents>
    <Contents>
        <Key>fun/movie/007.avi</Key>
        <LastModified>2012-02-24T08:43:27.000Z</LastModified>
        <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
        <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>Standard</StorageClass>
        <Owner>
            <ID>0022012****</ID>
            <DisplayName>user-example</DisplayName>
        </Owner>
    </Contents>
    <Contents>
        <Key>fun/test.jpg</Key>
        <LastModified>2012-02-24T08:42:32.000Z</LastModified>
        <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
        <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>Standard</StorageClass>
        <Owner>
            <ID>0022012****</ID>
            <DisplayName>user-example</DisplayName>
        </Owner>
    </Contents>
    <Contents>
        <Key>oss.jpg</Key>
        <LastModified>2012-02-24T06:07:48.000Z</LastModified>
        <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
        <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>Standard</StorageClass>
        <Owner>
            <ID>0022012****</ID>
            <DisplayName>user-example</DisplayName>
        </Owner>
    </Contents>
</ListBucketResult>
```

- Sample requests that have the prefix parameter specified

```
GET /?prefix=fun HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0ykbo****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</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>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
      <Type>Normal</Type>
      <Size>344606</Size>
      <StorageClass>Standard</StorageClass>
      <Owner>
          <ID>0022012****</ID>
          <DisplayName>user_example</DisplayName>
      </Owner>
</Contents>
<Contents>
      <Key>fun/movie/007.avi</Key>
      <LastModified>2012-02-24T08:43:27.000Z</LastModified>
      <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
      <Type>Normal</Type>
      <Size>344606</Size>
      <StorageClass>Standard</StorageClass>
      <Owner>
          <ID>0022012****</ID>
          <DisplayName>user_example</DisplayName>
      </Owner>
</Contents>
<Contents>
      <Key>fun/test.jpg</Key>
      <LastModified>2012-02-24T08:42:32.000Z</LastModified>
      <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
      <Type>Normal</Type>
      <Size>344606</Size>
      <StorageClass>Standard</StorageClass>
      <Owner>
          <ID>0022012****</ID>
          <DisplayName>user_example</DisplayName>
      </Owner>
</Contents>
</ListBucketResult>
```

- Sample requests that have the prefix and delimiter parameters specified

```
GET /?prefix=fun/&delimiter=/ HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:DNrnx7xHk3sgysx7I8U9I9IY****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</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>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
      <Type>Normal</Type>
      <Size>344606</Size>
      <StorageClass>Standard</StorageClass>
      <Owner>
          <ID>0022012****</ID>
          <DisplayName>user_example</DisplayName>
      </Owner>
</Contents>
<CommonPrefixes>
      <Prefix>fun/movie/</Prefix>
</CommonPrefixes>
</ListBucketResult>
```

- Sample requests that have the marker parameter specified

  In this example, the max-keys parameter is set to 2, which indicates that the maximum number of objects to return is 2.

```
GET /?max-keys=2&marker=test1.txt HTTP/1.1
Host: examplebucket.oss-cn-shenzhen.aliyuncs.com
Accept-Encoding: identity
Accept: */*
Connection: keep-alive
User-Agent: aliyun-sdk-python/2.11.0(Darwin/18.2.0/x86_64;3.4.1)
date: Tue, 26 May 2020 08:39:48 GMT
authorization: OSS LTAIB1VW9xxxxxxx:MmY11jLlO8UlAqjqHK3Ckp****
```

Sample responses

The NextMarker parameter in the response indicates the marker for the next list operation.

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 26 May 2020 08:39:48 GMT
Content-Type: application/xml
Content-Length: 1032
Connection: keep-alive
x-oss-request-id: 5ECCD5D4881816373582xxx
x-oss-server-time: 3
<?xml version="1.0" encoding="UTF-8"?>
<ListBucketResult>
  <Name>examplebucket</Name>
  <Prefix></Prefix>
  <Marker>test1.txt</Marker>
  <MaxKeys>2</MaxKeys>
  <Delimiter></Delimiter>
  <EncodingType>url</EncodingType>
  <IsTruncated>true</IsTruncated>
  <NextMarker>test100.txt</NextMarker>
  <Contents>
    <Key>test10.txt</Key>
    <LastModified>2020-05-26T07:50:18.000Z</LastModified>
    <ETag>"C4CA4238A0B923820DCC509A6F75****"</ETag>
    <Type>Normal</Type>
    <Size>1</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>1305433xxx</ID>
      <DisplayName>1305433xxx</DisplayName>
    </Owner>
  </Contents>
  <Contents>
    <Key>test100.txt</Key>
    <LastModified>2020-05-26T07:50:20.000Z</LastModified>
    <ETag>"C4CA4238A0B923820DCC509A6F75****"</ETag>
    <Type>Normal</Type>
    <Size>1</Size>
    <StorageClass>Standard</StorageClass>
    <Owner>
      <ID>1305433xxx</ID>
      <DisplayName>1305433xxx</DisplayName>
    </Owner>
  </Contents>
</ListBucketResult>
```

- Sample requests that are sent to list all objects including Archive or Cold Archive objects in a bucket

  In this example, the examplebucket bucket contains the following three Cold Archive objects: *exampleo bject1.txt*, *exampleobject2.txt*, and *exampleobject3.txt*. The three objects are in the following different states:

  - No RestoreObject requests are sent to restore *exampleobject1.txt* or the RestoreObject requests sent to restore the object expire.

  - A RestoreObject request is sent to restore *exampleobject2.txt*. The object is still being restored.

  - A RestoreObject request is sent to restore *exampleobject3.txt* and the object is restored.

Sample requests

```
GET / HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0ykbo****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: 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>examplebucket</Name>
  <Prefix></Prefix>
  <Marker></Marker>
  <MaxKeys></MaxKeys>
  <Delimiter></Delimiter>
  <IsTruncated>false</IsTruncated>
  <Contents>
        <Key>exampleobject1.txt</Key>
        <LastModified>2020-06-22T11:42:32.000Z</LastModified>
        <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
        <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>ColdArchive</StorageClass>
        <Owner>
            <ID>0022012****</ID>
            <DisplayName>user-example</DisplayName>
        </Owner>
  </Contents>
  <Contents>
        <Key>exampleobject2.txt</Key>
        <LastModified>2020-06-22T11:42:32.000Z</LastModified>
        <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
        <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>Standard</StorageClass>
        <RestoreInfo>ongoing-request="true"</RestoreInfo>
        <Owner>
            <ID>0022012****</ID>
            <DisplayName>user-example</DisplayName>
        </Owner>
  </Contents>
  <Contents>
        <Key>exampleobject3.txt</Key>
        <LastModified>2020-06-22T11:42:32.000Z</LastModified>
        <ETag>"5B3C1A2E053D763E1B002CC607C5A0FE1****"</ETag>
        <Type>Normal</Type>
        <Size>344606</Size>
        <StorageClass>Standard</StorageClass>
```

```
       <StorageClass>Standard</StorageClass>
       <RestoreInfo>ongoing-request="false", expiry-date="Thr, 24 Mon 2020 12:40:33 GMT"</
RestoreInfo>
       <Owner>
           <ID>0022012****</ID>
           <DisplayName>user-example</DisplayName>
       </Owner>
   </Contents>
</ListBucketResult>
```

SDK

You can use OSS SDKs for the following programming languages to call the GetBucket (ListObjects) operation:

- Java
- Python
- PHP
- Go
- C
- .NET
- Android
- Node.js
- Browser.js
- Ruby

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the requested bucket does not exist. Check whether the name of the requested bucket complies with the naming rules.
AccessDenied	403	The error message returned because you are not authorized to access the bucket. Only the bucket owner and RAM users who are granted the `oss:ListObjects` permission can access the bucket.
InvalidArgument	400	- The error message returned because the max-keys value is less than 0 or greater than 1,000. - The error message returned because the length of the prefix, marker, or delimiter value is invalid.

7.1.4. GetBucketV2 (ListObjectsV2)

Queries the information about all objects in a bucket.

> ⑦ **Note** The user metadata of objects is not returned for GetBucketV2 (ListObjectsV2) requests.

Request syntax

```
GET /?list-type=2 HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Request parameters

Parameter	Type	Required	Example	Description
list-type	Number	Yes	2	The version of the GetBucketV2 (ListObjectsV2) operation. Set the value to 2.
delimiter	String	No	/	The character that is used to group objects by name. If you specify the delimiter parameter in the request, the response contains the CommonPrefixes element. The objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Default value: null
start-after	String	No	b	The name of the object after which the list starts. The objects are returned in alphabetical order of their names. The start-after parameter is used to list the returned objects by page. The value of the parameter must be less than 1,024 bytes in length. Even if the specified start-after value does not exist during a conditional query, the list starts from the object whose name is alphabetically greater than the start-after value. Default value: null
continuation-token	String	No	test1.txt	The token from which the list operation must start. You can obtain the token from NextContinuationToken in the GetBucketV2 (ListObjectsV2) response.

Paramete r	Type	Required	Example	Description
max-keys	String	No	100	The maximum number of objects to return. Valid values: 1 to 1000 Default value: 100 ⑦ **Note** If the number of objects exceeds the value of max-keys, the response includes `<NextContinuationToken>` as the continuation token for the next list operation.
prefix	String	No	a	The prefix that the names of the returned objects must contain. If prefix is set to a directory name in the request, the objects whose names contain this prefix are listed, which includes all objects and subdirectories in the directory. If prefix is specified and delimiter is set to a forward slash (/), only objects in the directory are listed. The names of the subdirectories within the directory are returned in the CommonPrefixes element. However, objects and directories within the subdirectories are not listed. For example, a bucket contains the following three objects: fun/test.jpg, fun/movie/001.avi, and fun/movie/007.avi. If prefix is set to fun/, the three objects are returned. If prefix is set to fun/ and delimiter is set to a forward slash (/), fun/test.jpg and fun/movie/ are returned. ⑦ **Note** - The value of prefix must be less than 1,024 bytes in length. - The value of the prefix parameter cannot start with a forward slash (/). If you leave the prefix parameter empty, all objects in the bucket are listed by default. - If you specify a prefix to query objects, the names of the returned objects still contain the prefix. Default value: null

Parameter	Type	Required	Example	Description
encoding-type	String	No	url	The encoding type of the content in the response. Default value: null Valid value: url ⑦ **Note** The delimiter, start-after, prefix, NextContinuationToken, and Key values are encoded in UTF-8. If the delimiter, start-after, prefix, NextContinuationToken, or Key value contains control characters that are not supported by the XML 1.0 standard, you can specify Encoding-type to encode the value in the response.
fetch-owner	Boolean	No	false	Specifies whether to include the information about the object owner in the response. Valid values: *true* and *false* • true: The response includes the information about the object owner. • false: The response does not include the information about the object owner. Default value: false

Response parameters

Parameter	Type	Example	Description
Contents	Container	N/A	The container that stores the metadata of the returned objects. Parent nodes: ListBucketResult
CommonPrefixes	String	N/A	If the Delimiter parameter is specified in the request, the response contains the CommonPrefixes element. The objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Parent nodes: ListBucketResult
Delimiter	String	/	The character that is used to group objects by name. The objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Parent nodes: ListBucketResult

Parameter	Type	Example	Description
EncodingType	String	N/A	The encoding type of the content in the response. If you specify Encoding-type in the request, the values of Delimiter, StartAfter, Prefix, NextContinuationToken, and Key are encoded in the response. Parent nodes: ListBucketResult
DisplayName	String	user_example	The name of the object owner. Parent nodes: ListBucketResult.Contents.Owner
ETag	String	5B3C1A2E053 D763E1B002C C607C5A0FE1 ****	The entity tag (ETag). When an object is created, an ETag is created to identify the content of the object. Parent nodes: ListBucketResult.Contents • For an object that is created by calling the PutObject operation, the ETag value of the object is the MD5 hash of the object content. • For an object that is created by using another method, the ETag value is not the MD5 hash of the object content but a unique value calculated based on a specific rule. • You can use the ETag value of an object to check whether the object content is modified. However, we recommend that you use the MD5 hash of an object to check data integrity.
ID	String	0022012****	The user ID of the bucket owner. Parent nodes: ListBucketResult.Contents.Owner
IsTruncated	Enumerated string	false	Indicates whether the returned results are truncated. Valid values: *true* and *false* • true indicates that not all of the results are returned this time. • false indicates that all of the results are returned this time. Parent nodes: ListBucketResult
Key	String	fun/test.jpg	The name of the object. Parent nodes: ListBucketResult.Contents
LastModified	Time	2012-02-24T08:42:32.000Z	The time when the object was last modified. Parent nodes: ListBucketResult.Contents

Parameter	Type	Example	Description
ListBucketResult	Container	N/A	The container that stores the result of the GetBucketV2 (ListObjectsV2) request. Child nodes: Name, Prefix, StartAfter, MaxKeys, Delimiter, IsTruncated, NextContinuationToken, and Contents Parent nodes: none
StartAfter	String	test1.txt	If the StartAfter parameter is specified in the request, the response contains the StartAfter element.
MaxKeys	String	100	The maximum number of returned objects in the response. Parent nodes: ListBucketResult
Name	String	examplebucket	The name of the bucket. Parent nodes: ListBucketResult
Owner	Container	N/A	The container that stores the information about the bucket owner. Child nodes: DisplayName and ID Parent nodes: Contents
Prefix	String	fun/	The prefix contained in the names of the returned objects. Parent nodes: ListBucketResult
Size	String	344606	The size of the returned object. Unit: bytes. Parent nodes: ListBucketResult.Contents
StorageClass	String	Standard	The storage class of the object. Parent nodes: ListBucketResult.Contents
ContinuationToken	String	test1.txt	If the ContinuationToken parameter is specified in the request, the response contains the ContinuationToken element.
KeyCount	Number	6	The number of objects returned for this request. If Delimiter is specified, KeyCount is the sum of the values of Key and CommonPrefixes.
NextContinuationToken	String	CgJiYw--	The name of the object from which the next list operation starts. The NextContinuationToken value is used as the ContinuationToken value to query subsequent results.

Parameter	Type	Example	Description
RestoreInfo	String	ongoing-request="true"	The restoration status of the object. • If no RestoreObject requests are sent or the requests expire, this field is not included in the response. • If a RestoreObject request is sent and the object is still being restored, the returned RestoreInfo value is `ongoing-request="true"`. • If a RestoreObject request is sent and the object is restored, the returned RestoreInfo value is in the following format: `ongoing-request="false", expiry-date="Thr, 24 Mon 2020 12:40:33 GMT"`. In this returned RestoreInfo value, the `expiry-date` field indicates the time before which the restored object can be read.

Examples

- Sample request

```
GET /?list-type=2 HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0ykbo****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</Name>
    <Prefix></Prefix>
    <MaxKeys>100</MaxKeys>
    <EncodingType>url</EncodingType>
    <IsTruncated>false</IsTruncated>
    <Contents>
        <Key>a</Key>
        <LastModified>2020-05-18T05:45:43.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
    </Contents>
    <Contents>
        <Key>a/b</Key>
        <LastModified>2020-05-18T05:45:47.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
```

```
        </Contents>
        <Contents>
            <Key>b</Key>
            <LastModified>2020-05-18T05:45:50.000Z</LastModified>
            <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
            <Size>25</Size>
            <StorageClass>STANDARD</StorageClass>
        </Contents>
        <Contents>
            <Key>b/c</Key>
            <LastModified>2020-05-18T05:45:54.000Z</LastModified>
            <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
            <Size>25</Size>
            <StorageClass>STANDARD</StorageClass>
        </Contents>
        <Contents>
            <Key>bc</Key>
            <LastModified>2020-05-18T05:45:59.000Z</LastModified>
            <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
            <Size>25</Size>
            <StorageClass>STANDARD</StorageClass>
        </Contents>
        <Contents>
            <Key>c</Key>
            <LastModified>2020-05-18T05:45:57.000Z</LastModified>
            <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
            <Size>25</Size>
            <StorageClass>STANDARD</StorageClass>
        </Contents>
        <KeyCount>6</KeyCount>
</ListBucketResult>
```

- Sample request that have the Prefix parameter specified

```
GET /?list-type=2&prefix=a HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:BC+oQIXVR2/ZghT7cGa0ykbo****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</Name>
    <Prefix>a</Prefix>
    <MaxKeys>100</MaxKeys>
    <EncodingType>url</EncodingType>
    <IsTruncated>false</IsTruncated>
    <Contents>
        <Key>a</Key>
        <LastModified>2020-05-18T05:45:43.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
    </Contents>
    <Contents>
        <Key>a/b</Key>
        <LastModified>2020-05-18T05:45:47.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
    </Contents>
    <KeyCount>2</KeyCount>
</ListBucketResult>
```

- Sample request that have the Prefix and Delimiter parameters specified

```
GET /?list-type=2&prefix=a/&delimiter=/ HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:DNrnx7xHk3sgysx7I8U9I9IY****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</Name>
    <Prefix>a/</Prefix>
    <MaxKeys>100</MaxKeys>
    <Delimiter>/</Delimiter>
    <EncodingType>url</EncodingType>
    <IsTruncated>false</IsTruncated>
    <Contents>
        <Key>a/b</Key>
        <LastModified>2020-05-18T05:45:47.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
    </Contents>
    <CommonPrefixes>
        <Prefix>a/b/</Prefix>
    </CommonPrefixes>
    <KeyCount>2</KeyCount>
</ListBucketResult>
```

- Sample request that have the StartAfter, MaxKeys, and FetchOwner parameters specified

```
GET /?list-type=2&start-after=b&max=keys=3&fetch-owner=true HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 24 Feb 2012 08:43:27 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:DNrnx7xHk3sgysx7I8U9I9IY****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>examplebucket</Name>
    <Prefix></Prefix>
    <StartAfter>b</StartAfter>
    <MaxKeys>3</MaxKeys>
    <EncodingType>url</EncodingType>
    <IsTruncated>true</IsTruncated>
    <NextContinuationToken>CgJiYw--</NextContinuationToken>
    <Contents>
        <Key>b/c</Key>
        <LastModified>2020-05-18T05:45:54.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
        <Owner>
            <ID>1686240967192623</ID>
            <DisplayName>1686240967192623</DisplayName>
        </Owner>
    </Contents>
    <Contents>
        <Key>ba</Key>
        <LastModified>2020-05-18T11:17:58.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
        <Owner>
            <ID>1686240967192623</ID>
            <DisplayName>1686240967192623</DisplayName>
        </Owner>
    </Contents>
    <Contents>
        <Key>bc</Key>
        <LastModified>2020-05-18T05:45:59.000Z</LastModified>
        <ETag>"35A27C2B9EAEEB6F48FD7FB5861D****"</ETag>
        <Size>25</Size>
        <StorageClass>STANDARD</StorageClass>
        <Owner>
            <ID>1686240967192623</ID>
            <DisplayName>1686240967192623</DisplayName>
        </Owner>
    </Contents>
    <KeyCount>3</KeyCount>
</ListBucketResult>
```

-

7.1.5. GetBucketInfo

Queries the information about a bucket.

Usage notes

> ⑦ **Note** You can initiate a GetBucketInfo request from any Object Storage Service (OSS) endpoint.

To query the information about a bucket, you must have the `oss:GetBucketInfo` permission. For more information, see Attach a custom policy to a RAM user.

Request syntax

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

Request headers

A DescribeRegions request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a DescribeRegions request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description
BucketInfo	Container	N/A	The container that stores the bucket information. Child nodes: Bucket Parent nodes: none
Bucket	Container	N/A	The container that stores the bucket information. Parent nodes: BucketInfo
CreationDate	Time	2013-07-31T10:56:21.000Z	The time when the bucket is created. The time is in UTC. Parent nodes: BucketInfo.Bucket
ExtranetEndpoint	String	oss-cn-hangzhou.aliyuncs.com	The public endpoint that is used to access the bucket over the Internet. Parent nodes: BucketInfo.Bucket

Element	Type	Example	Description
IntranetEndpoint	String	oss-cn-hangzhou-internal.aliyuncs.com	The internal endpoint that is used to access the bucket from Elastic Compute Service (ECS) instances that reside in the same region as the bucket. Parent nodes: BucketInfo.Bucket
Location	String	oss-cn-hangzhou	The region in which the bucket is located. Parent nodes: BucketInfo.Bucket
StorageClass	String	Standard	The storage class of the bucket. Valid values: *Standard*, *IA*, *Archive*, and *ColdArchive* For more information about storage classes, see Overview.
Name	String	oss-example	The name of the bucket. Parent nodes: BucketInfo.Bucket
Owner	Container	N/A	The container that stores the information about the bucket owner. Parent nodes: BucketInfo.Bucket
ID	String	27183473914****	The user ID of the bucket owner. Parent nodes: BucketInfo.Bucket.Owner
DisplayName	String	username	The name of the bucket owner, which is the same as the user ID of the bucket owner. Parent nodes: BucketInfo.Bucket.Owner
AccessControlList	Container	N/A	The container that stores the access control list (ACL) information about the bucket. For more information about bucket ACLs, see Bucket ACL. Parent nodes: BucketInfo.Bucket
Grant	Enumerated string	private	The ACL of the bucket. Valid values: *private*, *public-read*, and *public-read-write* Parent nodes: BucketInfo.Bucket.AccessControlList

Element	Type	Example	Description
DataRedundancyType pe	Enumerated string	LRS	The disaster recovery type of the bucket. Valid values: *LRS* and *ZRS* Parent nodes: BucketInfo.Bucket
Versioning	String	Enabled	Indicates whether versioning is enabled for the bucket. Valid values: *Enabled* and *Suspended* For more information about versioning, see PutBucketVersioning. Parent nodes: BucketInfo.Bucket
ServerSideEncrypti onRule	Container	N/A	The container that stores the server-side encryption method. For more information about server-side encryption, see Server-side encryption. Parent nodes: BucketInfo.Bucket
ApplyServerSideEn cryptionByDefault	Container	N/A	The container that stores the server-side encryption method that is used by default. Parent nodes: BucketInfo.Bucket
SSEAlgorithm	String	KMS	The server-side encryption method that is used by default. Valid values: *KMS* and *AES256* Parent nodes: BucketInfo.Bucket
KMSMasterKeyID	String	******	The customer master key (CMK) ID in use. A valid value is returned only if you set SSEAlgorithm to Key Management Service (KMS) and specify the CMK ID. In other cases, an empty value is returned. Parent nodes: BucketInfo.Bucket
CrossRegionReplic ation	String	Disabled	Indicates whether cross-region replication (CRR) is enabled for the bucket. Valid values: *Enabled* and *Disabled* Parent nodes: BucketInfo.Bucket

Element	Type	Example	Description
TransferAcceleration	String	Disabled	Indicates whether transfer acceleration is enabled for the bucket. Valid values: *Enabled* and *Disabled* Parent nodes: BucketInfo.Bucket
HierarchicalNamespace	String	Enabled	Indicates whether hierarchical namespace is enabled for the bucket. Valid value: *Enabled* Parent nodes: BucketInfo.Bucket

Examples

Sample requests

```
Get /?bucketInfo HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Sat, 12 Sep 2015 07:51:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****: BuG4rRK+zNhH1AcF51NNHD39****
```

Sample responses

- Sample success responses when the information about the specified 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>
    <AccessMonitor>Enabled</AccessMonitor>
    <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>
    <StorageClass>Standard</StorageClass>
    <TransferAcceleration>Disabled</TransferAcceleration>
    <CrossRegionReplication>Disabled</CrossRegionReplication>
    <HierarchicalNamespace>Enabled</HierarchicalNamespace>
    <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 the specified bucket does not exist

```
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 do not have permissions to access 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 use OSS SDKs for the following programming languages to call the GetBucketInfo operation:

- Java
- Python
- PHP
- Go
- C
- C++
- .NET
- Android
- iOS
- Node.js

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the bucket does not exist.
AccessDenied	403	The error message returned because you do not have permissions to query the information about the bucket. Only the bucket owner can query the information about the bucket.

7.1.6. GetBucketLocation

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

Request structure

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

Response elements

Element	Type	Description
LocationConstraint	String	The region where a bucket is located. Valid values: *oss-cn-hangzhou*, *oss-cn-shanghai*, *oss-cn-qingdao*, *oss-cn-beijing*, *oss-cn-zhangjiakou*, *oss-cn-hongkong*, *oss-cn-shenzhen*, *oss-us-west-1*, *oss-us-east-1*, and *oss-ap-southeast-1*. ⑦ **Note** For more information about the mapping between the region and data center of a bucket , see Regions and endpoints.

Examples

Sample requests

```
Get /? location HTTP/1.1
Host: examplebucket.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 04 May 2012 05:31:04 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
```

Sample responses

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906****
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</Location
Constraint >
```

SDK

SDKs of the GetBucketLocation operation for various programming languages:

- Java
- Python
- Go
- C++
- PHP
- C

- Node.js

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you are not authorized to view the location information of the specified bucket. Only the bucket owner can view the location information of a bucket.

7.1.7. GetBucketStat

Queries the storage capacity of a specified bucket and the number of objects that are stored in the bucket.

Usage notes

- To call the GetBucketStat operation, you must have the `oss:GetBucketStat` permission.
- Data obtained by calling this operation is not real-time data and may have a latency of over 1 hour.
- The time information obtained by calling this operation may not be up-to-date. For example, the value of the LastModifiedTime field obtained by the current GetBucketStat operation may be earlier than the value of this field obtained by the previous GetBucketStat operation.

Request syntax

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

Request headers

A DeleteObject request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a DescribeRegions request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description
BucketStat	Container	N/A	The container that stores all elements returned for the GetBucketStat request.

Element	Type	Example	Description
Storage	Positive integer	1600	The storage capacity of the bucket. Unit: bytes. Parent node: BucketStat Child nodes: none
ObjectCount	Positive integer	230	The total number of objects that are stored in the bucket. Parent node: BucketStat Child nodes: none
MultipartUploadCount	Positive integer	40	The number of multipart upload tasks that have been initiated but are not completed or canceled. Parent node: BucketStat Child nodes: none
LiveChannelCount	Positive integer	4	The number of LiveChannels in the bucket. Parent node: BucketStat Child nodes: none
LastModifiedTime	Positive integer	1643341269	The time when the obtained information is last modified. The value of this element is a UNIX timestamp. Unit: seconds. Parent node: BucketStat Child nodes: none
StandardStorage	Positive integer	430	The storage usage of Standard objects in the bucket. Unit: bytes. Parent node: BucketStat Child nodes: none
StandardObjectCount	Positive integer	66	The number of Standard objects in the bucket. Parent node: BucketStat Child nodes: none

Element	Type	Example	Description
InfrequentAccessStorage	Positive integer	2359296	The billed storage usage of Infrequent Access (IA) objects in the bucket. Unit: bytes. **Notice** IA objects that are smaller than 64 KB in size are billed as 64 KB. For more information about billing details, see Storage fees. Parent node: BucketStat Child nodes: none
InfrequentAccessRealStorage	Positive integer	360	The actual storage usage of IA objects in the bucket. Unit: bytes. Parent node: BucketStat Child nodes: none
InfrequentAccessObjectCount	Positive integer	54	The number of IA objects in the bucket. Parent node: BucketStat Child nodes: none
ArchiveStorage	Positive integer	2949120	The billed storage usage of Archive objects in the bucket. Unit: bytes. **Notice** Archive objects that are smaller than 64 KB in size are billed as 64 KB. For more information about billing details, see Storage fees. Parent node: BucketStat Child nodes: none
ArchiveRealStorage	Positive integer	450	The actual storage usage of Archive objects in the bucket. Unit: bytes. Parent node: BucketStat Child nodes: none
ArchiveObjectCount	Positive integer	74	The number of Archive objects in the bucket. Parent node: BucketStat Child nodes: none

Element	Type	Example	Description
ColdArchiveStorage	Positive integer	2359296	The billed storage usage of Cold Archive objects in the bucket. Unit: bytes. 🔊 **Notice** Cold Archive objects that are smaller than 64 KB in size are billed as 64 KB. For more information about billing details, see Storage fees. Parent node: BucketStat Child nodes: none
ColdArchiveRealStorage	Positive integer	360	The actual storage usage of Cold Archive objects in the bucket. Unit: bytes. Parent node: BucketStat Child nodes: none
ColdArchiveObjectCount	Positive integer	36	The number of Cold Archive objects in the bucket. Parent node: BucketStat Child nodes: none

Examples

- Sample requests

```
GET /?stat HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 28 Dec 2021 01:17:29 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:ceOEyZavKY4QcjoUWYSpYbJ3****
```

- Sample responses

```
<?xml version="1.0" encoding="UTF-8"?>
<BucketStat>
  <Storage>1600</Storage>
  <ObjectCount>230</ObjectCount>
  <MultipartUploadCount>40</MultipartUploadCount>
  <LiveChannelCount>4</LiveChannelCount>
  <LastModifiedTime>1643341269</LastModifiedTime>
  <StandardStorage>430</StandardStorage>
  <StandardObjectCount>66</StandardObjectCount>
  <InfrequentAccessStorage>2359296</InfrequentAccessStorage>
  <InfrequentAccessRealStorage>360</InfrequentAccessRealStorage>
  <InfrequentAccessObjectCount>54</InfrequentAccessObjectCount>
  <ArchiveStorage>2949120</ArchiveStorage>
  <ArchiveRealStorage>450</ArchiveRealStorage>
  <ArchiveObjectCount>74</ArchiveObjectCount>
  <ColdArchiveStorage>2359296</ColdArchiveStorage>
  <ColdArchiveRealStorage>360</ColdArchiveRealStorage>
  <ColdArchiveObjectCount>36</ColdArchiveObjectCount>
</BucketStat>
```

7.2. Retention policy

7.2.1. InitiateBucketWorm

You can call this operation to create a retention policy.

Usage notes

OSS supports the Write Once Read Many (WORM) strategy that prevents an object from being deleted or overwritten for a specified period of time. You can configure a time-based retention policy for buckets. This policy has a protection period ranging from one day to 70 years.

- Within 24 hours after a retention policy is created for a bucket, if the retention policy is still not locked, the bucket owner and authorized users can modify or delete the policy. When a retention policy is locked, you can read objects from or upload objects to buckets. However, the objects or retention policies within the retention period cannot be deleted. You can delete objects only after their retention period ends. For more information about the retention policy, see Retention policies.

- Versioning cannot be configured with retention policies or mirroring-based back-to-origin at the same time. For more information about the Versioning, see Overview.

Request elements

Element	Type	Required	Description
InitiateWormConfiguration	Container	Yes	The root node. Child nodes: RetentionPeriodInDays
RetentionPeriodInDays	Positive integer	Yes	The number of days for which objects can be retained.

Examples

- Sample requests

```
POST /? worm HTTP/1.1
Date: Thu, 15 May 2014 11:18:32 GMT
Content-Length: 556
Content-Type: application/xml
Host: BucketName.oss.aliyuncs.com
Authorization: OSS nxj7dtlhcyl5hp****:COS3OQkfQPnKmYZTEHYv2****
<InitiateWormConfiguration>
  <RetentionPeriodInDays>365</RetentionPeriodInDays>
</InitiateWormConfiguration>
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 5374A2880232A65C2300****
x-oss-worm-id: 1666E2CFB2B3418****
Date: Thu, 15 May 2014 11:18:32 GMT
```

7.2.2. AbortBucketWorm

AbortBucketWorm is used to delete an unlocked retention policy.

Usage notes

By default, a time-based policy is in the InProgress state after the policy is created for a bucket. The state remains valid for 24 hours. Within the validity period, the retention policy protects the data in the bucket.

- In the 24-hour window after the retention policy is enabled: If the retention policy is not locked, the bucket owner and authorized users can delete this policy. If the retention policy is locked, the protection period of the policy cannot be shortened and the policy cannot be deleted. The protection period can only be prolonged.
- 24 hours after the retention policy is enabled: If the retention policy is not locked, the policy becomes invalid.

If a bucket contains objects that are within the protection period, you cannot delete the bucket or its retention policy. To delete the retention policy of a bucket, the bucket must be empty. Only the bucket owner can delete the retention policy.

Examples

- Sample requests

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

```
HTTP/1.1 204 NoContent
x-oss-request-id: RequestId
Date: Date
```

7.2.3. CompleteBucketWorm

CompleteBucketWorm is used to lock a retention policy.

Usage notes

By default, a time-based policy is in the InProgress state after the policy is created for a bucket. The state remains valid for 24 hours. Within the validity period, the retention policy protects the data in the bucket.

- In the 24-hour window after the retention policy is enabled: If the retention policy is not locked, the bucket owner and authorized users can delete this policy. If the retention policy is locked, the protection period of the policy cannot be shortened and the policy cannot be deleted. The protection period can only be prolonged.
- 24 hours after the retention policy is enabled: If the retention policy is not locked, the policy becomes invalid.

Examples

- Sample requests

```
POST /? wormId=xxx HTTP/1.1
Date: GMT Date
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: RequestId
Date: Date
Content-Type: application/xml
Content-Length: length
```

7.2.4. ExtendBucketWorm

ExtendBucketWorm is used to extend the retention period of objects in a bucket whose retention policy is locked.

> ⑦ **Note**   If the ID of the retention policy that specifies the number of days for which objects can be retained does not exist, OSS returns 404.

Usage notes

By default, a time-based policy is in the InProgress state after the policy is created for a bucket. The state remains valid for 24 hours. Within the validity period, the retention policy protects the data in the bucket.

- In the 24-hour window after the retention policy is enabled: If the retention policy is not locked, the bucket owner and authorized users can delete this policy. If the retention policy is locked, the protection period of the policy cannot be shortened and the policy cannot be deleted. The protection period can only be prolonged.
- 24 hours after the retention policy is enabled: If the retention policy is not locked, the policy becomes invalid.

If a bucket contains objects that are within the protection period, you cannot delete the bucket or its retention policy. To delete the retention policy of a bucket, the bucket must be empty. Only the bucket owner can delete the retention policy.

Request elements

Element	Type	Required	Description
ExtendWormConfiguration	Container	Yes	The root node. Child nodes: RetentionPeriodInDays
RetentionPeriodInDays	Positive integer	Yes	The number of days for which objects can be retained.

Examples

- Sample requests

```
POST /? wormId=xxx&wormExtend HTTP/1.1
Date: Thu, 15 May 2014 11:18:32 GMT
Host: BucketName.oss.aliyuncs.com
Authorization: OSS nxj7dtlhcyl5hp****:COS3OQkfQPnKmYZTEHYv2****
<ExtendWormConfiguration>
  <RetentionPeriodInDays>366</RetentionPeriodInDays>
</ExtendWormConfiguration>
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 5374A2880232A65C2300****
Date: Thu, 15 May 2014 11:18:32 GMT
Content-Type: application/xml
Content-Length: 556
```

7.2.5. GetBucketWorm

You can call this operation to query the retention policy configured for the specified bucket.

> ⑦ **Note** If the retention policy specified by the ID in the request does not exist, OSS returns 404.

Usage notes

OSS supports the Write Once Read Many (WORM) strategy that prevents an object from being deleted or overwritten for a specified period of time. You can configure a time-based retention policy for a bucket. A retention policy has a retention period that ranges from one day to 70 years.

After a retention policy configured for a bucket is locked, you can read objects from or upload objects to the bucket. However, the retention policy and objects in the bucket cannot be deleted within the retention period. You can delete objects in the bucket only after the retention period expires.

Request headers

A GetBucketWorm request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a GetBucketWorm request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Description
WormConfiguration	Container	The root node. Child nodes: WormId, State, RetentionPeriodInDays, and CreationDate
WormId	String	The ID of the retention policy.
State	String	The status of the retention policy. Valid values: • InProgress: indicates that the retention policy is in the InProgress state. By default, a retention policy is in the InProgress state after it is created. The state remains valid for 24 hours. • Locked: indicates that the retention policy is in the Locked state.
RetentionPeriodInDays	Positive integer	The number of days for which objects can be retained.
CreationDate	String	The time when the retention policy is created.

Examples

● Sample request

```
GET /? worm HTTP/1.1
Date: Fri, 16 Oct 2020 11:18:32 GMT
Host: BucketName.oss.aliyuncs.com
Authorization: SignatureValue
```

● Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 5374A2880232A65C2300****
Date: Fri, 16 Oct 2020 11:18:32 GMT
Content-Type: application/xml
Content-Length: length
<WormConfiguration>
  <WormId>1666E2CFB2B3418****</WormId>
  <State>Locked</State>
  <RetentionPeriodInDays>1</RetentionPeriodInDays>
  <CreationDate>2020-10-15T15:50:32</CreationDate>
</WormConfiguration>
```

7.3. ACL

7.3.1. PutBucketAcl

You can call this operation to configure or modify the ACL of a bucket.

Usage notes

When you call the PutBucketAcl operation, take note of the following items:

- To call this operation, you must have write permissions on the bucket.
- PutBucketAcl uses the overwriting semantics. A new ACL overwrites the existing one.
- If the specified bucket for which you want to set ACL does not exist when you call this operation, a new bucket is created.

Request structure

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

Request headers

Header	Type	Required	Description

Header	Type	Required	Description
x-oss-acl	String	Yes	The ACL that you want to set for the bucket. This header is included in PutBucketAcl requests to set the ACL of the bucket. If this header is not included, the ACL settings do not take effect. Valid values: public-read-write, public-read, and private • public-read-write: Any users, including anonymous users can read and write objects in the bucket. Exercise caution when you set the ACL of a bucket to public-read-write. • public-read: Only the owner or authorized users of this bucket can write objects in the bucket. Other users, including anonymous users can only read objects in the bucket. Exercise caution when you set the ACL of a bucket to public-read. • private: Only the owner or authorized users of this bucket can read and write objects in the bucket. Other users, including anonymous users cannot access the objects in the bucket without authorization.

For the common request headers included in PutBucketAcl requests, see Common request headers.

Response headers

The response to a PutBucketAcl request contains only common response headers. For more information, see Common response headers.

Examples

Sample request

```
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 qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrT****
```

Sample response

• Sample success response

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Fri, 24 Feb 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

• Sample response to a request that includes invalid ACL settings

```
HTTP/1.1 400 Bad Request
x-oss-request-id: 56594298207FB3044385****
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

You can use OSS SDKs for the following programming languages to call the PutBucketAcl operation:

- Java
- Python
- Go
- C++
- PHP
- C
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
AccessDenied	403	- The error message returned because the information for user authentication is not included in the PutBucketAcl request. - The error message returned because you are not authorized to initiate a PutBucketAcl request.

7.3.2. GetBucketAcl

You can call this operation to query the ACL of a bucket. Only the bucket owner can query the ACL of the bucket.

Request syntax

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

Response elements

Element	Type	Description
AccessControlList	Container	The container that contains the ACL information. Parent node: AccessControlPolicy.
AccessControlPolicy	Container	The container that contains the result of the GetBucketACL request. Parent node: none.
DisplayName	String	The name of the bucket owner, which is currently the same as the user ID. Parent node: AccessControlPolicy and Owner.
Grant	Enumeration	The ACL for the bucket. Valid values: *private*, *public-read*, and *public-read-write*. Parent node: AccessControlPolicy and AccessControlList.
ID	String	The user ID of the bucket owner. Parent node: AccessControlPolicy and Owner.
Owner	Container	The container that contains the information about the bucket owner. Parent node: AccessControlPolicy.

Examples

Sample requests

```
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+WwIfNm0Fmgb****
```

Sample success responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
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>0022012****</ID>
        <DisplayName>user_example</DisplayName>
    </Owner>
    <AccessControlList>
        <Grant>public-read</Grant>
    </AccessControlList>
</AccessControlPolicy>
```

SDKs

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

- Java
- Python
- PHP
- Go
- C
- .NET
- Android
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the specified bucket does not exist.
AccessDenied	403	The error message returned because you are not authorized to query the ACL of the bucket. Only the bucket owner can query the ACL of the bucket.

7.4. Lifecycle

7.4.1. PutBucketLifecycle

Configures a lifecycle rule for a bucket. After you enable a lifecycle rule for a bucket, Object Storage Service (OSS) automatically deletes the objects that match the lifecycle rule from the bucket or converts the storage class of the objects that match the lifecycle rule at the time specified in the lifecycle rule.

Usage notes

- To configure a lifecycle rule for a bucket, you must have the `oss:PutBucketLifecycle` permission. For more information, see Attach a custom policy to a RAM user.

- If no lifecycle rule is configured for a bucket, a lifecycle rule is created when you call the PutBucketLifecycle operation. If a lifecycle rule is configured for a bucket, the configurations of the lifecycle rule are overwritten when you call the PutBucketLifecycle operation.

- The PutBucketLifecycle operation overwrites the existing configurations of a lifecycle rule that is configured for a bucket. If you want to update the configurations of a lifecycle rule, call the GetBucketLifecycle operation to query the existing configurations of the lifecycle rule, modify the configurations, and then call the PutBucketLifecycle operation to update the configurations.

- You can use lifecycle rules to specify the expiration time of objects and parts that are uploaded in incomplete multipart upload tasks.

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	Example	Description
LifecycleConfiguration	Container	Yes	N/A	The container that stores lifecycle configurations. The container can store the configurations of up to 1,000 lifecycle rules. Child nodes: Rule Parent nodes: none

Element	Type	Required	Example	Description
Rule	Container	Yes	N/A	The container that stores lifecycle rules. The period of time from when the objects expire to when the objects are deleted must be longer than the period of time from when the objects expire to when the storage class of the objects is converted to IA or Archive. Child nodes: ID, Prefix, Status, and Expiration Parent nodes: LifecycleConfiguration
ID	String	No	rule1	The ID of the lifecycle rule. The ID can contain up to 255 characters. If you do not specify this element or you leave this element empty, OSS automatically generates a unique ID for the lifecycle rule. Child nodes: none Parent nodes: Rule
Prefix	String	No	tmp/	The prefix in the names of the objects to which the rule applies. The prefixes specified by different rules cannot overlap. • If you specify a value for the Prefix element, the rule applies only to objects whose names contain the specified prefix in the bucket. • Otherwise, the rule applies to all objects in the bucket. Child nodes: none Parent nodes: Rule
Status	String	Yes	Enabled	Specifies whether to enable the rule. Valid values: • Enabled: enables the rule. OSS periodically executes the rule. • Disabled: does not enable the rule. OSS ignores the rule. Parent nodes: Rule

Element	Type	Required	Example	Description
Expiration	Container	No	N/A	The delete operation that you want OSS to perform on the objects that match the lifecycle rule when the objects expire. For objects in a versioned bucket, the delete operation specified by this element is performed only on the current versions of the objects. The period of time from when the objects expire to when the objects are deleted must be longer than the period of time from when the objects expire to when the storage class of the objects is converted to IA or Archive. Child nodes: Days, CreatedBeforeDate, or ExpiredObjectDeleteMarker Parent nodes: Rule
Days	Positive integer	Days and CreatedBeforeDate are mutually exclusive.	1	The number of days from when the objects were last modified to when the lifecycle rule takes effect. Parent nodes: Expiration or AbortMultipartUpload
CreatedBeforeDate	String	Days and CreatedBeforeDate are mutually exclusive.	2002-10-11T00:00:00.000Z	The date based on which the lifecycle rule is implemented. OSS performs the specified operation on the objects that were last modified before this date. The value of this element is in the yyyy-MM-ddT00:00:00.000Z format. Specify the time in the ISO 8601 standard. The time must be at 00:00:00 in UTC. Parent nodes: Expiration or AbortMultipartUpload
ExpiredObjectDeleteMarker	String	No	true	Specifies whether to automatically remove expired delete markers. Valid values: • true: automatically removes expired delete markers. If you set this element to *true*, you cannot specify the *Days* or *CreatedBeforeDate* element. • false: does not automatically remove expired delete markers. If you set this element to *false*, you must specify the *Days* or *CreatedBeforeDate* element. Parent nodes: Expiration

Element	Type	Required	Example	Description
Transition	Container	No	N/A	The conversion of the storage class of objects that match the lifecycle rule when the objects expire. The storage class of Standard objects can be converted to IA, Archive, or Cold Archive. The period of time from when the objects expire to when the storage class of the objects is converted to Archive must be longer than the period of time from when the objects expire to when the storage class of the objects is converted to IA. For example, if the period of time from when the objects expire to when the storage class of the objects is converted to IA is 30 days, the period of time from when the objects expire to when the storage class of the objects is converted to Archive must be longer than 30 days. Parent nodes: Rule Child nodes: Days, CreatedBeforeDate, and StorageClass ◁)) **Notice** Days and CreatedBeforeDate are mutually exclusive.
StorageClass	String	Yes if Transition or Noncurrent VersionTransition is specified	IA	The storage class of objects after conversion. Valid values: • IA • Archive • Cold Archive ◁)) **Notice** You can convert the storage class of objects in an IA bucket to only Archive or Cold Archive. Parent nodes: Transition

Element	Type	Required	Example	Description
AbortMultipart Upload	Container	No	N/A	The delete operation that you want OSS to perform on the parts that are uploaded in incomplete multipart upload tasks when the parts expire. Child nodes: Days or CreatedBeforeDate Parent nodes: Rule
Tag	Container	No	N/A	The tag of objects that match the lifecycle rule. You can specify multiple tags. Parent nodes: Rule Child nodes: Key and Value
Key	String	Yes if the Tag element is specified	TagKey1	The key of the tag that is specified for the objects. Parent nodes: Tag
Value	String	Yes if the Tag element is specified	TagValue1	The value of the tag that is specified for the objects. Parent nodes: Tag
NoncurrentVers ionExpiration	Container	No	N/A	The delete operation that you want OSS to perform on the previous versions of the objects that match the lifecycle rule when the previous versions expire. Child nodes: NoncurrentDays
NoncurrentVers ionTransition	Container	No	N/A	The conversion of the storage class of previous versions of the objects that match the lifecycle rule when the previous versions expire. The storage class of the previous versions can be converted to IA or Archive. The period of time from when the previous versions expire to when the storage class of the previous versions is converted to Archive must be longer than the period of time from when the previous versions expire to when the storage class of the previous versions is converted to IA. Child nodes: NoncurrentDays and StorageClass

Element	Type	Required	Example	Description
NoncurrentDays	String	Yes if Noncurrent VersionExpiration or Noncurrent VersionTransition is specified		The number of days from when the objects became previous versions to when the lifecycle rule takes effect. Parent nodes: NoncurrentVersionTransition and NoncurrentVersionExpiration
Filter	Container	No	N/A	The container that stores the Not element that is used to filter out objects. You can leave this element empty or specify only one Not node. Parent nodes: Rule Child nodes: Not
Not	Container	Yes	N/A	The condition that is matched by objects to which the lifecycle rule does not apply. If you specify a value for the Filter element, you must specify only one Not node. Parent nodes: Filter Child nodes: Prefix and Tag
Prefix	String	Yes	tmp/not/	The prefix in the names of the objects to which the lifecycle rule does not apply. You cannot leave this element empty. • If you specify a value for the Prefix element on the Rule node, the value of the Prefix element that is specified on the Not node must be prefixed with the value of the Prefix element that is specified on the Rule node. For example, if the value of the Prefix element that is specified on the Rule node is *dir*, the value of the Prefix element that is specified on the Not node must be prefixed with *dir*, for example, *dir1* and *dir2*. • If no tag is specified on the Not node, the value of the Prefix element that is specified on the Not node must be different from the value of the Prefix element that is specified on the Rule node. Parent nodes: Not Child nodes: none

Element	Type	Required	Example	Description
Tag	Container	No	N/A	The tag of the objects to which the lifecycle rule does not apply. You can specify only one tag or leave this element empty.

Examples

- Configure lifecycle rules for a version-disabled bucket
  - Sample request 1 (the Not element not specified)

```
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 qn6qrrqxo2oawuk53otf****: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>
    <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>
    <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 request 2 (the Not element specified)

```
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>logs</Prefix>
    <Status>Enabled</Status>
    <Filter>
      <Not>
        <Prefix>logs1</Prefix>
        <Tag><Key>key1</Key><Value>value1</Value></Tag>
      </Not>
    </Filter>
    <Expiration>
      <Days>100</Days>
    </Expiration>
    <Transition>
      <Days>Days</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
```

● Configure lifecycle rules for a version-enabled bucket

Sample request

```
PUT /?lifecycle HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Content-Length: 336
Date: Mon , 6 May 2019 15:23:20 GMT
Authorization: OSSWnjl3fg9fdv8fg4b****: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: 7D3435J59A9812BAD56E
Date: Mon , 6 May 2019 15:23:20 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

You can use OSS SDKs for the following programming languages to call the PutBucketLifecycle operation:

- Java
- Python
- PHP
- Go

- C
- C++
- .NET
- Android
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	Possible causes: • The storage class of Standard objects in a Standard bucket can be converted from Standard to IA or Archive. You can configure a lifecycle rule for a Standard bucket to convert the storage class of an object in the bucket to IA and Archive at different points in time. The specified point in time at which the storage class of the object is converted to Archive must be later than the specified point in time at which the storage class of the object is converted to IA. • The period of time from when the objects expire to when the objects are deleted must be longer than the period of time from when the objects expire to when the storage class of the objects is converted to IA or Archive.
AccessDenied	403	The error message returned because you are not authorized to perform the PutBucketLifecycle operation. Only users that have the `oss:PutBucketLifecycle` permission can configure lifecycle rules for a bucket.

7.4.2. 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:ceOEyZavKY4QcjoUWYSpYbJ3naA=
```

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.

7.4.3. DeleteBucketLifecycle

You can call this operation to configure lifecycle rules for a bucket. After you call DeleteBucketLifecycle to delete all lifecycle rules for a bucket, the objects in the bucket are not deleted. Only the bucket owner can delete CORS rules for a bucket.

Request syntax

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

Examples

Sample requests

```
DELETE /? lifecycle HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: Mon, 14 Apr 2014 01:17:35 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:6ZVHOehYzxoC1yxRydPQs/Cn****
```

Sample success responses

> ⑦ **Note**   HTTP status code 204 is returned if there are no lifecycle rules to delete.

```
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
```

SDKs

The SDKs of the DeleteBucketLifecycle 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
NoSuchBucket	404	The error message returned because the specified bucket does not exist.
AccessDenied	403	The error message returned because you are not authorized to delete the lifecycle rules for the bucket. Only the bucket owner can delete the lifecycle rules for the bucket.

7.5. Transfer acceleration

7.5.1. PutBucketTransferAcceleration

You can call this operation to configure transfer acceleration for a bucket. After you enable transfer acceleration for a bucket, users worldwide can access objects more quickly. The transfer acceleration feature is applicable to scenarios where data needs to be transferred over long geographical distances. This feature can also be used to download or upload objects that are gigabytes or terabytes in size.

Usage notes

- Only the owner of a bucket or RAM users to which the oss:PutBucketTransferAcceleration permission is granted can initiate requests to configure transfer acceleration for the bucket.

- After you enable transfer acceleration for a bucket, you can use an accelerate endpoint in addition to the default endpoint to access the bucket. The access speed is accelerated only when you use the accelerate endpoint.

- You are charged for the transfer acceleration fees when you use the accelerate endpoint to access a bucket. For more information, see Transfer acceleration fees.

For more information about transfer acceleration, see Transfer acceleration in the Developer Guide.

Request structure

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

Request parameters

Parameter	Type	Required	Example	Description
TransferAccelerationConfiguration	Container	Yes	N/A	The container used to store transfer acceleration configurations.
Enabled	String	Yes	true	Specifies whether to enable transfer acceleration for the bucket. Valid values: • *true*: indicates that the request is sent to enable transfer acceleration for the bucket. • *false*: indicates that the request is sent to disable transfer acceleration for the bucket. 🔊 **Notice** Transfer acceleration takes effect within 30 minutes after it is enabled.

For more information about the common request headers contained in a PutBucketTransferAcceleration request, such as Authorization and Content-Length, see Common request headers.

Response headers

All deaders contained in the response to a PutBucketTransferAcceleration request are common response headers, such as x-oss-request-id and Date. For more information about the common response headers, see Common response headers.

Examples

• Sample requests

   The following sample request is used to enable transfer acceleration for a bucket named examplebucket:

```
PUT /?transferAcceleration HTTP/1.1
Date: Fri , 30 Apr 2021 13:08:38 GMT
Content-Length: 443
Content-Type: application/xml
Host: examplebucket.oss.aliyuncs.com
Authorization: OSS qn6qrrqxo2oawuk53otf****:PYbzsdWAIWAlMW8luk****
<TransferAccelerationConfiguration>
  <Enabled>true</Enabled>
</TransferAccelerationConfiguration>
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674A4D890****
Date: Fri , 30 Apr 2021 13:08:38 GMT
Content-Length: 443
Connection: keep-alive
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
AccessDenied	404	The error message returned because you are not authorized to perform the PutBucketTransferAcceleration operation. Only users granted with the oss:PutBucketTransferAcceleration permission can configure transfer acceleration for the bucket.
MalformedXML	400	The error message returned because the request is not in a valid XML format. For example, the Enabled field in the request is set to a value other than true or false.

7.5.2. GetBucketTransferAcceleration

You can call this operation to query the transfer acceleration configurations of a bucket.

Usage notes

- Only the owner of a bucket or RAM users granted with the oss:PutBucketTransferAcceleration permission can initiate requests to query the transfer acceleration configurations of a bucket.
- If transfer acceleration is not configured for the bucket to which you send the GetBucketTransferAcceleration request, no configurations are returned.

For more information about transfer acceleration, see Transfer acceleration in the Developer Guide.

Request structure

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

Response parameters

Parameter	Type	Example	Description
TransferAccelerationConfiguration	Container	N/A	The container used to store transfer acceleration configurations.
Enabled	String	true	The status of transfer acceleration Valid values: • *true*: indicates that transfer acceleration is enabled for the bucket. • *false*: indicates that transfer acceleration is disabled for the bucket.

For more information about other common response headers, such as x-oss-request-id and Date, contained in the response to a GetBucketTransferAcceleration request, see Common response headers.

Examples

- Sample requests

  The following sample request is used to query the status of transfer acceleration of a bucket named examplebucket:

  ```
  GET /?transferAcceleration HTTP/1.1
  Date: Fri , 30 Apr 2021 13:08:38 GMT
  Content-Length: 443
  Content-Type: application/xml
  Host: examplebucket.oss.aliyuncs.com
  Authorization: OSS qn6qrrqxo2oawuk53otf****:PYbzsdWAIWAlMW8luk****
  ```

- Sample responses

  The following response indicates that transfer acceleration is enabled for examplebucket:

  ```
  HTTP/1.1 200 OK
  x-oss-request-id: 534B371674E88A4D8906****
  Date: Fri , 30 Apr 2021 13:08:38 GMT
  <TransferAccelerationConfiguration>
   <Enabled>true</Enabled>
  </TransferAccelerationConfiguration>
  ```

Error codes

Error code	HTTP status code	Description
NoSuchTransferAccelerationConfiguration	404	The error message returned because transfer acceleration is not configured for the bucket.

7.6. Versioning

7.6.1. PutBucketVersioning

You can call this operation to configure the versioning state of a bucket.

Usage notes

- To configure versioning for a bucket, you must have the PutBucketVersioning permission.
- A bucket can be in one of the following versioning state: disabled, enabled, and suspended. By default, versioning is disabled for a bucket.
- If versioning is enabled for a bucket, an object that is added to the bucket have a unique version ID. In this case, multiple versions of an object can be stored in OSS at the same time.
- If versioning is suspended for a bucket, the version ID of an object that is added to the bucket is null. OSS does not store new previous versions for objects that is deleted or overwritten.

For more information about versioning, see Overview.

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>
```

Examples

- Sample request for enabling versioning for a bucket

```
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:12ztptkaR8a74gIGFzOaZZQe****
<? xml version="1.0" encoding="UTF-8"? >
<VersioningConfiguration>
    <Status>Enabled</Status>
</VersioningConfiguration>
```

  Sample response

```
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
```

- Sample request for suspending versioning for a bucket

```
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>
```

Sample response

```
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
```

SDK

You can use SDKs for the following programming languages to call the PutBucketVersioning operation:

- Java
- Python
- Go
- C++
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
AccessDenied	403	This error message returned because you do not have permissions to configure the versioning state of the bucket.
InvalidArgument	400	This error message returned because the versioning state that you want to configure is invalid. You can set the versioning state of a bucket to only Enabled or Suspended.

7.6.2. GetBucketVersioning

You can call this operation to query the versioning state of a 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	The container that stores the versioning state of the bucket. Child node: Status Parent node: none
Status	String	The versioning state of the bucket. Parent node: VersioningConfiguration Valid values: • Enabled: indicates that versioning is enabled for the bucket. • Suspended: indicates that versioning is suspended for the bucket.

Examples

Sample request

```
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****
```

Sample responses

- Sample response for a bucket for which versioning is enabled

```
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>
```

- Sample response for a bucket for which versioning is disabled

  If versioning is disabled for the requested bucket, the versioning state of the bucket is not contained in the XML body of the response.

  ```
  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"/>
  ```

SDK

You can use SDKs for the following programming languages to call the GetBucketVersioning operation:

- Java
- Python
- Go
- C++
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have permissions to query the versioning state of the bucket. Only the bucket owner or RAM users that have the GetBucketVersioning permission can query the versioning state of a bucket.
NoSuchBucket	404	The error message returned because the specified bucket does not exist.

7.6.3. GetBucketVersions(ListObjectVersions)

Lists the versions of all objects and delete markers in a bucket.

Usage notes

If you call the GetBucketVersions(ListObjectVersions) and GetBucket(ListObjects) operations on a versioned bucket, the following different results are returned:

- In the response to a GetBucket(ListObjects) request, the current versions of objects in the bucket are returned, excluding delete markers.
- In the response to a GetBucketVersions(ListObjectVersions) request, all versions of objects in the bucket are returned, including delete markers.

Objects are returned in alphabetic order, but the versions of each object are returned by creation time in descending order.

Request headers

A GetBucketVersions(ListObjectVersions) request contains only common request headers such as `Authorization` and `Host`. For more information about common request headers, see Common request headers.

Request parameters

When you call the GetBucketVersions(ListObjectVersions) operation, you can specify the following parameters to filter the returned results: prefix, key-marker, version-id-marker, delimiter, and max-keys.

Parameter	Type	Required	Example	Description
delimiter	String	No	/	The character that is used to group objects by name. If you specify the delimiter parameter in the request, the response contains the CommonPrefixes element. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. If you set prefix to a directory name and delimiter to a forward slash (/), only objects in the directory are returned. The names of the subdirectories within the directory are returned in the CommonPrefixes element. However, objects and directories within the subdirectories are not listed. This parameter is empty by default.
key-marker	String	The key-marker parameter is required if the version-id-marker parameter is specified.	example	Specifies that objects whose names are alphabetically greater than the key-marker value are returned. This parameter can be specified together with version-id-marker. The key-marker value must be less than 1,024 bytes in length. This parameter is empty by default.

Parameter	Type	Required	Example	Description
version-id-marker	String	No	CAEQMxiBgICbof2D0BYiIGRhZjgwMzJiMjA3MjQ0ODE5MWYxZDYwMzJlZjU1****	Specifies that the versions created before the version specified by version-id-marker for the object whose name is specified by key-marker are returned by creation time in descending order. By default, if this parameter is not specified, the results are returned from the latest version of the object whose name is alphabetically greater than the key-marker value. This parameter is empty by default. Valid values: version IDs
max-keys	String	No	100	The maximum number of objects to return. If the number of returned objects exceeds the max-keys value, the response contains the `NextKeyMarker` and `NextVersionIdMarker` elements as the markers for the next GetBucketVersions(ListObjectVersions) request. The `NextKeyMarker` and `NextVersionIdMarker` values are included in the response. Valid values: 1 to 1000 Default value: 100
prefix	String	No	fun	The prefix that the names of returned objects must contain. • The prefix value must be less than 1,024 bytes in length. • If you specify a prefix in the request, the names of the returned objects contain the prefix. If you set prefix to a directory name in the request, the objects whose names contain the prefix are listed, including all objects and subdirectories within the directory. This parameter is empty by default.

Parameter	Type	Required	Example	Description
encoding-type	String	No	URL	The encoding type of the content in the response. This parameter is empty by default. Valid value: URL 🔊 **Notice** The delimiter, marker, prefix, NextMarker, and Key values are UTF-8 encoded. If the delimiter, marker, prefix, NextMarker, or Key value contains a control character that is not supported by the XML 1.0 standard, you can specify encoding-type to encode the value in the response.

Response elements

Element	Type	Example	Description
ListVersionsResult	Container	N/A	The container that stores the results of the GetBucketVersions(ListObjectVersions) request. Child nodes: Name, Prefix, Marker, MaxKeys, Delimiter, IsTruncated, NextMarker, Version, and DeleteMarker Parent nodes: none
CommonPrefixes	String	N/A	If the delimiter parameter is specified in the request, the response contains the CommonPrefixes element. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Parent nodes: ListVersionsResult

Element	Type	Example	Description
Delimiter	String	/	The character that is used to group objects by name. If you specify the delimiter parameter in the request, the response contains the CommonPrefixes element. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes. Parent nodes: ListVersionsResult
EncodingType	String	URL	The encoding type of the content in the response. If you specify encoding-type in the request, the Delimiter, Marker, Prefix, NextMarker, and Key values are encoded in the response. Parent nodes: ListVersionsResult
IsTruncated	String	true	Indicates whether the returned results are truncated. ● true: indicates that not all of the results are returned this time. ● false: indicates that all of the results are returned this time. Valid values: true and false Parent nodes: ListVersionsResult
KeyMarker	String	example	Indicates the object from which the GetBucketVersions(ListObjectVersions) operation starts. Parent nodes: ListVersionsResult
VersionIdMarker	String	CAEQMxiBgICbof2D0B YilGRhZjgwMzJiMjA3 MjQ0ODE5MWYxZDY wMzJlZjU1****	This element is returned together with KeyMarker to indicate the version from which the GetBucketVersions(ListObjectVersions) operation starts. Parent nodes: ListVersionsResult
NextKeyMarker	String	test	If not all results are returned for the request, the NextKeyMarker element is contained in the response to indicate the key-marker value of the next GetBucketVersions(ListObjectVersions) request. Parent nodes: ListVersionsResult

Element	Type	Example	Description
NextVersionIdMarker	String	CAEQGBiBgIC_jq7P9x YilDRiZWJkNjY2Y2Q4 NDQ5ZTI5ZGE5ODIxM TIyZThl****	If not all of the results are returned for the request, the NextVersionIdMarker element is contained in the response to indicate the version-id-marker value of the next GetBucketVersions(ListObjectVersions) request. Parent nodes: ListVersionsResult
MaxKeys	String	1000	The maximum number of returned objects in the response. Parent nodes: ListVersionsResult
Name	String	examplebucket- 1250000000	The name of the bucket. Parent nodes: ListVersionsResult
Owner	Container	N/A	The container that stores the information about the bucket owner. Parent nodes: ListVersionsResult
Prefix	String	fun	The prefix that must be included in the names of the listed objects. Parent nodes: ListVersionsResult
Version	Container	N/A	The container that stores the versions of objects, excluding delete markers. Parent nodes: ListVersionsResult
DeleteMarker	Container	N/A	The container that stores delete markers. Parent nodes: ListVersionsResult

Element	Type	Example	Description
ETag	String	250F8A0AE989679A2 2926A875F0A2****	The entity tag (ETag) that is generated when an object is created. ETags are used to identify the content of objects. • If an object is created by calling the PutObject operation, the ETag value of the object is the MD5 hash of the object content. • If an object is created by using another method, the ETag value is not the MD5 hash of the object content but a unique value calculated based on a specific rule. ⑦ Note The ETag value of an object can be used only to check whether the object content is modified. We recommend that you use the MD5 hash of an object rather than the ETag value of the object to verify data integrity. Parent nodes: ListVersionsResult.Version
Key	String	example	The name of the object. Parent nodes: ListVersionsResult.Version and ListVersionsResult.DeleteMarker
LastModified	Time	2019-04-09T07:27:28.000Z	The last modified time of the object. Parent nodes: ListVersionsResult.Version and ListVersionsResult.DeleteMarker
VersionId	String	CAEQMxiBgMDNoP2D 0BYilDE3MWUxNzgxZ DQxNTRiODI5OGYwZ GMwNGY3MzZjN****	The version ID of the object. Parent nodes: ListVersionsResult.Version and ListVersionsResult.DeleteMarker
IsLatest	String	true	Indicates whether the version is the current version. Valid values: • true: The version is the current version. • false: The version is a previous version. Parent nodes: ListVersionsResult.Version and ListVersionsResult.DeleteMarker
Size	String	93731	The size of the returned object. Unit: bytes. Parent nodes: ListVersionsResult.Version and ListVersionsResult.DeleteMarker

Element	Type	Example	Description
StorageClass	String	Standard	The storage class of the object. Parent nodes: ListVersionsResult.Version and ListVersionsResult.DeleteMarker
DisplayName	String	1234512528586864390	The name of the object owner. Parent nodes: ListVersionsResult.Version.Owner and ListVersionsResult.DeleteMarker.Owner
ID	String	1234512528586****	The user ID of the bucket owner. Parent nodes: ListVersionsResult.Version.Owner and ListVersionsResult.DeleteMarker.Owner
RestoreInfo	String	ongoing-request="true"	The restoration status of the object.

For more information about the common response headers such as `x-oss-request-id` and `Content-Type` contained in the response to a GetBucketVersions(ListObjectVersions) request, see Common response headers.

Examples

- List the versions of objects in an unversioned bucket

  Sample requests

  ```
  GET /?versions HTTP/1.1
  Host: oss-example.oss-cn-hangzhou.aliyuncs.com
  Date: Tue, 09 Apr 2019 07:27:48 GMT
  Authorization: OSS ami4tq0x76ov9cu:WFx4****+e7Rc0jawCsh7hlk****
  ```

  Sample responses

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: 1262
Connection: keep-alive
Date: Thu, Tue, 09 Apr 2019 07:27:48 GMT
Server: AliyunOSS
x-cos-request-id: 534B371674E88A4D8906****
<ListVersionsResult>
    <Name>examplebucket-1250000000</Name>
    <Prefix/>
    <KeyMarker/>
    <VersionIdMarker/>
    <MaxKeys>1000</MaxKeys>
    <IsTruncated>false</IsTruncated>
    <Version>
        <Key>example-object-1.jpg</Key>
        <VersionId/>
        <IsLatest>true</IsLatest>
        <LastModified>2019-08-5T12:03:10.000Z</LastModified>
        <ETag>5B3C1A2E053D763E1B669CC607C5A0FE1****</ETag>
        <Size>20</Size>
        <StorageClass>STANDARD</StorageClass>
        <Owner>
            <ID>1250000000</ID>
            <DisplayName>1250000000</DisplayName>
        </Owner>
    </Version>
    <Version>
        <Key>example-object-2.jpg</Key>
        <VersionId/>
        <IsLatest>true</IsLatest>
        <LastModified>2019-08-9T12:03:09.000Z</LastModified>
        <ETag>5B3C1A2E053D763E1B002CC607C5A0FE1****</ETag>
        <Size>20</Size>
        <StorageClass>STANDARD</StorageClass>
        <Owner>
            <ID>1250000000</ID>
            <DisplayName>1250000000</DisplayName>
        </Owner>
    </Version>
    <Version>
        <Key>example-object-3.jpg</Key>
        <VersionId/>
        <IsLatest>true</IsLatest>
        <LastModified>2019-08-10T12:03:08.000Z</LastModified>
        <ETag>4B3F1A2E053D763E1B002CC607C5AGTRF****</ETag>
        <Size>20</Size>
        <StorageClass>STANDARD</StorageClass>
        <Owner>
            <ID>1250000000</ID>
            <DisplayName>1250000000</DisplayName>
        </Owner>
    </Version>
</ListVersionsResult>
```

- List the versions of objects in a versioned bucket

In this example, two objects named example and pic.jpg are stored in a bucket named oss-example. The object named example has the following three versions which are displayed by creation time in descending order: 111222, 000123 (delete marker), and 222333. The object named pic.jpg has only one version whose ID is 232323.

If you set key-marker to example and version-id-marker to 111222, the following three versions are returned in sequence: 000123 of example, 222333 of example, and 232323 of pic.jpg.

Sample requests

```
GET /?versions&key-marker=example&version-id-marker=CAEQMxiBgICbof2D0BYiIGRhZjgwMzJiMjA3MjQ
0ODE5MWYxZDYwMzJlZjU1**** HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 07:27:48 GMT
Authorization: OSS ami4tq0x76o****:WFx4kLpx+e7Rc0jawCsh7hlk****
```

Sample responses

```
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>CAEQMxiBgICbof2D0BYiIGRhZjgwMzJiMjA3MjQ0ODE5MWYxZDYwMzJlZjU1****</Vers
ionIdMarker>
    <MaxKeys>100</MaxKeys>
    <Delimiter></Delimiter>
    <IsTruncated>false</IsTruncated>
    <DeleteMarker>
        <Key>example</Key>
        <VersionId>CAEQMxiBgICAof2D0BYiIDJhMGE3N2M1YTI1NDQzOGY5NTkyNTI3MGYyMzJm****</Versio
nId>
        <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>CAEQMxiBgMDNoP2D0BYiIDE3MWUxNzgxZDQxNTRiODI5OGYwZGMwNGY3MzZjN****</Versi
onId>
        <IsLatest>false</IsLatest>
        <LastModified>2019-04-09T07:27:28.000Z</LastModified>
        <ETag>"250F8A0AE989679A22926A875F0A2****"</ETag>
        <Type>Normal</Type>
        <Size>93731</Size>
        <StorageClass>Standard</StorageClass>
```

```
                                StorageClass Standard /StorageClass
        <Owner>
          <ID>1234512528586****</ID>
          <DisplayName>12345125285864390</DisplayName>
        </Owner>
    </Version>
    <Version>
        <Key>pic.jpg</Key>
        <VersionId>CAEQMxiBgMCZov2D0BYiIDY4MDllOTc2YmY5MjQxMzdiOGI3OTlhNTU0ODIx****</Versio
nId>
        <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>
```

- Archive objects and Cold Archive objects stored in the requested bucket

```
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>CAEQMxiBgICbof2D0BYiIGRhZjgwMzJiMjA3MjQ0ODE5MWYxZDYwMzJlZjU1****</Vers
ionIdMarker>
    <MaxKeys>100</MaxKeys>
    <Delimiter></Delimiter>
    <IsTruncated>false</IsTruncated>
    <Version>
        <Key>exampleobject1.txt</Key>
        <VersionId>CAEQMxiBgICAof2D0BYiIDJhMGE3N2M1YTI1NDQzOGY5NTkyNTI3MGYyMzJm****</Versio
nId>
        <IsLatest>false</IsLatest>
        <LastModified>2019-04-09T07:27:28.000Z</LastModified>
        <Owner>
          <ID>1234512528586****</ID>
          <DisplayName>12345125285864390</DisplayName>
        </Owner>
     </Version>
    <Version>
        <Key>exampleobject2.txt</Key>
        <VersionId>CAEQMxiBgMDNoP2D0BYiIDE3MWUxNzgxZDQxNTRiODI5OGYwZGMwNGY3MzZjN****</Versi
```

```
onId>
        <IsLatest>false</IsLatest>
        <LastModified>2019-04-09T07:27:28.000Z</LastModified>
        <ETag>"250F8A0AE989679A22926A875F0A2****"</ETag>
        <Type>Normal</Type>
        <Size>93731</Size>
        <StorageClass>Standard</StorageClass>
        <RestoreInfo>ongoing-request="true"</RestoreInfo>
        <Owner>
          <ID>1234512528586****</ID>
          <DisplayName>12345125285864390</DisplayName>
        </Owner>
    </Version>
    <Version>
        <Key>exampleobject3.txt</Key>
        <VersionId>CAEQMxiBgMCZov2D0BYiIDY4MDllOTc2YmY5MjQxMzdiOGI3OTlhNTU0ODIx****</Versio
nId>
        <IsLatest>true</IsLatest>
        <LastModified>2019-04-09T07:27:28.000Z</LastModified>
        <ETag>"3663F7B0B9D3153F884C821E7CF4****"</ETag>
        <Type>Normal</Type>
        <Size>574768</Size>
        <StorageClass>Standard</StorageClass>
        <RestoreInfo>ongoing-request="false", expiry-date="Thr, 24 Mon 2020 12:40:33 GMT"</
RestoreInfo>
        <Owner>
          <ID>1234512528586****</ID>
          <DisplayName>12345125285864390</DisplayName>
        </Owner>
    </Version>
</ListVersionsResult>
```

SDK

You can use OSS SDKs for the following programming languages to call the
GetBucketVersions(ListObjectVersions) operation:

- Java
- Python
- Go
- C++
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the requested bucket does not exist. Check whether the name of the requested bucket complies with the naming rules.

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you are not authorized to access the bucket. Only the bucket owner and RAM users who are granted the `oss:ListObjectVersions` permission can access the bucket.
InvalidArgument	400	

7.7. Replication

7.7.1. PutBucketReplication

Configures data replication rules for a bucket. Object Storage Service (OSS) provides two data replication features: cross-region replication (CRR) and same-region replication (SRR).

Usage notes

You can use data replication features to automatically synchronize objects and the operations performed on the objects, such as creation, overwriting, and deletion operations from a source bucket to a destination bucket. When you use data replication features, take note of the following items:

- Data replication is an asynchronous process. It takes several minutes to several hours to complete a data replication process based on the size of the data to replicate.

- The source bucket and the destination bucket cannot have the same name.

- When you use CRR, the source bucket and the destination bucket must be located in different regions. When you use SRR, the source bucket and the destination bucket must be located in the same region.

For more information, see CRR and SRR.

Request syntax

```
POST /?replication&comp=add 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"?>
<ReplicationConfiguration>
    <Rule>
        <PrefixSet>
            <Prefix>prefix_1</Prefix>
            <Prefix>prefix_2</Prefix>
        </PrefixSet>
        <Action>ALL,PUT</Action>
        <Destination>
            <Bucket>Target Bucket Name</Bucket>
            <Location>oss-cn-hangzhou</Location>
            <TransferType>oss_acc</TransferType>
        </Destination>
        <HistoricalObjectReplication>enabled or disabled</HistoricalObjectReplication>
    </Rule>
</ReplicationConfiguration>
```

Request elements

Element	Type	Required	Description
ReplicationConfiguration	Container	Yes	The container that stores data replication configurations. Parent nodes: none Child nodes: Rule
Rule	Container	Yes	The container that stores data replication rules. Parent nodes: ReplicationConfiguration Child nodes: Destination, HistoricalObjectReplication, and ID
PrefixSet	Container	No	The container that stores prefixes. You can specify up to 10 prefixes in each data replication rule. Parent nodes: Rule Child nodes: Prefix

Element	Type	Required	Description
Prefix	String	No	The prefix that is used to specify the object to replicate. Only objects whose names contain the specified prefix are replicated to the destination bucket. • The value of Prefix can be up to 1,023 characters in length. • If you specify Prefix in a data replication rule, OSS synchronizes new data and historical data based on the specified value of Prefix. Parent nodes: PrefixSet Child nodes: none
Action	String	No	The operations that can be synchronized to the destination bucket. If you configure Action in a data replication rule, OSS synchronizes new data and historical data based on the specified value of Action. You can set Action to one or more of the following operation types. Default value: ALL. Valid values: • ALL: indicates that PUT, DELETE, and ABORT operations are synchronized to the destination bucket. • PUT: indicates that write operations are synchronized to the destination bucket, including PutObject, PostObject, AppendObject, CopyObject, PutObjectACL, InitiateMultipartUpload, UploadPart, UploadPartCopy, and CompleteMultipartUpload. Parent nodes: Rule Child nodes: none
Destination	Container	Yes	The container that stores the information about the destination bucket. Parent nodes: Rule Child nodes: Bucket and Location
Bucket	String	Yes	The destination bucket to which the data is replicated. Parent nodes: Destination Child nodes: none

Element	Type	Required	Description
Location	String	Yes	The region in which the destination bucket is located. Parent nodes: Destination Child nodes: none
TransferType	String	Yes	The link that is used to transfer data during data replication. Default value: internal. Valid values: • internal: the default data transfer link used in OSS. • oss_acc: the link in which data transmission is accelerated. You can set TransferType to oss_acc only when you create CRR rules. Parent nodes: Destination Child nodes: none
HistoricalObjectReplication	String	No	Specifies whether to replicate historical data from the source bucket to the destination bucket before data replication is enabled. Default value: enabled. Valid values: • enabled: indicates that historical data is replicated to the destination bucket. • disabled: indicates that historical data is not replicated to the destination bucket. Only data uploaded to the source bucket after data replication is enabled for the source bucket is replicated. Parent nodes: Rule Child nodes: none
SyncRole	String	No	The role that you authorize OSS to use to replicate data. If you want to use SSE-KMS to encrypt the objects that are replicated to the destination bucket, you must specify this element.
SourceSelectionCriteria	Container	No	The container that specifies other conditions used to filter the source objects to replicate. Filtering conditions can be specified only for source objects encrypted by using SSE-KMS.

Element	Type	Required	Description
SseKmsEncryptedObjects	Container	No	The container that is used to filter source objects encrypted by using SSE-KMS. This element must be specified if SourceSelectionCriteria is specified in the data replication rule.
Status	String	No	Specifies whether to replicate objects encrypted by using SSE-KMS. Default value: Disabled. Valid values: • Enabled: indicates that objects encrypted by using SSE-KMS are replicated. • Disabled: indicates that objects encrypted by using SSE-KMS are not replicated.
EncryptionConfiguration	Container	No	The encryption configuration for the objects that are replicated to the destination bucket. If Status is set to Enabled, you must specify this element.
ReplicaKmsKeyID	String	No	The customer master key (CMK) ID that is used in SSE-KMS. If Status is set to Enabled, you must specify this element.

For more information about the common request headers contained in PutBucketReplication requests such as Host and Date, see Common request headers.

Response headers

The headers contained in the response to a PutBucketReplication request are all common response headers. For more information about common response headers, see the "Common response headers" section in Common HTTP headers.

Examples

• Sample requests

```
POST /?replication&comp=add HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Thu, 24 Sep 2015 15:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****


<?xml version="1.0" encoding="UTF-8"?>
<ReplicationConfiguration>
  <Rule>
     <PrefixSet>
        <Prefix>source_image</Prefix>
        <Prefix>video</Prefix>
     </PrefixSet>
     <Action>PUT</Action>
     <Destination>
        <Bucket>target-bucket</Bucket>
        <Location>oss-cn-beijing</Location>
        <TransferType>oss_acc</TransferType>
     </Destination>
     <HistoricalObjectReplication>enabled</HistoricalObjectReplication>
      <SyncRole>aliyunramrole</SyncRole>
      <SourceSelectionCriteria>
         <SseKmsEncryptedObjects>
           <Status>Enabled</Status>
         </SseKmsEncryptedObjects>
      </SourceSelectionCriteria>
      <EncryptionConfiguration>
           <ReplicaKmsKeyID>c4d49f85-ee30-426b-a5ed-95e9139d****</ReplicaKmsKeyID>
      </EncryptionConfiguration>
  </Rule>
</ReplicationConfiguration>
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Thu, 24 Sep 2015 15:39:12 GMT
Content-Length: 0
Connection: close
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description

Error code	HTTP status code	Description
InvalidTargetBucket	400 BadRequest	Possible causes: • The error message returned because the source bucket and the destination bucket have the same name. • The error message returned because the destination bucket does not exist. • The error message returned because the source bucket and the destination bucket are owned by different Alibaba Cloud accounts.
InvalidTargetLocation	400 BadRequest	The error message returned because the region of the destination bucket is different from the region specified in the XML body of the request.
BucketReplicationAlreadyExist	400 BadRequest	The error message returned because a data replication rule already exists between the source bucket and the destination bucket. To configure a data replication rule between the source bucket and the destination bucket, delete the existing rule.
BadReplicationLocation	400 BadRequest	The error message returned because the region of the destination bucket is invalid. You can call the GetBucketReplicationLocation operation to query valid regions in which the destination bucket can be located.
NoReplicationLocation	400 BadRequest	The error message returned because the region of the source bucket does not have a matching region for which CRR can be configured. For more information about the matching regions for which CRR can be configured, see Regions and endpoints.

Error code	HTTP status code	Description
TooManyReplicationRules	400 BadRequest	The error message returned because more than one data replication rule is configured in the request. You can configure only one data replication rule in a single request.
TooManyIncomingReplication	400 BadRequest	The error message returned because 100 data replication rules are configured for the bucket. Delete the rules that you no longer use and then try again. You can configure up to 100 data replication rules for a bucket. If you must configure more than 100 data replication rules for a bucket, submit a ticket.
TooManyOutgoingReplication	400 BadRequest	The error message returned because 100 data replication rules are configured for the bucket. Delete the rules that you no longer use and then try again. You can configure up to 100 data replication rules for a bucket. If you must configure more than 100 data replication rules for a bucket, submit a ticket.
MissingArgument	400 BadRequest	The error message returned because the transmission link is not specified.
InvalidArgument	400 BadRequest	The error message returned because the specified transmission link is not supported.

7.7.2. GetBucketReplication

Queries cross-region replication (CRR) rules configured for a bucket.

Request syntax

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

Response elements

Element	Type	Description
ReplicationConfiguration	Container	The container that stores CRR rules of a bucket. Parent nodes: none Child nodes: Rule
Rule	Container	The container that stores the CRR rule of a bucket. Parent nodes: ReplicationConfiguration Child nodes: Destination, HistoricalObjectReplication, Status, and ID
ID	String	The ID of the CRR rule. Parent nodes: Rule Child nodes: none
PrefixSet	Container	The container that stores Prefix. You can specify up to 10 prefixes in each CRR rule. Parent nodes: Rule Child nodes: Prefix
Prefix	String	The prefix of the object that is replicated to the destination bucket. Parent nodes: PrefixSet Child nodes: none
Action	String	The operations that are synchronized to the destination bucket. You can set Action to one or more of the following operation types. Default value: ALL. • ALL: specifies that PUT, DELETE, and ABORT operations are synchronized to the destination bucket. • PUT: specifies that write operations are synchronized to the destination bucket, which includes PutObject, PostObject, AppendObject, CopyObject, PutObjectACL, InitiateMultipartUpload, UploadPart, UploadPartCopy, and CompleteMultipartUpload. Parent nodes: Rule Child nodes: none

Element	Type	Description
Status	String	The status of the data replication task. Valid values: • starting: Object Storage Service (OSS) creates a data replication task after a data replication rule is configured. In this case, the state of the task is starting. • doing: The state of a data replication task is doing after the data replication rule takes effect. In this case, the state of the task is being replicated. • closing: OSS clears a data replication task after the corresponding data replication rule is deleted. In this case, the state of the task is closing. Parent nodes: Rule Child nodes: none
Destination	Container	The container that stores the information about the destination bucket. Parent nodes: Rule Child nodes: Bucket and Location
Bucket	String	The destination bucket to which the data is replicated. Parent nodes: Destination Child nodes: none
Location	String	The region in which the destination bucket is located. Parent nodes: Destination Child nodes: none
TransferType	String	The data transfer type used to transfer data in data replication. Default value: internal. The TransferType element is contained in the response only when the value of TransferType is set to oss_acc in the request. Default value: internal. Valid values: • internal: the default data transfer link used in OSS. • oss_acc: the link in which data transmission is accelerated. TransferType can be set to oss_acc only when you create a CRR rule.

Element	Type	Description
HistoricalObjectReplication	String	Indicates whether historical data from the source bucket is replicated to the destination bucket before data replication is enabled. Default value: enabled. Valid values: • enabled: indicates that historical data is replicated to the destination bucket. • disabled: indicates that historical data is not replicated to the destination bucket. Only data uploaded to the source bucket after data replication is enabled for the source bucket is replicated. Parent nodes: Rule Child nodes: none
SyncRole	String	The role used for CRR. The element is contained in the response only when the destination object is encrypted by using server-side encryption (SSE) that uses customer master keys (CMKs) managed by Key Management Service (KMS) for encryption (SSE-KMS).

Examples

• Sample requests

```
GET /?replication HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 24 Sep 2015 15:39:15 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAi4XZ+WwIfNm0Fmgb****
```

• Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Thu, 24 Sep 2015 15:39:15 GMT
Content-Length: 186
Content-Type: application/xml
Connection: close
Server: AliyunOSS


<?xml version="1.0" ?>
<ReplicationConfiguration>
  <Rule>
    <ID>test_replication_1</ID>
    <PrefixSet>
      <Prefix>source_image</Prefix>
      <Prefix>video</Prefix>
    </PrefixSet>
    <Action>PUT</Action>
    <Destination>
      <Bucket>target-bucket</Bucket>
      <Location>oss-cn-beijing</Location>
      <TransferType>oss_acc</TransferType>
    </Destination>
    <Status>doing</Status>
    <HistoricalObjectReplication>enabled</HistoricalObjectReplication>
    <SyncRole>aliyunramrole</SyncRole>
  </Rule>
</ReplicationConfiguration>
```

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404 NotFound	The error message returned because the specified bucket does not exist.
NoSuchReplicationConfiguration	404 NotFound	The error message returned because no data replication rules are configured for the specified bucket.

7.7.3. GetBucketReplicationLocation

You can call this operation to query the region in which the destination bucket can be located. You can determine the region of the destination bucket based on the response returned for the operation.

Request structure

```
GET /?replicationLocation HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: Si
gnatureValue
```

Response elements

Element	Type	Description
ReplicationLocation	Container	The container that stores the region in which the destination bucket can be located.
Location	String	The region in which the destination bucket can be located. Example: oss-cn-beijing. Parent node: ReplicationLocation Child nodes: none ⑦ Note If the destination bucket can be located in multiple regions, multiple regions are contained in the response. If regions in which the destination bucket can be located do not exist, the value of Location is null.
LocationTransferTypeConstraint	Container	The container that stores regions in which the destination bucket can be located with TransferType specified.
LocationTransferType	Container	The container that stores regions in which the destination bucket can be located with the TransferType information.
TransferTypes	Container	The container that stores the transmission type.

Element	Type	Description
Type	String	The link used to transfer data in data replication. Default value: internal. Valid values: • internal: the default link. • oss_acc: the link in which data transmission is accelerated. TransferType can be set to oss_acc only for cross-region replication (CRR) rules.

Examples

• Sample requests

```
GET /?replicationLocation HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 24 Sep 2015 15:39:15 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:CTkuxpLAi4XZ+WwIfNm0Fmgb****
```

• Sample responses

> ⑦ Note
>
> The TransferType element is contained in the XML body of the response only when the value of TransferType is set to oss_acc in the request.

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Thu, 24 Sep 2015 15:39:15 GMT
Content-Length: 84
Content-Type: application/xml Connection: close
Server: AliyunOSS

<?xml version="1.0" ?>
<ReplicationLocation>
  <Location>oss-cn-beijing</Location>
  <Location>oss-cn-qingdao</Location>
  <Location>oss-cn-shenzhen</Location>
  <Location>oss-cn-hongkong</Location>
  <Location>oss-us-west-1</Location>
  <LocationTransferTypeConstraint>
    <LocationTransferType>
      <Location>oss-cn-hongkong</Location>
        <TransferTypes>
          <Type>oss_acc</Type>
        </TransferTypes>
    </LocationTransferType>
    <LocationTransferType>
      <Location>oss-us-west-1</Location>
      <TransferTypes>
        <Type>oss_acc</Type>
      </TransferTypes>
    </LocationTransferType>
  </LocationTransferTypeConstraint>
</ReplicationLocation>
```

Error codes

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

7.7.4. GetBucketReplicationProgress

You can call this operation to query the progress of a data replication task configured for a bucket.

Request structure

```
GET /?replicationProgress&rule-id=RuleId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Request parameters

Parameter	Type	Required	Description
rule-id	String	No	The ID of the data replication rule. You can call GetBucketReplication to obtain the ID.

Response elements

Element	Type	Description
ReplicationProgress	Container	The container that is used to store the progress of data replication tasks. Parent nodes: none Child nodes: Rule
Rule	Container	The container that stores the progress of the data replication task corresponding to each data replication rule. Parent nodes: ReplicationConfiguration Child nodes: ID, Destination, Status, and Progress
ID	String	The ID of the data replication rule. Parent nodes: Rule Child nodes: none
PrefixSet	Container	The container that stores prefixes. You can specify up to 10 prefixes in each data replication rule. Parent nodes: Rule Child nodes: Prefix
Prefix	String	The prefix used to specify the object to replicate. Only objects that match the prefix are replicated to the destination bucket. Parent nodes: PrefixSet Child nodes: none

Element	Type	Description
Action	String	The operations that can be synchronized to the destination bucket. You can set Action to one or more of the following operation types. Default value: ALL. • ALL: PUT, DELETE, and ABORT operations are synchronized to the destination bucket. • PUT: Write operations are synchronized to the destination bucket, including PutObject, PostObject, AppendObject, CopyObject, PutObjectACL, InitiateMultipartUpload, UploadPart, UploadPartCopy, and CompleteMultipartUpload. Parent nodes: Rule Child nodes: none
Destination	Container	The container that is used to store the information about the destination bucket. Parent nodes: Rule Child nodes: Bucket and Location
Bucket	String	The destination bucket to which the data is replicated. Parent nodes: Destination Child nodes: none
Location	String	The region in which the destination bucket is located. Parent nodes: Destination Child nodes: none
TransferType	String	The link used to transfer data in data replication. Default value: internal. • internal: the default link. • oss_acc: the link in which data transmission is accelerated. TransferType can be set to oss_acc only for cross-region replication (CRR) rules.
HistoricalObjectReplication	String	Indicates whether historical data from the source bucket is replicated to the destination bucket before data replication is enabled. Default value: enabled. Valid values: • enabled: indicates that historical data is replicated to the destination bucket. • disabled: indicates that historical data is not replicated to the destination bucket. Only data uploaded to the source bucket after data replication is enabled for the source bucket is replicated.

Element	Type	Description
Progress	Container	The container that stores the progress of the data replication task. This element is returned only when the data replication task is in the doing state. Parent nodes: Rule Child nodes: HistoricalObject and NewObject
HistoricalObject	String	The percentage of the replicated historical data. This element is valid only when HistoricalObjectReplication is set to enabled. Parent nodes: Progress Child nodes: none
NewObject	String	The time used to distinguish new data from historical data. Data that is written to the source bucket before the time is replicated to the destination bucket as new data. The value of this element is in GMT. Example: Thu, 24 Sep 2015 15:39:18 GMT. Parent nodes: Progress Child nodes: none

Examples

- Sample requests

```
GET /?replicationProgress&rule-id=test_replication_1 HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 24 Sep 2015 15:39:15 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:CTkuxpLAi4XZ+WwIfNm0Fmgb****
```

- Sample responses

> ⑦ **Note**   The TransferType element is contained in the XML body of the response only when the value of TransferType is set to oss_acc in the request.

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Thu, 24 Sep 2015 15:39:15 GMT
Content-Length: 234
Content-Type: application/xml
Connection: close
Server: AliyunOSS
<?xml version="1.0" ?>
<ReplicationProgress>
 <Rule>
   <ID>test_replication_1</ID>
   <PrefixSet>
    <Prefix>source_image</Prefix>
    <Prefix>video</Prefix>
   </PrefixSet>
   <Action>PUT</Action>
   <Destination>
    <Bucket>target-bucket</Bucket>
    <Location>oss-cn-beijing</Location>
    <TransferType>oss_acc</TransferType>
   </Destination>
   <Status>doing</Status>
   <HistoricalObjectReplication>enabled</HistoricalObjectReplication>
   <Progress>
    <HistoricalObject>0.85</HistoricalObject>
    <NewObject>2015-09-24T15:28:14.000Z </NewObject>
   </Progress>
 </Rule>
</ReplicationProgress>
```

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404 NotFound	The error message returned because the specified bucket does not exist.
NoSuchReplicationRule	404 NotFound	The error message returned because the specified rule ID does not exist.
NoSuchReplicationConfiguration	404 NotFound	The error message returned because no data replication rules are configured for the specified bucket.
TooManyReplicationRules	400 BadRequest	The error message returned because more than one data replication rule is configured in the request. You can configure only one data replication rule in a single request.

7.7.5. DeleteBucketReplication

You can call this operation to disable data replication for a bucket and delete the data replication rule configured for the bucket. After the data replication rule is deleted, all operations performed in the source bucket are not synchronized to the destination bucket.

Usage notes

- 200 OK is returned if no data replication rules are configured.

- DeleteBucketReplication does not immediately delete a data replication rule. OSS takes a period of time to clear the data replication task executed based on the rule. During the process, the data replication task is in the closing state. After the data replication task is cleared, the data replication rule is deleted.

- If you call DeleteBucketReplication to delete a data replication rule that corresponds to a data replication task in the closing state, 204 NoContent is returned.

Request structure

```
POST /?replication&comp=delete HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Content-Length: ContentLength
Content-Type: application/xml
Authorization: SignatureValue

<?xml version="1.0" encoding="UTF-8"?>
<ReplicationRules>
    <ID>rule id</ID>
</ReplicationRules>
```

Request elements

Element	Type	Required	Description
ReplicationRules	Container	Yes	The container that is used to store the data replication rule to delete. Parent nodes: none Child nodes: ID
ID	String	Yes	The ID of data replication rule to delete. You can call DeleteBucketReplication to obtain the ID. Parent nodes: ReplictionRules Child nodes: none

Examples

- Sample requests

```
POST /?replication&comp=delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 24 Sep 2015 15:39:18 GMT
Content-Length: 46
Content-Type: application/xml
Authorization: OSS qn6qrrqxo2oawuk53otf****:CTkuxpLAi4XZ+WwIfNm0Fmgb****


<?xml version="1.0" encoding="UTF-8"?>
<ReplicationRules>
  <ID>test_replication_1</ID>
</ReplicationRules>
```

● Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Thu, 24 Sep 2015 15:39:18 GMT
Connection: close
Content-Length: 0
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404 NotFound	The error message returned because the specified bucket does not exist.
TooManyReplicationRules	400 BadRequest	The error message returned because more than one data replication rule is configured in the request. You can configure only one data replication rule in a single request.

Error code	HTTP status code	Description

TransferAccAlreadyInUse	409Conflict	The error message returned because transfer acceleration is disabled for the destination bucket specified in the CRR rule. In this case, the following information about the source bucket and destination bucket is contained in the XML body of the response.
		
		 `<?xml version="1.0" encoding="UTF-8"?>`
		`<Error>`
		
		`<Code>TransferAccAlreadyInUse</Code>`
		`  <Message>The transfer acceleration is aleady used by cross-region replication. </Message>`
		
		`<SourceBucket>srcBucket</SourceBucket>`
		
		`<DestinationBucket>destBucket</DestinationBucket>`
		
		`<RequestId>5F1E76142A535D373683****</RequestId>`
		`  <HostId>oss-cn-hangzhou.aliyuncs.com</HostId>`
		`</Error>`

7.8. Authorization policy

7.8.1. PutBucketPolicy

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

Background information

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 Configure bucket policies to authorize other users to access OSS resources. For more information about bucket policy syntax, see Policy structure and syntax.

Request syntax

```
PUT /? policy
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 13 Nov 2018 09:09:13 GMT
Authorization: OSS xxxxxxxxx:xxxxxxxxxxx
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 xxxxxxx:xxxxxxxxxxxx
{
    "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
```

7.8.2. GetBucketPolicy

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

Background information

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 Configure bucket policies to authorize other users to access OSS resources. For more information about bucket policy syntax, see Policy structure and syntax.

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 xxxxxxxxx:xxxxxxxxxxx
```

- 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.

7.8.3. DeleteBucketPolicy

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

Background information

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 Configure bucket policies to authorize other users to access OSS resources. For more information about bucket policy syntax, see Policy structure and syntax.

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:xxxxxxxxxxxxxx
```

- 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
```

7.9. Inventory

7.9.1. PutBucketInventory

Configures inventories for a bucket.

Usage notes

You can use the bucket inventory feature to export the information about specific objects in a bucket, such as the number, sizes, storage classes, and encryption status of the objects. When you configure inventories for a bucket, take note of the following items:

- Only the bucket owner or users that have the PutBucketInventory permission on the bucket can initiate a PutBucketInventory request.

- Before you configure inventories, you must create a Resource Access Management (RAM) role. The RAM role must have permissions to read all objects from the source bucket and write objects to the destination bucket. If you use the inventory feature for the first time, we recommend that you configure this feature in the Object Storage Service (OSS) console. After you configure an inventory, you can obtain the RAM role that has permissions to read objects from the source bucket and write objects to the destination bucket. For more information about permissions of the RAM role for the inventory feature, see Bucket inventory.

- You can configure up to 1,000 inventories for a bucket.

- Inventory lists must be stored in a bucket in the same region as the bucket for which the inventory feature is configured.

Request structure

```
<InventoryConfiguration>
    <Id>report1</Id>
    <IsEnabled>true</IsEnabled>
    <Filter>
        <Prefix>filterPrefix</Prefix>
    </Filter>
    <Destination>
        <OSSBucketDestination>
            <Format>CSV</Format>
            <AccountId>1000000000000000</AccountId>
            <RoleArn>acs:ram::1000000000000000:role/AliyunOSSRole</RoleArn>
            <Bucket>acs:oss:::destination-bucket</Bucket>
            <Prefix>prefix1</Prefix>
            <Encryption>
                <SSE-KMS>
                    <KeyId>keyId</KeyId>
                </SSE-KMS>
            </Encryption>
        </OSSBucketDestination>
    </Destination>
    <Schedule>
        <Frequency>Daily</Frequency>
    </Schedule>
    <IncludedObjectVersions>All</IncludedObjectVersions>
    <OptionalFields>
        <Field>Size</Field>
        <Field>LastModifiedDate</Field>
        <Field>ETag</Field>
        <Field>StorageClass</Field>
        <Field>IsMultipartUploaded</Field>
        <Field>EncryptionStatus</Field>
    </OptionalFields>
</InventoryConfiguration>
```

Request elements

Element	Type	Required	Example	Description
Id	String	Yes	report1	The name of the inventory. The name must be globally unique in the bucket.

Element	Type	Required	Example	Description
IsEnabled	Boolean	Yes	true	Specifies whether to enable the bucket inventory feature. Valid values: - *true*: The inventory feature is enabled. - *false*: The inventory feature is disabled.
Filter	Container	No	N/A	The container that stores the prefix used to filter objects. Only objects whose names contain the specified prefix are included in the inventory list.
Prefix	String	No	Pics	The prefix specified in the inventory. Parent nodes: Filter
Destination	Container	Yes	N/A	The container that stores the information about exported inventory lists.
OSSBucketDestination	Container	Yes	N/A	The container that stores the information about the bucket in which exported inventory lists are stored. Parent nodes: Destination
Format	String	Yes	CSV	The format of exported inventory lists. The exported inventory lists are comma-separated values (CSV) objects compressed by using GZIP. Set the value to CSV. Parent nodes: OSSBucketDestination
AccountId	String	Yes	10000000 0000000	The account ID granted by the bucket owner to perform the PutBucketInventory operation. Parent nodes: OSSBucketDestination
RoleArn	String	Yes	acs:ram:: 10000000 0000000:r ole/Aliyun OSSRole	The Alibaba Cloud Resource Name (ARN) of the role that has permissions to read all objects from the source bucket and write objects to the destination bucket. Format: `acs:ram::uid:role/rolename` . Parent nodes: OSSBucketDestination

Element	Type	Required	Example	Description
Bucket	String	Yes	acs:oss::: bucket_00 01	The name of the bucket in which exported inventory lists are stored. Parent nodes: OSSBucketDestination
Prefix	String	No	prefix1	The prefix of the exported inventory lists. Parent nodes: OSSBucketDestination
Encryption	Container	No	N/A	The container that stores the encryption method of inventory lists. Valid values: • *SSE-OSS*: The SSE-OSS method is used to encrypt and decrypt inventory lists. • *SSE-KMS*: The default customer master key (CMK) or a specified CMK is used to encrypt and decrypt inventory lists. Parent nodes: OSSBucketDestination For more information about server-side encryption, see Server-side encryption.
SSE-OSS	Container	No	N/A	The container that stores the information about the SSE-OSS encryption method. Parent nodes: Encryption
SSE-KMS	Container	No	N/A	The container that stores the CMK used for SSE-KMS encryption. Parent nodes: Encryption
KeyId	String	No	keyId	The ID of the CMK used for SSE-KMS encryption. Parent nodes: SSE-KMS
Schedule	Container	Yes	N/A	The container that stores the information about the frequency at which inventory lists are exported.

Element	Type	Required	Example	Description
Frequency	String	Yes	Daily	The frequency at which inventory lists are exported. Valid values: • *Daily*: Inventory lists are exported on a daily basis. • *Weekly*: Inventory lists are exported on a weekly basis. Parent nodes: Schedule
IncludedObjectVersions	String	Yes	All	Specifies whether to include the versioning information of objects in inventory lists. Valid values: • *All*: The information about all versions of the objects is exported. • *Current*: The information only about the current versions of the objects is exported.
OptionalFields	Container	No	N/A	The container that stores the configuration fields included in inventory lists.
Field	String	No	Size	The configuration fields included in inventory lists. • *Size*: the size of the object. • *LastModifiedDate*: the last modified time of the object. • *ETag*: the ETag value of the object, which is used to identify the content of the object. • *StorageClass*: the storage class of the object. • *IsMultipartUploaded*: indicates whether the object is uploaded by using multipart upload. • *EncryptionStatus*: the encryption status of the object.

Response elements

The response headers involved in this API operation contain only common response headers such as Content-Length and Date. For more information, see Common response headers.

Examples

• Sample requests

```
PUT /?inventory&inventoryId=report1 HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: Mon, 31 Oct 2016 12:00:00 GMT
Authorization: authorization string
Content-Length: length
<?xml version="1.0" encoding="UTF-8"?>
<InventoryConfiguration>
    <Id>report1</Id>
    <IsEnabled>true</IsEnabled>
    <Filter>
        <Prefix>Pics</Prefix>
    </Filter>
    <Destination>
        <OSSBucketDestination>
            <Format>CSV</Format>
            <AccountId>100000000000000</AccountId>
            <RoleArn>acs:ram::100000000000000:role/AliyunOSSRole</RoleArn>
            <Bucket>acs:oss:::bucket_0001</Bucket>
            <Prefix>prefix1</Prefix>
            <Encryption>
                <SSE-KMS>
                    <KeyId>keyId</KeyId>
                </SSE-KMS>
            </Encryption>
        </OSSBucketDestination>
    </Destination>
    <Schedule>
        <Frequency>Daily</Frequency>
    </Schedule>
    <IncludedObjectVersions>All</IncludedObjectVersions>
    <OptionalFields>
        <Field>Size</Field>
        <Field>LastModifiedDate</Field>
        <Field>ETag</Field>
        <Field>StorageClass</Field>
        <Field>IsMultipartUploaded</Field>
        <Field>EncryptionStatus</Field>
    </OptionalFields>
</InventoryConfiguration>
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 56594298207FB3044385****
Date: Mon, 31 Oct 2016 12:00:00 GMT
Content-Length: 0
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because the input parameter is invalid.

Error code	HTTP status code	Description
InventoryExceedLimit	400	The error message returned because the number of configured inventories has been reached.
AccessDenied	403	Possible causes: • The authentication information is not included in the PutBucketInventory request. • You are not authorized to perform this operation.
InventoryAlreadyExist	409	The error message returned because the inventory that you want to configure already exists.

7.9.2. GetBucketInventory

You can call this operation to query the specified inventory task configured for a bucket.

> ? Note   To call this operation, ensure that you have permissions to perform operations on the inventory tasks of the bucket. By default, the bucket owner has the permission to perform this operation. If you do not have the permission, apply for the permission from the bucket owner.

Request syntax

```
GET /? inventory&inventoryId=inventoryId HTTP/1.1
```

Request elements

Element	Type	Required	Description
inventoryId	String	Yes	The ID of the inventory rule to query.

Response elements

Element	Type	Required	Description
Id	String	Yes	The specified inventory list name, which must be globally unique in the bucket.
IsEnabled	Boolean	Yes	Indicates whether the inventory function is enabled. Valid values: true and false • The value of true indicates that the inventory function is enabled. • The value of false indicates that no inventory list is generated.

Element	Type	Required	Description
Filter	Container	No	The container that stores the prefix used to filter the objects in the inventory list. Only objects with the specified prefix are included in the inventory list.
Prefix	String	No	The prefix specified in the inventory rule. Parent node: Filter
Destination	Container	Yes	The container used to store the information about the bucket that stores the exported inventory list.
OSSBucketDestination	Container	Yes	The information about the bucket that stores the exported inventory list. Parent node: Destination
Format	String	Yes	The format of the exported inventory list. Valid value: CSV Parent node: OSSBucketDestination
AccountId	String	Yes	The account ID granted by the bucket owner. Parent node: OSSBucketDestination
RoleArn	String	Yes	The name of the role to which the bucket owner grants permissions. Format: acs:ram::uid:role/rolename Parent node: OSSBucketDestination
Bucket	String	Yes	The bucket that stores the exported inventory list. Parent node: OSSBucketDestination
Prefix	String	No	The path of the exported inventory list. Parent node: OSSBucketDestination
Encryption	Container	No	The container that stores the encryption method of the inventory list. Valid values: SSE-OSS, SSE-KMS, and Null Parent node: OSSBucketDestination
SSE-OSS	Container	No	The container that stores the information about the SSE-OSS encryption method. Parent node: Encryption

Element	Type	Required	Description
SSE-KMS	Container	No	The container that stores the CMK used in the SSE-KMS encryption method. Parent node: Encryption
KeyId	String	No	The CMK used in the SSE-KMS encryption method. Parent node: SSE-KMS
Schedule	Container	Yes	The container that stores the frequency that inventory lists are exported.
Frequency	String	Yes	The frequency that inventory lists are exported. Valid values: Daily and Weekly Parent node: Schedule
IncludedObjectVersions	String	Yes	Specifies whether versioning information about the objects is included in the inventory list. Valid values: All and Current • The value of All indicates that all versions of the objects are exported. • The value of Current indicates that only the current versions of the objects are exported.
OptionalFields	Container	No	The container that stores the configuration fields included in the inventory list.
Field	String	No	The configuration fields included in the inventory list. Valid values: Size, LastModifiedDate, ETag, StorageClass, IsMultipartUploaded, and EncryptionStatus Parent node: OptionalFields

Examples

- Sample request

```
GET /? inventory&inventoryId=list1 HTTP/1.1
```

- Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 56594298207FB304438516F9
Date: Mon, 31 Oct 2016 12:00:00 GMT
Server: AliyunOSS
Content-Length: length
<? xml version="1.0" encoding="UTF-8"? >
<InventoryConfiguration">
    <Id>report1</Id>
    <IsEnabled>true</IsEnabled>
    <Destination>
        <OSSBucketDestination>
            <Format>CSV</Format>
            <AccountId>1000000000000000</AccountId>
            <RoleArn>acs:ram::1000000000000000:role/AliyunOSSRole</RoleArn>
            <Bucket>acs:oss:::bucket_0001</Bucket>
            <Prefix>prefix1</Prefix>
            <Encryption>
                <SSE-OSS/>
            </Encryption>
        </OSSBucketDestination>
    </Destination>
    <Schedule>
        <Frequency>Daily</Frequency>
    </Schedule>
    <Filter>
      <Prefix>myprefix/</Prefix>
    </Filter>
    <IncludedObjectVersions>All</IncludedObjectVersions>
    <OptionalFields>
        <Field>Size</Field>
        <Field>LastModifiedDate</Field>
        <Field>ETag</Field>
        <Field>StorageClass</Field>
        <Field>IsMultipartUploaded</Field>
        <Field>EncryptionStatus</Field>
    </OptionalFields>
</InventoryConfiguration>
```

7.9.3. ListBucketInventory

You can call this operation to query all inventory tasks configured for a bucket.

> ⑦ Note
> - You can query up to 100 inventory configurations by sending a request. To query more than 100 inventory configurations, you must send multiple requests and keep the token of each request to use it as the parameter for the next request.
> - To call this operation, ensure that you have permissions to perform operations on the inventory tasks of the bucket. By default, the bucket owner has the permission to perform this operation. If you do not have the permission, apply for the permission from the bucket owner.

Request syntax

- Requests that contain continuation-token

```
GET /? inventory&continuation-token=xxx HTTP/1.1
```

- Requests that do not contain continuation-token

```
GET /? inventory HTTP/1.1
```

Response elements

Element	Type	Description
InventoryConfiguration	Container	The container that stores inventory configurations.
IsTruncated	Boolean	Specifies whether to list all inventory tasks configured for the bucket. Valid values: true and false • The value of false indicates that all inventory tasks configured for the bucket are listed. • The value of true indicates that not all inventory tasks configured for the bucket are listed. To list the next page of inventory configurations, set the continuation-token parameter in the next request to the value of the NextContinuationToken header in the response to the current request.
NextContinuationToken	String	If the value of IsTruncated in the response is true and value of this header is not null, set the continuation-token parameter in the next request to the value of this header.
Id	String	The specified inventory list name, which must be globally unique in the bucket.
IsEnabled	Boolean	Indicates whether the inventory function is enabled. Valid values: true and false • The value of true indicates that the inventory function is enabled. • The value of false indicates that no inventory list is generated.
Filter	Container	The container that stores the prefix used to filter the objects in the inventory list. Only objects with the specified prefix are included in the inventory list.
Prefix	String	The prefix specified in the inventory rule. Parent node: Filter
Destination	Container	The container used to store the information about the bucket that stores the exported inventory list.

Element	Type	Description
OSSBucketDestination	Container	The information about the bucket that stores the exported inventory list. Parent node: Destination
Format	String	The format of the exported inventory list. Valid value: CSV Parent node: OSSBucketDestination
AccountId	String	The account ID granted by the bucket owner. Parent node: OSSBucketDestination
RoleArn	String	The name of the role to which the bucket owner grants permissions. Format: acs:ram::uid:role/rolename Parent node: OSSBucketDestination
Bucket	String	The bucket that stores the exported inventory list. Parent node: OSSBucketDestination
Prefix	String	The path of the exported inventory list. Parent node: OSSBucketDestination
Encryption	Container	The container that stores the encryption method of the inventory list. Valid values: SSE-OSS, SSE-KMS, and Null Parent node: OSSBucketDestination
SSE-OSS	Container	The container that stores the information about the SSE-OSS encryption method. Parent node: Encryption
SSE-KMS	Container	The container that stores the CMK used in the SSE-KMS encryption method. Parent node: Encryption
KeyId	String	The CMK used in the SSE-KMS encryption method. Parent node: SSE-KMS
Schedule	Container	The container that stores the frequency that inventory lists are exported.

Element	Type	Description
Frequency	String	The frequency that inventory lists are exported. Valid values: Daily and Weekly Parent node: Schedule
IncludedObjectVersions	String	Specifies whether versioning information about the objects is included in the inventory list. Valid values: All and Current • The value of All indicates that all versions of the objects are exported. • The value of Current indicates that only the current versions of the objects are exported.
OptionalFields	Container	The container that stores the configuration fields included in the inventory list.
Field	Container	The configuration fields included in the inventory list. Valid values: Size, LastModifiedDate, ETag, StorageClass, IsMultipartUploaded, and EncryptionStatus Parent node: OptionalFields

Examples

- Sample request

```
GET /? inventory HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: Fri, 24 Feb 2012 03:55:00 GMT
Authorization: authorization string
Content-Type: text/plain
```

- Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 56594298207FB304438516F9
Date: Sat, 30 Apr 2016 23:29:37 GMT
Content-Type: application/xml
Content-Length: length
Connection: close
Server: AliyunOSS
<? xml version="1.0" encoding="UTF-8"? >
<ListInventoryConfigurationsResult>
    <InventoryConfiguration>
        <Id>report1</Id>
        <IsEnabled>true</IsEnabled>
        <Destination>
            <OSSBucketDestination>
                <Format>CSV</Format>
                <AccountId>1000000000000000</AccountId>
```

```
                    <RoleArn>acs:ram::1000000000000000:role/AliyunOSSRole</RoleArn>
                    <Bucket>acs:oss:::destination-bucket</Bucket>
                    <Prefix>prefix1</Prefix>
                </OSSBucketDestination>
            </Destination>
            <Schedule>
                <Frequency>Daily</Frequency>
            </Schedule>
            <Filter>
                <Prefix>prefix/One</Prefix>
            </Filter>
            <IncludedObjectVersions>All</IncludedObjectVersions>
            <OptionalFields>
                <Field>Size</Field>
                <Field>LastModifiedDate</Field>
                <Field>ETag</Field>
                <Field>StorageClass</Field>
                <Field>IsMultipartUploaded</Field>
                <Field>EncryptionStatus</Field>
            </OptionalFields>
        </InventoryConfiguration>
        <InventoryConfiguration>
            <Id>report2</Id>
            <IsEnabled>true</IsEnabled>
            <Destination>
                <OSSBucketDestination>
                    <Format>CSV</Format>
                    <AccountId>1000000000000000</AccountId>
                    <RoleArn>acs:ram::1000000000000000:role/AliyunOSSRole</RoleArn>
                    <Bucket>acs:oss:::destination-bucket</Bucket>
                    <Prefix>prefix2</Prefix>
                </OSSBucketDestination>
            </Destination>
            <Schedule>
                <Frequency>Daily</Frequency>
            </Schedule>
            <Filter>
                <Prefix>prefix/Two</Prefix>
            </Filter>
            <IncludedObjectVersions>All</IncludedObjectVersions>
            <OptionalFields>
                <Field>Size</Field>
                <Field>LastModifiedDate</Field>
                <Field>ETag</Field>
                <Field>StorageClass</Field>
                <Field>IsMultipartUploaded</Field>
                <Field>EncryptionStatus</Field>
            </OptionalFields>
        </InventoryConfiguration>
        <InventoryConfiguration>
            <Id>report3</Id>
            <IsEnabled>true</IsEnabled>
            <Destination>
                <OSSBucketDestination>
                    <Format>CSV</Format>
```

```
              <AccountId>1000000000000000</AccountId>
              <RoleArn>acs:ram::1000000000000000:role/AliyunOSSRole</RoleArn>
              <Bucket>acs:oss:::destination-bucket</Bucket>
              <Prefix>prefix3</Prefix>
          </OSSBucketDestination>
      </Destination>
      <Schedule>
          <Frequency>Daily</Frequency>
      </Schedule>
      <Filter>
          <Prefix>prefix/Three</Prefix>
      </Filter>
      <IncludedObjectVersions>All</IncludedObjectVersions>
      <OptionalFields>
          <Field>Size</Field>
          <Field>LastModifiedDate</Field>
          <Field>ETag</Field>
          <Field>StorageClass</Field>
          <Field>IsMultipartUploaded</Field>
          <Field>EncryptionStatus</Field>
      </OptionalFields>
   </InventoryConfiguration>
    ...
   <IsTruncated>true</IsTruncated>
   <NextContinuationToken>... </NextContinuationToken>
</ListInventoryConfigurationsResult>
```

7.9.4. DeleteBucketInventory

You can call this operation to delete a specified inventory task of a bucket.

> ⑦ Note
> - To call this operation, ensure that you have permissions to perform operations on the inventory tasks of the bucket. By default, the bucket owner has the permission to perform this operation. If you do not have the permission, apply for the permission from the bucket owner.
> - If the request is successful, 204 is returned.

Request syntax

```
DELETE ? /inventory&inventoryId=list1 HTTP/1.1
```

Request elements

Element	Type	Required	Description
inventoryId	String	Yes	The ID of the inventory task to delete.

Examples

- Sample request

```
DELETE ? /inventory&inventoryId=list1 HTTP/1.1
Host: BucketName.oss.aliyuncs.com
Date: Wed, 14 May 2014 02:11:22 GMT
Authorization: signatureValue
```

- Sample response

```
HTTP/1.1 204 No Content
x-oss-request-id: 56594298207FB3044385****
Date: Wed, 14 May 2014 02:11:22 GMT
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
InvalidRequest	400	The error message returned because the request is invalid.
AccessDenied	403	- The error message returned because your information for authentication is not included in the DeleteBucketInventory request. - The error message returned because you are not authorized to perform this operation.

7.10. Logging

7.10.1. PutBucketLogging

Enables logging for a bucket. After you enable and configure logging for a bucket, Object Storage Service (OSS) generates log objects based on a predefined naming convention. This way, access logs are generated and stored in the specified bucket on an hourly basis.

Usage notes

- The source bucket for which logs are generated and the destination bucket in which the logs are stored can be the same or different. However, the destination bucket must belong to the same Alibaba Cloud account in the same region as the source bucket.

- OSS generates bucket access logs on an hourly basis. However, requests in an hour may be recorded in the log generated for the previous or subsequent hour.

  For more information about the naming conventions of log objects and log format, see Logging.

- Before you disable logging, OSS keeps generating log objects. Delete log objects that you no longer need to reduce your storage costs.

  You can configure lifecycle rules to regularly delete log objects. For more information, see Lifecycle rules based on the last modified time.

- More fields may be added to OSS logs. We recommend that developers consider potential

compatibility issues when they develop log processing tools.

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 headers

A PutBucketLogging request contains only common request headers. For more information, see Common request headers.

Request elements

Element	Type	Required	Example	Description
BucketLoggingStatus	Container	Yes	N/A	The container that stores the logging status information. Child nodes: LoggingEnabled Parent nodes: none
LoggingEnabled	Container	This parameter is required when you enable logging.	N/A	The container that stores the access log information. Child nodes: TargetBucket and TargetPrefix Parent nodes: BucketLoggingStatus
TargetBucket	String	This parameter is required when you enable logging.	examplebucket	The bucket that stores access logs. Child nodes: none Parent nodes: BucketLoggingStatus and LoggingEnabled
TargetPrefix	String	No	MyLog-	The prefix of the saved log objects. This element can be left empty. Child nodes: none Parent nodes: BucketLoggingStatus and LoggingEnabled

Response headers

The response to a PutBucketLogging request contains only common response headers. For more information, see Common response headers.

Examples

- Sample request on how to enable logging for a bucket

```
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 qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
<?xml version="1.0" encoding="UTF-8"?>
<BucketLoggingStatus>
<LoggingEnabled>
<TargetBucket>examplebucket</TargetBucket>
<TargetPrefix>MyLog-</TargetPrefix>
</LoggingEnabled>
</BucketLoggingStatus>
```

  Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E888648906008B
Date: Fri, 04 May 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

- Sample request on how to disable logging for a bucket

  To disable logging for a bucket, you need only to send an empty BucketLoggingStatus. Example:

```
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 qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
<?xml version="1.0" encoding="UTF-8"?>
<BucketLoggingStatus>
</BucketLoggingStatus>
```

  Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674125A4D8906008B
Date: Fri, 04 May 2012 04:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDKs

You can use OSS SDKs for the following programming languages to call the PutBucketLogging operation:

- Java
- Python
- PHP
- Go
- C
- .NET
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the source bucket does not exist.
InvalidTargetBucketForLogging	400	The error message returned because the source bucket and the destination bucket do not belong to the same data center.
InvalidDigest	400	The error message returned because the Content-MD5 value of the message body is inconsistent with the Content-MD5 value of the request header.
MalformedXML	400	The error message returned because the XML format in the request is invalid.
InvalidTargetBucketForLogging	403	The error message returned because the requester is not the owner of the destination bucket.
AccessDenied	403	The error message returned because the requester is not the owner of the source bucket.

7.10.2. 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	Indicates the container used to store access logging configuration of a bucket. Sub-node: LoggingEnabled Parent node: None ⊘ **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.
LoggingEnabled	Container	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. Sub-node: TargetBucket and TargetPrefix Parent node: BucketLoggingStatus
TargetBucket	Character	Indicates the bucket that stores access logs. Sub-node: None Parent node: BucketLoggingStatus.LoggingEnabled
TargetPrefix	Character	Indicates the prefix of the names of stored access log files. Sub-node: None Parent node: BucketLoggingStatus.LoggingEnabled

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:ceOEyZavKY4QcjoUWYSpYbJ3naA=
```

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.

7.10.3. DeleteBucketLogging

You can call this operation to delete the logging configurations for a bucket. Only the bucket owner is authorized to disable logging for the bucket.

Request syntax

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

Examples

Sample requests

```
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:6ZVHOehYzxoC1yxRydPQs/Cn****
```

Sample success responses

> ⑦ **Note**   HTTP status code 204 is returned if the bucket has logging disabled.

```
HTTP/1.1 204 No Content
x-oss-request-id: 534B371674E88A4D8906****
Date: Fri, 24 Feb 2012 05:35:24 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

SDKs

The SDKs of the DeleteBucketLogging 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
NoSuchBucket	404	The error message returned because the specified bucket does not exist.
AccessDenied	403	The error message returned because you are not authorized to disable logging for the bucket. Only the bucket owner can disable logging for the bucket.

7.11. Static websites

7.11.1. PutBucketWebsite

Sets a bucket to the static website hosting mode and configures redirection rules.

Upload limits

Static websites are websites where all web pages consist only of static content, including scripts such as JavaScript code that runs on the client. If you want to specify an Object Storage Service (OSS) object as a static page, the static page cannot contain content that needs to be processed by the server, such as PHP, JSP, and ASP.NET content.

- Features

  The PutBucketWebsite operation is used to configure the default homepage, default 404 page, and RoutingRule of the bucket that is set to the static website hosting mode. RoutingRule is used to specify redirection rules and mirroring-based back-to-origin rules. Mirroring-based back-to-origin supports the Alibaba Cloud public cloud and Finance Cloud.

- Access by using custom domain names

  To use a custom domain name to access bucket-based static websites, you can use CNAMEs. For more information about specific operations, see Map custom domain names.

- Index page and error page

  When you set a bucket to the static website hosting mode, you can specify the index page and the error page of the static website. The specified index page and error page must be objects in the bucket.

- Anonymous access to the root domain name

  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. If a signed request is sent to access the root domain name of the static website, OSS returns the result of the GetBucket (ListObjects) operation.

Request structure

```
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>
        <HttpStatus>404</HttpStatus>
    </ErrorDocument>
</WebsiteConfiguration>
```

Request headers

A PutBucketLifecycle request contains only common request headers. For more information, see Common request headers.

Request parameters

- The following table describes the element for WebsiteConfiguration.

Element	Type	Required	Description
WebsiteConfigurat ion	Container	Yes	The root node. Parent nodes: none

- The following table describes the elements for IndexDocument.

Element	Type	Required	Description
IndexDocument	Container	Conditional You must specify at least one of the following containers: IndexDocument, ErrorDocument, and RoutingRules.	The container for the default homepage. Parent nodes: WebsiteConfiguration

Element	Type	Required	Description
Suffix	String	Conditional This element must be specified if IndexDocument is specified.	The default homepage. After the default homepage is specified, OSS returns the default homepage if an object whose name ends with a forward slash (/) is accessed. Parent nodes: IndexDocument
SupportSubDir	String	No	Specifies whether to redirect the access to the default homepage in the subdirectory when the subdirectory is accessed. Default value: false. Valid values: ○ *true*: The access is redirected to the default homepage of the subdirectory. ○ *false*: The access is redirected to the default homepage of the root directory instead of that of the subdirectory. Example: The default homepage is set to index.html, and `bucket.oss-cn-hangzhou.aliyuncs.com/subdir/` is to access. If SupportSubDir is set to false, the access is redirected to `bucket.oss-cn-hangzhou.aliyuncs.com/index.html`. If SupportSubDir is set to true, the access is redirected to `bucket.oss-cn-hangzhou.aliyuncs.com/subdir/index.html`. Parent nodes: IndexDocument

Element	Type	Required	Description
Type	Enumeration	No	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. This parameter takes effect only when SupportSubDir is set to true. It takes effect after RoutingRule but before ErrorFile. If the default homepage for access to `bucket.oss-cn-hangzhou.aliyuncs.com/abc` is set to index.html and the abc object does not exist, the valid values of Type correspond to the following operations. The default value of Type is 0. ○ *0*: OSS checks whether the object named abc/index.html, which is in the `Object + Forward slash (/) + Homepage` format, exists. If the object exists, OSS returns 302 and the Location header value that contains URL-encoded `/abc/`. The URL-encoded /abc/ is in the `Forward slash (/) + Object + Forward slash (/)` format. If the object does not exist, OSS returns 404 and continues to check ErrorFile. ○ *1*: OSS returns 404 and NoSuchKey and continues to check ErrorFile. ○ *2*: OSS checks whether abc/index.html exists. If abc/index.html exists, the content of the object is returned. If abc/index.html does not exist, OSS returns 404 and continues to check ErrorFile. Parent nodes: IndexDocument

- The following table describes the elements for ErrorDocument.

Element	Type	Required	Description

Element	Type	Required	Description
ErrorDocument	Container	Conditional You must specify at least one of the following containers: IndexDocument, ErrorDocument, and RoutingRules.	The container used to store the default 404 page. Parent nodes: WebsiteConfiguration
Key	String	Conditional This element must be specified if ErrorDocument is specified.	The error page. After the error page is specified, the error page is returned if the object to access does not exist. Parent nodes: ErrorDocument
HttpStatus	String	No	The HTTP status code returned with the error page. Default value: 404. Valid values: 200 and 404 Parent nodes: ErrorDocument

- The following table describes the elements for RoutingRules, RoutingRule, and RuleNumber.

Element	Type	Required	Description
RoutingRules	Container	Conditional You must specify at least one of the following containers: IndexDocument, ErrorDocument, and RoutingRules.	The container used to store RoutingRule. Parent nodes: WebsiteConfiguration
RoutingRule	Container	No	The redirection rule or mirroring-based back-to-origin rule. You can specify a maximum of 20 rules. Parent nodes: RoutingRules
RuleNumber	Positive integer	Conditional This element must be specified if RoutingRule is specified.	The sequence number used to match and run the redirection rules. Redirection rules are matched based on this element. If a match succeeds, only the rule is run and the subsequent rules are not run. Parent nodes: RoutingRule

- The following table describes the elements for RoutingRules, RoutingRule, and Condition.

Element	Type	Required	Description
Condition	Container	Conditional This element must be specified if RoutingRule is specified.	The matching condition. If all of the specified conditions are met, the rule is run. A rule is considered matched only when the rule meets the conditions specified by all nodes in Condition. Parent nodes: RoutingRule
KeyPrefixEquals	String	No	The prefix of object names. Only objects whose names contain the specified prefix match the rule. Parent nodes: Condition
HttpErrorCodeReturnedEquals	HTTP status code	No	The HTTP status code. The rule is matched only when the specified object is accessed and the specified HTTP status code is returned. If the redirection rule is the mirroring-based back-to-origin rule, the value of this element is 404. Parent nodes: Condition
IncludeHeader	Container	No	The header specified in the request. The rule is matched only when the specified header is included in the request and the header value is equal to the specified value. You can specify up to 10 IncludeHeader containers. Parent nodes: Condition
Key	String	Yes	The key of the header. 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 nodes: IncludeHeader
Equals	String	No	The value of the header. 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 nodes: IncludeHeader

Element	Type	Required	Description
KeySuffixEquals	String	No	The suffix of object names. Only objects whose names contain the specified suffix match the rule. The default value is empty, which indicates that no suffix is specified. Parent nodes: Condition

- The following table describes the elements for RoutingRules, RoutingRule, and Redirect.

Element	Type	Required	Description
Redirect	Container	Conditional This element must be specified if RoutingRule is specified.	The operation to perform after the rule is matched. Parent nodes: RoutingRule
RedirectType	String	Conditional This parameter must be specified if Redirect is specified.	The redirection type. Valid values: ○ *Mirror*: mirroring-based back-to-origin. ○ *External*: external redirection. OSS returns the 3xx HTTP redirect code and the Location header for you to redirect the access to another IP address. ○ *AliCDN*: redirection based on Alibaba Cloud Content Delivery Network (CDN). OSS adds an additional header to the request, which is different from the External type. After CDN identifies the header, CDN redirects the access to the specified IP address and returns the obtained data instead of the redirect request to the user. Parent nodes: Redirect

Element	Type	Required	Description
PassQueryString	Boolean	No	Specifies whether to include parameters of the original request in the redirect request when the system runs the redirection rule or mirroring-based back-to-origin rule. For example, if the PassQueryString parameter is set to true and the `?a=b&c=d` parameter is included in a request sent to OSS, PassQueryString is set to true, and the redirection mode is 302, this parameter is added to the Location header. For example, if the request is `Location:www.example.com?a=b&c=d` and the redirection type is mirroring-based back-to-origin, the ?a=b&c=d parameter is also included in the back-to-origin request. Default value: false Valid values: true and false Parent nodes: Redirect
MirrorURL	String	Conditional This element must be specified if RedirectType is set to Mirror.	The origin URL for mirroring-based back-to-origin. This element takes effect only when the value of RedirectType is Mirror. The origin URL must start with http:// or https:// and end with a forward slash (/). OSS adds an object name to the end of the URL to generate a back-to-origin URL. For example, the name of the object to access is myobject. If MirrorURL is set to `http://www.example.com/`, the back-to-origin URL is `http://www.example.com/dir1/myobject`. If MirrorURL is set to `http://www.example.com/dir1/`, the back-to-origin URL is `http://www.example.com/dir1/myobject`. Parent nodes: Redirect

Element	Type	Required	Description
TransparentMirror ResponseCodes	String	No	Specifies the HTTP status codes from the origin when you need to pass through the HTTP status codes and the body to the client. Examples of valid values: 4xx and 5xx. Separate multiple HTTP status codes with commas (,). Example: `400,404` . This element takes effect only when the value of RedirectType is Mirror. When OSS requests content to the origin, if the origin returns an HTTP status code specified by this parameter, OSS passes through the HTTP status code and the body to the client. ◁) **Notice** If 404 is specified for this parameter, the ErrorDocument configurations become invalid. Parent nodes: Redirect
MirrorPassQueryString	Boolean	No	This element plays the same role as PassQueryString and has a higher priority than PassQueryString. This element takes effect only when the value of RedirectType is Mirror. Default value: false Parent nodes: Redirect

Element	Type	Required	Description
MirrorFollowRedirect	Boolean	No	Specifies whether to redirect the access to the address specified by Location if the origin returns a 3xx HTTP status code. This element takes effect only when the value of RedirectType is Mirror. For example, when a mirroring-based back-to-origin request is initiated, the origin returns 302 and Location is specified. ○ If you set MirrorFollowRedirect to true, OSS continues to request the address specified by Location. The access can be redirected for up to 10 times. If the access is redirected for more than 10 times, the mirroring-based back-to-origin request fails. ○ If you set MirrorFollowRedirect to false, OSS returns 302 and passes through Location. Default value: true Parent nodes: Redirect
MirrorCheckMd5	Boolean	No	Specifies whether to check the MD5 hash of the body of the response returned by the origin. This element takes effect only when the value of RedirectType is Mirror. When the MirrorFollowRedirect value is true and the response returned by the origin includes the Content-Md5 header, OSS checks whether the MD5 hash of the obtained data matches the header value. If the MD5 hash of the obtained data does not match the header value, OSS does not store the data. Default value: false Parent nodes: Redirect
MirrorHeaders	Container	No	The headers contained 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. Parent nodes: Redirect

Element	Type	Required	Description
PassAll	Boolean	No	Specifies whether to pass through all request headers to the origin. This element takes effect only when the value of RedirectType is Mirror. The request headers exclude the following headers: ○ Headers such as content-length, authorization2, authorization, range, and date ○ Headers that start with oss-, x-oss-, and x-drs- Default value: false Parent nodes: MirrorHeaders
Pass	String	No	The headers to pass through to the origin. This element takes effect only when the value of RedirectType is Mirror. Each header can be up to 1,024 bytes in length and can contain only letters, digits, and hyphens (-). You can specify up to 10 Pass headers. Parent nodes: MirrorHeaders
Remove	String	No	The headers that are not allowed to pass through to the origin. This element takes effect only when the value of RedirectType is Mirror. Each header can be up to 1,024 bytes in length. The character set of this parameter is the same as that of Pass. You can specify up to 10 Remove headers. This parameter is used together with PassAll. Parent nodes: MirrorHeaders
Set	Container	No	The header that is sent to the origin. The header is configured in the data returned by the origin regardless of whether the header is included in the request. This element takes effect only when the value of RedirectType is Mirror. You can specify up to 10 Set headers. Parent nodes: MirrorHeaders

Element	Type	Required	Description
Key	String	Conditional This element must be specified if Set is specified.	The key of the header. The key can be up to 1,024 bytes in length. The character set of this parameter is the same as that of Pass. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: Set
Value	String	Conditional This element must be specified if Set is specified.	The value of the header. The value can be up to 1,024 bytes in length and cannot contain `\r\n`. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: Set
Protocol	String	No	The protocol used for redirection. This element takes effect only when the value of RedirectType is External or AliCDN. For example, if you access an object named test, Protocol is set to https, and Hostname is set to `www.example.com`, the Location header value is `https://www.example.com/test`. Valid values: *http* and *https*. Parent nodes: Redirect
HostName	String	No	The domain name used for redirection, which must comply with the naming conventions for domain names. For example, if you access an object named test, Protocol is set to https, and Hostname is set to `www.example.com`, the Location header value is `https://www.example.com/test`. Parent nodes: Redirect

Element	Type	Required	Description
ReplaceKeyPrefix With	String	No	The string that is used to replace the prefix of the object name during redirection. If the prefix of the object is empty, this string precedes the object name. ⓘ **Note** You can specify only one of the ReplaceKeyWith and ReplaceKeyPrefixWith nodes in a rule. For example, the object to access is abc/test.txt. If you set KeyPrefixEquals to abc/ and ReplaceKeyPrefixWith to def/, the Location header value is `http://www.example.com/def/test.txt`. Parent nodes: Redirect
EnableReplacePref ix	Boolean	No	If this element is set to true, the prefix of object names is replaced with the value specified by ReplaceKeyPrefixWith. If this parameter is not specified or empty, the prefix of object names is truncated. ⓘ **Note** When the ReplaceKeyWith element is not empty, the EnableReplacePrefix element cannot be set to true. Default value: false Parent nodes: Redirect
ReplaceKeyWith	String	No	The string that is used to replace the requested object name when the request is redirected. This element can be set to a variable. The ${key} variable that indicates the object name in the request is supported. For example, the name of the object to access is test. If ReplaceKeyWith is set to `prefix/${key}.suffix`, the address specified by the Location header is `http://www.example.com/prefix/test.suffix`. Parent nodes: Redirect

Element	Type	Required	Description
HttpRedirectCode	HTTP status code	No	The HTTP redirect code in the response. This element takes effect only when the value of RedirectType is External or AliCDN. Default value: 301. Valid values: 301, 302, and 307 Parent nodes: Redirect

Response headers

The response to a PutBucket request contains only common response headers. For more information, see Common response headers.

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 nxj7dtwhcyl5hp****:sNKIHT6ci/z231yIT5vYnetD****
<?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>
    <HttpStatus>404</HttpStatus>
  </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
```

- Complete sample code

```
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 nxj7dtwhcyl5hp****:sNKIHT6ci/z231yIT5vYnetD****
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>
    <HttpStatus>404</HttpStatus>
</ErrorDocument>
<RoutingRules>
    <RoutingRule>
        <RuleNumber>1</RuleNumber>
        <Condition>
            <KeyPrefixEquals>abc/</KeyPrefixEquals>
            <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
        </Condition>
        <Redirect>
            <RedirectType>Mirror</RedirectType>
            <PassQueryString>true</PassQueryString>
            <MirrorURL>http://www.example.com/</MirrorURL>
          <TransparentMirrorResponseCodes>400,404</TransparentMirrorResponseCodes>
            <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>
                <Equals>test.oss-cn-beijing-internal.aliyuncs.com</Equals>
            </IncludeHeader>
        </Condition>
        <Redirect>
            <RedirectType>AliCDN</RedirectType>
            <Protocol>http</Protocol>
            <HostName>www.example.com</HostName>
            <PassQueryString>false</PassQueryString>
            <ReplaceKeyWith>prefix/${key}.suffix</ReplaceKeyWith>
            <HttpRedirectCode>301</HttpRedirectCode>
        </Redirect>
    </RoutingRule>
```

```
      <RoutingRule>
        <Condition>
          <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
        </Condition>
        <RuleNumber>3</RuleNumber>
        <Redirect>
          <ReplaceKeyWith>prefix/${key}</ReplaceKeyWith>
          <HttpRedirectCode>302</HttpRedirectCode>
          <EnableReplacePrefix>false</EnableReplacePrefix>
          <PassQueryString>false</PassQueryString>
          <Protocol>http</Protocol>
          <HostName>www.example.com</HostName>
          <RedirectType>External</RedirectType>
        </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
```

SDK

- 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 calculated by OSS is inconsistent with the Content-MD5 value in the request header.

7.11.2. GetBucketWebsite

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

Request structure

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

Request headers

A PutBucketLifecycle request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a PutBucket request contains only common response headers. For more information, see Common response headers.

Response elements

- The following table describes the element for WebsiteConfiguration in the response to a GetBucketWebsite request.

Element	Type	Example	Description
WebsiteConfiguration	Container	N/A	The root node. Parent nodes: none

- The following table describes the elements for IndexDocument in the response to a GetBucketWebsite request.

Element	Type	Example	Description
IndexDocument	Container	N/A	The container used to store the default homepage. Parent nodes: WebsiteConfiguration
Suffix	String	index.html	The default homepage. Parent nodes: IndexDocument

- The following table describes the elements for ErrorDocument in the response to a GetBucketWebsite request.

Element	Type	Example	Description
ErrorDocument	Container	N/A	The container used to store the error page. Parent nodes: WebsiteConfiguration

Element	Type	Example	Description
Key	String	error.html	The error page. Parent nodes: ErrorDocument
HttpStatus	String	404	The HTTP status code returned with the error page. Parent nodes: ErrorDocument

- The following table describes the elements for RoutingRules, RoutingRule, and RuleNumber in the response to a GetBucketWebsite request.

Element	Type	Example	Description
RoutingRules	Container	N/A	The container used to store RoutingRule. Parent nodes: WebsiteConfiguration
RoutingRule	Container	N/A	The redirection rule or mirroring-based back-to-origin rule. Parent nodes: RoutingRules
RuleNumber	Positive integer	1	The sequence number used to match and run redirection rules or mirroring-based back-to-origin rules. Redirection rules are matched based on this element. If a match succeeds, only the rule is run and the subsequent rules are not run. Parent nodes: RoutingRule

- The following table describes the elements for RoutingRules, RoutingRule, and Condition in the response to a GetBucketWebsite request.

Element	Type	Example	Description
Condition	Container	N/A	The matching condition. The rule is run only when all the specified conditions are met. Parent nodes: RoutingRule

Element	Type	Example	Description
KeyPrefixEquals	String	abc	The prefix of object names. Only objects whose names contain the specified prefix match the rule. Parent nodes: Condition
HttpErrorCodeReturnedEquals	HTTP status code	404	The returned HTTP status code. The rule is matched only when the specified object is accessed and the specified status code is returned. If the redirection rule is the mirroring-based back-to-origin rule, the value of this element is 404. Parent nodes: Condition
IncludeHeader	Container	N/A	The header specified in the request. The rule is matched only when the specified header is included in the request and the header value is equal to the specified value. Up to five IncludeHeader containers can be specified. Parent nodes: IncludeHeader
Key	String	host	The key of the header. 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 nodes: IncludeHeader
Equals	String	test.oss-cn-beijing-internal.aliyuncs.com	The value of the header. 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 nodes: IncludeHeader

- The following table describes the elements for RoutingRules, RoutingRule, and Redirect in the response to a GetBucketWebsite request.

Element	Type	Example	Description

Element	Type	Example	Description
Redirect	Container	N/A	The operation to perform after the rule is matched. Parent nodes: RoutingRule
RedirectType	String	Mirror	The redirection type. ○ Mirror: mirroring-based back-to-origin. ○ External: external redirection. Object Storage Service (OSS) returns the 3xx HTTP redirect code and the Location header for you to redirect the access to another IP address. ○ AliCDN: redirection based on Alibaba Cloud Content Delivery Network (CDN). OSS adds an additional header to the request, which is different from the External type. After CDN identifies the header, CDN redirects the access to the specified IP address and returns the obtained data instead of the redirect request to the user. Parent nodes: Redirect
PassQueryString	Boolean	false	Indicates whether the request parameters of the original request are included in the redirect request when the system runs the redirection rule or mirroring-based back-to-origin rule. If the PassQueryString parameter is set to true and "?a=b&c=d" is included in a request sent to OSS, this parameter is added to the Location header when the redirection mode is 302. For example, if the request contains "Location: www.example.com?a=b&c=d" and the value of RedirectType is Mirror, the a=b&c=d parameter is included in the back-to-origin request. Default value: false Parent nodes: Redirect

Element	Type	Example	Description
MirrorURL	String	http://example.com	The origin URL for mirroring-based back-to-origin. This element takes effect only when the value of RedirectType is Mirror. The origin URL must start with http:// or https:// and end with a forward slash (/). OSS adds an object name to the end of the URL to generate a back-to-origin URL. For example, the name of the object to access is myobject. If MirrorURL is set to `http://example.com/`, the back-to-origin URL is `http://example.com/myobject`. If MirrorURL is set to `http://example.com/dir1/`, the back-to-origin URL is `http://example.com/dir1/myobject`. Parent nodes: Redirect
TransparentMirrorRe sponseCodes	String	400,404	Indicates the status codes that OSS must pass through with the response body to the client after OSS receives the status codes from the origin. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: Redirect
MirrorPassQueryStrin g	Boolean	false	This element plays the same role as PassQueryString and has a higher priority than PassQueryString. This element takes effect only when the value of RedirectType is Mirror. Default value: false Parent nodes: Redirect

Element	Type	Example	Description
MirrorFollowRedirect	Boolean	true	Indicates whether the access is redirected to the address specified by Location if the origin returns a 3xx HTTP status code. This element takes effect only when the value of RedirectType is Mirror. For example, when a mirroring-based back-to-origin request is initiated, the origin returns 302 and Location is specified. ○ *true*: OSS continues to request the address specified by Location. The access can be redirected up to 10 times. After 10 times, an error message is returned. ○ *false*: OSS returns 302 and passes through Location. Default value: true Parent nodes: Redirect
MirrorCheckMd5	Boolean	false	Indicates whether OSS checks the MD5 hash of the body of the response returned by the origin. This element takes effect only when the value of RedirectType is Mirror. When the value of this parameter is true and the response returned by the origin includes the Content-Md5 header, OSS checks whether the MD5 hash of the obtained data matches the header value. If the MD5 hash of the obtained data does not match the header value, OSS does not store the data. Default value: false Parent nodes: Redirect
MirrorHeaders	Container	N/A	The headers that are included when a mirroring-based back-to-origin rule is specified for the bucket. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: Redirect

Element	Type	Example	Description
PassAll	Boolean	true	Indicates whether OSS passes through all request headers to the origin. The request headers exclude reserved headers and headers that start with `oss-, x-oss-, and x-drs-`. This element takes effect only when the value of RedirectType is Mirror. Default value: false Parent nodes: MirrorHeaders
Pass	String	myheader-key1	The header to pass through to the origin. This element takes effect only when the value of RedirectType is Mirror. The header can be up to 1,024 bytes in length and can contain only letters, digits, and hyphens (-). You can specify up to 10 Pass headers. Parent nodes: MirrorHeaders
Remove	String	myheader-key3	The header that is not allowed to pass through to the origin. Up to 10 Remove headers can be specified. This element is used together with PassAll. The header can be up to 1,024 bytes in length. The character set of this parameter is the same as that of Pass. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: MirrorHeaders
Set	Container	N/A	Indicates the headers that are sent to the origin. The specified headers are configured in the data returned by the origin regardless of whether the headers are contained in the request. Up to 10 Set containers can be specified. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: MirrorHeaders
Key	String	myheader-key5	The key of the header. The key can be up to 1,024 bytes in length. The character set of this parameter is the same as that of Pass. This element takes effect only when the value of RedirectType is Mirror. Parent nodes: Set

Element	Type	Example	Description
Value	String	myheader-value5	The value of the header. The value can be up to 1,024 bytes in length and cannot contain "\r\n". This element takes effect only when the value of RedirectType is Mirror. Parent nodes: Set
Protocol	String	http	The protocol used to redirect the access. This element takes effect only when the value of RedirectType is External or AliCDN. For example, if you access an object named test, Protocol is set to https, and Hostname is set to `example.com` , the Location header value is `https://example.com/test` . Valid values: *http* and *https*. Parent nodes: Redirect
HostName	String	example.com	The domain name used for redirection, which must comply with the naming conventions for domain names. This element takes effect only when the value of RedirectType is External or AliCDN. For example, if you access the object named test, Protocol is set to https, and Hostname is set to `example.com` , the Location header is `https://www.example.com/test` . Parent nodes: Redirect
HttpRedirectCode	HTTP status code	301	The HTTP redirect code in the response. This element takes effect only when the value of RedirectType is External or AliCDN. Valid values: 301, 302, and 307 Parent nodes: Redirect

Element	Type	Example	Description
ReplaceKeyPrefixWith	String	def/	The string used to replace the prefix of the object name in the redirect request. This element takes effect only when the value of RedirectType is External or AliCDN. For example, if you access an object named `abc/test.txt` and ReplaceKeyPrefixWith is set to `def/`, the value of the Location header varies based on whether the value of KeyPrefixEquals is empty. ○ If the value of KeyPrefixEquals is set to `abc/`, the Location header value is `http://example.com/def/test.txt`. ○ If KeyPrefixEquals is empty, the Location header value is `http://example.com/def/abc/test.txt`. Parent nodes: Redirect
ReplaceKeyWith	String	prefix/${key}.suffix	The string used to replace the object name in the redirect request. This element takes effect only when the value of RedirectType is External or AliCDN. This element supports the ${key} variable, which indicates the object name in the request. For example, if you access an object named test and ReplaceKeyWith is set to `prefix/${key}.suffix`, the Location header value is `http://example.com/prefix/test.suffix`. Parent nodes: Redirect

Examples

Sample requests

```
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=
```

Sample responses

● Sample responses when static website hosting rules are 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>
       <HttpStatus>404</HttpStatus>
    </ErrorDocument>
</WebsiteConfiguration>
```

- Sample response when static website hosting rules are not configured

```
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>
```

A complete sample response

```
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******sU9HUWomxsus=
User-Agent: aliyun-sdk-python-test/0.4.0
<?xml version="1.0" encoding="UTF-8"?>
<WebsiteConfiguration>
  <IndexDocument>
    <Suffix>index.html</Suffix>
  </IndexDocument>
  <ErrorDocument>
    <Key>error.html</Key>
    <HttpStatus>404</HttpStatus>
  </ErrorDocument>
  <RoutingRules>
    <RoutingRule>
      <RuleNumber>1</RuleNumber>
      <Condition>
        <KeyPrefixEquals>abc/</KeyPrefixEquals>
```

```
      <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals>
    </Condition>
    <Redirect>
      <RedirectType>Mirror</RedirectType>
      <PassQueryString>true</PassQueryString>
      <MirrorURL>http://example.com/</MirrorURL>
     <TransparentMirrorResponseCodes>400,404</TransparentMirrorResponseCodes>
      <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>example.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 09:07:41 GMT
Content-Type: application/xml
Content-Length: 2102
Connection: keep-alive
x-oss-request-id: 5B5AE0DD2F7938C45FCED4BA
x-oss-server-time: 47
```

SDK

You can use OSS SDKs for the following programming languages to call the GetBucketWebsite operation:

- 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 no such bucket is found.
AccessDenied	403	The error message returned because you are not authorized to perform this operation. Only the bucket owner can query the static website hosting status configurations of a bucket.
NoSuchWebsiteConfiguration	404	The error message returned because static website hosting is not configured for the specified bucket.

7.11.3. 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:LnM4AZ1OeIduZF5vGFWicOMEkVg=
```

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.

7.12. Hotlink protection

7.12.1. PutBucketReferer

Configures the Referer whitelist of a bucket. You can also specify whether empty Referer fields are allowed and whether query strings are truncated when you call PutBucketReferer to configure Referer for a bucket.

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>false</AllowEmptyReferer>
  <AllowTruncateQueryString>false</AllowTruncateQueryString>
  <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	Example	Description
RefererConfiguration	Container	Yes	N/A	The container that contains the Referer configurations. Child nodes: AllowEmptyReferer, AllowTruncateQueryString, and RefererList Parent nodes: none
AllowEmptyReferer	Enumerated string	Yes	false	Specifies whether to allow the request whose Referer field is empty. Default value: true. Valid values: • *true*: Requests that have an empty Referer field are allowed. • *false*: Requests that have an empty Referer field are denied. Parent nodes: RefererConfiguration
AllowTruncateQueryString	Enumerated string	No	false	Specifies whether query strings are truncated. Default value: true. Valid values: • *true*: Query strings are truncated. • *false*: Query strings are not truncated. Parent nodes: RefererConfiguration

Element	Type	Required	Example	Description
RefererList	Container	Yes	N/A	The container that contains the Referer whitelist. ⓘ **Note** The PutBucketReferer operation replaces the existing Referer whitelist with the Referer whitelist specified in RefererList. If RefererList is not specified in the request, that is, no Referer elements are included, this operation clears the existing Referer whitelist. Parent nodes: RefererConfiguration Child nodes: Referer
Referer	String	No	http://www.aliyun.com	The specified Referer whitelist. Parent nodes: RefererList

Examples

Sample requests

- Sample request that does not contain Referer elements

```
PUT /?referer HTTP/1.1
Host: BucketName.oss.example.com
Content-Length: 247
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZH****
<?xml version="1.0" encoding="UTF-8"?>
<RefererConfiguration>
  <AllowEmptyReferer>true</AllowEmptyReferer>
  <RefererList/>
</RefererConfiguration>
```

- Sample request that contains Referer elements

```
PUT /?referer HTTP/1.1
Host: BucketName.oss.example.com
Content-Length: 247
Date: Fri, 04 May 2012 03:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
<?xml version="1.0" encoding="UTF-8"?>
<RefererConfiguration>
<AllowEmptyReferer>false</AllowEmptyReferer>
<AllowTruncateQueryString>false</AllowTruncateQueryString>
<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>
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 534B371674E88A4D8906****
Date: Fri, 04 May 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

You can use OSS SDKs for the following programming languages to call PutBucketReferer:

- Java
- Python
- PHP
- Node.js
- Go
- Android
- C
- C++
- .NET
- Ruby

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you are not authorized to perform the PutBucketReferer operation. Only the owner of a bucket can initiate PutBucketReferer requests to the bucket.
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.

7.12.2. GetBucketReferer

Queries the Referer configurations of a bucket.

Request syntax

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

Response elements

Element	Type	Description
RefererConfiguration	Container	The container that contains the Referer configurations. Parent nodes: none Child nodes: AllowEmptyReferer, AllowTruncateQueryString, and RefererList
AllowEmptyReferer	Enumerated string	Indicates whether empty Referer fields are allowed in requests. Parent nodes: RefererConfiguration
AllowTruncateQueryString	Enumerated string	Indicates whether query strings are truncated. Parent nodes: RefererConfiguration
RefererList	Container	The container that contains the Referer whitelist. Parent nodes: RefererConfiguration Child nodes: Referer
Referer	String	The specified Referer whitelist. Parent nodes: RefererList

Examples

Sample requests

```
Get /?referer HTTP/1.1
Host: oss-example.oss.aliyuncs.com
Date: Thu, 13 Sep 2012 07:51:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****: BuG4rRK+zNhH1AcF51NNHD39****
```

Sample responses

- Sample responses to requests that include the Referer elements

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906****
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>
<AllowTruncateQueryString>false</AllowTruncateQueryString>
    <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>
```

- Sample responses to requests that exclude the Referer elements

> ⑦ **Note** If the bucket has no Referer-related configurations, OSS returns the default AllowEmptyReferer value and an empty RefererList.

```
HTTP/1.1 200
x-oss-request-id: 534B371674E88A4D8906****
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

You can use OSS SDKs for the following programming languages to call GetBucketReferer:

- Java
- PHP
- Python
- Go
- C
- .NET
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the destination bucket does not exist.
AccessDenied	403	The error message returned because you are not authorized to query the Referer configurations of the bucket. Only the bucket owner can query the Referer configurations of the bucket.

7.13. Tagging

7.13.1. PutBucketTags

Adds tags to a bucket or modifies the tags of a bucket.

Usage notes

When you call the PutBucketTags operation, take note of the following items:

- Only the owner of a bucket and authorized RAM users can configure tags for the bucket. If other users attempt to configure tags for the bucket, 403 Forbidden is returned with the error code AccessDenied.

- You can configure up to 20 tags for a bucket. A tag is a key-value pair.

- When you call PutBucketTags to add a tag to a bucket, the new tag overwrites the existing tag that has the same key.

Request syntax

```
PUT /?tagging HTTP/1.1
Date: GMT Date
Content-Length: ContentLength
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 headers

A PutBucketTags request contains only common request headers. For more information, see Common request headers.

Request elements

Element	Type	Required	Description
Tagging	Container	Yes	The container used to store TagSet. Child nodes: TagSet Parent nodes: none
TagSet	Container	Yes	The container used to store a set of Tags. Child nodes: Tag Parent nodes: Tagging
Tag	Container	Yes	The container used to store the tag that you want to add or modify. Child nodes: Key and Value Parent nodes: TagSet
Key	STRING	Yes	The key of a tag. • A tag key is up to 64 bytes in length. • A tag key cannot start with `http://`, `https://`, or `Aliyun`. • A tag key must be UTF-8 encoded. • The value of the element cannot be empty. Child nodes: none Parent nodes: Tag
Value	STRING	No	The value of a tag. • A tag value is up to 128 bytes in length. • A tag value must be UTF-8 encoded. • This parameter can be left empty. Child nodes: none Parent nodes: Tag

Response headers

The response to a PutBucketTags request contains only common response headers. For more information, see Common response headers.

Examples

• Sample request

```
PUT /?tagging
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 20 Dec 2018 11:49:13 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
<Tagging>
  <TagSet>
    <Tag>
      <Key>testa</Key>
      <Value>testv1</Value>
    </Tag>
    <Tag>
      <Key>testb</Key>
      <Value>testv2</Value>
    </Tag>
  </TagSet>
</Tagging>
```

- Sample response

```
200 (OK)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5C1B138A109F4E405B2D****
date: Thu, 20 Dec 2018 11:59:06 GMT
x-oss-server-time: 148
connection: keep-alive
```

OSS SDKs

You can use Object Storage Service (OSS) SDKs for the following programming languages to call the PutBucketTags operation:

- Java
- PHP
- Node.js
- Python
- .NET
- Go
- C++

7.13.2. GetBucketTags

You can call this operation to query the tags configured 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	The container that stores the returned tags of the bucket. Parent node: None ⑦ **Note** If no tags are configured for the bucket, an XML message body is returned in which the Tagging element is empty.
TagSet	Container	The container that stores the returned tags of the bucket. Parent node: None
Tag	Container	The container that stores a returned tag of the bucket. Parent node: TagSet
Key	String	The key of a tag. Parent node: Tag
Value	String	The value of a tag. Parent node: Tag

Examples

- Sample request

```
GET /? tagging
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 20 Dec 2018 13:09:13 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
```

- Sample response

```
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>
```

SDKs

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

- Java
- Python
- Go
- C++
- Node.js

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the specified bucket does not exist.
AccessDenied	403	The error message returned because you have no permissions to query the tags configured for the bucket. Only the bucket owner can query the tags configured for a bucket.

7.13.3. DeleteBucketTags

You can call this operation to delete tags configured for a bucket.

> ⑦ **Note**   If no tag is configured for the bucket or the tag to delete does not exist, OSS returns 204.

Request structure

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

Request headers

A DeleteBucketTags request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a DeleteBucketTags request contains only common response headers. For more information, see Common response headers.

Examples

- Sample request sent to delete all tags configured 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****:6ZVHOehYzxoC1yxRydPQs/Cn****
```

Sample response

```
HTTP/1.1 204 No Content
x-oss-request-id: 5C22E0EFD127F6810B1A****
Date: Tue, 25 Dec 2018 17:35:24 GMT
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

- Sample request sent to delete 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****:6ZVHOehYzxoC1yxRydPQs/Cn****
```

Sample response

```
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
```

SDK

- Java
- Python

- Go
- C++
- Node.js
- .NET
- PHP

Error codes

Error code	HTTP status code	Description
NoSuchBucket	404 No Content	The error message returned because the specified bucket does not exist.
AccessDenied	403 Forbidden	The error message returned because you do not have permissions to delete the tags configured for the bucket. Only the owner of a bucket can delete the tags configured for the bucket.

7.14. Encryption

7.14.1. PutBucketEncryption

You can call this operation to configure encryption rules for a bucket.

> ⑦ **Note**   Only the bucket owner or authorized RAM users can configure encryption rules for a bucket. Otherwise, OSS returns the 403 error. For more information about bucket encryption, see Server-side encryption.

Request structure

```
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	The container that stores server-side encryption rules. Child node: ApplyServerSideEncryptionByDefault
ApplyServerSideEncryptionByDefault	Container	Yes	The container that stores the default server-side encryption method. Child nodes: SSEAlgorithm and KMSMasterKeyID
SSEAlgorithm	String	Yes	The default server-side encryption method. Valid values: KMS, AES256. You are charged for calling API operations when you use CMKs to encrypt or decrypt data. For more information about the fees, see KMS pricing. In cross-region replications, if the default server-side encryption method is configured for the destination bucket and ReplicaCMKID is configured in the replication rule: • If objects in the source bucket are not encrypted, they are encrypted using the default encryption method of the destination bucket after they are replicated. • If objects in the source bucket are encrypted using SSE-KMS or SSE-OSS, they are encrypted using the same method after they are replicated. For more information, see Use cross-region replication with server-side encryption.
KMSDataEncryption	String	No	The algorithm used to encrypt objects. If this element is not specified, objects are encrypted by using AES256. This element is valid only when the value of SSEAlgorithm is set to KMS. Valid value: SM4.
KMSMasterKeyID	String	No	The CMK ID that must be specified when SSEAlgorithm is set to KMS and a specified CMK is used for encryption. In other cases, this element must be set to null.

Examples

- Sample requests

- Set the encryption method to SSE-KMS

  The following sample request can be sent to configure the encryption method of the bucket named oss-example to SSE-KMS:

  ```
  PUT /? encryption HTTP/1.1
  Date: Thur, 5 Nov 2020 11:09:13 GMT
  Content-Length: ContentLength
  Content-Type: application/xml
  Host: oss-example.oss-cn-hangzhou.aliyuncs.com
  Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
  <? xml version="1.0" encoding="UTF-8"? >
  <ServerSideEncryptionRule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>KMS</SSEAlgorithm>
      <KMSMasterKeyID>9468da86-3509-4f8d-a61e-6eab1eac****</KMSMasterKeyID>
    </ApplyServerSideEncryptionByDefault>
  </ServerSideEncryptionRule>
  ```

- Sample response

  ```
  HTTP/1.1 200 OK
  x-oss-request-id: 5C1B138A109F4E405B2D****
  Date: Thur, 5 Nov 2020 11:09:13 GMT
  ```

SDK

You can use OSS SDKs for the following programming languages to call the PutBucketEncryption operation:

- Java
- Python
- Go
- C++
- .NET
- Node.js

Errors codes

Error code	HTTP status code	Description
InvalidEncryptionAlgorithmError	400	The error returned because the value of SSEAlgorithm is not KMS or AES256. The following error message is returned: `The Encryption request you specified is not valid. Supported value: AES256/KMS` .

Error code	HTTP status code	Description
InvalidArgument	400	The error returned because the value of SSEAlgorithm is AES256 but KMSMasterKeyID is specified. The following error message is returned: `KMSMasterKeyID is not applicable if the default sse algorithm is not KMS`.

7.14.2. GetBucketEncryption

You can call this operation to query the encryption rules configured for a bucket.

> ? **Note** Only the bucket owner or authorized RAM users can query the encryption rules configured for a bucket. If other users try to query the encryption rules configured for the bucket, OSS returns 403. For more information about bucket encryption, see Server-side encryption.

Request structure

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

Request headers

A GetBucketEncryption request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a GetBucketEncryption request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description
ServerSideEncryptionRule	Container	N/A	The container that stores server-side encryption rules. Child node: ApplyServerSideEncryptionByDefault
ApplyServerSideEncryptionByDefault	Container	N/A	The container that stores the default server-side encryption method. Child nodes: SSEAlgorithm and KMSMasterKeyID

Element	Type	Example	Description
SSEAlgorithm	String	KMS	The default server-side encryption method. Valid values: KMS and AES256
KMSMasterKeyID	String	9468da86-3509-4f8d-a61e-6eab1eac****	The CMK ID that is used for encryption. This parameter is returned only when the value of SSEAlgorithm is KMS and a CMK ID is specified in the request. In other cases, this parameter is null.

Examples

- Sample request

```
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****:ceOEyZavKY4QcjoUWYSpYbJ3****
```

- Sample response

The following response indicates that SSE-KMS is configured for the bucket.

```
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>
```

SDK

You can use OSS SDKs for the following programming languages to call GetBucketEncryption:

- Java
- Python
- Go
- C++
- PHP
- .NET
- Node.js

Errors codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have permissions to query the encryption rules configured for the bucket.
NoSuchBucket	400	The error message returned because the bucket whose encryption rules you want to query does not exist.
NoSuchServerSideEncryptionRule	400	The error message returned because the no encryption rules are configured for the bucket.

7.14.3. DeleteBucketEncryption

You can call this operation to delete encryption rules configured for a bucket.

> ⑦ **Note**   Only the bucket owner or authorized RAM users can delete encryption rules configured for a bucket. Otherwise, OSS returns the 403 error. For more information about bucket encryption, see Server-side encryption.

Request syntax

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

Examples

- Sample request

```
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****:6ZVHOehYzxoC1yxRydPQs/Cn****
```

- Sample response

```
HTTP/1.1 204 OK
x-oss-request-id: 5C22E0EFD127F6810B1A****
Date: Tue, 20 Dec 2018 11:37:05 GMT
Connection: keep-alive
Content-Length: 0
```

SDK

You can use the following SDKs for various programming languages to call DeleteBucketEncryption:

- Java
- Python
- Go

- C++
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have permissions to delete encryption rules configured for the bucket.
NoSuchBucket	400	The error message returned because the bucket of which encryption rules that you want to delete does not exist.

7.15. Pay-by-requester

7.15.1. PutBucketRequestPayment

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

Usage notes

Note the following items when you enable pay-by-requester for a bucket:

- Access from anonymous users is rejected

  If you enable pay-by-requester for a bucket, anonymous users are not allowed to access the bucket. Requesters must provide authentication information to OSS so that OSS can identify and charge requesters for requests and traffic.

  If a requester assumes a RAM role of an Alibaba Cloud account to request data, OSS charges this Alibaba Cloud account for the requests sent by the requester and the generated traffic.

- Requesters must specify the x-oss-request-payer header in the request

  If you enable pay-by-requester for a bucket, requesters must specify the x-oss-request-payer:requester header in the POST, GET, or HEAD requests. This header indicates that requesters understand that they are charged for the requests and downloaded data. If requester does not specify the x-oss-request-payer header in requests sent to a bucket with pay-by-requester enabled, the requests fail to pass authentication.

  Bucket owners do not need to specify the x-oss-request-payer header in requests sent to access their buckets. In this case, bucket owners are charged for the requests sent by them and the traffic generated by the requests.

Request structure

```
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 headers

PutBucketRequestPayment requests contain only common request headers. For more information, see Common request headers.

Request elements

Element	Type	Required	Description
RequestPaymentConfiguration	Container	Yes	The container that stores pay-by-requester configurations. Child node: Payer
Payer	String	Yes	The payer of the request and traffic fees. Valid values: • *BucketOwner*: request and traffic fees are paid by the bucket owner. • *Requester*: request and traffic fees are paid by the requester. , Parent node: RequestPaymentConfiguration

Response headers

Responses for PutBucketRequestPayment requests contain only common response headers. For more information, see Common response headers.

Examples

Sample request

```
PUT /? requestPayment
Content-Length: 83
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 23 Jul 2019 01:33:47 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:77Dvh5wQgIjWjwO/KyRt8dOP****
<RequestPaymentConfiguration>
  <Payer>Requester</Payer>
</RequestPaymentConfiguration>
```

Sample response

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

SDK

You can use OSS SDKs for the following programming languages to call PutBucketRequestPayment:

- Java
- Python
- Go
- C++
- .NET
- Node.js

Error codes

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

7.15.2. 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

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

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********:Rk7tT30yhDO3D************
```

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.

7.16. CORS

7.16.1. 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.

- PutBucketCORS
- GetBucketCORS
- DeleteBucketCORS
- OptionObject

7.16.2. PutBucketCors

Configures cross-origin resource sharing (CORS) rules for a bucket.

Usage notes

- Disabled-by-default design

  By default, CORS is disabled for a bucket. All cross-origin requests are not allowed.

- Overwriting mechanism

  If you call the PutBucketCors operation to configure a new CORS rule for a bucket for which a CORS rule is already configured, the existing rule is overwritten.

- Use of CORS in applications

  Before you can use CORS in applications, you must call the PutBucketCors operation to configure a CORS rule to enable CORS.

  For example, if you want to use the `XMLHttpRequest` feature of your browser to access Object Storage Service (OSS) from the domain name `example.com`, you must call the PutBucketCors operation to configure a CORS rule that is described by an XML message body.

- CORS rule matching

  When OSS receives a cross-origin request or an OPTIONS request that is destined for a bucket, OSS reads the CORS rules that are configured for the bucket and attempts to match the rules one after another. If OSS finds the first match, OSS returns a corresponding header. If no match is found, OSS does not include CORS headers in the response.

  OSS considers that a cross-origin request or an OPTIONS request matches a CORS rule only when the request meets the following conditions:

  - The origin from which the cross-origin request is sent matches the value of one `AllowedOrigin` element in the CORS rule.

  - The method of the cross-origin request such as GET or PUT or the method that corresponds to the `Access-Control-Request-Method` header in the OPTIONS request matches the value of one `AllowedMethod` element in the CORS rule.

  - Each header that is included in `Access-Control-Request-Headers` in the OPTIONS request matches the value of one `AllowedHeader` element in the CORS rule.

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-fight response</MaxAgeSeconds>
    </CORSRule>
    <CORSRule>
      ...
    </CORSRule>
...
</CORSConfiguration >
```

Request elements

Element	Type	Required	Example	Description
CORSRule	Container	Yes	N/A	The container that stores CORS rules. You can configure up to 10 CORS rules for a bucket. The XML message body in a request can be up to 16 KB in size. Parent nodes: CORSConfiguration
AllowedOrigin	String	Yes	*	The origin from which you want to allow cross-origin requests. You can use multiple elements to specify multiple allowed origins. You can use only one asterisk (*) as the wildcard for AllowedOrigin. If you set AllowedOrigin to an asterisk (*), all cross-origin requests are allowed. Parent nodes: CORSRule

Element	Type	Required	Example	Description
AllowedMethod	Enumeration	Yes	GET	The cross-origin request method that is allowed. Valid values: GET, PUT, DELETE, POST, and HEAD Parent nodes: CORSRule
AllowedHeader	String	No	Authorization	Specifies whether the headers specified by `Access-Control-Request-Headers` in the OPTIONS preflight request are allowed. Each header specified by `Access-Control-Request-Headers` must match the value of an AllowedHeader element. 🔊 **Notice** You can use only one asterisk (*) as the wildcard for AllowedHeader. The following characters are not supported: • < • > • & • ' • " Parent nodes: CORSRule
ExposeHeader	String	No	x-oss-test	The response headers for allowed access requests from applications, such as an XMLHttpRequest object in JavaScript. 🔊 **Notice** The following characters are not supported: • * • < • > • & • ' • " Parent nodes: CORSRule

Element	Type	Required	Example	Description
MaxAgeSeconds	Integer	No	100	The period of time within which the browser can cache the response for an OPTIONS preflight request that is destined to specific resources. Unit: seconds. You can specify only one MaxAgeSeconds element in a CORS rule. Parent nodes: CORSRule
CORSConfiguration	Container	Yes	N/A	The container that stores the CORS rule that you want to configure for the bucket. Parent nodes: none
ResponseVary	Boolean	No	false	Specifies whether to return the Vary: Origin header. Default value: false. Valid values: • _true_: The Vary: Origin header is returned regardless whether the request is a cross-origin request or whether the cross-origin request succeeds. • _false_: The Vary: Origin header is not returned. ◁) **Notice** This element is valid only when at least one CORS rule is configured.

For more information about the common request headers contained in PutBucketCors requests such as Host and Authorization, see Common request headers.

Response headers

The response to a PutBucketCors request contains only common response headers. For more information, see Common response headers.

Examples

• Sample requests

```
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 qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrT*****
<?xml version="1.0" encoding="UTF-8"?>
<CORSConfiguration>
    <CORSRule>
      <AllowedOrigin>*</AllowedOrigin>
      <AllowedMethod>PUT</AllowedMethod>
      <AllowedMethod>GET</AllowedMethod>
      <AllowedHeader>Authorization</AllowedHeader>
    </CORSRule>
    <CORSRule>
      <AllowedOrigin>http://example.com</AllowedOrigin>
      <AllowedOrigin>http://example.net</AllowedOrigin>
      <AllowedMethod>GET</AllowedMethod>
      <AllowedHeader> Authorization</AllowedHeader>
      <ExposeHeader>x-oss-test</ExposeHeader>
      <ExposeHeader>x-oss-test1</ExposeHeader>
      <MaxAgeSeconds>100</MaxAgeSeconds>
    </CORSRule>
    <ResponseVary>false</ResponseVary>
</CORSConfiguration >
```

- Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 50519080C4689A033D0*****
Date: Fri, 04 May 2012 03:21:12 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDKs

You can use OSS SDKs for the following programming languages to call the PutBucketCors operation:

- Java
- Python
- PHP
- Go
- C++
- C
- .NET
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value that is calculated by OSS based on the message body is different from the Content-MD5 value that is specified in the request header.

7.16.3. GetBucketCors

You can call this operation to query the cross-origin resource sharing (CORS) rules configured for a specific bucket.

Request structure

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

Request headers

GetBucketCors requests contain only commend request headers. For more information, see Common request headers.

Response elements

Element	Type	Description
CORSRule	Container	The container that stores CORS rules. Up to 10 rules can be configured for a bucket. Parent node: CORSConfiguration
AllowedOrigin	String	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	Enumeraation (GET, PUT, DELETE, POST, and HEAD)	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 preflight request are allowed. Each header specified by Access-Control-Request-Headers must match the value of an AllowedHeader element. Parent node: CORSRule

Element	Type	Description
ExposeHeader	String	The response headers for allowed access requests from applications, such as an XMLHttpRequest object in JavaScript. Parent node: CORSRule
MaxAgeSeconds	Integer	Indicates the period of time within which the browser can cache the response for an OPTIONS preflight request to specific resources. A CORS rule can contain only one MaxAgeSeconds parameter. Unit: seconds Parent node: CORSRule
CORSConfiguration	Container	The container that stores the CORS rules configured for a bucket. Parent node: none

Examples

Sample request

```
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 response

```
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>
```

SDK

You can use OSS SDKs for the following programming languages to call GetBucketCors:

- 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.
NoSuchCORSConfiguration	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.

7.16.4. DeleteBucketCors

You can call this operation to disable cross-origin resource sharing (CORS) for a specific bucket and delete all CORS rules configured for the bucket.

Request structure

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

Request headers

DeleteBucketCors requests contain only common request headers. For more information, see Common request headers.

Response headers

Responses for DeleteBucketCors requests contain only common response headers. For more information, see Common response headers.

Examples

Sample request

```
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:LnM4AZ1OeIduZF5vGFWicOME****
```

Sample response

```
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
```

SDK

You can use OSS SDKs for the following programming languages to call DeleteBucketCors:

- 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.
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.

7.16.5. Options

Before a cross-origin request is sent, the browser sends a preflight (OPTIONS) request that includes a specific origin, HTTP method, and header information to Object Storage Service (OSS) to determine whether to send the cross-origin request. The browser automatically determines whether to send the preflight request based on whether the actual request is a cross-origin request.

Request structure

```
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 headers

Header	Type	Required	Example	Description
Origin	String	Yes	http://www.example.com	The origin of the request, which is used to identify a cross-origin request. You can specify only one Origin header in a cross-origin request. Default value: null
Access-Control-Request-Method	String	Yes	PUT	The method to use in the actual cross-origin request. You can specify only one Access-Control-Request-Method header in a cross-origin request. Default value: null
Access-Control-Request-Headers	String	No	x-oss-test1,x-oss-test2	The custom headers to be sent in the actual cross-origin request. You can configure multiple custom headers in a cross-origin request. Custom headers are separated by commas (,). Default value: null

Response headers

Header	Type	Example	Description
Access-Control-Allow-Origin	String	http://www.example.com	The origin that is included in the request. If the request is denied, the response does not contain the header.
Access-Control-Allow-Methods	String	PUT	The HTTP method of the request. If the request is denied, the response does not contain the header.

Header	Type	Example	Description
Access-Control-Allow-Headers	String	x-oss-test,x-oss-test1	The list of headers included in the request. If the request includes headers that are not allowed, the response does not contain the headers and the request is denied.
Access-Control-Expose-Headers	String	x-oss-test1,x-oss-test2	The list of headers that can be accessed by JavaScript applications on a client.
Access-Control-Max-Age	Integer	60	The maximum duration for the browser to cache preflight results. Unit: seconds.

Examples

Sample requests

```
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-test1,x-oss-test2
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 5051845BC4689A033D00****
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-test1,x-oss-test2
Connection: keep-alive
Content-Length: 0
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
AccessForbidden	403	The error message returned because OSS does not allow the cross-origin request or cross-origin resource sharing (CORS) is disabled for the bucket. You can call PutBucketCORS to enable CORS for the bucket. After CORS is enabled for the bucket and a preflight request is sent from the browser, OSS determines whether to allow the actual cross-origin request based on the specified CORS rules.

7.17. Data indexing

7.17.1. OpenMetaQuery

Enables the metadata management feature for a bucket. After you enable the metadata management feature for a bucket, Object Storage Service (OSS) creates a metadata index library for the bucket and creates metadata indexes for all objects in the bucket. After the metadata index library is created, OSS continues to perform quasi-real-time scans on incremental objects in the bucket and creates metadata indexes for the incremental objects.

Usage notes

- If you want to enable the metadata management feature for a bucket, you must have the `oss:OpenMetaQuery` permission. For more information, see Attach a custom policy to a RAM user.
- After you enable the metadata management feature for a bucket, you can perform metadata indexing only after a metadata index library is created. The larger the number of objects in a bucket, the longer it takes to create the metadata index library.

Request syntax

```
POST /?metaQuery&comp=add HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Sample request

```
POST /?metaQuery&comp=add HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 26 Jul 2021 13:08:38 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D****
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
MetaQueryAlreadyExist	400	The error message returned because the metadata index library of the bucket is being created. Wait until the metadata index library is created and try again.

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have the permissions to access the bucket. Make sure that the RAM user is granted the permissions to access the bucket.
NoSuchBucket	404	The error message returned because the destination bucket does not exist. Specify a valid bucket name.

7.17.2. GetMetaQueryStatus

Queries the information about the metadata index library of a bucket.

Usage notes

If you want to query the information about the metadata index library of a bucket, you must have the `oss:GetMetaQueryStatus` permission. For more information, see Attach a custom policy to a RAM user.

Request syntax

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

Response elements

Element	Type	Example	Description
MetaQueryStatus	Container	N/A	The container that stores metadata information. Child nodes: State, Phase, CreateTime, and UpdateTime.
Phase	String	FullScanning	The scan type. Valid values: • FullScanning: Full scanning is in progress. • IncrementalScanning: Incremental scanning is in progress. Parent node: MetaQuery.

Element	Type	Example	Description
State	String	Running	The status of the metadata index library. Valid values: • Ready: The metadata index library is being prepared after it is created. In this case, the metadata index library cannot be used to query data. • Stop: The metadata index library is paused. • Running: The metadata index library is running. • Retrying: The metadata index library failed to be created and is being created again. • Failed: The metadata index library failed to be created. • Deleted: The metadata index library is deleted. Parent node: MetaQuery.
CreateTime	String	2021-08-02T10:49:17.2893 72919+08:00	The time when the metadata index library was created. The value follows the RFC 3339 standard in the YYYY-MM-DDTHH:mm:ss+TIMEZONE format. YYYY-MM-DD indicates the year, month, and day. T indicates the beginning of the time element. HH:mm:ss indicates the hour, minute, and second. TIMEZONE indicates the time zone. Parent node: MetaQuery.
UpdateTime	String	2021-08-02T10:49:17.2893 72919+08:00	The time when the metadata index library was updated. The value follows the RFC 3339 standard in the YYYY-MM-DDTHH:mm:ss+TIMEZONE format. YYYY-MM-DD indicates the year, month, and day. T indicates the beginning of the time element. HH:mm:ss indicates the hour, minute, and second. TIMEZONE indicates the time zone. Parent node: MetaQuery.

Examples

Sample requests

```
GET /?metaQuery HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 26 Jul 2021 13:08:38 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D****
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<MetaQueryStatus>
  <State>Running</State>
  <Phase>FullScanning</Phase>
  <CreateTime>2021-08-02T10:49:17.289372919+08:00</CreateTime>
  <UpdateTime>2021-08-02T10:49:17.289372919+08:00</UpdateTime>
</MetaQueryStatus>
```

Error codes

Error code	HTTP status code	Description
MetaQueryNotExist	400	The error message returned because the metadata index library does not exist in the bucket. Make sure that you have enabled the metadata management feature for the bucket and try again after the metadata index library is created.
AccessDenied	403	The error message returned because you do not have the permissions to access the bucket. Make sure that the RAM user is granted the permissions to access the bucket.
NoSuchBucket	404	The error message returned because the destination bucket does not exist. Specify a valid bucket name.

7.17.3. DoMetaQuery

Queries the objects that meet specified conditions and lists the information about objects based on specified fields and sorting methods. You can also use nested queries to implement complex queries and use aggregate operations to collect statistics and analyze the values of different fields.

Usage notes

To query objects that meet specified conditions, you must have the `oss:DoMetaQuery` permission. For more information, see Attach a custom policy to a RAM user.

Request syntax

```
POST /?metaQuery&comp=query HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
<?xml version="1.0" encoding="UTF-8"?>
<MetaQuery>
  <NextToken></NextToken>
  <MaxResults>5</MaxResults>
  <Query>{"Field": "Size","Value": "1048576","Operation": "gt"}</Query>
  <Sort>Size</Sort>
  <Order>asc</Order>
  <Aggregations>
    <Aggregation>
      <Field>Size</Field>
      <Operation>sum</Operation>
    </Aggregation>
    <Aggregation>
      <Field>Size</Field>
      <Operation>max</Operation>
    </Aggregation>
  </Aggregations>
</MetaQuery>
```

Request elements

Element	Type	Required	Example	Description
MetaQuery	Container	Yes	N/A	The container for query conditions. Child nodes: NextToken, MaxResults, Query, Sort, Order, and Aggregations
NextToken	String	No	MTIzNDU2Nzg6aW1tdGVzdDpleGFtcGxYnVja2V0OmRhdGFzZXQwMDE6b3NzOi8vZXhhbXBsZWJ1Y2tldDC9zYW1wbGVvYmplY3QxLmpwZw==	The token that is used for the next query when the total number of objects exceeds the value of MaxResults. The object information is returned in alphabetical order starting from the value of NextToken. When this operation is called for the first time, set this field to null. Parent node: MetaQuery
MaxResults	Integer	No	5	The maximum number of objects to return. Valid values: 0 to 200. If this parameter is not set or is set to 0, 100 objects are returned. Parent node: MetaQuery

Element	Type	Required	Example	Description
Query	String	Yes	{"Field": "Size","Value": "1048576","Operation": "gt"}	The query condition. Options: • Operation: the operators. Valid values: eq (equal to), gt (greater than), gte (greater than or equal to), lt (less than), lte (less than or equal to), match (fuzzy query), prefix (prefix query), and (AND), or (OR), and not (NOT). • Field: the fields. For more information about supported fields and supported operators, see Appendix: Supported fields and operators. • Value: the value of the field. • SubQueries: the subquery conditions. Options that are included in this element are the same as those of simple query. You only need to set subquery conditions when Operation is set to AND, OR, or NOT. For more information, see Query examples. Parent node: MetaQuery
Sort	String	No	Size	The field based on which the results are sorted. For more information about the fields that can be sorted, see Appendix: Supported fields and operators. Parent node: MetaQuery
Order	String	No	asc	The sorting order. Default value: asc. Valid values: • asc: ascending order • desc: descending order Parent node: MetaQuery
Aggregations	Container	No	N/A	The container for the information about aggregate operations. Child node: Aggregation Parent node: MetaQuery

Element	Type	Required	Example	Description
Aggregation	Container	No	N/A	The container for the information about a single aggregate operation. Child nodes: Field and Operation Parent node: Aggregations
Field	String	No	Size	The name of the field. For more information about supported fields and supported operators, see Appendix: Supported fields and operators. Parent node: Aggregation
Operation	String	No	sum	The operator for aggregate operations. Valid values: • min • max • average • sum • count • distinct • group Parent node: Aggregation

Response elements

Element	Type	Example	Description
MetaQuery	Container	N/A	The container for the query result. Child nodes: NextToken, Files, and Aggregations
NextToken	String	MTIzNDU2Nzg6aW1tdGVzdDpleGFtcGxlYnVja2V0OmRhdGFzZXQwMDE6b3NzOi8vZXhhbXBsZWJ1Y2tldC9zYW1wbGVvYmplY3QxLmpwZw==	The token that is used for the next query when the total number of objects exceeds the value of MaxResults. The NextToken value is used to return the unreturned results in the next query. This parameter has a value only when not all objects are returned. Parent node: MetaQuery

Element	Type	Example	Description
Files	Container	N/A	The containers for the information about objects. Child node: File Parent node: MetaQuery
File	Container	N/A	The container for the information about a single object. Child nodes: Filename, Size, FileModifiedTime, OSSObjectType, OSSStorageClass, ObjectACL, ETag, OSSTaggingCount, OSSTagging, OSSUserMeta, OSSCRC64, and ServerSideEncryption Parent node: Files
Filename	String	exampleobject.txt	The full path of the object. Parent node: File
Size	Integer	120	The size of the object. Unit: bytes. Parent node: File
FileModifiedTime	String	2021-06-29T14:50:13.011643661+08:00	The time when the object was last modified. The value follows the RFC 3339 standard in the YYYY-MM-DDTHH:mm:ss.ms+TIMEZONE format. YYYY-MM-DD indicates the year, month, and day. T indicates the beginning of the time element. HH:mm:ss.ms indicates the hour, minute, second, and millisecond. TIMEZONE indicates the time zone. Parent node: File
OSSObjectType	String	Normal	The type of the object. Valid values: • Normal: The object was uploaded by calling the PutObject operation or created by calling the CreateDirectory operation. • Appendable: The object was uploaded by calling the AppendObject operation. • Multipart: The object was uploaded by calling the MultipartUpload operation. • Symlink: The symbolic link was created by calling the PutSymlink operation. Parent node: File

Element	Type	Example	Description
OSSStorageClass	String	Standard	The storage class of the object. Valid values: • Standard: The Standard storage class provides highly reliable, highly available, and high-performance object storage services that can handle frequent data access. • IA: The Infrequent Access (IA) storage class is suitable for long-term storage of data that is infrequently accessed. Data that is accessed once or twice per month on average falls into this class. • Archive: The Archive storage class is suitable for long-term storage of data that is infrequently accessed. Data that you want to store for at least six months falls into this class. The data requires up to one minute to restore before you can read the data. • ColdArchive: The Cold Archive storage class is suitable for long-term storage of data that is rarely accessed. Parent node: File
ObjectACL	String	default	The access control list (ACL) of the object. Valid values: • default: The ACL of the object is the same as that of the bucket in which the object is stored. • private: The ACL of the object is private. Only the owner of the object and authorized users have read and write permissions on the object. • public-read: The ACL of the object is public read. Only the owner of the object and authorized users have read and write permissions on the object. Other users can only read the object. Exercise caution when you set the object ACL to this value. • public-read-write: The ACL of the object is public read/write. All users have read and write permissions on the object. Exercise caution when you set the object ACL to this value. Parent node: File

Element	Type	Example	Description
ETag	String	"fba9dede5f27731c9771645a3986****"	The ETag that is generated when an object is created. ETags are used to identify the content of objects. • If an object is created by calling the PutObject operation, the ETag value of the object is the MD5 hash of the object content. • If an object is created by using another method, the ETag value is not the MD5 hash of the object content but a unique value that is calculated based on a specific rule. ⑦ Note The ETag value of an object can be used to check whether the object content is modified. We recommend that you use the MD5 hash of an object rather than the ETag value to check data integrity. Parent node: File
OSSTaggingCount	Integer	2	The number of tags of the object. Parent node: File
OSSTagging	Container	N/A	The container for the information about the tags. Child node: Tagging Parent node: File
Tagging	Container	N/A	The container for the information about a single tag. Child nodes: Key and Value Parent node: OSSTagging
Key	String	owner	The key of the tag or user metadata. User metadata must be prefixed with `x-oss-meta-`. Parent nodes: Tagging and UserMeta
Value	String	John	The value of the tag or user metadata. Parent nodes: Tagging and UserMeta

Element	Type	Example	Description
OSSUserMeta	Container	N/A	The container for user metadata. Child node: UserMeta Parent node: File
UserMeta	Container	N/A	The container for metadata of a single user. Child nodes: Key and Value Parent node: OSSUserMeta
OSSCRC64	String	4858A48BD146688 4	The CRC-64 value of the object. This value is calculated based on the ECMA-182 standard.
ServerSideEncryption	String	AES256	The server-side encryption algorithm used when Object Storage Service (OSS) created the object. Valid value: AES256. Parent node: File
ServerSideEncryptionCustomerAlgorithm	String	SM4	The algorithm that is used to encrypt the object on a local client. Parent node: File
Aggregations	Container	N/A	The container for the information about aggregate operations. Child nodes: Field, Operation, Value, and Groups Parent node: MetaQuery
Field	String	Size	The name of the field. Parent node: Aggregations
Operation	String	sum	The operator for the aggregate operation. Parent node: Aggregations
Value	Float	200	The result of the aggregate operation. Parent node: Aggregations
Groups	Container	N/A	The result list of aggregation operations by group. Child nodes: Value and Count Parent node: Aggregations

Element	Type	Example	Description
Value	String	100	The result of the aggregation operations performed by group. Parent node: Groups
Count	Integer	5	The number of aggregation operations performed by group. Parent node: Groups

Examples

Sample requests

```
POST /?metaQuery&comp=query HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 26 Jul 2021 13:08:38 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
<?xml version="1.0" encoding="UTF-8"?>
<MetaQuery>
  <NextToken>MTIzNDU2Nzg6aW1tdGVzdDpleGFtcGxlYnVja2V0OmRhdGFzZXQwMDE6b3NzOi8vZXhhbXBsZWJ1Y2tl
dC9zYW1wbGVvYmplY3QxLmpwZw==</NextToken>
  <MaxResults>5</MaxResults>
  <Query>{"Field": "Size","Value": "1048576","Operation": "gt"}</Query>
  <Sort>Size</Sort>
  <Order>asc</Order>
  <Aggregations>
    <Aggregation>
      <Field>Size</Field>
      <Operation>sum</Operation>
    </Aggregation>
    <Aggregation>
      <Field>Size</Field>
      <Operation>max</Operation>
    </Aggregation>
  </Aggregations>
</MetaQuery>
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D****
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<MetaQuery>
  <NextToken>MTIzNDU2Nzg6aW1tdGVzdDpleGFtcGxlYnVja2V0OmRhdGFzZXQwMDE6b3NzOi8vZXXhhbXBsZWJ1Y2tl
dC9zYW1wbGVvYmplY3QxLmpwZw==</NextToken>
  <Files>
    <File>
      <Filename>exampleobject.txt</Filename>
      <Size>120</Size>
      <FileModifiedTime>2021-06-29T14:50:13.011643661+08:00</FileModifiedTime>
      <OSSObjectType>Normal</OSSObjectType>
      <OSSStorageClass>Standard</OSSStorageClass>
      <ObjectACL>default</ObjectACL>
      <ETag>"fba9dede5f27731c9771645a3986****"</ETag>
      <OSSCRC64>4858A48BD1466884</OSSCRC64>
      <OSSTaggingCount>2</OSSTaggingCount>
      <OSSTagging>
        <Tagging>
          <Key>owner</Key>
          <Value>John</Value>
        </Tagging>
        <Tagging>
          <Key>type</Key>
          <Value>document</Value>
        </Tagging>
      </OSSTagging>
      <OSSUserMeta>
        <UserMeta>
          <Key>x-oss-meta-location</Key>
          <Value>hangzhou</Value>
        </UserMeta>
      </OSSUserMeta>
    </File>
  </Files>
</MetaQuery>
```

Query examples

Queries can be nested. You can use nested queries to perform complex query and exact search. The following examples show how to perform nested queries.

- If you want to query an object whose name is exampleobject.txt and whose size is less than 1,000 bytes, you can configure the query as shown in the following example:

```
{
  "SubQueries":[
    {
      "Field":"Filename",
      "Value": "exampleobject.txt",
      "Operation":"eq"
    },
    {
      "Field":"Size",
      "Value":"1000",
      "Operation":"lt"
    }
  ],
  "Operation":"and"
}
```

- If you want to query objects that are prefixed with `exampledir/`, contain the `type=document` or `owner=John` tag, and are larger than 10 MB in size, you can configure the query as shown in the following example:

```
{
  "SubQueries": [
    {
      "Field": "Filename",
      "Value": "exampledir/",
      "Operation": "prefix"
    },
    {
      "Field": "Size",
      "Value": "1048576",
      "Operation": "gt"
    },
    {
      "SubQueries": [
        {
          "Field": "OSSTagging.type",
          "Value": "document",
          "Operation": "eq"
        },
        {
          "Field": "OSSTagging.owner",
          "Value": "John",
          "Operation": "eq"
        }
      ],
      "Operation": "or"
    }
  ],
  "Operation": "and"
}
```

You can also use aggregate operations to collect and analyze different data based on the preceding search conditions. For example, you can calculate the sum, count, average value, or maximum value of all objects that meet the query conditions. You can also calculate the size distribution of images that meet the query conditions.

Error codes

Error code	HTTP status code	Description
MetaQueryNotExist	400	The error message returned because the metadata index library does not exist in the bucket. Make sure that you have enabled the metadata management feature for the bucket and try again after the metadata index library is created.
EntityTooLarge	400	The error message returned because the maximum string size allowed for the query condition specified by the Query parameter has been reached. Modify the query condition and try again.
InvalidArgument	400	The error message returned because the specified argument value is either invalid or in an invalid format. Specify a valid argument.
InvalidParameter	400	The error message returned because the specified parameter value is invalid. Specify a valid parameter value.
MissingParameter	400	The error message returned because a required parameter in the request is not specified. Specify all the required parameters.
Throttling.Api	403	The error message returned because your request is denied due to throttling. Reduce the QPS and try again. If the error persists after you try the operation multiple times, submit a ticket.
Throttling.User	403	The error message returned because your request is denied due to throttling. Reduce the QPS and try again.If the error persists after you try the operation multiple times, submit a ticket.
AccessDenied	403	The error message returned because you do not have the permissions to access the bucket. Make sure that the RAM user is granted the permissions to access the bucket.
NoSuchBucket	404	The error message returned because the destination bucket does not exist. Specify a valid bucket name.
InternalServerError	500	The error message returned because an internal error has occurred.If the error persists after you try the operation multiple times, submit a ticket.

7.17.4. CloseMetaQuery

Disables the metadata management feature for a bucket. After the metadata management feature is disabled for a bucket, OSS automatically deletes the metadata index library of the bucket. After the metadata index library is deleted, you cannot perform metadata indexing.

Usage notes

- If you want to disable the metadata management feature for a bucket, you must have the `oss:Close MetaQuery` permission. For more information, see Attach a custom policy to a RAM user.

- HTTP status code 200 is returned when you call the CloseMetaQuery operation to disable the metadata management feature regardless of whether the metadata management feature is enabled for a bucket.

- This operation is an asynchronous operation and does not immediately take effect. After you call the CloseMetaQuery operation, it takes time for OSS to delete the metadata index library.

Request syntax

```
POST /?metaQuery&comp=delete HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Examples

Sample request

```
POST /?metaQuery&comp=delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 26 Jul 2021 13:08:38 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:ceOEyZavKY4QcjoUWYSpYbJ3****
```

Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D****
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have the permissions to access the bucket. Make sure that the RAM user is granted the permissions to access the bucket.

Error code	HTTP status code	Description
NoSuchBucket	404	The error message returned because the destination bucket does not exist. Specify a valid bucket name.

7.17.5. Appendix: Supported fields and operators

This topic describes the fields and operators that are supported in simple query conditions, aggregate operations, and sort operations.

> ⑦ **Note**
> - The following operators are supported in simple query conditions: eq (equal to), gt (greater than), gte (greater than or equal to), lt (less than), lte (less than or equal to), match (fuzzy query), and prefix (prefix query). The following operators are supported in aggregate conditions: min (minimum), max (maximum), average (average), sum (sum), count (count), distinct (distinct count), and group (group count).
> - When you use the `OSSUserMeta.*` field to query objects, replace the asterisk (*) with the key of the user-defined metadata. The system queries objects based on the key-value of the user-defined metadata. The key of the user-defined metadata is not case-sensitive. However, the value is case-sensitive.
>
>   For example, if you want to query objects that contain the `x-oss-meta-location=hangzhou` user-defined metadata, set the query condition to `{"Field": "OSSUserMeta.x-oss-meta-location", "Value": "hangzhou", "Operation": "eq"}`.
> - When you use the `OSSTagging.*` field to query an object, replace the asterisk (*) with the key of the object tag. The system queries the object based on the key-value of the object tag. The keys and values of object tags are case-sensitive.
>
>   For example, if you want to query objects that contain the `owner=John` tag, set the query condition to `{"Field": "OSSTagging.owner", "Value": "John", "Operation": "eq"}`.
> - In the following table, tick (✓) indicates that the operators are supported for the corresponding fields, and cross (×) indicates that the operators are not supported for the fields.

The following table describes the fields and operators that are supported in simple query conditions, aggregate operations, and sort operations.

Field	Operator in simple query conditions					
	eq, gt, gte, lt, lte	match	prefix	min, max, sum, average	count, distinct, group	
ETag	✓	×	✓	×	✓	✓
FileModifiedTime	✓	×	×	×	✓	✓
Filename	✓	✓	✓	×	✓	✓
ObjectACL	✓	×	✓	×	✓	✓
OSSCRC64	✓	×	✓	×	✓	✓
OSSObjectType	✓	×	✓	×	✓	✓
OSSStorageClass	✓	×	✓	×	✓	✓
OSSTagging.*	✓	×	✓	×	×	×
OSSTaggingCount	✓	×	×	✓	✓	✓
OSSUserMeta.*	✓	×	✓	×	×	×

Field	Operator in simple query conditions					
	eq, gt, gte, lt, lte	match	prefix	min, max, sum, average	count, distinct, group	
ServerSideEncryption	✓	×	✓	×	✓	✓
ServerSideEncryptionCustomerAlgorithm	✓	×	✓	×	✓	✓
Size	✓	×	×	✓	✓	✓

7.18. CNAME

7.18.1. CreateCnameToken

Creates a CNAME token to verify the ownership of the domain name.

> ⑦ **Note** By default, a CNAME token expires within 12 hours after it is created. If a new CNAME token is created within the validity period of the existing token, the existing CNAME token is returned.

Request syntax

```
POST /?cname&comp=token HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: GMT Date
Authorization: SignatureValue
```

Request elements

Element	Type	Required	Example	Description
BucketCnameConfiguration	Container	Yes	N/A	The container that stores the CNAME record. Parent nodes: none Child nodes: Cname
Cname	Container	Yes	N/A	The container in which the CNAME information is stored. Parent nodes: BucketCnameConfiguration Child nodes: Domain
Domain	String	Yes	example.com	The custom domain name. Parent nodes: Cname Child nodes: none

Response elements

Element	Type	Example	Description
CnameToken	Container	N/A	The container in which the CNAME token is stored. Parent nodes: none Child nodes: Bucket, Cname, Token, and ExpireTime
Bucket	String	examplebucket	The name of the bucket to which the CNAME record is mapped. Parent nodes: CnameToken Child nodes: none

Element	Type	Example	Description
Cname	String	example.com	The name of the CNAME record that is mapped to the bucket. Parent nodes: CnameToken Child nodes: none
Token	String	be1d49d863dea9ffeff3df7d6455****	The CNAME token that is returned by Object Storage Service (OSS). Parent nodes: CnameToken Child nodes: none
ExpireTime	String	Wed, 23 Feb 2022 21:16:37 GMT	The time when the CNAME token expires. Parent nodes: CnameToken Child nodes: none

Examples

- Sample request

```
POST /?cname&comp=token HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Thu, 24 Sep 2015 15:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
<BucketCnameConfiguration>
  <Cname>
    <Domain>example.com</Domain>
  </Cname>
</BucketCnameConfiguration>
```

- Sample responses

  ○ The CNAME token is created.

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<CnameToken>
  <Bucket>examplebucket</Bucket>
  <Cname>example.com</Cname>;
  <Token>be1d49d863dea9ffeff3df7d6455****</Token>
  <ExpireTime>Wed, 23 Feb 2022 21:16:37 GMT</ExpireTime>
</CnameToken>
```

- The number of CNAME tokens exceeds the limit.

```
HTTP/1.1 400 Bad Request
x-oss-request-id: 5C1B138A109F4E405B2D
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<Error>
  <Code>TooManyCnameToken</Code>
  <Message>You have attempted to create more cname token than allowed.</Message>
  <RequestId>6215FD21DA0E27393F004E9E</RequestId>
  <HostId>127.0.0.1</HostId>
  <Bucket>examplebucket</Bucket>
</Error>
```

Error codes

Error code	HTTP status code	Description
TooManyCnameToken	400	The error message returned because the number of tokens created for a bucket exceeds the upper limit 1000.
NoNeedCreateCnameToken	403	The error message returned because the CNAME token is in effect. You do not need to create a new CNAME token for the bucket.

7.18.2. GetCnameToken

Obtains the created CNAME token.

Request syntax

```
GET /?comp=token&cname=example.com HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: GMT Date
Authorization: SignatureValue
```

Response elements

Element	Type	Example	Description
CnameToken	Container	N/A	The container in which the CNAME token is stored. Parent nodes: none Child nodes: Bucket, Cname, Token, and ExpireTime
Bucket	String	examplebucket	The name of the bucket to which the CNAME record is mapped. Parent nodes: CnameToken Child nodes: none
Cname	String	example.com	The name of the CNAME record that is mapped to the bucket. Parent nodes: CnameToken Child nodes: none
Token	String	be1d49d863dea9ffeff3df7d6455****	The CNAME token that is returned by OSS. Parent nodes: CnameToken Child nodes: none
ExpireTime	String	Wed, 23 Feb 2022 21:16:37 GMT	The time when the CNAME token expires. Parent nodes: CnameToken Child nodes: none

Examples

- Sample request

```
GET /?comp=token&cname=example.com HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Thu, 24 Sep 2015 15:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
```

- Sample responses
  - The CNAME token is not created or has expired.

```
HTTP/1.1 404 Not Found
x-oss-request-id: 5C1B138A109F4E405B2D
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<Error>
  <Code>CnameTokenNotFound</Code>
  <Message>Cname token not found.</Message>
  <RequestId>6215FE05DA0E27393F005F0E</RequestId>
  <HostId>127.0.0.1</HostId>
  <Bucket>mybucket</Bucket>
  <Cname>example.com</Cname>;
</Error>
```

  - The CNAME token is found.

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
<?xml version="1.0" encoding="UTF-8"?>
<CnameToken>
  <Bucket>mybucket</Bucket>
  <Cname>example.com</Cname>;
  <Token>be1d49d863dea9ffeff3df7d6455****</Token>
  <ExpireTime>Wed, 23 Feb 2022 21:39:42 GMT</ExpireTime>
</CnameToken>
```

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because the CNAME record that you want to query is not included in the parameter list or the format of the CNAME record is invalid.
CnameTokenNotFound	404	The error message returned because the CNAME token is not created or has expired.

7.18.3. PutCname

Maps a custom domain name to a bucket.

Request syntax

```
POST /?cname&comp=add HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: GMT Date
Authorization: SignatureValue
<BucketCnameConfiguration>
  <Cname>
    <Domain>example.com</Domain>
  </Cname>
</BucketCnameConfiguration>
```

Request elements

Element	Type	Required	Example	Description
BucketCnameConfiguration	Container	Yes	N/A	The container that stores the CNAME record. Parent nodes: none Child nodes: Cname
Cname	Container	Yes	N/A	The container in which the CNAME information is stored. Parent nodes: BucketCnameConfiguration Child nodes: Domain
Domain	String	Yes	example.com	The custom domain name. Parent nodes: Cname Child nodes: none

Examples

- Sample request

```
POST /?cname&comp=add HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Thu, 24 Sep 2015 15:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
<BucketCnameConfiguration>
  <Cname>
    <Domain>example.com</Domain>
  </Cname>
</BucketCnameConfiguration>
```

- Sample response

```
content-length: 0
x-oss-console-auth: success
server: AliyunOSS
x-oss-server-time: 980
connection: keep-alive
x-oss-request-id: 5C1B138A109F4E405B2D
date: Wed, 15 Sep 2021 03:33:37 GMT
```

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because the format of the CNAME record is invalid. You can view the error fields and cause in the XML content that is returned.

Error code	HTTP status code	Description
NeedVerifyDomainOwnership	403	The error message returned because the ownership of the domain name is not verified. Perform the following steps to verify the ownership of a domain name : 1. Call the CreateCnameToken operation to create a CNAME token used to verify the ownership of a domain name. ⑦ **Note** By default, a CNAME token expires within 12 hours after it is created. If a new CNAME token is created within the validity period of the existing token, the existing CNAME token is returned. 2. Add a TXT record in the system of your domain name provider. For example, add a TXT record for the custom domain `example.com`. When you add a record, select TXT as the record type, enter _dn sauth.example as the host record, and enter the CNAME token returned from as the record value. Keep the default settings for other parameters. For more information about how to add a CNAME record, see Manually add a CNAME record. ⑦ **Note** After you add a TXT record, the TXT record requires several minutes to take effect. 3. Call the PutCname operation to map a custom domain name.
CnameDenied	403	The error message returned because the domain name is in use.
CnameIsForbidden	403	The error message returned because the domain name is reserved for OSS and cannot be mapped.
CnameIsRisk	403	The error message returned because the domain name is a high-risk domain name and cannot be mapped.
NoSuchCnameInRecord	404	The error message returned because the specified domain name does not have an ICP license. For more information about how to apply for an ICP filing for a domain name, see What is Domains?.

Error code	HTTP status code	Description
CnameAlreadyExists	409	Possible causes: • The domain name is mapped to another bucket that belongs to the current account. Problem description: The CnameType parameter in the returned error message is CNAME_OSS. Solution: Go to the OSS console and remove the domain name mapping. For more information, see Remove a domain name mapping. • The domain name is used for image processing. Problem description: The CnameType parameter in the returned error message is CNAME_IMG. Solution: Contact technical support.

7.18.4. ListCname

Queries all CNAME records that are mapped to a bucket.

Request syntax

```
GET /?cname HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Tues, 11 May 2022 11:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
```

Response elements

Element	Type	Example	Description
ListCnameResult	Container	N/A	The container that is used to query information about all CNAME records. Parent nodes: none Child nodes: Bucket, Owner, and Cname
Bucket	String	examplebucket	The name of the bucket to which the CNAME records you want to query are mapped. Parent nodes: ListCnameResult Child nodes: none

Element	Type	Example	Description
Owner	String	testowner	The name of the bucket owner. Parent nodes: ListCnameResult Child nodes: none
Cname	Container	N/A	The container that is used to store the information about all CNAME records. Parent nodes: ListCnameResult Child nodes: Domain, LastModified, Status, and Certificate
Domain	String	example.com	The custom domain name. Parent nodes: Cname Child nodes: none
LastModified	String	2021-09-15T02:35:07.000Z	The time when the custom domain name was mapped. Parent nodes: Cname Child nodes: none
Status	String	Enabled	The status of the domain name. Valid values: • *Enabled:*: The domain name is enabled. • *Disabled*: The domain name is disabled. Parent nodes: Cname Child nodes: none
Certificate	Container	N/A	The container in which the certificate information is stored. Parent nodes: Cname Child nodes: Type, CertId, Status, CreationDate, Fingerprint, ValidStartDate, and ValidEndDate

Element	Type	Example	Description
Type	String	CAS	The source of the certificate. Valid values: • *CAS*: The certificate that is obtained by using SSL Certificates Service. • *Upload*: The certificate that is uploaded by the user to the earlier version of the certificate hosting service. Parent nodes: Certificate Child nodes: none
CertId	String	493****-cn-hangzhou	The ID of the certificate. Parent nodes: Certificate Child nodes: none
Status	String	Enabled	The status of the certificate. Valid values: • *Enabled*: The certificate is used. • *Disabled*: The certificate is not used. Parent nodes: Certificate Child nodes: none
CreationDate	String	Wed, 15 Sep 2021 02:35:06 GMT	The time when the certificate was bound. Parent nodes: Certificate Child nodes: none
Fingerprint	String	DE:01:CF:EC:7C:A7:98:CB:D8:6E:FB:1D:97:EB:A9:64:1D:4E:**:**	The signature of the certificate. Parent nodes: Certificate Child nodes: none
ValidStartDate	String	Tues, 12 Apr 2021 10:14:51 GMT	The time when the certificate takes effect. Parent nodes: Certificate Child nodes: none
ValidEndDate	String	Mon, 4 May 2048 10:14:51 GMT	The time when the certificate expires. Parent nodes: Certificate Child nodes: none

Examples

• Sample request

```
GET /?cname HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Tues, 11 May 2022 11:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
```

- Sample response

```
content-length: 1855
x-oss-console-auth: success
server: AliyunOSS
x-oss-server-time: 7
connection: keep-alive
x-oss-request-id: 614169F1AE63BD37355CA12B
date: Tues, 11 May 2022 11:39:12 GMT
content-type: application/xml
<?xml version="1.0" encoding="UTF-8"?>
<ListCnameResult>
  <Bucket>targetbucket</Bucket>
  <Owner>testowner</Owner>
  <Cname>
    <Domain>example.com</Domain>
    <LastModified>2021-09-15T02:35:07.000Z</LastModified>
    <Status>Enabled</Status>
    <Certificate>
      <Type>CAS</Type>
      <CertId>493****-cn-hangzhou</CertId>
      <Status>Enabled</Status>
      <CreationDate>Wed, 15 Sep 2021 02:35:06 GMT</CreationDate>
      <Fingerprint>DE:01:CF:EC:7C:A7:98:CB:D8:6E:FB:1D:97:EB:A9:64:1D:4E:**:**</Fingerprint
>
      <ValidStartDate>Tues, 12 Apr 2021 10:14:51 GMT</ValidStartDate>
      <ValidEndDate>Mon, 4 May 2048 10:14:51 GMT</ValidEndDate>
    </Certificate>
  </Cname>
  <Cname>
    <Domain>example.org</Domain>
    <LastModified>2021-09-15T02:34:58.000Z</LastModified>
    <Status>Enabled</Status>
  </Cname>
  <Cname>
    <Domain>example.edu</Domain>
    <LastModified>2021-09-15T02:50:34.000Z</LastModified>
    <Status>Enabled</Status>
  </Cname>
</ListCnameResult>
```

Error codes

Error code	HTTP status code	Description

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have the permissions to call the ListCname operation. Only the bucket owner and RAM users that are granted the `oss:ListCname` permission can query all CNAME records mapped to the bucket.
NoSuchCname	404	The error message returned because no CNAME record is mapped to the bucket.

7.18.5. DeleteCname

Deletes the CNAME record that is mapped to a bucket.

Request syntax

```
POST /?cname&comp=delete HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: GMT Date
Authorization: SignatureValue
```

Request elements

Element	Type	Required	Example	Description
BucketCnameConfiguration	Container	Yes	N/A	The container that stores the CNAME record. Parent nodes: none Child nodes: Cname
Cname	Container	Yes	N/A	The container in which the CNAME information is stored. Parent nodes: BucketCnameConfiguration Child nodes: Domain
Domain	String	Yes	example.com	The custom domain name. Parent nodes: Cname Child nodes: none

Examples

- Sample request

```
POST /?cname&comp=delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Content-Type: application/xml
Content-Length: 186
Date: Thu, 24 Sep 2015 15:39:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:KU5h8YMUC78M30dXqf3JxrTZ****
<BucketCnameConfiguration>
  <Cname>
    <Domain>example.com</Domain>
  </Cname>
</BucketCnameConfiguration>
```

- Sample response

```
HTTP/1.1 200 OK
x-oss-request-id: 5C1B138A109F4E405B2D
Date: Mon, 26 Jul 2021 13:08:38 GMT
Content-Length: 118
Content-Type: application/xml
Connection: keep-alive
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have the permissions to call the DeleteCname operation. Only the bucket owner and RAM users that are granted the `oss:DeleteCname` permission can delete the CNAME records mapped to the bucket.
NoSuchCname	404	The error message returned because no CNAME record is mapped to the bucket.

8.Object operations
8.1. Basic operations

8.1.1. PutObject

Uploads objects.

Usage notes

- The object that you want to upload cannot be larger than 5 GB in size.

- By default, if you upload an object whose name is the same as that of an existing object on which you have permissions, the existing object is overwritten by the uploaded object and 200 OK is returned.

Versioning

If you call the PutObject operation to upload an object to a versioning-enabled bucket, OSS generates a unique version ID for the uploaded object and returns the version ID as the x-oss-version-id header in the response.

If you call the PutObject operation to upload an object to a versioning-suspended bucket, OSS generates a version ID of null for the uploaded object. An object can have only one version whose 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 headers

OSS supports five HTTP request headers: Cache-Control, Expires, Content-Encoding, Content-Disposition, and Content-Type. If these headers are configured when you upload an object, the headers are automatically set to the configured values when you download the object.

Header	Type	Required	Description
Authorization	String	No	Specifies that the request is authorized. For more information, see RFC 2616. For more information about how to calculate the value of this header, see Include signatures in the Authorization header. The Authorization header is required in most cases. However, if you use a signed URL in a PutObject request, this header is not required. For more information, see Add signatures to a URL. Default value: null

Header	Type	Required	Description
Cache-Control	String	No	The caching behavior of the web page when the object is downloaded. For more information, see RFC 2616. Default value: null
Content-Disposition	String	No	The name of the object when the object is downloaded. For more information, see RFC 2616. Default value: null
Content-Encoding	String	No	The content encoding format of the object when the object is downloaded. For more information, see RFC 2616. Default value: null
Content-MD5	String	No	The MD5 hash of the object that you want to upload. The Content-MD5 value is calculated by using the MD5 algorithm. If you specify the Content-MD5 header in a PutObject request, OSS calculates the Content-MD5 value based on the message body and checks whether the calculated Content-MD5 value is the same as the Content-MD5 value that is specified in the request header. For more information, see Calculation of Content-MD5. To ensure data integrity, OSS provides multiple methods to check the MD5 hash of the uploaded data. To verify the MD5 hash of an uploaded object based on the Content-MD5 header, add the Content-MD5 header to the request. Default value: null
Content-Length	String	No	The size of the data in the HTTP message body. If the value of the Content-Length header in the request is less than the size of the data in the message body, the object can still be created. However, the data is truncated to the object size that is specified by the Content-Length header.

Header	Type	Required	Description
ETag	String	No	The entity tag (ETag) that is generated when an object is created. ETags are used to identify the content of objects. • If an object is created by using a PutObject request, the ETag value of the object is the MD5 hash of the object content. • If an object is created by using other methods, the ETag value of the object is not the MD5 hash of the object content but a unique value calculated based on a specific rule. ⑦ Note The ETag value of an object can be used to check whether the object content is modified. However, we recommend that you use the MD5 hash of an object rather than the ETag value of the object to verify data integrity. Default value: null
Expires	String	No	The expiration time. For more information, see RFC 2616. Default value: null
x-oss-forbid-overwrite	String	No	Specifies whether the object that is uploaded by calling the PutObject operation overwrites the existing object that has the same name. When versioning is enabled or suspended for the bucket to which you want to upload the object, the x-oss-forbid-overwrite header does not take effect. In this case, the object that is uploaded by calling the PutObject operation overwrites the existing object that has the same name. • If the x-oss-forbid-overwrite header is not specified or the value of the x-oss-forbid-overwrite header is set to *false*, the object that is uploaded by calling the PutObject operation overwrites the existing object that has the same name. • If the value of the x-oss-forbid-overwrite header is set to *true*, the object that is uploaded by calling the PutObject operation does not overwrite the existing object that has the same name. If you specify the x-oss-forbid-overwrite header, the queries per second (QPS) performance of OSS is degraded. If you want to configure the x-oss-forbid-overwrite header in a large number of requests (QPS > 1,000), submit a ticket. Default value: *false*

Header	Type	Required	Description
x-oss-server-side-encryption	String	No	The method that is used to encrypt the uploaded object on the OSS server when the object is created. Valid values: *AES256* and *KMS* If you specify the header in a PutObject request, the header is returned in the response. OSS uses the method that is specified by this header to encrypt the uploaded object. When you download the object, the x-oss-server-side-encryption header is included in the response and the header value is set to the algorithm that is used to encrypt the object.
x-oss-server-side-encryption-key-id	String	No	The ID of the customer master key (CMK) hosted in Key Management Service (KMS). This parameter is valid only when the x-oss-server-side-encryption header is set to KMS.
x-oss-object-acl	String	No	The access control list (ACL) of the object. Default value: default. Valid values: • *default*: The ACL of the object is the same as that of the bucket in which the object is stored. • *private*: The ACL of the object is private. Only the owner of the object and authorized users can read and write this object. • *public-read*: The ACL of the object is public-read. Only the owner of the object and authorized users can read and write this object. Other users can only read the object. Exercise caution when you set the object ACL to this value. • *public-read-write*: The ACL of the object is public-read-write. All users can read and write this object. Exercise caution when you set the object ACL to this value. For more information about ACLs, see Object ACL.

Header	Type	Required	Description
x-oss-storage-class	String	No	The storage class of the object. If you specify the header when you upload an object, the storage class of the uploaded object is the specified header value regardless of the storage class of the bucket to which the object is uploaded. For example, if you set the x-oss-storage-class header to Standard when you upload an object to an IA bucket, the object is stored as a Standard object. Valid values: • *Standard* • *IA* • *Archive* • *ColdArchive* For more information about storage classes, see Overview.
x-oss-meta-*	String	No	In a PutObject request, headers whose names contain the x-oss-meta-* prefix specify the user metadata of the object that you want to upload. Example: `x-oss-meta-location`. You can specify multiple similar headers for an object. However, the user metadata of an object cannot exceed 8 KB in size. The names of user metadata headers can contain letters, digits, and hyphens (-). Uppercase letters are converted to lowercase letters. Other characters such as underscores (_) are not supported.
x-oss-tagging	String	No	The tag of the object. You can configure multiple tags for the object. Example: TagA=A&TagB=B. ⑦ **Note** The key and value of a tag must be URL-encoded. If a tag does not contain an equal sign (=), the value of the tag is considered an empty string.

For more information about the common request headers contained in PutObject requests such as Host and Date, see Common request headers.

Response headers

The response to a PutObject request contains only common response headers. For more information, see Common response headers.

Examples

• Upload an object by using simple upload

Sample requests

```
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 qn6qrrqxo2oawuk53otfjbyc:kZoYNv66bsmc10+dcGKw5x2P****
Transfer-Encoding: chunked
```

Sample responses

```
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: 5C06A3B67B8B5A3DA422299D
ETag: "D41D8CD98F00B204E9800998ECF8****"
x-oss-hash-crc64ecma: 0
Content-MD5: 1B2M2Y8AsgTpgAmY7PhCfg==
x-oss-server-time: 7
```

- Upload an Archive object

Sample requests

```
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 qn6qrrqxo2oawuk53otfjbyc:kZoYNv66bsmc10+dcGKw5x2P****
[344606 bytes of object data]
```

Sample responses

```
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: 5650BD72207FB30443962F9A
x-oss-bucket-version: 1418321259
ETag: "A797938C31D59EDD08D86188F6D5B872"
```

- Upload an object to a versioned bucket

Sample requests

```
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 lkojgn8y1exic6e:6yYhX+BuuEqzI1tAMW0wgIyl****
```

Sample responses

```
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: CAEQNhiBgMDJgZCA0BYiIDc4MGZjZGI2OTBjOTRmNTE5NmU5NmFhZjhjYmY0****
ETag: "4F345B1F066DB1444775AA97D5D2****"
```

SDKs

You can use OSS SDKs for the following programming languages to call the PutObject operation:

- Java
- Python
- Go
- C++
- PHP
- C
- .NET
- Android
- iOS
- Node.js
- Browser.js
- Ruby

Error codes

Error code	HTTP status code	Description
MissingContentLength	411	The error message returned because the request header is not encoded by using chunked encoding or the Content-Length header is not specified.
InvalidEncryptionAlgorithmError	400	The error message returned because the specified value of the x-oss-server-side-encryption header is invalid. Valid values: *AES256* and *KMS*

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you do not have permissions to access the specified bucket to which you want to upload the object.
NoSuchBucket	404	The error message returned because the specified bucket to which you want to upload the object does not exist.
InvalidObjectName	400	The error message returned because the length of the specified object key exceeds 1,023 bytes.
InvalidArgument	400	Possible causes: • The object that you want to upload is larger than 5 GB in size. • The values of headers such as x-oss-storage-class are invalid.
RequestTimeout	400	The error message returned because the Content-Length header is specified in the request but the message body is not sent, or the size of the data in the message body is less than the specified value. In this case, the server waits until the request times out.
Bad Request	400	The error message returned because the Content-MD5 value that is specified in the request header is different from the MD5 hash that is calculated by OSS. OSS calculates the MD5 hash based on the message body and compares the calculated MD5 hash with the Content-MD5 value that is specified in the request header.
KmsServiceNotEnabled	403	The error message returned because the x-oss-server-side-encryption header is set to KMS, but KMS is not activated in advance.
FileAlreadyExists	409	Possible causes: • The request contains the `x-oss-forbid-overwrite=true` header, but an existing object has the same name as the object that you want to upload. • The hierarchical namespace feature is enabled for the bucket, and a directory that has the same name as the object that you want to upload exists in the current directory level.
FileImmutable	409	The error message returned because the data that you want to delete or modify is being protected. During the protection period, data in the bucket cannot be deleted or modified.

8.1.2. GetObject

Queries an object. To perform the GetObject operation on an object, you must have the read permissions on the object.

Usage notes

- By default, the GetObject operation supports access over HTTP and HTTPS. To impose a limit on access to a bucket only over HTTPS, configure a bucket policy for the bucket to specify the access method. For more information, see Configure bucket policies to authorize other users to access OSS resources.

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

Versioning

By default, only the current version of an object is returned after GetObject is called.

If the version ID of the object is specified in the request, Object Storage Service (OSS) returns the specified version of the object. If the version ID is set to null in the request, OSS returns the version of the object whose version ID is null.

Request syntax

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

If you download an object larger than 100 MB from OSS, the object may fail to download due to network errors. You can specify the HTTP Range header to query part of data of the large object.

You can specify only one range in a GetObject request. ByteRange specifies the range of data of the object to query. Unit: bytes. The valid values of ByteRange are from 0 to `object size - 1` . Examples:

- `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, which is the entire object.

Request headers

When you initiate a GET request in OSS, you can set headers in the request to customize 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. When the request is successful, 200 OK is returned.

> ⑦ **Note**　When you initiate a GET request to OSS as an anonymous user, you cannot set headers in the request to customize headers in the response.

Header	Type	Required	Description
response-content-type	String	No	The content-type header in the response that OSS returns. Default value: null

Header	Type	Required	Description
response-content-language	String	No	The content-language header in the response that OSS returns. Default value: null
response-expires	String	No	The expires header in the response that OSS returns. Default value: null
response-cache-control	String	No	The cache-control header in the response that OSS returns. Default value: null
response-content-disposition	String	No	The content-disposition header in the response that OSS returns. Default value: null
response-content-encoding	String	No	The content-encoding header in the response that OSS returns. Default value: null
Range	String	No	The range of data of the object to be returned. - If the value of Range is valid, OSS returns the response that 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. - However, if the value of Range is invalid, the entire object is returned, and the response returned by OSS excludes Content-Range. Default value: null
If-Modified-Since	String	No	If the time specified in this header is earlier than the object modified time or is invalid, OSS returns the object and 200 OK. If the time specified in this header is later than or the same as the object modified time, OSS returns 304 Not Modified. The time must be in GMT. Example: `Fri, 13 Nov 2015 14:47:53 GMT`. Default value: null

Header	Type	Required	Description
If-Unmodified-Since	String	No	If the time specified in this header is the same as or later than the object modified time, OSS returns the object and 200 OK. If the time specified in this header is earlier than the object modified time, OSS returns 412 Precondition Failed. The time must be in GMT. Example: `Fri, 13 Nov 2015 14:47:53 GMT`. You can specify the If-Modified-Since and If-Unmodified-Since headers in a request. Default value: null
If-Match	String	No	If the ETag specified in the request matches the ETag value of the object, OSS transmits the object and returns 200 OK. If the ETag specified in the request does not match the ETag value of the object, OSS returns 412 Precondition Failed. The ETag value of an object is used to check whether the content of the object has changed. You can check data integrity by using the ETag value. Default value: null
If-None-Match	String	No	If the ETag specified in the request does not match the ETag value of the object, OSS transmits the object and returns 200 OK. If the ETag specified in the request matches the ETag value of the object, OSS returns 304 Not Modified. You can specify both the If-Match and If-None-Match headers in a request. Default value: null

Header	Type	Required	Description
Accept-Encoding	String	No	The encoding type at the client side. If you want an object to be returned in the GZIP format, you must include the Accept-Encoding:gzip header in your request. OSS determines whether to return the object compressed in the GZIP format based on the Content-Type header and whether the size of the object is larger than or equal to 1 KB. ⑦ **Note** • If an object is compressed in the GZIP format, the response OSS returns does not include the ETag value of the object. • OSS supports the following Content-Type values to compress the object in the GZIP format: text/cache-manifest, text/xml, text/plain, text/css, application/javascript, application/x-javascript, application/rss+xml, application/json, and text/json. Default value: null

Response headers

If the requested object is a symbolic link, the content of the object to which the symbolic link points is returned. Response headers `Content-Length` , `ETag` , and `Content-Md5` indicate the metadata of the returned object. The returned value of the `Last-Modified` header uses the last modified time of the symbolic link or the last modified time of the object to which the symbolic link points, whichever one is later. Other headers indicate the metadata of the symbolic link.

Header	Type	Description
x-oss-server-side-encryption	String	If the requested object is encrypted by using a server-side encryption algorithm based on entropy encoding, OSS automatically decrypts the object and returns the decrypted object after OSS receives 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	The number of tags added to the object. This header is returned only if you have the read permissions on tags.

Examples

- Use simple GetObject requests

Sample requests

```
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:UNQDb7GapEgJkcde6OhZ9J*****
```

Sample success responses when GetObject is performed on an object

```
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 success responses when GetObject is performed on a directory

> ◁⟩ **Notice**   When GetObject is performed on a directory, custom response headers such as response-content-type and Range that are included in a GetObject request do not take effect.

```
HTTP/1.1 200 OK
x-oss-request-id: 3a8f-2e2d-7965-3ff9-51c875b*****
x-oss-object-type: Normal
Date: Wed, 31 Mar 2021 06:38:30 GMT
Last-Modified: Tue, 30 Mar 2021 06:07:48 GMT
ETag: "null"
Content-Type: application/x-directory
Content-Length: 0
Server: AliyunOSS
```

- Include the Range parameter

Sample requests

```
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+yK16BdhGtFcC*****
```

Sample responses

```
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]
```

- Include custom response headers

  Sample requests

```
GET /oss.jpg?response-expires=Thu%2C%2001%20Feb%202012%2017%3A00%3A00%20GMT& response-conte
nt-type=text&response-cache-control=No-cache&response-content-disposition=attachment%253B%2
520filename%253Dtesting.txt&response-content-encoding=utf-8&response-content-language=%E4%B
8%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 responses

```
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]
```

- Query an object that is a symbolic link

  Sample requests

```
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 responses

```
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****
```

- Query an object that is restored

  Sample requests

```
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 responses

```
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]
```

- Query an object for which the version ID is specified

  Sample requests

```
GET /example?versionId=CAEQNhiBgMDJgZCA0BYiIDc4MGZjZGI2OTBjOTRmNTE5NmU5NmFhZjhjYmY0**** HTT
P/1.1
Host: versioning-get.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 02:58:06 GMT
Authorization: OSS lkojgxic6e:8wcOrEDt4iSxpBPfQW9OJNw*****
```

  Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC0A3EDE0170*****
x-oss-version-id: CAEQNhiBgM0BYiIDc4MGZjZGI2OTBjOTRmNTE5NmU5NmFhZjhjYmY*****
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]
```

- Query an object for which the version ID is not specified and of which the current version is a delete marker

  Sample requests

  ```
  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 responses

  ```
  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>
  ```

- Specify a version ID to access a delete marker

  Sample requests

  ```
  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 responses

```
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>
```

SDK

You can use OSS SDKs for the following programming languages to call the GetObject operation:

- Java
- Python
- PHP
- Go
- C
- C++
- .NET
- Android
- iOS
- Node.js
- Browser.js
- Ruby

Error codes

Error code	HTTP status code	Description
NoSuchKey	404	The error message returned because the specified object does not exist.
SymlinkTargetNotExist	404	The error message returned because the requested object is a symbolic link, and the object to which the symbolic link points does not exist.
InvalidTargetType	400	The error message returned because the requested object is a symbolic link, and the object to which the symbolic link points is another symbolic link.

Error code	HTTP status code	Description
InvalidObjectState	403	The error message returned because the following scenarios occur when the storage class of the object you want to download is Archive: • The RestoreObject request for the object was not initiated or timed out. • The RestoreObject request for the object has been initiated but the object is not restored yet.
Not Modified	304	The error message returned because of the following possible causes: • The If-Modified-Since header is specified in the request, but the requested object has not been modified since the time specified in the request. • The If-None-Match 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	The error message returned because of the following possible causes: • The If-Unmodified-Since header is specified in the request, but the specified time is earlier than the modified time of the requested object. • The If-Match header is specified in the request, but the ETag value provided in the request is different from the ETag value of the requested object.
Not Found	404	The error message returned because the version ID of the object is not specified in the request and the current version of the object is a delete marker.
Method Not Allowed	405	The error message returned because the version ID of the object is specified in the request and the object that has the version ID is a delete marker.

8.1.3. CopyObject

Copies objects within a bucket or between buckets in the same region.

Versioning

If you do not specify a version ID in the `x-oss-copy-source` header of the CopyObject request, the current version of the object is copied. You can add a version ID to `x-oss-copy-source` to copy a specified version of the object. If the specified version of the object to copy is a delete marker, Object Storage Service (OSS) returns 404 Not Found, which indicates that the object does not exist.

To recover a previous version of an object, you can copy the previous version of the object to the bucket in which the object is stored. Then, the previous version of the object is stored as the current version.

If versioning is enabled for the destination bucket, OSS generates a unique version ID for the object copied to the destination bucket. The version ID is returned as the `x-oss-version-id` header in the response. If versioning is not enabled or suspended for the destination bucket, OSS generates a version whose ID is null for the object copied to the destination bucket, and overwrites the existing version whose ID is null.

Limits

- The following limits on the size of an object apply when you call the CopyObject operation:
  - If you copy objects within a bucket, no limit is imposed on the size of the object that is copied by calling the CopyObject operation.
  - If you copy objects between buckets in the same region, we recommend that you call this operation to copy objects smaller than 1 GB. To copy objects larger than 1 GB, you can call the UploadPartCopy operation.

  To call CopyObject or UploadPartCopy, you must have read permissions on the object to copy.

- The following limits apply when you call CopyObject to copy an object within an unversioned bucket and the source and destination objects are the same:
  - If the copy operation does not involve modifying the encryption method or storage class of the source object, OSS only modifies the metadata of the source object and does not copy the content of the object.
  - If the copy operation involves modifying the encryption method or storage class of the source object, OSS modifies the metadata of the source objects and copies the content of the object.

- In versioned buckets, objects generated by using append upload cannot be copied.
- If the source object is a symbolic link, only the symbolic link is copied. The object to which the symbolic link points is not copied.
- Directories in buckets for which the hierarchical namespace feature is enabled cannot be copied.

Billing

- Each time you call the CopyObject operation, you are charged for a PUT request to the destination bucket.
- The storage usage of the destination bucket increases when you call the CopyObject operation.
- You are also charged if you call the CopyObject operation to modify the storage class of an object by overwriting the object. For example, if you call the CopyObject operation to convert an IA object to a Standard object by overwriting the IA object less than 10 days after the IA object is created, you are charged for the entire minimum storage period of 30 days. For more information about storage fees, see Storage fees.

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 headers

All headers in a CopyObject request start with x-oss-. Therefore, these headers must be added to the signature string.

Header	Type	Required	Example	Description
x-oss-forbid-overwrite	STRING	No	true	Specifies whether the CopyObject operation overwrites objects with the same name. The x-oss-forbid-overwrite request header does not take effect when versioning is enabled or suspended for the destination bucket. In this case, the CopyObject operation overwrites the existing object that has the same name as that of the object you want to copy. • If x-oss-forbid-overwrite is not specified or x-oss-forbid-overwrite is set to *false*, an existing object with the same name as the object to copy is overwritten. • If x-oss-forbid-overwrite is set to *true*, an existing object with the same name as the object to copy cannot be overwritten. If you specify the x-oss-forbid-overwrite request header, the queries per second (QPS) performance of OSS may be degraded. If you want to specify the x-oss-forbid-overwrite header in a large number of requests (QPS greater than 1,000), contact technical support. Default value: false.
x-oss-copy-source	STRING	Yes	/oss-example/oss.jpg	The path of the source object. Default value: null.
x-oss-copy-source-if-match	STRING	No	5B3C1A2E053D763E1B002CC607C5****	If the ETag value of the source object is the same as the ETag value specified in the request, OSS copies the object and returns 200 OK. Default value: null.
x-oss-copy-source-if-none-match	STRING	No	5B3C1A2E053D763E1B002CC607C5****	If the ETag value of the source object is different from the ETag value specified in the request, OSS copies the object and returns 200 OK. Default value: null.
x-oss-copy-source-if-unmodified-since	STRING	No	Mon, 11 May 2020 08:16:23 GMT	If the time that is specified in the request is the same as or later than the modified time of the object, OSS copies the object and returns 200 OK. Default value: null.

Header	Type	Required	Example	Description
x-oss-copy-source-if-modified-since	STRING	No	Mon, 11 May 2020 08:16:23 GMT	If the time that is specified in the request is earlier than the actual modified time of the object, OSS copies the object and returns 200 OK. Default value: null.
x-oss-metadata-directive	STRING	No	COPY	The method used to configure the metadata of the destination object. Default value: COPY. • *COPY*: The metadata of the source object is copied to the destination object. The x-oss-server-side-encryption attribute of the source object is not copied to the destination object. The x-oss-server-side-encryption parameter in the CopyObject request specifies the method used to encrypt the destination object. • *REPLACE*: The metadata specified in the request instead of the metadata of the source object is used as the metadata of the destination object. ⏹ **Notice**　If the path of the source object is the same as that of the destination object and versioning is not enabled for the bucket in which the source and destination objects are stored, metadata specified in the CopyObject request is used as the metadata of the destination object regardless of the value of x-oss-metadata-directive.

Header	Type	Required	Example	Description
x-oss-server-side-encryption	STRING	No	AES256	The entropy coding-based encryption algorithm that OSS uses to encrypt an object when you create the object. Valid values: *AES256* and *KMS*. ② **Note** You must enable Key Management Service (KMS) in the OSS console before you can use the KMS encryption algorithm. Otherwise, KmsServiceNotEnabled is returned. • If the x-oss-server-side-encryption header is not specified in the CopyObject request, the destination object is not encrypted on the server regardless of whether the source object is encrypted on the server. • If the x-oss-server-side-encryption header is specified in the CopyObject request, the destination object is encrypted on the server after the CopyObject operation is performed regardless of whether the source object is encrypted on the server. In addition, the response to a CopyObject request contains the x-oss-server-side-encryption header, the value of which is set to the algorithm used to encrypt the destination object. When the destination object is downloaded, the x-oss-server-side-encryption header is included in the response header. The value of the header is set to the algorithm used to encrypt the destination object.
x-oss-server-side-encryption-key-id	STRING	No	9468da86-3509-4f8d-a61e-6eab1eac****	The ID of the customer master key (CMK) managed by KMS. This parameter is valid only when x-oss-server-side-encryption is set to KMS. ② **Note**

Header	Type	Required	Example	Description
x-oss-object-acl	STRING	No	private	The ACL of the destination object when the object is created. Default value: default. Valid values: • *default*: The ACL of the object is the same as the ACL of the bucket in which the object is stored. • *private*: The ACL of the object is private. Only the owner of the object and authorized users have read and write permissions on the object. • *public-read*: The ACL of the object is public read. Only the owner of the object and authorized users have read and write permissions on the object. Other users have only read permissions on the object. Exercise caution when you set the object ACL to this value. • *public-read-write*: The ACL of the object is public read/write. All users have read and write permissions on the object. Exercise caution when you set the object ACL to this value. For more information about object ACLs, see Object ACL.
x-oss-storage-class	STRING	No	Standard	The storage class of the object that you want to upload. Default value: Standard. If you specify the storage class when you upload the object, the specified storage class applies regardless of the storage class of the bucket to which the object is uploaded. For example, if you set x-oss-storage-class to Standard when you upload an object to an IA bucket, the storage class of the uploaded object is Standard. Valid values: • *Standard* • *IA* • *Archive* • *ColdArchive* ⑦ **Note** For more information about storage classes, see Overview.

Header	Type	Required	Example	Description
x-oss-tagging	STRING	No	a:1	The tags of the destination object. You can configure multiple tags for the destination object. Example: TagA=A&TagB=B. ⑦ **Note** The tag key and value must be URL-encoded. If a key-value pair does not contain an equal sign (=), the tag value is considered an empty string.
x-oss-tagging-directive	STRING	No	Copy	The method used to configure tags for the destination object. Default value: Copy. Valid values: • *Copy*: The tags of the source object are copied to the destination object. • *Replace*: The tags specified in the request instead of the tags of the source object are configured for the destination object.

For more information about the common request headers included in CopyObject requests such as Host and Date, see Common request headers.

Response headers

The response to a CopyObject request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description
CopyObjectResult	STRING	N/A	The result of the CopyObject operation. Default value: null.
ETag	STRING	5B3C1A2E053D763E1B002CC607C5****	The ETag value of the destination object. Parent nodes: CopyObjectResult
LastModified	STRING	Fri, 24 Feb 2012 07:18:48 GMT	The time when the destination object was last modified. Parent nodes: CopyObjectResult

Examples

• Copy an object in a bucket that does not have versioning enabled.

  Sample requests

```
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: text/html
Connection: keep-alive
x-oss-copy-source: /test/AK.txt
date: Fri, 28 Dec 2018 09:41:55 GMT
authorization: OSS qn6qrrqxo2oawuk53otfjbyc:gmnwPKuu20LQEjd+iPkL259A****
Content-Length: 0
```

Sample responses

`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 by the CopyObject operation may not have this value.

```
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>
```

- Copy an object in a versioned bucket without specifying a version ID.

    Sample requests

    ```
    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:QqwOjq7U7j04NVpPqdfcVk0I****
    x-oss-copy-source: /versioning-copy-source/source-object
    ```

    Sample responses

    `x-oss-copy-source-version-id` in the sample response indicates the version ID of the source object. In this example, x-oss-copy-source-version-id indicates the current version of the source object. `x-oss-version-id` indicates the version ID of the destination object.

```
HTTP/1.1 200 OK
x-oss-copy-source-version-id: CAEQNRiBgIC28uaA0BYiIDY5OGIwNmNlNjYyMTRjNTc4N2M2OGNiMjZkZTQ2*
***
x-oss-version-id: CAEQNxiBgIDG8uaA0BYiIGZhZDRkZTk5Zjg3YzRhNzdiMWEwZGViNDM1NTFh****
x-oss-request-id: 5CAC155CB7AEADE01700****
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>
```

- Copy an object in a versioned bucket by specifying a version ID.

    Sample requests

    ```
    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=CAEQNRiBgICv8uaA0BYiIDli
    ZDc3MTc1NjE5MjRkMDI4ZGU4MTZkYjY1ZDgy****
    ```

    Sample responses

    `x-oss-copy-source-version-id` in the sample response indicates the version ID of the source object. In this example, x-oss-copy-source-version-id indicates the version ID specified by `x-oss-copy-source` in the request. `x-oss-version-id` indicates the version ID of the destination object.

    ```
    HTTP/1.1 200 OK
    x-oss-copy-source-version-id: CAEQNRiBgICv8uaA0BYiIDliZDc3MTc1NjE5MjRkMDI4ZGU4MTZkYjY1ZDgy*
    ***
    x-oss-version-id: CAEQNxiBgMDP8uaA0BYiIDIyNGNhZDQ1M2M3NzRkZThiNzE0N2I3ZDkxOWY4****
    x-oss-request-id: 5CAC155CB7AEADE01700****
    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>
    ```

SDKs

You can use OSS SDKs for the following programming languages to call CopyObject:

- Java
- Python

- PHP
- Go
- C
- .NET
- Android
- iOS
- Node.js
- Ruby

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because the values of parameters such as x-oss-storage-class are invalid.
Precondition Failed	412	The error message returned due to the following possible causes: • The x-oss-copy-source-if-match header is specified in the request, but the ETag value of the source object is different from the ETag value in the request. • The x-oss-copy-source-if-unmodified-since header is specified in the request, but the time specified in the request is earlier than the last modified time of the object.
Not Modified	304	The error message returned due to the following possible causes: • The x-oss-copy-source-if-none-match header is specified in the request, but the ETag value of the source object is the same as the ETag value in the request. • The x-oss-copy-source-if-modified-since header is specified in the request, but the source object has not been modified after the time specified in the request.
KmsServiceNotEnabled	403	The error message returned because the x-oss-server-side-encryption header is set to KMS, but KMS is not activated in advance.
FileAlreadyExists	409	The error message returned due to the following possible causes: • The request contains the `x-oss-forbid-overwrite=true` header, but an object that has the same name as the object that you want to upload already exists. • The object that you want to copy is a directory within a bucket for which the hierarchical namespace feature is enabled.

Error code	HTTP status code	Description
FileImmutable	409	The error message returned because the data you want to delete or modify is protected by a retention policy.

8.1.4. AppendObject

Uploads an object by appending the content of the object to an existing object. Objects created by using the AppendObject operation are appendable objects. Objects uploaded by using the PutObject operation are normal objects.

Versioning

When you perform operations on appendable objects in a bucket for which versioning is enabled or suspended, take note of the following items:

- You can perform the AppendObject operation only on an object whose current version is an appendable object. When you perform this operation, Object Storage Service (OSS) does not generate a previous version for the appendable object.

  When you perform the PutObject or DeleteObject operation on an object whose current version is an appendable object, OSS stores the appendable object as a previous version. However, the appendable object cannot be further appended.

- Appendable objects cannot be copied.

- The AppendObject operation cannot be performed on non-appendable objects such as normal objects and delete markers.

Limits

- The maximum size of an object generated by using the AppendObject operation is 5 GB.

- The AppendObject operation cannot be performed on objects that are protected by a retention policy. For more information, see Retention policies.

- Appendable objects stored in the OSS server cannot be encrypted by using a specified customer master key (CMK) ID.

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

> 🔊 **Notice**   The append and position headers are both CanonicalizedResource and must be included in the signature in the AppendObject request.

Header	Type	Required	Example	Description
append	String	Yes	N/A	Specifies that the request is an AppendObject request. Each time an AppendObject operation is performed on an object, the time when the object is last modified is updated.
position	String	Yes	0	The position from which the AppendObject operation starts. Each time an AppendObject operation succeeds, the x-oss-next-append-position header is included in the response to specify the position from which the next AppendObject operation starts. The value of position in the first AppendObject operation performed on an object must be 0. The value of position in subsequent AppendObject operations performed on the object is the current length of the object. 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 in the second AppendObject request must be set to 65536. • If the value of position in an AppendObject request is 0 and an object that has the same name as the appended object 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 valid x-oss-server-side-encryption header to an AppendObject request in which the value of position is 0, the x-oss-server-side-encryption header is included in the response to the request. To modify the metadata specified by the headers, you can initiate a CopyObject request. • If you initiate an AppendObject request in which the value of position is valid to append an object that is 0 KB in size to an existing appendable object, the status of the appendable object is not changed.

Header	Type	Required	Example	Description
Cache-control	String	No	no-cache	The caching behavior of the web page for the object. For more information, see RFC 2616. This parameter is empty by default.
Content-Disposition	String	No	attachment;filename=oss_download.jpg	The name of the object when the object is downloaded. For more information, see RFC 2616. This parameter is empty by default.
Content-Encoding	String	No	utf-8	The encoding format for the content of the object. For more information, see RFC 2616. This parameter is empty by default.
Content-MD5	String	No	ohhnqLBJFiKkPSBO1eNaUA==	The value of Content-MD5 is a string calculated based on the MD5 algorithm. This header is used to check whether the content of the received message is the same as the content of the sent message. To obtain the value of the Content-MD5 header, calculate a 128-bit number based on the message content except for the header, and then encode the number in Base64. This parameter is empty by default. Limits: none
Expires	GMT	No	Wed, 08 Jul 2015 16:57:01 GMT	The time when the cached data expires. For more information, see RFC 2616. This parameter is empty by default.
x-oss-server-side-encryption	String	No	AES256	The method used to encrypt objects on the OSS server. Valid values: • *AES256*: Keys managed by OSS are used for encryption and decryption (SSE-OSS). • *KMS*: CMKs managed by Key Management Service (KMS) are used for encryption and decryption.

Header	Type	Required	Example	Description
x-oss-object-acl	String	No	private	The access control list (ACL) of the object. Default value: default. Valid values: • *default*: The ACL of the object is the same as the ACL of the bucket in which the object is stored. • *private*: The ACL of the object is private. Only the owner of the object and authorized users can read and write this object. • *public-read*: The ACL of the object is public read. Only the owner of the object and authorized users can read and write this object. Other users can only read the object. Exercise caution when you set the object ACL to this value. • *public-read-write*: The ACL of the object is public read/write. All users can read and write this object. Exercise caution when you set the object ACL to this value. For more information about object ACLs, see Object ACL.
x-oss-storage-class	String	No	Standard	The storage class of the object. If you specify the header when you upload an object, the storage class of the uploaded object is the specified header value regardless of the storage class of the bucket to which the object is uploaded. For example, if you set x-oss-storage-class to Standard when you upload an object to an IA bucket, the object is stored as a Standard object. Valid values: • *Standard* • *IA* • *Archive* For more information about storage classes, see Overview. 🔊 **Notice** • This header takes effect only when you perform the AppendObject operation on an object for the first time. • The storage class of appendable objects cannot be converted to Cold Archive.

Header	Type	Required	Example	Description
x-oss-meta-*	String	No	x-oss-meta-location	You can add parameters prefixed with x-oss-meta- when you create an appendable object by performing the AppendObject operation. These parameters cannot be included in the requests when you append objects to an existing appendable object. Parameters prefixed with x-oss-meta-* are considered the user metadata of the object. You can configure multiple parameters prefixed with x-oss-meta- for an object. However, the total size of the metadata cannot exceed 8 KB. The name of parameters prefixed with x-oss-meta- can contain hyphens (-), digits, and letters. Uppercase letters are converted to lowercase letters. Other characters such as underscores (_) are not supported.
x-oss-tagging	String	No	TagA=A	The tags that you want to add to the object. A tag is a key-value pair. You can specify multiple tags for the object at a time. Example: `TagA=A&TagB=B`. **Notice** • This header takes effect only when you perform the AppendObject operation on an object for the first time. • The key and value of a tag must be URL-encoded. When you specify a tag for the object, only the key of the tag is required and the value is optional. For example, you can set the value of this header to `TagA&TagB=B`.

For more information about the common request headers included in an AppendObject request, see Common request headers.

Response headers

Header	Type	Example	Description
x-oss-next-append-position	64-bit integer	1717	The position that must be provided in the next request, which is the current length of the object. This header is returned when a success message is returned for an AppendObject request, or when the 409 HTTP status code is returned because the position and the object length do not match.
x-oss-hash-crc64ecma	64-bit integer	3231342946509354535	The 64-bit CRC value of the object. This value is calculated based on the ECMA-182 standard.

For more information about the common response headers that are contained in the response to an AppendObject request, see Common response headers.

Methods used to calculate the 64-bit CRC value

The CRC value of an appendable object is calculated based on the ECMA-182 standard. You can calculate the 64-bit CRC value of an object by using the following methods:

- Use the Boost CRC module:

```
typedef boost::crc_optimal<64, 0x42F0E1EBA9EA3693ULL, 0xffffffffffffffffULL, 0xffffffffffff
ffffULL, 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();
}
```

- Use the crcmod function in Python:

```
do_crc64 = crcmod.mkCrcFun(0x142F0E1EBA9EA3693L, initCrc=0L, xorOut=0xffffffffffffffffL, re
v=True)
print do_crc64("123456789")
```

Association with other operations

Operation	Relationship
PutObject	If you perform a PutObject operation on an existing appendable object, the appendable object is overwritten by a new normal object.
HeadObject	If you perform a HeadObject operation on an existing appendable object, x-oss-next-append-position, x-oss-hash-crc64ecma, and x-oss-object-type are returned. The x-oss-object-type value of the appendable object is Appendable.
GetBucket (ListObjects)	In the response to a GetBucket request, the x-oss-object-type value of an appendable object is Appendable.
CopyObject	- You can use CopyObject to modify the user metadata of an appendable object. - Appendable objects cannot be copied by using CopyObject. - The server-side encryption method for an appendable object cannot be modified by using CopyObject.

Examples

- Sample requests

```
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/jpg
Content-Length: 1717
Authorization: OSS qn6qrrqxo2oawuk53otf****:kZoYNv66bsmc10+dcGKw5x2P****
[1717 bytes of object data]
```

Sample responses

```
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: 559CC9BDC755F95A6448****
```

- Sample requests for a versioned bucket

  If you perform the AppendObject operation on an object in a bucket for which versioning is enabled or suspended, the x-oss-version-id header is included in the response and its value must be null.

```
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 bwo4j5l8d3j****:MCY5nnfgfJU/f3Xe0odqBtG5****
```

Sample responses

```
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: 5CAC18A5B7AEADE01700****
```

SDK

You can use OSS SDKs for the following programming languages to call the AppendObject operation:

- Java

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

Error codes

Error code	HTTP status code	Description
ObjectNotAppendable	409	The error message returned because you performed the AppendObject operation on a non-appendable object.
PositionNotEqualToLength	409	- The error message returned because the value of position does not match the current object length. You can obtain the position for the next AppendObject operation from the x-oss-next-append-position header in the response to the current request. Multiple requests may be sent concurrently. Therefore, even if you set the value of x-oss-next-append-position in a request, the request may still fail because the value is not updated immediately. - 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 an 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 error message returned because the value of a parameter such as x-oss-storage-class or x-oss-object-acl is invalid.
FileImmutable	409	The error message returned because the data that you want to delete or modify is protected by a retention policy.
KmsServiceNotEnabled	403	The error message returned because KMS is specified as the server-side encryption method but KMS is not activated in the console.

8.1.5. DeleteObject

You can call this operation to delete an object.

Usage notes

- To delete an object, you must have write permissions on the object.
- HTTP status code 204 is returned when the DeleteObject operation succeeds, regardless of whether the object exists.
- If the object you want to delete is a symbolic link, the DeleteObject operation deletes only the symbolic link but not the content to which the link points.

- The DeleteObject operation cannot be used to delete directories in a bucket for which the hierarchical namespace feature is enabled.

Versioning

When you call DeleteObject to delete an object from a versioned bucket, you must determine whether to specify a version ID in the request.

- Delete an object without specifying a version ID (temporary deletion)

  By default, if you do not specify the version ID of the object you want to delete in the request, OSS does not delete the current version of the object and instead add a delete marker to the object as the new current version. In this case, if you perform the GetObject operation on the object without specifying a version ID in the request, OSS identifies that the current version of the object is a delete marker and returns `404 Not Found` . In addition, the `x-oss-delete-marker=true` header and the `x-oss-version-id` header that indicates the version ID of the created delete marker are included in the response.

  The value of the `x-oss-delete-marker` header in the response is true, which indicates that the `x-oss-version-id` is the version ID of a delete marker.

- Delete an object by specifying a version ID (permanently deletion)

  If you specify the version ID of the object you want to delete in the request, OSS permanently deletes the version specified by the `versionId` field in the `params` parameter. To delete a version whose ID is null, add `params['versionId'] = "null"` in `params` in the request. OSS identifies the string "null" as the ID of the version to delete and deletes the version whose ID is null.

Request structure

```
DELETE /ObjectName HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 02 Jan 2019 13:28:38 GMT
Authorization: SignatureValue
```

Request headers

A DeleteObject request contains only common request headers. For more information, see Common request headers.

Response headers

Header	Type	Example	Description

Header	Type	Example	Description
x-oss-delete-marker	Boolean	true	Indicates whether the object is a delete marker. • If you do not specify the version ID of the object that you want to delete in the DeleteObject request, OSS creates a delete marker as the current version of the object and includes this header with a value of true in the response. • If you specify the version ID of the object you want to delete in the DeleteObject request and the specified version is a delete marker, OSS includes this header in the response and the value of this header is true. Valid value: *true*
x-oss-version-id	String	CAEQMxiBgIDh3ZCB0 BYilGE4YjIyMjExZDhh YjQxNzZiNGUyZTI4Z jIjZDcz****	The version ID of the deleted object. • If you do not specify the version ID of the object that you want to delete in the DeleteObject request, OSS creates a delete marker as the current version of the object and includes this header in the response to indicate the version ID of the created delete marker. • If you specify the version ID of the object you want to delete in the DeleteObject request, OSS includes this header in the response to indicate the ID of the deleted object version.

The response to a DeleteObject request contains only common response headers. For more information, see Common response headers.

Examples

• Delete an object from an unversioned bucket.

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: text/html
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
```

- Delete an object from a versioned bucket without specifying a version ID.

  In this case, OSS adds a delete marker to the object and includes the `x-oss-delete-marker=true` header in the response.

  Sample requests

  ```
  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 NoContent
  x-oss-delete-marker: true
  x-oss-version-id: CAEQMxiBgIDh3ZCB0BYiIGE4YjIyMjExZDhhYjQxNzZiNGUyZTI4ZjljZDcz****
  x-oss-request-id: 5CAC1AB7B7AEADE01700****
  Date: Tue, 09 Apr 2019 04:08:23 GMT
  Connection: keep-alive
  Server: AliyunOSS
  ```

- Delete a version of the object from a versioned bucket by specifying the version ID.

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

  Sample requests

  ```
  DELETE /example?versionId=CAEQOBiBgIDNlJeB0BYiIDAwYjJlNDQ4YjJkMzQxMmY5NTM5N2UzZWNiZTQ2****
  HTTP/1.1
  Host: versioning-delete.oss-cn-hangzhou.aliyuncs.com
  Date: Tue, 09 Apr 2019 04:11:54 GMT
  Authorization: OSS gb3m2qiwirupd6v:UjOXBmIbJD3qXL+DP1EDNyCI****
  ```

  Sample responses

  ```
  HTTP/1.1 204 No Content
  x-oss-version-id: CAEQOBiBgIDNlJeB0BYiIDAwYjJlNDQ4YjJkMzQxMmY5NTM5N2UzZWNiZTQ2****
  x-oss-request-id: 5CAC1B8AB7AEADE01700****
  Date: Tue, 09 Apr 2019 04:11:54 GMT
  Content-Length: 0
  Connection: keep-alive
  Server: AliyunOSS
  ```

- Delete a delete marker from a versioned bucket by specifying the version ID of the delete marker.

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

  Sample requests

```
DELETE /example?versionId=CAEQOBiBgIDNlJeB0BYiIDAwYjJlNDQ4YjJkMzQxMmY5NTM5N2UzZWNiZTQ2****
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.B0BYiIDk4NzgwMmU4NDMyOTQyM2NiMDQxOTcxYWNhMjc1****
x-oss-request-id: 5CAC1C99B7AEADE01700****
Date: Tue, 09 Apr 2019 04:16:25 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

You can use OSS SDKs for the following programming languages to call DeleteObject:

- Java
- Python
- PHP
- Go
- C
- .NET
- Android
- iOS
- Node.js
- Browser.js

Error codes

Error code	HTTP status code	Description
FileImmutable	409	The error message returned because you attempt to delete or modify protected data. During the protection period, data in the bucket cannot be deleted or modified.
FileAlreadyExists	409	The error message returned because the object that you want to delete is a directory within a bucket for which the hierarchical namespace feature is enabled.

8.1.6. DeleteMultipleObjects

Deletes multiple objects from a bucket.

> ⑦ **Note**   You can delete up to 1,000 objects at a time by calling the DeleteMultipleObjects operation.

Versioning

You can call the DeleteMultipleObjects operation to delete multiple objects from a versioned bucket. If you do not specify the version IDs of the objects that you want to delete in your request, delete markers are added to the objects. If you specify the version IDs of the objects that you want to delete in your request, objects with the specified version IDs 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

The following table describes the headers contained in DeleteMultipleObjects requests. Object Storage Service (OSS) verifies the message bodies of DeleteMultipleObjects requests based on these headers and delete the objects only when the verification is successful.

Header	Type	Required	Description
Encoding-type	String	No	The encoding type of the object name in the response. The value of the Key parameter is UTF-8 encoded. If the Key parameter includes control characters that are not supported by the XML 1.0 standard, you can specify this header to encode the value of the Key parameter in the response. Default value: null Valid value: *url*
Content-Length	String	Yes	The length of the HTTP message body. OSS verifies the message body of the request and deletes the specified objects only when the length of the message body is the same as the value of the header.

Header	Type	Required	Description
Content-MD5	String	Yes	The Content-MD5 header value is a string calculated by using the MD5 algorithm. The header is used to check whether the content of the received message is the same as that of the sent message. After the Content-MD5 request header is uploaded, OSS calculates the MD5 hash based on the message body and checks whether the calculated MD5 hash is the same as the Content-MD5 value specified in the request header. ⑦ **Note** To obtain the value of the Content-MD5 header, encrypt the message body of the DeleteMultipleObjects request by using the MD5 algorithm to obtain a 128-bit byte array, and then encode the byte array in Base64.

Request elements

Element	Type	Required	Description
Delete	Container	Yes	The container that stores the DeleteMultipleObjects request. Child nodes: Object and Quite Parent nodes: none
Object	Container	Yes	The container that stores the information about the object. Child nodes: Key Parent nodes: Delete
Key	String	Yes	The name of the object that you want to delete. Parent nodes: Object

Element	Type	Required	Description
Quiet	Enumerated string	Yes	Specifies whether to enable the Quiet response mode. The DeleteMultipleObjects operation provides the following two response modes: • Quiet mode: The response does not include a message body. • Verbose mode: The response includes a message body that contains the information about all deleted objects. By default, this mode is used. Valid values: *true* (enables the Quiet mode) and *false* (enables the Verbose mode) Default value: *false* Parent nodes: Delete
VersionId	String	No	The version ID of the object that you want to delete. Parent nodes: Object

Response elements

Element	Type	Description
Deleted	Container	The container that stores the deleted objects. Child nodes: Key Parent nodes: DeleteResult
DeleteResult	Container	The container that stores the returned results of the DeleteMultipleObjects request. Child nodes: Deleted Parent nodes: none
Key	String	The name of the deleted object. Parent nodes: Deleted
EncodingType	String	The encoding type for the returned results. If encoding-type is specified in the request, the object name is encoded in the returned result. Parent nodes: container

Element	Type	Description
DeleteMarker	Boolean	Indicates whether the specified version is a delete marker. true: The specified version is a delete marker. false: The specified version is not a delete marker. ⑦ Note This element is returned only if a delete marker is created or permanently deleted, and the value is true.
DeleteMarkerVersionId	String	The version ID of the delete marker. Parent nodes: Deleted

Examples

- Sample requests in which the Verbose mode is enabled

```
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: ohhnqLBJFiKkPSBO1eNaUA==
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>
```

Sample responses

```
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>
```

- Sample requests in which the Quiet mode is 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: ohhnqLBJFiKkPSBO1eNaUA==
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:WuV0Jks8RyGSNQrBca64kEEx****
<?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>
```

Sample responses

```
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
```

- Sample requests in which version IDs are not specified

```
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>
```

Sample responses

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

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC1D73B7AEADE01700****
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>CAEQMhiBgIDXiaaB0BYiIGQzYmRkZGUxMTM1ZDRjOTZhNjk4YjRjMTAyZjhl*
***</DeleteMarkerVersionId>
    </Deleted>
    <Deleted>
        <Key>test.jpg</Key>
        <DeleteMarker>true</DeleteMarker>
        <DeleteMarkerVersionId>CAEQMhiBgIDB3aWB0BYiIGUzYTA3YzliMzVmNzRkZGM5NjllYTVlMjYyYWEy*
***</DeleteMarkerVersionId>
    </Deleted>
</DeleteResult>
```

- Sample requests in which version IDs are specified

    ⑦ Note   You must specify the name of the object when you specify the VersionId parameter.

```
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 qac50zy2vbvbq4z:/pingCxyqfxc0+50Bfi2SX9c****
<?xml version="1.0" encoding="UTF-8"?>
<Delete>
  <Quiet>false</Quiet>
  <Object>
    <Key>multipart.data</Key>
    <VersionId>CAEQNRiBgIDyz.6C0BYiIGQ2NWEwNmVhNTA3ZTQ3MzM5ODliYjM1ZTdjYjA4****</VersionId>
  </Object>
</Delete>
```

Sample responses

In this example, the key and the version ID of the deleted object are returned.

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC371EB7AEADE01700****
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.6C0BYiIGQ2NWEwNmVhNTA3ZTQ3MzM5ODliYjM1ZTdjYjA4****</Version
Id>
    </Deleted>
</DeleteResult>
```

● Sample requests when version IDs are specified to delete delete markers

```
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>CAEQNRiBgICEoPiC0BYiIGMxZWJmYmMzYjE0OTQ0ZmZhYjgzNzkzYjc2NjZk****</VersionId>
  </Object>
</Delete>
```

Sample responses

○ In this example, the returned Key parameter indicates the name of the deleted object and the
  returned VersionId parameter 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.

```
HTTP/1.1 200 OK
x-oss-request-id: 5CAC385AB7AEADE01700****
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>CAEQNRiBgICEoPiC0BYiIGMxZWJmYmMzYjE0OTQ0ZmZhYjgzNzkzYjc2NjZk****</Version
Id>
        <DeleteMarker>true</DeleteMarker>
        <DeleteMarkerVersionId>111111</DeleteMarkerVersionId>
    </Deleted>
</DeleteResult>
```

SDKs

You can use OSS SDKs for the following programming languages to call the DeleteMultipleObjects operation:

- Java
- Python
- PHP
- Go
- C
- .NET
- iOS
- Node.js
- Browser.js
- Ruby

Error codes

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value that is calculated by OSS based on the message body is different from the Content-MD5 value that is specified in the request header.

Error code	HTTP status code	Description
MalformedXML	400	• The error message returned because the size of the message body exceeds 2 MB. A DeleteMultipleObjects request can contain a message body of up to 2 MB. • The error message returned because the number of objects that you want to delete at a time exceeds 1,000. You can delete up to 1,000 objects at a time by calling the DeleteMultipleObjects operation.
FileImmutable	409	The error message returned because the data that you want to delete or modify is protected by a retention policy.

8.1.7. HeadObject

Queries the metadata of an object. When you call this operation, the object content is not returned in the results.

Versioning

- By default, if you call the HeadObject operation to query the metadata of an object and do not specify a version ID in the request, the metadata of the object of the current version is returned. If the current version of the object is a delete marker, Object Storage Service (OSS) returns 404 NoSuchKey.
- If you call the HeadObject operation to query the metadata of an object and specify a version ID in the request, the metadata of the object of the specified version is returned. Version IDs of delete markers cannot be specified in HeadObject requests. If you specify a version ID of a delete marker in a HeadObject request, OSS returns 405 MethodNotAllowed.

Request syntax

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

Request headers

Header	Type	Required	Description
If-Modified-Since	String	No	The information return condition. If the specified time is earlier than the last modified time of the object, OSS returns the metadata of the object and 200 OK. Otherwise, OSS returns 304 Not Modified. This parameter is empty by default.

Header	Type	Required	Description
If-Unmodified-Since	String	No	The information return condition. If the specified time is equal to or later than the last modified time of the object, OSS returns the metadata of the object and 200 OK. Otherwise, OSS returns 412 Precondition Failed. This parameter is empty by default.
If-Match	String	No	The information return condition. If the input ETag value matches the ETag value of the object, OSS returns the metadata of the object and 200 OK. Otherwise, OSS returns 412 Precondition Failed. This parameter is empty by default.
If-None-Match	String	No	The information return condition. If the input ETag value does not match the ETag value of the object, OSS returns the metadata of the object and 200 OK. Otherwise, OSS returns 304 Not Modified. This parameter is empty by default.

For more information about the common request headers such as Host and Date contained in HeadObject requests, see Common request headers.

Response headers

If the requested object is a symbolic link, the following headers are included in the response:

- The Content-Length, ETag, x-oss-storage-class, and Content-Md5 headers are the metadata of the object to which the symbolic link points.
- The returned value of Last-Modified uses the last modified time of the symbolic link or the last modified time of the object to which the symbolic link points, whichever one is later.
- Other response headers are the metadata of the symbolic link.

Header	Type	Description
x-oss-meta-*	String	The user metadata that is prefixed with x-oss-meta-. If you specify headers prefixed with x-oss-meta- in the PutObject request, the user metadata of the object is included in the response.
Custom headers that are not prefixed with x-oss-meta-	String	If you specify headers that are not prefixed with x-oss-meta in the PutObject request to configure the user metadata of the object, the headers are included in the response. Example: x-oss-persistent-headers: *key1:base64_encode(value1),key2:base64_encode(value2)*…..
x-oss-server-side-encryption	String	This header is included in the response if the object is encrypted by using the server-side encryption algorithm based on entropy encoding. The value of this header is the algorithm used to encrypt the object on the server side.

Header	Type	Description
x-oss-server-side-encryption-key-id	String	This header is included in the response if the object is encrypted by using Key Management Service (KMS) on the server side. The value of this header is the customer master key (CMK) ID that is used to encrypt the object.
x-oss-storage-class	String	The storage class of the object. Valid values: • Standard: provides highly reliable, highly available, and high-performance object storage services that can handle frequent data access. • IA: is suitable for long-term storage of data that is infrequently accessed. Data that is accessed once or twice per month on average falls into this category. • Archive: is suitable for long-term storage of data that is infrequently accessed. Data that you want to store for at least six months falls into this category. The data takes up to one minute to restore before the data can be read. • Cold Archive: is suitable for long-term storage of data that is rarely accessed.
x-oss-object-type	String	The type of the object. Valid values: • Normal: The object is uploaded by using PutObject or created by using CreateDirectory. • Appendable: The object is uploaded by using AppendObject. • Multipart: The object is uploaded by using MultipartUpload.
x-oss-next-append-position	String	The position for the next append operation. If the type of the object is Appendable, this header is included in the response.
x-oss-hash-crc64ecma	String	The 64-bit CRC value of the object. This value is calculated based on the ECMA-182 standard. If an object is created before OSS supports CRC-64, this header may not be included in the response when you call HeadObject to query the metadata of the object.
x-oss-expiration	String	The lifecycle information about the object. If lifecycle rules are configured for the object, this header is included in the response. This header contains two parameters: expiry-date that indicates the expiration time of the object, and rule-id that indicates the ID of the matched lifecycle rule.

Header	Type	Description
x-oss-restore	String	The status of the object when you restore an object. If the storage class of the bucket is Archive and a RestoreObject request is submitted, this header is included in the response. • If the RestoreObject request is not submitted or expires, this header is not included in the response. • If the RestoreObject request is submitted and the restoration is incomplete, the returned value of this header is ongoing-request="true". • If the RestoreObject request is submitted and the restoration is complete, the returned value of this header is in the following format: ongoing-request="false", expiry-date="Sun, 16 Apr 2017 08:12:33 GMT", in which the value of the expiry-date parameter is the time before which the restored object can be read.
x-oss-process-status	String	The result of an event notification that is triggered for the object. If you create an OSS event notification rule by using Message Service (MNS) and an operation performed on the object triggers the rule, this header is included in the response. The returned value of this header is Base64-encoded and in the JSON format.
x-oss-request-charged	String	This header is included in the response if pay-by-requester is enabled for the bucket and the requester is not the bucket owner. The value of this header is requester.
Content-Md5	String	• This header is included in the response if the object type is Normal. The value of this header is calculated based on the following process: 1. Calculate the MD5 hash of the message content based on RFC 1864 to obtain a 128-bit digit. Do not include headers to calculate the MD5 hash. 2. Encode the digit by using Base64. • If the object type is Multipart or Appendable, this header is not included in the response.
Last-Modified	String	The time when the object was last modified. The time is in GMT specified in HTTP/1.1.
Access-Control-Allow-Origin	String	The origins allowed for cross-origin resource sharing (CORS). If a CORS rule is configured for the bucket that stores the object and the Origin header in the request meets the CORS rule, this header is included in the response.
Access-Control-Allow-Methods	String	The methods allowed for CORS. If a CORS rule is configured for the bucket that stores the object and the Access-Control-Request-Method header in the request meets the CORS rule, this header is included in the response.
Access-Control-Max-Age	String	The maximum caching period for CORS. If a CORS rule is configured for the bucket that stores the object and the request meets the CORS rule, this header is included in the response.
Access-Control-Allow-Headers	String	The headers allowed for CORS. If a CORS rule is configured for the bucket that stores the object and the request meets the CORS rule, this header is included in the response.

Header	Type	Description
Access-Control-Expose-Headers	String	The list of header fields that can be accessed by JavaScript applications on the client. If a CORS rule is configured for the bucket that stores the object and the request meets the CORS rule, this header is included in the response.
x-oss-tagging-count	String	The number of tags added to the object. This header is included in the response only when you have read permissions on tags.

For more information about the common response headers such as ETag and x-oss-request-id contained in the responses to HeadObject requests, see Common response headers.

Examples

- Query the metadata of an object in an unversioned bucket

  Sample requests

  ```
  HEAD /oss.jpg HTTP/1.1
  Host: oss-example.oss-cn-hangzhou.aliyuncs.com
  Date: Fri, 7 Aug 2020 07:32:52 GMT
  Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:JbzF2LxZUtanlJ5dLA092wpD****
  ```

  Sample responses when HeadObject is called to query the metadata of an object

  ```
  HTTP/1.1 200 OK
  x-oss-request-id: 559CC9BDC755F95A6448****
  x-oss-object-type: Normal
  x-oss-storage-class: Archive
  Date: Fri, 7 Aug 2020 07:32:52 GMT
  Last-Modified: Fri, 24 Feb 2012 06:07:48 GMT
  ETag: "fba9dede5f27731c9771645a3986****"
  Content-Length: 344606
  Content-Type: image/jpg
  Connection: keep-alive
  Server: AliyunOSS
  ```

  Sample responses when the object is a directory

  ```
  HTTP/1.1 200 OK
  x-oss-request-id: 559CC9BDC755F95A6448****
  x-oss-object-type: Normal
  x-oss-storage-class: Standard
  Date: Wed, 31 Mar 2021 07:32:52 GMT
  Last-Modified: Tue, 30 Mar 2021 06:07:48 GMT
  ETag: "null"
  Content-Length: 0
  Content-Type: application/x-directory
  Connection: keep-alive
  Server: AliyunOSS
  ```

- Query the metadata of an object of the specified version in a versioned bucket

  Sample requests

```
HEAD /example?versionId=CAEQNRiBgICb8o6D0BYiIDNlNzk5NGE2M2Y3ZjRhZTViYTAxZGE0ZTEyMWYy****
Host: versioning-test.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 7 Aug 2020 06:27:12 GMT
Authorization: OSS ryghu9rp3mqp1ya:RvyjGvKxaUhdF0ibyEwX5mOM****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-versionId: CAEQNRiBgICb8o6D0BYiIDNlNzk5NGE2M2Y3ZjRhZTViYTAxZGE0ZTEyMWYy****
x-oss-request-id: 5CAC3B40B7AEADE01700****
x-oss-object-type: Normal
x-oss-storage-class: Archive
Date: Fri, 7 Aug 2020 06:27:12 GMT
Last-Modified: Fri, 7 Aug 2020 06:27:12 GMT
ETag: "A082B659EF78733A5A042FA253B1****"
Content-Length: 481827
Content-Type: text/html
Connection: keep-alive
Server: AliyunOSS
```

- Query the metadata of an object of the current version in a versioned bucket

    Sample requests

```
HEAD /example HTTP/1.1
Host: versioning-test.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 7 Aug 2020 06:27:12 GMT
Authorization: OSS ryghu9rp3mqp1ya:RvyjGvKxaUhdF0ibyEwX5mOM****
```

    Sample responses

```
HTTP/1.1 200 OK
x-oss-versionId: CAEQMxiBgMCZov2D0BYiIDY4MDllOTc2YmY5MjQxMzdiOGI3OTlhNTU0ODIx****
x-oss-request-id: 5CAC3B40B7AEADE01700****
x-oss-object-type: Normal
x-oss-storage-class: Archive
Date: Fri, 7 Aug 2020 06:27:12 GMT
Last-Modified: Fri, 7 Aug 2020 06:27:12 GMT
ETag: "3663F7B0B9D3153F884C821E7CF4****"
Content-Length: 485859
Content-Type: text/html
Connection: keep-alive
Server: AliyunOSS
```

- Query the metadata of an object for which the RestoreObject request is submitted and restoration is in progress

    Sample requests

```
HEAD /oss.jpg HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 7 Aug 2020 07:32:52 GMT
Authorization: OSS e1Unnbm1rgdnpI:KKxkdNrUBu2t1kqlDh0MLbDb****
```

    Sample responses

```
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: Fri, 7 Aug 2020 07:32:52 GMT
Last-Modified: Fri, 7 Aug 2020 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a3986****"
Content-Length: 344606
Content-Type: image/jpg
Connection: keep-alive
Server: AliyunOSS
```

- Query the metadata of an object for which the RestoreObject request is submitted and restoration is complete

  Sample requests

```
HEAD /oss.jpg HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 7 Aug 2020 09:35:51 GMT
Authorization: OSS e1Unnbm1rgdnpI:21qtGJ+ykDVmdu6O6FMJnn+W****
```

  Sample responses

```
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: Fri, 7 Aug 2020 09:35:51 GMT
Last-Modified: Fri, 7 Aug 2020 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a3986****"
Content-Length: 344606
```

- Query the metadata of an object that is encrypted by using the server-side encryption method SSE-OSS

  Sample requests

```
HEAD /oss.jpg HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 7 Aug 2020 07:32:52 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:JbzF2LxZUtanlJ5dLA092wpD****
```

  Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A6448****
x-oss-object-type: Normal
x-oss-storage-class: Archive
x-oss-server-side-encryption: AES256
Date: Fri, 7 Aug 2020 07:32:52 GMT
Last-Modified: Fri, 7 Aug 2020 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a3986****"
Content-Length: 344606
Content-Type: image/jpg
Connection: keep-alive
Server: AliyunOSS
```

- Query the metadata of an object that is encrypted by using the server-side encryption method SSE-KMS

Sample requests

```
HEAD /oss.jpg HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Fri, 7 Aug 2020 07:32:52 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:JbzF2LxZUtanlJ5dLA092wpD****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
x-oss-object-type: Normal
x-oss-storage-class: Archive
x-oss-server-side-encryption: KMS
x-oss-server-side-encryption-key-id: 9468da86-3509-4f8d-a61e-6eab1eac****
Date: Fri, 7 Aug 2020 07:32:52 GMT
Last-Modified: Fri, 7 Aug 2020 06:07:48 GMT
ETag: "fba9dede5f27731c9771645a3986****"
Content-Length: 344606
Content-Type: image/jpg
Connection: keep-alive
Server: AliyunOSS
```

Error codes

Error code	HTTP status code	Description
NoSuchKey	404	The error message returned because the requested object does not exist.
SymlinkTargetNotExist	404	The error message returned because the requested object is a symbolic link.
InvalidTargetType	400	The error message returned because the requested object is a symbolic link that points to another symbolic link.

Error code	HTTP status code	Description
NotModified	304	Possible causes: • The If-Modified-Since header is specified in the request, but the requested object has not been modified since the time specified in the request. • The If-None-Match 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.
PreconditionFailed	412	Possible causes: • The If-Unmodified-Since header is specified in the request, but the specified time is earlier than the last modified time of the requested object. • The If-Match header is specified in the request, but the ETag value provided in the request is different from the ETag value of the requested object.

8.1.8. GetObjectMeta

Queries the metadata of an object, including ETag, Size, and LastModified. The content of the object is not returned.

Precautions

> ⓘ **Note**   If the type of the object is a symbolic link, the information about the symbolic link is returned.

To query the metadata of an object in an unversioned bucket, you must have the `oss:GetObject` permission. To query the metadata of an object of a specific version in a versioned bucket by sending a request that contains the x-oss-version-id header, you must have the `oss:GetObjectVersion` permission. For more information, see Attach a custom policy to a RAM user.

Versioning

By default, the GetObjectMeta operation obtains the metadata of an object of the current version. If the current version of the object is a delete marker, OSS returns 404 Not Found. If you specify a version ID in the request, OSS returns the metadata of the object of the specified version.

Request syntax

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

Response headers

Response headers	Type	Example	Description
Content-Length	String	344606	The object size. Unit: bytes.
ETag	String	5B3C1A2E05 3D763E1B00 2CC607C5*** *	The entity tag (ETag) that is generated when an object is created. ETags are used to identify the content of objects. If an object is created by calling the PutObject operation, the ETag value of the object is the MD5 hash of the object content. If an object is created by using another method, the ETag value of the object is not the MD5 hash of the object content but a unique value calculated based on a specific rule. The ETag of an object can be used to check whether the object content changes. However, we recommend that you use the MD5 hash of an object rather than the ETag value of the object to verify data integrity. Default value: null.
x-oss-version-id	String	CAEQNRiBgI DMh4mD0BY iIDUzNDA4O GNmZjBjYTQ 0YmI4Y2I4Z mVlYzJlNGV k****	The version ID of the object. This element is returned only if you query the metadata of an object of a specific version.

The response to this request contains common response headers. For more information, see Common response headers.

Examples

- Query the metadata of an object in an unversioned bucket

  Sample requests

  ```
  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 qn6qrrqxo2oawuk53otf****:CTkuxpLAi4XZ+WwIfNm0Fmgb****
  ```

  Sample responses when the object is a file

  ```
  HTTP/1.1 200 OK
  x-oss-request-id: 559CC9BDC755F95A6448****x-oss-last-access-time: Thu, 14 Oct 2021 11:49:05
  GMT
  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
  ```

Sample success responses when the object is a directory

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A6448****
Date: Wed, 31 Mar 2021 05:21:12 GMT
ETag: "null"
Last-Modified: Tue, 30 Mar 2021 06:07:48 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

- Query the metadata of an object in a versioned bucket

Sample requests

```
GET /example?objectMeta&versionId=CAEQNRiBgIDMh4mD0BYiIDUzNDA4OGNmZjBjYTQ0YmI4Y2I4ZmVlYzJlN
GVk**** HTTP/1.1
Host: versioning-test.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:24:00 GMT
Authorization: OSS 5n4nrhyqrcs****:i/M/c36KzrOEA/bBSHLllIAt****
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-version-id: CAEQNRiBgIDMh4mD0BYiIDUzNDA4OGNmZjBjYTQ0YmI4Y2I4ZmVlYzJlNGVk****
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

You can use OSS SDKs for the following programming languages to call the GetObjectMeta operation:

- Java
- Python
- PHP
- Go
- C
- C++
- .NET
- Android
- iOS
- Node.js
- Browser.js

Error codes

Error code	HTTP status code	Description
Not Found	404	The error message returned because the specified object does not exist.

8.1.9. Callback

Performs a callback by sending a request that contains callback parameters to Object Storage Service (OSS). This topic describes how to configure callbacks.

> ? Note
> - The following API operations support callbacks: PutObject, PostObject, and CompleteMultipartUpload. For more information about callbacks, see Overview.
> - Callbacks do not support server name indication (SNI).

Step 1: Construct parameters

- Callback parameter

A callback parameter is a Base64-encoded string that contains multiple fields in the JSON format. To construct a callback parameter, you must specify the URL (callbackUrl) of the server to which the callback request is sent and the content (callbackBody) of the callback request.

The following table describes the fields in the JSON format.

Field	Description	Required
callbackUrl	○ The URL of the server to which OSS sends a callback request. After you upload an object, OSS uses POST to send a callback request to the URL. The body of the request is the content that is specified in callbackBody. In most cases, the server whose URL is used returns the `HTTP/1.1 200 OK` response. The response body must be in the JSON format, and the value of the Content-Length response header must be valid and smaller than 3 MB in size. ○ You can configure up to five URLs. Separate the URLs with semicolons (;). OSS sends requests to each URL until a successful response is returned. ○ If you do not configure this field or if you leave this field empty, the callback is not configured. ○ HTTPS URLs are supported. ○ To ensure that Chinese characters can be correctly processed, the callback URL must be encoded.	Yes

Field	Description	Required
callbackHost	○ The value of the Host header in the callback request. The value must comply with the naming conventions for domain names and IP addresses. This field takes effect only when callbackUrl is specified. ○ If you do not configure this field, the host values are resolved from the URLs of the callbackUrl field and are specified as the value of callbackHost.	No
callbackBody	○ The value of the callback request body. Example: key=${object}&etag=${etag}&my_var=${x:my_var}. ○ OSS system variables, custom variables, and constants are supported. The following table describes the system variables that are supported. You can specify custom variables by using the callback-var parameter in the PutObject and CompleteMultipartUpload operations and by using form fields in the PostObject operation.	Yes
callbackBodyType	○ 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 you set callbackBodyType to application/x-www-form-urlencoded, the variables in the callbackBody field are replaced with URL-encoded values. If you set callbackBodyType to application/json, the variables in the callbackBody field are replaced with values in the JSON format.	No

Examples of the JSON fields:

```
{
"callbackUrl":"172.16.XX.XX/test.php",
"callbackHost":"oss-cn-hangzhou.aliyuncs.com",
"callbackBody":"{\"mimeType\":${mimeType},\"size\":${size}}",
"callbackBodyType":"application/json"
}
```

```
{
"callbackUrl":"172.16.XX.XX:23456/index.html",
"callbackBody":"bucket=${bucket}&object=${object}&etag=${etag}&size=${size}&mimeType=${mime
Type}&imageInfo.height=${imageInfo.height}&imageInfo.width=${imageInfo.width}&imageInfo.for
mat=${imageInfo.format}&my_var=${x:my_var}"
}
```

You can use system parameters for the callbackBody field. The following table describes the parameters.

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

> ⑦ Note   The imageInfo parameters take effect only on image objects. If the object is not an image, the imageInfo.height, imageInfo.width, and imageInfo.format parameters are empty.

- 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 a map. You can add the required parameters to the map. When a POST callback request is initiated, OSS adds the custom parameters and the system parameters that are described in the preceding table to the body of the POST request. This way, the requester can obtain these parameters.

  You can create a custom parameter in the same manner in which you create a callback parameter. Configure the custom parameters in the JSON format. The JSON string is a map that consists of key-value pairs of all custom parameters.

  > ⑦ Note   The key of a custom parameter must start with x: and must be specified in lowercase letters. If the key does not start with x: and is not specified in lowercase letters, the system cannot correctly assign a value to the custom parameter even if HTTP status code 200 is returned.

  For example, you configure two custom parameters named x:var1 and x:var2. The value of x:var1 is value1, and the value of x:var2 is value2. The following JSON string is created:

  ```
  {
  "x:var1":"value1",
  "x:var2":"value2"
  }
  ```

> **Note** If the callback parameter or callback-var parameter that you imported is invalid, HTTP status code 400 and the InvalidArgument error code are returned. This error occurs in the following scenarios:
>
> - You specified URLs and headers for 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 parameter or callback-var parameter exceeds 5 KB. PostObject() does not include the callback-var parameter. When you use PostObject(), no limits are imposed for operations.
> - The callback parameter or callback-var parameter is not Base64-encoded, or the parameter is not in the valid JSON format after you decode the parameter.
> - The callbackUrl field that you decoded from the callback parameter includes more than five URLs or the port in the URL is invalid. Example:
>
>   ```
>   {"callbackUrl":"172.16.XX.XX:test",
>       "callbackBody":"test"}
>   ```
>
> - The callbackBody field that you decoded from the callback parameter is empty.
> - The value of the callbackBodyType field that you decoded from the callback parameter is not `application/x-www-form-urlencoded` or `application/json`.
> - The variables in the callbackBody field that you decoded from the callback parameter are not in the ${var} format.
> - The variables that you decoded from the callback-var parameter are not in the following JSON format: `{"x:var1":"value1","x:var2":"value2"...}`.

Step 2: Configure a callback request

After you construct the callback and callback-var parameters, you must add the parameters to the callback request that is sent to OSS.

You can use one of the following methods to add the parameters:

- Add the parameters to a 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 calling the PostObject operation.

You can use only one of the preceding three methods. If you use more than one method, OSS returns the InvalidArgument error code.

To add the parameters to a request that you want OSS to send, you must use Base64 to encode the JSON strings that you created in the preceding section, and then add the parameters.

- To add the parameters to a URL, add `callback=[CallBack]` or `callback-var=[CallBackVar]` to the request as a URL parameter. The callback paramter or callback-var parameter is used as a subresource to calculate the signature for the CanonicalizedResource field.
- To add the parameters to the header, add `x-oss-callback=[CallBack]` or `x-oss-callback-var=[CallBackVar]` to the request as a header. Add the x-oss-callback-var parameter and x-oss-callback parameter in the header to calculate the signature for the CanonicalizedOSSHeaders field. Example:

```
PUT /test.txt HTTP/1.1
Host: callback-test.oss-test.aliyun-inc.com
Accept-Encoding: identity
Content-Length: 5
x-oss-callback-var: eyJ4Om15X3ZhciI6ImZvci1jYWxsYmFjay10ZXN0In0=
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: eyJjYWxsYmFja1VybCI6IjEyMS40My4xMTMuODoyMzQ1Ni9pbmRleC5odG1sIiwgICJjYWxsYmF
ja0JvZHki0iJidWNrZXQ9JHtidWNrZXR9Jm9iamVjdD0ke29iamVjdH0mZXRhZz0ke2V0YWd9JnNpemU9JHtzaXplfS
ZtaW1lVHlwZT0ke21pbWVUeXBlfSZpbWFnZUluZm8uaGVpZ2h0PSR7aW1hZ2VJbmZvLmhlaWdodH0maW1hZ2VJbmZvL
ndpZHRoPSR7aW1hZ2VJbmZvLndpZHRofSZpbWFnZUluZm8uZm9ybWF0PSR7aW1hZ2VJbmZvLmZvcm1hdH0mbXlfdmFy
PSR7eDpteV92YXJ9In0=
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.

  - If you use POST to upload an object, add the callback parameter by using a different form field. Example:

```
--9431149156168
Content-Disposition: form-data; name="callback"
eyJjYWxsYmFja1VybCI6IjEwLjEwMS4xNjYuMzA6ODA4My9jYWxsYmFjay5waHAiLCJjYWxsYmFja0hvc3QiOiIxM
C4xMDEuMTY2LjMwIiwiY2FsbGJhY2tCb2R5IjoiZmlsZW5hbWU9JChmaWxlbmFtZSkmdGFibGU9JHt4OnRhYmxlfS
IsImNhbGxiYWNrQm9keVR5cGUiOiJhcHBsaWNhdGlvbi94LXd3dy1mb3JtLXVybGVuY29kZWQifQ==
```

- Each custom parameter uses a different form field. You cannot add the callback-var parameter to existing fields. Examples of JSON fields that you can configure for custom parameters:

```
{
"x:var1":"value1",
"x:var2":"value2"
}
```

Examples of form fields in the POST request:

```
--9431149156168
Content-Disposition: form-data; name="callback"
eyJjYWxsYmFja1VybCI6IjEwLjEwMS4xNjYuMzA6ODA4My9jYWxsYmFjay5waHAiLCJjYWxsYmFja0hvc3QiOiIxM
C4xMDEuMTY2LjMwIiwiY2FsbGJhY2tCb2R5IjoiZmlsZW5hbWU9JChmaWxlbmFtZSkmdGFibGU9JHt4OnRhYmxlfS
IsImNhbGxiYWNrQm9keVR5cGUiOiJhcHBsaWNhdGlvbi94LXd3dy1mb3JtLXVybGVuY29kZWQifQ==
--9431149156168
Content-Disposition: form-data; name="x:var1"
value1
--9431149156168
Content-Disposition: form-data; name="x:var2"
value2
```

You can add callback conditions to the policy. If you do not add callback conditions, the callback parameters are not verified for the upload. Example:

```
{ "expiration": "2021-12-01T12:00:00.000Z",
  "conditions": [
     {"bucket": "johnsmith" },
     {"callback": "eyJjYWxsYmFja1VybCI6IjEwLjEwMS4xNjYuMzA6ODA4My9jYWxsYmFjay5waHAiLCJjYWx
sYmFja0hvc3QiOiIxMC4xMDEuMTY2LjMwIiwiY2FsbGJhY2tCb2R5IjoiZmlsZW5hbWU9JChmaWxlbmFtZSkiLCJj
YWxsYmFja0JvZHlUeXBlIjoiYXBwbGljYXRpb24veC13d3ctZm9ybS11cmxlbmNvZGVkIn0="},
     ["starts-with", "$key", "user/eric/"],
  ]
}
```

Step 3: Initiate a callback request

If you upload an object, OSS sends the content that you specified in the callback parameter and callback-var parameter in the request to the application server by using the POST method. Example:

```
POST /index.html HTTP/1.0
Host: 172.16.XX.XX
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=D8E8FCA2DC0F896FD7CB4CB0031BA249&size=5&mimeType=te
xt%2Fplain&imageInfo.height=&imageInfo.width=&imageInfo.format=&x:var1=for-callback-test
```

(Optional) Step 4: Sign the callback request

If you include the callback parameter in the request, OSS uses the POST method to send a callback request to the application server based on the specified callback URL. To check whether the callback request that is received by the application server is initiated by OSS, you can sign the callback request.

- Generate a signature

  OSS uses the RSA asymmetric algorithm to sign a callback request.

  To generate a signature, encrypt the callback string by using 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 that is known only to OSS, path is the resource path that is included in the callback request, query_string is the query string, and body is the message body that is specified in the callback request.

  To sign a callback request, perform the following steps:

  i. Obtain the callback string that you want to sign. The string consists of the resource path that is obtained by decoding the URL, the original query string, a carriage return, and the callback message body.

  ii. Sign the callback string by using the RSA encryption algorithm. Use the private key to encrypt the signature string. The MD5 hash function is used for the signature.

  iii. Use Base64 to encode the signed result to obtain the final signature. Then, add the signature to the Authorization header in the callback request.

  Example:

  ```
  POST /index.php?id=1&index=2 HTTP/1.0
  Host: 172.16.XX.XX
  Connection: close
  Content-Length: 18
  authorization: kKQeGTRccDKyHB3H9vF+xYMSrmhMZjzzl2/kdD1ktNVgbWEfYTQG0G2SU/RaHBovRCE8OkQDjC3u
  G33esH2t****
  Content-Type: application/x-www-form-urlencoded
  User-Agent: http-client/0.0.1
  x-oss-pub-key-url: aHR0cDovL2dvc3NwdWJsaWMuYWxpY2RuLmNvbS9jYWxsYmFja19wdWJfa2V5X3YxLn****==
  bucket=yonghu-test
  ```

  In the preceding code, path is set to `/index.php` , query_string is set to `?id=1&index=2` , and the body is set to `bucket=yonghu-test` . The final signature is `kKQeGTRccDKyHB3H9vF+xYMSrmhMZjzzl2/kdD1ktNVgbWEfYTQG0G2SU/RaHBovRCE8OkQDjC3uG33esH2txA==` .

- Verify the signature

  The process for verifying a signature is the inverse of the process for signing a request. The signature is verified by the application server. Process:

  ```
  Result = rsa_verify(public_key, md5(url_decode(path) + query_string + '\n' + body), base64_
  decode(authorization))
  ```

  The fields in the preceding code and the fields that are used to sign the request are similar. public_key specifies the public key, and authorization specifies the signature that you want to include in the callback request header. To verify the signature, perform the following steps:

  i. The x-oss-pub-key-url header in the callback request stores the Base64-encoded URL of the public key. Decode the Base64-encoded URL to obtain the public key.

     ```
     public_key = urlopen(base64_decode(x-oss-pub-key-url header value))
     ```

> ⓘ **Note** To ensure that the public key is issued by OSS, check whether the value of the `x-oss-pub-key-url` header starts with `http://gosspublic.alicdn.com/` or `https://gosspublic.alicdn.com/`.

ii. Obtain the signature that you decoded in Base64.

```
signature = base64_decode(authorization header value)
```

iii. Obtain the string to sign by using the same procedure that you used to obtain the string when the callback request is signed.

```
sign_str = url_decode(path) + query_string + '\n' + body
```

iv. Verify the signature.

```
result = rsa_verify(public_key, md5(sign_str), signature)
```

Complete signature verification:

i. Obtain the URL of the public key by decoding `aHR0cDovL2dvc3NwdWJsaWMuYWxpY2RuLmNvbS9jYWxsYmFja19wdWJfa2V5X3YxLnBlbQ==` in Base64. The decoded URL is `http://gosspublic.alicdn.com/callback_pub_key_v1.pem`.

ii. Decode `kKQeGTRccDKyHB3H9vF+xYMSrmhMZjzzl2/kdD1ktNVgbWEfYTQG0G2SU/RaHBovRCE8OkQDjC3uG33esH2txA==` in Base64. The decoded result cannot be displayed because the result is a non-printable string.

iii. Obtain the string to sign and perform MD5 verification. The string to sign is concatenated as shown in the following sample code: url_decode("index.php") + "?id=1&index=2" + "\n" + "bucket=yonghu-test".

iv. Verify the signature.

- Verify the signature by using an application server

The following sample code in Python shows how an application server verifies a signature. Before you run the code, install the M2Crypto library.

```python
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' + callbac
k_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 following table describes the code in other programming languages that you can use to verify a signature on the server.

Programming language	Description
Java	o Download link: Java o Running method: Decompress the package and run `java -jar oss-callback-server-demo.jar 9000`. The port number is 9000. You can change the port number.
Python	o Download link: Python o Running method: Decompress the package and run `python callback_app_server.py`. Before you run the code, install RSA dependencies.
Go	o Download link: Go o Running method: Decompress the package and follow the instructions in README.md.
PHP	o Download link: PHP o Running method: Deploy the code to an Apache environment to ensure that specific headers in the code can use the environment as a dependency. You can modify the sample code based on the environment.
.NET	o Download link: .NET o Running method: Decompress the package and follow the instructions in `README.md`.
Node.js	o Download link: Node.js o Running method: Decompress the package and run `node example.js`.

Programming language	Description
Ruby	- Download link: Ruby - Running method: Run ruby aliyun_oss_callback_server.rb.

Step 5: Return the callback result

The application server returns a response to OSS.

The following example shows a response that is returned for a callback request:

```
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 that is 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.

The following example shows a response that is returned:

```
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 response bodies for some requests such as CompleteMultipartUpload contains content such as data in the XML format. If you use the upload callback feature, the original body content such as `{"a":"b"}` is overwritten. Exercise caution when you configure upload callbacks.
- If the upload callback fails, HTTP status code 203 and the CallbackFailed error code are returned. This response indicates that the object is uploaded to OSS and the callback fails. A callback failure indicates that OSS does not receive the expected callback response. However, this type of failure does not indicate that the application server does not receive a callback request. For example, a callback failure occurs if the response that is returned by the application server is not in the JSON format.

8.1.10. RestoreObject

Restores an Archive object or a Cold Archive object.

> ⑦ Note
> - The RestoreObject operation applies only to Archive objects or Cold Archive objects. This operation does not apply to Standard objects or Infrequent Access (IA) objects.
> - The first time RestoreObject is called on an object, HTTP status code 202 is returned.
> - When you call RestoreObject on an object that has been restored, 200 OK is returned.

Restoration

If you want to read an Archive object or a Cold Archive object, you must restore the object in advance. For an Archive, it takes several minutes to restore the Archive object. For a Cold Archive object, it takes several hours to restore the Cold Archive object by different restoration priorities. The actual time required to restore an object prevails.

The following section describes the status of an Archive object or a Cold Archive object throughout the restoration process:

1. By default, an Archive object is in the frozen state before restoration.

2. After you submit a restore request, the object is in the restoring state.

3. After the server completes the restore task, the object enters the restored state and you can read the object.
   - Archive objects

     For Archive objects, the restored state lasts 24 hours by default. During the 24 hours, if you call RestoreObject again, the restored state is extended by 24 hours. You can extend the restored state by up to seven days by calling RestoreObject six times during the first 24 hours of restored state. You can also configure the duration of the restored state in days by calling RestoreObject once. You can specify a duration of at most seven days.

   - Cold Archive objects

     For Cold Archive objects, you can specify the duration of restored state and restoration priority. The duration of the restored state must be at least one day and at most 365 days. The time required to restore a Cold Archive object to the readable state is determined based on the restoration priority of the object:

     - Expedited: The object is restored within one hour.

     - Standard: The object is restored within two to five hours. If the JobParameters element is not passed in, the default restoration mode is Standard.

     - Bulk: The object is restored within five to twelve hours.

4. After the restored state expires, the object returns to the frozen state.

Usage notes

- The RestoreObject operation applies only to Archive objects or Cold Archive objects. This operation does not apply to Standard or IA objects.

-

- The first time RestoreObject is called on an object, HTTP status code 202 is returned. When you call RestoreObject that was called on a frozen object whose restored state expires, 200 OK is returned.
- In a versioned bucket, the storage classes of different versions of an object can be different. By default, when you call RestoreObject to restore an object, the current version of the object is restored. You can specify a version ID in the request to restore a specified version of the object.

Billing

- Data retrieval fees are generated when you restore Archive and Cold Archive objects. For more information, see Data processing fees.
- The restored state of an Archive object can persist up to seven days and that of a Cold Archive object can persist up to 365 days. You are not repeatedly charged data retrieval fees during this process.
- After the restored state expires, the object returns to the frozen state. Data retrieval fees are generated if you perform the restore operation on the object again.
- When you restore a Cold Archive object, a Standard replica is generated for temporary access. You are charged the temporary storage fees of the replica for the duration during which the replica is available based on Standard storage. For more information, see Temporary storage fees.

Request syntax

```
POST /ObjectName?restore HTTP/1.1
Host: archive-bucket.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Request headers

The request headers involved in this API operation contain only common request headers. For more information, see Common request headers.

Request parameters

Parameter	Type	Required	Example	Description
RestoreRequest	Container	Yes	N/A	Stores the information about the restore request. Child nodes: Days and JobParameters
Days	Integer	Yes	2	Specifies the duration of restored state for Archive and Cold Archive objects. • Valid values for Archive objects: 1 to 7. Unit: days. • Valid values for Cold Archive objects: 1 to 365. Unit: days. Parent node: RestoreRequest

Parameter	Type	Required	Example	Description
JobParameters	Container	No	N/A	Stores the restoration priority. The configuration of this parameter takes effect only if the request is sent to restore Cold Archive objects. If the JobParameters element is not passed in, the default restoration priority Standard is used. Parent node: RestoreRequest Child node: Tier
Tier	String	Yes	Standard	Specifies the restoration priority. Default value: Standard. Valid values: • Expedited: The object is restored within one hour. • Standard: The object is restored within two to five hours. • Bulk: The object is restored within five to twelve hours. Parent node: JobParameters

Response headers

Header	Type	Example	Description
x-oss-object-restore-priority	String	Standard	Specifies the restoration priority. The field is displayed only if the request is sent to restore a Cold Archive object in the restored state.
x-oss-version-id	String	CAEQNRiBgMClj7qD0B YilDQ5Y2QyMjc3NGZk ODRlMTU5M2VkY2U3 MWRiNGRh****	Specifies the version ID of an object. This field is displayed only if a version ID of the object is specified in the request.

The response headers involved in this API operation include common response headers. For more information, see Common response headers.

Examples

• Submit a restore request for an Archive object in the frozen state for the first time

Sample request

```
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 e1Unnbm1rg****:y4eyu+4yje5ioRCr****
```

Sample response

```
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
```

- Submit a restore request for an Archive object in the restoring state

    Sample request

    ```
    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 e1Unnbm1rg****:21qtGJ+ykDVmdy4eyu+N****
    ```

    Sample response

    ```
    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.XX.XX</HostId>
    </Error>
    ```

- Submit a restore request for an Archive object in the restored state

    Sample request

    ```
    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 e1Unnbm1rg****:u6O6FMJnn+WuBwbByZxm1+y4eyu+N****
    <RestoreRequest>
      <Days>2</Days>
    </RestoreRequest>
    ```

    Sample response

```
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
```

- Submit a restore request for a Cold Archive object in the restored state

  Sample request

```
POST /coldarchiveobject?restore HTTP/1.1
Host: cold-archive-bucket.oss-cn-hangzhou.aliyuncs.com
User-Agent: aliyun-sdk-go/v2.1.0 (Darwin/17.5.0/x86_64;go1.11.8)/ossutil-v1.6.12
Content-Length: 99
Authorization: OSS LTAI4FjmjjhjiYK6kMaV****:Gi1x7YHqTw+NQCJo0fKBHcYQ****
Content-Type: text/plain; charset=utf-8
Date: Tue, 21 Apr 2020 11:09:19 GMT
Accept-Encoding: gzip
<RestoreRequest>
  <Days>2</Days>
  <JobParameters>
    <Tier>Standard</Tier>
  </JobParameters>
</RestoreRequest>
```

  Sample response

```
HTTP/1.1 200 OK
Server: AliyunOSS
Date: Tue, 21 Apr 2020 11:09:19 GMT
Content-Length: 0
Connection: keep-alive
x-oss-request-id: 5E9ED45F093E2F3930318EA0
x-oss-object-restore-priority: Standard
x-oss-server-time: 10
```

- Specify the version ID of an object when you call the RestoreObject operation to restore a specified version of the object

  Sample request

```
POST /oss.jpg?restore&versionId=CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3MWRiNGR
h**** HTTP/1.1
Host: oss-archive-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 06:50:48 GMT
Authorization: OSS o3shiyktjw1****:2JND5qqlAlaA1/kLO4kBbGTw****
```

  Sample response

```
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

You can use OSS SDKs for the following programming languages to call the RestoreObject operation:

- Java
- Python
- PHP
- Go
- C
- C++
- .NET
- Android
- iOS
- Node.js

Error codes

Error code	HTTP status code	Description
OperationNotSupported	400	The error message returned because the storage class of the specified object is not Archive or Cold Archive.
NoSuchKey	404	The error message returned because the specified object does not exist.
RestoreAlreadyInProgress	409	The error message returned because the RestoreObject operation is called while the server is performing the restore operation. Do not call RestoreObject repeatedly.

8.1.11. SelectObject

Executes SQL statements on an object and obtain the execution result.

> ⑦ Note
> - You must have read permissions on the object.
> - The 206 HTTP status code is returned if the operation is successful. If the SQL statement is not valid or cannot match any objects, the 400 HTTP status code is returned.
> - For more information about the functions of SelectObject, see Call the SelectObject operation to query objects in OSS Developer Guide.

Request syntax

Request syntax for 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-encoded SQL statement. Example: c2VsZWN0IGNvdW50KCopIGZyb20gb3Nzb2Jq
ZWN0IHdoZXJlIF80ID4gNDU=</Expression>
    <InputSerialization>
        <CompressionType>None|GZIP</CompressionType>
        <CSV>
            <FileHeaderInfo>
                NONE|IGNORE|USE
            </FileHeaderInfo>
            <RecordDelimiter>Base64-encoded character</RecordDelimiter>
            <FieldDelimiter>Base64-encoded character</FieldDelimiter>
            <QuoteCharacter>Base64-encoded character</QuoteCharacter>
            <CommentCharacter>Base64-encoded character</CommentCharacter>
            <Range>line-range=start-end|split-range=start-end</Range>
            <AllowQuotedRecordDelimiter>true|false</AllowQuotedRecordDelimiter>
        </CSV>
        </InputSerialization>
        <OutputSerialization>
            <CSV>
            <RecordDelimiter>Base64-encoded character</RecordDelimiter>
            <FieldDelimiter>Base64-encoded character</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-encoded SQL statement. Example: c2VsZWN0IGNvdW50KCopIGZyb20gb3Nzb2JqZWN0IHdo
ZXJlIF80ID4gNDU=
    </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	The container that stores the SelectObject request. Child nodes: Expression, InputSerialization, and OutputSerialization Parent nodes: none

Element	Type	Description
Expression	String	The Base64-encoded SQL statement. Child nodes: none Parent nodes: SelectRequest
InputSerialization	Container	Optional. This element specifies the input serialization parameters. Child nodes: CompressionType, CSV, and JSON Parent nodes: SelectRequest
OutputSerialization	Container	Optional. This element specifies the output serialization parameters. Child nodes: CSV, JSON, and OutputRawData Parent nodes: SelectRequest
CSV(InputSerialization)	Container	Optional. This element specifies the input serialization parameters when the CSV object is queried. Child nodes: FileHeaderInfo, RecordDelimiter, FieldDelimiter, QuoteCharacter, CommentCharacter, and Range Parent nodes: InputSerialization
CSV(OutputSerialization)	Container	Optional. This element specifies the output serialization parameters when the CSV object is queried. Child nodes: RecordDelimiter and FieldDelimiter Parent nodes: OutputSerialization
JSON(InputSerialization)	Container	Optional. This element specifies the input serialization parameters when the JSON object is queried. Child nodes: Type, Range, and ParseJsonNumberAsString
JSON(OutputSerialization)	Container	Optional. This element specifies the output serialization parameters when the JSON object is queried. Child nodes: RecordDelimiter

Element	Type	Description
Type	Enumeration	Specifies the type of the input JSON object: DOCUMENT or LINES
OutputRawData	Boolean	Optional. This element specifies whether to export raw data. Default value: false Child nodes: none Parent nodes: OutputSerialization ⊘ Note • If you specify OutputRawData in the request, OSS returns data accordingly. • If you do not specify OutputRawData in the request, OSS automatically selects a format and returns it in the response. • If you explicitly set OutputRawData to True and it takes a long time for the sent SQL statement to return data, the HTTP request may time out.
CompressionType	Enumeration	The compression type of the object. Valid value: None or GZIP. Child nodes: none Parent nodes: InputSerialization
FileHeaderInfo	Enumeration	Optional. This element specifies the header information of the CSV object. Valid values: • Use: 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: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 CSV object does not contain header information. This is the default value. Child nodes: none Parent nodes: CSV (input)

Element	Type	Description
RecordDelimiter	String	Optional. This element specifies a Base64-encoded line break. Default value: `\n` . The value of this element before the value is encoded can be an ANSI value of up to two characters in length. For example, `\n` is used to indicate a line break in Java. Child nodes: none Parent nodes: CSV (input and output) and JSON (output)
FieldDelimiter	String	Optional. This element specifies the delimiter used to separate columns in the CSV object. The value of this element must be Base64-encoded. Default value: `,` . The value of this element before the value is encoded must be a one-character ANSI value. For example, `,` is used to indicate a comma in Java code. Child nodes: none Parent nodes: CSV (input and output)
QuoteCharacter	String	Optional. This element specifies a Base64-encoded quote character used in the CSV object. Default value: `\"` . In a CSV object, line breaks and column delimiters enclosed in quotation marks are processed as normal characters. The value of this element before the value is encoded can be an ANSI value of up to two characters in length. For example, `\"` is used to indicate a quote character in Java code. Child nodes: none Parent nodes: CSV (input)
CommentCharacter	String	The comment character used in the CSV object. The value of this element must be Base64-encoded. This value is empty by default.

Element	Type	Description
Range	String	Optional. This element specifies the query range. The following two query methods are supported: ⑦ **Note**　SelectMeta must be created for objects that are queried based on Range. For more information about SelectMeta, see CreateSelectObjectMeta. • Query by row: line-range=start-end. For example, line-range=10-20 indicates that data from row 10 to row 20 is scanned. • Query by split: split-range=start-end. For example, split-range=10-20 indicates that data from split 10 to split 20 is scanned. The start and end parameters are both inclusive. The two preceding parameters have the same format as that of the range parameter in range get. This parameter can be used only when the object is in CSV format or when the JSON type is LINES. Child nodes: none Parent nodes: CSV (input) and JSON (output)
KeepAllColumns	Boolean	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 response are sorted in ascending order of the column numbers. Example: `select _5, _1 from ossobject.` If you set KeepAllColumns to true and six columns are included in the CSV object, the following result is returned for the preceding SELECT clause: Value of 1st column,,,,Value of 5th column,\n Child nodes: none Parent nodes: OutputSerialization (CSV)
EnablePayloadCrc	Boolean	The CRC-32 value for verification of each frame. The client can calculate the CRC-32 value of each payload and compare it with the included CRC-32 value to verify data integrity. Child nodes: none Parent nodes: OutputSerialization

Element	Type	Description
Options	Container	Other optional parameters. Child nodes: SkipPartialDataRecord and MaxSkippedRecordsAllowed Parent nodes: SelectRequest
OutputHeader	Boolean	A value of true indicates that the header information of the CSV object is included in the beginning of the response. Default value: false Child nodes: none Parent nodes: OutputSerialization
SkipPartialDataRecord	Boolean	Specifies whether to ignore rows where data is missing. If this parameter is set to false, OSS processes 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. Default value: false Child nodes: none Parent nodes: Options

Element	Type	Description
MaxSkippedRecordsAllowed	Int	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 SkipPartialDataRecord is True, the rows are skipped. If the number of skipped rows has exceeded the value of this parameter, OSS reports an error and stops processing the data. ⑦ **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. Default value: 0 Child nodes: none Parent nodes: Options
ParseJsonNumberAsString	Boolean	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 SQL to convert the parsed data into the required type such as int, double, or decimal. Default value: false Child nodes: none Parent nodes: JSON

Element	Type	Description
AllowQuotedRecordDelimiter	Boolean	Specifies whether the CSV object contains line breaks in quotation marks ("). 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. Default value: true Child nodes: none Parent nodes: InputSerialization

Response body

- If the HTTP status code included in the response is 4xx, the request has not passed the SQL syntax check or that the request contains errors. 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, internal server errors occur. 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 successful. In this case:

  - If the value of header x-oss-select-output-raw is true, 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.

- The frames are in the format of `Version|Frame-Type | Payload Length | Header Checksum | Payload | Payload Checksum<1 byte><--3 bytes--><---4 bytes----><-------4 bytes--><variable><----4bytes---------->`.

  > **Note**   The Checksum is CRC-32 in 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->	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-->	The frame 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.
End Frame	8388613	offset | total scanned bytes | http status code | error message<--8bytes-><--8bytes--------><----4 bytes--------><-variable------>	An end frame is used to return the final status of an operation, including the scanned bytes and the possible error messages. • 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. ⑦ **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. • The error message parameter includes error messages, including the number of each skipped row and the total quantity of skipped rows. ⑦ **Note**　The format of error messages included in an end frame is `ErrorCodes.DetailMessage`. The ErrorCodes section contains one or more error codes separated with commas (,). ErrorCodes and DetailMessage are separated with a period (.).

Sample requests

Sample requests for CSV or JSON objects.

- Sample requests 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>c2VsZWN0IGNvdW50KCopIGZyb20gb3Nzb2JqZWN0IHdoZXJlIF80ID4gNDU=
    </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>c2VsZWN0ICogZnJvbSBvc3NvYmplY3Qub2JqZWN0c1sqXSB3aGVyZSBwYXJ0eSA9ICdEZW1vc3J
hdCc=
    </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` .

> ⑦ **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 object
s)
           | function(column index | column name)
           | function(json_path) (applies only to JSON objects)
           | select_list AS alias
```

> ⑦ **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, table must be OSSOBJECT. For JSON objects (including DOCUMENT and LINES type
objects), you can specify json_path after OSSOBJECT.
json_path: ['string '] (The quotation marks around string can be deleted if the string does n
ot 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 n 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 n
ot 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 value of the first columns in the first 100 rows. This function differs from the statement supported by MySQL because only a single row is returned for an aggregation function in SelectObject operations. This makes it unnecessary to limit the output data size. The operation for limit is performed before the aggregation operation when you call SelectObject.

Limits on SQL statements

Limits on SQL statements:

- Only text objects encoded in UTF-8 and UTF-8 text objects compressed in the GZIP format are supported. The deflate format is not supported for GZIP objects.

- Only a single object can be queried when you use an SQL statement. The following clauses are not supported: JOIN, ORDER BY, GROUP BY, and HAVING clauses.

- 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 a maximum of 1,024 bytes in length.

- A maximum of five wildcards (%) are supported in a LIKE clause. 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 convert 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.

- 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 json path after FROM.

- In SQL statements for a JSON object, the SELECT or WHERE expressions cannot include array wildcards ([*]). Array wildcards ([*]) can be included only in 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 to handle 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 HTTP status code 400 in the end frame.

  Assume that the SQL statement is `select _1, _3 from ossobject` and that 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 JSON objects may exclude 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 HTTP 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 that 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.

> ⑦ **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 the `{"{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 name 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 name with the serial number (starting from 1) and underscore (_) 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 ossobjects` , 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 _ 7 and its serial number in the output. {"_1":35} is returned.
>   - When the alias of the column is specified in SQL statement `select s.contacts.Age, s.contacts.Children[0] as firstChild from ossobject` , {"Age":35, "firstChild":"child1"} is returned.
>
> - Keys that match the 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 exceeds the value of MaxSkippedRecordsAllowed, OSS stops processing data and returns the 400 HTTP status code.

  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 ignored 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", "Career_age": To be hired}` , this node is ignored.

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 entire CSV object is scanned to analyze and record the preceding information. The information obtained in the first API operation call is used when the operation is called again. This way, the entire CSV object does not need to be scanned again.

> ⑦ Note
> - You must have the write permissions on the target object before you can perform the CreateSelectObjectMeta operation.
> - The 200 HTTP status code is returned if the operation is successful. If the target object is not a valid CSV or JSON LINES object, or the specified delimiter does not match any CSV objects, the 400 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-encoded character</RecordDelimiter>
            <FieldDelimiter>Base64-encoded character</FieldDelimiter>
            <QuoteCharacter>Base64-encoded character</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	The container that stores the CreateSelectObjectMeta request for CSV objects. Child nodes: InputSerialization Parent nodes: none
JsonMetaRequest	Container	The container that stores the CreateSelectObjectMeta request for JSON objects. Child nodes: InputSerialization Parent nodes: none
InputSerialization	Container	Optional. This element specifies the input serialization parameters. Child nodes: CompressionType, CSV, and JSON Parent nodes: CsvMetaRequest and JsonMetaRequest
OverwriteIfExists	Boolean	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 SelectMeta already exists. Default value: false Child nodes: none Parent nodes: CsvMetaRequest and JsonMetaRequest
CompressionType	Enumeration	Optional. This element specifies the compression type of the object. Only None is supported. Child nodes: none Parent nodes: InputSerialization
RecordDelimiter	String	Optional. This element specifies a Base64-encoded line break used to separate rows in the CSV object. Default value: \n The value of this element before the value is encoded can be an ANSI value of up to two characters in length. For example, \n is used to indicate a line break in Java code. Child nodes: none Parent nodes: CSV

Element	Type	Description
FieldDelimiter	String	Optional. This element specifies a Base64-encoded delimiter used to separate columns in the CSV object. Default value: `,` The value of this element before being encoded must be a one-character ANSI value. For example, `,` is used to indicate a comma in Java code. Child nodes: none Parent nodes: CSV (input and output)
QuoteCharacter	String	Optional. This element specifies a Base64-encoded quote character used in the CSV object. Default value: \"In a CSV object, line breaks and column delimiters enclosed in quotation marks are processed as normal characters. The value of this element before the value is encoded can be an ANSI value of up to two characters in length. For example, \"is used to indicate a quote character in Java code. Child nodes: none Parent nodes: CSV (input)
CSV	Container	The format of the input CSV object. Child nodes: RecordDelimiter, FieldDelimiter, and QuoteCharacter Parent nodes: InputSerialization
JSON	Container	The format of the input JSON object. Child nodes: Type Parent nodes: InputSerialization
Type	Enumeration	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

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>	Used to report the final status of a CreateSelectObjectMeta operation. ○ offset: an 8-bit integer, which indicates the offset when the scanning is complete. ○ total scanned bytes: an 8-bit integer, which indicates the size of the scanned data. ○ status: a 4-bit integer, which indicates the final status of the operation. ○ splits_count: a 4-bit integer, which indicates the total number of splits. ○ rows_count: an 8-bit integer, which indicates the total number of rows. ○ cols_count: a 4-bit integer, which indicates the total number of columns. ○ error_message: detailed error messages. If no errors occur, the value of this parameter is null.
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. ○ offset: an 8-bit integer, which indicates the offset when the scanning is complete. ○ total scanned bytes: an 8-bit integer, which indicates the size of the scanned data. ○ status: a 4-bit integer, which indicates the final status of the operation. ○ splits_count: a 4-bit integer, which indicates the total number of splits. ○ rows_count: an 8-bit integer, which indicates the total number of rows. ○ error_message: detailed error messages. If no errors occur, the value of this parameter is null.

- Sample requests

○ Sample requests 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>
    <OverwriteIfExisting>false</OverwriteIfExisting>
</CsvMetaRequest>
```

○ Sample requests 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>
    <OverwriteIfExisting>false</OverwriteIfExisting>
</JsonMetaRequest>
```

Supported time format

You can convert any of the following listed formats to a timestamp without specifying the time format. For example, 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

Format	Description
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
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
YYYYMMDDT HH:MM:SS	year month day T hour:minute:second
YYYYMMDDT HH:MM:SS.mss	year month day T hour:minute:second. millisecond
DD-MM-YYYYT HH:MM:SS.mss	day-month-year T hour:minute:second. millisecond
DD-MM-YYYYT HH:MM:SS	day-month-year T hour:minute:second
YYYYMMDDT HHMM	year month day T hour minute
YYYYMMDDT HHMMSS	year month day T hour minute second
YYYYMMDDT HHMMSSMSS	year month day T hour minute second millisecond

Format	Description
ISO8601-0	year-month-day T hour:minute+hour:minute, or year-month-day T hour: minute-hour:minute "+" 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, ISO8601-0 can be used.
ISO8601-1	year-month-day T hour:minute+hour:minute, or year-month-day T hour: minute-hour:minute "+" 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 8601-1 can be used.
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 you use strings in these formats. For example, the cast('20121201' as timestamp format 'YYYYDDMM') statement incorrectly parses 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 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 codes returned in this manner indicate that input errors such as an invalid SQL statement or data errors occur.

- The error code is included in the end frame of the response body. Error codes returned in this manner indicate that the data is incorrect or does not match the SQL statement. For example, a string exists in a column for which the type is set to integer in the SQL statement. In this case, part of data is processed and returned to the client, and the HTTP status code is 206.

Error codes such as InvalidCSVLine can be returned an HTTP status code in the response header or as a status code in 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
InvalidSqlParameter	The error message returned because the specified SQL parameter does not exist. 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
InvalidInputFieldDelimiter	The error message returned because the input CSV object contains invalid column delimiters. The parameter is not Base64-encoded, or the size of the parameter is greater than 1 byte after being decoded.	400	None
InvalidInputRecordDelimiter	The error message returned because the input CSV object contains invalid row delimiters. The parameter is not Base64-encoded, or the size of the parameter is greater than 2 bytes after being decoded.	400	None
InvalidInputQuote	The error message returned because the input CSV object contains invalid quote characters. The parameter is not Base64-encoded, or the size of the parameter is greater than 1 byte after being decoded.	400	None
InvalidOutputFieldDelimiter	The error message returned because the output CSV object contains Invalid column delimiters. The parameter is not Base64-encoded, or the size of the parameter is greater than 1 byte after being decoded.	400	None
InvalidOutputRecordDelimiter	The error message returned because the output CSV object contains Invalid column delimiters. The parameter is not Base64-encoded, or the size of the parameter is greater than 2 bytes after being decoded.	400	None
UnsupportedCompressionFormat	The error message returned because the value of the Compression parameter is not NONE or GZIP (case-insensitive).	400	None

Error code	Description	HTTP Status Code	Http Status Code in End Frame
InvalidCommentCharacter	The error message returned because the CSV object contains invalid comment characters. The parameter is not Base64-encoded, or the size of the parameter is greater than 1 byte after being decoded.	400	None
InvalidRange	The error message returned because the Range parameter is not prefixed with line-range= or split-range=, or the range value does not comply with the HTTP standard for Range.	400	None
DecompressFailure	The error message returned because the value of Compression is GZIP and the object cannot be decompressed.	400	None
InvalidMaxSkippedRecordsAllowed	The error message returned because the value of MaxSkippedRecordsAllowed is not an integer.	400	None
SelectCsvMetaUnavailable	The error message returned because the target object does not include CSV Meta when the Range parameter is specified. Call the CreateSelectObjectMeta operation first.	400	None
InvalidTextEncoding	The error message returned because the object is not UTF-8 encoded.	400	None
InvalidOSSSelectParameters	The error message returned because the EnablePayloadCrc and OutputRawData parameters are both set to True, which results in conflicts.	400	None
InternalError	The error message returned because an OSS system error has occurred.	500 or 206	500 or None
SqlSyntaxError	The error message returned because the syntax of the Base64-decoded SQL statement is invalid.	400	None
SqlExceedsMaxInCount	The error message returned because the number of values included in the SQL IN clause has exceeded 1,024.	400	None
SqlExceedsMaxColumnNameLength	The error message returned because the size of the column name has exceeded 1,024 bytes.	400	None
SqlInvalidColumnIndex	The error message returned because the column index in the SQL statement is smaller than 1 byte or greater than 1,000 bytes in length.	400	None
SqlAggregationOnNonNumericType	The error message returned because an aggregation function is used in a non-numeric column.	400	None

Error code	Description	HTTP Status Code	Http Status Code in End Frame
SqlInvalidAggregationOnTimestamp	The error message returned because the SUM or AVG aggregation function is used in the timestamp column.	400	None
SqlValueTypeOfInMustBeSame	The error message returned because values of different types are included in the SQL IN clause.	400	None
SqlInvalidEscapeChar	The error message returned because an invalid escape character such as a question mark (?), percent sign (%), or an asterisk (*) was specified in the SQL LIKE clause.	400	None
SqlOnlyOneEscapeCharIsAllowed	The error message returned because the size of the escape character in the SQL LIKE clause is greater than 1 byte in length.	400	None
SqlNoCharAfterEscapeChar	The error message returned because no characters after the escape character in the SQL LIKE clause exist.	400	None
SqlInvalidLimitValue	The error message returned because the number after the SQL Limit clause is smaller than 1.	400	None
SqlExceedsMaxWildCardCount	The error message returned because the number of wildcards (*) or (%) in the SQL LIKE clause has exceeded the limit.	400	None
SqlExceedsMaxConditionCount	The error message returned because the number of conditional expressions in the SQL WHERE clause has exceeded the limit.	400	None
SqlExceedsMaxConditionDepth	The error message returned because the depth of the conditional tree in the SQL WHERE clause has exceeded the limit.	400	None
SqlOneColumnCastToDifferentTypes	The error message returned because a column was converted into different types by including the CAST function in the SQL statement.	400	None
SqlOperationAppliedToDifferentTypes	The error message returned because an operator was used for two objects of different types in the SQL statement. For example, this error code is returned if col1 in _col1 > 3 is a string.	400	None
SqlInvalidColumnName	The error message returned because a column name used in the SQL statement was not included in the header of the CSV object.	400	None
SqlNotSupportedTimestampFormat	The error message returned because the timestamp format specified in the SQL CAST clause is not supported.	400	None

Error code	Description	HTTP Status Code	Http Status Code in End Frame
SqlNotMatchTimestamp Format	The error message returned because the timestamp format specified in the SQL CAST clause does not match the timestamp string.	400	None
SqlInvalidTimestampVal ue	The error message returned because no timestamp formats are specified in the SQL CAST clause and the provided string cannot be converted to a timestamp.	400	None
SqlInvalidLikeOperand	The error message returned because column names or indexes are not specified in the SQL LIKE clause, the specified column is not of the string type, or the right column in the LIKE clause is of the string type.	400	None
SqlInvalidMixOfAggregati onAndColumn	The error message returned because the SQL SELECT clause includes column names and indexes for both aggregation functions and non-aggregation functions.	400	None
SqlExceedsMaxAggregati onCount	The error message returned because the number of aggregation functions included in the SQL SELECT clause has exceeded the limit.	400	None
SqlInvalidMixOfStarAndC olumn	The error message returned because an asterisk (*), a column name, and a column index are included in the same SQL statement.	400	None
SqlInvalidKeepAllColumn sWithAggregation	The error message returned because the SQL statement includes aggregation functions while the KeepAllColumns parameter is set to True.	400	None
SqlInvalidKeepAllColumn sWithDuplicateColumn	The error message returned because the SQL statement includes repeated column names or column indexes while the KeepAllColumns parameter is set to True.	400	None
SqlInvalidSqlAfterAnalysi s	The error message returned because the SQL statement is not supported because the SQL statement is too complex to parse.	400	None
InvalidArithmeticOperan d	The error message returned because the SQL statement contains arithmetic operations performed on non-numeric constants or columns.	400	None
SqlInvalidAndOperand	The error message returned because the expressions connected by the AND operator in the SQL statement are not of the Boolean type.	400	None
SqlInvalidOrOperand	The error message returned because the expressions connected by the OR 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
SqlInvalidNotOperand	The error message returned because the expressions connected by the NOT operator in the SQL statement are not of the Boolean type.	400	None
SqlInvalidIsNullOperand	The error message returned because the SQL statement specifies the IS NULL operator-based operations performed on a constant.	400	None
SqlComparerOperandTypeMismatch	The error message returned because the SQL statement specifies the comparison operator-based operations performed on two objects of different types.	400	None
SqlInvalidConcatOperand	The error message returned because the SQL statement contains two constants connected by the concatenation operator (||).	400	None
SqlUnsupportedSql	The error message returned because the SQL statement is too complex so that the size of the generated SQL plan has exceeded the limit.	400	None
HeaderInfoExceedsMaxSize	The error message returned because the size of the header information specified in the SQL statement has exceeded the limit.	400	None
OutputExceedsMaxSize	The error message returned because a row of output results has exceeded the size limit.	400	None
InvalidCsvLine	The error message returned because a row in the CSV object is invalid or has exceeded the size limit, or the number of skipped rows has exceeded the value of MaxSkippedRecordsAllowed.	400 or 206	400 or None
NegativeRowIndex	The error message returned because the value of the array index in the SQL statement is a negative number.	400	None
ExceedsMaxNestedColumnDepth	The error message returned because the number of nested levels of the JSON object in the SQL statement has exceeded the level limit.	400	None
NestedColumnNotSupportInCsv	The error message returned because 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
TableRootNodeOnlySupportInJson	The error message returned because the root node path can be specified only after From ossobject in JSON objects.	400	None

Error code	Description	HTTP Status Code	Http Status Code in End Frame
JsonNodeExceedsMaxSize	The error message returned because the size of the root node in the JSON object has exceeded the limit.	400 or 206	400 or None
InvalidJsonData	The error message returned because the JSON data is formatted incorrectly.	400 or 206	400 or None
ExceedsMaxJsonArraySize	The error message returned because the number of elements in an array in the root node of the JSON object has exceeded the limit.	400 or 206	400 or None
WildCardNotAllowed	The error message returned because the wildcard (*) cannot be used in SQL SELECT clauses or SQL WHERE clauses for the JSON object. For example, the following statement is not supported: `select s.a.b[*] from ossobject where a.c[*] > 0`.	400	None
JsonNodeExceedsMaxDepth	The error message returned because the depth of the root node of the JSON object has exceeded the limit.	400 or 206	400 or None

8.2. Directory management

8.2.1. CreateDirectory

You can call this operation to create a directory. This operation is applicable only to buckets that have the hierarchical namespace feature enabled.

Usage notes

- To create a directory, you must have the PutObject permission.
- When you create a directory, OSS returns 200 OK if the directory you want to create has the same name as an existing directory and you have the permissions to access the existing directory. However, OSS does not perform creation operations.
- When you create a directory, data cannot be imported to the directory. The Content-Length value of the directory can be set only to 0.
- The Content-Type value of the directory can be set only to application/x-directory, which cannot be modified.
- When you create a directory, the absolute path of the directory cannot contain consecutive forward slashes (/).

Request structure

```
POST /objectName?x-oss-dir HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Request headers

Header	Type	Required	Description
Authorization	String	No	Specifies that the request is authorized. For more information, see RFC 2616. The Authorization header is required in most cases. However, if you use a signed URL in a request, this header is not required. For more information, see Generate a signed URL. Default value: null

This API operation must also include common request headers such as Host and Date. For more information about common request headers, see Common request headers.

Response headers

The response headers involved in this API operation contain only common response headers. For more information, see Common response headers.

Examples

Sample requests

```
POST /desktop/oss?x-oss-dir HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 29 Apr 2021 05:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAi4XZ+WwIfNm0Fmgb****
```

Sample success responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Thu, 29 Apr 2021 05:21:12 GMT
Last-Modified: Wed, 24 Feb 2021 06:07:48 GMT
Content-Length: 0
Connection: keep-alive
Server: AliyunOSS
```

SDK

OSS SDK for Java: Create directories

Error code

Error code	HTTP status code	Description

Error code	HTTP status code	Description
AccessDenied	403	Possible causes: • When you create a directory, you do not have permissions to access the specified bucket. • When you create a directory, the directory you want to create has the same name as an existing directory, but you do not have the permissions to access the existing directory.
FileAlreadyExists	409	The error message returned because an existing object at the same directory level has the same name. For example: The desktop directory contains an object named osstest. You cannot create a directory named osstest in the desktop directory.

8.2.2. Rename

You can call this operation to rename a directory or an object. This operation supports only buckets for which the hierarchical namespace feature is enabled.

Usage notes

When you call the Rename operation to rename the source directory or object to the destination directory or object, take note of the following items:

- You must have the DeleteObject permission on the source directory or object and the PutObject permission on the destination directory or object.
- The parent directory included in the names of the source directory or object as well as the destination directory or object must exist.
- The name that you use to rename the source directory or object cannot be the same as that of an existing directory or object in the parent directory included in the name of the destination directory or object.

Request structure

```
POST /dstObjectName?x-oss-rename HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
x-oss-rename-source:srcPathName
```

Request headers

Header	Type	Required	Description
x-oss-rename-source	String	Yes	The absolute path of the source directory or object. Example: *desktop/oss/a*. The path must exist in the source bucket.

For more information about the common request headers contained in Rename requests such as Host and Date, see Common request headers.

Response headers

The response to a Rename request contains only common response headers. For more information, see Common response headers.

Examples

Sample requests

The following sample request is sent to rename an object named a in the desktop/osstest/ directory to b.

```
POST /desktop/osstest/b?x-oss-rename HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 29 Apr 2021 05:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAi4XZ+WwIfNm0Fmgb****
x-oss-rename-source: desktop/oss/a
```

Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Thu, 29 Apr 2021 05:21:12 GMT
Connection: keep-alive
Server: AliyunOSS
```

SDK

OSS SDK for Java

Error codes

Error code	HTTP status code	Description
AccessDenied	403	Possible causes: • You do not have permissions to access the bucket specified in the request. • You do not have permissions to access the directory or object that you want to rename.
NoSuchKey	404	Possible causes: • The source directory or object you want to rename does not exist. • The parent directory included in the name of the source directory or object does not exist.
FileAlreadyExists	409	The error message returned because the name that you use to rename the source directory or object is the same as that of an existing directory or object.

8.2.3. DeleteDirectory

You can call this operation to delete a directory. This operation is applicable only to buckets that have the hierarchical namespace feature enabled.

Usage notes

- To delete a directory, use one of the following methods:
  - Recursive delete: All objects and subdirectories are deleted from the directory.
  - Non-recursive delete: The directory can be deleted if the directory is empty.

- Different permissions are required when a different deletion method is used.
  - When you use the recursive delete method to delete a directory, you must have the DeleteObject permission on the directory and all objects and subdirectories in this directory.

    For example, to recursively delete the oss directory from the desktop directory, you must have the DeleteObject permission on the desktop/osstest directory and all objects and subdirectories in the desktop/osstest directory.

  - To use non-recursive delete to delete a directory, you must have the DeleteObject permission on the directory.

    To use non-recursive delete to delete the dir directory from the desktop directory, you must have the DeleteObject permission on the desktop/dir directory.

- You cannot use the recursive delete method to delete the root directory of a bucket.
- When you use the recursive delete method to delete a directory, the directory may fail to be deleted if concurrent requests are sent to write data to the directory at the same time.

Request structure

```
POST /objectName?x-oss-delete HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: SignatureValue
```

Request headers

Header	Type	Required	Description
x-oss-delete-recursive	String	No	Specifies whether to recursively delete a directory. - If you do not specify x-oss-delete-recursive or set x-oss-delete-recursive to *false*, the non-recursive delete method is used. The directory can be deleted only when the directory is empty. - If you set x-oss-delete-recursive to *true*, the recursive delete method is used. The directory as well as all objects and subdirectories in this directory is deleted. Default value: false

Header	Type	Required	Description
x-oss-delete-token	String	No	The name of the object or directory after which the next delete operation begins. This option is valid only when x-oss-delete-recursive is set to *true*. This option is empty when you call the DeleteDirectory operation on the bucket for the first time.

This API operation must also include common request headers such as Host and Date. For more information about common request headers, see Common request headers.

Response headers

The response headers involved in this API operation contain only common response headers. For more information about common response headers involved in this API operation, see Common response headers.

Response elements

Element	Type	Description
DeleteDirectoryResult	Container	The container that stores the deleted objects. Parent nodes: none
DirectoryName	String	The name of the deleted directory. Parent nodes: DeleteDirectoryResult
DeleteNumber	String	The number of deleted objects and directories. Parent nodes: DeleteDirectoryResult
NextDeleteToken	String	The name of the object or directory after which the delete operation begins. Parent nodes: DeleteDirectoryResult

Examples

- Use non-recursive delete to delete a directory

  Sample requests

  ```
  POST /desktop/osstest/a?x-oss-delete HTTP/1.1
  Host: oss-example.oss-cn-hangzhou.aliyuncs.com
  Date: Thu, 29 Apr 2021 05:21:12 GMT
  Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAi4XZ+WwIfNm0Fmgb****
  ```

  Sample success responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Thu, 29 Apr 2021 05:21:12 GMT
Connection: keep-alive
Server: AliyunOSS
<DeleteDirectoryResult>
    <DirectoryName>desktop/osstest/a</DirectoryName>
    <DeleteNumber>1</DeleteNumber>
</DeleteDirectoryResult>
```

- Recursively delete a directory

  Sample requests

```
POST /desktop/osstest/a?x-oss-delete HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 29 Apr 2021 05:21:12 GMT
Authorization: OSS qn6qrrqxo2oawuk53otfjbyc:CTkuxpLAi4XZ+WwIfNm0Fmgb****
x-oss-delete-recursive: true
```

  Sample success responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Thu, 29 Apr 2021 05:21:12 GMT
Connection: keep-alive
Server: AliyunOSS
<DeleteDirectoryResult>
    <DirectoryName>desktop/osstest/a</DirectoryName>
    <DeleteNumber>100</DeleteNumber>
    <NextDeleteToken>CgJiYw--</NextDeleteToken>
</DeleteDirectoryResult>
```

SDK

OSS SDK for Java: Delete directories

Error codes

Error code	HTTP status code	Description
AccessDenied	403	Possible causes: • When you delete the directory, you do not have the permissions to access the specified bucket. • When you delete the directory, you do not have the permissions to delete the directory.
NoSuchKey	404	When you delete the directory, the specified directory does not exist.

Error code	HTTP status code	Description
FileAlreadyExists	409	Possible causes: • When you use the non-recursive delete method to delete the directory, the directory is not empty. • When you use the recursive delete method to delete the directory, concurrent requests are sent to write data to the directory at the same time.
InvalidArgument	400	When you use the recursive delete method to delete the directory, the format of the x-oss-delete-token value is invalid.

8.3. Multipart upload

8.3.1. InitiateMultipartUpload

Before you use multipart upload to upload data, you must call the InitiateMultipartUpload operation to notify Object Storage Service (OSS) to initiate a multipart upload task.

Usage notes

• When you call the InitiateMultipartUpload operation, OSS creates and returns a unique upload ID to identify the multipart upload task. You can initiate operations such as stopping or querying the multipart upload task by using this upload ID.

• When you initiate a multipart upload request to upload an object, the existing object that has the same name is not affected.

• If you want to calculate the signature for authentication when you call this operation, you must add `?` `uploads` to the `CanonicalizedResource` header.

Request syntax

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

Request parameters

When you call the InitiateMultipartUpload operation, you can specify the encoding-type parameter in the request to encode the object name returned in the response.

Parameter	Type	Description

Parameter	Type	Description
encoding-type	String	The method used to encode the object name in the response. Only URL encoding is supported. The object name can contain characters encoded in UTF-8. However, the XML 1.0 standard cannot be used to parse specific control characters, such as characters whose ASCII values range from 0 to 10. You can configure the encoding-type parameter to encode object names that include characters that cannot be parsed by XML 1.0 in the response. Default value: null Valid value: *url*

Request headers

InitiateMultipartUpload requests support custom headers that start with `x-oss-meta-` and the following standard HTTP request headers: Cache-Control, Content-Disposition, Content-Encoding, Content-Type, and Expires. For more information, see PutObject.

Header	Type	Description
Cache-Control	String	The web page caching behavior that is performed when the object is downloaded. For more information, see RFC 2616. Default value: null
Content-Disposition	String	The name of the object when the object is downloaded. For more information, see RFC 2616. Default value: null
Content-Encoding	String	The method used to encode the object when the object is downloaded. For more information, see RFC 2616. Default value: null
Expires	Integer	The timeout period after which the response is considered expired. Unit: milliseconds. For more information, see RFC 2616. Default value: null

Header	Type	Description
x-oss-forbid-overwrite	String	Specifies whether the InitiateMultipartUpload operation overwrites the object that has the same name as that of the object to upload. The x-oss-forbid-overwrite request header does not take effect when versioning is enabled or suspended for the bucket to which the object is uploaded. In this case, the InitiateMultipartUpload operation overwrites the existing object that has the same name as that of the object you want to upload. • If x-oss-forbid-overwrite is not specified or the value of x-oss-forbid-overwrite is set to *false*, an existing object that has the same name as that of the object you want to upload is overwritten. • If the value of x-oss-forbid-overwrite is set to *true*, an existing object that has the same name as that of the object you want to upload cannot be overwritten. If you specify the x-oss-forbid-overwrite request header, the queries per second (QPS) performance of OSS may be degraded. If you want to use the x-oss-forbid-overwrite request header to perform a large number of operations (QPS greater than 1,000), submit a ticket.
x-oss-server-side-encryption	String	The algorithm that is used to encrypt each part of the object to upload on the OSS server. Valid values: *AES256* and *KMS*. 🔊 **Notice** You must activate Key Management Service (KMS) before you set this header to KMS. If you specify this header in the request, this header is included in the response. OSS uses the algorithm specified by this header to encrypt each uploaded part. When you download the encrypted object, the x-oss-server-side-encryption header is included in the response and the header value is set to the algorithm used to encrypt the object.
x-oss-server-side-encryption-key-id	String	The ID of the customer master key (CMK) hosted in KMS. This parameter is valid only when x-oss-server-side-encryption is set to KMS.

Header	Type	Description
x-oss-storage-class	String	The storage class of the uploaded object. If you specify the storage class when you upload the object, the specified storage class applies regardless of the storage class of the bucket to which the object is uploaded. For example, if you set x-oss-storage-class to Standard when you upload an object to an Infrequent Access (IA) bucket, the storage class of the uploaded object is Standard. Valid values: • *Standard* • *IA* • *Archive* • *ColdArchive* For more information about storage classes, see Overview.
x-oss-tagging	String	Specifies the tags of the object. You can configure multiple tags for the object. Example: TagA=A&TagB=B. ⑦ **Note** The tag key and value must be URL-encoded. If a tag does not contain an equal sign (=), the tag value is considered an empty string.

Response elements

After OSS receives an InitiateMultipartUpload request, OSS returns a response that contains a message body 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 to which the object is uploaded by the multipart upload task. Parent nodes: InitiateMultipartUploadResult
InitiateMultipartUploadResult	Container	The container that is used to store the result of the InitiateMultipartUpload request. Child nodes: Bucket, Key, UploadId, and EncodingType Parent nodes: none
Key	String	The name of the object that is uploaded by the multipart upload task. Parent nodes: InitiateMultipartUploadResult

Element	Type	Description
UploadId	String	The Upload ID that uniquely identifies the multipart upload task. The Upload ID is used to call UploadPart and CompleteMultipartUpload later. Parent nodes: InitiateMultipartUploadResult
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 nodes: 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>oss-example</Bucket>
    <Key>multipart.data</Key>
    <UploadId>0004B9894A22E5B1888A1E29F823****</UploadId>
</InitiateMultipartUploadResult>
```

SDK

You can use OSS SDKs for the following programming languages to call the InitiateMultipartUpload operation:

- Java
- Python
- Go
- C++
- PHP
- C
- .NET

- Node.js
- Browser.js

Error codes

Error code	HTTP status code	Description
InvalidEncryptionAlgorithmError	400	The error message returned because the x-oss-server-side-encryption header is set to a value other than AES256 and KMS.
InvalidArgument	400	The error message returned because the x-oss-server-side-encryption header is specified each time a part is uploaded.
InvalidArgument	400	The error message returned because the specified storage class of the object to upload is invalid.
KmsServiceNotEnabled	403	The error message returned because KMS is specified as the server-side encryption algorithm but KMS is not activated in the console.
FileAlreadyExists	409	Possible causes: • The request contains the `x-oss-forbid-overwrite=true` header, and an existing object has the same name as that of the object to upload. • The error message returned because the object that you want to upload by using InitiateMultipartUpload is a directory in a bucket for which the hierarchical namespace feature is enabled.

8.3.2. UploadPart

Uploads data by part based on the specified object name and upload ID after you initiate a multipart upload operation.

Usage notes

- Before you call UploadPart to upload data by part, you must call the InitiateMultipartUpload operation to obtain an upload ID generated by Object Storage Service (OSS).

- If you use the same partNumber to upload a new part, the existing part that is uploaded by using the partNumber is overwritten.

- OSS includes the MD5 hash of each received part in the ETag header of the response.

- If the x-oss-server-side-encryption request header is specified when you call InitiateMultipartUpload, the uploaded part is encrypted. The x-oss-server-side-encryption header is included in the response, which indicates the server-side encryption algorithm 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
```

Request elements

Element	Type	Required	Description
partNumber	Positive integer	Yes	The number that identifies a part. Valid values: 1 to 10000. The size of a part ranges from 100 KB to 5 GB. ⑦ Note In multipart upload, each part except the last part must be larger than or equal to 100 KB in size. The size of each part is not verified when you call UploadPart because not all parts have been uploaded and OSS does not know which part is the last part. The size of each part is verified only when you call CompleteMultipartUpload.
uploadId	String	Yes	The ID that identifies the object to which the parts to upload belong.

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 qn6qrrqxo2oawuk53otf****: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
```

SDK

You can use OSS SDKs for the following programming languages to call the UploadPart operation:

- Java
- Python
- Go
- C++
- PHP
- C
- .NET
- Node.js
- Android
- iOS

Error codes

Error code	HTTP status code	Description
NoSuchUpload	404	The error message returned because the specified multipart upload ID does not exist.
InvalidArgument	400	The error message returned because the part number is not within the range of 1 to 10000.
InvalidDigest	400	The error message returned because the Content-MD5 value in the request is inconsistent with the MD5 hash calculated by OSS. To make sure that errors do not occur during data transmission over the network, you can include the Content-MD5 value in the request. OSS calculates the MD5 hash of the uploaded data and verifies whether the MD5 hash is consistent with the Content-MD5 value.

8.3.3. UploadPartCopy

You can call this operation to copy data from an existing object to upload a part by adding a x-oss-copy-request header to UploadPart.

Usage notes

To copy an object larger than 1 GB, use UploadPartCopy. For more information about how to copy objects smaller than 1 GB, see CopyObject.

When you use UploadPartCopy, take note of the following items:

- You cannot call AppendObject to copy data from append objects.
- When you call UploadPartCopy, the source and destination buckets must be located within the same region.
- Before you call UploadPart 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, which indicates the server-side encryption method of the part. For more information, see InitiateMultipartUpload.

- In the multipart upload mode, each part except the last part must be larger 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.

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 to x-oss-copy-source : /SourceBucketName/SourceObjectName? versionId=111111.

> ⑦ **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.

Request structure

```
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
x-oss-copy-source	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	The range of bytes to copy data from the source object. For example, if you specify bytes to 0 to 9, the system transfers byte 0 to byte 9, a total of 10 bytes. Default value: null • 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.

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	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. Default value: null
x-oss-copy-source-if-none-match	String	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, OSS returns 304 Not Modified. Default value: null

Header	Type	Description
x-oss-copy-source-if-unmodified-since	String	The object transfer condition. If the specified time is the same as or later than the actual modified time of the object, OSS transfers the object normally and returns 200 OK. Otherwise, OSS returns 412 Precondition Failed. Default value: null
x-oss-copy-source-if-modified-since	String	The object transfer condition. If the specified time is earlier than the actual modified time of the object, the system transfers the object normally and returns 200 OK. Otherwise, OSS returns 304 Not Modified. Default value: null Time format: ddd, dd MMM yyyy HH:mm:ss GMT. Example: Fri, 13 Nov 2015 14:47:53 GMT.

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 qn6qrrqxo2oawuk53otf****: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=63C06A5CFF6F4AE4A6BB3AD7F01C****  HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Tue, 09 Apr 2019 07:01:56 GMT
Authorization: OSS 6jftttm6x6san0ewtgyk****:v/sJFtYvg7DTa4pJ2AMShZL/****
x-oss-copy-source: /oss-example/src-object? versionId=CAEQMxiBgMC0vs6D0BYiIGJiZWRjOTRjNTg0N
zQ1MTRiN2Y1OTYxMTdkYjQ0****
```

Sample responses

```
HTTP/1.1 200 OK
Server: AliyunOSS
Connection: keep-alive
x-oss-copy-source-version-id: CAEQMxiBgMC0vs6D0BYiIGJiZWRjOTRjNTg0NzQ1MTRiN2Y1OTYxMTdkYjQ0*
***
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>
```

SDK

SDKs of the UploadPartCopy operation for various programming languages:

- Java
- Python
- Go
- C++
- PHP
- C
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
OperationNotSupported	400	The error message returned because UploadPartCopy does not support the storage class of Archive.

8.3.4. CompleteMultipartUpload

Completes the multipart upload task of an object after all parts of the object are uploaded.

Usage notes

When you call the CompleteMultipartUpload operation, you must provide a complete list of all valid parts, including the part number and entity tag (ETag) of each part. After Object Storage Service (OSS) receives the list of parts, OSS verifies the validity of each part one after another. After all parts are validated, OSS combines these parts into a complete object.

- Confirm the size of each part

  When you call the CompleteMultipartUpload operation, OSS checks whether each part except the last part is larger than or equal to 100 KB in size and verifies the part number and ETag of each part provided in the part list. Therefore, when a part is uploaded, the client must record not only the part number of the part but also the ETag value of the part returned from the server.

- Handle requests

  It may take a period of time for OSS to process a CompleteMultipartUpload request. If the client is disconnected from OSS during the period, OSS continues to process the request.

- PartNumber

  OSS verifies the value of PartNumber when you call the CompleteMultipartUpload operation.

  The value of PartNumber ranges from 1 to 10000. The part numbers listed in the request can be non-consecutive but must be sorted in ascending order. For example, if the part number of the first part is 1, the part number of the second part can be 5.

- UploadId

  An object can be uploaded by multiple upload tasks that have independent upload IDs. When one upload task is completed, its upload ID becomes invalid but the upload IDs of other upload tasks are not affected.

- x-oss-server-side-encryption

  If the x-oss-server-side-encryption header is specified in an InitiateMultipartUpload request, this header is returned in the response to the CompleteMultipartUpload request. The value of the x-oss-server-side-encryption header in the response indicates the method that is used to encrypt the object on the OSS server.

Versioning

You can call the CompleteMultipartUpload operation to complete the multipart upload task of an object when versioning is enabled for the bucket to which the object is uploaded. In this case, OSS generates a unique version ID for the object, and returns the version ID as the x-oss-version-id header in the response.

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

You can configure the encoding-type parameter in a CompleteMultipartUpload request. OSS uses the specified encoding type to encode the object name in the response.

Parameter	Type	Description
encoding-type	String	The encoding type of the object name in the response. Only URL encoding is supported. The object name can contain characters that are encoded in UTF-8. However, the XML 1.0 standard cannot be used to parse control characters, such as characters with an ASCII value from 0 to 10. You can configure this parameter to encode the object name in the response. This parameter is empty by default. Valid value: *url*

Request headers

Header	Type	Required	Description

Header	Type	Required	Description
x-oss-forbid-overwrite	String	No	Specifies whether the object with the same object name is overwritten when you call the CompleteMultipartUpload operation. • If x-oss-forbid-overwrite is not specified or set to *false*, existing objects can be overwritten by objects that have the same names. • If x-oss-forbid-overwrite is set to *true*, existing objects cannot be overwritten by objects that have the same names. ⑦ **Note** • The x-oss-forbid-overwrite request header is invalid if versioning is enabled or suspended for the bucket. In this case, the CompleteMultipartUpload operation overwrites the object that has the same name. • If you specify the x-oss-forbid-overwrite request header, the queries per second (QPS) performance of OSS may degrade. If you want to configure the x-oss-forbid-overwrite header in a large number of requests (more than 1,000 QPS), submit a ticket.

Header	Type	Required	Description
x-oss-complete-all	String	No	Specifies whether to list all parts that are uploaded by using the current upload ID. Valid value: *yes* • If x-oss-complete-all is set to *yes* in the request, OSS lists all parts that are uploaded by using the current upload ID, sorts the parts by part number, and then performs the CompleteMultipartUpload operation. When OSS performs the CompleteMultipartUpload operation, OSS cannot detect the parts that are not uploaded or currently being uploaded. Before you call the CompleteMultipartUpload operation, make sure that all parts are uploaded. • If x-oss-complete-all is specified in the request, the request body cannot be specified. Otherwise, an error occurs. • If x-oss-complete-all is specified in the request, the format of the response remains unchanged.

For more information about the common request headers contained in CompleteMultipartUpload requests such as Host and Date, see Common HTTP headers.

Request elements

Element	Type	Description
CompleteMultipartUpload	Container	The container that stores the content of the CompleteMultipartUpload request. Child nodes: Part Parent nodes: none
ETag	String	The ETag values that are returned by OSS after parts are uploaded. Parent nodes: Part
Part	Container	The container that stores the uploaded parts. Child nodes: ETag and PartNumber Parent nodes: CompleteMultipartUpload
PartNumber	Integer	The number of parts. Parent nodes: Part

Response elements

Element	Type	Description
Bucket	String	The name of the bucket. Parent nodes: CompleteMultipartUploadResult
CompleteMultipartUploadResult	Container	The container that stores the results of the CompleteMultipartUpload request. Child nodes: Bucket, Key, ETag, and Location Parent nodes: none
ETag	String	The ETag that is generated when an object is created. ETags are used to identify the content of objects. If an object is created by calling the CompleteMultipartUpload operation, the ETag value is not the MD5 hash of the object content but a unique value calculated based on a specific rule. ⑦ **Note** The ETag of an object can be used to check whether the object content changes. However, we recommend that you use the MD5 hash of an object rather than the ETag value of the object to verify data integrity. Parent nodes: CompleteMultipartUploadResult
Location	String	The URL that is used to access the uploaded object. Parent nodes: CompleteMultipartUploadResult
Key	String	The name of the uploaded object. Parent nodes: CompleteMultipartUploadResult
EncodingType	String	The encoding type of the object name in the response. If this parameter is specified in the request, the object name is encoded in the response. Parent nodes: container

Examples

- Complete the multipart upload task of an object in an unversioned bucket

  Sample requests

```
POST /multipart.data?uploadId=0004B9B2D2F7815C432C9057C031****&encoding-type=url 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 qn6qrrqxo2oawuk53otf****: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">
    <EncodingType>url</EncodingType>
    <Location>http://oss-example.oss-cn-hangzhou.aliyuncs.com /multipart.data</Location>
    <Bucket>oss-example</Bucket>
    <Key>multipart.data</Key>
    <ETag>"B864DB6A936D376F9F8D3ED3BBE540****"</ETag>
</CompleteMultipartUploadResult>
```

- Complete the multipart upload task of an object in a versioned bucket

  Sample requests

```
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 6jftttm6x6s****:XljBrYBYxDnxKdFMj9WYI6qu****
<CompleteMultipartUpload>
    <Part>
        <PartNumber>1</PartNumber>
        <ETag>"25A9F4ABFCC05743DF6E2C886C56****"</ETag>
    </Part>
    <Part>
        <PartNumber>5</PartNumber>
        <ETag>"25A9F4ABFCC05743DF6E2C886C56****"</ETag>
    </Part>
</CompleteMultipartUpload>
```

Sample responses

```
HTTP/1.1 200 OK
Server: AliyunOSS
Content-Length: 314
Content-Type: Application/xml
Connection: keep-alive
x-oss-version-id: CAEQMxiBgID6v86D0BYiIDc3ZDI0YTBjZGQzYjQ2Mjk4OWVjYWNiMDljYzhlN****
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>
```

SDK

You can use OSS SDKs for the following programming languages to call the CompleteMultipartUpload operation:

- Java
- Python
- Go
- C++
- .NET
- PHP
- C
- Node.js
- Android

Error codes

Error code	HTTP status code	Description
InvalidDigest	400	The error message returned because the Content-MD5 value in the request is different from the MD5 hash calculated by OSS. To prevent errors during data transmission, you can include the Content-MD5 value in the request. OSS calculates the MD5 hash of the uploaded data and compares it with the Content-MD5 value in the request.
FileAlreadyExists	409	Possible causes: • The request contains the `x-oss-forbid-overwrite=true` header, but an existing object has the same name as the object that you want to upload. • The object on which you want to perform the CompleteMultipartUpload operation is a directory within a bucket for which the hierarchical namespace feature is enabled.

8.3.5. AbortMultipartUpload

You can call this operation to cancel a multipart upload task and delete the parts generated in the task.

Usage notes

When you call AbortMultipartUpload, note the following items:

- You must provide the upload ID of the multipart upload task that you want to cancel.
- When you cancel a multipart upload task, parts that are being uploaded cannot be deleted.
- After a multipart upload task is canceled, the upload ID of the task cannot be used to perform any operations and the parts uploaded by the task are deleted.
- We recommend that you complete or cancel multipart upload tasks that are not complete in a timely manner because parts generated by these tasks consume storage spaces and incur storage fees.

Request structure

```
DELETE /ObjectName? uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: Signature
```

Request elements

Element	Type	Required	Description
uploadId	String	Yes	The ID of the multipart upload task.

For more information about other common request headers such as Host and Date, see Common HTTP headers.

Examples

- Sample request

```
Delete /multipart.data? &uploadId=0004B9895DBBB6E****  HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 22 Feb 2012 08:32:21 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:J/lICfXEvPmmSW86bBAfMmUm****
```

- Sample response

```
HTTP/1.1 204
Server: AliyunOSS
Connection: keep-alive
x-oss-request-id: 059a22ba-6ba9-daed-5f3a-e48027df****
Date: Wed, 22 Feb 2012 08:32:21 GMT
```

SDK

You can use SDKs for the following programming languages to call the AbortMultipartUpload operation:

- Java
- Python
- Go
- C++
- .NET
- PHP
- C
- Node.js
- Android

Error codes

Error code	HTTP status code	Description
NoSuchUpload	404	The error message returned because the specified upload ID does not exist.

8.3.6. ListMultipartUploads

Lists all multipart upload tasks in progress. The tasks are not completed or canceled.

Request structure

```
Get /?uploads HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: Signature
```

Request parameters

Parameter	Type	Description
delimiter	String	The character used to group objects by name. If you specify the Delimiter parameter in the request, the response contains the CommonPrefixes element. Objects whose names contain the same string from the prefix to the next occurrence of the delimiter are grouped as a single result element in CommonPrefixes.
max-uploads	String	The maximum number of multipart upload tasks that can be returned for the current request. Default value: 1000. Maximum value: 1000.

key-marker	String	This parameter is used together with the upload-id-marker parameter to specify the position from which the next list begins.
		• If the upload-id-marker parameter is not set, Object Storage Service (OSS) returns all multipart upload tasks in which object names are alphabetically after the key-marker value.
		• If the upload-id-marker parameter is set, the response includes the following tasks:
		  ○ Multipart upload tasks in which object names are alphabetically after the key-marker value in alphabetical order
		  ○ Multipart upload tasks in which object names are the same as the key-marker parameter value but whose upload IDs are greater than the upload-id-marker parameter value

prefix	String	The prefix that the returned object names must contain. If you specify a prefix in the request, the specified prefix is included in the response. ⑦ **Note** You can use prefixes to group and manage objects in buckets in the same way you manage a folder in a file system.

Parameter	Type	Description

upload-id-marker	String	The upload ID of the multipart upload task after which the list begins. This parameter is used together with the key-marker parameter.
		
		• If the key-marker parameter is not set, OSS ignores the upload-id-marker parameter.
		
		• If the key-marker parameter is configured, the query result includes:
		
		  ○ Multipart upload tasks in which object names are alphabetically after the key-marker value in alphabetical order
		
		  ○ Multipart upload tasks in which object names are the same as the key-marker parameter value but whose upload IDs are greater than the upload-id-marker parameter value

encoding-type	String	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 control characters such as characters with an American Standard Code for Information Interchange (ASCII) value from 0 to 10. You can set the encoding-type parameter to encode values of Delimiter, KeyMarker, Prefix, NextKeyMarker, and Key in the response. Default value: null

Response elements

Element	Type	Description
ListMultipartUploadsResult	Container	The container that stores the response to the ListMultipartUpload request. Child nodes: Bucket, KeyMarker, UploadIdMarker, NextKeyMarker, NextUploadIdMarker, MaxUploads, Delimiter, Prefix, CommonPrefixes, IsTruncated, and Upload Parent nodes: none
Bucket	String	The name of the bucket. Parent nodes: ListMultipartUploadsResult

Element	Type	Description
EncodingType	String	The method used to encode the object name in the response. If encoding-type is specified in the request, values of those elements including Delimiter, KeyMarker, Prefix, NextKeyMarker, and Key are encoded in the returned result. Parent nodes: ListMultipartUploadsResult
KeyMarker	String	The name of the object that corresponds to the multipart upload task after which the list begins. Parent nodes: ListMultipartUploadsResult
UploadIdMarker	String	The upload ID of the multipart upload task after which the list begins. Parent nodes: ListMultipartUploadsResult
NextKeyMarker	String	The object name marker in the response for the next request to return the remaining results. Parent nodes: ListMultipartUploadsResult
NextUploadMarker	String	The NextUploadMarker value that is used for the UploadMarker value in the next request if the response does not contain all required results. Parent nodes: ListMultipartUploadsResult
MaxUploads	Integer	The maximum number of multipart upload tasks returned by OSS. Parent nodes: ListMultipartUploadsResult
IsTruncated	Enumerated string	Indicates whether the list of multipart upload tasks returned in the response is truncated. Default value: false. Valid values: • *true*: Only part of the results are returned this time. • *false*: All results are returned. Parent nodes: ListMultipartUploadsResult
Upload	Container	The container that stores the information about multipart upload tasks. Child nodes: Key, UploadId, and Initiated Parent nodes: ListMultipartUploadsResult

Element	Type	Description
Key	String	The name of the object for which a multipart upload task was initiated. Parent nodes: Upload ⓘ **Note** The results returned by OSS are listed in ascending alphabetical order of object names. Multiple multipart upload tasks that are initiated to upload the same object are listed in ascending order of upload IDs.
UploadId	String	The ID of the multipart upload task. Parent nodes: Upload
Initiated	Date	The time when the multipart upload task was initialized. Parent nodes: 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</NextUploadIdMarker>
    <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 use OSS SDKs for the following programming languages to call the ListMultipartUploads operation:

- Java
- Go
- C++
- PHP
- .NET

8.3.7. ListParts

Lists all parts that are uploaded by using a specified upload ID.

Usage notes

- The results returned by Object Storage Service (OSS) are listed in ascending order of part numbers.

- Errors may occur during network transmission. Therefore, to generate the list of uploaded parts, we recommend that you do not use the part numbers and ETag values in the results of the ListParts operation.

Request syntax

```
Get  /ObjectName?uploadId=UploadId HTTP/1.1
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: GMT Date
Authorization: Signature
```

Request headers

This request contains only common request headers. For more information, see Common request headers.

Request parameters

Parameter	Type	Example	Description
uploadId	String	0004B999EF5A 239BB9138C62 27D69F95	The ID of the multipart upload task. Default value: null
max-parts	Integer	1000	The maximum number of parts that can be returned by OSS. Default value: *1000* Maximum value: *1000*
part-number-marker	Integer	100	The position from which the list starts. All parts whose part numbers are greater than the value of this parameter are listed. Default value: null
encoding-type	String	url	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 specify the Encoding-type parameter to encode the returned object name. Default value: null Valid value: *url*

Response headers

The response to this request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description
ListPartsResult	Container	N/A	The container that stores the response of the ListParts request. Child nodes: Bucket, Key, UploadId, PartNumberMarker, NextPartNumberMarker, MaxParts, IsTruncated, and Part Parent nodes: none
Bucket	String	multipart_upload	The name of the bucket. Parent nodes: ListPartsResult
EncodingType	String	url	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 nodes: ListPartsResult
Key	String	multipart.data	The name of the object. Parent nodes: ListPartsResult
UploadId	String	0004B999EF5A239BB9138C6227D69F95	The ID of the upload task. Parent nodes: ListPartsResult
PartNumberMarker	Integer	10	The position from which the list starts. All parts whose part numbers are greater than the value of this parameter are listed. Parent nodes: ListPartsResult
NextPartNumberMarker	Integer	5	The NextPartNumberMarker value that is used for the PartNumberMarker value in a subsequent request when the response does not contain all required results. Parent nodes: ListPartsResult

Element	Type	Example	Description
MaxParts	Integer	1000	The maximum number of parts in the response. Parent nodes: ListPartsResult
IsTruncated	Enumerated string	false	Indicates whether the list of parts returned in the response has been truncated. A value of true indicates that the response does not contain all required results. A value of false indicates that the response contains all required results. Valid values: *true* and *false* Parent nodes: ListPartsResult
Part	Container	N/A	The container that stores the information about parts. Child nodes: PartNumber, LastModified, ETag, and Size Parent nodes: ListPartsResult
PartNumber	Integer	1	The number that identifies a part. Parent nodes: ListPartsResult.Part
LastModified	Date	2012-02-23T07:01:34.000Z	The time when the part was uploaded. Parent nodes: ListPartsResult.Part
ETag	String	3349DC700140D7F86A0784842780****	The ETag value of the content of the uploaded part. Parent nodes: ListPartsResult.Part
Size	Integer	6291456	The size of the uploaded parts. Parent nodes: ListPartsResult.Part

Examples

Sample request

```
Get  /multipart.data?uploadId=0004B999EF5A239BB9138C6227D6****  HTTP/1.1
Host: oss-example.oss-cn-hangzhou.aliyuncs.com
Date: Thu, 23 Feb 2012 07:13:28 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:4qOnUMc9UQWqkz8wDqD3lIsa****
```

Sample response

```
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>0004B999EF5A239BB9138C6227D6****</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 use OSS SDKs for the following programming languages to call the ListParts operation:

- Java
- PHP
- Python
- Node.js
- Browser.js
- Android
- iOS
- Go
- C++
- .NET

8.4. ACL

8.4.1. PutObjectACL

You can call this operation to modify the access control list (ACL) of an object. Only the bucket owner that has permissions to read and write objects in the bucket can call this operation to modify object ACLs.

Versioning

By default, the PutObjectACL operation is called to configure the ACL of the current version of an object. You can specify a version ID in the request to configure the ACL of the specified version of an object. If the specified version is a delete marker, OSS returns 404 Not Found.

ACL overview

When you call the PutObjectACL operation, you can set the `x-oss-object-acl` header in request to configure the ACL of an object. The following table describes the ACLs that you can configure for an object.

ACL	Description
private	The object is a private resource. Only the owner of this object has permissions to read and write this object. Other users cannot access the object.
public-read	The object is a public-read resource. Only the owner of this object has permissions to write this object. Other users can only read the object.
public-read-write	The object is a public-read-write resource. All users have permissions to read and write this object.
default	The ACL of the object is the same as that of the bucket in which the object is stored.

> ⑦ Note
> - The ACL of an object takes precedence over the ACL of the bucket in which the object is stored. For example, if an object whose ACL is public-read-write is stored in a bucket whose ACL is private, all users can read and write the object. By default, if you do not configure the ACL of an object, the ACL of the object is the same as that of the bucket in which the object is stored.
> - Operations that read objects include GetObject, HeadObject, CopyObject, and UploadPartCopy, in which CopyObject and UploadPartCopy read the source object. Operations that write objects include PutObject, PostObject, AppendObject, DeleteObject, DeleteMultipleObjects, CompleteMultipartUpload, and CopyObject, in which CopyObject writes the destination object.
> - When you call operations to write an object, you can also include the x-oss-object-acl header in the request to configure the ACL of the object. For example, you can include the x-oss-object-acl header in a PutObject request to configure the ACL of the object to upload.

Request structure

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

Request headers

Header	Type	Required	Example	Description
x-oss-object-acl	String	No	public-read	The ACL of the object when the object is created. Default value: default. Valid values: • *default*: The ACL of the object is the same as that of the bucket in which the object is stored. • *private*: The object is a private resource. Only the owner of this object and authorized users have permissions to read and write this object. • *public-read*: The object is a public-read resource. Only the owner of this object and authorized users have permissions to write this object. Other users can only read the object. Exercise caution when you set the ACL of the object to this value. • *public-read-write*: The object is a public-read-write resource. All users have permissions to read and write the object. Exercise caution when you set the ACL of the object to this value. For more information about ACLs, see Object ACL.

For more information about the common headers included in PutObjectACL requests such as Host and Date, see Common request headers.

Examples

● Modify the ACL of an object in an unversioned bucket

Sample requests

```
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****
```

Sample responses

```
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
```

- Modify the ACL of an object in a versioned bucket

  Sample requests

```
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****
```

  Sample responses

```
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

You can use OSS SDKs for the following programming languages to call the PutObjectACL operation:

- Java
- Python
- PHP
- Go
- C
- .NET
- Node.js
- Browser.js

Error codes

Error code	HTTP status code	Description
AccessDenied	403	The error message returned because you are not the bucket owner or do not have permissions to read and write the object whose ACL you want to modify.
InvalidArgument	400	The error message returned because the specified x-oss-object-acl value is invalid.
FileAlreadyExists	409	The error message returned because the object whose ACL you want to modify is a directory in a bucket for which the hierarchical namespace feature is enabled.

8.4.2. GetObjectACL

Queries the access control list (ACL) of an object in a bucket.

Versioning

By default, when you call the GetObjectACL operation to query the ACL of an object, only the ACL of the current version of the object is returned. You can specify the versionId parameter in the request to query the ACL of a specified version of an object. If the specified version is a delete marker, Object Storage Service (OSS) returns 404 Not Found.

> **Note** If you call the GetObjectACL operation to query the ACL of an object for which no ACL is configured, OSS returns the default ACL of this object. In this case, the ACL of this object is the same as the ACL of the bucket in which the object is stored. For example, if the ACL of the bucket in which the object is stored is private, the ACL of 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
```

Request headers

A DeleteObject request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a CopyObject request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Description

Element	Type	Description
AccessControlList	Container	The container that stores the ACL information. Parent nodes: AccessControlPolicy
AccessControlPolicy	Container	The container that stores the results of the GetObjectACL request. Parent nodes: none
DisplayName	String	The name of the bucket owner, which is the same as the user ID. Parent nodes: AccessControlPolicy.Owner
Grant	Enumerated string	The ACL of the object. Default value: default. Valid values: • *default*: The ACL of the object is the same as the ACL of the bucket in which the object is stored. • *private*: The ACL of the object is private. • *public-read*: The ACL of the object is public read. • *public-read-write*: The ACL of the object is public read/write. Parent nodes: AccessControlPolicy.AccessControlList
ID	String	The user ID of the bucket owner. Parent nodes: AccessControlPolicy.Owner
Owner	Container	The container that stores the information about the bucket owner. Parent nodes: AccessControlPolicy

Examples

- Query the ACL of an object in an unversioned bucket

  Sample requests

  ```
  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****
  ```

  Sample responses

```
HTTP/1.1 200 OK
x-oss-request-id: 559CC9BDC755F95A64485981
Date: Wed, 29 Apr 2015 05:21:12 GMT
Content-Length: 253
Content-Tupe: 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>
```

- Query the ACL of an object in a versioned bucket

  Sample requests

```
GET /example?acl&versionId=CAEQMhiBgMC1qpSD0BYiIGQ0ZmI5ZDEyYWVkNTQwMjBiNTliY2NjNmY3ZTVk**** 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****
```

  Sample responses

```
HTTP/1.1 200 OK
x-oss-version-id: CAEQMhiBgMC1qpSD0BYiIGQ0ZmI5ZDEyYWVkNTQwMjBiNTliY2NjNmY3ZTVk****
x-oss-request-id: 5CAC3BF2B7AEADE017000621
Date: Tue, 09 Apr 2019 06:30:10 GMT
Content-Length: 261
Content-Tupe: 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

You can use OSS SDKs for the following programming languages to call the GetObjectACL operation:

- 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.	The error message returned because you are not authorized to perform the GetObjectACL operation. Only the bucket owner has permissions to call the GetObjectACL operation to query the ACL of an object in the bucket.
FileAlreadyExists	409	The object you specified already exists and is a directory.	The error message returned because the object whose ACL you want to query is a directory in a bucket for which the hierarchical namespace feature is enabled.

8.5. Symbolic link

8.5.1. PutSymlink

You can call this operation to create a symbolic link that points to target object. You can use the symbolic link to access the target object.

Usage notes

- When you use the PutSymlink operation to create a symbolic link, OSS does not check whether the target object exists, whether the storage class of the target object is valid, or whether you can access the target object.

- The ACL of a symbolic link and the ACL of the target object to which the symbolic link points are checked when API operations such as GetObject are called to access the target object.

- If a PutSymlink request contains a parameter whose name is prefixed with x-oss-meta-, the parameter is considered the user metadata of the symbolic link. Example: x-oss-meta-location. An object can have multiple parameters whose names contain the x-oss-meta- prefix. However, the total size of all user metadata of the object cannot exceed 8 KB.

- By default, if the object that you want to create already exists and you have permissions to access the existing object, the new object overwrites the existing object, and OSS returns 200 OK.

Versioning

You can create a symbolic link for a target object and point the symbolic link to the current version of the target object.

A symbolic link can have multiple versions. You can use the PutSymlink operation to point each version of a symbolic link to different target objects. In this case, the IDs of the versions are generated by OSS and are returned in the response as the x-oss-version-id header.

Request structure

```
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-forbid-overwrite	String	No	Specifies whether the PutSymlink operation overwrites the object that has the same name as that of the symbolic link you want to create. • If x-oss-forbid-overwrite is not specified or the value of x-oss-forbid-overwrite is set to *false*, an existing object that has the same name as that of the symbolic link you want to create is overwritten. • If the value of x-oss-forbid-overwrite is set to *true*, an existing object that has the same name as that of the symbolic link you want to create cannot be overwritten. If you specify the x-oss-forbid-overwrite request header, the queries per second (QPS) performance of OSS may be degraded. If you want to specify the x-oss-forbid-overwrite header in a large number of requests (QPS greater than 1,000), submit a ticket. ⑦ **Note** The x-oss-forbid-overwrite request header does not take effect when versioning is enabled or suspended for the bucket in which the symbolic link you want to create is stored. In this case, the PutSymlink operation overwrites the existing object that has the same name as that of the symbolic link you want to create.
x-oss-symlink-target	String	Yes	The target object to which the symbolic link points. The naming conventions for target objects are the same as those for objects. • Similar to ObjectName, TargetObjectName must be URL-encoded. • The target object to which a symbolic link points cannot be a symbolic link.

Header	Type	Required	Description
x-oss-object-acl	String	No	The access control list (ACL) of the symbolic link you want to create. Default value: default. Valid values: • *default*: The ACL of the symbolic link is the same as that of the bucket in which the symbolic link is stored. • *private*: The symbolic link is a private resource. Only the owner of this symbolic link and authorized users have permissions to read and write this symbolic link. • *public-read*: The symbolic link is a public-read resource. Only the owner of this symbolic link and authorized users have permissions to write this symbolic link. Other users can only read the symbolic link. Exercise caution when you set the ACL of the symbolic link to this value. • *public-read-write*: The symbolic link is a public-read-write resource. All users have permissions to read and write the symbolic link. Exercise caution when you set the ACL of the symbolic link to this value. For more information about ACLs, see Object ACL.
x-oss-storage-class	String	No	The storage class of the symbolic link. If you specify the storage class when you upload the object, the specified storage class applies regardless of the storage class of the bucket in which the object is stored. For example, if you set x-oss-storage-class to Standard when you upload an object to an IA bucket, the storage class of the uploaded object is Standard. Valid values: • *Standard* • *IA* • *Archive* IA and Archive objects have a minimum billable size of 64 KB. We recommend that you do not set the storage class to IA or Archive in PutSymlink requests. For more information about storage classes, see Overview.

For more information about the common headers included in PutSymlink requests such as Host and Date, see Common request headers.

Response headers

The response headers involved in this API operation contain only common response headers. For more information, see Common response headers.

Examples

• Sample requests

```
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-targ
et: oss****
x-oss-storage-class: Standard
```

Sample responses

```
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****"
```

- Sample requests for a versioned bucket

```
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:NVXXKiyUJ2tg07PxININU0eO****
x-oss-symlink-target: oss.jpg
```

Sample responses

```
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: CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3MWRiNGRh****
x-oss-request-id: 5CAC40C8B7AEADE01700064B
ETag: "136A5E127272200EDAB170DD84DE****"
```

SDK

You can use OSS SDKs for the following programming languages to call the PutSymlink operation:

- Java
- Python
- PHP
- Go
- C
- C++
- .NET
- Android
- iOS
- Node.js

Error codes

Error code	HTTP status code	Description
InvalidArgument	400	The error message returned because the value of StorageClass is invalid.
FileAlreadyExists	409	The error message returned because an object with the same name already exists and the request contains the x-oss-forbid-overwrite=true header.
FileImmutable	409	The error message returned because the data you want to delete or modify is protected by a retention policy.

8.5.2. 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:UNQDb7GapEgJCZkcde6OhZ9J****
```

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=CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3
MWRiNGRh**** 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: CAEQNRiBgMClj7qD0BYiIDQ5Y2QyMjc3NGZkODRlMTU5M2VkY2U3MWRiNGRh****
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
- C++
- .NET
- Android
- iOS
- Node.js

Error codes

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

Error code	HTTP status code	Description
NotSymlink	400	The requested symbol link does not exist.

8.6. Tagging

8.6.1. PutObjectTagging

Adds tags to an object or updates the tags added to the object. The object tagging feature uses a key-value pair to tag an object.

Usage notes

- You can add up to 10 tags to an object. The tags added to an object must have unique tag keys.

- A tag key can be up to 128 characters in length. A tag value can be up to 256 characters in length.

- Tag keys and values are case-sensitive.

- The key and value of a tag can contain letters, digits, spaces, and the following special characters:

  + - = ._:/

  If the tags of the HTTP header contain characters, you must perform URL encoding on the keys and values of the tags.

- The Last-Modified value of an object is not updated when the object tags are changed.

For more information about object tags, see Object tagging.

Versioning

By default, when you call PutObjectTagging to add tags to an object or update the tags configured for an object, the tags are added to the current version of the object or the tags configured for the current version of the object are updated. You can specify the versionId parameter in the request to add tags to a specified version of an object or update the tags configured for a specified version of an object. If the specified version is a delete marker, OSS returns 404 Not Found.

Request syntax

```
PUT /objectname?tagging
Content-Length: 114
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 18 Mar 2019 08:25:17 GMT
Authorization: SignatureValue
<Tagging>
  <TagSet>
    <Tag>
      <Key>Key</Key>
      <Value>Value</Value>
    </Tag>
  </TagSet>
</Tagging>
```

Request elements

Element	Type	Required	Description
Tagging	Container	Yes	The container used to store the collection of tags. Child nodes: TagSet
TagSet	Container	Yes	The container used to store the collection of tags. Parent nodes: Tagging Child nodes: Tag
Tag	Container	No	The container used to store the collection of tags. Parent nodes: TagSet Child nodes: Key and Value
Key	String	No	The key of the object tag. Parent nodes: Tag Child nodes: none
Value	String	No	The value of the object tag. Parent nodes: Tag Child nodes: none

Examples

- Add tags to an object in an unversioned bucket

  In this example, an object named objectname is stored in an unversioned bucket named bucketname. A PutObjectTagging request is sent to add the {a:1} and {b:2} tags to objectname. After the two tags are added to the object, 200 (OK) is returned.

  Sample requests

```
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>
```

Sample responses

```
200 (OK)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5C8F55ED461FB4A64C00****
date: Mon, 18 Mar 2019 08:25:17 GMT
```

- Add tags to an object in a versioned bucket

  In this example, an object named objectname is stored in a versioned bucket named bucketname. A PutObjectTagging request is sent to add the {age:18} tag to the specified version of objectname. After the tag is added to the specified version of the object, 200 (OK) is returned.

  Sample requests

```
PUT /objectname?tagging&versionId=CAEQExiBgID.jImWlxciIDQ2ZjgwODIyNDk5MTRhNzBiYmQwYTZkMTYzZ
jM0****
Content-Length: 90
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 24 Jun 2020 08:58:15 GMT
Authorization: OSS ***********:********************
<Tagging>
  <TagSet>
    <Tag>
      <Key>age</Key>
      <Value>18</Value>
    </Tag>
  </TagSet>
</Tagging>
```

  Sample responses

```
200 (OK)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5EF315A7FBD3EC3232B4****
date: Wed, 24 Jun 2020 08:58:15 GMT
x-oss-version-id: CAEQExiBgID.jImWlxciIDQ2ZjgwODIyNDk5MTRhNzBiYmQwYTZkMTYzZjM0****
```

SDK

You can use OSS SDKs for the following programming languages to call the PutObjectTagging operation:

- Java
- Python
- Go
- C++
- .NET
- Node.js

Error codes

Error code	HTTP status code	Description
FileAlreadyExists	409	The error message returned because the object for which you want to configure or update tags is a directory within a bucket that has the hierarchical namespace feature enabled.

8.6.2. GetObjectTagging

You can call this operation to query the tags of an object.

Versioning

By default, the GetObjectTagging operation is called to query the tags of the current version of an object. If the current version of the object is a delete marker, OSS returns 404 Not Found. You can query the tags of a specified version of an object by specifying the versionId parameter.

Request structure

```
GET /objectname? tagging
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 20 Mar 2019 02:02:36 GMT
Authorization: SignatureValue
```

Request headers

A GetObjectTagging request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a GetObjectTagging request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Description
Tagging	Container	The collection of tags. Child node: TagSet
TagSet	Container	The collection of tags. Parent node: Tagging Child node: Tag
Tag	Container	The collection of tags. Parent nodes: TagSet Child nodes: Key and Value
Key	String	The key of the object tag. Parent nodes: Tag Child node: none
Value	String	The value of the object tag. Parent nodes: Tag Child node: none

Examples

- Sample request for querying the tags of an object in an unversioned bucket

  You can send this request to query the tags {a:1} and {b:2} of objectname in bucketname that is unversioned. After the two object tags are obtained, 200 OK is returned.

  ```
  GET /objectname? tagging
  Host: BucketName.oss-cn-hangzhou.aliyuncs.com
  Date: Wed, 20 Mar 2019 02:02:36 GMT
  Authorization: OSS qn6qrrqxo2oawuk53otf****:kZoYNv66bsmc10+dcGKw5x2P****
  ```

  Sample response

```
200 (OK)
content-length: 209
server: AliyunOSS
x-oss-request-id: 5C8F55ED461FB4A64C00****
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>
```

- Sample requests for querying the tags of an object in a versioned bucket

  You can send this request to query the tag {age:18} of the specified version of objectname in bucketname that is versioned. The version is specified by versionId. After the tag of the specified version of the object is obtained, 200 OK is returned.

```
GET /objectname? tagging&versionId=CAEQExiBgID.jImWlxciIDQ2ZjgwODIyNDk5MTRhNzBiYmQwYTZkMTYz
ZjM0****
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 24 Jun 2020 08:50:28 GMT
Authorization: OSS ************:********************
```

  Sample response

```
200 (OK)
content-length: 161
server: AliyunOSS
x-oss-request-id: 5EF313D44506783438F3****
date: Wed, 24 Jun 2020 08:50:28 GMT
content-type: application/xml
x-oss-version-id: CAEQExiBgID.jImWlxciIDQ2ZjgwODIyNDk5MTRhNzBiYmQwYTZkMTYzZjM0****
<? xml version="1.0" encoding="UTF-8"? >
<Tagging>
  <TagSet>
    <Tag>
      <Key>age</Key>
      <Value>18</Value>
    </Tag>
  </TagSet>
</Tagging>
```

SDK

You can call GetObjectTagging by using OSS SDKs for the following programming languages:

- Java

- Python
- Go
- C++
- .NET
- Node.js

8.6.3. DeleteObjectTagging

You can call this operation to delete the tags of a specified object.

Versioning

By default, the DeleteObjectTagging operation is called to delete the tags of the current version of an object. If the current version of the object is a delete marker, OSS returns 404 Not Found. You can delete the tags of a specified version of an object by specifying the versionId parameter.

Request structure

```
DELETE /objectname? tagging
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Mon, 18 Mar 2019 08:25:17 GMT
Authorization: SignatureValue
```

Request headers

A DeleteObjectTagging request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a DeleteObjectTagging request contains only common response headers. For more information, see Common response headers.

Examples

- Sample request for deleting the tags of an object in an unversioned bucket

  You can send this request to delete all tags of objectname in bucketname that is unversioned.

  ```
  DELETE /objectname? tagging
  Host: BucketName.oss-cn-hangzhou.aliyuncs.com
  Date: Tue, 09 Apr 2019 03:00:33 GMT
  Authorization: OSS qn6qrrqxo2oawuk53otf****:kZoYNv66bsmc10+dcGKw5x2P****
  ```

  Sample response

  ```
  204 (No Content)
  content-length: 0
  server: AliyunOSS
  x-oss-request-id: 5CAC0AD16D0232E2051B****
  date: Tue, 09 Apr 2019 03:00:33 GMT
  ```

- Sample request for deleting the tags of an object in a versioned bucket

You can send this request to delete all tags of the specified version of objectname in bucketname that is versioned. The version is specified by versionId.

```
DELETE /objectname? tagging&versionId=CAEQExiBgID.jImWlxciIDQ2ZjgwODIyNDk5MTRhNzBiYmQwYTZkM
TYzZjM0****
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Date: Wed, 24 Jun 2020 09:01:09 GMT
Authorization: OSS qn6qrrqxo2oawuk53otf****:kZoYNv66bsmc10+dcGKw5x2P****
```

Sample response

```
204 (No Content)
content-length: 0
server: AliyunOSS
x-oss-request-id: 5EF3165525D95C3338E8****
date: Wed, 24 Jun 2020 09:01:09 GMT
x-oss-version-id: CAEQExiBgID.jImWlxciIDQ2ZjgwODIyNDk5MTRhNzBiYmQwYTZkMTYzZjM0****
```

SDK

You can call DeleteObjectTagging by using OSS SDKs for the following programming languages:

- Java
- Python
- Go
- C++
- .NET
- Node.js

9.LiveChannel-related operations

9.1. 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.

9.2. RTMP ingest URLs and signatures

This topic describes RTMP ingest URLs and their signature method.

> ? **Note** You must add a signature to an 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.

RTMP ingest URL

An RTMP ingest URL must be in the following format: `rtmp://${bucket}.${host}/live/${channel}?${params}`. Example: `rtmp://your-bucket.oss-cn-hangzhou.aliyuncs.com/live/test-channel`.

- `bucket` : The bucket name. Example: `examplebucket`. For more information about the naming conventions for buckets, see bucket.

- `host` : The endpoint of the region. Example: `oss-cn-hangzhou.aliyuncs.com`. For more information about endpoints, see Regions and endpoints.

- `live` : The name of the app used for RTMP ingest. OSS uses "live" for RTMP ingest.

- `channel` : The name of the LiveChannel. Example: `test-channel`. For more information about the naming conventions for LiveChannels, see PutLiveChannel.

- `params` : The ingest parameter. The format of the parameter must be the same as that of 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	The name of the generated M3U8 file. ⑦ **Note** The generated M3U8 file will still contain the `${channel_name}/` prefix.

Signature method of RTMP ingest URLs

A signed RTMP ingest URL is in the following format: `rtmp://${bucket}.${host}/live/${channel}?OSSAccessKeyId=xxx&Expires=yyy&Signature=zzz&${params}`.

The following table describes the parameters in signed RTMP ingest URLs.

Parameter	Description
OSSAccessKeyId	Plays the same role as AccessKeyId in signed HTTP requests.
Expires	The UNIX timestamp.
Signature	The signature string.
params	Other parameters. All parameters must be included in the signature.

The signature is calculated using the following method:

```
base64(hmac-sha1(AccessKeySecret,
    + Expires + "\n"
    + CanonicalizedParams
    + CanonicalizedResource))
```

The following table describes the parameters involved in signature calculation.

Parameter	Description
CanonicalizedParams	The canonicalized query string created by arranging the parameter keys in alphabetical order. Parameters must be in the `key:value\n` format. ⑦ **Note** • The value of this parameter is null if no parameter is specified. • SecurityToken, OSSAccessKeyId, Expire, and Signature are not used for creating a canonicalized query string. • Every parameter key is used in the string only once.

Parameter	Description
CanonicalizedResource	The value of this parameter is in the `/BucketName/ChannelName` format. Example: `examplebucket/test-channel` .

9.3. PutLiveChannel

Before you can upload audio and video data by using the Real-Time Messaging Protocol (RTMP), you must call the PutLiveChannel operation to create a LiveChannel. The response to the PutLiveChannel request includes the URL that is used to ingest streams to the LiveChannel and the URL that is used to play the ingested streams.

> ⑦ **Note**   You can use the returned URLs to ingest and play streams. In addition, you can perform operations based on the returned LiveChannel name, such as query stream ingesting status, query stream ingesting records, and disable stream ingesting.

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>
  <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 headers

Header	Type	Required	Description

Header	Type	Required	Description
ChannelName	String	Yes	The name of the LiveChanel that you want to create. The name must comply with the naming conventions for objects and cannot contain forward slashes (/).

Request elements

Element	Type	Required	Description
LiveChannelConfiguration	Container	Yes	The container that stores the configurations of the LiveChannel. Child nodes: Description, Status, and Target Parent nodes: none
Description	String	No	The description of the LiveChannel. The description can be up to 128 bytes in length. Child nodes: none Parent nodes: LiveChannelConfiguration
Status	Enumerated string	No	The status of the LiveChannel. Child nodes: none Parent nodes: LiveChannelConfiguration Valid values: *enabled* and *disabled* Default value: *enabled*
Target	Container	Yes	The container that stores the configurations used by the LiveChannel to store uploaded data. Child nodes: Type, FragDuration, FragCount, and PlaylistName Parent nodes: LiveChannelConfiguration

Element	Type	Required	Description
Type	Enumerated string	Yes	The format in which the LiveChannel stores uploaded data. Child nodes: none Parent nodes: Target Valid value: *HLS* ⑦ **Note** • If the value of Type is HLS, Object Storage Service (OSS) updates the m3u8 file each time when a ts file is generated. The maximum number of the latest ts files that can be contained in the m3u8 file is specified by the FragCount element. • If the value of Type is HLS, when the duration of the audio and video data written to the current ts file exceeds the duration specified by FragDuration, OSS switches to the next ts file to write data before the next key frame is received. If OSS does not receive the next key frame after max(2*FragDuration, 60s), OSS forcibly switches to the next ts file. In this case, the playback of the stream may stall.

Element	Type	Required	Description
FragDuration	String	No	The duration of each ts file when the value of Type is HLS. Unit: seconds. Child nodes: none Parent nodes: Target Valid values: [1, 100] Default value: *5* ⑦ **Note** The default values of FragDuration and FragCount take effect only when the values of the two elements are both not specified. The values of the FragDuration and FragCount elements must be specified at the same time.
FragCount	String	No	The number of ts files included in the m3u8 file when the value of Type is HLS. Child nodes: none Parent nodes: Target Valid values: [1, 100] Default value: *3* ⑦ **Note** The default values of FragDuration and FragCount take effect only when the values of the two elements are both not specified. The values of the FragDuration and FragCount elements must be specified at the same time.
PlaylistName	String	No	The name of the generated m3u8 file when the value of Type is HLS. The name must end with .m3u8. Child nodes: none Parent nodes: Target Default value: *playlist.m3u8* Valid values: [6, 128]

Element	Type	Required	Description
Snapshot	Container	No	The container that stores the options of the high-frequency snapshot operations. Child nodes: RoleName, DestBucket, NotifyTopic, Interval, and PornRec Parent nodes: Snapshot
RoleName	String	No	The name of the role used to perform high-frequency snapshot operations. The role must have write permissions on DestBucket and permissions to send messages to NotifyTopic. Child nodes: none Parent nodes: Snapshot
DestBucket	String	No	The bucket that stores the results of high-frequency snapshot operations. The bucket must belong to the same owner as the current bucket. Child nodes: none Parent nodes: Snapshot
NotifyTopic	String	No	The MNS topic used to notify users of the results of high-frequency snapshot operations. Child nodes: none Parent nodes: Snapshot
Interval	Number	Yes	The interval of high-frequency snapshot operations. If no key frame (inline frame) exists within the interval, no snapshot is captured. Unit: seconds. Child nodes: none Parent nodes: Snapshot Valid values: [1, 100] This parameter is empty by default.

Response elements

Element	Type	Description

Element	Type	Description
CreateLiveChannelResult	Container	The container that stores the response to the CreateLiveChannel request. Child nodes: PublishUrls and PlayUrls Parent nodes: none
PublishUrls	Container	The container that stores the URL used to ingest streams to the LiveChannel. Child nodes: Url Parent nodes: CreateLiveChannelResult
Url	String	The URL used to ingest streams to the LiveChannel. Child nodes: none Parent nodes: PublishUrls ⑦ Note • The URL used to ingest streams is not signed. If the access control list (ACL) of the bucket is not public read/write, you must add a signature to the URL before you use the URL to access the bucket. • The URL used to play streams is not signed. If the ACL of the bucket is private, you must add a signature to the URL before you use the URL to access the bucket.
PlayUrls	Container	The container that stores the URL used to play the streams ingested to the LiveChannel. Child nodes: Url Parent nodes: CreateLiveChannelResult
Url	String	The URL used to play the streams ingested to the LiveChannel. Child nodes: none Parent nodes: PlayUrls

Examples

Sample requests

```
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+a****
<?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>
```

Sample responses

```
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>
```

9.4. ListLiveChannel

Lists specified LiveChannels.

Request syntax

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

Request elements

Element	Type	Required	Description
Marker	String	No	The name of the LiveChannel after which the list operation starts. LiveChannels whose names are alphabetically after the value of the marker parameter are returned.
Max-keys	String	No	The maximum number of LiveChannels that can be returned in the operation. Valid values: 1 to 1000 Default value: 100
Prefix	String	No	The prefix that the names of the LiveChannels that you want to return must contain. If you specify a prefix in the request, the specified prefix is included in the response.

Response elements

Element	Type	Description
ListLiveChannelResult	Container	The container that stores the results of the ListLiveChannel request. Child nodes: Prefix, Marker, MaxKeys, IsTruncated, NextMarker, and LiveChannel Parent nodes: none
Prefix	String	The prefix that the names of the returned LiveChannels contain. Child nodes: none Parent nodes: ListLiveChannelResult
Marker	String	The name of the LiveChannel after which the ListLiveChannel operation starts. Child nodes: none Parent nodes: ListLiveChannelResult

Element	Type	Description
MaxKeys	String	The maximum number of returned LiveChannels in the response. Child nodes: none Parent nodes: ListLiveChannelResult
IsTruncated	String	Indicates whether all results are returned. • true: All results are returned. • false: Not all results are returned. Child nodes: none Parent nodes: ListLiveChannelResult
NextMarker	String	If not all results are returned, the NextMarker parameter is included in the response to indicate the Marker value of the next request. Child nodes: none Parent nodes: ListLiveChannelResult
LiveChannel	Container	The container that stores the information about each returned LiveChannel. Child nodes: Name, Description, Status, LastModified, PublishUrls, and PlayUrls Parent nodes: ListLiveChannelResult
Name	String	The name of the LiveChannel. Child nodes: none Parent nodes: LiveChannel
Description	String	The description of the LiveChannel. Child nodes: none Parent nodes: LiveChannel
Status	Enumerated string	The status of the LiveChannel. Child nodes: none Parent nodes: LiveChannel Valid values: • *disabled*: The LiveChannel is disabled. • *enabled*: The LiveChannel is enabled.

Element	Type	Description
LastModified	String	The time when the LiveChannel configuration is last modified. Standard: ISO 8601. Child nodes: none Parent nodes: LiveChannel
PublishUrls	Container	The container that stores the URL used to ingest a stream to the LiveChannel. Child nodes: Url Parent nodes: LiveChannel
Url	String	The URL used to ingest a stream to the LiveChannel. Child nodes: none Parent nodes: PublishUrls
PlayUrls	Container	The container that stores the URL used to play a stream ingested to the LiveChannel. Child nodes: Url Parent nodes: LiveChannel
Url	String	The URL used to play a stream ingested to the LiveChannel. Child nodes: none Parent nodes: PlayUrls

For more information about the common response headers such as ETag and x-oss-request-id contained in the responses to HeadObject requests, see Common response headers.

Examples

Sample request

```
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 YJjHKOKWDWIN****:TaX+tlc/Xsgpz6uRuqcbmUJs****
```

Sample response

```
HTTP/1.1 200
content-length: 656
server: AliyunOSS
connection: close
x-oss-request-id: 57BEA331B92475920B00****
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>
```

9.5. DeleteLiveChannel

You can call this operation to delete a specified LiveChannel.

> ⑦ Note
> - If you send a DeleteLiveChannel request to delete a LiveChannel to which a client is ingesting streams, the request fails.
> - When you call this operation to delete a LiveChannel, only the LiveChannel is deleted. Files generated during stream ingestion are not deleted.

Request structure

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

Examples

Sample request

```
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:ZbfvQ3XwmYEE8O9CX8kwVQY****
```

Sample response

```
HTTP/1.1 204
content-length: 0
server: AliyunOSS
connection: close
x-oss-request-id: 57BE9F0AB92475920B0*****
date: Thu, 25 Aug 2016 07:32:26 GMT
```

9.6. PutLiveChannelStatus

A LiveChannel can be in one of the following states: enabled or disabled. You can call this operation to set a LiveChannel to one of the two states.

Usage notes

When you call PutLiveChannelStatus, take note of the following items:

- If a LiveChannel is in the disabled state, OSS prohibits you from ingesting streams to the LiveChannel. If you are ingesting a stream to a LiveChannel when the status of the LiveChannel is switched to disabled, your client is disconnected from the LiveChannel after about 10 seconds.

- When no stream is ingested to a LiveChannel, You can also re-create the LiveChannel by calling PutLiveChannel to change the status of the LiveChannel.

- When a stream is being ingested to a LiveChannel, you can only call PutLiveChannelStatus to set the LiveChannel to the disabled state.

Request structure

```
PUT /ChannelName? live&status=NewStatus HTTP/1.1
Date: Tue, 25 Dec 2018 17:35:24 GMT
Host: BucketName.oss-cn-hangzhou.aliyuncs.com
Authorization: SignatureValue
```

Request headers

Header	Type	Required	Description
NewStatus	String	Yes	Specifies the status of the LiveChannel. Valid values: • enabled: enables the LiveChannel. • disabled: disables the LiveChannel.

For more information about the common request headers contained in a PutLiveChannelStatus request, see Common request headers.

Response headers

The response to a PutLiveChannelStatus request contains only common response headers. For more information, see Common response headers.

Examples

Sample request

```
PUT /test-channel? live&status=disabled HTTP/1.1
Date: Tue, 25 Dec 2018 17:35:24 GMT
Host: test-bucket.oss-cn-hangzhou.aliyuncs.com
Authorization: OSS YJjHKOKWDWIN****:X/mBrSbkNoqM/JoAfRC0ytyQ****
```

Sample response

```
HTTP/1.1 200
Content-Length: 0
Server: AliyunOSS
Connection: close
x-oss-request-id: 57BE8422B92475920B00****
Date: Tue, 25 Dec 2018 17:35:24 GMT
```

9.7. GetLiveChannelInfo

You can call this operation to query the configuration information about a specified LiveChannel.

Request structure

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

Request headers

A GetLiveChannelInfo request contains only common request headers. For more information, see Common request headers.

Response headers

The response to a GetLiveChannelInfo request contains only common response headers. For more information, see Common response headers.

Response elements

Element	Type	Example	Description

Element	Type	Example	Description
LiveChannelConfiguration	Container	N/A	The container that stores the returned results of the GetLiveChannelInfo request. Child nodes: Description, Status, and Target Parent node: none
Description	String	test	The description of the LiveChannel. Child node: none Parent node: LiveChannelConfiguration
Status	Enumerated string	enabled	The status of the LiveChannel. Child node: none Parent node: LiveChannelConfiguration Valid values: • *enabled*: indicates that the LiveChannel is enabled. • *disabled*: indicates that the LiveChannel is disabled.
Target	Container	N/A	The container that stores the configurations used by the LiveChannel to store uploaded data. Child nodes: Type, FragDuration, FragCount, and PlaylistName ⑦ Note FragDuration, FragCount, and PlaylistName are returned only when the value of Type is HLS. Parent node: LiveChannelConfiguration
Type	Enumerated string	HLS	The format in which the uploaded data is stored when the value of Type is HLS. Child node: none Parent node: Target Valid value: *HLS*

Element	Type	Example	Description
FragDuration	String	2	The duration of each ts file when the value of Type is HLS. Unit: seconds Child node: none Parent node: Target
FragCount	String	3	The number of ts files included in the m3u8 file when the value of Type is HLS. Child node: none Parent node: Target
PlaylistName	String	playlist.m3u8	The name of the generated m3u8 file when the value of Type is HLS. Child node: none Parent node: Target

Examples

Sample requests

```
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 YJjHKOKWDWIN****:D6bDCRXKht58hin1BL83wxyG****
```

Sample responses

```
HTTP/1.1 200
content-length: 475
server: AliyunOSS
connection: close
x-oss-request-id: 57BE87A8B92475920B00****
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>
```

9.8. GetLiveChannelStat

Queries the stream ingestion 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
```

Request headers

A DescribeRegions request contains only common request headers. For more information, see Common request headers.

Response elements

Element	Type	Description
LiveChannelStat	Container	The container that stores the returned results of the GetLiveChannelStat request. Child nodes: Status, ConnectedTime, Video, and Audio Parent nodes: none
Status	Enumerated string	The current stream ingestion status of the LiveChannel. Child nodes: none Parent nodes: LiveChannelStat Valid values: *Disabled*, *Live*, and *Idle*
ConnnectedTime	String	If Status is set to Live, this element indicates the time when the current client starts to ingest streams. The value of the element is in the ISO 8601 format. Child nodes: none Parent nodes: LiveChannelStat
RemoteAddr	String	If Status is set to Live, this element indicates the IP address of the current client that ingests streams. Child nodes: none Parent nodes: LiveChannelStat

Element	Type	Description
Video	Container	The container that stores video stream information if Status is set to Live. ⊘ **Note** Video and audio containers can be returned only if Status is set to Live. However, these two containers may not necessarily be returned if Status is set to Live. For example, if the client has connected to the LiveChannel but no audio or video stream is sent, these two containers are not returned. Child nodes: Width, Height, FrameRate, Bandwidth, and Codec Parent nodes: LiveChannelStat
Width	String	The width of the current video stream. Unit: pixels. Child nodes: none Parent nodes: Video
Height	String	The height of the current video stream. Unit: pixels. Child nodes: none Parent nodes: Video
FrameRate	String	The frame rate of the current video stream. Child nodes: none Parent nodes: Video
Bandwidth	String	The bitrate of the current video stream. Unit: bit/s. Child nodes: none Parent nodes: Video
Codec	Enumerated string	The encoding format of the current video stream. Child nodes: none Parent nodes: Video

Element	Type	Description
Audio	Container	The container that stores audio stream information if Status is set to Live. ⑦ Note Video and audio containers can be returned only if Status is set to Live. However, these two containers may not necessarily be returned if Status is set to Live. For example, if the client has connected to the LiveChannel but no audio or video stream is sent, these two containers are not returned. Child nodes: SampleRate, Bandwidth, and Codec Parent nodes: LiveChannelStat
SampleRate	String	The sample rate of the current audio stream. Child nodes: none Parent nodes: Audio
Bandwidth	String	The bitrate of the current audio stream. ⑦ Note Bandwidth indicates the average bitrate of the audio stream or video stream in the recent period. When LiveChannel is switched to the Live state, the returned value of Bandwidth may be 0. Unit: bit/s. Child nodes: none Parent nodes: Audio
Codec	Enumerated string	The encoding format of the current audio stream. Child nodes: none Parent nodes: Audio

Examples

- Sample request 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:fOzwkAgVTVSO1VKLPIInQ0JY****
```

Sample response 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>
```

- Sample request 2

```
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:WeC5joEaRzfSSS8xK0tlo7WT****
```

Sample response 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>
```

9.9. 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	\Specifies the container that stores the response to the GetLiveChannelHistory request. Sub-node: LiveRecord Parent node: None
LiveRecord	Container	Specifies the container that stores a stream pushing record. Sub-node: StartTime, EndTime, and RemoteAddr Parent node: LiveChannelHistory
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>
```

9.10. 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
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+7fMHLeRlOUnzv0=
```

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
```

9.11. 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. ⑦ **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 YJjHKOKWDWINLKXv:ABIigvnLtCHK+7fMHLeRlOUnzv0=
```

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
```

9.12. FAQ

This topic provides answers to frequently asked questions about LiveChannel.

Process of stream ingest

The following figure shows the process of ingesting a stream to a LiveChannel, which helps you troubleshoot the problems that occur when you ingest a stream to a LiveChannel.
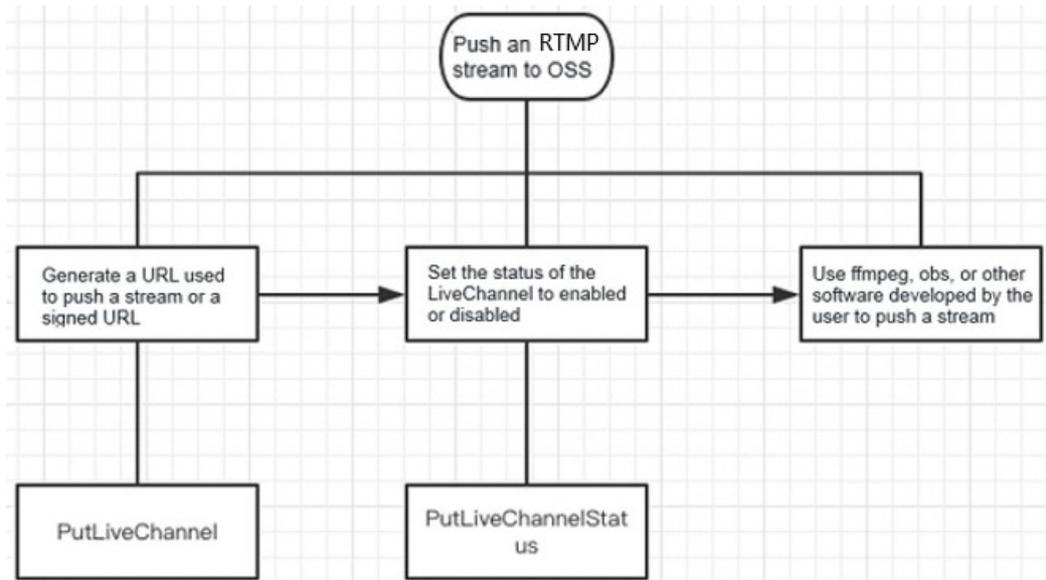
For more information, see PutLiveChannel and PutLiveChannelStatus.

What do I do if the generated M3U8 object does not contain all data that is ingested to the LiveChannel?

Cause: Based on the default rules of the HTTP Live Streaming (HLS) protocol, the generated M3U8 object contains only the last three TS objects.

Solution: Call the PostVodPlaylist operation to converge the *TS* objects generated within the specified time range into the M3U8 object.

- The value of `EndTime` must be greater than the value of `StartTime`. The duration between EndTime and StartTime must be less than one day.
- OSS queries all *TS* objects that are generated by the streams ingested to all specified LiveChannels within the specified time range and converges these objects into an M3U8 playlist object.

What do I do if the M3U8 object failed to be generated?

Cause: Data in the stream is not completely ingested to Object Storage Service (OSS).

Solution: Capture packets on the client to check whether the "publish success" message is returned. This message indicates that the data in the stream is completely uploaded to OSS. If the message is returned but the M3U8 object is not generated, analyze the packets sent from the client to locate the cause.

What do I do if the client cannot ingest a stream to OSS?

Problem description: The client failed to use FFMpeg to ingest a stream to OSS by running the following command:

```
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=LTAlujianb****&Signature=qwh31
xQsanmao6ygCFJgo****%3D&playlistName=playlist.m3u8
```

Solution:

- Use the original command to ingest a stream without setting additional parameters.
- If ampersands (&) are included in the URL used to ingest a stream, enclose the URL with quotation marks (""). 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=LTAlujianb****&S ignature=qwh31xQsanmao6ygCFJgo****%3D&playlistName=playlist.m3u8"` .
- Use OBS to ingest a stream to check whether the problem is caused by FFMpeg.

If the latency of the ingested stream is high, adjust the values of the FragDuration and FragCount parameters when you call the PutLiveChannel operation.

What do I do if lag occurs when I playback the generated M3U8 object?

If the value of Type is HLS, when the duration of the video or audio data in the current *TS* object reaches the value of `FragDuration` , OSS generates a new *TS* object when the next key frame is received. OSS waits for the next key frame for a specific time period (calculated by `max(2*FragDuration, 60s)`) before OSS creates the next TS file. If the next key frame is not received within the period, OSS creates a new TS object and uses the new TS object to store data in the stream. In this case, lag occurs.

What do I do if no audio or video data is included in the generated M3U8 object?

Cause:

- The `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.
- Audio or video data specified by the `codec_ctx` parameter is incorrect.

What do I do if the video uploaded to OSS by using FFMpeg does not contain audio data?

Solution:

- 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 frame ([7][0][0][0] / 0x0007), yuv420p(progressive, left), 544x
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 (LC) ([10][0][0][0] / 0x000A), 48000 Hz, mono, fltp
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 if it occurs once at the start per stream)
2018-10-31T00:37:14+08:00      Last message repeated 2 times
```