Object Storage Service

API Reference

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1 Before You Start

1.1 Overview

Welcome to the *Object Storage Service API Reference*. Object Storage Service (OBS) provides massive, secure, reliable, and cost-effective data storage capabilities for users to store data of any type and size. It is suitable for scenarios such as enterprise backup/archiving, video on demand (VoD), and video surveillance.

This document describes how to use application programming interfaces (APIs) to perform operations on OBS, such as creating, modifying, and deleting bucket, as well as uploading, downloading, and deleting objects. For details about all supported operations, see **API Overview**.

Before calling OBS APIs, ensure that you have fully understood relevant concepts. For details, see **Service Overview**.

OBS provides Representational State Transfer (REST) APIs that you can call by making HTTP or HTTPS requests. For details, see **Calling APIs**.

Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions.

Table 1-1 OBS endpoint

Region Name	Region	Endpoint	Protocol
EU-Dublin	eu-west-101	obs.eu-west-101.myhuaweicloud.eu	HTTPS/HTTP

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1.2 Basic Concepts

Basic Concepts Related to OBS APIs

- Account

  You can register an account with Huawei Cloud. The account has full access permissions for all of its cloud services and resources. The account can also reset user passwords and grant permissions to users. An account is a payment entity. To keep the account secure, it is recommended that you create users under the account to perform routine management operations.

- User

  A user is created using an account on Identity and Access Management (IAM) to use cloud services. Each IAM user has its own identity credentials (password and access keys).

  On the **My Credentials** page on the console, you can view the account ID and user ID, and manage the access keys of the account or IAM users.

  Access keys of the account and its IAM users are required for authentication when calling APIs.

- Bucket

  A bucket is a container where objects are stored. It is the top namespace in OBS. Each object must reside in a bucket. For example, if the object named **picture.jpg** is stored in the **photo** bucket, you can use the following URL to access the object: **http://photo.obs.*region*.myhuaweicloud.com/picture.jpg**

- Object

  An object is a basic data unit on OBS. A bucket can store multiple objects, and OBS does not distinguish between object file types. Objects are serialized in OBS. An object may be a text, a video, or any other types of files. In OBS, the size of a file can range from 0 bytes to 48.8 TB. However, when an object is uploaded through the **PutObject** operation, it cannot exceed the maximum size of 5 GB. Use the multipart upload method, if the object size is larger than 5 GB.

- Region

  A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other. Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.

  Each bucket in OBS must reside in a region. You can specify the region when creating the bucket. Once a bucket is created, its region cannot be changed. Select the most appropriate region for a bucket based on the location, cost, and regulatory compliance requirements. For details about the available regions, see **Endpoints**.

- AZ

  An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into

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multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.

- Enterprise project

  Enterprise projects group and manage resources across regions. Resources in one enterprise project are logically isolated from resources in another. An enterprise project can contain resources from multiple regions, and resources can be added to or removed from enterprise projects. For more information about enterprise projects and how to obtain enterprise project IDs, see **Enterprise Management User Guide**.

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2 API Overview

APIs for Basic Bucket Operations

Table 2-1 APIs for basic bucket operations

API	Description
Listing Buckets	Queries the buckets created by the user.
Creating a Bucket	Creates a bucket. You can add request headers to specify the region, storage class, and ACL.
Listing Objects in a Bucket	Lists objects in a bucket. You can add different request headers to obtain objects that match the specified prefix, identifier, and other requirements.
Obtaining Bucket Metadata	Checks the bucket metadata. You can query the region, storage class, service version, CORS, or other information.
Obtaining Bucket Location	Obtains the bucket region.
Deleting Buckets	Deletes a bucket. Only empty buckets can be deleted.

APIs for Advanced Bucket Settings

Table 2-2 APIs for advanced bucket settings

API	Description
Configuring a Bucket Policy	Creates or modifies a bucket policy. The existing policy in a bucket is overwritten by the policy in the request.
Obtaining Bucket Policy Information	Obtains the policy of a bucket.

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API	Description
Deleting a Bucket Policy	Deletes the policy of a bucket.
Configuring a Bucket ACL	Sets an ACL to control the read and write permissions on a bucket.
Obtaining Bucket ACL Information	Obtains the ACL of a bucket.
Configuring Logging for a Bucket	Enables or disables logging for a bucket. If logging is enabled for a bucket, each operation creates a record. Multiple records are packed and stored in a specified location.
Obtaining a Bucket Logging Configuration	Obtains the logging configuration of a bucket.
Configuring Bucket Lifecycle Rules	Configures rules to delete or migrate objects in a bucket.
Obtaining Bucket Lifecycle Configuration	Obtains the lifecycle rules of a bucket.
Deleting Lifecycle Rules	Deletes the lifecycle rules of a bucket.
Configuring Versioning for a Bucket	Enables or suspends versioning for a bucket. With versioning enabled, you can use various object versions to protect data against accidental deletion or application breakdown.
Obtaining Bucket Versioning Status	Obtains the versioning status of a bucket.
Configuring Storage Class for a Bucket	Creates or updates the default storage class of a bucket.
Obtaining Bucket Storage Class Information	Obtains the default storage class of a bucket.
Configuring Tags for a Bucket	Adds a tag to an existing bucket. The tags you added are attached to all service detail records (SDRs) generated by bucket requests. This makes it easy to manage costs.
Obtaining Bucket Tags	Obtains the tags of a specified bucket.
Deleting Tags	Deletes the tags of a bucket.
Configuring Bucket Storage Quota	Sets a quota to limit how much space of a bucket can be used.
Querying Bucket Storage Quota	Obtains the bucket quota.
Obtaining Storage Information of a Bucket	Obtains the number of objects in a bucket and the space occupied by them.

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API	Description
Configuring Bucket Inventories	Configures an inventory rule for a bucket. You can use an inventory rule to get a list of all objects in your bucket on a regular basis. The object metadata is saved in CSV files. These files are uploaded to your bucket.
Obtaining a Specific Inventory of a Bucket	Obtains an inventory rule of a bucket.
Listing All Inventories of a Bucket	Obtains all inventory rules of a bucket.
Deleting Bucket Inventories	Deletes an inventory rule of a bucket.
Configuring Bucket Encryption	Creates or updates the server-side encryption configuration for a bucket. This configuration is later used to encrypt newly uploaded objects.
Obtaining Bucket Encryption Configuration	Queries the server-side encryption configuration of a bucket.
Deleting the Encryption Configuration of a Bucket	Deletes the server-side encryption configuration of a bucket.
Configuring Direct Reading for Archive Objects in a Bucket	Enables or disables direct reading for Archive objects in a bucket. This means objects can be downloaded without being restored.
Obtaining the Direct Reading Policy of Archive Objects in a Bucket	Obtains the direct reading status of Archive objects in a bucket.
Deleting the Direct Reading Policy of Archive Objects in a Bucket	Deletes the direct reading configuration of Archive objects in a bucket.
Configuring a Default WORM Policy for a Bucket	Configures the WORM policy and retention period for a bucket.
Obtaining the Default WORM Policy of a Bucket	Returns the WORM policy of a bucket.

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APIs for Static Website Hosting

Table 2-3 APIs for static website hosting

API	Description
Configuring Static Website Hosting for a Bucket	Creates or updates the website hosting configuration of a bucket. You can host static website resources such as HTML web pages, flash files, or audio and video files in an OBS bucket, so that you can provide these hosted resources using the bucket's website endpoint to end users.
Obtaining the Static Website Hosting Configuration of a Bucket	Obtains the website hosting configuration of a bucket.
Deleting the Static Website Hosting Configuration of a Bucket	Deletes the website hosting configuration of a bucket.
Configuring Bucket CORS	Configures cross-origin resource sharing (CORS) for a bucket. Static website resources stored in a bucket in a domain can be configured with CORS to accept requests from a different domain.
Obtaining the CORS Configuration of a Bucket	Obtains the CORS configuration of a bucket.
Deleting the CORS Configuration of a Bucket	Deletes the CORS configuration of a bucket.
OPTIONS Bucket	Checks whether the client has the permission to access the server. This operation is usually performed before cross-domain access.
OPTIONS Object	Checks whether the client has the permission to access the server. This operation is usually performed before cross-domain access.

APIs for Object Operations

Table 2-4 APIs for object operations

API	Description
Uploading an Object - PUT	Uploads an object to a bucket.
Uploading an Object - POST	Uploads an object to a bucket using a form.
Copying an Object	Creates a copy for an existing object.

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API	Description
Downloading an Object	Downloads an object.
Querying Object Metadata	Obtains object metadata (such as expiration time, version number, and CORS configuration).
Deleting an Object	Deletes an object. You can use **versionId** to specify a version to delete.
Deleting Objects	Permanently deletes a batch of objects from a bucket.
Restoring Archive Objects	Restores objects from the Archive storage class.
Appending an Object	Appends data to an object. If the requested object cannot be found, it will be created.
Configuring an Object ACL	Sets an ACL to control the read and write permissions on an object.
Obtaining Object ACL Configuration	Obtains the ACL of an object.
Modifying Object Metadata	Adds, modifies, or deletes the existing object metadata.
Modifying an Object	Modifies the content of an object in a parallel file system from a specified location.
Truncating an Object	Truncates an object in a parallel file system to a specified size.
Renaming an Object	Renames an object in a parallel file system.
Adding Object Tags	Adds tags to an object.
Obtaining Object Tags	Obtains tags of an object.
Deleting Object Tags	Deletes tags of an object.
Configuring WORM Retention for an Object	Configures or updates the retention period for objects uploaded to a bucket with WORM enabled.

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APIs for Multipart Uploads

Table 2-5 APIs for multipart uploads

API	Description
Listing Initiated Multipart Uploads in a Bucket	Queries all multipart uploads for a bucket that have been initiated but not completed or aborted.
Initiating a Multipart Upload	Initiates a multipart upload and obtains a globally unique task ID for later use when uploading, assembling, and listing parts.
Uploading Parts	Uploads parts for a multipart task.
Copying Parts	Copies an object or its part as a part of a multipart upload task.
Listing Uploaded Parts that Have Not Been Assembled	Queries all parts of a multipart task.
Completing a Multipart Upload	Assembles parts into an object.
Canceling a Multipart Upload Task	Cancels a multipart upload task.

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3 Calling APIs

3.1 Constructing a Request

This section describes the structure of a REST API request.

Request URI

OBS uses URI to locate specific buckets, objects, and their parameters. Use URIs when you want to operate resources.

The following provides a common URI format. The parameters in square brackets [ ] are optional.

protocol://[bucket.]domain[:port][/object][?param]

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Table 3-1 URI parameters

Parameter	Type	Mandatory	Description
protocol	String	Yes	**Definition**: Protocol used for sending requests **Constraints**: None **Range**: • HTTP: HyperText Transfer Protocol. Data is transmitted in plaintext. It is easy to be eavesdropped and tampered with. It is usually used to transmit website content that does not contain sensitive information, such as news. • HTTPS: HyperText Transfer Protocol Secure. Data is encrypted using SSL/TLS to provide secure and reliable communication. It is used to transmit sensitive information. **Default value**: None
bucket	String	No	**Definition**: Bucket name **Constraints**: • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None

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Parameter	Type	Mandatory	Description
domain	String	Yes	**Definition**: Endpoint of each region **Constraints**: None **Range**: For details about region endpoints, see **Regions and Endpoints**. **Default value**: None
port	String	No	**Definition**: Port enabled for sending requests. The value varies with software server deployment. **Constraints**: None **Range**: In OBS, the default HTTP port is **80** and that of HTTPS is **443**. **Default value**: If no port number is specified, the protocol uses the default value. Each transmission protocol has its default port number.
object	String	No	**Definition**: Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the address for accessing the object is **examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt**, the object name is **folder/test.txt**. For example, if the access path is **examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt**, the object name is **folder/test.txt**. **Range**: The value is a string of 1 to 1024 characters. **Default value**: None

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Parameter	Type	Mandatory	Description
param	String	No	**Definition**: Requested bucket and object **Constraints**: None **Range**: None **Default value**: If this parameter is not set, the bucket or object involved in the request is used by default.

NOTICE

All API requests except those for the bucket list must contain the bucket name. Based on the DNS resolution performance and reliability, OBS requires that the bucket name must be placed in front of the **domain** when a request carrying a bucket name is constructed to form a third-level domain name, also mentioned as virtual hosting access domain name.

For example, you have a bucket named **test-bucket** in the **eu-west-101** region, and you want to access the ACL of an object named **test-object** in the bucket. The correct URL is **https://test-bucket.obs.eu-west-101.myhuaweicloud.eu/test-object?acl**.

Request Method

HTTP methods, which are also called operations or actions, specify the type of operations that you are requesting.

Table 3-2 HTTP request methods supported by the OBS

Method	Description
GET	Requests that the server return a specific resource, for example, a bucket list or object.
PUT	Requests that the server update a specific resource, for example, creating a bucket or uploading an object.
POST	Requests that the server add a resource or perform a special operation, for example, initiating multipart uploads or assembling parts.
DELETE	Requests that the server delete specified resources, for example, an object.

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Method	Description
HEAD	Requests that the server return the description of a specific resource, for example, object metadata.
OPTIONS	Requests that the server check whether the user has the operation permission for a resource. The CORS needs to be configured for the bucket.

Request Headers

Refers to optional and additional request fields, for example a field required by a specific URI or HTTP method. For details about the fields of common request headers, see **Table 3-3**.

Table 3-3 Common request headers

Header	Type	Mandatory (Yes/No)	Description
Authorization	String	Conditionally Yes	**Definition**: Signature information contained in a request message **Constraints**: This header is optional for anonymous requests and is mandatory for other requests. **Range**: None **Default value**: None
Content-Length	String	Conditionally Yes	**Definition**: Length of a message (excluding the message header). **Constraints**: It is optional for the PUT operation and mandatory for the operation of loading XML files. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
Content-Type	String	No	**Definition**: The content type of the requested resource, for example, **text/plain** **Constraints**: None **Range**: For details about the common content types, see **Common Content Types**. **Default value**: If this header is not carried when an object is uploaded, the value of Content-Type returned by default when the object is downloaded is binary/octet-stream.
Date	String	Conditionally Yes	**Definition**: Time when a request is initiated, for example, **Wed, 27 Jun 2018 13:39:15 +0000** **Constraints**: This header is optional for anonymous requests or requests whose headers contain the **x-obs-date** field and mandatory for other requests. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
Host	String	Yes	**Definition**: Access domain name of a bucket. The format is *BucketName.Endpoint*. Example: examplebucketname.obs.eu-west-101.myhuaweicloud.eu **Constraints**: The constraints on bucket names are as follows: • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Range**: For details about region endpoints, see **Regions and Endpoints**. **Default value**: None

(Optional) Request Body

A request body is generally sent in a structured format (for example, JSON or XML). It corresponds to **Content-Type** in the request header and is used to transfer content other than the request header. If the request body contains full-width characters, these characters must be coded using UTF-8.

The request body varies according to the APIs. Certain APIs do not require the request body, such as the GET and DELETE APIs.

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Sending a Request

There are two methods to initiate requests based on the constructed request messages:

- cURL

  cURL is a command-line tool used to perform URL operations and transmit information. cURL acts as an HTTP client that can send HTTP requests to the server and receive response messages. cURL is applicable to API debugging. For more information about cURL, visit **https://curl.haxx.se/**. cURL cannot calculate signatures. When cURL is used, only anonymous public OBS resources can be accessed.

- Coding

  You can use code to make API calls, and to assemble, send, and process request messages. It can be implemented by using the SDK or coding.

3.2 Authentication

3.2.1 User Signature Authentication

OBS signs a request using AK/SK. When a client is sending a request to OBS, the message header must contain the SK, request time, request type, and other information of the signature.

- AK: access key ID, which is a unique identifier associated with a secret access key (SK). The AK and SK are used together to obtain an encrypted signature for a request.
- SK: secret access key, which is used together with the AK to sign requests, identify a request sender, and prevent the request from being modified.

A user can obtain the AK and SK from IAM. For details, see **Obtaining Access Keys (AK/SK)**.

OBS provides three signature calculation methods based on application scenarios: **Authentication of Signature in a Header**, **Authentication of Signature in a URL**, and **Authenticating the Signature Carried in a Form Uploaded Through a Browser**.

Table 3-4 shows the user signature verification process in which a signature is carried in a header. For details about the parameters and code examples of authentication of signature in a header, see **Authentication of Signature in a Header**.

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Table 3-4 Signature calculation and verification procedure

Procedure		Example
Signature calculation	1. Construct an HTTP message.	PUT /object HTTP/1.1 Host: bucket.obs.eu-west-101.myhuaweicloud.eu Date: Tue, 04 Jun 2019 06:54:59 GMT Content-Type: text/plain Content-Length: 5913
	2. Calculate **StringToSign** based on the signature rule.	StringToSign = HTTP-Verb + "\n" + Content-MD5 + "\n" + Content-Type + "\n" + Date + "\n" + CanonicalizedHeaders + CanonicalizedResource
	3. Prepare the AK and SK.	AK: ****** SK: ******
	4. Calculate **Signature**.	Signature = Base64(HMAC-SHA1(**SecretAccessKeyID**, UTF-8-Encoding-Of(**StringToSign**)))
	5. Add a signature header and send the request to OBS.	PUT /object HTTP/1.1 Host: bucket.obs.eu-west-101.myhuaweicloud.eu Date: Tue, 04 Jun 2019 06:54:59 GMT Content-Type: text/plain Content-Length: 5913 Authorization: OBS **AccessKeyID**:**Signature**
Signature authentication	6. Receive the HTTP message.	PUT /object HTTP/1.1 Host: bucket.obs.eu-west-101.myhuaweicloud.eu Date: Tue, 04 Jun 2019 06:54:59 GMT Content-Type: text/plain Content-Length: 5913 Authorization: OBS **AccessKeyID**:**Signature**
	7. Obtain the SK based on the AK in the request.	Obtain the AK from the **Authorization** header and obtain the SK from IAM.
	8. Calculate **StringToSign** based on the signature rule.	StringToSign = HTTP-Verb + "\n" + Content-MD5 + "\n" + Content-Type + "\n" + Date + "\n" + CanonicalizedHeaders + CanonicalizedResource
	9. Calculate **Signature**.	Signature = Base64(HMAC-SHA1(**SecretAccessKeyID**, UTF-8-Encoding-Of(**StringToSign**)))

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Procedure		Example
	10. Authenticate the signature.	Check whether the value of **Signature** in the **Authorization** header is the same as the value of **Signature** calculated by the server. If the two values are the same, the signature verification is successful. If the two values are different, the signature verification fails.

3.2.2 Authentication of Signature in a Header

For all API operations, the most common identity authentication is to carry signatures in headers.

In the header, the signature is carried in the authorization header field of the HTTP message. The format of the message header is as follows:

```
Authorization: OBS AccessKeyID:Signature
```

Authorization is an identifier (serving as a key). The value of **Authorization** consists of the service acronym, AK, and signature, with the service acronym and AK separated by a space and the AK and signature separated by a colon (:).

The process of calculating a signature is as follows:

1. Construct the StringToSign.
2. Encode the result of **1** in UTF-8.
3. Use the SK to calculate the HMAC-SHA1 signature on the result of **2**.
4. Encode the result of **3** in Base64 to obtain the signature.

The StringToSign is constructed according to the following rules. **Table 3-5** describes the parameters.

```
StringToSign =
   HTTP-Verb + "\n" +
   Content-MD5 + "\n" +
   Content-Type + "\n" +
   Date + "\n" +
   CanonicalizedHeaders + CanonicalizedResource
```

Table 3-5 Parameters required for constructing a StringToSign

Parameter	Description
HTTP-Verb	Indicates an HTTP request method supported by the OBS REST API. The value can be an HTTP verb such as **PUT**, **GET**, or **DELETE**.
Content-MD5	Base64-encoded 128-bit MD5 digest of the message according to RFC 1864. This parameter can be empty. For details, see **Table 3-10** and the algorithm examples below the table.

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Parameter	Description
Content-Type	Specifies the message type, for example, **text/plain**. If a request does not contain this header field, this parameter is deemed as an empty string. For details, see **Table 3-6**.
Date	Time when a request is initiated. This parameter uses the RFC 1123 time format. If the deviation between the time specified by this parameter and the server time is over 15 minutes, the server returns error 403. This parameter is an empty string when the **x-obs-date** is specified. For details, see **Table 3-10**. If an operation (for example, obtaining an object content) is temporarily authorized, this parameter is not required.
CanonicalizedHeaders	HTTP request headers that start with **x-obs-**, such as **x-obs-date**, **x-obs-acl**, and **x-obs-meta-***. When calling an API, choose a header that is supported by the API as required. 1. All characters of keywords in a request header field must be converted to lowercase letters (content values must be case sensitive, for example, **x-obs-storage-class:STANDARD**). If a request contains multiple header fields, these fields should be organized by keyword in the alphabetical order from a to z. 2. If multiple header fields in a request have the same prefix, combine the header fields into one. For example, **x-obs-meta-name:name1** and **x-obs-meta-name:name2** should be reorganized into **x-obs-meta-name:name1,name2**. Use comma to separate the values. 3. Keywords in the request header field cannot contain non-ASCII or unrecognizable characters, which are also not advisable for values in the request header field. If the two types of characters are necessary, they should be encoded and decoded on the client side. Either URL encoding or Base64 encoding is acceptable, but the server does not perform decoding. 4. Delete meaningless spaces and tabs in a header field. For example, **x-obs-meta-name: name** (with a meaningless space before **name**) must be changed to **x-obs-meta-name:name**. 5. Each header field occupies a separate line. See **Table 3-8**.

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Parameter	Description
CanonicalizedResource	Indicates the OBS resource specified by an HTTP request. This parameter is constructed as follows: <Bucket name + Object name> + [Subresource 1] + [Subresource 2] + ... 1. Bucket name and object name • If the bucket is bound to a user domain name, use the user domain name as the bucket name, for example, ***/obs.ccc.com/object***. *obs.ccc.com* is the user domain name bound to the bucket. If no object name is specified, the entire bucket is listed, for example, **/obs.ccc.com/**. • If you do not access OBS using a user domain name, this field is in the format of ***/bucket/object***. If no object name is specified, for example, ***/bucket/***, the entire bucket is listed. If bucket name is not specified either, the value of this field is **/**. 2. If a subresource (such as **?acl** and **?logging**) exists, the subresource must be added. OBS supports a variety of sub-resources, including acl, append, attname, cors, delete, deletebucket, directcoldaccess, encryption, inventory, length, lifecycle, location, logging, metadata, modify, name, notification, partNumber, policy, position, quota, rename, replication, response-cache-control, response-content-disposition, response-content-encoding, response-content-language, response-content-type, response-expires, restore, storageClass, storagePolicy, storageinfo, tagging, torrent, truncate, uploadId, uploads, versionId, versioning, versions, website, object-lock, retention, and x-obs-security-token. 3. If there are multiple subresources, sort them in the alphabetical order from a to z, and use **&** to combine the subresources. **NOTE** • A subresource is unique. Do not add subresources with the same keyword (for example, **key=value1&key=value2**) in the same request URL. In this case, signature is computed only based on the first subresource, and only the value of the first subresource takes effect on the actual service. • Using the **GetObject** API as an example, assume there is a bucket named **bucket-test** and an object named **object-test** in the bucket, and the object version is **xxx**. When obtaining the object, you need to rewrite Content-Type to **text/plain**. Then, the **CanonicalizedResource** calculated by the signature is **/bucket-test/object-test?response-content-type=text/plain&versionId=xxx**.

The following tables provide some examples of generating StringToSign.

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Table 3-6 Obtaining an object

Request Header	StringToSign
GET /object.txt HTTP/1.1 Host: bucket.obs.eu-west-101.myhuaweicloud.eu Date: Sat, 12 Oct 2015 08:12:38 GMT	GET \n \n \n Sat, 12 Oct 2015 08:12:38 GMT\n /bucket/object.txt

Table 3-7 Using temporary AK/SK and security token to upload objects

Request Header	StringToSign
PUT /object.txt HTTP/1.1 User-Agent: curl/7.15.5 Host: bucket.obs.eu-west-101.myhuaweicloud.eu x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT x-obs-security-token: YwkaRTbdY8g7q.... content-type: text/plain Content-Length: 5913339	PUT\n \n text/plain\n \n x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT\n x-obs-security-token:YwkaRTbdY8g7q....\n /bucket/object.txt

Table 3-8 An object upload request containing header fields

Request Header	StringToSign
PUT /object.txt HTTP/1.1 User-Agent: curl/7.15.5 Host: bucket.obs.eu-west-101.myhuaweicloud.eu Date: Mon, 14 Oct 2015 12:08:34 GMT x-obs-acl: public-read content-type: text/plain Content-Length: 5913339	PUT\n \n text/plain\n Mon, 14 Oct 2015 12:08:34 GMT\n x-obs-acl:public-read\n /bucket/object.txt

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Table 3-9 Obtaining an object ACL

Request Header	StringToSign
GET /object.txt?acl HTTP/1.1 Host: bucket.obs.eu-west-101.myhuaweicloud.eu Date: Sat, 12 Oct 2015 08:12:38 GMT	GET \n \n \n Sat, 12 Oct 2015 08:12:38 GMT\n /bucket/object.txt?acl

Table 3-10 An object upload request carrying the Content-MD5 header

Request Header	StringToSign
PUT /object.txt HTTP/1.1 Host: bucket.obs.eu-west-101.myhuaweicloud.eu x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT Content-MD5: I5pU0r4+sgO9Emgl1KMQUg== Content-Length: 5913339	PUT\n I5pU0r4+sgO9Emgl1KMQUg==\n \n \n x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT\n /bucket/object.txt

Content-MD5 Algorithm in Java

```
import java.security.MessageDigest;
import sun.misc.BASE64Encoder;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;

public class Md5{
    public static void main(String[] args) {
        try {
            String exampleString = "blog";
            MessageDigest messageDigest = MessageDigest.getInstance("MD5");
            BASE64Encoder encoder = new BASE64Encoder();
            String contentMd5 = encoder.encode(messageDigest.digest(exampleString.getBytes("utf-8")));
            System.out.println("Content-MD5:" + contentMd5);
        } catch (NoSuchAlgorithmException | UnsupportedEncodingException e)
        {
            e.printStackTrace();
        }
    }
}
```

The signature is generated as follows based on the StringToSign and SK. The hash-based message authentication code algorithm (HMAC algorithm) is used to generate the signature.

```
Signature = Base64( HMAC-SHA1( Your_SK, UTF-8-Encoding-Of( StringToSign ) ) )
```

```
PUT / HTTP/1.1
Host: newbucketname2.obs.eu-west-101.myhuaweicloud.eu
Content-Length: length
Date: Fri, 06 Jul 2018 03:45:51 GMT
x-obs-acl:private
```

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```
x-obs-storage-class:STANDARD
Authorization: OBS UDSIAMSTUBTEST000254:ydH8ffpcbS6YpeOMcEZfn0wE90c=
<CreateBucketConfiguration xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
</CreateBucketConfiguration>
```

Signature Calculation in Java

```
import java.io.UnsupportedEncodingException;
import java.net.URLEncoder;
import java.security.InvalidKeyException;
import java.security.NoSuchAlgorithmException;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.Base64;
import java.util.Collections;
import java.util.HashMap;
import java.util.List;
import java.util.Locale;
import java.util.Map;
import java.util.TreeMap;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;

public class SignDemo {

    private static final String SIGN_SEP = "\n";

    private static final String OBS_PREFIX = "x-obs-";

    private static final String DEFAULT_ENCODING = "UTF-8";

    private static final List<String> SUB_RESOURCES = Collections.unmodifiableList(Arrays.asList(
        "CDNNotifyConfiguration", "acl", "append", "attname",  "cors", "delete",
        "deletebucket", "directcoldaccess", "encryption", "inventory", "length", "lifecycle", "location", "logging",
        "metadata", "mirrorBackToSource", "modify", "name", "notification", "obscompresspolicy",
        "partNumber", "policy", "position", "quota","rename", "replication", "response-cache-control",
        "response-content-disposition","response-content-encoding", "response-content-language", "response-
content-type",
        "response-expires","restore", "storageClass", "storagePolicy", "storageinfo", "tagging", "torrent",
"truncate",
        "uploadId", "uploads", "versionId", "versioning", "versions", "website",
        "x-obs-security-token", "object-lock", "retention"));

    private String ak;

    private String sk;

     public String urlEncode(String input) throws UnsupportedEncodingException {
        return URLEncoder.encode(input, DEFAULT_ENCODING)
            .replaceAll("%7E", "~") //for browser
            .replaceAll("%2F", "/")
            .replaceAll("%20", "+");
    }

    private String join(List<?> items, String delimiter) {
        StringBuilder sb = new StringBuilder();
        for (int i = 0; i < items.size(); i++) {
            String item = items.get(i).toString();
            sb.append(item);
            if (i < items.size() - 1) {
                sb.append(delimiter);
            }
        }
        return sb.toString();
    }

    private boolean isValid(String input) {
        return input != null && !input.equals("");
```

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```
    }

    public String hmacSha1(String input) throws NoSuchAlgorithmException, InvalidKeyException,
UnsupportedEncodingException {
        SecretKeySpec signingKey = new SecretKeySpec(this.sk.getBytes(DEFAULT_ENCODING), "HmacSHA1");
        Mac mac = Mac.getInstance("HmacSHA1");
        mac.init(signingKey);
        return Base64.getEncoder().encodeToString(mac.doFinal(input.getBytes(DEFAULT_ENCODING)));
    }

    private String stringToSign(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries,
        String bucketName, String objectName) throws Exception{
        String contentMd5 = "";
        String contentType = "";
        String date = "";

        TreeMap<String, String> canonicalizedHeaders = new TreeMap<String, String>();

        String key;
        List<String> temp = new ArrayList<String>();
        for(Map.Entry<String, String[]> entry : headers.entrySet()) {
            key = entry.getKey();
            if(key == null || entry.getValue() == null || entry.getValue().length == 0) {
                continue;
            }

            key = key.trim().toLowerCase(Locale.ENGLISH);
            if(key.equals("content-md5")) {
                contentMd5 = entry.getValue()[0];
                continue;
            }

            if(key.equals("content-type")) {
                contentType = entry.getValue()[0];
                continue;
            }

            if(key.equals("date")) {
                date = entry.getValue()[0];
                continue;
            }

            if(key.startsWith(OBS_PREFIX)) {
                for(String value : entry.getValue()) {
                    if(value != null) {
                        temp.add(value.trim());
                    }
                }
                canonicalizedHeaders.put(key, this.join(temp, ","));
                temp.clear();
            }
        }

        if(canonicalizedHeaders.containsKey("x-obs-date")) {
            date = "";
        }

        // handle method/content-md5/content-type/date
        StringBuilder stringToSign = new StringBuilder();
        stringToSign.append(httpMethod).append(SIGN_SEP)
            .append(contentMd5).append(SIGN_SEP)
            .append(contentType).append(SIGN_SEP)
            .append(date).append(SIGN_SEP);

        // handle canonicalizedHeaders
        for(Map.Entry<String, String> entry : canonicalizedHeaders.entrySet()) {
            stringToSign.append(entry.getKey()).append(":").append(entry.getValue()).append(SIGN_SEP);
        }
```

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```
        // handle CanonicalizedResource
        stringToSign.append("/");
        if(this.isValid(bucketName)) {
            stringToSign.append(bucketName).append("/");
            if(this.isValid(objectName)) {
                stringToSign.append(this.urlEncode(objectName));
            }
        }

        TreeMap<String, String> canonicalizedResource = new TreeMap<String, String>();
        for(Map.Entry<String, String> entry : queries.entrySet()) {
            key = entry.getKey();
            if(key == null) {
                continue;
            }

            if(SUB_RESOURCES.contains(key)) {
                canonicalizedResource.put(key, entry.getValue());
            }
        }

        if(canonicalizedResource.size() > 0) {
            stringToSign.append("?");
            for(Map.Entry<String, String> entry : canonicalizedResource.entrySet()) {
                stringToSign.append(entry.getKey());
                if(this.isValid(entry.getValue())) {
                    stringToSign.append("=").append(entry.getValue());
                }
                stringToSign.append("&");
            }
            stringToSign.deleteCharAt(stringToSign.length()-1);
        }

        //    System.out.println(String.format("StringToSign:%s%s", SIGN_SEP, stringToSign.toString()));

        return stringToSign.toString();
    }

    public String headerSignature(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries,
        String bucketName, String objectName) throws Exception {

        //1. stringToSign
        String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName);

        //2. signature
        return String.format("OBS %s:%s", this.ak, this.hmacSha1(stringToSign));
    }

    public String querySignature(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries,
        String bucketName, String objectName, long expires) throws Exception {
        if(headers.containsKey("x-obs-date")) {
            headers.put("x-obs-date", new String[] {String.valueOf(expires)});
        } else {
            headers.put("date", new String[] {String.valueOf(expires)});
        }
        //1. stringToSign
        String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName);

        //2. signature
        return this.urlEncode(this.hmacSha1(stringToSign));
    }

    public static void main(String[] args) throws Exception {
        SignDemo demo = new SignDemo();

            /* Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK
```

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```
and store them in the configuration file or environment variables.
        In this example, the AK and SK are stored in environment variables for identity authentication. Before running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and HUAWEICLOUD_SDK_SK. */
        demo.ak = System.getenv("HUAWEICLOUD_SDK_AK");
        demo.sk = System.getenv("HUAWEICLOUD_SDK_SK");

        String bucketName = "bucket-test";
        String objectName = "hello.jpg";
        Map<String, String[]> headers = new HashMap<String, String[]>();
        headers.put("date", new String[] {"Sat, 12 Oct 2015 08:12:38 GMT"});
        headers.put("x-obs-acl", new String[] {"public-read"});
        headers.put("x-obs-meta-key1", new String[] {"value1"});
        headers.put("x-obs-meta-key2", new String[] {"value2", "value3"});
        Map<String, String> queries = new HashMap<String, String>();
        queries.put("acl", null);

        System.out.println(demo.headerSignature("PUT", headers, queries, bucketName, objectName));
    }

}
```

The calculation result of the signature is **ydH8ffpcbS6YpeOMcEZfn0wE90c=**, which varies depending on the execution time.

Signature Algorithm in Python

```
import os
import sys
import hashlib
import hmac
import binascii
from datetime import datetime
IS_PYTHON2 = sys.version_info.major == 2 or sys.version < '3'

# Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK and store them in the configuration file or environment variables.
# In this example, the AK and SK are stored in environment variables for identity authentication. Before running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and HUAWEICLOUD_SDK_SK.
Your_SK = os.getenv('HUAWEICLOUD_SDK_SK')
httpMethod = "PUT"
contentType = "application/xml"
# "date" is the time when the request was actually generated
date = datetime.utcnow().strftime('%a, %d %b %Y %H:%M:%S GMT')
canonicalizedHeaders = "x-obs-acl:private\n"
CanonicalizedResource = "/newbucketname2"
canonical_string = httpMethod + "\n" + "\n" + contentType + "\n" + date + "\n" + canonicalizedHeaders + CanonicalizedResource
if IS_PYTHON2:
    hashed = hmac.new(Your_SK, canonical_string, hashlib.sha1)
    encode_canonical = binascii.b2a_base64(hashed.digest())[:-1]
else:
    hashed = hmac.new(Your_SK.encode('UTF-8'), canonical_string.encode('UTF-8'), hashlib.sha1)
    encode_canonical = binascii.b2a_base64(hashed.digest())[:-1].decode('UTF-8')

print(encode_canonical)
```

The calculation result of the signature is **ydH8ffpcbS6YpeOMcEZfn0wE90c=**, which varies depending on the execution time.

Signature Mismatch Error Handling

During an OBS API call, if the following error is reported:

Status code: 403 Forbidden

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Error code: SignatureDoesNotMatch

Error message: The request signature we calculated does not match the signature you provided. Check your key and signing method.

Handle the problem by referring to **Why Don't the Signatures Match?**

3.2.3 Authentication of Signature in a URL

You can create a presigned URL for a specific operation. This kind of URL includes the user AK, signature, validity period, resources and other information. It allows any user who gets it to perform the specified operation (such as download) as if they are its creator. Presigned URLs enable authentication without secret access keys. Such URLs, however, must be used before expiration.

A request with a presigned URL is formed as follows:

```
GET /ObjectKey?AccessKeyId=AccessKeyID&Expires=ExpiresValue&Signature=signature HTTP/1.1
Host: bucketname.obs.eu-west-101.myhuaweicloud.eu
```

A download request with a URL that uses a temporary AK/SK pair and security token is formed as follows:

```
GET /ObjectKey?AccessKeyId=AccessKeyID&Expires=ExpiresValue&Signature=signature&x-obs-security-token=securitytoken HTTP/1.1
Host: bucketname.obs.eu-west-101.myhuaweicloud.eu
```

Table 3-11 describes the parameters.

Table 3-11 Request parameters

Parameter	Description	Mandatory
AccessKeyId	The access key of the URL creator. OBS uses it to verify the identity. Type: string	Yes
Expires	When the URL expires, measured as a Unix timestamp (how many seconds elapsed since 00:00:00 on January 1, 1970). After the specified time elapses, the URL expires. Type: string	Yes
Signature	The signature based on the user SK and **Expires** Type: string	Yes
x-obs-security-token	A temporary AK/SK pair must be used with a security token, indicated by the **x-obs-security-token** header. For details about how to obtain a temporary AK/SK pair and security token, see **Obtaining a Temporary AK/SK Pair and Security Token**.	No

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A signature is calculated as follows:

1. Construct the StringToSign.
2. Encode the result of **1** in UTF-8.
3. Use the SK to calculate HMAC-SHA1 based on the result of **2**.
4. Encode the result of **3** in Base64.
5. Encode the result of **4** in URL to obtain the signature.

The format of StringToSign is shown below. **Table 3-12** describes the parameters.

```
StringToSign =
    HTTP-Verb + "\n" +
    Content-MD5 + "\n" +
    Content-Type + "\n" +
    Expires + "\n" +
    CanonicalizedHeaders + CanonicalizedResource
```

Table 3-12 Parameters for StringToSign

Parameter	Description
HTTP-Verb	Type of operation. For REST APIs, HTTP request operations include **PUT**, **GET**, and **DELETE**.
Content-MD5	(Optional) Base64-encoded 128-bit MD5 value of the request body based on RFC 1864
Content-Type	The type of the message, for example, **text/plain**. If this header is not included, an empty string is used.
Expires	When the URL expires (**ExpiresValue**)
CanonicalizedHeaders	HTTP request headers that start with **x-obs-**, such as **x-obs-date**, **x-obs-acl**, and **x-obs-meta-***. 1. All characters in a header name must be lower-case. Multiple header names are sorted in alphabetical order. 2. If a header has more than one value, combine them using commas (,). For example, **x-obs-meta-name:name1** and **x-obs-meta-name:name2** need to be written as **x-obs-meta-name:name1,name2**. 3. Non-ASCII or unrecognizable characters are not allowed for header names and also not recommended for header values. If such characters are required, encode or decode them on the client using URL or Base64. The server does not perform decoding. 4. Delete meaningless spaces or tabs in a header. For example, **x-obs-meta-name: name** (there is a meaningless space before the second **name**) must be changed to **x-obs-meta-name:name**. 5. Each header occupies a separate line.

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Parameter	Description
CanonicalizedResource	OBS resources specified in an HTTP request. Resources are arranged in this order: bucket name, object name, sub-resource 1, sub-resource 2... 1. bucket name and object name • If the bucket has a custom domain name associated, use that domain name as the bucket name. In **/obs.ccc.com/object**, for example, **obs.ccc.com** is the custom domain name of a bucket. If no object is required, specify only the bucket, for example, **/obs.ccc.com/**. • If there is no custom domain name associated with a bucket, use the bucket name. The examples above will be **/bucket/object** and **/bucket/**. If no bucket needs to be specified, use only **/**. 2. If a subresource (such as **?acl** and **?logging**) exists, the subresource must be added. OBS sub-resources: acl, append, attname, cors, delete, deletebucket, directcoldaccess, encryption, inventory, length, lifecycle, location, logging, metadata, modify, name, notification, partNumber, policy, position, quota, rename, replication, response-cache-control, response-content-disposition, response-content-encoding, response-content-language, response-content-type, response-expires, restore, storageClass, storagePolicy, storageinfo, tagging, torrent, truncate, uploadId, uploads, versionId, versioning, versions, website, x-obs-security-token, object-lock, retention 3. Sort multiple sub-resources in alphabetical order by name and use ampersands (&) to separate them. **NOTE** • A sub-resource is usually unique. Do not specify multiple values for the same sub-resource (such as key=value1&key=value2). Otherwise, only the first value is used. • Suppose you use the **GetObject** API to download version **xxx** of object **object-test** from bucket **bucket-test** and require **Content-Type** be changed to **text/plain**. **CanonicalizedResource** is **/bucket-test/object-test?response-content-type=text/plain&versionId=xxx**.

Use hash-based message authentication code (HMAC) to calculate the signature based on the StringToSign and SK:

```
Signature = URL-Encode( Base64( HMAC-SHA1( Your_SK, UTF-8-Encoding-Of( StringToSign ) ) ) )
```

Compared with the Authorization header method:

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- URLs must use URL encoding — after using Base64 — for signatures.
- **Expires** in **StringToSign** of a URL is similar to **Date** in the **Authorization** header.

Generate a predefined URL instance for the browser by carrying the signature in the URL.

Table 3-13 Request that has the signature carried in the URL and the StringToSign

Request Header	StringToSign
GET /objectkey?AccessKeyId=MFyfvK41ba2giqM7Uio6PznpdUKGpownRZlmVmHc&Expires=1532779451&Signature=0Akylf43Bm3mD1bh2rM3dmVp1Bo%3D HTTP/1.1 Host: examplebucket.obs.eu-west-101.myhuaweicloud.eu	GET \n \n \n 1532779451\n /examplebucket/objectkey

Table 3-14 Object download request that has the temporary AK/SK and security token carried in the URL and the StringToSign

Request Header	StringToSign
GET /objectkey?AccessKeyId=MFyfvK41ba2giqM7Uio6PznpdUKGpownRZlmVmHc&Expires=1532779451&Signature=0Akylf43Bm3mD1bh2rM3dmVp1Bo%3D&x-obs-security-token=YwkaRTbdY8g7q.... HTTP/1.1 Host: examplebucket.obs.eu-west-101.myhuaweicloud.eu	GET \n \n \n 1532779451\n /examplebucket/objectkey?x-obs-security-token=YwkaRTbdY8g7q....

Calculation rule of the signature

```
Signature = URL-Encode( Base64( HMAC-SHA1( Your_SK, UTF-8-Encoding-Of( StringToSign ) ) ) )
```

Calculate the signature and use the host as the prefix of the URL to generate a predefined URL:

http(s)://examplebucket.obs.*region*.myhuaweicloud.eu/objectkey?AccessKeyId=AccessKeyID&Expires=1532779451&Signature=0Akylf43Bm3mD1bh2rM3dmVp1Bo%3D

If you enter the address in the browser, then the object **objectkey** in the **examplebucket** bucket can be downloaded. The validity period of this link is **1532779451** (indicating Sat Jul 28 20:04:11 CST 2018).

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In the Linux operating system, when running the **curl** command, you need to add a forward slash (\) to escape the character (&). The following command can download the **objectkey** object to the **output** file:

curl http(s)://examplebucket.obs.*region*.myhuaweicloud.eu/objectkey?AccessKeyId=AccessKeyID \&Expires=1532779451\&Signature=0Akylf43Bm3mD1bh2rM3dmVp1Bo%3D -X GET -o output

NOTE

If you want to open a pre-defined URL using your browser, you must not use **Content-MD5**, **Content-Type**, or **CanonicalizedHeaders** headers to calculate a signature. This is because the browser cannot carry them. If you do so, the server will return a signature error.

Signature Calculation in Java

```
import java.io.UnsupportedEncodingException;
import java.net.URLEncoder;
import java.security.InvalidKeyException;
import java.security.NoSuchAlgorithmException;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.Base64;
import java.util.Collections;
import java.util.HashMap;
import java.util.List;
import java.util.Locale;
import java.util.Map;
import java.util.TreeMap;
import java.util.regex.Pattern;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;

public class SignDemo {

    private static final String SIGN_SEP = "\n";

    private static final String OBS_PREFIX = "x-obs-";

    private static final String DEFAULT_ENCODING = "UTF-8";

    private static final List<String> SUB_RESOURCES = Collections.unmodifiableList(Arrays.asList(
            "CDNNotifyConfiguration", "acl", "append", "attname",  "cors", "delete",
            "deletebucket", "directcoldaccess", "encryption", "inventory", "length", "lifecycle", "location",
"logging",
            "metadata", "mirrorBackToSource", "modify", "name", "notification", "obscompresspolicy",
            "partNumber", "policy", "position", "quota","rename", "replication", "response-cache-control",
            "response-content-disposition","response-content-encoding", "response-content-language",
"response-content-type",
            "response-expires","restore", "storageClass", "storagePolicy", "storageinfo", "tagging", "torrent",
"truncate",
            "uploadId", "uploads", "versionId", "versioning", "versions", "website",
            "x-obs-security-token", "object-lock", "retention"));

    private String ak;

    private String sk;

    private boolean isBucketNameValid(String bucketName) {
        if (bucketName == null || bucketName.length() > 63 || bucketName.length() < 3) {
            return false;
        }
```

```
        if (!Pattern.matches("^[a-z0-9][a-z0-9.-]+$", bucketName)) {
            return false;
        }

        if (Pattern.matches("(\\d{1,3}\\.){3}\\d{1,3}", bucketName)) {
            return false;
        }

        String[] fragments = bucketName.split("\\.");
        for (int i = 0; i < fragments.length; i++) {
            if (Pattern.matches("^-.*", fragments[i]) || Pattern.matches(".*-$", fragments[i])
                    || Pattern.matches("^$", fragments[i])) {
                return false;
            }
        }

        return true;
    }

    public String encodeUrlString(String path) throws UnsupportedEncodingException {
        return URLEncoder.encode(path, DEFAULT_ENCODING)
                .replaceAll("\\+", "%20")
                .replaceAll("\\*", "%2A")
                .replaceAll("%7E", "~");
    }

    public String encodeObjectName(String objectName) throws UnsupportedEncodingException {
        StringBuilder result = new StringBuilder();
        String[] tokens = objectName.split("/");
        for (int i = 0; i < tokens.length; i++) {
            result.append(this.encodeUrlString(tokens[i]));
            if (i < tokens.length - 1) {
                result.append("/");
            }
        }
        return result.toString();
    }

    private String join(List<?> items, String delimiter) {
        StringBuilder sb = new StringBuilder();
        for (int i = 0; i < items.size(); i++) {
            String item = items.get(i).toString();
            sb.append(item);
            if (i < items.size() - 1) {
                sb.append(delimiter);
            }
        }
        return sb.toString();
    }

    private boolean isValid(String input) {
        return input != null && !input.equals("");
    }

    public String hmacSha1(String input) throws NoSuchAlgorithmException, InvalidKeyException,
UnsupportedEncodingException {
        SecretKeySpec signingKey = new SecretKeySpec(this.sk.getBytes(DEFAULT_ENCODING), "HmacSHA1");
        Mac mac = Mac.getInstance("HmacSHA1");
        mac.init(signingKey);
        return Base64.getEncoder().encodeToString(mac.doFinal(input.getBytes(DEFAULT_ENCODING)));
    }

    private String stringToSign(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries,
                                String bucketName, String objectName, long expires) throws Exception {
        String contentMd5 = "";
        String contentType = "";
        TreeMap<String, String> canonicalizedHeaders = new TreeMap<String, String>();
        String key;
```

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```
List<String> temp = new ArrayList<String>();
for (Map.Entry<String, String[]> entry : headers.entrySet()) {
    key = entry.getKey();
    if (key == null || entry.getValue() == null || entry.getValue().length == 0) {
        continue;
    }
    key = key.trim().toLowerCase(Locale.ENGLISH);
    if (key.equals("content-md5")) {
        contentMd5 = entry.getValue()[0];
        continue;
    }
    if (key.equals("content-type")) {
        contentType = entry.getValue()[0];
        continue;
    }
    if (key.startsWith(OBS_PREFIX)) {
        for (String value : entry.getValue()) {
            if (value != null) {
                temp.add(value.trim());
            }
        }
        canonicalizedHeaders.put(key, this.join(temp, ","));
        temp.clear();
    }
}
// handle method/content-md5/content-type
StringBuilder stringToSign = new StringBuilder();
stringToSign.append(httpMethod).append(SIGN_SEP)
        .append(contentMd5).append(SIGN_SEP)
        .append(contentType).append(SIGN_SEP)
        .append(expires).append(SIGN_SEP);


// handle canonicalizedHeaders
for (Map.Entry<String, String> entry : canonicalizedHeaders.entrySet()) {
    stringToSign.append(entry.getKey()).append(":").append(entry.getValue()).append(SIGN_SEP);
}


// handle CanonicalizedResource
stringToSign.append("/");
if (this.isValid(bucketName)) {
    stringToSign.append(bucketName).append("/");
    if (this.isValid(objectName)) {
        stringToSign.append(this.encodeObjectName(objectName));
    }
}

TreeMap<String, String> canonicalizedResource = new TreeMap<String, String>();
for (Map.Entry<String, String> entry : queries.entrySet()) {
    key = entry.getKey();
    if (key == null) {
        continue;
    }

    if (SUB_RESOURCES.contains(key)) {
        canonicalizedResource.put(key, entry.getValue());
    }
}

if (canonicalizedResource.size() > 0) {
    stringToSign.append("?");
    for (Map.Entry<String, String> entry : canonicalizedResource.entrySet()) {
        stringToSign.append(entry.getKey());
        if (this.isValid(entry.getValue())) {
            stringToSign.append("=").append(entry.getValue());
        }
        stringToSign.append("&");
    }
```

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```
            stringToSign.deleteCharAt(stringToSign.length() - 1);
        }
        //        System.out.println(String.format("StringToSign:%s%s", SIGN_SEP, stringToSign.toString()));

        return stringToSign.toString();
    }

    public String querySignature(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries,
                                 String bucketName, String objectName, long expires) throws Exception {
        if (!isBucketNameValid(bucketName)) {
            throw new IllegalArgumentException("the bucketName is illegal");
        }
        //1. stringToSign
        String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName,
expires);

        //2. signature
        return this.encodeUrlString(this.hmacSha1(stringToSign));
    }

    public String getURL(String endpoint, Map<String, String> queries,
                         String bucketName, String objectName, String signature, long expires) throws
UnsupportedEncodingException {
        StringBuilder URL = new StringBuilder();
        URL.append("https://").append(bucketName).append(".").append(endpoint).append("/").
                append(this.encodeObjectName(objectName)).append("?");
        String key;
        for (Map.Entry<String, String> entry : queries.entrySet()) {
            key = entry.getKey();
            if (key == null) {
                continue;
            }
            if (SUB_RESOURCES.contains(key)) {
                String value = entry.getValue();
                URL.append(key);
                if (value != null) {
                    URL.append("=").append(value).append("&");
                } else {
                    URL.append("&");
                }
            }
        }
        URL.append("AccessKeyId=").append(this.ak).append("&Expires=").append(expires).
                append("&Signature=").append(signature);
        return URL.toString();
    }

    public static void main(String[] args) throws Exception {
        SignDemo demo = new SignDemo();

        /* Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK and
store them in the configuration file or environment variables.
        In this example, the AK and SK are stored in environment variables for identity authentication. Before
running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and
HUAWEICLOUD_SDK_SK. */
    demo.ak = System.getenv("HUAWEICLOUD_SDK_AK");
    demo.sk = System.getenv("HUAWEICLOUD_SDK_SK");
        String endpoint = "<your-endpoint>";

        String bucketName = "bucket-test";
        String objectName = "hello.jpg";

        // A header cannot be included if you want to use a URL to access OBS with a browser. If a header is
added to headers, the signature does not match. To use headers, it must be processed by the client.
        Map<String, String[]> headers = new HashMap<String, String[]>();
        Map<String, String> queries = new HashMap<String, String>();

        // Expiration time. Set it to expire in 24 hours.
```

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```
        long expires = (System.currentTimeMillis() + 86400000L) / 1000;
        String signature = demo.querySignature("GET", headers, queries, bucketName, objectName, expires);
        System.out.println(signature);
        String URL = demo.getURL(endpoint, queries, bucketName, objectName, signature, expires);
        System.out.println(URL);
    }
}
```

Signature Mismatch Error Handling

During an OBS API call, if the following error is reported:

Status code: 403 Forbidden

Error code: SignatureDoesNotMatch

Error message: The request signature we calculated does not match the signature you provided. Check your key and signing method.

Handle the problem by referring to **Why Don't the Signatures Match?**

3.2.4 Authenticating the Signature Carried in a Form Uploaded Through a Browser

OBS supports browser-based uploads using POST requests. Authenticating such a request uses the signature carried in the form. First, create a policy to specify the requirements for requests, such as bucket name or object name prefix. Then, create a signature based on this policy. The request form to be signed must contain a valid signature and policy. Finally, create a form to upload the object to the bucket.

The process of calculating a signature is as follows:

1. Encode the policy content in UTF-8.
2. Encode the result of **1** in Base64.
3. Use the SK to calculate the HMAC-SHA1 signature on the result of **2**.
4. Encode the result of **3** in Base64 to obtain the signature.

```
StringToSign = Base64( UTF-8-Encoding-Of( policy ) )
Signature = Base64( HMAC-SHA1( Your_SK, StringToSign ) )
```

The content of the policy is as follows:

```
{ "expiration": "2017-12-31T12:00:00.000Z",
  "conditions": [
    {"x-obs-acl": "public-read" },
    {"x-obs-security-token": "YwkaRTbdY8g7q...." },
    {"bucket": "book" },
    ["starts-with", "$key", "user/"]
  ]
}
```

The policy contains the validity period (see **Expiration**) and conditions (see **Conditions**).

Expiration

The **expiration** field describes when the signature will expire, which is expressed in the format according to ISO 8601 UTC. For example, **expiration:**

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2017-12-31T12:00:00.000Z in the example means that the request becomes invalid after 12:00:00 on December 31, 2017. This field must be specified in a policy. It can only be in the **yyyy-MM-dd'T'HH:mm:ss'Z'** or **yyyy-MM-dd'T'HH:mm:ss.SSS'Z'** format.

Conditions

A mechanism used to verify the validity of a request. Conditions are used to define the content that must be contained in a request. In the example, the requested bucket name is **book**, the object name is prefixed with **user/**, and the ACL of the object is public read. All items in the form must be included in the policy, excluding **AccessKeyId**, **Signature**, **file**, **policy**, **token**, **field names**, and items with the prefix **x-ignore-**. The following table lists the items that should be contained in **conditions**:

Table 3-15 Conditions contained in a policy

Element	Description
x-obs-acl	ACL in the request. Supports exact match and conditional match such as **starts-with**.
content-length-range	Maximum and minimum length of an object to be uploaded. The value can be a range.
Cache-Control, Content-Type, Content-Disposition, Content-Encoding, Expires	Headers specially for REST requests Supports exact match and conditional match such as **starts-with**.
key	Name of an object to be uploaded. Supports exact match and conditional match such as **starts-with**.
bucket	Name of the requested bucket. Supports exact match.
success_action_redirect	Redirection address after the upload is successful. For details, see **Uploading an Object - POST**. Supports exact match and conditional match such as **starts-with**.
success_action_status	If **success_action_redirect** is not specified, the status code is returned to the client when the upload is successful. For details, see **Uploading an Object - POST**. Supports exact match.

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Element	Description
x-obs-meta-*	User-defined metadata. Keywords in this element cannot include non-ASCII or unrecognizable characters. If such characters are necessary, they must be encoded and decoded on the client side in either URL or Base64. The server does not perform decoding. Supports exact match and conditional match such as **starts-with**.
x-obs-*	Other header fields with prefix **x-obs-**. Supports exact match and conditional match such as **starts-with**.
x-obs-security-token	Field name in the request header. Mandatory field for the temporary AK/SK and security token authentication. For details about how to obtain a temporary access key and security token, see **Obtaining a Temporary Access Key and Security Token Through a Token**.

The table below describes the supported condition matching types:

Table 3-16 Policy condition matching methods

Matching Method	Description
Exact Matches	The default type. The form field value must match the value specified in conditions. This example indicates the object ACL must be set to **public-read**: {"x-obs-acl": "public-read"} or ["eq", "$x-obs-acl", "public-read"], which are equivalent.
Starts With	The form field value must start with the specified value. This example indicates the object key must start with **user/**: **["starts-with", "$key", "user/"]**

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Matching Method	Description
Matching Any Content	To allow any content within a form field, use "starts-with" with an empty value (""). This example allows any value for **success_action_redirect**: **["starts-with", "$success_action_redirect", ""]**
Specifying Ranges	Only used to restrict the size of the uploaded file. Quotation marks are not allowed for element values. This example allows a file size from 1 to 10 MB, that is, from 1048576 to 10485760: **["content-length-range", 1048576, 10485760]**

NOTE

Policies use the JSON format. Use curly brackets ({}) or square brackets ([]) to specify conditions. Curly brackets ({}) can enclose a key and a value separated by a colon (:). Square brackets ([]) can contain a condition type, key, and value separated by commas (,). Use the dollar sign ($) ahead of a key to mark a variable.

The table below lists the characters that must be escaped in a policy.

Table 3-17 Characters that must be escaped in a policy

Character After Escape	Real Character
\\	Backslash (\)
\$	Dollar symbol ($)
\b	Backspace
\f	Page up and down
\n	Newline characters
\r	Enter
\t	Horizontal tab
\v	Vertical tab
\u***xxxx***	All Unicode characters

Request and Policy Examples

The following tables provide some example requests and policies.

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Example 1: Upload the **testfile.txt** object to bucket **examplebucket** and set the object ACL to **public-read**.

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Request	Policy

POST / HTTP/1.1
Host: examplebucket.obs.eu-west-101.myhuaweicloud.eu
Content-Type: multipart/form-data; boundary=7e32233530b26
Content-Length: 1250
--7e32233530b26
Content-Disposition: form-data; name="key"
testfile.txt
--7e32233530b26
Content-Disposition: form-data; name="x-obs-acl"
public-read
--7e32233530b26
Content-Disposition: form-data; name="content-type"
text/plain
--7e32233530b26
Content-Disposition: form-data; name="AccessKeyId"
UDSIAMSTUBTEST000002
--7e32233530b26
Content-Disposition: form-data; name="policy"
ewogICJleHBpcmF0aW9uIjogIjIwMTktMDctMDFUMTI6MDA6MDAuMDAwWiIsCiAgImNvbmRpdGlvbnMiOiBbCiAgICB7ImJ1Y2tldCI6ICJleGFtcGxlYnVja2V0IiB9LAogICAgWyJlcSIsICIka2V5IiwgInRlc3RmaWxlLnR4dCJdLAogICAgeyJ4LW9icy1hY2wiOiAicHVibGljLXJlYWQiIH0sCiAgICBbImVxIiwgIiRDb250ZW50LVR5cGUiLCAidGV4dC9wbGFpbiJdLAogICAgWyJjb250ZW50LWxlbmd0aC1yYW5nZSIsIDYsIDEwXQogIF0KfQo=
--7e32233530b26
Content-Disposition: form-data; name="Signature"
xxl7bZs/5FgtBUggOdQ88DPZUo0=
	{
	"expiration": "2019-07-01T12:00:00.000Z",
	"conditions": [
	{"bucket": "examplebucket" },
	["eq", "$key", "testfile.txt"],
	{"x-obs-acl": "public-read" },
	["eq", "$Content-Type", "text/plain"]
	]
	}

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Request	Policy
--7e32233530b26 Content-Disposition: form-data; name="file"; filename="E:\TEST_FILE\TEST.txt" Content-Type: text/plain 123456 --7e32233530b26 Content-Disposition: form-data; name="submit" Upload --7e32233530b26--	

Example 2: Upload the **file/obj1** object to bucket **examplebucket** and configure the four custom metadata items of the object.

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Request	Policy

POST / HTTP/1.1
Host: examplebucket.obs.eu-west-101.myhuaweicloud.eu
Content-Type: multipart/form-data; boundary=7e329d630b26
Content-Length: 1597
--7e3542930b26
Content-Disposition: form-data; name="key"
file/obj1
--7e3542930b26
Content-Disposition: form-data; name="AccessKeyId"
UDSIAMSTUBTEST000002
--7e3542930b26
Content-Disposition: form-data; name="policy"
ewogICJleHBpcmF0aW9uIjogIjIwMTktMDctMDFUMTI6MDA6MDAuMDAwWiIsCiAgImNvbmRpdGlvbnMiOiBbCiAgICB7ImJ1Y2tldCI6ICJleGFtcGxlYnVja2V0IiB9LAogICAgWyJzdGFydHMtd2l0aCIsICIka2V5IiwgImZpbGUvIl0sCiAgICB7Ingtb2JzLW1ldGEtdGVzdDEiOiJ2YWx1ZTEifSwKICAgIFsiZXEiLCAiJHgtb2JzLW1ldGEtdGVzdDIiLCAidmFsdWUyIl0sCiAgICBbInN0YXJ0cy13aXRoIiwgIiR4LW9icy1tZXRhLXRlc3QzIiwgImRvYyJdLAogICAgWyJzdGFydHMtd2l0aCIsICIkeC1vYnMtbWV0YS10ZXN0NCIsICIiXQogIF0KfQo=
--7e3542930b26
Content-Disposition: form-data; name="signature"
HTId8hcaisn6FfdWKqSJP9RN4Oo=
--7e3542930b26
Content-Disposition: form-data; name="x-obs-meta-test1"
value1
--7e3542930b26
Content-Disposition: form-data; name="x-obs-meta-test2"
	{
	"expiration": "2019-07-01T12:00:00.000Z",
	"conditions": [
	{"bucket": "examplebucket" },
	["starts-with", "$key", "file/"],
	{"x-obs-meta-test1":"value1"},
	["eq", "$x-obs-meta-test2", "value2"],
	["starts-with", "$x-obs-meta-test3", "doc"],
	["starts-with", "$x-obs-meta-test4", ""]
	]
	}

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Request	Policy
value2 --7e3542930b26 Content-Disposition: form-data; name="x-obs-meta-test3" doc123 --7e3542930b26 Content-Disposition: form-data; name="x-obs-meta-test4" my --7e3542930b26 Content-Disposition: form-data; name="file"; filename="E:\TEST_FILE\TEST.txt" Content-Type: text/plain 123456 --7e3542930b26 Content-Disposition: form-data; name="submit" Upload --7e3542930b26--	

3.2.5 Signature Generators

OBS offers visualized tools for you to easily generate signatures.

Table 3-18 Signature generators

Calculation Method	How to Obtain
Authenticating the signature in a header	**Generate Signed Authorization Header**
Authenticating the signature in a URL	**Generate Signed Query URL**

During an OBS API call, if the following error is reported:

Status code: 403 Forbidden

Error code: SignatureDoesNotMatch

Error message: The request signature we calculated does not match the signature you provided. Check your key and signing method.

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Handle the problem by referring to **Why Don't the Signatures Match?**

3.3 Returned Values

After sending a request, you will receive a response, including the status code, response header, and response body.

Status Codes

A status code is a group of digits ranging from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). It indicates the status of a response. For more information, see **Status Codes**.

Response Headers

Responses have some headers matching their corresponding requests, for example, **Content-Length**.

For details about common response headers, see **Table 3-19**.

Table 3-19 Common response headers

Header	Description
Content-Length	The length (in bytes) of the response body. Type: string Default value: none
Connection	Indicates whether the connection to the server is a long connection or a short connection. Type: string Value options: **keep-alive**, **close** Default value: none
Date	The date and time at which OBS responds to the request. Type: string Default value: none

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Header	Description
ETag	128-bit MD5 digest of the Base64 code of an object. ETag is the unique identifier of the object content. It can be used to determine whether the object content is changed. For example, if ETag value is **A** when an object is uploaded and the ETag value has changed to **B** when the object is downloaded, it indicates that the object content is changed. The actual ETag is the hash value of the object, which only reflects the changed content rather than the metadata. An uploaded object or copied object has a unique ETag after being encrypted using MD5. If an object is uploaded in the multipart mode, the MD5 splits ETag regardless of the encryption method. In this case, the ETag is not an MD5 digest. Type: string
x-obs-id-2	A special symbol that helps troubleshoot faults. Type: string Default value: none
x-reserved-indicator	A special symbol that helps troubleshoot faults. Type: string Default value: none
x-obs-request-id	The value created by OBS to uniquely identify the request. OBS uses this value to troubleshoot faults. Type: string Default value: none

(Optional) Response Body

A response body is generally returned in a structured format (for example, JSON or XML), corresponding to **Content-Type** in the response header, and is used to transfer content other than the response header.

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4 Getting Started

4.1 Creating a Bucket

Scenarios

A bucket is a container that stores objects in OBS. You need to create a bucket before storing data in OBS.

The following describes how to call the API for **creating a bucket** in a specified region. For details about how to call an API, see **Calling APIs**.

Prerequisites

- You have obtained the AK and SK. For details about how to obtain the AK and SK, see **Obtaining Access Keys (AK/SK)**.
- You have planned the region where you want to create a bucket and obtained the endpoint required for API calls. For details, see **Endpoints**.

Once a region is determined, it cannot be modified after the bucket is created.

Creating a Bucket Named bucket001 in the a1 Region

In this example, an Apache HttpClient is used.

```
package com.obsclient;

import java.io.*;

import org.apache.http.Header;
import org.apache.http.client.methods.CloseableHttpResponse;
import org.apache.http.client.methods.HttpPut;
import org.apache.http.entity.StringEntity;
import org.apache.http.impl.client.CloseableHttpClient;
import org.apache.http.impl.client.HttpClients;

public class TestMain {
    /* Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK and store them in the configuration file or environment variables.
    In this example, the AK and SK are stored in environment variables for identity authentication. Before running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and HUAWEICLOUD_SDK_SK. */
    public static String accessKey = System.getenv("HUAWEICLOUD_SDK_AK"); //The value is the AK
```

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```
obtained.
    public static String securityKey = System.getenv("HUAWEICLOUD_SDK_SK");  //The value is the SK
obtained.
    public static String region = "a1"; // The value is the region where the planned bucket resides.
    public static String createBucketTemplate =
            "<CreateBucketConfiguration " +
            "xmlns=\"http://obs.a1.myhuaweicloud.eu/doc/2015-06-30/\">\n" +
            "<Location>" + region + "</Location>\n" +
            "</CreateBucketConfiguration>";

    public static void main(String[] str) {

         createBucket();

    }

    private static void createBucket() {
        CloseableHttpClient httpClient = HttpClients.createDefault();
        String requesttime = DateUtils.formatDate(System.currentTimeMillis());
        String contentType = "application/xml";
        HttpPut httpPut = new HttpPut("http://bucket001.obs.a1.myhuaweicloud.eu");
        httpPut.addHeader("Date", requesttime);
        httpPut.addHeader("Content-Type", contentType);

        /**Calculate the signature based on the request.**/
        String contentMD5 = "";
        String canonicalizedHeaders = "";
        String canonicalizedResource = "/bucket001/";
        // Content-MD5 and Content-Type fields do not contain line breaks. The data format is RFC 1123,
which is the same as the time in the request.
        String canonicalString = "PUT" + "\n" + contentMD5 + "\n" + contentType + "\n" + requesttime + "\n"
+ canonicalizedHeaders + canonicalizedResource;
        System.out.println("StringToSign:[" + canonicalString + "]");
        String signature = null;
        CloseableHttpResponse httpResponse = null;
        try {
            signature = Signature.signWithHmacSha1(securityKey, canonicalString);

             // Added the Authorization: OBS AccessKeyID:signature field to the header.
            httpPut.addHeader("Authorization", "OBS " + accessKey + ":" + signature);

            // Add a body.
            httpPut.setEntity(new StringEntity(createBucketTemplate));

            httpResponse = httpClient.execute(httpPut);

            // Prints the sending request information and the received response message.
            System.out.println("Request Message:");
            System.out.println(httpPut.getRequestLine());
            for (Header header : httpPut.getAllHeaders()) {
                System.out.println(header.getName() + ":" + header.getValue());
            }

            System.out.println("Response Message:");
            System.out.println(httpResponse.getStatusLine());
            for (Header header : httpResponse.getAllHeaders()) {
                System.out.println(header.getName() + ":" + header.getValue());
            }
            BufferedReader reader = new BufferedReader(new InputStreamReader(
                    httpResponse.getEntity().getContent()));

            String inputLine;
            StringBuffer response = new StringBuffer();

            while ((inputLine = reader.readLine()) != null) {
                response.append(inputLine);
            }
            reader.close();
```

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```
            // print result
            System.out.println(response.toString());
        } catch (UnsupportedEncodingException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        } finally {
            try {
                httpClient.close();
            } catch (IOException e) {
                e.printStackTrace();
            }
        }

    }

}
```

The format of the **Date** header field **DateUtils** is as follows:

```
package com.obsclient;

import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Locale;
import java.util.TimeZone;

public class DateUtils {

    public static String formatDate(long time)
    {
        DateFormat serverDateFormat = new SimpleDateFormat("EEE, dd MMM yyyy HH:mm:ss z",
Locale.ENGLISH);
        serverDateFormat.setTimeZone(TimeZone.getTimeZone("GMT"));
        return serverDateFormat.format(time);
    }
}
```

The method of calculating the signature character string is as follows:

```
package com.obsclient;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;
import java.security.InvalidKeyException;
import java.util.Base64;

public class Signature {
    public static String signWithHmacSha1(String sk, String canonicalString) throws
UnsupportedEncodingException {

        try {
            SecretKeySpec signingKey = new SecretKeySpec(sk.getBytes("UTF-8"), "HmacSHA1");
            Mac mac = Mac.getInstance("HmacSHA1");
            mac.init(signingKey);
            return Base64.getEncoder().encodeToString(mac.doFinal(canonicalString.getBytes("UTF-8")));
        } catch (NoSuchAlgorithmException | InvalidKeyException | UnsupportedEncodingException e) {
            e.printStackTrace();
        }
        return null;
    }
}
```

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4.2 Listing Buckets

Scenarios

If you want to view information about all buckets created by yourself, you can call the API for listing buckets.

The following describes how to call the API for **listing buckets**. For details about how to call an API, see **Calling APIs**.

Prerequisites

- You have obtained the AK and SK. For details about how to obtain the AK and SK, see **Obtaining Access Keys (AK/SK)**.
- You have specified the region where you want to list buckets and obtained the endpoint required for API calls. For details, see **Endpoints**.

Obtaining the Bucket List in the a1 Region

In this example, an Apache HttpClient is used.

```
package com.obsclient;

import java.io.*;
import java.util.ArrayList;
import java.util.List;

import org.apache.http.Header;
import org.apache.http.HttpEntity;
import org.apache.http.NameValuePair;
import org.apache.http.client.entity.UrlEncodedFormEntity;
import org.apache.http.client.methods.CloseableHttpResponse;
import org.apache.http.client.methods.HttpGet;
import org.apache.http.client.methods.HttpPost;
import org.apache.http.client.methods.HttpPut;
import org.apache.http.entity.InputStreamEntity;
import org.apache.http.entity.StringEntity;
import org.apache.http.impl.client.CloseableHttpClient;
import org.apache.http.impl.client.HttpClients;
import org.apache.http.message.BasicNameValuePair;


public class TestMain {

    /* Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK and store them in the configuration file or environment variables.
    In this example, the AK and SK are stored in environment variables for identity authentication. Before running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and HUAWEICLOUD_SDK_SK. */
    public static String accessKey = System.getenv("HUAWEICLOUD_SDK_AK"); //The value is the AK obtained.
    public static String securityKey = System.getenv("HUAWEICLOUD_SDK_SK");  //The value is the SK obtained.

    public static void main(String[] str) {

        listAllMyBuckets();

    }
```

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```
   private static void listAllMyBuckets() {
      CloseableHttpClient httpClient = HttpClients.createDefault();
      String requesttime = DateUtils.formatDate(System.currentTimeMillis());
      HttpGet httpGet = new HttpGet("http://obs.a1.myhuaweicloud.com");
      httpGet.addHeader("Date", requesttime);

      /**Calculate the signature based on the request.**/
      String contentMD5 = "";
      String contentType = "";
      String canonicalizedHeaders = "";
      String canonicalizedResource = "/";
      // Content-MD5 and Content-Type fields do not contain line breaks. The data format is RFC 1123,
which is the same as the time in the request.
      String canonicalString = "GET" + "\n" + contentMD5 + "\n" + contentType + "\n" + requesttime + "\n"
+ canonicalizedHeaders + canonicalizedResource;
      System.out.println("StringToSign:[" + canonicalString + "]");
      String signature = null;
      try {
         signature = Signature.signWithHmacSha1(securityKey, canonicalString);

          // Added the Authorization: OBS AccessKeyID:signature field to the header.
         httpGet.addHeader("Authorization", "OBS " + accessKey + ":" + signature);
         CloseableHttpResponse httpResponse = httpClient.execute(httpGet);

         // Prints the sending request information and the received response message.
         System.out.println("Request Message:");
         System.out.println(httpGet.getRequestLine());
         for (Header header : httpGet.getAllHeaders()) {
            System.out.println(header.getName() + ":" + header.getValue());
         }

         System.out.println("Response Message:");
         System.out.println(httpResponse.getStatusLine());
         for (Header header : httpResponse.getAllHeaders()) {
            System.out.println(header.getName() + ":" + header.getValue());
         }
         BufferedReader reader = new BufferedReader(new InputStreamReader(
               httpResponse.getEntity().getContent()));

         String inputLine;
         StringBuffer response = new StringBuffer();

         while ((inputLine = reader.readLine()) != null) {
            response.append(inputLine);
         }
         reader.close();
         // print result
         System.out.println(response.toString());
      } catch (UnsupportedEncodingException e) {
         e.printStackTrace();

      } catch (IOException e) {
         e.printStackTrace();
      } finally {
         try {
            httpClient.close();
         } catch (IOException e) {
            e.printStackTrace();
         }
      }

   }

}
```

The format of the **Date** header field **DateUtils** is as follows:

```
package com.obsclient;
```

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```
import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Locale;
import java.util.TimeZone;

public class DateUtils {

    public static String formatDate(long time)
    {
        DateFormat serverDateFormat = new SimpleDateFormat("EEE, dd MMM yyyy HH:mm:ss z",
Locale.ENGLISH);
        serverDateFormat.setTimeZone(TimeZone.getTimeZone("GMT"));
        return serverDateFormat.format(time);
    }
}
```

The method of calculating the signature character string is as follows:

```
package com.obsclient;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;
import java.security.InvalidKeyException;
import java.util.Base64;

public class Signature {
    public static String signWithHmacSha1(String sk, String canonicalString) throws
UnsupportedEncodingException {

        try {
            SecretKeySpec signingKey = new SecretKeySpec(sk.getBytes("UTF-8"), "HmacSHA1");
            Mac mac = Mac.getInstance("HmacSHA1");
            mac.init(signingKey);
            return Base64.getEncoder().encodeToString(mac.doFinal(canonicalString.getBytes("UTF-8")));
        } catch (NoSuchAlgorithmException | InvalidKeyException | UnsupportedEncodingException e) {
            e.printStackTrace();
        }
        return null;
    }
}
```

4.3 Uploading an Object

Scenarios

You can upload files of any type to OBS buckets for storage.

The following describes how to call the API for **uploading objects using the PUT method** to a specified bucket. For details about how to call an API, see **Calling APIs**.

Prerequisites

- You have obtained the AK and SK. For details, see **Obtaining Access Keys (AK/SK)**.
- At least one bucket is available.
- The file to be uploaded has been prepared and you know the complete local path of the file.
- You have obtained the region of the bucket which you want to upload files to and determined the endpoint required for API calls. For details, see **Endpoints**.

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Uploading the Object objecttest1 to Bucket bucket001 in the a1 Region

In this example, an Apache HttpClient is used.

NOTE

If the **contentType** parameter in the sample code is left blank, the parameter in the signature header must also be left blank during signature calculation. Otherwise, a signature mismatch error is reported.

```
package com.obsclient;

import java.io.*;
import java.util.ArrayList;
import java.util.List;

import org.apache.http.Header;
import org.apache.http.HttpEntity;
import org.apache.http.NameValuePair;
import org.apache.http.client.entity.UrlEncodedFormEntity;
import org.apache.http.client.methods.CloseableHttpResponse;
import org.apache.http.client.methods.HttpGet;
import org.apache.http.client.methods.HttpPost;
import org.apache.http.client.methods.HttpPut;
import org.apache.http.entity.InputStreamEntity;
import org.apache.http.entity.StringEntity;
import org.apache.http.impl.client.CloseableHttpClient;
import org.apache.http.impl.client.HttpClients;
import org.apache.http.message.BasicNameValuePair;


public class TestMain {

    /* Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK and store them in the configuration file or environment variables.
    In this example, the AK and SK are stored in environment variables for identity authentication. Before running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and HUAWEICLOUD_SDK_SK. */
    public static String accessKey = System.getenv("HUAWEICLOUD_SDK_AK"); //The value is the AK obtained.
    public static String securityKey = System.getenv("HUAWEICLOUD_SDK_SK");  //The value is the SK obtained.

    public static void main(String[] str) {

        putObjectToBucket();

    }


    private static void putObjectToBucket() {

        InputStream inputStream = null;
        CloseableHttpClient httpClient = HttpClients.createDefault();
        CloseableHttpResponse httpResponse = null;
        String requestTime = DateUtils.formatDate(System.currentTimeMillis());
        HttpPut httpPut = new HttpPut("http://bucket001.obs.a1.myhuaweicloud.eu/objecttest1");
        httpPut.addHeader("Date", requestTime);

         /**Calculate the signature based on the request.**/
        String contentMD5 = "";
        String contentType = "";
        String canonicalizedHeaders = "";
        String canonicalizedResource = "/bucket001/objecttest1";
        // Content-MD5 and Content-Type fields do not contain line breaks. The data format is RFC 1123, which is the same as the time in the request.
        String canonicalString = "PUT" + "\n" + contentMD5 + "\n" + contentType + "\n" + requestTime + "\n" + canonicalizedHeaders + canonicalizedResource;
        System.out.println("StringToSign:[" + canonicalString + "]");
```

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```
        String signature = null;
        try {
            signature = Signature.signWithHmacSha1(securityKey, canonicalString);
            // Directory for storing uploaded files
            inputStream = new FileInputStream("D:\\OBSobject\\text01.txt");
            InputStreamEntity entity = new InputStreamEntity(inputStream);
            httpPut.setEntity(entity);

           // Added the Authorization: OBS AccessKeyID:signature field to the header.
            httpPut.addHeader("Authorization", "OBS " + accessKey + ":" + signature);
            httpResponse = httpClient.execute(httpPut);

           // Prints the sending request information and the received response message.
            System.out.println("Request Message:");
            System.out.println(httpPut.getRequestLine());
            for (Header header : httpPut.getAllHeaders()) {
                System.out.println(header.getName() + ":" + header.getValue());
            }

            System.out.println("Response Message:");
            System.out.println(httpResponse.getStatusLine());
            for (Header header : httpResponse.getAllHeaders()) {
                System.out.println(header.getName() + ":" + header.getValue());
            }
            BufferedReader reader = new BufferedReader(new InputStreamReader(
                    httpResponse.getEntity().getContent()));

            String inputLine;
            StringBuffer response = new StringBuffer();

            while ((inputLine = reader.readLine()) != null) {
                response.append(inputLine);
            }
            reader.close();

            // print result
            System.out.println(response.toString());


        } catch (UnsupportedEncodingException e) {
            e.printStackTrace();

        } catch (IOException e) {
            e.printStackTrace();
        } finally {
            try {
                httpClient.close();
            } catch (IOException e) {
                e.printStackTrace();
            }
        }
    }

}
```

The format of the Date header field DateUtils is as follows:

```
package com.obsclient;

import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Locale;
import java.util.TimeZone;

public class DateUtils {

    public static String formatDate(long time)
    {
        DateFormat serverDateFormat = new SimpleDateFormat("EEE, dd MMM yyyy HH:mm:ss z",
```

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```
Locale.ENGLISH);
        serverDateFormat.setTimeZone(TimeZone.getTimeZone("GMT"));
        return serverDateFormat.format(time);
    }
}
```

The method of calculating the signature character string is as follows:

```
package com.obsclient;

import javax.crypto.Mac;
import javax.crypto.spec.SecretKeySpec;
import java.io.UnsupportedEncodingException;
import java.security.NoSuchAlgorithmException;
import java.security.InvalidKeyException;
import java.util.Base64;

public class Signature {
    public static String signWithHmacSha1(String sk, String canonicalString) throws
UnsupportedEncodingException {

        try {
            SecretKeySpec signingKey = new SecretKeySpec(sk.getBytes("UTF-8"), "HmacSHA1");
            Mac mac = Mac.getInstance("HmacSHA1");
            mac.init(signingKey);
            return Base64.getEncoder().encodeToString(mac.doFinal(canonicalString.getBytes("UTF-8")));
        } catch (NoSuchAlgorithmException | InvalidKeyException | UnsupportedEncodingException e) {
            e.printStackTrace();
        }
        return null;
    }
}
```

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5 APIs

5.1 Operations on Buckets

5.1.1 Listing Buckets

Functions

You can perform this operation to list all buckets that you have created across all regions.

Request Syntax

```
GET / HTTP/1.1
Host: obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

NOTE

Regardless of the endpoint you specified, a list of buckets spanning all regions is returned.

When creating a bucket, do not list buckets.

Request Parameters

This request contains no parameters.

Request Headers

This request's message header is the same as that of a common request. For details, see **Table 5-1**. This request can contain additional headers. The following table describes the additional headers for this request.

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Table 5-1 Additional request headers

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-bucket-type	No	String	**Definition**: This header specifies the type of buckets contained in the list. Example: **x-obs-bucket-type: POSIX** **Constraints**: If this header is not carried, the list of all buckets and parallel file systems is obtained. **Range:** • **OBJECT**: Obtain the list of all buckets. • **POSIX**: Obtain the list of all parallel file systems. **Default value**: If the request header is not carried, the default value is blank, indicating that both **OBJECT** and **POSIX** are carried.

Request Elements

The request does not use request elements.

Response Syntax

```
GET HTTP/1.1 status_code
Content-Type: type
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListAllMyBucketsResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Owner>
      <ID>id</ID>
   </Owner>
   <Buckets>
      <Bucket>
         <Name>bucketName</Name>
         <CreationDate>date</CreationDate>
         <Location>region</Location>
         <BucketType>buckettype</BucketType>
      </Bucket>
      ...
   </Buckets>
</ListAllMyBucketsResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains the XML list of buckets owned by the user. **Table 5-2** describes the elements.

Table 5-2 Response elements

Parameter	Type	Description
ListAllMyBuckets-Result	XML	**Definition**: List of buckets. It is the parent node of **Owner** and **Buckets**. **Range**: None
Owner	XML	**Definition**: Owner of the bucket. **Range**: For details, see **Table 5-3**.
Buckets	XML	**Definition**: List of buckets returned. **Range**: For details, see **Table 5-4**.

Table 5-3

Parameter	Type	Description
ID	String	**Definition**: Domain ID (account ID) of the owner. **Range**: For details, see **Domain ID**.

Table 5-4

Parameter	Type	Description
Bucket	XML	**Definition**: Detailed bucket information, including the bucket name and creation time. **Range**: For details, see **Table 5-5**.

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Table 5-5 Bucket parameters

Parameter	Type	Description
Name	String	**Definition**: Bucket name **Range**: The value is a string of 3 to 63 characters.
CreationDate	String	**Definition**: Time (UTC) when the bucket is created. The date is in the ISO8601 format, for example, 2025-06-28T08:57:41.047Z. **Range**: The value is a string of 24 characters.
Location	String	**Definition**: Region where a bucket is located
BucketType	String	**Definition**: Bucket type **Range**: • **OBJECT**: object bucket • **POSIX**: parallel file system

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /
 HTTP/1.1
User-Agent: curl/7.29.0
Host: obs.region.myhuaweicloud.eu
Accept: */*
Date: Mon, 25 Jun 2018 05:37:12 +0000
Authorization: OBS GKDF4C7Q6SI0IPGTXTJN:9HXkVQIiQKw33UEmyBI4rWrzmic=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435722C11379647A8A00A
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSGGDRUM62QZi3hGP8Fz3gOloYCfZ39U
Content-Type: application/xml
Date: Mon, 25 Jun 2018 05:37:12 GMT
Content-Length: 460

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
```

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```
<ListAllMyBucketsResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
 <Owner>
  <ID>783fc6652cf246c096ea836694f71855</ID>
 </Owner>
 <Buckets>
  <Bucket>
   <Name>examplebucket01</Name>
   <CreationDate>2018-06-21T09:15:01.032Z</CreationDate>
   <Location>region</Location>
   <BucketType>OBJECT</BucketType>
  </Bucket>
  <Bucket>
   <Name>examplebucket02</Name>
   <CreationDate>2018-06-22T03:56:33.700Z</CreationDate>
   <Location>region</Location>
   <BucketType>OBJECT</BucketType>
  </Bucket>
 </Buckets>
</ListAllMyBucketsResult>
```

5.1.2 Creating a Bucket

Functions

This operation is used to create a bucket with a specified name.

NOTE

- By default, a user can have a maximum of 100 buckets.
- The name of a deleted bucket can be reused for a bucket or a parallel file system at least 30 minutes after the deletion.
- You can enable WORM when you create a bucket. After WORM is enabled, you can configure retention policies for objects you upload to the bucket. For more information, see **Configuring a Default WORM Policy for a Bucket**. When you create a bucket with WORM enabled, OBS automatically enables versioning for the bucket, which cannot be suspended. When you create a parallel file system, you cannot enable WORM for it.

A bucket name must be unique in OBS. If a user creates a bucket with the same name as that of an existing bucket under the same account and in the same region, a 200 code (indicating success) is returned. In scenarios other than the preceding one, the request for creating a bucket with the same name as that of an existing one will receive the 409 code (indicating that a namesake bucket already exists). To set an access control policy for the bucket to be created, you can add the **x-obs-acl** parameter to request headers.

Storage Class

You can create buckets with different storage classes. The **x-obs-storage-class** header in a bucket creation request specifies the bucket's storage class. If you do not specify a storage class when you upload an object to the bucket, the object inherits the storage class of the bucket. The storage class options are as follows: **STANDARD** (Standard), **WARM** (Infrequent Access), **COLD** (Archive). If the **x-obs-storage-class** header is not in the request, a Standard bucket will be created.

If the storage class of an object is not specified when it is uploaded to a bucket (see **Uploading an Object - PUT**), the object will be stored in the default storage class of the bucket.

- OBS Standard features low access latency and high throughput. It is most suitable for storing frequently accessed (multiple times per month) hot files.

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Potential application scenarios include big data, mobile applications, trending videos, and social media images.

- OBS Infrequent Access is most suitable for storing semi-frequently accessed (less than 12 times a year) data requiring quick response. Potential application scenarios include file synchronization or sharing and enterprise-level backup. It provides the same durability, access latency, and throughput as the Standard but at a lower price. The main drawback, however, is that it has lower availability than the Standard.
- OBS Archive is most suitable for archiving rarely-accessed (averagely once a year) data. Potential application scenarios include data archiving and long-term data retention for backup. It provides secure, durable, and inexpensive storage, which can replace tape libraries. However, the low cost comes at the cost of minutes to hours needed to restore data from the Archive storage class.

Request Syntax

```
PUT / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Length: length
Date: date
Authorization: authorization
<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Location>location</Location>
</CreateBucketConfiguration>
```

Request Parameters

This request contains no parameters.

Request Headers

The operation message header is the same as that of a common request. For details, see **Table 3-3**. However, this request can contain additional headers. The following table describes the additional headers for this request.

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Table 5-6 Additional request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	**Definition**: When creating a bucket, you can use this parameter to set a pre-defined ACL. **Range**: ● private: A bucket or an object can be accessed only by its owner. ● public-read: If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata. ● public-read-write: If this permission is granted on a bucket, anyone can obtain the object list, multipart tasks, and metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and cancel multipart upload tasks. ● public-read-delivered: If this permission is set for a bucket, everyone can obtain the object list, multipart uploads, and bucket metadata in the bucket, and obtain the content and metadata of the objects in the bucket. ● public-read-write-delivered: If this permission is set for a bucket, everyone can obtain the object list in the bucket, multipart uploads in the bucket, and metadata of the bucket; upload and delete objects; initiate multipart uploads; upload, assemble, and copy parts; cancel multipart uploads; and obtain content and metadata of objects in the bucket. ● bucket-owner-full-control: If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket of any other user, the bucket owner does not have the permissions on your object. After you grant this policy to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have the control over object **x**. If user A sets the **bucket-owner-full-control** policy for object **x**, user B then has the control over object **x**.

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Header	Type	Mandatory (Yes/No)	Description
			Default value: private
x-obs-storage-class	String	No	**Definition**: When creating a bucket, you can add this header to set the default storage class for the bucket. **Range**: • STANDARD (Standard storage) • WARM (Infrequent Access storage) • COLD (Archive storage) **Default value**: STANDARD
x-obs-grant-read	String	No	**Definition**: Grants the read permission to all users in a specified domain. It allows you to list objects in a bucket, list multipart tasks in a bucket, list multi-version objects in a bucket, and obtain bucket metadata. Example: **x-obs-grant-read:id=***tenant-ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-write	String	No	**Definition**: Grants the WRITE permission to all users in a specified domain to create, delete, and overwrite all objects in a bucket; and initiate multipart uploads, upload parts, copy parts, assemble parts, and cancel multipart uploads. Example: **x-obs-grant-write:id=***tenant-ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-read-acp	String	No	**Definition**: Grant the READ_ACP permission to all users in a specified domain to allow them to read the bucket ACL. Example: **x-obs-grant-read-acp:id=***Account ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-write-acp	String	No	**Definition**: Grants the WRITE_ACP permission to all users in a specified domain to allow them to modify the bucket ACL. Example: **x-obs-grant-write-acp:id=***Account ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-full-control	String	No	**Definition**: Grants the FULL_CONTROL permission to all users in a specified domain. Example: **x-obs-grant-full-control:id=***tenant-ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read-delivered	String	No	**Definition**: Grants the READ permission to all users in a specified domain. By default, the read permission is granted on all objects in the bucket. Example: **x-obs-grant-read-delivered:id=***tenant-ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-full-control-delivered	String	No	**Definition**: Grants the FULL_CONTROL permission to all users in a specified domain. By default, the FULL_CONTROL permission is granted on all objects in the bucket. Example: **x-obs-grant-full-control-delivered:id=***tenant-ID* **Constraints**: None **Range**: id=*tenant-ID*. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-fs-file-interface	String	No	**Definition**: This header can be carried when you want to create a parallel file system. Example: **x-obs-fs-file-interface:Enabled** **Range**: Enabled **Default value**: If the header is specified, the value must be **Enabled**. There is no default value.

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Header	Type	Mandatory (Yes/No)	Description
x-obs-bucket-object-lock-enabled	String	No	**Definition**: When creating a bucket, you can use this header to enable WORM for the bucket. Example: **x-obs-bucket-object-lock-enabled:true** **Constraints**: Only object buckets are supported. **Range**: • **true**: WORM is enabled. **Default value**: If the header is set to **true**, the object lock policy of the bucket is enabled. If the header is not set to **true** or is not carried, the object lock policy is disabled.
x-obs-server-side-encryption-bucket-key-enabled	String	No	**Definition**: Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled. **Default value**: false

Request Elements

This request can use additional elements. For details about additional elements, see **Table 5-7**.

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Table 5-7 Additional request elements

Element	Type	Mandatory (Yes/No)	Description
Location	String	No	**Definition**: Specifies the region where a bucket will be created. **Constraints**: If the endpoint used is **obs.myhuaweicloud.eu**, this parameter is not required. If any other endpoint is used, this parameter is required. **Range**: For details about OBS regions and endpoints, see **Endpoints**. **Default value**: If **obs.myhuaweicloud.eu** is used as the endpoint and no region is specified, **eu-west-101** (the EU-Dublin region) is used by default.

Response Syntax

```
HTTP/1.1 status_code
Location: location
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Creating a Bucket

```
PUT / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 157
```

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```
<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Location>region</Location>
</CreateBucketConfiguration>
```

Sample Response: Creating a Bucket

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
Location: /examplebucket
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

Sample Request: Creating a Bucket (with the ACL and Storage Class Specified)

```
PUT / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
x-obs-acl:public-read
x-obs-storage-class:STANDARD
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 157

<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Location>region</Location>
</CreateBucketConfiguration>
```

Sample Response: Creating a Bucket (with the ACL and Storage Class Specified)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
Location: /examplebucket
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

Sample Request: Creating a Parallel File System

```
PUT / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 157
x-obs-fs-file-interface: Enabled

<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
<Location>region</Location>
</CreateBucketConfiguration>
```

Sample Response: Creating a Parallel File System

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
Location: /examplebucket
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

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Sample Request: Creating a Bucket with WORM Enabled

```
PUT / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
x-obs-bucket-object-lock-enabled:true
Content-Length: 0
```

Sample Response: Creating a Bucket with WORM Enabled

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 00000184C11AC7A6809F881341842C02
x-reserved-indicator: Unauthorized
Location: /examplebucket
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

Sample Request: Creating a Bucket with Explicitly Configured Access Permissions

```
PUT / HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
x-obs-grant-read: id=783fc6vz2cf2442c096evxxxxxxxxxxx
x-obs-grant-write: id=3u3fc6vz2cf24mc830fhsxxxxxxxxxxx
x-obs-grant-read-acp: id=902su2vz2cf2vire.239caxxxxxxxxxxx
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<CreateBucketConfiguration  xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
    <Location>region</Location>
</CreateBucketConfiguration>
```

Sample Response: Creating a Bucket with Explicitly Configured Access Permissions

```
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTeau73DlKTh4wPYzoZf5w3KacolerP4
x-obs-request-id: 0000018A2A22B72447CF01A99F32E2B0
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
Location: /examplebucket
```

5.1.3 Listing Objects in a Bucket

Functions

This operation lists objects in a bucket. To use this operation, you must have the permission to read the bucket.

If you specify only the bucket name in the request, OBS returns descriptions for some or all of the objects (a maximum of 1,000 objects) in the bucket. If you also specify one or more of the following parameters in the request: **prefix**, **marker**, **max-keys**, and **delimiter**, OBS returns a list of objects based on the semantics specified in **Table 5-8**.

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You can also add the **versions** parameter to the request to list multiple versions of an object in a bucket.

Request Syntax

```
GET / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Syntax (for multi-version objects)

```
GET /?versions HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request uses parameters to list some objects in a bucket. **Table 5-8** describes the parameters.

Table 5-8 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	No	**Definition**: Name prefix that the objects to be listed must contain. **Constraints**: The value must comply with the format of the object name. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None
marker	String	No	**Definition**: Name of the object to start with when listing objects in a bucket. All objects following this object are listed in lexicographical order by object name. **Constraints**: This parameter is used only for listing non-versioned objects. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
max-keys	Integer	No	**Definition**: The maximum number of objects returned in the response in alphabetical order **Constraints**: None **Range**: The value ranges from **1** to **1000**. If the specified value is greater than **1000**, only 1,000 objects are returned. **Default value**: 1000

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Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	**Definition**: Separator used to group object names. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **CommonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **CommonPrefixes**. For example, there are three objects (**abcd**, **abcde**, and **bbcde**) in a bucket. If **delimiter** is set to **d** and **prefix** is set to **a**, objects **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix. If only **delimiter** is set to **d**, objects **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix, and **bbcde** is grouped separately into another **CommonPrefixes** with **bbcd** as the prefix. For a parallel file system, if this parameter is not specified, all the content in the directory is recursively listed by default, including the content in subdirectories. If there are a large number of subdirectories, the request response may be slow or the request may fail. In big data scenarios, parallel file systems usually have deep directory levels and each directory has a large number of files. In such case, you are advised to configure **[delimiter=/]** to list the content in the current directory, but not list subdirectories, thereby improving the listing efficiency. **Constraints**: None **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
key-marker	String	No	**Definition**: Object name to start with when listing object versions in a bucket. All object versions following the specified value are listed in lexicographical order by object name. **Constraints**: This field is used only for listing versioned objects. **Range**: The value of **NextKeyMarker** in the response body of the last request **Default value**: None
version-id-marker	String	No	**Definition**: Version ID to start with when listing objects in a bucket. All objects following the specified value are listed in lexicographical order by object name and version ID. This parameter must be used together with **key_marker**. A maximum of 1,000 objects can be returned at a time. **key_marker** specifies the object name, and **version_id_marker** specifies the version of the specified object. **Constraints**: • This parameter is only used for listing objects with multiple versions. • If the value of **version_id_marker** is not a version ID that belongs to the object specified by **key_marker**, **version_id_marker** does not take effect. **Range**: Object version ID, that is, the value of **nextVersionIdMarker** in the response body of the last request **Default value**: None

Request Headers

This request uses common request headers. For details, see **Table 3-3**.

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Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
x-obs-bucket-location: region
Content-Type: application/xml
Content-Length: length
<Response Body>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response lists objects in XML format. Specific elements are described in **Table 5-9**.

Table 5-9 Response elements

Parameter	Type	Description
ListBucketResult	XML	**Definition**: A list of objects in a bucket **Constraints**: None **Range**: None **Default value**: None
Contents	XML	**Definition**: Object metadata Parent: ListBucketResult **Constraints**: None **Range**: None **Default value**: None

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Parameter	Type	Description
CommonPrefixes	XML	**Definition**: Group information. If you specify a delimiter in the request, the response contains group information in **CommonPrefixes**. Parent: ListBucketResult **Constraints**: None **Range**: None **Default value**: None
Delimiter	String	**Definition**: Separator used to group object names. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **CommonPrefix**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **CommonPrefix**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, objects **abcd** and **abcde** are grouped into a **commonPrefix** with **abcd** as the prefix. If only **delimiter** is set to **d**, objects **abcd** and **abcde** are grouped into a **commonPrefix** with **abcd** as the prefix, and **bbcde** is grouped separately into another **commonPrefix** with **bbcd** as the prefix. Parent: ListBucketResult **Constraints**: None **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
ETag	String	**Definition**: Base64-encoded 128-bit MD5 digest of an object. ETag is the unique identifier of the object content. It can be used to determine whether the object content is changed. For example, if the ETag value is **A** when an object is uploaded, but this value has changed to **B** when the object is downloaded, it indicates that the object content has been changed. The ETag value is a hash of the object. The ETag reflects changes to the object content, rather than the object metadata. An uploaded object or copied object has a unique ETag after being encrypted using MD5. Parent: ListBucketResult.Contents **Restriction**: If the object is encrypted on the server side, the ETag value is not the MD5 digest of the object, but the unique identifier calculated through server-side encryption. **Range**: The value must contain 32 characters. **Default value**: None
Type	String	**Definition**: Object type Parent: ListBucketResult.Contents **Constraints**: This parameter is returned when the object is not a **Normal** object. **Range**: ● Normal: normal objects ● APPENDABLE: appendable objects **Default value**: None

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Parameter	Type	Description
ID	String	**Definition**: Domain ID of the object owner Parent: ListBucketResult.Contents.Owner **Constraints**: None **Range**: **DomainId** **Default value**: None
IsTruncated	Boolean	**Definition**: Whether all results are returned in the response. Parent: ListBucketResult **Constraints**: None **Range**: • **true**: Not all results are returned. • **false**: All results are returned. **Default value**: None
Key	String	**Definition**: Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is **examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt**, the object name is **folder/test.txt**. Parent: ListBucketResult.Contents **Constraints**: See **Object Overview**. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
LastModified	Date	**Definition**: Time (UTC) when an object was last modified Parent: ListBucketResult.Contents **Constraints**: The date is in the ISO8601 format. Example: **2018-01-01T00:00:00.000Z** **Range**: None **Default value**: None
Marker	String	**Definition**: Name of the object to start with when listing objects in a bucket. All objects following this object are listed in lexicographical order by object name. Assume that you have the following objects: **test/a**, **test/b**, **test/c**, and **test/d**. If you specify **test/b** as the marker, **test/c** and **test/d** are returned. Parent: ListBucketResult **Constraints**: None **Range**: The value can contain 1 to 1,024 characters. **Default value**: None
NextMarker	String	**Definition**: The last object in the returned list. This parameter is returned when not all the objects are listed. You can set the **Marker** value to list the remaining objects in follow-up requests. Parent: ListBucketResult **Constraints**: None **Range**: An object name string **Default value**: None

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Parameter	Type	Description
MaxKeys	String	**Definition**: The maximum number of objects returned in the response in alphabetical order Parent: ListBucketResult **Constraints**: None **Range**: The value ranges from 1 to 1000. If a value larger than 1000 is specified, 1000 is used. **Default value**: 1000
Name	String	**Definition**: Bucket name Parent: ListBucketResult **Constraints**: ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None

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Parameter	Type	Description
Owner	XML	**Definition**: User information, including the domain ID and name of the object owner Parent: ListBucketResult.Contents **Constraints**: None **Range**: None **Default value**: None
DisplayName	String	**Definition**: Name of the object owner Parent: ListBucketResult.Contents.Owner **Constraints**: None **Range**: None **Default value**: None
Prefix	String	**Definition**: Name prefix that the objects to be listed must contain. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If you leave this parameter blank and there are also no other filters specified, all objects in the bucket will be returned. Parent: ListBucketResult **Constraints**: The prefix you specified must already exist in the bucket. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
Size	String	**Definition**: Object size in bytes Parent: ListBucketResult.Contents **Constraints**: None **Range**: The value ranges from 0 TB to 48.8 TB, in bytes. **Default value**: None
StorageClass	String	**Definition**: Storage class of an object. Parent: ListBucketResult.Contents **Constraints**: None **Range**: • STANDARD • WARM • COLD **Default value**: None

Table 5-10 Elements in the response message for listing versioned objects

Parameter	Type	Description
ListVersionsResult	Container	**Definition**: Container for the list of objects (including versioned objects) **Constraints**: None **Range**: None **Default value**: None

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Parameter	Type	Description
Name	String	**Definition**: Bucket name Parent: ListVersionsResult **Constraints**: • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Range**: None **Default value**: None

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Parameter	Type	Description
Prefix	String	**Definition**: Name prefix that the objects to be listed must contain. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If you leave this parameter blank and there are also no other filters specified, all objects in the bucket will be returned. Parent: ListVersionsResult **Constraints**: The prefix you specified must already exist in the bucket. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None
KeyMarker	String	**Definition**: Name of the object to start with when listing objects in a bucket. All objects following this object are listed in lexicographical order by object name. Assume that you have the following objects: **test/a**, **test/b**, **test/c**, and **test/d**. If you specify **test/b** as the marker, **test/c** and **test/d** are returned. Parent: ListVersionsResult **Constraints**: This parameter is used only for listing versioned objects. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
VersionIdMarker	String	**Definition**: Version ID to start with when listing versioned objects, which is consistent with that set in the request **Constraints**: This parameter is used only for listing versioned objects. **Range**: The value must contain 32 characters. **Default value**: None
NextKeyMarker	String	**Definition**: Start position when listing versioned objects in the next request. Key marker for the last returned object in the list. **NextKeyMarker** is returned when not all the objects are listed. You can set the **KeyMarker** value to list the remaining objects in follow-up requests. Parent: ListVersionsResult **Constraints**: None **Range**: An object name string **Default value**: None
NextVersionIdMarker	String	**Definition**: Version ID to start with when listing versioned objects in the next request. It is used with the **nextKeyMarker** parameter. Version ID marker for the last returned object in the list. **NextVersionIdMarker** is returned when not all the objects are listed. You can set the **VersionIdMarker** value to list the remaining objects in follow-up requests. Parent: ListVersionsResult **Constraints**: This parameter is used only for listing versioned objects. **Range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
MaxKeys	String	**Definition**: The maximum number of objects returned in the response in alphabetical order Parent: ListVersionsResult **Constraints**: None **Range**: The value ranges from 1 to 1000. If a value larger than 1000 is specified, 1000 is used. **Default value**: 1000
IsTruncated	Boolean	**Definition**: Whether all results are returned in the response. Parent: ListVersionsResult **Constraints**: None **Range**: ● **true**: Not all results are returned. ● **false**: All results are returned. **Default value**: None
Version	Container	**Definition**: Container that contains the version information Parent: ListVersionsResult **Constraints**: None **Range**: None **Default value**: None

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Parameter	Type	Description
DeleteMarker	Container	**Definition**: Container that contains objects with delete markers Parent: ListVersionsResult **Constraints**: None **Range**: None **Default value**: None
Key	String	**Definition**: Name of the versioned object. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is **examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt**, the object name is **folder/test.txt**. Parent: ListVersionsResult.Version | ListVersionsResult.DeleteMarker **Constraints**: See **Object Overview**. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None
VersionId	String	**Definition**: Version ID of the object. Parent: ListVersionsResult.Version | ListVersionsResult.DeleteMarker **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
IsLatest	Boolean	**Definition**: Whether the object is of the latest version Parent: ListVersionsResult.Version | ListVersionsResult.DeleteMarker **Constraints**: None **Range**: • true: The version is the latest. • false: The version is not the latest. **Default value**: None
LastModified	Date	**Definition**: Time (UTC) when an object was last modified Parent: ListVersionsResult.Version | ListVersionsResult.DeleteMarker **Constraints**: The date is in the ISO8601 format. Example: **2018-01-01T00:00:00.000Z** **Range**: None **Default value**: None

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Parameter	Type	Description
ETag	String	**Definition**: Base64-encoded 128-bit MD5 digest of an object. ETag is the unique identifier of the object content. It can be used to determine whether the object content is changed. For example, if the ETag value is **A** when an object is uploaded, but this value has changed to **B** when the object is downloaded, it indicates that the object content has been changed. The ETag value is a hash of the object. The ETag reflects changes to the object content, rather than the object metadata. An uploaded object or copied object has a unique ETag after being encrypted using MD5. Parent: ListVersionsResult.Version **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None
Type	String	**Definition**: Object type Parent: ListVersionsResult.Version **Constraints**: This parameter is returned when the object is not a **Normal** object. **Range**: ● NORMAL: normal objects ● APPENDABLE: appendable objects **Default value**: None
Size	String	**Definition**: Object size in bytes Parent: ListVersionsResult.Version **Constraints**: None **Range**: The value ranges from 0 TB to 48.8 TB, in bytes. **Default value**: None

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Parameter	Type	Description
Owner	Container	**Definition**: User information, including the domain ID and name of the object owner Parent: ListVersionsResult.Version | ListVersionsResult.DeleteMarker **Constraints**: None **Range**: None **Default value**: None
ID	String	**Definition**: Domain ID of the object owner Parent: ListVersionsResult.Version.Owner | ListVersionsResult.DeleteMarker.Owner **Constraints**: None **Range**: **DomainId** **Default value**: None
DisplayName	String	**Definition**: Name of the object owner Parent: ListVersionsResult.Version.Owner | ListVersionsResult.DeleteMarker.Owner **Constraints**: None **Range**: None **Default value**: None

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Parameter	Type	Description
StorageClass	String	**Definition**: Storage class of an object Parent: ListVersionsResult.Version **Constraints**: None **Range**: • STANDARD • WARM • COLD **Default value**: None
CommonPrefixes	Container	**Definition**: Group information. If you specify a delimiter in the request, the response contains group information in **CommonPrefixes**. Parent: ListVersionsResult **Constraints**: None **Range**: None **Default value**: None
Prefix	String	**Definition**: Indicates a different prefix in the group information in **CommonPrefixes**. Parent: ListVersionsResult.CommonPrefixes **Constraints**: The prefix you specified must already exist in the bucket. **Range**: The value can contain 1 to 1,024 characters. **Default value**: None

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request: Listing All Objects

```
GET / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:28:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:KiyoYze4pmRNPYfmlXBfRTVxt8c=
```

Sample Response: Listing All Objects

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435D34E379ABD93320CB9
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSXiN7GPL/yXM6OSBaYCUV1zcY5OelWp
Content-Type: application/xml
Date: WED, 01 Jul 2015 02:23:30 GMT
Content-Length: 586

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Name>examplebucket</Name>
  <Prefix/>
  <Marker/>
  <MaxKeys>1000</MaxKeys>
  <IsTruncated>false</IsTruncated>
  <Contents>
    <Key>object001</Key>
    <LastModified>2015-07-01T00:32:16.482Z</LastModified>
    <ETag>"2fa3bcaaec668adc5da177e67a122d7c"</ETag>
    <Size>12041</Size>
    <Owner>
      <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
      <DisplayName>ObjectOwnerName</DisplayName>
    </Owner>
    <StorageClass>STANDARD</StorageClass>
  </Contents>
</ListBucketResult>
```

Sample Request: Listing Some Objects

Assume that you have a bucket **examplebucket** that contains objects **newfile**, **obj001**, **obj002**, and **obs001**. If you want to list only object **obj002**, the request message is as follows:

```
GET /?marker=obj001&prefix=obj HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:28:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:KiyoYze4pmRNPYfmlXBfRTVxt8c=
```

Sample Response: Listing Some Objects

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435D758FBA857E0801874
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShn/xAyk/xHBX6qgGSB36WXrbco0X80
Content-Type: application/xml
Date: WED, 01 Jul 2015 02:29:48 GMT
Content-Length: 707

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
<Name>examplebucket</Name>
<Prefix>obj</Prefix>
<Marker>obj001</Marker>
```

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```
<MaxKeys>1000</MaxKeys>
<IsTruncated>false</IsTruncated>
 <Contents>
   <Key>obj002</Key>
   <LastModified>2015-07-01T02:11:19.775Z</LastModified>
   <ETag>"a72e382246ac83e86bd203389849e71d"</ETag>
   <Size>9</Size>
   <Owner>
     <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
     <DisplayName>ObjectOwnerName</DisplayName>
   </Owner>
   <StorageClass>STANDARD</StorageClass>
 </Contents>
</ListBucketResult>
```

Sample Request: Listing Some Objects

Assume a user has a bucket named **examplebucket**. The bucket contains three objects: **abcd**, **abcde**, and **bbcde**. If the filter criteria is specified (the prefix is **a** and the delimiter is **d**), objects with the same characters between **a** and **d** are grouped into one group. In this example, **abcd** and **abcde** are grouped into one group with **abcd** as the **CommonPrefixes**.

The specific request format is as follows:

```
GET /?prefix=a&delimiter=d HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml;charset=UTF-8
```

Sample Response: Listing Some Objects

```
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSsokG49mPTa0cU5U/4gjFYLmYPgfYs/
x-obs-request-id: 0000018A2A563686D2C61543407D6ABF
Server: OBS
x-obs-bucket-location: region
Content-Length: 333
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketResult  xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
   <Name>examplebucket</Name>
   <Prefix>a</Prefix>
   <Marker>
   </Marker>
   <MaxKeys>1000</MaxKeys>
   <Delimiter>d</Delimiter>
   <IsTruncated>false</IsTruncated>
   <CommonPrefixes>
      <Prefix>abcd</Prefix>
   </CommonPrefixes>
</ListBucketResult>
```

Sample Request: Listing Object Versions

```
GET /?versions HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:29:45 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iZeDESIMxBK2YODk7vIeVpyO8DI=
```

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Sample Response: Listing Object Versions

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435D758FBA857E0801874
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShn/xAyk/xHBX6qgGSB36WXrbco0X80
Content-Type: application/xml
Date: WED, 01 Jul 2015 02:29:48 GMT
Content-Length: 707

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListVersionsResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
 <Name>bucket02</Name>
 <Prefix/>
 <KeyMarker/>
 <VersionIdMarker/>
 <MaxKeys>1000</MaxKeys>
 <IsTruncated>false</IsTruncated>
 <Version>
  <Key>object001</Key>
  <VersionId>00011000000000013F16000001643A22E476FFFF9046024ECA3655445346485a</VersionId>
  <IsLatest>true</IsLatest>
  <LastModified>2015-07-01T00:32:16.482Z</LastModified>
  <ETag>"2fa3bcaaec668adc5da177e67a122d7c"</ETag>
  <Size>12041</Size>
  <Owner>
   <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   <DisplayName>ObjectOwnerName</DisplayName>
  </Owner>
  <StorageClass>STANDARD</StorageClass>
 </Version>
</ListVersionsResult>
```

Sample Request: Listing Objects (Including Archive Objects) in a Bucket

```
GET / HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml;charset=UTF-8
```

Sample Response: Listing Objects (Including Archive Objects) in a Bucket

```
HTTP/1.1 200 OK
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSWqA48YKdA2aExVAgcpwubHQO5wd9ww
x-obs-request-id: 0000018A2A5FE372D308213442F9065F
Server: OBS
x-obs-bucket-location: region
Content-Length: 497
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketResult  xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
   <Name>examplebucket</Name>
   <Prefix>
   </Prefix>
   <Marker>
   </Marker>
   <MaxKeys>1000</MaxKeys>
   <IsTruncated>false</IsTruncated>
   <Contents>
      <Key>abcd.txt</Key>
      <LastModified>2014-08-25T01:47:00.838Z</LastModified>
      <ETag>"d41d8cd98f00b204e9800998ecf8427e"</ETag>
      <Size>0</Size>
      <Owner>
         <ID>d029cb567d464a93pdl9v800575ee4cf</ID>
```

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```
    </Owner>
    <StorageClass>COLD</StorageClass>
  </Contents>
</ListBucketResult>
```

5.1.4 Obtaining Bucket Metadata

Functions

This operation queries the metadata of a bucket. To use this operation, you must have the permission to read the bucket.

Request Syntax

```
HEAD / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

If you want to get CORS configuration information, you must use the headers in **Table 5-11**.

Table 5-11 Request headers for obtaining CORS configuration

Header	Type	Mandatory (Yes/No)	Description
Origin	String	Yes	**Definition**: Origin of the cross-domain request specified by the pre-request. Generally, it is a domain name. **Constraints**: You can enter multiple origins, with one separated from another using a line break. Each origin can contain at most one wildcard character (*). **Range**: An HTTP-compliant header value **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
Access-Control-Request-Headers	String	No	**Definition**: HTTP headers in a request **Constraints**: You can enter multiple allowed headers, with one separated from another using a line break. Each header can contain one wildcard character (*) at most. Spaces, ampersands (&), colons (:), and less-than signs (<) are not allowed. **Range**: An HTTP-compliant header value **Default value**: None

Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
x-obs-bucket-location: region
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-12** may be used.

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Table 5-12 Additional response headers

Header	Type	Description
x-obs-bucket-location	String	**Definition**: The region where the bucket resides. **Constraints**: None **Range**: None **Default value**: None
x-obs-storage-class	String	**Definition**: Default storage class of the bucket. **Constraints**: None **Range**: • STANDARD (Standard storage) • WARM (Infrequent Access storage) • COLD(Archive storage) **Default value**: None
x-obs-version	String	**Definition**: OBS version of the bucket. **Constraints**: None **Range**: • 3.0: bucket of the latest version • --: bucket of an earlier version **Default value**: None
x-obs-fs-file-interface	String	**Definition**: Whether it is a parallel file system **Constraints**: If this header field is not carried, the bucket is not a parallel file system. **Range**: The value can be **Enabled** (parallel file system). **Default value**: None

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Header	Type	Description
Access-Control-Allow-Origin	String	**Definition**: Indicates that the origin is included in the response if the origin in the request meets the CORS configuration requirements when CORS is configured for buckets. **Constraints**: None **Range**: The value that complies with the CORS **Default value**: None
Access-Control-Allow-Headers	String	**Definition**: Indicates that the headers are included in the response if headers in the request meet the CORS configuration requirements when CORS is configured for buckets. **Constraints**: None **Range**: The value that complies with the CORS **Default value**: None
Access-Control-Max-Age	Integer	**Definition**: Value of **MaxAgeSeconds** in the CORS configuration of the server when CORS is configured for buckets. **Constraints**: None **Range**: An integer greater than or equal to 0, in seconds **Default value**: 3000

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Header	Type	Description
Access-Control-Allow-Methods	String	**Definition**: Indicates that methods in the rule are included in the response if **Access-Control-Request-Method** in the request meets the CORS configuration requirements when CORS is configured for buckets. **Constraints**: None **Range**: • GET • PUT • HEAD • POST • DELETE **Default value**: None
Access-Control-Expose-Headers	String	**Definition**: **ExposeHeader** in the CORS rules of the bucket. It specifies additional headers allowed in the response by a CORS rule, which are used to provide extra information to clients. By default, a browser can access only headers **Content-Length** and **Content-Type**. If the browser needs to access other headers, you need to configure them in this parameter. **Constraints**: Spaces, wildcard characters (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: None **Default value**: None

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Getting CORS Configuration (with No Headers Specified)

```
HEAD / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:30:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:niCQCuGIZpETKIyx1datxHZyYlk=
```

Sample Response: Getting CORS Configuration (with No Headers Specified)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016439C734E0788404623FA8
Content-Type: application/xml
x-obs-storage-class: STANDARD
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSxwLpq9Hzf3OnaXr+pI/OPLKdrtiQAF
Date: WED, 01 Jul 2015 02:30:25 GMT
x-obs-bucket-location: region
x-obs-version: 3.0
Content-Length: 0
```

Sample Request: Getting Bucket Metadata and CORS Configuration

```
HEAD / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:30:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:niCQCuGIZpETKIyx1datxHZyYlk=
Origin:www.example.com
Access-Control-Request-Headers:AllowedHeader_1
```

Sample Response: Getting Bucket Metadata and CORS Configuration

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016439C734E0788404623FA8
Content-Type: application/xml
x-obs-storage-class: STANDARD
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSxwLpq9Hzf3OnaXr+pI/OPLKdrtiQAF
Date: WED, 01 Jul 2015 02:30:25 GMT
x-obs-bucket-location: region
Access-Control-Allow-Origin: www.example.com
Access-Control-Allow-Methods: POST,GET,HEAD,PUT
Access-Control-Allow-Headers: AllowedHeader_1
Access-Control-Max-Age: 100
Access-Control-Expose-Headers: ExposeHeader_1
x-obs-version: 3.0
Content-Length: 0
```

5.1.5 Obtaining Bucket Location

Functions

This operation obtains the location of a bucket. To use this operation, you must have the permission to read the bucket.

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Request Syntax

```
GET /?location HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Location xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">region</Location>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements of information about a bucket's region. **Table 5-13** describes the elements.

Table 5-13 Response elements

Element	Description
Location	Indicates the region where the bucket resides. Type: string

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?location HTTP/1.1
User-Agent: curl/7.29.0
```

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```
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:30:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:1DrmbCV+lhz3zV7uywlj7lrh0MY=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435D9F27CB2758E9B41A5
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSKWoJmaMyRXqofHgapbETDyI2LM9rUw
Content-Type: application/xml
Date: WED, 01 Jul 2015 02:30:25 GMT
Content-Length: 128

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Location xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">region</Location>
```

5.1.6 Deleting Buckets

Functions

This operation deletes specified buckets. This operation can be performed only by the bucket owner and users who have been authorized (via a policy) with the permission to delete the bucket. The bucket to be deleted must be an empty bucket. If a bucket has an object or a multipart task, the bucket is not empty. You can list objects and multipart upload tasks in a bucket to check whether the bucket is empty.

Note:

If the server returns a **5XX** error or times out when a bucket is being deleted, the system needs to synchronize the bucket information. During this period, the bucket information may be inaccurate. Therefore, wait a while and then check whether the bucket is successfully deleted. If the bucket can still be queried, send the deletion request again.

Request Syntax

```
DELETE / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common request headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

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Response Syntax

```
HTTP/1.1 status_code
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:31:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF260000016435DE6D67C35F9B969C47
x-obs-id-2: 32AAAQAAEAABKAAQAAEAABAAAQAAEAABCTukraCnXLsb7lEw4ZKjzDWWhzXdgme3
Date: WED, 01 Jul 2015 02:31:25 GMT
```

Sample Request: Deleting a Bucket That Does Not Exist

```
DELETE / HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml;charset=UTF-8
```

Sample Response: Deleting a Bucket That Does Not Exist

```
x-obs-id-2: "32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTBZPaontVN8iyR2NNEeTPRDdcmPVNFm
x-obs-request-id: "0000018A4E4567BD47CF110EE1B2A4DF
Server: OBS
Content-Length: 314
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Error>
   <Code>NoSuchBucket</Code>
   <Message>The specified bucket does not exist</Message>
   <RequestId>0000018A4E4567BD47CF110EE1B2A4DF</RequestId>
   <HostId>DRmhM6VfpWGBYYGrx6tpvbs8yoGi+uvlu5/20rpZ/Y2kTuq9mRuCXeA84734xs0+</HostId>
   <BucketName>examplebucket</BucketName>
</Error>
```

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Sample Request: Deleting a Non-Empty Bucket

```
DELETE / HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml;charset=UTF-8
```

Sample Response: Deleting a Non-Empty Bucket

```
x-obs-id-2: "32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTBZPaontVN8iyR2NNEeTPRDdcmPVNFm
x-obs-request-id: "0000018A4E4567BD47CF110EE1B2A4DF
Server: OBS
Content-Length: 314
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Error>
   <Code>BucketNotEmpty</Code>
   <Message>The bucket you tried to delete is not empty</Message>
   <RequestId>0000018A4E4D04BBD304AD8E409873EC</RequestId>
   <HostId>hME9234LDBKRFuuobDsmyUiP5Oq71oYo1vEL348QzfXHUoGs1RU1TgrOMUKTEMtA</HostId>
   <BucketName>examplebucket</BucketName>
</Error>
```

5.2 Advanced Bucket Settings

5.2.1 Configuring a Bucket Policy

Functions

This operation creates or modifies policies for buckets. The existing policy in a bucket is overwritten by the policy in the request. You can add as many statements as you would like to a bucket. All these statements in JSON cannot exceed 20 KB.

To perform this operation, the user must be the bucket owner or the bucket owner's IAM user that has permissions required for configuring bucket policies.

For details about how to use bucket policies to manage permissions, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
PUT /?policy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: signatureValue
Policy written in JSON
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

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Request Elements

The request body is a JSON string that contains the bucket policy information.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details, see **Table 6-2**.

Sample Request 1

Grant permissions to an OBS tenant.

Grant permissions to the tenant whose ID is **783fc6652cf246c096ea836694f71855**.

For details about how to obtain the tenant ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. For details about the parameters in a bucket policy, see **Bucket Policy Parameters**.

```
PUT /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:32:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
   "Statement": [
      {
         "Sid": "Stmt1375240018061",
         "Action": [
            "GetBucketLogging"
         ],
         "Effect": "Allow",
         "Resource": "logging.bucket",
         "Principal": {
            "ID": [
               "domain/783fc6652cf246c096ea836694f71855:user/*"
            ]
         }
      }
   ]
}
```

Sample Response 1

```
HTTP/1.1 204 No Content
x-obs-request-id: 7B6DFC9BC71DD58B061285551605709
x-obs-id-2: N0I2REZDOUJDNzFERDU4QjA2MTI4NTU1MTYwNTcwOUFBQUFBQUFBYmJiYmJiYmJD
Date: WED, 01 Jul 2015 02:32:25 GMT
```

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```
Content-Length: 0
Server: OBS
```

Sample Request 2

Grant permissions to an OBS user.

The user ID is **71f3901173514e6988115ea2c26d1999**, and the account ID is **783fc6652cf246c096ea836694f71855**.

For details about how to obtain the account ID and user ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. For details about the parameters in a bucket policy, see **Bucket Policy Parameters**.

```
PUT /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:33:28 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
   "Statement": [
      {
         "Sid": "Stmt1375240018062",
         "Action": [
            "PutBucketLogging"
         ],
         "Effect": "Allow",
         "Resource": "examplebucket",
         "Principal": {
            "ID": [
               "domain/783fc6652cf246c096ea836694f71855:user/71f3901173514e6988115ea2c26d1999"
            ]
         }
      }
   ]
}
```

Sample Response 2

```
HTTP/1.1 204 No Content
x-obs-request-id: 7B6DFC9BC71DD58B061285551605709
x-obs-id-2: N0I2REZDOUJDNzFERDU4QjA2MTI4NTU1MTYwNTcwOUFBQUFBQUFBYmJiYmJiYmJD
Date: WED, 01 Jul 2015 02:33:28 GMT
Content-Length: 0
Server: OBS
```

Sample Request 3

Deny all users except the specified one all the operation permissions.

The user ID is **71f3901173514e6988115ea2c26d1999**, and the account ID is **783fc6652cf246c096ea836694f71855**.

For details about how to obtain the account ID and user ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. For details about the parameters in a bucket policy, see **Bucket Policy Parameters**.

```
PUT /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:34:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
   "Statement": [
      {
```

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```
        "Effect": "Deny",
        "Action": ["*"],
        "Resource": [
            "examplebucket/*",
            "examplebucket"
        ],
        "NotPrincipal": {
            "ID": [
                "domain/783fc6652cf246c096ea836694f71855:user/71f3901173514e6988115ea2c26d1999",
                "domain/783fc6652cf246c096ea836694f71855:root"
            ]
        }
    }
  ]
}
```

Sample Response 3

```
HTTP/1.1 204 No Content
x-obs-request-id: A603000001604A7DFE4A4AF31E301891
x-obs-id-2: BKOvGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMllAObRK1n
Date: WED, 01 Jul 2015 02:34:34 GMT
Content-Length: 0
Server: OBS
```

Sample Request 4

Request to allow only the specified domain name and external link requests that have no referer headers by using the URL validation whitelist.

https://console.eu.huaweicloud.com

For details about the parameters in a bucket policy, see **Bucket Policy Parameters**.

```
PUT /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:34:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
   "Statement": [{
      "Effect": "Deny",
      "Action": [
      "GetObject",
      "GetObjectVersion"
      ],
      "Principal": {
         "ID": ["*"]
      },
      "Resource": ["examplebucket/*"],
      "Condition": {
         "StringNotLike": {
            "Referer": [
            "${null}"
            ]
         }
      }
   }]
}
```

Sample Response 4

```
HTTP/1.1 204 No Content
x-obs-request-id: A603000001604A7DFE4A4AF31E301891
x-obs-id-2: BKOvGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMllAObRK1n
Date: WED, 01 Jul 2015 02:34:34 GMT
```

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```
Content-Length: 0
Server: OBS
```

Sample Request 5

Granting permissions to a specified agency

The tenant whose account ID is **783fc6652cf246c096ea836694f71855** has an agency named **exampleAgency**. This example grants the agency the permission to view logs of the **logging.bucket** bucket.

For details about the bucket policy parameters, see **Bucket Policy Parameters**. For details about how to obtain the account ID and agency name, see **Obtaining Account, IAM User, Group, Project, Region, and Agency Information**.

```
PUT /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:32:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
   "Statement": [
      {
         "Sid": "Stmt1375240018061",
         "Action": [
            "GetBucketLogging"
         ],
         "Effect": "Allow",
         "Resource": "logging.bucket",
         "Principal": {
            "ID": [
               "domain/783fc6652cf246c096ea836694f71855:agency/exampleAgency"
            ]
         }
      }
   ]
}
```

Sample Response 5

```
HTTP/1.1 204 No Content
x-obs-request-id: A603000001604A7DFE4A4AF31E301891
x-obs-id-2: BKOvGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMllAObRK1n
Date: WED, 01 Jul 2015 02:34:34 GMT
Content-Length: 0
Server: OBS
```

5.2.2 Obtaining Bucket Policy Information

Functions

This operation uses the sub-resources of policy to return the policy information of a specified bucket.

To perform this operation, the user must be the bucket owner or the bucket owner's IAM user that has permissions required for obtaining bucket policies.

This operation cannot be performed in the following scenarios, and the 404 error code "NoSuchBucketPolicy" is returned:

- The specified bucket policy does not exist.
- The standard bucket policy is set to **Private** and no custom bucket policy is configured.

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Request Syntax

```
GET /?policy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Content-Type: application/xml
Date: date
Policy Content
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

The response body is a JSON string that contains the bucket policy information.

Error Responses

No special error responses are returned. For details, see **Table 6-2**.

Sample Request

```
GET /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:35:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
```

Sample Response

```
HTTP/1.1 200 OK
x-obs-request-id: A603000001604A7DFE4A4AF31E301891
x-obs-id-2: BKOvGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMllAObRK1n
Date: WED, 01 Jul 2015 02:35:46 GMT
Content-Length: 509
Server: OBS

{
   "Statement":[
      {
         "Sid":"Stmt1375240018061",
         "Effect":"Allow",
         "Principal":{
```

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```
            "ID":[
               "domain/domainiddomainiddomainiddo006666:user/useriduseriduseriduseridus004001",
               "domain/domainiddomainiddomainiddo006667:user/*"
            ]
         },
         "Action":[
            "*"
         ],
         "Resource":[
            "examplebucket"
         ]
      }
   ]
}
```

5.2.3 Deleting a Bucket Policy

Functions

This operation uses the policy sub-resources to delete the policy of a specified bucket.

To perform this operation, the user must be the bucket owner or the bucket owner's IAM user that has permissions required for deleting bucket policies.

The 204 error code "No Content" is returned regardless of whether a requested bucket policy exists or not.

Request Syntax

```
DELETE /?policy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: text/xml
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details, see **Table 6-2**.

Sample Request

```
DELETE /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:36:06 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
```

Sample Response

```
HTTP/1.1 204 No Content
x-obs-request-id: 9006000001643AAAF70BF6152D71BE8A
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSB4oWmNX3gVGGLr1cRPWjOhffEbq1XV
Date: WED, 01 Jul 2015 02:36:06 GMT
Server: OBS
```

5.2.4 Configuring a Bucket ACL

Functions

This operation controls access permissions for buckets. By default, only the creator of a bucket has the permission to read and write the bucket. You can also set other access permissions. For example, you can set a public read policy to grant the read permission to all users.

You can configure an ACL when creating a bucket, and modify or obtain the ACLs of existing buckets using the API operations. A bucket ACL supports a maximum of 100 grants. The PUT method is idempotent. With this method, a new bucket ACL will overwrite the previous bucket ACL. To modify or delete an ACL, you just need to create a new one using the PUT method.

For details about how to use bucket ACLs to manage permissions, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
PUT /?acl HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length

<AccessControlPolicy>
   <Owner>
      <ID>ID</ID>
   </Owner>
   <AccessControlList>
      <Grant>
         <Grantee>
            <ID>domainId</ID>
         </Grantee>
         <Permission>permission</Permission>
         <Delivered>false</Delivered>
```

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```
    </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

Request Parameters

This request contains no parameters.

Request Headers

You can change the ACL of a bucket by using the header settings. Each ACL configured with the header setting has a set of predefined grantees and authorized permissions. If you want to authorize access permissions by adding the header to a request, you must add the following header and specify the value.

Table 5-14 Optional header for specifying canned ACLs

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	**Definition**: Uses the canned ACL for a bucket. **Constraints**: None **Range**: • private • public-read • public-read-write • public-read-delivered • public-read-write-delivered For details about each policy, see the "Configuring an ACL Using Header Fields" section in **ACLs**. **Default value**: private

Request Elements

This request carries ACL information in elements to specify an ACL. **Table 3-3** describes the elements.

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Table 5-15 Additional request elements

Element	Type	Mandatory (Yes/No)	Description
Owner	XML	Yes	**Definition**: Owner information of a bucket. Owner is the parent node of ID. **Constraints**: None
ID	String	Yes	**Definition**: Account ID of the bucket owner. **Constraints**: None **Range**: None **Default value**: None
AccessControlList	XML	Yes	**Definition**: Access control list, which is the parent node of Grant. **Constraints**: None
Grant	XML	No	**Definition**: Used to identify users and user permissions. It is the parent node of Grantee and Permission. **Constraints**: A single bucket can contain at most 100 grants in its ACL.
Grantee	XML	No	**Definition**: Records user information and is the parent node of the authorized account ID. **Constraints**: None

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Element	Type	Mandatory (Yes/No)	Description
ID	String	Yes	**Definition**: Account ID of the authorized user. **Constraints**: None **Range**: None **Default value**: None
Permission	String	Yes	**Definition**: Permissions to be granted. For details, see **access permissions controlled by a bucket ACL**. **Constraints**: None **Range**: • READ: Grants the permission to obtain the list of objects in the bucket and the metadata of the bucket. • READ_ACP: Grants the permission to read the ACL of the bucket. • WRITE: Grants the permission to upload objects to the bucket and allows the authorizer to delete and overwrite existing objects in a bucket. • WRITE_ACP: Grants the permission to update the ACL of the bucket. • FULL_CONTROL: Grants the permission to read, write, read ACL, and write ACL of the bucket. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
Canned	String	No	**Definition**: Grants permissions to all users. **Constraints**: None **Range**: Everyone **Default value**: None
Delivered	Boolean	No	**Definition**: Whether the bucket ACL is applied to all objects in the bucket. **Constraints**: None **Range**: • true: The bucket ACL is applied to all objects in the bucket. • false: The bucket ACL is not applied to any objects in the bucket. **Default value**: false

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request

```
PUT /?acl HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:37:22 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
Content-Length: 727

<AccessControlPolicy xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">

 <Owner>
  <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
 </Owner>
 <AccessControlList>
  <Grant>
   <Grantee>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   </Grantee>
   <Permission>FULL_CONTROL</Permission>
  </Grant>
  <Grant>
   <Grantee>
    <ID>783fc6652cf246c096ea836694f71855</ID>
   </Grantee>
   <Permission>READ</Permission>
   <Delivered>false</Delivered>
  </Grant>
  <Grant>
   <Grantee>
    <Canned>Everyone</Canned>
   </Grantee>
   <Permission>READ_ACP</Permission>
  </Grant>
 </AccessControlList>
</AccessControlPolicy>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164361F2954B4D063164704
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT78HTIBuhe0FbtSptrb/akwELtwyPKs
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Length: 0
```

Sample Request: Specifying Access Permissions Using Headers

```
PUT /?acl HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
x-obs-acl: private
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

Sample Response: Specifying Access Permissions Using Headers

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

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5.2.5 Obtaining Bucket ACL Information

Functions

This operation returns the ACL information of a bucket. To obtain the ACL of a bucket, you need to have the **READ_ACP** or **FULL_CONTROL** permission for the bucket.

Request Syntax

```
GET /?acl HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AccessControlPolicy xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
   <Owner>
      <ID>id</ID>
   </Owner>
   <AccessControlList>
      <Grant>
         <Grantee>
            <ID>id</ID>
         </Grantee>
         <Permission>permission</Permission>
         <Delivered>false</Delivered>
      </Grant>
   </AccessControlList>
</AccessControlPolicy>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response returns information (in the form of elements) about the bucket ACL. **Table 5-16** describes the elements.

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Table 5-16 Response elements

Element	Description
Owner	Bucket owner Type: XML
ID	Account ID Type: string
AccessControlList	Indicates the ACL that records all users who have permissions to access the bucket and the permissions granted to the users. Type: XML
Grant	Container for the grantee and the granted permissions Type: XML
Grantee	Grantee information Type: XML
Canned	Grants permissions to all users. Type: string. The value can only be **Everyone**.
Delivered	Indicates whether the bucket ACL is applied to objects in the bucket. Type: boolean
Permission	Grantee's permission for a bucket Type: string

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?acl HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:39:28 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:X7HtzGsIEkzJbd8vo1DRu30vVrs=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436B69D82F14E93528658
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSjTh8661+HF5y8uAnTOBIpNO133hji+
Content-Type: application/xml
```

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```
Date: WED, 01 Jul 2015 02:39:28 GMT
Content-Length: 784

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AccessControlPolicy xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
  </Owner>
  <AccessControlList>
    <Grant>
      <Grantee>
        <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
      </Grantee>
      <Permission>FULL_CONTROL</Permission>
    </Grant>
    <Grant>
      <Grantee>
        <ID>783fc6652cf246c096ea836694f71855</ID>
      </Grantee>
      <Permission>READ</Permission>
      <Delivered>false</Delivered>
    </Grant>
    <Grant>
      <Grantee>
        <Canned>Everyone</Canned>
      </Grantee>
      <Permission>READ_ACP</Permission>
    </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

5.2.6 Configuring Logging for a Bucket

Functions

When a bucket is created, the logging function is not enabled by default. To generate logs recording operations on buckets, you need to enable the logging function for the bucket. After the logging function is enabled, a log is generated for each operation on a bucket and multiple logs are packed into a log file. The target bucket for storing log files must be specified when logging is enabled. It can be the bucket logging is enabled for, or any other bucket you have access to. If you specify another bucket for storing logs, the bucket must be in the same region as the logged bucket.

Log files are generated by OBS and uploaded to the bucket where logs are stored. Therefore, OBS needs to be authorized to upload generated log files. Before configuring the logging function, you need to create an agency for OBS in IAM, the agency name is configured as a parameter of the bucket, and the logging function must be configured under the **LoggingEnabled** tag in the XML file. You only need to authorize the agency with the upload permissions for the target bucket.

Example of agency permissions

```
{
    "Version": "1.1",
    "Statement": [
        {
            "Action": [
                "obs:object:PutObject"
            ],
            "Resource": [
                "OBS:*:*:object:mybucketlogs/*"
```

```
        ],
        "Effect": "Allow"
      }
    ]
}
```

To disable the bucket logging function, upload a logging file with an empty **BucketLoggingStatus** tag.

Buckets in the Infrequent Access and Archive storage classes cannot be used to store log files. Stored log files occupy storage space in a bucket. Therefore, users are charged for the logging service based on the pricing for data storage.

CAUTION

If the target bucket has KMS encryption enabled, grant the agency access to KMS.

Request Syntax

```
PUT /?logging HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: signatureValue
<?xml version="1.0" encoding="UTF-8"?>
<BucketLoggingStatus>
  <Agency>agency-name</Agency>
  <LoggingEnabled>
    <TargetBucket>mybucketlogs</TargetBucket>
    <TargetPrefix>mybucket-access_log-/</TargetPrefix>
    <TargetGrants>
      <Grant>
        <Grantee>
          <ID>domainID</ID>
        </Grantee>
        <Permission>READ</Permission>
      </Grant>
    </TargetGrants>
  </LoggingEnabled>
</BucketLoggingStatus>
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

Table 5-17 Request elements

Element	Description	Mandatory
BucketLoggingStatus	Container for logging status information Type: container	Yes

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Element	Description	Mandatory
Agency	Name of the IAM agency created by the owner of the target bucket on IAM. Type: string	Yes only when you need to enable the logging function
LoggingEnabled	Container for logging information. Present this element when enabling the logging function. Otherwise, absent it. You can add specific logging information in this element. Type: container	Yes only when you need to enable the logging function
Grant	Container for the grantee and the grantee's logging permissions. It describes who has the permission to access the generated log files. Type: container	No
Grantee	Container for the user that is granted with the logging permission. Type: container	No
ID	Account ID of the authorized user, which is globally unique. Type: string	No
Permission	Permissions of the grantee to the generated logs. Type: string Value options: **FULL_CONTROL**, **READ**, **WRITE**	No

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Element	Description	Mandatory
TargetBucket	When enabling the logging function, the owner of the bucket being logged can specify a target bucket to store the generated log files. Ensure that the bucket owner who configures the logging function has the **FULL_CONTROL** permission for the bucket that stores log files. Log files generated for multiple buckets can be stored in the same target bucket. If you do so, you need to specify different TargetPrefixes to classify logs for different buckets. Type: string	Yes only when you need to enable the logging function
TargetPrefix	You can specify a prefix using this element so that log files are named with this prefix. Type: string	Yes only when you need to enable the logging function
TargetGrants	Container for granting information. Type: container	No

Naming rules for access logs

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

- <*TargetPrefix*> is the log name prefix specified by the user.
- YYYY-mm-DD-HH-MM-SS indicates the date and time when the log is generated.
- *<UniqueString>* indicates a character string generated by OBS.

The following is an example of a log object name:

```
bucket-log2015-06-29-12-22-07-N7MXLAF1BDG7MPDV
```

- **bucket-log** is the target prefix specified by the user.
- **2015-06-29-12-22-07** indicates the time when the log is generated.
- **N7MXLAF1BDG7MPDV** is a string automatically generated by OBS

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Format of bucket access logs

The following shows an access log delivered to the target bucket:

```
787f2f92b20943998a4fe2ab75eb09b8 bucket [13/Aug/2015:01:43:42 +0000] xx.xx.xx.xx
787f2f92b20943998a4fe2ab75eb09b8 281599BACAD9376ECE141B842B94535B
REST.GET.BUCKET.LOCATION - "GET /bucket?location HTTP/1.1" 200 - 211 - 6 6 "-"  "HttpClient" - -
```

Each access log contains the following information:

Table 5-18 Format of bucket access logs

Parameter	Example	Description
BucketOwner	787f2f92b20943998a4fe2ab75eb09b8	ID of the bucket owner
Bucket	bucket	Bucket name
Time	[13/Aug/2015:14:43:42 +0000]	Request timestamp in the *[dd/MMM/yyyy:HH:mm:ss Z]* format
Remote IP	xx.xx.xx.xx	Request IP address
Requester	787f2f92b20943998a4fe2ab75eb09b8	ID of the requester • When an account initiates a request, this parameter value is the account ID. When an IAM user initiates a request, this parameter value is the ID of the account where the IAM user belongs. • When an anonymous user initiates a request, this parameter value is **Anonymous**.
RequestID	281599BACAD9376ECE141B842B94535B	Request ID
Operation	REST.GET.BUCKET.LOCATION	Operation
Key	-	Object name
Request-URI	GET /bucket?location HTTP/1.1	Request URI
HTTPStatus	200	Return code.
ErrorCode	-	Error code
BytesSent	211	Size of the HTTP response, expressed in bytes

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Parameter	Example	Description
ObjectSize	-	Object size
TotalTime	6	Processing time on the server Unit: ms
Turn-AroundTime	6	Total request processing time Unit: ms
Referer	-	Referer header of the request
User-Agent	HttpClient	User-Agent header of the request
VersionID	-	Version ID contained in a request
STSLogUrn	-	Federated authentication and agency information
StorageClass	STANDARD_IA	Current object storage class ● STANDARD: Standard storage ● **STANDARD_IA** (also **WARM**): Infrequent Access storage class ● **COLD**: Archive storage class
TargetStorageClass	GLACIER	Storage class that the object will be transitioned to
DentryName	12456%2Ffile.txt	● For a parallel file system, this field represents an internal identifier of a file or directory. Its value consists of a parent directory's inode number and a file or directory name and is displayed in the URL-encoded format. ● For a bucket, the value of this field is **-**.

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Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /?logging HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:40:06 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mCOjER/L4ZZUY9qr6AOnkEiwvVk=
Content-Length: 528

<?xml version="1.0" encoding="UTF-8"?>
<BucketLoggingStatus>
  <Agency>agencyGrantPutLogging</Agency>
  <LoggingEnabled>
    <TargetBucket>log-bucket</TargetBucket>
    <TargetPrefix>mybucket-access_log-/</TargetPrefix>
    <TargetGrants>
      <Grant>
        <Grantee>
          <ID>783fc6652cf246c096ea836694f71855</ID>
        </Grantee>
        <Permission>READ</Permission>
      </Grant>
    </TargetGrants>
  </LoggingEnabled>
</BucketLoggingStatus>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643663CE53B6AF31C619FD
x-obs-id-2: 32AAAQAAEAABSAAkpAIAABAAAQAAEAABCT9CjuOx8cETSRbqkm35s1dL/tLhRNdZ
Date: WED, 01 Jul 2015 02:40:06 GMT
Content-Length: 0
```

Sample Request: Disabling Bucket Log Dump

```
PUT /?logging HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

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```
<BucketLoggingStatus>
</BucketLoggingStatus>
```

Sample Response: Disabling Bucket Log Dump

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSalxuWjLa91ewuXRoIcCKZFjFgCrYn0
x-obs-request-id: 0000018A2BC32FB6D2C62C9689DD14B3
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

5.2.7 Obtaining a Bucket Logging Configuration

Functions

This operation queries the logging status of a bucket. It uses the logging sub-resource to return the logging status of a bucket.

Only the bucket owner or users granted the **GetBucketLogging** permission can query the bucket logging status.

Request Syntax

```
GET /?logging HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Content-Type: application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8"?>
<BucketLoggingStatus xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
<Agency>agency-name</Agency>
<LoggingEnabled>
   <TargetBucket>bucketName</TargetBucket>
   <TargetPrefix>prefix</TargetPrefix>
      <TargetGrants>
         <Grant>
            <Grantee>
               <ID>id</ID>
            </Grantee>
            <Permission>permission</Permission>
         </Grant>
      </TargetGrants>
```

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```
  </LoggingEnabled>
</BucketLoggingStatus>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements to specify the bucket logging status. **Table 5-19** describes the elements.

Table 5-19 Response elements

Element	Description
BucketLoggingStatus	Container for logging status information Type: container
Agency	Name of the agency created by the owner of the logging bucket for uploading log files by OBS Type: string
LoggingEnabled	Container for logging information. This element enables or disables the logging function. Present this element when enabling the logging. Otherwise, absent it. Type: container
Grant	Container for the grantee and the granted permissions Type: container
Grantee	Container for the user that is granted with the logging permission Type: container
ID	Grantee domain ID, a globally unique ID Type: string
Permission	Logging permission granted to the grantee for a bucket. The bucket owner is automatically granted the **FULL_CONTROL** permission when creating the bucket. Logging permissions control access to different logs. Type: string Value options: **FULL_CONTROL**, **READ**, **WRITE**

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Element	Description
TargetBucket	When enabling the logging function, the owner of the bucket being logged can specify a target bucket to store the generated log files. Log files generated for multiple buckets can be stored in the same target bucket. If you do so, you need to specify different TargetPrefixes to classify logs for different buckets. Type: string
TargetPrefix	You can specify a prefix using this element so that log files are named with this prefix. Type: string
TargetGrants	Container for granting information Type: container

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?logging HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:42:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:hUk+jTnR07hcKwJh4ousF2E1U3E=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436B8EEE7FBA2AA3335E3
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShuQJoWFpS77C8bOv1mqURv0UY+0ejx
Content-Type: application/xml
Date: WED, 01 Jul 2015 02:42:46 GMT
Content-Length: 429

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<BucketLoggingStatus xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <Agency>agency-name</Agency>
  <LoggingEnabled>
    <TargetBucket>log-bucket</TargetBucket>
    <TargetPrefix>mybucket-access_log-/</TargetPrefix>
    <TargetGrants>
      <Grant>
        <Grantee>
          <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
        </Grantee>
        <Permission>READ</Permission>
      </Grant>
    </TargetGrants>
  </LoggingEnabled>
</BucketLoggingStatus>
```

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5.2.8 Configuring Bucket Lifecycle Rules

Functions

You can configure lifecycle rules to automatically delete objects or transition objects between storage classes. For details about lifecycle rules, see **Lifecycle**.

Request Syntax

```
PUT /?lifecycle HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Length: length
Date: date
Authorization: authorization
Content-SHA256: SHA256
<?xml version="1.0" encoding="UTF-8"?>
<LifecycleConfiguration>
   <Rule>
      <ID>id</ID>
      <Filter>
         <And>
            <Prefix>prefix</Prefix>
            <Tag><Key>key1</Key><Value>value1</Value></Tag>
            <Tag><Key>key2</Key><Value>value2</Value></Tag>
         </And>
      </Filter>
      <Status>status</Status>
      <Expiration>
         <Days>days</Days>
      </Expiration>
      <NoncurrentVersionExpiration>
         <NoncurrentDays>days</NoncurrentDays>
      </NoncurrentVersionExpiration>
      <Transition>
       <Days>30</Days>
        <StorageClass>WARM</StorageClass>
      </Transition>
      <Transition>
       <Days>60</Days>
       <StorageClass>COLD</StorageClass>
      </Transition>
      <NoncurrentVersionTransition>
       <NoncurrentDays>30</NoncurrentDays>
       <StorageClass>WARM</StorageClass>
      </NoncurrentVersionTransition>
      <NoncurrentVersionTransition>
       <NoncurrentDays>60</NoncurrentDays>
       <StorageClass>COLD</StorageClass>
      </NoncurrentVersionTransition>
   </Rule>
</LifecycleConfiguration>
```

Request Parameters

This request contains no parameters.

Request Headers

Table 5-20 lists the request headers.

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Table 5-20 Request headers

Parameter	Mandatory (Yes/No)	Type	Description
Content-SHA256	Yes	String	**Definition**: SHA-256 digest string of the message body, that is, the string obtained after the 256-bit SHA-256 value of the message body is encoded using Base64 Example: **ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=** **Range**: None **Default value**: None

Request Elements

In this request body, you need to specify the lifecycle configuration in XML format. **Table 5-21** describes the specific XML configuration elements.

- If the versioning of a bucket is enabled or suspended, you can set **NoncurrentVersionTransition** or **NoncurrentVersionExpiration** to control the lifecycle of historical object versions. The lifecycle of a historical version depends on the time when it becomes a historical one (time when the version is replaced by a new version) and the value of **NoncurrentDays**. If **NoncurrentDays** is set to **1** in an object deletion scenario, an object version will be deleted one day after it becomes historical. If the version V1 of object A is created on the first date of a month and new version V2 is uploaded on the fifth date of the month, V1 becomes a historical version. At 00:00 on the seventh date of the month, V1 will expire. If an object version does not meet the deletion conditions, but **NoncurrentDays** is set to **1** and **StorageClass** is set to **WARM**, the version transitions to the storage class one day after it has become a historical version. For example, the V1 version of object A is created on the first day of a month, and its new version V2 is uploaded on the fifth day of the month. Then V1 becomes a historical version. One day later, that is, at 0 o'clock of the seventh day, V1 transitions to the storage class. The deletion or transition of the object after the expiration time may be delayed. The delay is within 48 hours.
- Objects are processed according to the following procedures, if their latest versions meet the expiration rule and versioning is enabled or suspended for the bucket.
  - Versioning enabled:

    If the latest object version is not a delete marker, a new delete marker will be inserted for the object.

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If the latest object version is a delete marker and is the only version of the object, this latest version will be deleted.

If the object of the latest version has the DeleteMarker and the object has other versions, all versions of the object remain unchanged.

- Versioning suspended:

  If the latest version of the object does not have the DeleteMarker and is not the null version, the object generates a new DeleteMarker for the null version.

  If the latest version of the object does not have the DeleteMarker but is the null version, this null version is overwritten by a new DeleteMarker generated for the null version.

  If the latest object version is a delete marker and is the only version of the object, this latest version will be deleted.

  If the object of the latest version has the DeleteMarker and the object has other versions, all versions of the object remain unchanged.

- The following lists the processing when the versioning is enabled or suspended for a bucket and objects of the latest versions meet the transition rules:
  - If the latest version of the object has the DeleteMarker, the storage class of this version will not be transitioned.
  - If the latest version of the object does not have the DeleteMarker and meets the transition rule, the storage class of this version will be transitioned.

Table 5-21 Response elements for lifecycle configuration

Parameter	Mandatory (Yes/No)	Type	Description
LifecycleConfiguration	Yes	XML	**Definition**: Lifecycle rules. Multiple rules can be configured. LifecycleConfiguration is the parent node of **Rule**. **Constraints**: The total size of the configuration message body cannot exceed 20 KB. **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Rule	Yes	XML	**Definition**: A specific lifecycle rule. **Constraints**: None **Range**: For details, see **Table 5-22**. **Default value**: None

Table 5-22 Rule parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Transition	Yes if the **NoncurrentVersionTransition**, **Expiration**, **AbortIncompleteMultipartUpload**, and **NoncurrentVersionExpiration** elements are absent.	XML	**Definition**: Transition time and the object storage class after transition **Constraints**: This parameter is only available for the latest object version. **Range**: For details, see **Table 5-23**. **Default value**: None
Expiration	Yes if **Transition**, **NoncurrentVersionTransition**, **AbortIncompleteMultipartUpload**, and **NoncurrentVersionExpiration** are absent.	XML	**Definition**: Expiration time. **Constraints**: This parameter is only available for the latest object version. **Range**: For details, see **Table 5-24**. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
NoncurrentVersionTransition	Yes if the **Transition**, **Expiration**, **AbortIncompleteMultipartUpload**, and **NoncurrentVersionExpiration** elements are absent.	XML	**Definition**: Transition time and the object storage class after transition **Constraints**: This parameter is only available for historical object versions. **Range**: For details, see **Table 5-25**. **Default value**: None
NoncurrentVersionExpiration	No	XML	**Definition**: Expiration time of objects' historical versions. If versioning is enabled or suspended for a bucket, you can set this parameter to delete historical versions of objects that match the lifecycle rule. **Constraints**: This parameter is only available for historical object versions. **Range**: For details, see **Table 5-26**. **Default value**: None
AbortIncompleteMultipartUpload	Yes if the **Transition**, **Expiration**, **NoncurrentVersionExpiration**, and **NoncurrentVersionTransition** elements are absent.	XML	**Definition**: Expiration attribute of fragments in an unassembled multipart task. **Constraints**: Tag-based filtering is not supported. **Range**: For details, see **Table 5-27**. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Filter	Either Filter or Prefix can be configured at the same level under **Rule**. Prefix can be a child node of Filter.	XML	**Definition**: A specific filter. The lifecycle rule will apply to the objects matching this filter in a bucket. You can filter objects by object name prefix, object tag, or a combination of them. **Constraints**: If there are multiple filtering criteria, use the AND logic to combine them. **Range**: For details, see **Table 5-28**. **Default value**: None
ID	No	String	**Definition**: ID of a rule. **Constraints**: Only letters, digits, periods (.), underscores (_), and hyphens (-) are allowed. **Range**: The value is a string of 0 to 255 characters. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Prefix	Yes	String	**Definition**: Object name prefix. It identifies the objects the rule applies to. **Constraints**: • When you configure a lifecycle rule by specifying a prefix, if the specified prefix and the prefix of an existing lifecycle rule overlap, OBS regards these two rules as one and forbids you to configure this rule. For example, if there is a rule with the object prefix **abc** configured in the system, another rule with the object prefix starting with **abc** cannot be configured. • If there is already a lifecycle rule that is based on an object prefix, you are not allowed to configure another rule that is applied to the entire bucket. **Range**: The value is a string of 0 to 255 characters. **Default value**: None
Status	Yes	String	**Definition**: Whether the rule is enabled **Constraints**: None **Range**: • Enabled: The rule is enabled. • Disabled: The rule is disabled. **Default value**: None

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Table 5-23 Transition parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Date	Yes if the **Days** element is absent.	String	**Definition**: Specifies that OBS executes lifecycle rules for objects before the specified date. **Constraints**: The date must be compliant with the ISO8601 format, and the time must be compliant with the UTC format of 00:00:00. For example, **2018-01-01T00:00:00.000Z** indicates that objects whose last modification time is earlier than **2018-01-01T00:00:00.000Z** are deleted or transitioned to another storage class. Objects whose last modification time is equal to or later than the specified time are not deleted or transitioned to another storage class. **Range**: Character string in the date format. **Default value**: None
Days	Yes if the **Date** element is absent.	Integer	**Definition**: Number of days (since the last update was made to the object) after which the lifecycle rule takes effect **Constraints**: This parameter is only available for the latest object version. **Range**: The value is an integer ranging from 0 to 2147483647. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
StorageClass	Yes if the **Transition** or **NoncurrentVersionTransition** element is present.	String	**Definition**: The storage class to which the object is transitioned. **Constraints**: None **Range**: • **WARM**: Infrequent Access storage class • **COLD**: Archive storage class **Default value**: None

Table 5-24 Expiration parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Date	Yes if the **Days** element is absent.	String	**Definition**: Specifies that OBS executes lifecycle rules for objects before the specified date. **Constraints**: The date must be compliant with the ISO8601 format, and the time must be compliant with the UTC format of 00:00:00. For example, **2018-01-01T00:00:00.000Z** indicates that objects whose last modification time is earlier than **2018-01-01T00:00:00.000Z** are deleted or transitioned to another storage class. Objects whose last modification time is equal to or later than the specified time are not deleted or transitioned to another storage class. **Range**: Character string in the date format. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Days	Yes if the **Date** element is absent.	Integer	**Definition**: Number of days (since the last update was made to the object) after which the lifecycle rule takes effect **Constraints**: This parameter is only available for the latest object version. **Range**: The value is an integer ranging from 0 to 2147483647. **Default value**: None

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Table 5-25 NoncurrentVersionTransition parameter description

Parameter	Mandatory (Yes/No)	Type	Description
NoncurrentDays	Yes if the **NoncurrentVersionExpiration** or **NoncurrentVersionTransition** element is present.	Integer	**Definition**: Number of days an object is historical before the specified rule takes effect **Constraints**: This parameter is only available for historical object versions. **Range**: • If only one transition is involved, the time should be at least one day later. • If multiple transitions are involved, the latter transition should be at least one day later than the former transition. • Multiple transitions: For the same object, the time its historical versions transition to the Deep Archive storage class must be later than the time they transition to the Archive storage class, and the time of transitioning to the Archive storage class must be later than the time of transitioning to the Infrequent Access storage class. **Default value**: None
StorageClass	Yes if the **Transition** or **NoncurrentVersionTransition** element is present.	String	**Definition**: The storage class to which the object is transitioned. **Constraints**: None **Range**: • **WARM**: Infrequent Access storage class • **COLD**: Archive storage class **Default value**: None

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Table 5-26 NoncurrentVersionExpiration parameter description

Parameter	Mandatory (Yes/No)	Type	Description
NoncurrentDays	Yes if the **NoncurrentVersionExpiration** or **NoncurrentVersionTransition** element is present.	Integer	**Definition**: Number of days an object is historical before the specified rule takes effect **Constraints**: This parameter is only available for historical object versions. **Range**: The value is an integer ranging from 0 to 2147483647. **Default value**: None

Table 5-27 AbortIncompleteMultipartUpload parameter description

Parameter	Mandatory (Yes/No)	Type	Description
DaysAfterInitiation	Yes if the **AbortIncompleteMultipartUpload** element is present.	Integer	**Definition**: Number of days fragments are present before being deleted **Constraints**: None **Range**: The value is an integer ranging from 0 to 2147483647. **Default value**: None

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Table 5-28 Filter parameter description

Parameter	Mandatory (Yes/No)	Type	Description
And	Yes if there are multiple Prefix and Tag rules.	XML	**Definition**: The And logic among filtering criteria. The And logic can be used when both the object name prefix and object tag are used or multiple object tags are used. **Constraints**: • And must have child nodes. • If Filter has **Tag** or Prefix as its child node, And cannot be a child node at the same level as the Tag or Prefix child node under Filter. (**Tag** and Prefix can be included in And.) **Range**: For details, see **Table 5-29**. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Tag	No	Container	**Definition**: Object tag, which is used to identify what objects match the rule. **Constraints**: • If Tag is configured as a child node of **Filter**, there can be only one Tag node. If Filter has a Prefix child node, there cannot be any Tag node at the same level with Prefix under Filter. • If Tag is configured under **And**, there can be a maximum of 10 Tag nodes, and the tag keys must be different. • If **AbortIncompleteMultipartUpload** exists as a child node of **Rule**, Tag cannot be configured to filter fragments. • If the tags in multiple rules overlap and lifecycle actions conflict, the configuration is not allowed. For example, rule 1 uses one tag (*key1*, *value1*) and deletes objects 90 days after creation, while rule 2 uses two tags (*key1*, *value1*; *key2*, *value2*) and transitions objects to COLD 120 days after creation. In this case, the tags in two rules overlap and lifecycle actions conflict, so such configuration is not allowed. **Range**: For details, see **Table 5-30**. **Default value**: None

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Table 5-29 And parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Tag	No	Container	**Definition**: Tag element, which is used to identify the objects that can match the current rule. **Constraints**: • If Tag is configured as a child node of **Filter**, there can be only one Tag node. If Filter has a Prefix child node, there cannot be any Tag node at the same level with Prefix under Filter. • If Tag is configured under **And**, there can be a maximum of 10 Tag nodes, and the tag keys must be different. • If **AbortIncompleteMultipartUpload** exists as a child node of **Rule**, Tag cannot be configured to filter fragments. • If the tags in multiple rules overlap and lifecycle actions conflict, the configuration is not allowed. For example, rule 1 uses one tag (*key1*, *value1*) and deletes objects 90 days after creation, while rule 2 uses two tags (*key1*, *value1*; *key2*, *value2*) and transitions objects to COLD 120 days after creation. In this case, the tags in two rules overlap and lifecycle actions conflict, so such configuration is not allowed. **Range**: For details, see **Table 5-30**. **Default value**: None

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Table 5-30 Tag parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Key	Yes if Tag is present.	String	**Definition**: The key of the tag. **Constraints**: None **Range**: The key name is case-sensitive and must be unique. It consists of 0 to 128 characters and cannot be blank. The following characters are not allowed: =*<> \,|/?!; **Default value**: None
Value	Yes if Tag is present.	String	**Definition**: The value of the tag. **Constraints**: None **Range**: The key value is case-sensitive and consists of 0 to 255 characters. It can be blank and cannot contain the following characters: =*<>\,|?!; **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request

```
PUT /?lifecycle HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:05:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:DpSAlmLX/BTdjxU5HOEwflhM0WI=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 919

<?xml version="1.0" encoding="utf-8"?>
<LifecycleConfiguration>
  <Rule>
    <ID>lifecycle-rule-id</ID>
    <Filter>
      <And>
        <Prefix>prefix</Prefix>
        <Tag><Key>key1</Key><Value>value1</Value></Tag>
        <Tag><Key>key2</Key><Value>value2</Value></Tag>
      </And>
    </Filter>

    <Status>Enabled</Status>
    <Expiration>
      <Days>70</Days>
    </Expiration>
    <NoncurrentVersionExpiration>
      <NoncurrentDays>70</NoncurrentDays>
    </NoncurrentVersionExpiration>
    <Transition>
      <Days>30</Days>
      <StorageClass>WARM</StorageClass>
    </Transition>
    <Transition>
      <Days>60</Days>
      <StorageClass>COLD</StorageClass>
    </Transition>
    <NoncurrentVersionTransition>
      <NoncurrentDays>30</NoncurrentDays>
      <StorageClass>WARM</StorageClass>
    </NoncurrentVersionTransition>
    <NoncurrentVersionTransition>
      <NoncurrentDays>60</NoncurrentDays>
      <StorageClass>COLD</StorageClass>
    </NoncurrentVersionTransition>
  </Rule>
</LifecycleConfiguration>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643670AC06E7B9A7767921
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vqzpgtohkiFm
Date: WED, 01 Jul 2015 03:05:34 GMT
Content-Length: 0
```

Sample Request: Transitioning the Objects' Storage Class Only

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: b67aDumlm/b+5iev6+sRYw==

<LifecycleConfiguration>
```

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```
  <Rule>
    <ID>lifecycle-rule-id</ID>
    <Prefix>test/</Prefix>
    <Status>Enabled</Status>
    <Transition>
      <Days>30</Days>
      <StorageClass>WARM</StorageClass>
    </Transition>
    <Transition>
      <Days>60</Days>
      <StorageClass>COLD</StorageClass>
    </Transition>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Transitioning the Objects' Storage Class Only

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSZbDadL1f7fYU44bvRLvc0l6D10+wzG
x-obs-request-id: 0000018A2BCBB3ABD3046B99E3ED2E30
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Deleting Expired Objects Only

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: tt0IizQ7YSTFtMJ3sie6qA==

<LifecycleConfiguration>
  <Rule>
    <ID>lifecycle-rule-id</ID>
    <Prefix>test/</Prefix>
    <Status>Enabled</Status>
    <Expiration>
      <Days>70</Days>
    </Expiration>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Deleting Expired Objects Only

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSfpG6nArWY7cM7rB3+GbvO13XJPx9g4
x-obs-request-id: 0000018A2BD6BB02D30426F6E4A1FBA2
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Transitioning the Objects' Storage Class and Then Deleting the Objects

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: 9CJYqNUbXEVhhawEx0ICRw==

<LifecycleConfiguration>
  <Rule>
    <ID>lifecycle-rule-id</ID>
    <Prefix>test/</Prefix>
```

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```
    <Status>Enabled</Status>
    <Expiration>
       <Days>70</Days>
    </Expiration>
    <Transition>
       <Days>30</Days>
       <StorageClass>WARM</StorageClass>
    </Transition>
    <Transition>
       <Days>60</Days>
       <StorageClass>COLD</StorageClass>
    </Transition>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Transitioning the Objects' Storage Class and Then Deleting the Objects

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSMYkLcGTyUsgSJe2Rdsg2P8JwMsJV6n
x-obs-request-id: 0000018A2BDA0816D2877F5D5622F0BA
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Deleting Historical Object Versions and Delete Markers

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: SGAUB+2hLUAWV5IJ69xU+Q==

<LifecycleConfiguration>
  <Rule>
    <ID>lifecycle-rule-id</ID>
    <Prefix>test/</Prefix>
    <Status>Enabled</Status>
    <NoncurrentVersionExpiration>
       <NoncurrentDays>70</NoncurrentDays>
    </NoncurrentVersionExpiration>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Deleting Historical Object Versions and Delete Markers

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSZbDadL1f7fYU44bvRLvc0l6D10+wzG
x-obs-request-id: 0000018A2BCBB3ABD3046B99E3ED2E30
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Deleting Fragments

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Date: Thu, 24 Apr 2025 14:28:22 GMT
Content-Type: application/xml
Content-MD5: PBgGafte2ACjUwYxdJA47Q==

<LifecycleConfiguration>
  <Rule>
    <ID>lifecycle-rule-id</ID>
    <Prefix>test/</Prefix>
    <Status>Enabled</Status>
```

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```
    <AbortIncompleteMultipartUpload>
      <DaysAfterInitiation>10</DaysAfterInitiation>
    </AbortIncompleteMultipartUpload>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Deleting Fragments

```
HTTP/1.1 200 OK
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCTlN+glNMVGtTicAnVXkTVDjR5xKSLuH
x-obs-request-id: 0000018A2BE86742D2C6989CA79E136C
Server: OBS
Content-Length: 0
Date: Thu, 24 Apr 2025 14:28:23 GMT
```

5.2.9 Obtaining Bucket Lifecycle Configuration

Functions

This operation obtains the bucket lifecycle configuration.

To perform this operation, you must have the **GetLifecycleConfiguration** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
GET /?lifecycle HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<LifecycleConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <Rule>
    <ID>id</ID>
    <Filter>
      <And>
        <Prefix>prefix</Prefix>
        <Tag><Key>key1</Key><Value>value1</Value></Tag>
```

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```
        <Tag><Key>key2</Key><Value>value2</Value></Tag>
      </And>
    </Filter>

    <Status>status</Status>
    <Expiration>
       <Date>date</Date>
    </Expiration>
    <NoncurrentVersionExpiration>
       <NoncurrentDays>days</NoncurrentDays>
    </NoncurrentVersionExpiration>
    <Transition>
     <Date>date</Date>
     <StorageClass>WARM</StorageClass>
    </Transition>
    <Transition>
     <Date>date</Date>
     <StorageClass>COLD</StorageClass>
    </Transition>
    <NoncurrentVersionTransition>
     <NoncurrentDays>30</NoncurrentDays>
     <StorageClass>WARM</StorageClass>
    </NoncurrentVersionTransition>
    <NoncurrentVersionTransition>
     <NoncurrentDays>60</NoncurrentDays>
     <StorageClass>COLD</StorageClass>
    </NoncurrentVersionTransition>
  </Rule>
</LifecycleConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements to detail the configuration. **Table 5-31** describes the elements.

Table 5-31 Response elements for lifecycle configuration

Parameter	Type	Description
LifecycleConfiguration	XML	**Definition**: Container for lifecycle configuration rules. Multiple rules can be configured. LifecycleConfiguration is the parent node of **Rule**. **Range**: None
Rule	Container	**Definition**: Container for a specific lifecycle rule. **Range**: For details, see **Table 5-32**.

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Table 5-32 Rule parameter description

Parameter	Type	Description
Transition	XML	**Definition**: The transition time and the object storage class after transition (valid only for the latest object version). **Range**: For details, see **Table 5-33**. **Default value**: None
Expiration	XML	**Definition**: Container for the object expiration rule. **Range**: For details, see **Table 5-34**.
NoncurrentVersionTransition	XML	**Definition**: Transition time of historical object versions and the object storage class after transition. **Range**: For details, see **Table 5-35**.
NoncurrentVersionExpiration	XML	**Definition**: Container for the expiration time of objects' historical versions. If versioning is enabled or suspended for a bucket, you can set this parameter to delete historical versions of objects that match the lifecycle rule. **Range**: For details, see **Table 5-36**.
AbortIncompleteMultipartUpload	XML	**Definition**: Container for specifying when the unassembled parts (fragments) in an incomplete upload will expire. **Range**: For details, see **Table 5-37**.
Filter	XML	**Definition**: A specific filter. The lifecycle rule will apply to the objects matching this filter in a bucket. You can filter objects by object name prefix, object tag, or a combination of them. **Range**: For details, see **Table 5-38**.

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Parameter	Type	Description
ID	String	**Definition**: ID of a rule. **Range**: The value is a string of 0 to 255 characters.
Prefix	String	**Definition**: Object name prefix. It identifies the objects the rule applies to. **Range**: The value is a string of 0 to 255 characters.
Status	String	**Definition**: Whether the rule is enabled **Range**: • Enabled: The rule is enabled. • Disabled: The rule is disabled.

Table 5-33 Transition parameter description

Parameter	Type	Description
Date	String	**Definition**: ID of the rule to be queried **Range**: The date must be compliant with the ISO8601 format, and the time must be compliant with the UTC format of 00:00:00. For example, **2018-01-01T00:00:00.000Z** indicates that objects whose last modification time is earlier than **2018-01-01T00:00:00.000Z** are deleted or transitioned to another storage class. Objects whose last modification time is equal to or later than the specified time are not deleted or transitioned to another storage class.
Days	Integer	**Definition**: Specifies the number of days (since the latest update to the latest object version) after which the lifecycle rule is executed. **Range**: None

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Parameter	Type	Description
StorageClass	String	**Definition**: The storage class to which the object is transitioned. **Range**: • **WARM**: Infrequent Access storage class • **COLD**: Archive storage class

Table 5-34 Expiration parameter description

Parameter	Type	Description
Date	String	**Definition**: ID of the rule to be queried **Range**: The date must be compliant with the ISO8601 format, and the time must be compliant with the UTC format of 00:00:00. For example, **2018-01-01T00:00:00.000Z** indicates that objects whose last modification time is earlier than **2018-01-01T00:00:00.000Z** are deleted or transitioned to another storage class. Objects whose last modification time is equal to or later than the specified time are not deleted or transitioned to another storage class.
Days	Integer	**Definition**: Specifies the number of days (since the latest update to the latest object version) after which the lifecycle rule is executed. **Range**: None

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Table 5-35 NoncurrentVersionTransition parameter description

Parameter	Type	Description
NoncurrentDays	Integer	**Definition**: Number of days when the specified rule takes effect after the object becomes a historical version. **Range**: • If only one transition is involved, the time should be at least one day later. • If multiple transitions are involved, the latter transition should be at least one day later than the former transition. • Multiple transitions: For the same object, the time its historical versions transition to the Deep Archive storage class must be later than the time they transition to the Archive storage class, and the time of transitioning to the Archive storage class must be later than the time of transitioning to the Infrequent Access storage class.
StorageClass	String	**Definition**: The storage class to which the object is transitioned. **Range**: • **WARM**: Infrequent Access storage class • **COLD**: Archive storage class

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Table 5-36 NoncurrentVersionExpiration parameter description

Parameter	Type	Description
NoncurrentDays	Integer	**Definition**: Number of days when the specified rule takes effect after the object becomes a historical version. **Range**: • If only one transition is involved, the time should be at least one day later. • If multiple transitions are involved, the latter transition should be at least one day later than the former transition. • Multiple transitions: For the same object, the time its historical versions transition to the Deep Archive storage class must be later than the time they transition to the Archive storage class, and the time of transitioning to the Archive storage class must be later than the time of transitioning to the Infrequent Access storage class.

Table 5-37 AbortIncompleteMultipartUpload parameter description

Parameter	Type	Description
DaysAfterInitiation	Integer	**Definition**: Number of days fragments are present before being deleted **Range**: None

Table 5-38 Filter parameter description

Parameter	Type	Description
And	XML	**Definition**: The And logic among filtering criteria. The And logic can be used when both the object name prefix and object tag are used or multiple object tags are used. **Range**: For details, see **Table 5-39**.

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Parameter	Type	Description
Tag	Container	**Definition**: Object tag, which is used to identify what objects match the rule. **Range**: For details, see **Table 5-40**.

Table 5-39 And parameter description

Parameter	Type	Description
Tag	Container	**Definition**: Tag element, which is used to identify the objects that can match the rule. **Range**: For details, see **Table 5-40**.

Table 5-40 Tag parameter description

Parameter	Type	Description
Key	String	**Definition**: The key of the tag. **Range**: The key name is case-sensitive and must be unique. It consists of 0 to 128 characters and cannot be blank. The following characters are not allowed: *<> \,|/?!;
Value	String	**Definition**: The value of the tag. **Range**: The key value is case-sensitive and consists of 0 to 255 characters. It can be blank and cannot contain the following characters: *<>\,|?!;

Error Responses

Table 5-41 describes possible special errors in the request.

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Table 5-41 Special error

Error Code	Description	HTTP Status Code
NoSuchLifecycleConfiguration	The bucket lifecycle configuration does not exist.	404 Not Found

For other errors, see **Table 6-2**.

Sample Request

```
GET /?lifecycle HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:06:56 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:/Nof9FCNANfzIXDS0NDp1IfDu8I=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436BA5684FF5A10370EDB
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSEMKZSIeboCA1eAukgYOOAd7oX3ZONn
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:06:56 GMT
Content-Length: 919

<?xml version="1.0" encoding="utf-8"?>
<LifecycleConfiguration>
  <Rule>
    <ID>delete-2-days</ID>
    <Filter>
      <Prefix>test/</Prefix>
    </Filter>
    <Status>Enabled</Status>
    <Expiration>
      <Days>2</Days>
    </Expiration>
    <NoncurrentVersionExpiration>
      <NoncurrentDays>5</NoncurrentDays>
    </NoncurrentVersionExpiration>
    <Transition>
      <Days>30</Days>
      <StorageClass>WARM</StorageClass>
    </Transition>
    <Transition>
      <Days>60</Days>
      <StorageClass>COLD</StorageClass>
    </Transition>
    <NoncurrentVersionTransition>
      <NoncurrentDays>30</NoncurrentDays>
      <StorageClass>WARM</StorageClass>
    </NoncurrentVersionTransition>
    <NoncurrentVersionTransition>
      <NoncurrentDays>60</NoncurrentDays>
      <StorageClass>COLD</StorageClass>
    </NoncurrentVersionTransition>
  </Rule>
</LifecycleConfiguration>
```

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5.2.10 Deleting Lifecycle Rules

Functions

This operation deletes the lifecycle configuration of a bucket. After the lifecycle configuration of a bucket is deleted, OBS will not automatically delete objects in that bucket.

To perform this operation, you must have the **PutLifecycleConfiguration** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
DELETE /?lifecycle HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: Authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: text/xml
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /?lifecycle HTTP/1.1
User-Agent: curl/7.29.0
```

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```
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:12:22 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:5DGAS7SBbMC1YTC4tNXY57Zl2Fo=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF260000016436C2550A1EEA97614A98
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSB7A0KZEBOCutgcfZvaGVthTGOJSuyk
Date: WED, 01 Jul 2015 03:12:22 GMT
```

5.2.11 Configuring Versioning for a Bucket

Functions

This operation restores an object that is mistakenly overwritten or deleted. You can use versioning to save, query, and restore objects of different versions. Versioning allows you to easily recover lost data due to misoperations or program faults. Versioning can also be used for retaining and archiving data.

By default, versioning is disabled for a bucket.

Once WORM is enabled for a bucket, OBS automatically enables versioning for the bucket and the versioning cannot be suspended for that bucket.

You can perform this operation to enable or suspend versioning for a bucket.

After versioning is enabled for a bucket:

- OBS creates a unique version ID for each uploaded object. Namesake objects are not overwritten and are distinguished by their own version IDs.
- You can download objects by specifying version IDs. By default, the latest object is downloaded if the version ID is not specified.
- You can specify a version ID to permanently delete a specific object. If an object is deleted with no version ID specified, only a delete marker with a unique version ID is generated, but the object is not physically deleted.
- The latest objects in a bucket are returned by default after a GET Object request. You can also send a request to obtain a bucket's objects with all version IDs.
- Except delete markers, storage space occupied by objects with all version IDs, excluding object metadata, is billed.

After versioning is suspended for a bucket:

- Existing objects with version IDs are not affected.
- The system creates version ID **null** to an uploaded object and the object will be overwritten after a namesake one is uploaded.
- You can download objects by specifying version IDs. By default, the latest object is downloaded if the version ID is not specified.
- You can specify a version ID to delete a specific object. If an object is deleted with no version ID specified, OBS creates a delete marker with a version ID of **null** and deletes the object whose version ID is **null**.
- Except delete markers, storage space occupied by objects with all version IDs, excluding object metadata, is billed.

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Only the bucket owner can set versioning for the bucket.

Request Syntax

```
PUT /?versioning HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Content-Length: length

<VersioningConfiguration>
   <Status>status</Status>
</VersioningConfiguration>
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request contains elements to configure the bucket versioning in XML format. **Table 5-42** lists the request elements.

Table 5-42 Elements for configuring bucket versioning

Parameter	Type	Mandatory (Yes/No)	Description
VersioningConfiguration	XML	Yes	**Definition**: Root node of versioning configuration, which is the parent node of Status. **Constraints**: None
Status	String	Yes	**Definition**: Versioning status of the bucket. **Constraints**: None **Range**: • Enabled: Versioning is enabled. • Suspended: Versioning is suspended. **Default value**: None

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Response Syntax

```
HTTP/1.1 status_code
Date: date

Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /?versioning HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:14:18 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0MwsI2Zpo=
Content-Length: 89

<VersioningConfiguration>
   <Status>Enabled</Status>
</VersioningConfiguration>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643672B973EEBC5FBBF909
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSH6rPRHjQCa62fcNpCCPs7+1Aq/hKzE
Date: Date: WED, 01 Jul 2015 03:14:18 GMT
Content-Length: 0
```

Sample Request: Suspending Versioning

```
PUT /?versioning HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<VersioningConfiguration>
   <Status>Suspended</Status>
</VersioningConfiguration>
```

Sample Response: Suspending Versioning

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSjqfl2JttwovZb7kTM+xkyQQyhNyOOC
x-obs-request-id: 0000018A2C044BC6D24722440C5EC81C
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

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5.2.12 Obtaining Bucket Versioning Status

Functions

This operation allows a bucket owner to get the versioning status of the bucket.

If versioning is not configured for a bucket, no versioning status information will be returned following this operation.

Request Syntax

```
GET /?versioning HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length

<VersioningConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Status>status</Status>
</VersioningConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements to specify the bucket versioning status. **Table 5-43** describes the elements.

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Table 5-43 Response elements

Parameter	Type	Description
VersioningConfiguration	XML	**Definition**: Root node of versioning configuration, which is the parent node of Status. **Constraints**: None
Status	String	**Definition**: Versioning status of the bucket. **Constraints**: None **Range**: • Enabled: Versioning is enabled. • Suspended: Versioning is suspended. **Default value**: None

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?versioning HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:15:20 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:4N5qQIoluLO9xMY0m+8lIn/UWXM=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436BBA4930622B4FC9F17
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSQIrNJ5/Ag6EPN8DAwWlPWgBc/xfBnx
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:15:20 GMT
Content-Length: 180

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<VersioningConfiguration xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Status>Enabled</Status>
</VersioningConfiguration>
```

5.2.13 Configuring Storage Class for a Bucket

Functions

This operation sets or updates the default storage class for a bucket.

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To perform this operation, you must have the **PutBucketStoragePolicy** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

If you do not specify a storage class when uploading or copying an object, or initiating a multipart upload, the object inherits the bucket's storage class.

Request Syntax

```
PUT /?storageClass HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Content-Type: type
Content-Length: length
Authorization: authorization

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<StorageClass xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">STANDARD</
StorageClass>
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request needs an additional element to specify the default bucket storage class. For details, see **Table 5-44**.

Table 5-44 Additional request elements

Parameter	Mandatory (Yes/No)	Type	Description
StorageClass	Yes	String	**Definition**: The default storage class for a bucket. **Constraints**: None **Range**: • STANDARD: Standard storage • WARM: Infrequent Access storage • COLD: Archive storage **Default value**: If no default storage class is configured for a bucket, the default value is STANDARD (Standard).

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Response Syntax

```
HTTP/1.1 status_code
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /?storageClass HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:18:19 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:Tf6XbndPx/yNgfAVQ6KIXr7tMj4=
Content-Length: 87

<StorageClass xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">STANDARD</
StorageClass>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164368E704B571F328A8797
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSIsw3tPtUn6damTI5acQmQAcEfmTwl3
Date: WED, 01 Jul 2015 03:18:19 GMT
Content-Length: 0
```

5.2.14 Obtaining Bucket Storage Class Information

Functions

This operation obtains the default storage class of a bucket.

To perform this operation, you must have the **GetBucketStoragePolicy** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
GET /?storageClass HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

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Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<StorageClass xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">STANDARD</
StorageClass>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements to provide details about the storage class information of a bucket. **Table 5-45** describes the elements.

Table 5-45 Response elements

Parameter	Type	Description
StorageClass	String	**Definition**: Default storage class of the bucket. **Range**: • STANDARD: Standard storage • WARM: Infrequent Access storage • COLD: Archive storage

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?storageClass HTTP/1.1
User-Agent: curl/7.29.0
```

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```
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:20:28 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:0zVTSdKG6OFCIH2dKvmsVGYCQyw=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436BE45820FDF3A65B42C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSCju1CZy3ZfRVW5hiNd024lRFdUoqWy
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:20:28 GMT
Content-Length: 142

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>

<StorageClass xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">STANDARD</
StorageClass>
```

5.2.15 Configuring Tags for a Bucket

Functions

This operation adds tags to a bucket.

After tags are added to a bucket, all service detail records (SDRs) generated by the requests for this bucket will have the same tags. You can categorize the SDRs for detailed cost analysis. For example, if a running application uploads data to a bucket, you can tag the bucket with the application name. In this manner, the costs on the application can be analyzed using tags in SDRs.

To perform this operation, you must have the **PutBucketTagging** permission. By default, only the bucket owner can delete the tags of a bucket. The bucket owner can allow other users to perform this operation by setting a bucket policy or granting them the permission.

Constraints

- A bucket can have up to 20 tags.

Request Syntax

```
PUT /?tagging HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization string
Content-SHA256: SHA256
<Tagging>
   <TagSet>
      <Tag>
         <Key>Tag Name</Key>
         <Value>Tag Value</Value>
      </Tag>
   </TagSet>
</Tagging>
```

Request Parameters

This request contains no message parameters.

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Request Headers

Table 5-46 lists the request header.

Table 5-46 Request headers

Header	Type	Mandatory	Description
Content-SHA256	String	Yes	Base64-encoded 256-bit SHA256 digest of the message according to SHA. Example: **ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=**

Request Elements

In this request, you must configure bucket tags in the request body. The tag configuration is uploaded in XML format. Table 5-47 describes the configuration elements.

Table 5-47 Bucket tag configuration elements

Header	Type	Mandatory (Yes/No)	Description
Tagging	XML	Yes	**Definition**: Root element for TagSet and Tag **Constraints**: None
TagSet	XML	Yes	**Definition**: Parent element of Tag. Parent: Tagging **Constraints**: A maximum of 20 tags can be set for a bucket. That means a TagSet can contain a maximum of 20 Tag nodes.
Tag	XML	Yes	**Definition**: Information element of Tag Parent: TagSet **Constraints**: A maximum of 20 tags can be set for a bucket. That means a TagSet can contain a maximum of 20 Tag nodes.

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Header	Type	Mandatory (Yes/No)	Description
Key	String	Yes	**Definition**: Name of a tag. Parent: Tag. **Constraints**: • A tag key can contain a maximum of 36 characters. • Tag keys and values cannot contain commas (,), asterisks (*), vertical bars (|), slashes (/), less-than signs (<), greater-than signs (>), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server. **Range**: A string between 1 and 36 characters long. **Default value**: None
Value	String	Yes	**Definition**: Tag value. Parent: Tag. **Constraints**: • A key value can contain a maximum of 43 characters. • Tag keys and values cannot contain commas (,), asterisks (*), vertical bars (|), slashes (/), less-than signs (<), greater-than signs (>), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server. **Range**: A string of 0 (included) to 43 (excluded) characters. **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
```

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```
Content-Length: length
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

In addition to common error codes, this API also returns other error codes. The following table lists common errors and possible causes. For details, see **Table 5-48**.

Table 5-48 Bucket tag configuration errors

Error Code	Description	HTTP Status Code
InvalidTagError	An invalid tag is provided when configuring bucket tags.	400 Bad Request
MalformedXMLError	An incorrect XML format is provided when configuring bucket tags.	400 Bad Request

Sample Request

This example adds a tag whose key is **TagKey(Name1)** and value is **TagValue(Value1)** to bucket **examplebucket**.

```
PUT /?tagging HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 27 Jun 2018 13:22:50 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:Pf1ZyGvVYg2BzOjokZ/BAeR1mEQ=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 182

<Tagging xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <TagSet>
    <Tag>
      <Key>TagKey%28Name1%29</Key>
      <Value>TagValue%28Value1%29</Value>
    </Tag>
  </TagSet>
</Tagging>
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF26000001643FEBA09B1ED46932CD07
```

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```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSEZp87iEirC6DggPB5cN49pSvHBWClg
Date: Wed, 27 Jun 2018 13:22:50 GMT
```

5.2.16 Obtaining Bucket Tags

Functions

This operation obtains information about tags of a bucket.

To perform this operation, you must have the **GetBucketTagging** permission. By default, only the bucket owner can obtain the tags of a bucket. The bucket owner can allow other users to perform this operation by setting a bucket policy or granting them the permission.

Request Syntax

```
GET /?tagging HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization string
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
Content-Type: application/xml
Content-Length: length
Date: date
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Tagging xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
   <TagSet>
      <Tag>
         <Key>key</Key>
         <Value>value</Value>
      </Tag>
   </TagSet>
</Tagging>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements to detail bucket tag configuration. **Table 5-49** describes the elements.

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Table 5-49 Bucket tag configuration elements

Header	Type	Description
Tagging	XML	**Definition**: Parent element of TagSet and Tag. **Constraints**: None
TagSet	XML	**Definition**: Parent element of Tag. Parent: Tagging **Constraints**: A maximum of 20 tags can be set for a bucket. That means a TagSet can contain a maximum of 20 Tag nodes.
Tag	XML	**Definition**: Information element of Tag Parent: TagSet **Constraints**: A maximum of 20 tags can be set for a bucket. That means a TagSet can contain a maximum of 20 Tag nodes.
Key	String	**Definition**: Name of a tag. Parent: Tag **Constraints**: • A tag key can contain a maximum of 36 characters. • Tag keys and values cannot contain commas (,), asterisks (*), vertical bars (|), slashes (/), less-than signs (<), greater-than signs (>), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server. **Range**: A string between 1 and 36 characters long. **Default value**: None

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Header	Type	Description
Value	String	**Definition**: Tag value. Parent: Tag **Constraints**: • A key value can contain a maximum of 43 characters. • Tag keys and values cannot contain commas (,), asterisks (*), vertical bars (|), slashes (/), less-than signs (<), greater-than signs (>), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server. **Range**: A string of 0 (included) to 43 (excluded) characters. **Default value**: None

Error Responses

In addition to common error codes, this API also returns other error codes. The following table lists common errors and possible causes. For details, see **Table 5-50**.

Table 5-50 Bucket tag configuration errors

Error Code	Description	HTTP Status Code
NoSuchTagSet	The specified bucket does not have any tags.	404 Not Found

Sample Request

```
GET /?tagging HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 27 Jun 2018 13:25:44 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:H1INcyc5i0XlHqYTfuzkPxLZUPM=
```

Sample Response

```
HTTP/1.1 200 OK
x-obs-request-id: 0002B7532E0000015BEB35330C5884X1
x-obs-id-2: s12w20LYNQqSb7moq4ibgJwmQRSmVQV+rFBqplOGYkXUpXeS/nOmbkyD+E35K79j
Content-Type: application/xml
```

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```
Date: Wed, 27 Jun 2018 13:25:44 GMT
Content-Length: 441

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Tagging xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <TagSet>
    <Tag>
      <Key>TagName1</Key>
      <Value>TageSetVaule1</Value>
    </Tag>
  </TagSet>
</Tagging>
```

5.2.17 Deleting Tags

Functions

This operation deletes the tags of a bucket.

To perform this operation, you must have the **DeleteBucketTagging** permission. By default, only the bucket owner can delete the tags of a bucket. The bucket owner can allow other users to perform this operation by setting a bucket policy or granting them the permission.

Request Syntax

```
DELETE /?tagging HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization string
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
Content-Length: length
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /?tagging HTTP/1.1
User-Agent: curl/7.19.7
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 27 Jun 2018 13:46:58 GMT
Authorization: authorization string
```

Sample Response

```
HTTP/1.1 204 No Content
x-obs-request-id: 0002B7532E0000015BEB2C212E53A17L
x-obs-id-2: CqT+86nnOkB+Cv9KZoVgZ28pSgMF+uGQBUC68flvkQeq6CxoCz65wWFMNBpXvea4
Content-Length: 0
Date: Wed, 27 Jun 2018 13:46:58 GMT
```

5.2.18 Configuring Bucket Storage Quota

Functions

The bucket storage quota must be a positive integer in the unit of byte. The maximum storage quota is 2^{63} – 1 bytes. The default bucket storage quota is **0**, indicating that the bucket storage quota is not limited.

NOTE

1. For a bucket that has a specified storage quota, you can change the quota to **0** to cancel the quota limitation.
2. The bucket storage quota verification depends on how much space is used in the bucket. However, the used storage space is measured at the background. Therefore, bucket storage quotas may not take effect immediately, and delay is expected. The used storage space in a bucket may exceed the bucket storage quota, or the used storage space may remain unchanged after data is deleted from the bucket.
3. For details about the API for querying used storage space, see **Obtaining Storage Information of a Bucket**.
4. If the used storage space in a bucket reaches the upper limit of the bucket storage quota, object upload will fail and the HTTP status code 403 Forbidden will be returned, indicating **InsufficientStorageSpace**. In this case, you can increase the quota, cancel the quota limitation (by changing the quota to **0**), or delete unwanted objects from the bucket.

Request Syntax

```
PUT /?quota HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Content-Length: length
Authorization: authorization

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Quota xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <StorageQuota>value</StorageQuota>
</Quota>
```

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Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request uses an additional element to specify a bucket quota. **Table 5-51** describes the element.

Table 5-51 Additional request elements

Element	Description	Mandatory
StorageQuota	Specifies the bucket storage quota. The unit is byte. Type: integer	Yes

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /?quota HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:24:37 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:k/rbwnYaqYf0Ae6F0M3OJQ0dmI8=
Content-Length: 106

<Quota xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <StorageQuota>10240000</StorageQuota>
</Quota>
```

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Sample Response

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435E09A2BCA388688AA08
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSHbmBecv7ohDSvqaRObpxzgzJ9+l8xT
Date: WED, 01 Jul 2015 03:24:37 GMT
Content-Length: 0
```

5.2.19 Querying Bucket Storage Quota

Functions

A bucket owner can query the bucket storage quota, but a bucket owner who is frozen due to arrears cannot. The bucket storage quota is measured by byte. **0** indicates that no upper limit is set.

Request Syntax

```
GET /?quota HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: application/xml
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Quota xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">

   <StorageQuota>quota</StorageQuota>
</Quota>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements of information about the bucket quota. **Table 5-52** describes the elements.

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Table 5-52 Response elements

Element	Description
Quota	Bucket storage quota. This element contains the StorageQuota element. Type: XML
StorageQuota	Bucket storage quota quantity. The unit is byte. Type: string

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?quota HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:27:45 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:8m4bW1gFCNeXQlfu45uO2gpo7l8=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436B55D8DED9AE26C4D18
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSs2Q5vz5AfpAJ/CMNgCfo2hmDowp7M9
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:27:45 GMT
Content-Length: 150

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Quota xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <StorageQuota>0</StorageQuota>
</Quota>
```

5.2.20 Obtaining Storage Information of a Bucket

Functions

This operation queries the number of bucket objects and the space occupied by the objects. The size of the object space is a positive integer, measured by bytes.

NOTE

Because OBS bucket storage statistics are measured in the background, the storage information is not updated in real time. For this reason, you are advised not to perform real-time verification on the storage information.

Request Syntax

```
GET /?storageinfo HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
```

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```
Date: date
Authorization: authorization
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetBucketStorageInfoResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
<Size>size</Size>
<ObjectNumber>number</ObjectNumber>
</GetBucketStorageInfoResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements of information about the used storage capacity of a bucket. **Table 5-53** describes the elements.

Table 5-53 Response elements

Element	Description
GetBucketStorageInfoResult	Request result that saves bucket storage information, including the stored data size and the number of objects Type: XML
Size	Size of stored data Type: long
ObjectNumber	Number of objects returned Type: integer

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?storageinfo HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:31:18 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:bLcdeJGYWw/eEEjMhPZx2MK5R9U=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435DD2958BFDCDB86B55E
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSitZctaPYVnat49fVMd1O+OWIP1yrg3
Content-Type: application/xml
WED, 01 Jul 2015 03:31:18 GMT
Content-Length: 206

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<GetBucketStorageInfoResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Size>25490</Size>
  <ObjectNumber>24</ObjectNumber>
</GetBucketStorageInfoResult>
```

5.2.21 Configuring Bucket Inventories

Functions

OBS uses the PUT method to configure bucket inventories. Each bucket can have a maximum of 10 inventories. For more information about the use and limitations of bucket inventories, see **Bucket Inventory** in the *Object Storage Service User Guide*.

To perform this operation, ensure that you have the **PutBucketInventoryConfiguration** permission. By default, the bucket owner has this permission and can grant it to others.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
PUT /?inventory&id=configuration-id  HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
Content-Length: length
Expect: 100-continue

<InventoryConfiguration>
  <Id>configuration-id</Id>
  <IsEnabled>true</IsEnabled>
  <Filter>
      <Prefix>inventoryTestPrefix</Prefix>
  </Filter>
```


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```
<Destination>
      <Format>CSV</Format>
      <Bucket>destbucket</Bucket>
      <Prefix>dest-prefix</Prefix>
</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>ReplicationStatus</Field>
       <Field>EncryptionStatus</Field>
</OptionalFields>
</InventoryConfiguration>
```

Request Parameters

Table 5-54 Request parameters

Parameter	Description	Mandatory
id	ID of the inventory configuration, which must be consistent with the inventory configuration ID in the message body. Type: string Specifications: A maximum of 64 characters There is no default value. Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	Yes

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

In this request, you must configure the bucket inventory in the request body. Upload the inventory configuration information in an XML file. **Table 5-55** lists the configuration elements.

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Table 5-55 Bucket inventory configuration elements

Element	Description	Mandatory
InventoryConfiguration	Inventory configuration. Type: container Parent: none Child: Id, IsEnabled, Filter, Destination, Schedule, IncludedObjectVersions, and OptionalFields	Yes
Id	ID of an inventory configuration, which must be consistent with the inventory configuration ID specified in the request. Type: string Specifications: A maximum of 64 characters There is no default value. Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_) Parent: InventoryConfiguration	Yes
IsEnabled	Indicates whether the rule is enabled. If this parameter is set to **true**, the inventory is generated. If not, the inventory will not be generated. Type: boolean Value options: **true**, **false** Parent: InventoryConfiguration	Yes
Filter	Inventory filter configuration. The inventory contains only objects that meet the filter criteria (filtering by object name prefix). If no filter criteria is configured, all objects are included. Type: container Parent: InventoryConfiguration Child: Prefix	No
Prefix	Filtering by name prefix. Only objects with the specified name prefix are included in the inventory. Type: string Parent: Filter	No
Schedule	Time scheduled for generation of inventories. Type: container Parent: InventoryConfiguration Child: Frequency	Yes

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Element	Description	Mandatory
Frequency	Intervals when inventories are generated. You can set this parameter to **Daily** or **Weekly**. An inventory is generated within one hour after it is configured for the first time. Then it is generated at the specified intervals. Type: string Parent: Schedule Value options: **Daily**, **Weekly**	Yes
Destination	Destination bucket of an inventory. Type: container Parent: InventoryConfiguration	Yes
Format	Inventory format. Only the CSV format is supported. Type: string Parent: Destination Value options: **CSV**	Yes
Bucket	Name of the bucket for saving inventories. Type: string Parent: Destination	Yes
Prefix	The name prefix of inventory files. If no prefix is configured, the names of inventory files will start with the **BucketInventory** by default. Type: string Parent: Destination	No
IncludedObjectVersions	Indicates whether versions of objects are included in an inventory. • If this parameter is set to **All**, all the versions of objects are included in the inventory, and versioning related fields are added to the inventory, including: **VersionId**, **IsLatest**, and **DeleteMarker**. • If this parameter is set to **Current**, the inventory contains only the current objects versions at the time when the inventory is generated. No versioning fields are displayed in the inventory. Type: string Parent: InventoryConfiguration Value options: **All**, **Current**	Yes

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Element	Description	Mandatory
OptionalFields	Extra metadata fields that can be added to an inventory. If this parameter is configured, fields specified in this parameter are contained in the inventory. Type: container Parent: InventoryConfiguration Child: Field	No
Field	Optional fields. The **OptionalFields** can contain multiple field elements. Type: string Parent: OptionalFields Value options: **Size**, **LastModifiedDate**, **StorageClass**, **ETag**, **IsMultipartUploaded**, **ReplicationStatus**, **EncryptionStatus**	No

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

In addition to common error codes, this API also returns other error codes. The following lists some common errors and possible causes of this API. For details, see **Table 5-56**.

Table 5-56 Inventory configuration error codes

Error Code	Description	HTTP Status Code
MalformedXML	Incorrect XML format of the inventory.	400 Bad Request
InvalidArgument	Invalid parameter.	400 Bad Request

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Error Code	Description	HTTP Status Code
InventoryCountOverLimit	The number of inventories reached the upper limit.	400 Bad Request
PrefixExistInclusionRelationship	The prefix configured for this inventory overlaps with prefixes of existing inventories.	400 Bad Request

Sample Request

```
PUT /?inventory&id=test_id HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Tue, 08 Jan 2019 08:17:10 +0000
Authorization: OBS UDSIAMSTUBTEST000001:/e2fqSfzLDb+0M36D4Op/s5KKr0=
Content-Length: 600
Expect: 100-continue

<InventoryConfiguration>
  <Id>test_id</Id>
  <IsEnabled>true</IsEnabled>
  <Filter>
       <Prefix>inventoryTestPrefix</Prefix>
  </Filter>
  <Destination>
       <Format>CSV</Format>
       <Bucket>destbucket</Bucket>
       <Prefix>dest-prefix</Prefix>
  </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>ReplicationStatus</Field>
        <Field>EncryptionStatus</Field>
  </OptionalFields>
</InventoryConfiguration>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 000001682C8545B0680893425D60AB83
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSIGTuRtBfo7lpHSt0ZknhdDHmllwd/p
Date: Tue, 08 Jan 2019 08:12:38 GMT
Content-Length: 0
```

5.2.22 Obtaining a Specific Inventory of a Bucket

Functions

OBS uses the GET method to obtain a specific inventory of a bucket.

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To perform this operation, you must have the **GetBucketInventoryConfiguration** permission. By default, the bucket owner has this permission and can grant it to others.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
GET /?inventory&id=configuration-id HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
```

Request Parameters

Table 5-57 Request parameters

Parameter	Description	Mandatory
id	ID of the inventory configuration that you want to obtain. Type: string Specifications: A maximum of 64 characters There is no default value. Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	Yes

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Server: OBS
x-obs-request-id: request id
x-obs-id-2: id
Content-Type: application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<InventoryConfiguration  xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <Id>configuration-id</Id>
  <IsEnabled>true</IsEnabled>
  <Destination>
    <Format>CSV</Format>
    <Bucket>destbucket</Bucket>
    <Prefix>prefix</Prefix>
```

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```
  </Destination>
  <Schedule>
    <Frequency>Daily</Frequency>
  </Schedule>
  <IncludedObjectVersions>Current</IncludedObjectVersions>
  <OptionalFields>
    <Field>Size</Field>
    <Field>LastModifiedDate</Field>
    <Field>ETag</Field>
    <Field>StorageClass</Field>
    <Field>IsMultipartUploaded</Field>
    <Field>ReplicationStatus</Field>
    <Field>EncryptionStatus</Field>
  </OptionalFields>
</InventoryConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

Table 5-58 lists elements contained in the response body.

Table 5-58 Elements in a response body to the request for bucket inventory configurations

Element	Description
InventoryConfiguration	Inventory configuration. Type: container Parent: none Child: Id, IsEnabled, Filter, Destination, Schedule, IncludedObjectVersions, and OptionalFields
Id	ID of an inventory configuration, which must be consistent with the inventory configuration ID specified in the request. Type: string Specifications: A maximum of 64 characters There is no default value. Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_) Parent: InventoryConfiguration
IsEnabled	Indicates whether the rule is enabled. If this parameter is set to **true**, the inventory is generated. If not, the inventory will not be generated. Type: boolean Value options: **true**, **false** Parent: InventoryConfiguration

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Element	Description
Filter	Inventory filter configuration. The inventory contains only objects that meet the filter criteria (filtering by object name prefix). If no filter criteria is configured, all objects are included. Type: container Parent: InventoryConfiguration Child: Prefix
Prefix	Filtering by name prefix. Only objects with the specified name prefix are included in the inventory. Type: string Parent: Filter
Schedule	Time scheduled for generation of inventories. Type: container Parent: InventoryConfiguration Child: Frequency
Frequency	Intervals when inventories are generated. You can set this parameter to **Daily** or **Weekly**. An inventory is generated within one hour after it is configured for the first time. Then it is generated at the specified intervals. Type: string Parent: Schedule Value options: **Daily**, **Weekly**
Destination	Destination bucket of an inventory. Type: container Parent: InventoryConfiguration
Format	Inventory format. Only the CSV format is supported. Type: string Parent: Destination Value options: **CSV**
Bucket	Name of the bucket for saving inventories. Type: string Parent: Destination
Prefix	The name prefix of inventory files. If no prefix is configured, the names of inventory files will start with the **BucketInventory** by default. Type: string Parent: Destination

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Element	Description
IncludedObjectVersions	Indicates whether versions of objects are included in an inventory. • If this parameter is set to **All**, all the versions of objects are included in the inventory, and versioning related fields are added to the inventory, including: **VersionId**, **IsLatest**, and **DeleteMarker**. • If this parameter is set to **Current**, the inventory contains only the current objects versions at the time when the inventory is generated. No versioning fields are displayed in the inventory. Type: string Parent: InventoryConfiguration Value options: **All**, **Current**
OptionalFields	Extra metadata fields that can be added to an inventory. If this parameter is configured, fields specified in this parameter are contained in the inventory. Type: container Parent: InventoryConfiguration Child: Field
Field	Optional fields. The **OptionalFields** can contain multiple field elements. Type: string Parent: OptionalFields Value options: **Size**, **LastModifiedDate**, **StorageClass**, **ETag**, **IsMultipartUploaded**, **ReplicationStatus**, **EncryptionStatus**

Error Responses

In addition to common error codes, this API also returns other error codes. The following table lists common errors and possible causes. For details, see **Table 5-59**.

Table 5-59 Error codes related to obtaining inventory configurations

Error Code	Description	HTTP Status Code
NoSuchInventoryConfiguration	No inventory configuration found matching the specified ID.	404 Not Found

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Sample Request

```
GET /?inventory&id=id1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Tue, 08 Jan 2019 09:32:24 +0000
Authorization: OBS UDSIAMSTUBTEST000001:ySWncC9M08jNsyXdJLSMJkpi7XM=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 000001682CB4C2EE6808A0D8DF9F3D00
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSBjn5O7Jv9CqvUMO0BenehRdil1n8rR
Content-Type: application/xml
Date: Tue, 08 Jan 2019 09:04:30 GMT
Content-Length: 626

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<InventoryConfiguration  xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <Id>id1</Id>
  <IsEnabled>true</IsEnabled>
  <Destination>
    <Format>CSV</Format>
    <Bucket>bucket</Bucket>
    <Prefix>prefix</Prefix>
  </Destination>
  <Schedule>
    <Frequency>Daily</Frequency>
  </Schedule>
  <IncludedObjectVersions>Current</IncludedObjectVersions>
  <OptionalFields>
    <Field>Size</Field>
    <Field>LastModifiedDate</Field>
    <Field>ETag</Field>
    <Field>StorageClass</Field>
    <Field>IsMultipartUploaded</Field>
    <Field>ReplicationStatus</Field>
    <Field>EncryptionStatus</Field>
  </OptionalFields>
</InventoryConfiguration>
```

5.2.23 Listing All Inventories of a Bucket

Functions

OBS uses the GET method without inventory IDs to obtain all inventories of a specified bucket. Obtained inventories are returned together on only one page.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
GET /?inventory HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
```

Request Parameters

This request message does not contain the request parameters.

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Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Server: OBS
x-obs-request-id: request id
x-obs-id-2: id
Content-Type: application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListInventoryConfiguration  xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
 <InventoryConfiguration>
  <Id>id</Id>
   <IsEnabled>true</IsEnabled>
   <Destination>
     <Format>CSV</Format>
     <Bucket>bucket</Bucket>
     <Prefix>prefix</Prefix>
   </Destination>
   <Schedule>
     <Frequency>Daily</Frequency>
   </Schedule>
   <IncludedObjectVersions>Current</IncludedObjectVersions>
   <OptionalFields>
     <Field>Size</Field>
     <Field>LastModifiedDate</Field>
     <Field>ETag</Field>
     <Field>StorageClass</Field>
     <Field>IsMultipartUploaded</Field>
     <Field>ReplicationStatus</Field>
     <Field>EncryptionStatus</Field>
   </OptionalFields>
 </InventoryConfiguration>
</ListInventoryConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

Table 5-60 lists elements contained in the response body.

Table 5-60 Bucket inventory configuration elements

Element	Description
ListInventoryConfiguration	List of bucket inventories. Type: container

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Element	Description
InventoryConfiguration	Bucket inventory configuration. For details about the configuration elements, see **Table 5-58**. Type: container Parent: ListInventoryConfiguration

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?inventory HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Tue, 08 Jan 2019 09:32:24 +0000
Authorization: OBS UDSIAMSTUBTEST000001:ySWncC9M08jNsyXdJLSMJkpi7XM=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 000001682CB4C2EE6808A0D8DF9F3D00
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSBjn5O7Jv9CqvUMO0BenehRdil1n8rR
Content-Type: application/xml
Date: Tue, 08 Jan 2019 09:04:30 GMT
Content-Length: 626

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListInventoryConfiguration  xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
 <InventoryConfiguration>
  <Id>id1</Id>
   <IsEnabled>true</IsEnabled>
   <Destination>
     <Format>CSV</Format>
     <Bucket>bucket</Bucket>
     <Prefix>prefix</Prefix>
   </Destination>
   <Schedule>
     <Frequency>Daily</Frequency>
   </Schedule>
   <IncludedObjectVersions>Current</IncludedObjectVersions>
   <OptionalFields>
     <Field>Size</Field>
     <Field>LastModifiedDate</Field>
     <Field>ETag</Field>
     <Field>StorageClass</Field>
     <Field>IsMultipartUploaded</Field>
     <Field>ReplicationStatus</Field>
     <Field>EncryptionStatus</Field>
   </OptionalFields>
 </InventoryConfiguration>
</ListInventoryConfiguration>
```

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5.2.24 Deleting Bucket Inventories

Functions

OBS uses the DELETE method to delete inventories (identified by inventory IDs) of a specified bucket.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
DELETE /?inventory&id=configuration-id HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
```

Request Parameters

Table 5-61 Request parameters

Parameter	Description	Mandatory
id	ID of the inventory to be deleted. Type: string Specifications: A maximum of 64 characters There is no default value. Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	Yes

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Server: OBS
x-obs-request-id: request id
x-obs-id-2: id
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /test?inventory&id=id1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Tue, 08 Jan 2019 13:18:35 +0000
Authorization: OBS UDSIAMSTUBTEST000001:UT9F2YUgaFu9uFGMmxFj2CBgQHs=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 000001682D993B666808E265A3F6361D
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSyB46jGSQsu06m1nyIeKxTuJ+H27ooC
Date: Tue, 08 Jan 2019 13:14:03 GMT
```

5.2.25 Configuring Bucket Encryption

Functions

OBS uses the PUT method to create or update the default server-side encryption for a bucket.

After you configure encryption for a bucket, objects uploaded to this bucket will be encrypted with the bucket encryption settings you specified. Currently, OBS supports server-side encryption with KMS-managed keys (SSE-KMS). For details, see **Server-Side Encryption**.

To perform this operation, you must have the **PutEncryptionConfiguration** permission. By default, the bucket owner has this permission and can grant it to others.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax (SSE-KMS AES256)

```
PUT /?encryption  HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
Content-Length: length

<ServerSideEncryptionConfiguration>
   <Rule>
      <ApplyServerSideEncryptionByDefault>
         <SSEAlgorithm>kms</SSEAlgorithm>
         <KMSMasterKeyID>kmskeyid-value</KMSMasterKeyID>
      </ApplyServerSideEncryptionByDefault>
```

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```
    <BucketKeyEnabled>true</BucketKeyEnabled>
  </Rule>
</ServerSideEncryptionConfiguration>
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

In this request, you need to carry the bucket encryption configuration in the request body. The bucket encryption configuration information is uploaded in the XML format. **Table 5-62** lists the configuration elements.

Table 5-62 Configuration elements of bucket encryption

Parameter	Mandatory (Yes/No)	Type	Description
ServerSideEncryptionConfiguration	Yes	Container	**Definition**: Root element of the default bucket encryption configuration. ServerSideEncryptionConfiguration is the parent node of **Rule**. **Constraints**: None **Range**: None **Default value**: None
Rule	Yes	Container	**Definition**: The child element of the default bucket encryption configuration. Rule is the parent node of ApplyServerSideEncryptionByDefault and BucketKeyEnabled. **Constraints**: None **Range**: For details, see **Rule parameters**. **Default value**: None

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Table 5-63 Rule parameter description

Parameter	Mandatory (Yes/No)	Type	Description
ApplyServerSideEncryptionByDefault	Yes	Container	**Definition**: The child element of the default bucket encryption configuration. **Constraints**: None **Range**: For details, see **Table 5-64**. **Default value**: None
BucketKeyEnabled	No	String	**Definition**: Whether to enable the OBS bucket key feature. **Constraints**: • This parameter is available only when **SSEAlgorithm** is set to **kms**. • When configuring a POSIX bucket, set this parameter to **true** and **KMSMasterKeyID** is mandatory. **Range**: • **true**: The OBS bucket key feature is enabled. • **false**: The OBS bucket key feature is disabled. **Default value**: **false**

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Table 5-64 ApplyServerSideEncryptionByDefault parameters

Parameter	Mandatory (Yes/No)	Type	Description
SSEAlgorithm	Yes	String	**Definition**: Server-side encryption algorithm used for the default encryption configuration of a bucket. **Constraints**: None **Range**: • **kms**: SSE-KMS encryption and the AES256 algorithm are used. • **AES256**: SSE-OBS encryption and the AES256 algorithm are used. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
KMSMasterKeyID	No	String	**Definition**: KMS master key ID used in SSE-KMS encryption. **Constraints**: • If this parameter is not specified, the default master key will be used. • If **BucketKeyEnabled** is set to **true**, the value of **KMSMasterKeyID** is the ID of the master key created on KMS. **Range**: • *regionID*:*domainID*:**key/***key_id* • *key_id* In the preceding formats: • *regionID* indicates the ID of the region where the key belongs. • *domainID* indicates the ID of the account to which the key belongs. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. • *key_id* indicates the ID of the key created in DEW. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
ProjectID	No	String	**Definition**: ID of the project where the KMS master key belongs when SSE-KMS is used. **Constraints**: • If the project is not the default one, you must use this parameter to specify the project ID. • If **KMSMasterKeyID** is not specified, do not set the project ID. • If a custom key in a non-default IAM project is used to encrypt objects, only the key owner can upload or download the encrypted objects. **Range**: Project ID that matches **KMSMasterKeyID**, that is, the ID of the project to which the master key with the specified **KMSMasterKeyID** belongs **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request (SSE-KMS AES256)

```
PUT /?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date:  Thu, 21 Feb 2019 03:05:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:DpSAlmLX/BTdjxU5HOEwflhM0WI=
Content-Length: 778

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ServerSideEncryptionConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Rule>
      <ApplyServerSideEncryptionByDefault>
         <SSEAlgorithm>kms</SSEAlgorithm>
         <KMSMasterKeyID>4f1cd4de-ab64-4807-920a-47fc42e7f0d0</KMSMasterKeyID>
      </ApplyServerSideEncryptionByDefault>
      <BucketKeyEnabled>true</BucketKeyEnabled>
   </Rule>
</ServerSideEncryptionConfiguration>
```

Sample Response (SSE-KMS AES256)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643670AC06E7B9A7767921
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vqzpgtohkiFm
Date: Thu, 21 Feb 2019 03:05:34 GMT
Content-Length: 0
```

5.2.26 Obtaining Bucket Encryption Configuration

Functions

OBS uses the GET method to obtain the encryption configuration of a specified bucket.

To perform this operation, you must have the **GetEncryptionConfiguration** permission. By default, only the bucket owner can delete the tags of a bucket. The bucket owner can allow other users to perform this operation by setting a bucket policy or granting them the permission.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
GET /?encryption  HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
```

Request parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

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Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
Content-Type: application/xml
Content-Length: length
Date: date

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ServerSideEncryptionConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Rule>
      <ApplyServerSideEncryptionByDefault>
         <SSEAlgorithm>kms</SSEAlgorithm>
         <KMSMasterKeyID>kmskeyid-value</KMSMasterKeyID>
         <ProjectID>projectid</ProjectID>
      </ApplyServerSideEncryptionByDefault>
      <BucketKeyEnabled>true</BucketKeyEnabled>
   </Rule>
</ServerSideEncryptionConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains the following elements to detail bucket encryption configuration:

Table 5-65 Configuration elements of bucket encryption

Parameter	Type	Description
ServerSideEncryptionConfiguration	Container	**Definition**: Root element of the default bucket encryption configuration. ServerSideEncryptionConfiguration is the parent node of **Rule**. **Range**: None
Rule	Container	**Definition**: Child element of the default bucket encryption configuration. Rule is the parent node of ApplyServerSideEncryptionByDefault. **Range**: For details, see **Rule parameters**.

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Table 5-66 Rule parameter description

Parameter	Type	Description
ApplyServerSideEncryptionByDefault	Container	**Definition**: The child element of the default bucket encryption configuration. **Range**: For details, see **Table 5-64**.

Table 5-67 ApplyServerSideEncryptionByDefault parameters

Parameter	Type	Description
SSEAlgorithm	String	**Definition**: Server-side encryption algorithm used for the default encryption configuration of a bucket. **Range**: • **kms**: SSE-KMS encryption and the AES256 algorithm are used. • **AES256**: SSE-OBS encryption and the AES256 algorithm are used.
KMSMasterKeyID	String	**Definition**: KMS master key ID used in SSE-KMS encryption. **Range**: • *regionID*:*domainID*:**key**/*key_id* • key_id In the preceding formats: • *regionID* indicates the ID of the region where the key belongs. • *domainID* indicates the ID of the account to which the key belongs. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. • *key_id* indicates the ID of the key created in DEW.

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Parameter	Type	Description
ProjectID	String	**Definition**: ID of the project where the KMS master key belongs when SSE-KMS is used. **Range**: Project ID that matches **KMSMasterKeyID**, that is, the ID of the project to which the master key with the specified **KMSMasterKeyID** belongs

Error Responses

In addition to common error codes, this API also returns others. The following table lists common errors and possible causes. For details, see **Table 5-68**.

Table 5-68 Error codes related to getting bucket encryption configuration

Error Code	Description	HTTP Status Code
NoSuchEncryptionConfiguration	The specified bucket does not have any encryption configurations	404 Not Found

Sample Request

```
GET /?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date:  Thu, 21 Feb 2019 03:05:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:DpSAlmLX/BTdjxU5HOEwflhM0WI=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643670AC06E7B9A7767921
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vqzpgtohkiFm
Date: Thu, 21 Feb 2019 03:05:34 GMT
Content-Length: 788

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ServerSideEncryptionConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Rule>
      <ApplyServerSideEncryptionByDefault>
         <SSEAlgorithm>kms</SSEAlgorithm>
         <KMSMasterKeyID>4f1cd4de-ab64-4807-920a-47fc42e7f0d0</KMSMasterKeyID>
      </ApplyServerSideEncryptionByDefault>
      <BucketKeyEnabled>true</BucketKeyEnabled>
   </Rule>
</ServerSideEncryptionConfiguration>
```

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5.2.27 Deleting the Encryption Configuration of a Bucket

Functions

OBS uses the DELETE method to delete the encryption configuration of a specified bucket.

To perform this operation, you must have the **PutEncryptionConfiguration** permission. By default, only the bucket owner can delete the tags of a bucket. The bucket owner can allow other users to perform this operation by setting a bucket policy or granting them the permission.

For more information about permission control, see the **permission control** in the *OBS Permission Configuration Guide*.

Request Syntax

```
DELETE /?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: date
Authorization: authorization string
```

Request parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Server: OBS
x-obs-request-id: request id
x-obs-id-2: id
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request

```
DELETE /examplebucket?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Tue, 08 Jan 2019 13:18:35 +0000
Authorization: OBS UDSIAMSTUBTEST000001:UT9F2YUgaFu9uFGMmxFj2CBgQHs=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 000001682D993B666808E265A3F6361D
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSyB46jGSQsu06m1nyIeKxTuJ+H27ooC
Date: Tue, 08 Jan 2019 13:14:03 GMT
```

5.2.28 Configuring Direct Reading for Archive Objects in a Bucket

Functions

The direct reading function means that you can directly perform operations on Archive objects without restoring them.

By default, direct reading is disabled on a bucket.

You can use this API to enable or disable direct reading for a bucket.

- When direct reading is enabled on a bucket:
  - You can directly perform operations on Archive objects in the bucket regardless of whether they have been restored.
  - If Archive objects are not restored, your operations on them will be charged separately.
- When direct reading is disabled on a bucket:
  - You need to restore Archive objects in the bucket before you can operate them.

To perform this operation, you must have the **PutDirectColdAccessConfiguration** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
PUT /?directcoldaccess HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Content-SHA256: SHA256
Content-Length: length

<DirectColdAccessConfiguration>
   <Status>status</Status>
</DirectColdAccessConfiguration>
```

Request Parameters

This request contains no message parameters.

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Request Headers

Table 5-69 lists the request headers.

Table 5-69 Request headers

Parameter	Mandatory (Yes/No)	Type	Description
Content-SHA256	Yes	String	**Definition**: SHA-256 digest string of the message body, that is, the string obtained after the 256-bit SHA-256 value of the message body is encoded using Base64 Example: **ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=** **Range**: None **Default value**: None

Request Elements

This request contains elements to configure the direct reading status in XML format for Archive objects. Table 5-70 lists the request elements.

Table 5-70 Elements required to configure the direct reading status for Archive objects

Parameter	Mandatory (Yes/No)	Type	Description
DirectColdAccessConfiguration	Yes	Container	**Definition**: Root node for the configuration of the direct reading for Archive objects. DirectColdAccessConfiguration is the parent node of Status. **Constraints**: None **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Status	Yes	String	**Definition**: Indicates the direct reading status for a bucket. **Constraints**: None **Range**: • Enabled: The direct reading policy is enabled for Archive objects. • Disabled: The direct reading policy is disabled for Archive objects. **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Date: date

Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /?directcoldaccess HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: Fri, 26 Apr 2019 07:37:36 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0MwsI2Zpo=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 92

<DirectColdAccessConfiguration>
    <Status>Enabled</Status>
</DirectColdAccessConfiguration>
```

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Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 0000016A58940244809DEF00122E6802
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCStOlo1yxthHHo2GlS3WGgt1ekAIh3Vy
Date: Fri, 26 Apr 2019 07:37:36 GMT
Content-Length: 0
```

5.2.29 Obtaining the Direct Reading Policy of Archive Objects in a Bucket

Functions

The owner of a bucket can obtain the direct reading status of Archive objects in the bucket.

If the direct reading has never been configured for Archive objects or the configured direct reading policy has been deleted, no status will be returned after this operation.

To perform this operation, you must have the **GetDirectColdAccessConfiguration** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
GET /?directcoldaccess HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length

<DirectColdAccessConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Status>Enabled</Status>
</DirectColdAccessConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains elements to indicate the direct reading status of Archive objects. **Table 5-71** describes the elements.

Table 5-71 Response elements

Parameter	Type	Description
DirectColdAccess-Configuration	Container	**Definition**: Indicates the direct reading information of Archive objects. **Range**: None
Status	String	**Definition**: Indicates the direct reading status for a bucket. If direct reading has never been configured for Archive objects or the direct reading configuration has been deleted, no direct reading status will be returned. **Range**: • Enabled: The direct reading policy is enabled for Archive objects. • Disabled: The direct reading policy is disabled for Archive objects. • If the Status parameter is not specified, the direct reading policy is disabled for Archive objects in the bucket.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
GET /?directcoldaccess HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:15:20 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:4N5qQIoluLO9xMY0m+8lIn/UWXM=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 0000016A6C21AD79654C09D9AA45EB5D
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSmfq4hegf1QZv8/ewfveE4B566v5DZ8
Content-Type: application/xml
Date: Tue, 30 Apr 2019 02:45:07 GMT
```

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```
Content-Length: 192

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
  <Status>Enabled</Status>
</DirectColdAccessConfiguration>
```

5.2.30 Deleting the Direct Reading Policy of Archive Objects in a Bucket

Functions

This API deletes the direct reading configurations of Archive objects in a bucket.

After the direct reading configurations are deleted, Archive objects in the bucket cannot be read directly. If you then perform operations on Archive objects that have not been restored or are being restored, a **403 Forbidden** error will be returned.

To delete such configurations, you must have the **DeleteDirectColdAccessConfiguration** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
DELETE /?directcoldaccess HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: Authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: text/xml
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /?directcoldaccess HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Tue, 30 Apr 2019 03:04:48 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:5DGAS7SBbMC1YTC4tNXY57Zl2Fo=
```

5.2.31 Configuring a Default WORM Policy for a Bucket

Functions

This API configures a default WORM policy and retention period for a bucket.

With the bucket's default WORM policy, if you do not specify a WORM policy or a retention period when you upload an object to the bucket, the default policy will be automatically applied to the newly uploaded object. An object-level WORM policy requires configuring a specific date, which indicates an object will be protected until that date. For a default bucket-level WORM policy, a retention period is required, and the protection for an object starts when the object is uploaded to the bucket.

To perform this operation, you must have the PutBucketObjectLockConfiguration permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

NOTE

- You can modify or even delete the default WORM policy of a bucket. The change applies only to the objects uploaded after the change, but not to those uploaded before.
- During a multipart upload, the object parts uploaded are not protected before they are assembled. After object parts are assembled, the new object is protected by the default bucket-level WORM policy. You can also configure an object-level WORM policy for the new object.

Other restrictions on the WORM retention configuration:

- The WORM mode can only be **COMPLIANCE**.
- The retention period can be set to **1** to **36500** days or **1** to **100** years.

Request Syntax

```
PUT /?object-lock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <ObjectLockEnabled>Enabled</ObjectLockEnabled>
   <Rule>
      <DefaultRetention>
         <Days>integer</Days>
```

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```
        <Mode>COMPLIANCE</Mode>
        <Years>integer</Years>
      </DefaultRetention>
    </Rule>
</ObjectLockConfiguration>
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 5-72**.

Request Elements

Table 5-72 Request elements

Parameter	Mandatory (Yes/No)	Type	Description
ObjectLockConfiguration	Yes	Container	**Definition**: Container for bucket-level WORM configurations. ObjectLockConfiguration is the parent node of ObjectLockEnabled and Rule. **Constraints**: None **Range**: For details, see **Table 5-73**. **Default value**: None

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Table 5-73 Parameters in ObjectLockConfiguration

Parameter	Mandatory (Yes/No)	Type	Description
ObjectLockEnabled	No	String	**Definition**: Bucket-level WORM status. **Constraints**: None **Range**: Enabled: Bucket-level WORM is enabled. **Default value**: None
Rule	Yes when ObjectLockEnabled is set to Enabled. If this parameter is not specified, the default bucket-level WORM policy will be cleared.	Container	**Definition**: Rule container of a bucket-level WORM policy. Rule is the parent node of DefaultRetention. **Constraints**: None **Range**: For details, see **Table 5-74**. **Default value**: None

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Table 5-74 Rule parameter description

Parameter	Mandatory (Yes/No)	Type	Description
DefaultRetention	Yes if Rule is specified	Container	**Definition**: Container of a bucket-level WORM policy. DefaultRetention is the parent node of Mode, Days, and Years. **Constraints**: None **Range**: For details, see **Table 5-75**. **Default value**: None

Table 5-75 DefaultRetention parameters

Parameter	Mandatory (Yes/No)	Type	Description
Mode	Yes if DefaultRetention is specified	String	**Definition**: WORM retention policy of a bucket. **Constraints**: None **Range**: COMPLIANCE: compliance mode **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Days	If the Default Retention container is included, you must specify either **Days** or **Years**, but you cannot specify both at the same time.	Integer	**Definition**: Number of retention days. **Constraints**: Only one of **Days** and **Years** can be set to a value other than 0. The value must be within the allowed range. **Range**: 1 to 36500 **Default value**: None
Years	If the Default Retention container is included, you must specify either **Years** or **Days**, but you cannot specify both at the same time.	Integer	**Definition**: Default retention years. **Constraints**: • One year is considered as 365 days, regardless of the leap year. • Only one of **Days** and **Years** can be set to a value other than 0. The value must be within the allowed range. **Range**: 1 to 100 **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

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Response Headers

This response uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

Table 5-76 describes possible special errors in this request.

Table 5-76 Error Responses

Error Code	Description	HTTP Status Code
InvalidRequest	The object lock is disabled for the bucket.	400
MalformedXML	Invalid policy configuration format.	400

For other errors, see **Table 6-2**.

Sample Request 1

Configure the default bucket-level WORM policy with a retention period of 2 years.

```
PUT /?object-lock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Type: application/xml
Content-Length: 157
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <ObjectLockEnabled>Enabled</ObjectLockEnabled>
   <Rule>
      <DefaultRetention>
         <Mode>COMPLIANCE</Mode>
         <Years>2</Years>
      </DefaultRetention>
   </Rule>
</ObjectLockConfiguration>
```

Sample Response 1

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

Sample Request 2

Delete the configuration of the default bucket-level WORM policy.

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```
PUT /?object-lock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Type: application/xml
Content-Length: 157
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
</ObjectLockConfiguration>
```

Sample Response 2

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

5.2.32 Obtaining the Default WORM Policy of a Bucket

Functions

This operation returns the default WORM policy of a bucket.

To perform this operation, you must have the GetBucketObjectLockConfiguration permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

NOTE

If you have never configured the default bucket-level retention policy after you enable WORM for a bucket, you can still use this API to check whether WORM is enabled.

Request Syntax

```
GET /?object-lock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: application/xml
```

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```
Content-Length: length

<?xml version="1.0" encoding="UTF-8"?>
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <ObjectLockEnabled>Enabled</ObjectLockEnabled>
   <Rule>
      <DefaultRetention>
         <Days>integer</Days>
         <Mode>COMPLIANCE</Mode>
         <Years>integer</Years>
      </DefaultRetention>
   </Rule>
</ObjectLockConfiguration>
```

Response Headers

This response uses common headers. For details, see **Table 3-19**.

Response Elements

Table 5-77 describes the elements of the default bucket-level WORM policy in the response.

Table 5-77 Elements of the default bucket-level WORM policy

Parameter	Type	Description
ObjectLockConfiguration	Container	**Definition**: Container for bucket-level WORM configurations. ObjectLockConfiguration is the parent node of ObjectLockEnabled and Rule. **Range**: For details, see **Table 5-78**.

Table 5-78 ObjectLockConfiguration parameters

Parameter	Type	Description
ObjectLockEnabled	String	**Definition**: Bucket-level WORM status. **Range**: Enabled: Bucket-level WORM is enabled.
Rule	Container	**Definition**: Rule container of a bucket-level WORM policy. If the default bucket-level WORM policy has never been configured, the returned information does not contain this part. Rule is the parent node of DefaultRetention. **Range**: For details, see **Table 5-79**.

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Table 5-79 Rule parameter description

Parameter	Type	Description
DefaultRetention	Container	**Definition**: Container of the bucket-level default WORM policy. DefaultRetention is the parent node of Mode, Days, and Years. **Range**: For details, see **Table 5-80**.

Table 5-80 DefaultRetention parameters

Parameter	Type	Description
Mode	String	**Definition**: Default retention policy. **Range**: COMPLIANCE: compliance mode
Days	Integer	**Definition**: Default retention days. **Range**: 1 to 36500
Years	Integer	**Definition**: Default retention years. **Range**: 1 to 100

Error Responses

Table 5-81 describes possible special errors in this request.

Table 5-81 Error Responses

Error Code	Description	HTTP Status Code
InvalidRequest	The object lock is disabled for the bucket.	400

For other errors, see **Table 6-2**.

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Sample Request 1

Get the configuration where the bucket has WORM enabled, but has no default retention policy configured.

```
GET /?object-lock HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 0
```

Sample Response 1

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 157

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
  <ObjectLockEnabled>Enabled</ObjectLockEnabled>
</ObjectLockConfiguration>
```

Sample Request 2

Get the configuration where the bucket has WORM enabled and has the default retention policy configured.

```
GET /?object-lock HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 0
```

Sample Response 2

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 157

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <ObjectLockEnabled>Enabled</ObjectLockEnabled>
  <Rule>
    <DefaultRetention>
      <Mode>COMPLIANCE</Mode>
      <Days>10</Days>
      <Years>0</Years>
    </DefaultRetention>
  </Rule>
</ObjectLockConfiguration>
```

5.3 Static Website Hosting

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5.3.1 Configuring Static Website Hosting for a Bucket

Functions

OBS allows you to store static web page resources such as HTML web pages, flash files, videos, and audios in a bucket. When a client accesses these resources from the website endpoint of the bucket, the browser can directly resolve and present the resources to the client. This operation is applicable to:

- Redirecting all requests to a website endpoint.
- Adding routing rules that redirect specific requests.

You can perform this operation to create or update the website configuration of a bucket.

To perform this operation, you must have the **PutBucketWebsite** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

NOTE

Avoid using periods (.) in the destination bucket name. Otherwise, failures in client authentication certificate may occur when users use HTTPS for access.

The maximum size of a request body for configuring static website hosting for a bucket is 10 KB.

Request Syntax

```
PUT /?website HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Length: length
Date: date
Authorization: authorization
<WebsiteConfiguration>
   <RedirectAllRequestsTo>
      <HostName>hostName</HostName>
   </RedirectAllRequestsTo>
</WebsiteConfiguration>
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request contains elements to specify the website configuration in XML format.

- To redirect all website requests sent to the bucket's website endpoint, add the elements as described in **Table 5-82**.

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Table 5-82 Elements for redirecting all website requests

Element	Description	Mandatory
WebsiteConfiguration	Root node configured on the website Type: container Parent: none	Yes
RedirectAllRequestsTo	Describes the redirection behavior for every request to this bucket's website endpoint. If this element is present, no other siblings are allowed. Type: container Parent: WebsiteConfiguration	Yes
HostName	Name of the host where requests will be redirected Type: string Parent: RedirectAllRequestsTo	Yes
Protocol	The HTTP or HTTPS protocol used in redirecting requests. The default protocol is HTTP. Type: string Parent: RedirectAllRequestsTo	No

- To configure redirection rules, add the elements as described in **Table 5-83**.

Table 5-83 Elements for adding rules that redirect requests

Element	Description	Mandatory
WebsiteConfiguration	Root element for the website configuration Type: container Parent: none	Yes
IndexDocument	***Suff*** element Type: container Parent: WebsiteConfiguration	Yes

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Element	Description	Mandatory
Suffix	*Suffix* that is appended to a request initiated for a directory on the website endpoint. For example, if the *suffix* is **index.html** and you request for **samplebucket/images/**, the data that is returned will be for the object with the key name **images/index.html** in the **samplebucket** bucket. *Suffix* cannot be empty or contain slashes (/). Type: string Parent: IndexDocument	Yes
ErrorDocument	*Key* element Type: container Parent: WebsiteConfiguration	No
Key	Object key that is used when a 4XX error occurs. This element identifies the page that is returned when a 4XX error occurs. Type: string Parent: ErrorDocument Condition: Required when **ErrorDocument** is specified.	No
RoutingRules	***Routing*** element Type: container Parent: WebsiteConfiguration	No
RoutingRule	Element of a redirection rule. A redirection rule contains a **Condition** and a **Redirect**. When the **Condition** is matched, **Redirect** takes effect. Type: container Parent: RoutingRules At least the *RoutingRule* element is required.	Yes
Condition	Element for describing a condition that must be met for the specified redirection to apply. Type: container Parent: RoutingRule	No

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Element	Description	Mandatory
KeyPrefixEquals	Object key name prefix when the redirection is applied. Example: • To redirect the request for object **ExamplePage.html**, the **KeyPrefixEquals** is set to **ExamplePage.html**. Type: string Parent: Condition Condition: Required when the ancestor element **Condition** is specified and sibling **HttpErrorCodeReturnedEquals** is not specified. If two conditions are specified, both conditions must be true for the **Redirect** to be applied.	No
HttpErrorCodeReturnedEquals	HTTP error code returned after the **Redirect** has taken effect. The specified **Redirect** is applied only when the error code returned equals this value. Example: • If you want to redirect requests to **NotFound.html** when HTTP error code 404 is returned, set HttpErrorCodeReturnedEquals to 404 in **Condition**, and set **ReplaceKeyWith** to **NotFound.html** in **Redirect**. Type: string Parent: Condition Condition: Required when ancestor element **Condition** is specified and sibling **KeyPrefixEquals** is not specified. If multiple conditions are specified, the **Redirect** takes effect only after all conditions are met.	No

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Element	Description	Mandatory
Redirect	Element for redirection information. You can redirect requests to another host, to another web page, or with another protocol. You can specify an error code to be returned after an error. Type: container Parent: RoutingRule	Yes
Protocol	Protocol used in the redirection request Type: string Parent: Redirect Value options: **http**, **https** Condition: Not required if one of the siblings is present.	No
HostName	Host name used in the redirection request. Type: string Parent: Redirect Condition: Not required if one of the siblings is present.	No
ReplaceKeyPrefixWith	The object name prefix used in the redirection request. OBS replaces the value of **KeyPrefixEquals** with the value you specified here for **ReplaceKeyPrefixWith**. Example: To redirect all requests for **docs** (objects in the **docs** directory) to **documents** (objects in the **documents** directory), set **KeyPrefixEquals** to **docs** under **Condition** and **ReplaceKeyPrefixWith** to **documents** under **Redirect**. This way, requests for object **docs/a.html** will be redirected to **documents/a.html**. Type: string Parent: Redirect Condition: Not required if one of the siblings is present. Can be present only if ReplaceKeyWith is not provided.	No

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Element	Description	Mandatory
ReplaceKeyWith	The object name used in the redirection request. OBS replaces the entire object name in the request with the value you specified here for **ReplaceKeyWith**. Example: To redirect requests for all objects in the **docs** directory to **documents/error.html**, set **KeyPrefixEquals** to **docs** under **Condition** and **ReplaceKeyWith** to **documents/error.html** under **Redirect**. This way, requests for both objects **docs/a.html** and **docs/b.html** will be redirected to **documents/error.html**. Type: string Parent: Redirect Condition: Not required if one of the siblings is present. Can be present only if **ReplaceKeyPrefixWith** is not provided.	No
HttpRedirectCode	HTTP status code returned after the redirection request Type: string Parent: Redirect Condition: Not required if one of the siblings is present.	No

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request: Redirecting All Requests for a Bucket to Another Bucket or URL

```
PUT /?website HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:40:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:pUK7Yp0yebnq4P6gqzVjoS7whoM=
Content-Length: 194

<WebsiteConfiguration xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <RedirectAllRequestsTo>
    <HostName>www.huaweicloud.eu</HostName>
  </RedirectAllRequestsTo>
</WebsiteConfiguration>
```

Sample Response: Redirecting All Requests for a Bucket to Another Bucket or URL

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164360D144670B9D02AABC6
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSItqMZ/AoFUX97l1xx8s67V3cCQtXWk
Date: WED, 01 Jul 2015 03:40:29 GMT
Content-Length: 0
```

Sample Request: Configuring a Bucket to Host a Static Website

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<WebsiteConfiguration  xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
   <IndexDocument>
      <Suffix>index.html</Suffix>
   </IndexDocument>
   <ErrorDocument>
      <Key>SomeErrorDocument.html</Key>
   </ErrorDocument>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSfxlr+FrXuJzYpLod1lrLK45tVx+GPR
x-obs-request-id: 0000018A39F07D0DD3888442DC29719E
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Configuring a Bucket to Host a Static Website, with an Optional Redirection Rule Specified

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<WebsiteConfiguration  xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
   <IndexDocument>
      <Suffix>index.html</Suffix>
```

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```
  </IndexDocument>
  <ErrorDocument>
     <Key>Error.html</Key>
  </ErrorDocument>
  <RoutingRules>
     <RoutingRule>
        <Condition>
           <KeyPrefixEquals>docs/</KeyPrefixEquals>
        </Condition>
        <Redirect>
           <ReplaceKeyPrefixWith>documents/</ReplaceKeyPrefixWith>
        </Redirect>
     </RoutingRule>
  </RoutingRules>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website, with an Optional Redirection Rule Specified

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSxixo46vLYhGrY/zwgqlM0fMNpeFthi
x-obs-request-id: 0000018A39F2E328D3888F46DB9BB5A2
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Configuring a Bucket to Host a Static Website and Redirecting Errors

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<WebsiteConfiguration  xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
  <IndexDocument>
     <Suffix>index.html</Suffix>
  </IndexDocument>
  <ErrorDocument>
     <Key>Error.html</Key>
  </ErrorDocument>
  <RoutingRules>
     <RoutingRule>
        <Condition>
           <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals >
        </Condition>
        <Redirect>
           <HostName>www.huaweicloud.com</HostName>
           <ReplaceKeyPrefixWith>report-404/</ReplaceKeyPrefixWith>
        </Redirect>
     </RoutingRule>
  </RoutingRules>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website and Redirecting Errors

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCS/xBBLGZwRUiL439eWMw1v/vphFB6JY
x-obs-request-id: 0000018A3A06C048D38610C04366B2F5
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

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Sample Request: Configuring a Bucket to Host a Static Website and Redirecting Requests for Folders to Another Page

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<WebsiteConfiguration  xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
   <IndexDocument>
      <Suffix>index.html</Suffix>
   </IndexDocument>
   <ErrorDocument>
      <Key>Error.html</Key>
   </ErrorDocument>
   <RoutingRules>
      <RoutingRule>
         <Condition>
            <KeyPrefixEquals>images/</KeyPrefixEquals>
         </Condition>
         <Redirect>
            <ReplaceKeyWith>errorpage.html</ReplaceKeyWith>
         </Redirect>
      </RoutingRule>
   </RoutingRules>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website and Redirecting Requests for Folders to Another Page

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSLjAKDDyha8LY/HcoFNfbLBeAKCAYcv
x-obs-request-id: 0000018A3A09D30CD306902FC7572429
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

5.3.2 Obtaining the Static Website Hosting Configuration of a Bucket

Functions

You can perform this operation to get the static website hosting configuration of a bucket.

To perform this operation, you must have the **GetBucketWebsite** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
GET /?website HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

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Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<WebsiteConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">

   <RedirectAllRequestsTo>
      <HostName>hostName</HostName>
   </RedirectAllRequestsTo>
</WebsiteConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements the same as those used by the PutBucketWebsite request. For details, see **Request Elements**.

Error Responses

Table 5-84 describes possible special errors in this request.

Table 5-84 Special error

Error Code	Description	HTTP Status Code
NoSuchWebsiteConfiguration	The website configuration does not exist.	404 Not Found

For other errors, see **Table 6-2**.

Sample Request

```
GET /?website HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:41:54 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:Yxt1Ru+feHE0S94R7dcBp+hfLnI=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
```

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```
x-obs-request-id: BF2600000164363442EC03A8CA3DD7F5
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSFbGOmlN0BVp1kbwN3har8jbVvtKEKN
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:41:54 GMT
Content-Length: 250

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<WebsiteConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">

  <RedirectAllRequestsTo>
    <HostName>www.huaweicloud.eu</HostName>
  </RedirectAllRequestsTo>
</WebsiteConfiguration>
```

5.3.3 Deleting the Static Website Hosting Configuration of a Bucket

Functions

You can perform this operation to delete the website configuration of a bucket.

To perform this operation, you must have the **DeleteBucketWebsite** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
DELETE /?website HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: type
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /?website HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:44:37 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:AZ1b0N5eLknxNOe/c0BISV1bEqc=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF260000016436378623OE2001DC0807
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSFUG4fEyDRgzUiEY2i71bJndBCy+wUZ
Date: WED, 01 Jul 2015 03:44:37 GMT
```

5.3.4 Configuring Bucket CORS

Functions

Cross-origin resource sharing (CORS) is a standard mechanism proposed by World Wide Web Consortium (W3C) and allows cross-origin requests from clients. For standard web page requests, the scripts and contents at one website cannot interact with those at another website due to the existence of the Same Origin Policy (SOP).

OBS allows buckets to store static web resources. The buckets of OBS can serve as website resources if the buckets are properly used (for details, see **Configuring Static Website Hosting for a Bucket**). A website in OBS can respond to cross-origin requests from another website only after CORS is configured.

Typical application scenarios are as follows:

- With CORS, you can use JavaScript and HTML5 to construct web applications that allow direct access to resources in OBS without the need to use proxy servers for transfer.
- You can enable the dragging function of HTML 5 to directly upload files to the OBS (with the upload progress displayed) or update the OBS contents using web applications.
- Hosts external web pages, style sheets, and HTML 5 applications in different origins. Web fonts or pictures on OBS can be shared by multiple websites.

To perform this operation, you must have the **PutBucketCORS** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

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Request Syntax

```
PUT /?cors HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Length: length
Date: date
Authorization: authorization
Content-SHA256: SHA256
<?xml version="1.0" encoding="UTF-8"?>
<CORSConfiguration>
   <CORSRule>
      <ID>id</ID>
      <AllowedMethod>method</AllowedMethod>
      <AllowedOrigin>origin</AllowedOrigin>
      <AllowedHeader>header</AllowedHeader>
      <MaxAgeSeconds>seconds</MaxAgeSeconds>
      <ExposeHeader>header</ExposeHeader>
   </CORSRule>
</CORSConfiguration>
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers and CORS request headers. For details, see **Table 3-3** and **Table 5-85**.

Table 5-85 CORS request headers

Header	Type	Mandatory (Yes/No)	Description
Content-SHA256	String	Yes	**Definition**: SHA-256 digest string of the message body, that is, the string obtained after the 256-bit SHA-256 value of the message body is encoded using Base64 Example: **ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=** **Default value**: None

Request Elements

In this request body, you must configure the CORS rules for a bucket in XML format. **Table 5-86** describes the specific configuration elements.

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Table 5-86 CORS configuration elements

Element	Type	Mandatory (Yes/No)	Description
CORSConfiguration	Container	Yes	**Definition**: Root node of CORSRules. Parent: none **Constraints**: The maximum size is 64 KB. **Range**: None **Default value**: None
CORSRule	Container	Yes	**Definition**: CORS rules Parent: CORSConfiguration **Constraints**: CORSConfiguration can contain a maximum of 100 rules. **Range**: None **Default value**: None
ID	String	No	**Definition**: The ID of a CORS rule. Parent: CORSRule **Constraints**: The ID cannot be longer than 255 characters. **Range**: A string of 1 to 255 characters. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
AllowedMethod	String	Yes	**Definition**: The allowed HTTP methods (types of operations on buckets and objects) for a cross-origin request. Parent: CORSRule **Constraints**: None **Range**: The following HTTP methods are supported: • GET • PUT • HEAD • POST • DELETE **Default value**: None
AllowedOrigin	String	Yes	**Definition**: The origin that is allowed to access the bucket. Parent: CORSRule **Constraints**: Only English domain names are supported. Regular expressions are used to match. Each rule allows at most one asterisk (*). For example, **https://*.vbs.example.com**. **Range**: The value must comply with the CORS protocol and contain 0 to 20480 characters. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
AllowedHeader	String	No	**Definition**: What headers are allowed in a CORS request. If a CORS request contains the **Access-Control-Request-Headers** header, the headers listed in this header must match the headers in the **AllowedHeader** element so that the request can be considered valid. The matching is based on regular expressions. Parent: CORSRule **Constraints**: At most one asterisk (*) is allowed. Spaces, ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: The value must comply with the CORS protocol and contain 0 to 20480 characters. **Default value**: None
MaxAgeSeconds	Integer	No	**Definition**: How long the response can be cached on a client Parent: CORSRule **Constraints**: Each CORS rule can contain at most one **MaxAgeSeconds**. **Range**: An integer greater than or equal to 0, in seconds **Default value**: 3000

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Element	Type	Mandatory (Yes/No)	Description
ExposeHeader	String	No	**Definition**: Specifies additional headers allowed in the response by a CORS rule, which are used to provide extra information to clients. By default, a browser can access only headers **Content-Length** and **Content-Type**. If the browser needs to access other headers, you need to configure them in this parameter. Parent: CORSRule **Constraints**: Spaces, asterisks (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: The value that complies with the CORS **Default value**: None

Response Syntax

```
HTTP/1.1 status_code

Date: date
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /?cors HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:51:52 GMT
```

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```
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:lq7BGoqE9yyhdEwE6KojJ7ysVxU=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 617

<?xml version="1.0" encoding="utf-8"?>
<CORSConfiguration>
  <CORSRule>
    <AllowedMethod>POST</AllowedMethod>
    <AllowedMethod>GET</AllowedMethod>
    <AllowedMethod>HEAD</AllowedMethod>
    <AllowedMethod>PUT</AllowedMethod>
    <AllowedMethod>DELETE</AllowedMethod>
    <AllowedOrigin>www.example.com</AllowedOrigin>
    <AllowedHeader>AllowedHeader_1</AllowedHeader>
    <AllowedHeader>AllowedHeader_2</AllowedHeader>
    <MaxAgeSeconds>100</MaxAgeSeconds>
    <ExposeHeader>ExposeHeader_1</ExposeHeader>
    <ExposeHeader>ExposeHeader_2</ExposeHeader>
  </CORSRule>
</CORSConfiguration>
```

Sample Response

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643627112BD03512FC94A4
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSYi6wLC4bkrvuS9sqnlRjxK2a5Fe3ry
Date: WED, 01 Jul 2015 03:51:52 GMT
Content-Length: 0
```

Sample Request: Configuring Two CORS Rules for a Bucket

```
PUT /?cors HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: HwVUAzslyD0rroMp/eIdwQ==

<CORSConfiguration>
   <CORSRule>
      <AllowedOrigin>http://www.example.com</AllowedOrigin>
      <AllowedMethod>PUT</AllowedMethod>
      <AllowedMethod>POST</AllowedMethod>
      <AllowedMethod>DELETE</AllowedMethod>
      <AllowedHeader>*</AllowedHeader>
   </CORSRule>
   <CORSRule>
      <AllowedOrigin>*</AllowedOrigin>
      <AllowedMethod>GET</AllowedMethod>
   </CORSRule>
</CORSConfiguration>
```

Sample Response: Configuring Two CORS Rules for a Bucket

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCTPXg+yj9IXC9r6mgmWgfSfqQGvHM3rS
x-obs-request-id: 0000018A3A14051AD2886D166EE13D98
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

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5.3.5 Obtaining the CORS Configuration of a Bucket

Functions

You can perform this operation to obtain CORS configuration information about a specified bucket.

To perform this operation, you must have the **GetBucketCORS** permission. By default, only the bucket owner can perform this operation. The bucket owner can grant the permission to other users by configuring the bucket policy or user policy.

Request Syntax

```
GET /?cors HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Content-Type:  application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CORSConfiguration xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <CORSRule>
      ...
   </CORSRule>
</CORSConfiguration>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements to detail the configuration. **Table 5-87** describes the elements.

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Table 5-87 CORS configuration elements

Element	Description
CORSConfiguration	Root node of **CORSRules** and its capacity cannot exceed 64 KB. Type: container Parent: none
CORSRule	CORS rule. CORSConfiguration can contain a maximum of 100 rules. Type: container Parent: CORSConfiguration
ID	Unique identifier of a rule. The value can contain a maximum of 255 characters. Type: string Parent: CORSRule
AllowedMethod	Method allowed by a CORS rule. Type: string Value options: **GET**, **PUT**, **HEAD**, **POST**, **DELETE** Parent: CORSRule
AllowedOrigin	The origin (domain name) that is allowed by a CORS rule. The value is a string of 0 to 20480 characters. It allows at most one wildcard character (*). Type: string Parent: CORSRule
AllowedHeader	Headers that can be carried in **Access-Control-Request-Headers** of CORS requests. The value contains 0 to 20480 characters. If a request contains **Access-Control-Request- Headers**, only a CORS request that matches the configuration of AllowedHeader is considered as a valid request. Each AllowedHeader can contain at most one wildcard (*) and cannot contain spaces. Type: string Parent: CORSRule
MaxAgeSeconds	Response time of CORS that can be cached by a client. It is expressed in seconds. Each CORS rule can contain at most one **MaxAgeSeconds**. Type: integer Parent: CORSRule

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Element	Description
ExposeHeader	Indicates a supplemented header in CORS responses. The header provides additional information for clients. It cannot contain spaces. Type: string Parent: CORSRule

Error Responses

Table 5-88 describes possible special errors in this request.

Table 5-88 Special error

Error Code	Description	HTTP Status Code
NoSuchCORSConfiguration	Indicates that the CORS configuration of buckets does not exist.	404 Not Found

For other errors, see Table 6-2.

Sample Request

```
GET /?cors HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:54:36 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:WJGghTrPQQXRuCx5go1fHyE+Wwg=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164363593F10738B80CACBE
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSpngvwC5TskcLGh7Fz5KRmCFIayuY8p
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:54:36 GMT
Content-Length: 825

<?xml version="1.0" encoding="utf-8"?>
 <CORSRule>
   <ID>783fc6652cf246c096ea836694f71855</ID>
   <AllowedMethod>POST</AllowedMethod>
   <AllowedMethod>GET</AllowedMethod>
   <AllowedMethod>HEAD</AllowedMethod>
   <AllowedMethod>PUT</AllowedMethod>
   <AllowedMethod>DELETE</AllowedMethod>

   <AllowedOrigin>obs.eu-west-101.myhuaweicloud.eu</AllowedOrigin>
   <AllowedOrigin>obs.example.com</AllowedOrigin>
   <AllowedOrigin>www.example.com</AllowedOrigin>
   <AllowedHeader>AllowedHeader_1</AllowedHeader>
   <AllowedHeader>AllowedHeader_2</AllowedHeader>
   <MaxAgeSeconds>100</MaxAgeSeconds>
```

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```
  <ExposeHeader>ExposeHeader_1</ExposeHeader>
  <ExposeHeader>ExposeHeader_2</ExposeHeader>
 </CORSRule>
</CORSConfiguration>
```

5.3.6 Deleting the CORS Configuration of a Bucket

Functions

This operation is used to delete the CORS configuration of a bucket. After the CORS configuration is deleted, the bucket and objects in it cannot be accessed by requests from other websites.

To perform this operation, you must have the **PutBucketCORS** permission.

Request Syntax

```
DELETE /?cors HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type:  application/xml
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /?cors HTTP/1.1
User-Agent: curl/7.29.0
```

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```
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 03:56:41 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mKUs/uIPb8BP0ZhvMd4wEy+EbiI=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF26000001643639F290185BB27F793A
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSLWMRFJfckapW+ktT/+1AnAz7XlNU0b
Date: WED, 01 Jul 2015 03:56:41 GMT
```

5.3.7 OPTIONS Bucket

Functions

OPTIONS refers to pre-requests that are sent to servers by clients. Generally, the requests are used to check whether clients have permissions to perform operations on servers. Only after a pre-request is returned successfully, clients start to execute the follow-up requests.

OBS allows static web resources to be stored in buckets with appropriate configurations. In this scenario, buckets in the OBS serve as servers to process OPTIONS pre-requests from clients.

OBS can process OPTIONS pre-requests only after CORS is configured for buckets in OBS. For details about CORS, see **Configuring Bucket CORS**.

Differences Between OPTIONS Bucket and OPTIONS Object

With the OPTIONS Object, you need to specify an object name in the URL, but an object name is not required with the OPTIONS Bucket, which uses the bucket domain name as the URL. The request lines of the two methods are as follows:

```
OPTIONS /object HTTP/1.1
OPTIONS / HTTP/1.1
```

Request Syntax

```
OPTIONS / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Origin: origin
Access-Control-Request-Method: method
```

Request Parameters

This request contains no message parameters.

Request Headers

This request uses the headers described in **Table 5-89**.

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Table 5-89 OPTIONS request headers

Header	Description	Mandatory
Origin	Origin of the cross-domain request specified by the pre-request. Generally, it is a domain name set in CORS. Type: string	Yes
Access-Control-Request-Method	An HTTP method that can be used by a request. The request can use multiple method headers. Type: string Value options: **GET**, **PUT**, **HEAD**, **POST**, **DELETE**	Yes
Access-Control-Request-Headers	HTTP headers of a request. The request can use multiple HTTP headers. Type: string	No

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Content-Type: application/xml
Access-Control-Allow-Origin: origin
Access-Control-Allow-Methods: method
Access-Control-Allow-Header: header
Access-Control-Max-Age: time
Access-Control-Expose-Headers: header
Date: date
Content-Length: length
```

Response Headers

The response uses the following headers as described in **Table 5-90**.

Table 5-90 CORS response headers

Header	Description
Access-Control-Allow-Origin	If the origin of a request meets server CORS configuration requirements, the response contains the origin. Type: string
Access-Control-Allow-Headers	If the headers of a request meet server CORS configuration requirements, the response contains the headers. Type: string

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Header	Description
Access-Control-Max-Age	Value of MaxAgeSeconds in the CORS configuration of a server Type: integer
Access-Control-Allow-Methods	If the Access-Control-Request-Method of a request meets server CORS configuration requirements, the response contains the methods in the rule. Type: string Value options: **GET**, **PUT**, **HEAD**, **POST**, **DELETE**
Access-Control-Expose-Headers	Value of ExposeHeader in the CORS configuration of a server Type: string

Response Elements

This response contains no elements.

Error Responses

Table 5-91 describes possible special errors in the request.

Table 5-91 Special error

Error Code	Description	HTTP Status Code
Bad Request	Invalid Access-Control-Request-Method: null When CORS and OPTIONS are configured for a bucket, no method header is added.	400 BadRequest
Bad Request	Insufficient information. Origin request header needed. When CORS and OPTIONS are configured for a bucket, no origin header is added.	400 BadRequest

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Error Code	Description	HTTP Status Code
AccessForbidden	CORSResponse: This CORS request is not allowed. This is usually because the evaluation of Origin, request method / Access-Control-Request-Method or Access-Control-Request-Headers are not whitelisted by the resource's CORS specification. When CORS and OPTIONS are configured for a bucket, origin, method, and headers do not match any rule.	403 Forbidden

For other errors, see **Table 6-2**.

Sample Request

```
OPTIONS / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:02:15 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:7RqP1vjemo6U+Adv9/Y6eGzWrzA=
Origin: www.example.com
Access-Control-Request-Method: PUT
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436314E8FF936946DBC9C
Access-Control-Allow-Origin: www.example.com
Access-Control-Allow-Methods: POST,GET,HEAD,PUT,DELETE
Access-Control-Max-Age: 100
Access-Control-Expose-Headers: ExposeHeader_1,ExposeHeader_2
Access-Control-Allow-Credentials: true
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTlYimJvOyJncCLNm5y/iz6MAGLNxTuS
Date: WED, 01 Jul 2015 04:02:15 GMT
Content-Length: 0
```

5.3.8 OPTIONS Object

Functions

For details, see **OPTIONS Bucket**.

Differences Between OPTIONS Bucket and OPTIONS Object

With the OPTIONS Object, you need to specify an object name in the URL, but an object name is not required with the OPTIONS Bucket, which uses the bucket domain name as the URL. The request lines of the two methods are as follows:

```
OPTIONS /object HTTP/1.1
OPTIONS / HTTP/1.1
```

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Request Syntax

```
OPTIONS /object HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Origin: origin
Access-Control-Request-Method: method
```

Request Parameters

This request contains no message parameters.

Request Headers

Table 5-92 describes headers used by this request.

Table 5-92 OPTIONS request headers

Header	Description	Mandatory
Origin	Origin of the cross-domain request specified by the pre-request. Generally, it is a domain name set in CORS. Type: string	Yes
Access-Control-Request-Method	Indicates an HTTP method that can be used by a request. The request can use multiple method headers. Type: string Value options: **GET**, **PUT**, **HEAD**, **POST**, **DELETE**	Yes
Access-Control-Request-Headers	Indicates the HTTP headers of a request. The request can use multiple HTTP headers. Type: string	No

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Content-Type: type
Access-Control-Allow-Origin: origin
Access-Control-Allow-Methods: method
Access-Control-Allow-Header: header
Access-Control-Max-Age: time
Access-Control-Expose-Headers: header
Date: date
Content-Length: length
```

Response Headers

The request uses the headers described in Table 5-93.

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Table 5-93 CORS request headers

Header	Description
Access-Control-Allow-Origin	If the origin of a request meets server CORS configuration requirements, the response contains the origin. Type: string
Access-Control-Allow-Headers	If the headers of a request meet server CORS configuration requirements, the response contains the headers. Type: string
Access-Control-Max-Age	Value of MaxAgeSeconds in the CORS configuration of a server. Type: integer
Access-Control-Allow-Methods	If the Access-Control-Request-Method of a request meets server CORS configuration requirements, the response contains the methods in the rule. Type: string Value options: **GET**, **PUT**, **HEAD**, **POST**, **DELETE**
Access-Control-Expose-Headers	Indicates ExposeHeader in the CORS configuration of a server. Type: string

Response Elements

This response contains no elements.

Error Responses

Table 5-94 describes possible special errors in the request.

Table 5-94 Special error

Error Code	Description	HTTP Status Code
Bad Request	Invalid Access-Control-Request-Method: null When CORS and OPTIONS are configured for a bucket, no method header is added.	400 BadRequest

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Error Code	Description	HTTP Status Code
Bad Request	Insufficient information. Origin request header needed. When CORS and OPTIONS are configured for a bucket, no origin header is added.	400 BadRequest
AccessForbidden	CORSResponse: This CORS request is not allowed. This is usually because the evaluation of Origin, request method/Access-Control-Request-Method or Access-Control-Request-Headers are not whitelisted by the resource's CORS spec. When CORS and OPTIONS are configured for a bucket, origin, method, and headers do not match any rule.	403 Forbidden

For other errors, see **Table 6-2**.

Sample Request

```
OPTIONS /object_1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:02:19 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:bQZG9c2aokAJsHOOkuVBK6cHZZQ=
Origin: www.example.com
Access-Control-Request-Method: PUT
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643632D12EFCE1C1294555
Access-Control-Allow-Origin: www.example.com
Access-Control-Allow-Methods: POST,GET,HEAD,PUT,DELETE
Access-Control-Max-Age: 100
Access-Control-Expose-Headers: ExposeHeader_1,ExposeHeader_2
Access-Control-Allow-Credentials: true
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS+DXV4zZetbTqFehhEcuXywTa/mi3T3
Date: WED, 01 Jul 2015 04:02:19 GMT
Content-Length: 0
```

5.4 Operations on Objects

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5.4.1 Uploading an Object - PUT

Functions

After creating a bucket in OBS, you can use this operation to upload an object to the bucket. This operation uploads an object to a bucket. To use this operation, you must have the write permission for the bucket.

NOTE

The name of each object in a bucket must be unique.

With versioning not enabled, if an object to be uploaded has the same name as an existing object in the bucket, the newly uploaded object will overwrite the existing one. To protect data from being corrupted during transmission, you can add the **Content-MD5** header in the request. After receiving the uploaded object, OBS compares the provided MD5 value to the MD5 value it calculates. If the two values do not match, OBS reports an error.

You can also specify the value of the **x-obs-acl** parameter to configure an access control policy for the object. If the **x-obs-acl** parameter is not specified when an anonymous user uploads an object, the object can be accessed by all OBS users by default.

This operation supports server-side encryption.

For a single upload, the size of the object to be uploaded ranges [0, 5 GB]. To upload a file greater than 5 GB, see **Operations on Multipart Upload**.

OBS does not have real folders. To facilitate data management, OBS provides a method to simulate a folder by adding a slash (/) to the object name, for example, **test/123.jpg**. You can simulate **test** as a folder and **123.jpg** as the name of a file under the **test** folder. However, the object key remains **test/123.jpg**. Objects named in this format appear as folders on the console. When you upload an object larger than 0 in size using this format, an empty folder will be displayed on the console, but the occupied storage capacity is the actual object size.

An object name containing **special characters** must be URL encoded. For example, **#obj** must be encoded as **%23obj**.

Differences Between PUT and POST Methods

Parameters are passed through the request header if the PUT method is used to upload objects; if the POST method is used to upload objects, parameters are passed through the form field in the message body.

With the PUT method, you need to specify the object name in the URL, but object name is not required with the POST method, which uses the bucket domain name as the URL. Request lines of these two methods are given as follows:

```
PUT /ObjectName HTTP/1.1
POST / HTTP/1.1
```

For details about POST upload, see **Uploading an Object - POST**.

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Versioning

If versioning is enabled for a bucket, the system automatically generates a unique version ID for the requested object in this bucket and returns the version ID in response header **x-obs-version-id**. If versioning is suspended for the bucket, the object version ID is **null**. For details about the versioning statuses of a bucket, see **Configuring Versioning for a Bucket**.

WORM

If a bucket has WORM enabled, you can configure retention policies for objects in the bucket. You can specify the **x-obs-object-lock-mode** and **x-obs-object-lock-retain-until-date** headers to configure a retention policy when you upload an object. If you do not specify these two headers but have configured a default bucket-level WORM policy, this default policy automatically applies to the object newly uploaded. You can also configure or update a WORM retention policy for an existing object.

NOTE

When you enable WORM for a bucket, OBS automatically enables versioning for the bucket. WORM protects objects based on the object version IDs. Only object versions with any WORM retention policy configured will be protected. Assume that object **test.txt 001** is protected by WORM. If another file with the same name is uploaded, a new object version **test.txt 002** with no WORM policy configured will be generated. In such case, **test.txt 002** is not protected and can be deleted. When you download an object without specifying a version ID, the current object version (**test.txt 002**) will be downloaded.

Request Syntax

```
PUT /ObjectName HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Type: application/xml
Content-Length: length
Authorization: authorization
Date: date
<Optional Additional Header>
<object Content>
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**. The request can use additional headers shown in **Table 5-95**.

NOTE

OBS supports the six HTTP request headers: Cache-Control, Expires, Content-Encoding, Content-Disposition, Content-Type, and Content-Language. If these headers are carried in an object upload request, their values are saved. You can also call the metadata modification API, provided by OBS, to change the values of the six headers. When the object is downloaded or queried, the saved values are set for corresponding HTTP headers and returned to the client.

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Table 5-95 Request headers

Header	Type	Mandatory (Yes/No)	Description
Content-MD5	String	No	**Definition**: Base64-encoded 128-bit MD5 digest of the message according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Constraints**: None **Range**: None **Default value**: None
x-obs-acl	String	No	**Definition**: When creating an object, you can use this parameter to set a pre-defined ACL. **Constraints**: Pre-defined policies must be displayed in character strings. **Range**: • private • public-read • public-read-write For details about each policy, see the "Configuring an ACL Using Header Fields" section in **ACLs**. **Default value**: private

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read	String	No	**Definition**: When creating an object, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. Example: **x-obs-grant-read: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: The value must be a valid ID. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-read-acp	String	No	**Definition**: When creating an object, you can use this header to grant all users in a domain the permissions to obtain the object ACL. Example: **x-obs-grant-read-acp: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: The value must be a valid ID. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-write-acp	String	No	**Definition**: When creating an object, you can use this header to grant all users in a domain the permission to write the object ACL. Example: **x-obs-grant-write-acp: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: The value must be a valid ID. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-full-control	String	No	**Definition**: When creating an object, you can use this header to grant all users in a domain the permissions to read the object, obtain the object metadata and ACL, and write the object ACL. Example: **x-obs-grant-full-control: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: The value must be a valid ID. For details, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	**Definition**: When creating an object, you can use this header to specify the storage class for the object. If you do not use this header, the object storage class is the default storage class of the bucket. Example: **x-obs-storage-class: STANDARD** **Constraints**: The value is case-sensitive. **Range**: • STANDARD • WARM • COLD **Default value**: By default, the storage class of the bucket is inherited.
x-obs-meta-*	String	No	**Definition**: When creating an object, you can use a header starting with **x-obs-meta-** to define object metadata in an HTTP request. Such metadata will be returned in the response when you retrieve the object or query the object metadata. For details, see **Managing Object Metadata**. Example: **x-obs-meta-test: test metadata** **Constraints**: Both metadata keys and their values must conform to US-ASCII standards. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	**Definition**: If a bucket is configured with the static website hosting function, it will redirect requests for this object to another object in the same bucket or to an external URL. OBS stores the value of this header in the object metadata. In the following example, the request header sets the redirection to an object (**anotherPage.html**) in the same bucket: x-obs-website-redirect-location:/anotherPage.html In the following example, the request header sets the object redirection to an external URL: x-obs-website-redirect-location:http://www.example.com/ **Constraints**: The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. **Range**: None **Default value**: None
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	**Definition**: Indicates that SSE-KMS is used. Example: **x-obs-server-side-encryption: kms** **Constraints**: None **Range**: kms, or AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-kms-key-id	String	No	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-bucket-key-enabled	String	No	Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled. false
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: • This header is used only when SSE-C is used. • This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: The key used for encrypting an object. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: • This header is used only when SSE-C is used. • This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: The MD5 value of the key used for encryption. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: • This header is used only when SSE-C is used. • This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: MD5 value of the key. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
success-action-redirect	String	No	**Definition**: The redirection address used when requests were successfully responded to. ● If the value is valid and the request is successful, OBS returns status code 303. **Location** contains **success_action_redirect** as well as the bucket name, object name, and object ETag. ● If this parameter value is invalid, OBS ignores this parameter. In such case, the **Location** header is the object address, and OBS returns the response code based on whether the operation succeeds or fails. **Constraints**: The value must be a valid URL, for example, **http://***domainname* or **https://***domainname*. **Range**: URL **Default value**: None
x-obs-expires	Integer	No	**Definition**: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. (The validity calculates from the object's creation time.) You can configure this field when uploading an object or modify this field by using the metadata modification API after the object is uploaded. Example: **x-obs-expires:3** **Constraints**: The value must be greater than the number of days that have passed since the object was created. For example, if the object was uploaded 10 days ago, you must specify a value greater than 10. **Range**: The value is an integer greater than 0. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	**Definition**: Object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: **x-obs-tagging:TagA=A&TagB&TagC** **Constraints**: ● If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. ● If there is no equal sign (=) in a configuration, the tag value is considered left blank. **Range**: None **Default value**: None
x-obs-object-lock-mode	String	No, but required when **x-obs-object-lock-retain-until-date** is present	**Definition**: WORM mode applied to the object. Example: **x-obs-object-lock-mode:COMPLIANCE** **Constraints**: ● Only COMPLIANCE (compliance mode) is supported. ● This parameter must be used together with **x-obs-object-lock-retain-until-date**. **Range**: COMPLIANCE **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-object-lock-retain-until-date	String	No, but required when **x-obs-object-lock-mode** is present.	**Definition**: When the WORM policy of the object expires. Example: **x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z** **Constraints**: • The value must be a UTC time that complies with the ISO 8601 standard. Example: **2015-07-01T04:11:15Z** • This parameter must be used together with **x-obs-object-lock-mode**. **Range**: The time must be later than the current time. **Default value**: None

Request Elements

This request contains no elements. Its body contains only the content of the requested object.

Response Syntax

```
HTTP/1.1 status_code
Content-Length: length
Content-Type: type
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-96** might also be needed.

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Table 5-96 Additional response headers

Header	Type	Description
x-obs-version-id	String	**Definition**: Version ID of the object. If versioning is enabled for the bucket, the object version ID will be returned. **Constraints**: None **Range**: None **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

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Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: The MD5 value of the key used for encryption. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: MD5 value of the key. **Default value**: None
x-obs-storage-class	String	**Definition**: Storage class of an object **Constraints**: This header is returned when the storage class of an object is not Standard. **Range**: • WARM • COLD **Default value**: None

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Uploading an Object

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:11:15 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:gYqplLq30dEX7GMi2qFWyjdFsyw=
Content-Length: 10240
Expect: 100-continue

[1024 Byte data content]
```

Sample Response: Uploading an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164364C10805D385E1E3C67
ETag: "d41d8cd98f00b204e9800998ecf8427e"
x-obs-id-2: 32AAAWJAMAABAAAQAAEAABAAAQAAEAABCTzu4Jp2lquWuXsjnLyPPiT3cfGhqPoY
Date: WED, 01 Jul 2015 04:11:15 GMT
Content-Length: 0
```

Sample Request: Uploading an Object (with the ACL Configured)

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:13:55 GMT
x-obs-grant-read:id=52f24s3593as5730ea4f722483579ai7,id=a93fcas852f24s3596ea8366794f7224
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:gYqplLq30dEX7GMi2qFWyjdFsyw=
Content-Length: 10240
Expect: 100-continue

[1024 Byte data content]
```

Sample Response: Uploading an Object (with the ACL Configured)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB7800000164845759E4F3B39ABEE55E
ETag: "d41d8cd98f00b204e9800998ecf8427e"
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSReVRNuas0knI+Y96iXrZA7BLUgj06Z
Date: WED, 01 Jul 2015 04:13:55 GMT
Content-Length: 0
```

Sample Request: Uploading an Object to a Versioned Bucket

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:17:12 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:uFVJhp/dJqj/CJIVLrSZ0gpw3ng=
Content-Length: 10240
Expect: 100-continue

[1024 Byte data content]
```

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Sample Response: Uploading an Object to a Versioned Bucket

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: DCD2FC9CAB78000001439A51DB2B2577
ETag: "d41d8cd98f00b204e9800998ecf8427e"
X-OBS-ID-2: GcVgfeOJHx8JZHTHrRqkPsbKdB583fYbr3RBbHT6mMrBstReVILBZbMAdLiBYy1l
Date: WED, 01 Jul 2015 04:17:12 GMT
x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAAVURTRkha
Content-Length: 0
```

Sample Request: Uploading an Object (with Its MD5 Specified)

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:17:50 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:uFVJhp/dJqj/CJIVLrSZ0gpw3ng=
Content-Length: 10
Content-MD5: 6Afx/PgtEy+bsBjKZzihnw==
Expect: 100-continue

1234567890
```

Sample Response: Uploading an Object (with Its MD5 Specified)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB7800000164B165971F91D82217D105
X-OBS-ID-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCSEKhBpS4BB3dSMNqMtuNxQDD9XvOw5h
ETag: "1072e1b96b47d7ec859710068aa70d57"
Date: WED, 01 Jul 2015 04:17:50 GMT
Content-Length: 0
```

Sample Request: Uploading an Object (with Website Hosting Configured)

If static website hosting has been configured for a bucket, you can configure parameters as follows when you upload an object. Then, users will be redirected when they download the object.

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:17:12 GMT
x-obs-website-redirect-location: http://www.example.com/
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:uFVJhp/dJqj/CJIVLrSZ0gpw3ng=
Content-Length: 10240
Expect: 100-continue

[1024 Byte data content]
```

Sample Response: Uploading an Object (with Website Hosting Configured)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: DCD2FC9CAB78000001439A51DB2B2577
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTmxB5ufMj/7/GzP8TFwTbp33u0xhn2Z
ETag: "1072e1b96b47d7ec859710068aa70d57"
Date: WED, 01 Jul 2015 04:17:12 GMT
x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAAVURTRkha
Content-Length: 0
```

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Sample Request: Uploading an Object Using a Signed URL

```
PUT /object02?
AccessKeyId=H4IPJX0TQTHTHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrzrzRNZxwS72CXeXM%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Content-Length: 1024

[1024 Byte data content]
```

Sample Response: Uploading an Object Using a Signed URL

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: DCD2FC9CAB78000001439A51DB2B2577
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTmxB5ufMj/7/GzP8TFwTbp33u0xhn2Z
ETag: "1072e1b96b47d7ec859710068aa70d57"
Date: Fri, 27 Jul 2018 10:52:31 GMT
x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAAVURTRkha
Content-Length: 0
```

Sample Request: Uploading an Object (with a Storage Class Specified)

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:15:07 GMT
x-obs-storage-class: WARM
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:uFVJhp/dJqj/CJIVLrSZ0gpw3ng=
Content-Length: 10240
Expect: 100-continue

[1024 Byte data content]
```

Sample Response: Uploading an Object (with a Storage Class Specified)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB7800000164846A2112F98BF970AA7E
ETag: "d41d8cd98f00b204e9800998ecf8427e"
x-obs-id-2: a39E0UgAIAABAAAQAAEAABAAAQAAEAABCTPOUJu5XlNyU32fvKjM/92MQZK2gtoB
Date: WED, 01 Jul 2015 04:15:07 GMT
x-obs-storage-class: WARM
Content-Length: 0
```

Sample Request: Uploading an Object (with a WORM Retention Policy Configured)

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:11:15 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:gYqplLq30dEX7GMi2qFWyjdFsyw=
Content-Length: 10240
x-obs-object-lock-mode:COMPLIANCE
x-obs-object-lock-retain-until-date:2022-09-24T16:10:25Z
Expect: 100-continue

[1024 Byte data content]
```

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Sample Response: Uploading an Object (with a WORM Retention Policy Configured)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164364C10805D385E1E3C67
ETag: "d41d8cd98f00b204e9800998ecf8427e"
x-obs-id-2: 32AAAWJAMAABAAAQAAEAABAAAQAAEAABCTzu4Jp2lquWuXsjnLyPPiT3cfGhqPoY
Date: WED, 01 Jul 2015 04:11:15 GMT
Content-Length: 0
```

5.4.2 Uploading an Object - POST

Functions

This API allows you to upload an object to a bucket. This requires the write permission for the bucket.

NOTE

The name of each object in a bucket must be unique.

If a bucket has versioning disabled, and you upload an object that has the same name as an existing object, the new object overwrites the existing one. You can also use **Content-MD5** in the form to verify in-transit integrity. OBS calculates an MD5 after the object is uploaded and checks if this MD5 matches the MD5 carried in the form. If they do not match, an error is reported. You can also use **x-obs-acl** to control access to objects.

You can also upload an object using the POST method.

A single upload allows at most 5 GB of objects. To upload more than 5 GB of objects, see **Operations on Multipart Upload**.

This API supports server-side encryption.

Differences Between PUT and POST Methods

PUT requests include parameters in the header, while POST requests include them in the form.

In the URL, PUT requests require object names be specified; POST requests only require bucket domain names. Request lines of PUT and POST are as follows:

```
PUT /ObjectName HTTP/1.1
POST / HTTP/1.1
```

For details about PUT upload, see **Uploading an Object - PUT**.

Versioning

If versioning is enabled for a bucket, each object uploaded has a unique version ID. If versioning is suspended, the version ID is **null**. Version IDs are returned in the **x-obs-version-id** header of the response. For details about versioning, see **Configuring Versioning for a Bucket**.

WORM

If a bucket has WORM enabled, you can configure WORM for its objects. To do so, use **x-obs-object-lock-mode** and **x-obs-object-lock-retain-until-date** in the

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request when uploading an object. If these two elements are not specified, objects uploaded use the default bucket WORM policy (if any). You can also configure or update WORM after an object was uploaded.

NOTE

If WORM is enabled, versioning is automatically enabled. WORM is based on the object version. Versions of an object not protected by WORM can be deleted. For example, assume version **test.txt 001** of an object is protected by WORM. You upload a new version **test.txt 002** for the same object with no WORM configured. In such case, **test.txt 002** is not protected and can be deleted. If you download an object without specifying a version ID, the latest version — **test.txt 002** — is downloaded.

Request Syntax

```
POST / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
User-Agent: browser_data
Accept: file_types
Accept-Language: Regions
Accept-Encoding: encoding
Accept-Charset: character_set
Keep-Alive: 300
Connection: keep-alive
Content-Type: multipart/form-data; boundary=9431149156168
Content-Length: length


--9431149156168
Content-Disposition: form-data; name="key"

acl
--9431149156168
Content-Disposition: form-data; name="success_action_redirect"

success_redirect
--9431149156168
Content-Disposition: form-data; name="content-Type"

content_type
--9431149156168
Content-Disposition: form-data; name="x-obs-meta-uuid"

uuid
--9431149156168
Content-Disposition: form-data; name="x-obs-meta-tag"

metadata
--9431149156168
Content-Disposition: form-data; name="AccessKeyId"

access-key-id
--9431149156168
Content-Disposition: form-data; name="policy"

encoded_policy
--9431149156168
Content-Disposition: form-data; name="signature"

signature=
--9431149156168
Content-Disposition: form-data; name="file"; filename="MyFilename"
Content-Type: image/jpeg

file_content
--9431149156168
Content-Disposition: form-data; name="submit"
```

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```
Upload to OBS
--9431149156168--
```

Request Parameters

This request contains no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

If you want to get CORS settings, use the headers in **Table 5-97**.

Table 5-97 Request headers for obtaining CORS configuration

Header	Type	Mandatory (Yes/No)	Description
Origin	String	Yes	**Definition**: Where a cross-domain request is from (usually a domain name), specified in a preflight request **Constraints**: None **Range**: An HTTP-compliant header value **Default value**: None
Access-Control-Request-Headers	String	No	**Definition**: HTTP headers in a request. Multiple headers can be included. **Constraints**: None **Range**: An HTTP-compliant header value **Default value**: None

Request Elements

This request uses form elements. **Table 5-98** describes the form elements.

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Table 5-98 Form elements

Element	Type	Mandatory (Yes/No)	Description
file	Binary or text	Yes	**Definition**: Object content to upload. Both the file name and path are ignored and will not be used as the object name. The object name is the value of parameter **key**. **Constraints**: • This parameter must be the last to specify. Otherwise, the parameters that follow it will be discarded. • A request can contain only one **file** parameter. **Range**: None **Default value**: None
key	String	Yes	**Definition**: Name of the object to be created. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is **examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt**, the object name is **folder/test.txt**. **Constraints**: See **Object Overview**. **Range**: 1 to 1,024 characters **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
AccessKeyId	String	Yes when the restrictions are met	**Definition**: Access key ID (AK) of the requester. **Constraints**: This parameter is mandatory if there is security policy parameter **policy** or **signature** in the request. **Range**: AK of a user. **Default value**: None
policy	String	Yes when the restrictions are met	**Definition**: A security policy **Constraints**: This parameter is mandatory if **AccessKeyId** or **signature** is provided in the form. **Range**: For the policy format, see **Authenticating the Signature Carried in a Form Uploaded Through a Browser**. **Default value**: None
signature	String	Yes when the restrictions are met	**Definition**: A signature string calculated based on StringToSign. **Constraints**: This parameter is mandatory if **AccessKeyId** or **policy** is provided in the form. **Range**: None **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
token	String	No	**Definition**: Specifies the access key, signature, and security policy of the requester all together. **Constraints**: The priority of a token is higher than that of a separately specified AK, signature, or security policy. Example: For HTML: `<input type="text" name="token" value="ak:signature:policy" />` **Range**: The value must be in the *ak*:*signature*:*policy* format. **Default value**: None
x-obs-acl	String	No	**Definition**: Used to set a pre-defined ACL when creating an object Examples: In POLICY: {"acl": "public-read" } For HTML: `<input type="text" name="acl" value="public-read" />` **Constraints**: None **Range**: • private • public-read • public-read-write • public-read-delivered • public-read-write-delivered For details about each policy, see the "Configuring an ACL Using Header Fields" section in **ACLs**. **Default value**: private

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Element	Type	Mandatory (Yes/No)	Description
x-obs-grant-read	String	No	**Definition**: Used to — when creating an object — grant all users in a domain the permissions to read the object and obtain the object metadata Examples: In POLICY: {'grant-read': 'id=domainId1' }, For HTML: <input type="text" name="grant-read" value="id=domainId1" /> **Constraints**: Use commas (,) to separate multiple domains. **Range**: The value of *domainId* must be valid. For details about how to obtain the ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-read-acp	String	No	**Definition**: Used to — when creating an object — grant all users in a domain the permission to obtain the object ACL. Examples: In POLICY: {"grant-read-acp": "id=domainId1" }, For HTML: <input type="text" name="grant-read-acp" value="id=domainId1" /> **Constraints**: None **Range**: The value of *domainId* must be valid. For details about how to obtain the ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
x-obs-grant-write-acp	String	No	**Definition**: Used to — when creating an object — grant all users in a domain the permission to write the object ACL. Examples: In POLICY: {"grant-write-acp": "id=domainId1" }, For HTML: <input type="text" name="grant-write-acp" value="id=domainId1" /> **Constraints**: None **Range**: The value of *domainId* must be valid. For details about how to obtain the ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None
x-obs-grant-full-control	String	No	**Definition**: When creating an object, you can use this header to grant all users in an account the permissions to read the object, obtain the object metadata and ACL, and write the object ACL. Examples: In POLICY: {"grant-full-control": "id=domainId1" }, For HTML: <input type="text" name="grant-full-control" value="id=domainId1" /> **Constraints**: None **Range**: The value of *domainId* must be valid. For details about how to obtain the ID, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	**Definition**: Used to — when creating an object — specify its storage class. Examples: In POLICY: {"storage-class": "STANDARD" }, For HTML: <input type="text" name="x-obs-storage-class" value="STANDARD" /> **Constraints**: The value is case-sensitive. **Range**: • STANDARD • WARM • COLD **Default value**: If you do not use this header, the object storage class is the default storage class of the bucket.
Cache-Control	String	No	**Definition**: Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request. **Constraints**: None **Range**: See the HTTP requirements for the Cache-Control header. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
Content-Type	String	No	**Definition**: Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request. Example: In POLICY: ["starts-with", "$Content-Type", "text/"], For HTML: <input type="text" name="content-type" value="text/plain" /> **Constraints**: None **Range**: For details about the common content types, see **Common Content Types**. **Default value**: None
Content-Disposition	String	No	**Definition**: Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request. **Constraints**: None **Range**: See the HTTP requirements for the Content-Disposition header. **Default value**: None
Content-Encoding	String	No	**Definition**: Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request. **Constraints**: None **Range**: See the HTTP requirements for the Content-Encoding header. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
Expires	String	No	**Definition**: Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request. **Constraints**: None **Range**: See the HTTP requirements for the Expires header. **Default value**: None
success_action_redirect	String	No	**Definition**: Where a successful request is redirected • If the value is valid and the request is successful, OBS returns status code 303. **Location** contains **success_action_redirect** as well as the bucket name, object name, and object ETag. • If the value is invalid, OBS ignores this parameter. **Location** contains the object address, and OBS returns the response code based on the actual result. Examples: In POLICY: {"success_action_redirect": "http://123458.com"}, For HTML: `<input type="text" name="success_action_redirect" value="http://123458.com" />` **Constraints**: The value must start with **http** or **https**. **Range**: URL **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
x-obs-meta-*	String	No	**Definition**: Used when creating an object to define metadata. The defined metadata is returned in the response when you obtain the object or query its metadata. For details, see **Managing Object Metadata**. Examples: In POLICY: {" x-obs-meta-test ": " test metadata " }, For HTML: <input type="text" name=" x-obs-meta-test " value=" test metadata " /> **Constraints**: None **Range**: For details, see **Managing Object Metadata**. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
success_action_status	String	No	**Definition**: The status code returned for a successful request. Examples: In POLICY: ["starts-with", "$success_action_status", ""], For HTML: <input type="text" name="success_action_status" value="200" /> **Constraints**: ● If this parameter is set to **200** or **204**, the response body is left blank. ● If this parameter is set to **201**, the response message contains an XML document that describes the response. ● If this parameter is not specified or is invalid, the status code is **204**. **Range**: ● 200: The request is processed successfully. ● 201: The request is successful and a new resource is created. ● 204: The request is successful, but no content is returned. **Default value**: None
x-obs-website-redirect-location	String	No	**Definition**: If a bucket is configured with static website hosting, requests for one object in this bucket can be redirected to another object in the same bucket or to an external URL. OBS stores the value of this header in the object metadata. **Constraints**: The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2K. **Range**: None **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	**Definition**: Indicates that SSE-KMS is used for server-side encryption. Example: **x-obs-server-side-encryption:kms** **Constraints**: None **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	No	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-bucket-key-enabled	String	No	**Definition**: Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled. **Default value**: false

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Element	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: ● This header is used only when SSE-C is used. ● This header must be used with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: The key used for encrypting an object. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 256-bit key. It must be used with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: The MD5 value of the key used for encryption. Used to check whether any error occurs during the key transmission. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 128-bit MD5 value. It must be used with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: MD5 value of the key. **Default value**: None
x-obs-expires	Integer	No	**Definition**: When an object expires and is deleted (how many days after the last update). You can configure this parameter when uploading an object. You can also modify it after the object is uploaded by using the metadata modification API. Example: **x-obs-expires:3** **Constraints**: The value must be greater than the number of days that have passed since the object was created. For example, if the object was uploaded 10 days ago, you must specify a value greater than 10. **Range**: The value is an integer greater than 0. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
x-obs-object-lock-mode	String	No, but required when **x-obs-object-lock-retain-until-date** is present.	**Definition**: WORM mode applied to the object. Example: **x-obs-object-lock-mode:COMPLIANCE** **Constraints**: Currently, only COMPLIANCE (compliance mode) is supported. This parameter must be used with **x-obs-object-lock-retain-until-date**. **Range**: COMPLIANCE **Default value**: None
x-obs-object-lock-retain-until-date	String	No, but required when **x-obs-object-lock-mode** is present.	**Definition**: When the WORM policy of the object expires. Example: **x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z** **Constraints**: The value must be a UTC time that complies with the ISO 8601 standard. Example: **2015-07-01T04:11:15Z** This parameter must be used with **x-obs-object-lock-mode**. **Range**: The time must be later than the current time. **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Content-Type: application/xml
Location: location
Date: date
ETag: etag
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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In addition to the common response headers, the headers listed in **Table 5-99** may be used.

Table 5-99 Additional response headers

Header	Type	Description
x-obs-version-id	String	**Definition**: Object version ID. **Constraints**: • If versioning is enabled for the bucket, the object version ID will be returned. • If versioning is suspended for the bucket, a string **null** is returned. **Range**: The value is automatically generated by the server. **Default value**: None
Access-Control-Allow-Origin	String	**Definition**: Returned if the request origin meets the CORS configured on the server. **Constraints**: None **Range**: The value that complies with the CORS **Default value**: None
Access-Control-Allow-Headers	String	**Definition**: Returned if the request headers meet the CORS configured on the server. **Constraints**: None **Range**: The value that complies with the CORS **Default value**: None

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Header	Type	Description
Access-Control-Max-Age	Integer	**Definition**: Value of **MaxAgeSeconds** in the CORS configuration on the server when CORS is configured for buckets. **Constraints**: None **Range**: An integer greater than or equal to 0, in seconds **Default value**: 3000
Access-Control-Allow-Methods	String	**Definition**: If a bucket has CORS configured, and Access-Control-Request-Method in the request meets the CORS configuration on the server, the specified methods in the rule are returned. **Constraints**: None **Range**: • GET • PUT • HEAD • POST • DELETE **Default value**: None

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Header	Type	Description
Access-Control-Expose-Headers	String	**Definition**: **ExposeHeader** in the CORS rules of the bucket. It specifies additional headers allowed in the response by a CORS rule. These headers provide extra information to clients. By default, a browser can access only headers **Content-Length** and **Content-Type**. If the browser needs to access other headers, you need to configure them as additional headers. **Constraints**: Spaces, asterisks (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: None **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None

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Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: Only for SSE-C server-side encryption. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: The MD5 value of the key used for encryption. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: Only for SSE-C server-side encryption. **Range**: MD5 value of the key. **Default value**: None

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Uploading an Object Using POST

```
POST / HTTP/1.1
Date: WED, 01 Jul 2015 04:15:23 GMT
Host: examplebucket.obs.region.myhuaweicloud.eu
Content-Type: multipart/form-data; boundary=7db143f50da2
Content-Length: 2424
Origin: www.example.com
Access-Control-Request-Headers:acc_header_1

--7db143f50da2
Content-Disposition: form-data; name="key"

object01
--7db143f50da2
Content-Disposition: form-data; name="acl"

public-read
--7db143f50da2
Content-Disposition: form-data; name="content-type"

text/plain
--7db143f50da2
Content-Disposition: form-data; name="expires"

WED, 01 Jul 2015 04:16:15 GMT
--7db143f50da2
Content-Disposition: form-data; name="AccessKeyId"

14RZT432N80TGDF2Y2G2
--7db143f50da2
Content-Disposition: form-data; name="policy"

ew0KICAiZXhaaXJhdGlvbiI6ICIyMDE1LTA3LTAxVDEyOjAwOjAwLjAwMFoiLA0KICAiY29uZGl0aW9ucyI6IFsNCiAgICB7ImJ1Y2tldCI6ICJleG1hcGxlYnVja2V0IiB9LA0KICAgIHsiYWNsIjogInB1YmxpYy1yZWFkIiB9LA0KICAgIHsiRXhaaXJlcyI6ICIxMDAwIiB9LA0KICAgIFsiZXEiLCAiJGtleSIsICJvYmplY3QwMSJdLA0KICAgIFsic3RhcnRzLXdpdGgiLCAiJENvbnRlbnQtVHlwZSIsICJ0ZXh0LyJdLA0KICBdDQp9DQo=
--7db143f50da2
Content-Disposition: form-data; name="signature"

Vk6rwO0Nq09BLhvNSlYwSJTRQ+k=
--7db143f50da2
Content-Disposition: form-data; name="x-obs-persistent-headers"

test:dmFsdWUx
--7db143f50da2
Content-Disposition: form-data; name="x-obs-grant-read"

id=52f24s3593as5730ea4f722483579xxx
--7db143f50da2
Content-Disposition: form-data; name="x-obs-server-side-encryption"

kms
--7db143f50da2
Content-Disposition: form-data; name="x-obs-website-redirect-location"

http://www.example.com/
--7db143f50da2
Content-Disposition: form-data; name="file"; filename="C:\Testtools\UpLoadFiles\object\1024Bytes.txt"
Content-Type: text/plain

01234567890
--7db143f50da2
```

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```
Content-Disposition: form-data; name="submit"

Upload
--7db143f50da2--
```

Sample Response: Uploading an Object Using POST

After CORS is configured for a bucket, the response contains the **Access-Control-*** information.

```
HTTP/1.1 204 No Content
x-obs-request-id: 90E2BA00C26C00000133B442A90063FD
x-obs-id-2: OTBFMkJBMDBDMjZDMDAwMDAxMzNCNDQyQTkwMDYzRkRBQUFBQUFBQWJiYmJiYmJi
Access-Control-Allow-Origin: www.example.com
Access-Control-Allow-Methods: POST,GET,HEAD,PUT
Access-Control-Allow-Headers: acc_header_01
Access-Control-Max-Age: 100
Access-Control-Expose-Headers: exp_header_01
Content-Type: text/xml
Location: http://examplebucket.obs.region.myhuaweicloud.eu/object01
Date: WED, 01 Jul 2015 04:15:23 GMT
ETag: "ab7abb0da4bca5323ab6119bb5dcd296"
```

Sample Request: Uploading an Object (with x-obs-acl and a Storage Class Specified)

Upload an object with the x-obs-acl, storage class, and redirection header fields carried in the request message.

Before encoding, the policy content is as follows:

```
{
  "expiration":"2018-07-17T04:54:35Z",
  "conditions":[
    {
      "content-type":"text/plain"
    },
    {
      "x-obs-storage-class":"WARM"
    },
    {
      "success_action_redirect":"http://www.example.com"
    },
    {
      "x-obs-acl":"public-read"
    },
    [
      "starts-with",
      "$bucket",
      ""
    ],
    [
      "starts-with",
      "$key",
      ""
    ]
  ]
}
```

Sample request:

```
POST / HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept-Encoding: identity
Content-Length: 947
Content-Type: multipart/form-data; boundary=9431149156168
```

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```
User-Agent: OBS/Test

--9431149156168
Content-Disposition: form-data; name="x-obs-acl"

public-read
--9431149156168
Content-Disposition: form-data; name="AccessKeyId"

H4IPJX0TQTHTHEBQQCEC
--9431149156168
Content-Disposition: form-data; name="key"

my-obs-object-key-demo
--9431149156168
Content-Disposition: form-data; name="signature"

WNwv8P1ZiWdqPQqjXeLmAfzPDAI=
--9431149156168
Content-Disposition: form-data; name="policy"

eyJleHBpcmF0aW9uIjoiMjAxOC0wNy0xN1QwODozNDoyM1oiLCAiY29uZGl0aW9ucyI6W3siY29udGVudC10eX
BlIjoidGV4dC9wbGFpbiJ9LHsieC1vYnMtYWNsIjoicHVibGljLXJlYWQifSxbInN0YXJ0cy13aXRoIiwgIiRidWNrZXQiL
CAiIl0sWyJzdGFydHMtd2l0aCIsICIka2V5IiwgIiJdXX0=
--9431149156168
Content-Disposition: form-data; name="content-type"

text/plain
--9431149156168
Content-Disposition: form-data; name="file"; filename="myfile"
Content-Type: text/plain

c2c6cd0f-898e-11e8-aab6-e567c91fb541
52b8e8a0-8481-4696-96f3-910635215a78

--9431149156168--
```

Sample Response: Uploading an Object (with x-obs-acl and a Storage Class Specified)

```
HTTP/1.1 204 No Content
Server: OBS
Location: http://examplebucket.obs.region.myhuaweicloud.eu/my-obs-object-key-demo
ETag: "17a83fc8d431273405bd266114b7e034"
x-obs-request-id: 5DEB00000164A728A7C7F4E032214CFA
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCSwj2PcBE0YcoLHUDO7GSj+rVByzjflA
Date: Tue, 17 Jul 2018 07:33:36 GMT
```

Sample Request: Using a Token for Authentication

```
POST / HTTP/1.1
Content-Type:multipart/form-data; boundary=9431149156168
Content-Length: 634
Host: examplebucket.obs.region.myhuaweicloud.eu

--9431149156168
Content-Disposition: form-data; name="key"
obj01

--9431149156168
Content-Disposition: form-data; name="token"
UDSIAMSTUBTEST002538:XsVcTzR2/
A284oE4VH9qPndGcuE=:eyJjb25kaXRpb25zIjogW3siYnVja2V0IjogInRlc3QzMDAzMDU4NzE2NjI2ODkzNjcuMT
IifSwgeyJDb250ZW50LVR5cGUiOiAiYXBwbGljYXRpb24veG1sIn0sIFsiZXEiLCAiJGtleSIsICJvYmoudHh0Il1dLCAiZ
XhwaXJhdGlvbiI6ICIyMDIyLTA5LTA5VDEyOjA5OjI3WiJ9

--9431149156168
Content-Disposition: form-data; name="file"; filename="myfile"
```

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```
Content-Type: text/plain
01234567890

--9431149156168--
Content-Disposition: form-data; name="submit"
Upload to OBS
```

Sample Response: Using a Token for Authentication

```
HTTP/1.1 204 No Content
Server: OBS
Location: http://examplebucket.obs.region.myhuaweicloud.eu/my-obs-object-key-demo
ETag: "7eda50a430fed940023acb9c4c6a2fff"
x-obs-request-id: 000001832010443D80F30B649B969C47
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTj0yO9KJd5In+i9pzTgCDVG9vMnk7O/
Date: Fri,09Sep 2022 02: 24:40 GMT
```

Sample Request: Specifying an Object Expiration Time

```
POST / HTTP/1.1
Date: WED, 01 Jul 2015 04:15:23 GMT
Host: examplebucket.obs.region..com
Content-Type: multipart/form-data; boundary=14882896926023390562087O
Content-Length: 1639
Origin: www.example.com
Access-Control-Request-Headers:acc_header_1

--14882896926023390562087O
Content-Disposition: form-data; name="key"

object01
--14882896926023390562087O
Content-Disposition: form-data; name="ObsAccessKeyId"

55445349414d535455425445535430303030303
--14882896926023390562087O
Content-Disposition: form-data; name="signature"

396246666f6f42793872792f7a3958524f6c44334e4e69763950553d--7db143f50da2
--14882896926023390562087O
Content-Disposition: form-data; name="policy"

65794a6c65484270636d463061573975496a6f694d6a41794d7930774e6930784e565178...
--14882896926023390562087O
Content-Disposition: form-data; name="x-obs-expires"

4
--14882896926023390562087O
Content-Disposition: form-data; name="file"; filename="test.txt"
Content-Type: text/plain

01234567890
--14882896926023390562087O
Content-Disposition: form-data; name="submit"

Upload
--14882896926023390562087O--
```

Sample Response: Specifying an Object Expiration Time

```
HTTP/1.1 204 No Content
Server: OBS
Date: Thu, 15 Jun 2023 12:39:03 GMT
Connection: keep-alive
Location: http://examplebucket.obs.region..com/my-obs-object-key-demo
x-obs-expiration: expiry-date="Tue, 20 Jun 2023 00:00:00 GMT"
ETag: "d41d8cd98f00b204e9800998ecf8427e"
```

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```
x-obs-request-id: 00000188BF11049553064911000FC30D
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCSwj2PcBE0YcoLHUDO7GSj+rVByzjflA
x-forward-status: 0x40020000000001
x-dae-api-type: REST.POST.OBJECT
```

Sample Request: Specifying a Status Code

Set the status code of a successful action to 200.

```
POST /srcbucket HTTP/1.1
User-Agent: PostmanRuntime/7.26.8
Accept: */*
Postman-Token: 667dcc44-1c48-41ba-9e41-9f87d8975089
Host: obs.region..com
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Content-Type: multipart/form-data; boundary=--------------------------285613759795901770404350
Content-Length: 1134

----------------------------285613759795901770404350
Content-Disposition: form-data; name="key"

obj
----------------------------285613759795901770404350
Content-Disposition: form-data; name="ObsAccessKeyId"

XXXXXXXXXXXXXXX000003
----------------------------285613759795901770404350
Content-Disposition: form-data; name="signature"

9rc4bVhDPQ7eHtw17hWtYxLnBWU=
----------------------------285613759795901770404350
Content-Disposition: form-data; name="policy"

eyJleHBpcmF0aW9uIjoiMjAyMy0wNi0xNVQxNDoxMTozNFoiLCAiY29uZGl0aW9ucyI6W3siYnVja2V0Ijoic3JjYnV
ja2V0MiJ9LHsic3VjY2Vzc19hY3Rpb25fc3RhdHVzIjoiMjAwIn0seyJjb250ZW50LXR5cGUiOiJ0ZXh0L3BsYWluIn0s
eyJrZXkiOiIzMzMifSxdfQ==
----------------------------285613759795901770404350
Content-Disposition: form-data; name="success_action_status"

200
----------------------------285613759795901770404350
Content-Disposition: form-data; name="file"; filename="test.txt"
Content-Type: text/plain


----------------------------285613759795901770404350
Content-Disposition: form-data; name="submit"

Upload to OBS
----------------------------285613759795901770404350--
```

Sample Response: Specifying a Status Code

Response to the configuration of success status code 200

```
HTTP/1.1 200 OK
Server: OBS
Date: Thu, 15 Jun 2023 13:12:51 GMT
Content-Length: 0
Connection: keep-alive
Location: http://obs.region..com/srcbucket/obj
ETag: "d41d8cd98f00b204e9800998ecf8427e"
x-obs-request-id: 00000188BF2FF55F5306426E000FE366
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCScDjcXgZ7oMYSVnZnk4+HrClVwLVPTi
x-forward-status: 0x40020000000001
x-dae-api-type: REST.POST.OBJECT
```

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Sample Request: Uploading an Object (with a WORM Retention Policy Configured)

```
POST /srcbucket HTTP/1.1
User-Agent: PostmanRuntime/7.26.8
Accept: */*
Postman-Token: 4c2f4c7e-2e0b-46c0-b1a7-4a5da560b6a1
Host: obs.region..com
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Content-Type: multipart/form-data; boundary=--------------------------940435396775653808840608
Content-Length: 1409

----------------------------940435396775653808840608
Content-Disposition: form-data; name="key"

obj
----------------------------940435396775653808840608
Content-Disposition: form-data; name="ObsAccessKeyId"

XXXXXXXXXXXXXXX000003
----------------------------940435396775653808840608
Content-Disposition: form-data; name="signature"

X/7QiyMYUvxUWk0R5fToeTcgMMU=
----------------------------940435396775653808840608
Content-Disposition: form-data; name="policy"

eyJleHBpcmF0aW9uIjoiMjAyMy0wNi0xNVQxNDoyMjo1MVoiLCAiY29uZGl0aW9ucyI6W3sieC1vYnMtb2JqZW
N0LWxvY2stcmV0YWluLXVudGlsLWRhdGUiOiJUaHUsIDIwIEp1biAyMDIzIDEzOjEyOjUxIEdNVCJ9LHsieC1vYn
Mtb2JqZWN0LWxvY2stbW9kZSI6IkNPTVBMSUFOQ0UifSx7ImJ1Y2tldCI6InNyY2J1Y2tldDIifSx7ImNvbnRlbnQt
dHlwZSI6InRleHQvcGxhaW4ifSx7ImtleSI6IjMzMyJ9LF19
----------------------------940435396775653808840608
Content-Disposition: form-data; name="x-obs-object-lock-mode"

COMPLIANCE
----------------------------940435396775653808840608
Content-Disposition: form-data; name="x-obs-object-lock-retain-until-date"

Thu, 20 Jun 2023 13:12:51 GMT
----------------------------940435396775653808840608
Content-Disposition: form-data; name="file"; filename="test.txt"
Content-Type: text/plain


----------------------------940435396775653808840608
Content-Disposition: form-data; name="submit"

Upload to OBS
----------------------------940435396775653808840608--
```

Sample Response: Uploading an Object (with a WORM Retention Policy Configured)

```
HTTP/1.1 204 No Content
Server: OBS
Date: Thu, 15 Jun 2023 13:24:03 GMT
Connection: keep-alive
Location: http://obs.region..com/srcbucket/obj
ETag: "d41d8cd98f00b204e9800998ecf8427e"
x-obs-request-id: 00000188BF3A36EE5306427D000FEE0A
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS/5pj0p0hAQcDVl3B6E5y167zy4eAQv
x-forward-status: 0x40020000000001
x-dae-api-type: REST.POST.OBJECT
```

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References

The following table lists the links to the POST description and sample code for different SDK languages:

Java	Python	C: not supported	Go: not supported	BrowserJS	.NET: not supported	Android	iOS: not supported	PHP	Node.js

5.4.3 Copying an Object

Functions

You can perform this operation to create a copy of an existing object in OBS.

Users can determine whether to copy the metadata of the source object to the target object (by default) or replace the metadata of the target object with the metadata contained in the request. The ACL of the source object is not copied to the target object. By default, the ACL of the target object is private. You can set an ACL for the target object by sending an API request.

The object copy request carries the information about the source bucket and object to be copied in the header field. The message body cannot be carried.

This operation supports server-side encryption.

An object copy can be up to 5 GB in size. If the source object size exceeds 5 GB, you can only **copy part of the object**.

NOTE

You cannot determine whether a request is executed successfully only using **status_code** in the header returned by HTTP. If 200 in **status_code** is returned, the server has received the request and starts to process the request. The body in the response shows whether the copy succeeds. If the body contains ETag, the copy succeeds. Otherwise, the copy failed.

Versioning

By default, **x-obs-copy-source** specifies the latest version of the source object. If the latest version of the source object is a delete marker, the object is considered deleted. You can add **versionId** to request header **x-obs-copy-source** to copy an object with the specified version ID.

If a bucket has versioning enabled, the system automatically generates a unique version ID for the requested object in this bucket and returns the version ID in response header **x-obs-version-id**. If versioning is suspended for the bucket, the object version ID is **null**.

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NOTICE

When the bucket versioning status is disabled, if you make a copy of object_A and save it as object_B, and an object named as object_B already exists, the new object_B will overwrite the existing one. After the copying is executed successfully, only new object_B can be downloaded because old object_B has been deleted. Therefore, before copying an object, ensure that there is no object with the same name as the object copy to prevent data from being deleted mistakenly. During the copying, object_A has no changes.

WORM

If a bucket has WORM enabled, you can configure retention policies for objects in the bucket. You can specify the **x-obs-object-lock-mode** and **x-obs-object-lock-retain-until-date** headers to configure a retention policy when you copy an object. If you do not specify these two headers but have configured a default bucket-level WORM policy, this default policy automatically applies to the object newly copied. You can also configure or update a WORM retention policy after an object is copied to the bucket.

NOTE

In a copy operation, the object protection status is not copied, so the protection status of an object copy is independent of that of the source object. After the copy is complete, WORM retention changes made on the source object does not affect the object copy.

Object Tags

You can use the **x-obs-tagging-directive** header to specify how object tags will be processed during a copy. You can also configure tags for the object copy after the copy is complete.

NOTE

To copy tags of a source object, you must have the **GetObjectTagging** permission for the source object. To copy tags of a source object version, you must have the **GetObjectTagging** and **GetObjectVersionTagging** permissions for the source object version. These permissions can be granted using object ACLs or bucket policies.

To add tags to an object copy, you must have the **PutObjectTagging** permission for the object copy. To add tags to an object copy version, you must have the **PutObjectTagging** and **PutObjectVersionTagging** permissions for the object copy version. These permissions can be granted using bucket ACLs or bucket policies.

Archive Objects

If source objects are in the Archive storage class, ensure that these objects have been restored before you copy them. If a source object is not restored or is being restored, its copy will fail and error **403 Forbidden** will be returned. The fault is described as follows:

ErrorCode: InvalidObjectState

ErrorMessage: Operation is not valid for the source object's storage class

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Request Syntax

```
PUT /destinationObjectName HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
x-obs-copy-source: /sourceBucket/sourceObject
x-obs-metadata-directive: metadata_directive
x-obs-copy-source-if-match: etag
x-obs-copy-source-if-none-match: etag
x-obs-copy-source-if-unmodified-since: time_stamp
x-obs-copy-source-if-modified-since: time_stamp
Authorization: signature
Date: date
```

Request Parameters

This request contains no parameters.

Request Headers

You can add optional headers to specify the object to be copied. **Table 3-3** describes the optional headers.

Table 5-100 Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	**Definition**: When copying an object, you can use this parameter to set a pre-defined ACL. Example: **x-obs-acl: acl** **Constraints**: Use character strings. **Range**: • private • public-read • public-read-write For details about each policy, see the "Configuring an ACL Using Header Fields" section in **ACLs**. **Default value**: private

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read	String	No	**Definition**: When copying an object, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. **Constraints**: None **Range**: None **Default value**: None
x-obs-grant-read-acp	String	No	**Definition**: When copying an object, you can use this header to grant all users in a domain the permissions to obtain the object ACL. **Constraints**: None **Range**: None **Default value**: None
x-obs-grant-write-acp	String	No	**Definition**: When copying an object, you can use this header to grant all users in a domain the permissions to write the object ACL. **Constraints**: None **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-full-control	String	No	**Definition**: When copying an object, you can use this header to grant the following permissions to all users in a domain: Permissions to read objects, obtain object metadata, obtain object ACLs, and write object ACLs. **Constraints**: None **Range**: None **Default value**: None
x-obs-copy-source	String	Yes	**Definition**: Indicates names of the source bucket and the source object. If the source object has multiple versions, the versionId parameter can be used to specify the desired version. Example: **x-obs-copy-source: /source_bucket/sourceObject** **Constraints**: Full-width characters and percent signs (%) must be URL-encoded. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-metadata-directive	String	No	**Definition**: Indicates whether the metadata of the target object is copied from the source object or replaced with the metadata contained in the request. Example: **x-obs-metadata-directive: metadata_directive** **Constraints**: Values other than **COPY** or **REPLACE** result in an immediate 400-based error response. If you need to modify the metadata (the same for both the source and target objects), this parameter must be set to **REPLACE**. Otherwise, the request is invalid and the server returns a 400 HTTP status code error. This parameter cannot change an encrypted object to a non-encrypted one (for both the source and target objects). If you use this parameter to change the encryption of an object, OBS returns a 400 error. **Range**: ● COPY ● REPLACE **Default value**: COPY
x-obs-copy-source-if-match	String	No	**Definition**: Indicates that the source object is copied only if its ETag matches the one specified in this header. Otherwise, a 412 status code (failed precondition) is returned. Example: **x-obs-copy-source-if-match: etag** **Constraints**: This parameter can be used with **x-obs-copy-source-if-unmodified-since** but cannot with other conditional copy headers. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-if-none-match	String	No	**Definition**: Indicates that the source object is copied only if its ETag does not match the one specified in this header. Otherwise, a 412 status code (failed precondition) is returned. Example: **x-obs-copy-source-if-none-match: etag** **Constraints**: This parameter can be used with **x-obs-copy-source-if-modified-since** but cannot with other conditional copy headers. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-if-unmodified-since	String	No	**Definition**: The source object is copied only if the source object has not been modified since the time specified by this parameter. Otherwise, a 412 status code (precondition failed) is returned. **Constraints**: ● The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. ● This parameter can be used with **x-obs-copy-source-if-match** but cannot with other conditional copy parameters. ● Format: HTTP time string complying with the format specified at **http://www.ietf.org/rfc/rfc2616.txt**, which can be any of the following: 1. **EEE, dd MMM yyyy HH:mm:ss z** 2. **EEEE, dd-MMM-yy HH:mm:ss z** 3. **EEE MMM dd HH:mm:ss yyyy** Examples: 1. **x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT** 2. **x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT** 3. **x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994** **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-if-modified-since	String	No	**Definition**: The source object is copied only if the source object has been modified since the time specified by this parameter. Otherwise, a 412 status code (precondition failed) is returned. **Constraints**: ● The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. ● This parameter can be used with **x-obs-copy-source-if-none-match** but cannot with other conditional copy parameters. ● Format: HTTP time string complying with the format specified at **http://www.ietf.org/rfc/rfc2616.txt**, which can be any of the following: 1. **EEE, dd MMM yyyy HH:mm:ss z** 2. **EEEE, dd-MMM-yy HH:mm:ss z** 3. **EEE MMM dd HH:mm:ss yyyy** Examples: 1. x-obs-copy-source-if-modified-since: Sun, 06 Nov 1994 08:49:37 GMT 2. x-obs-copy-source-if-modified-since: Sunday, 06-Nov-94 08:49:37 GMT 3. x-obs-copy-source-if-modified-since: Sun Nov 6 08:49:37 1994 **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	**Definition**: When copying an object, you can use this header to specify the storage class for the object. If you do not use this header, the object storage class is the default storage class of the destination bucket where the object is copied to. Example: **x-obs-storage-class: STANDARD** **Constraints**: The value is case-sensitive. **Range**: ● STANDARD ● WARM ● COLD **Default value**: By default, the storage class of the bucket is inherited.
x-obs-website-redirect-location	String	No	**Definition**: If a bucket is configured with the static website hosting function, it will redirect requests for this object to another object in the same bucket or to an external URL. OBS stores the value of this header in the object metadata. **Constraints**: The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2K. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	**Definition**: Indicates that SSE-KMS is used for server-side encryption. Objects are encrypted using SSE-KMS. Example: **x-obs-server-side-encryption: kms** **Constraints**: None **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	No	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-bucket-key-enabled	String	No	**Definition**: Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled. **Default value**: false

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: The algorithm used to encrypt a target object. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: ● This header is used only when SSE-C is used. ● This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: The key used to encrypt a target object. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: The MD5 value of the key used to encrypt a target object. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: MD5 value of the key. **Default value**: None
x-obs-copy-source-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used to copy a source object.	**Definition**: Indicates the algorithm used to decrypt a source object. Example: x-obs-copy-source-server-side-encryption-customer-algorithm: AES256 **Constraints**: ● This header is used only when SSE-C is used. ● This header must be used together with **x-obs-copy-source-server-side-encryption-customer-key** and **x-obs-copy-source-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used to copy a source object.	**Definition**: Indicates the key used to decrypt a source object. Example: **x-obs-copy-source-server-side-encryption-customer-key: K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 256-bit key and must be used together with **x-obs-copy-source-server-side-encryption-customer-algorithm** and **x-obs-copy-source-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None
x-obs-copy-source-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used to copy a source object.	**Definition**: Indicates the MD5 value of the key used to decrypt a source object. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-copy-source-server-side-encryption-customer-algorithm** and **x-obs-copy-source-server-side-encryption-customer-key**. **Range**: MD5 value of the key. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
success-action-redirect	String	No	**Definition**: The redirection address used when requests were successfully responded to. ● If the value is valid and the request is successful, OBS returns status code 303. **Location** contains **success_action_redirect** as well as the bucket name, object name, and object ETag. ● If this parameter value is invalid, OBS ignores this parameter. In such case, the **Location** header is the object address, and OBS returns the response code based on whether the operation succeeds or fails. **Constraints**: The value must be a valid URL, for example, **http://***domainname* or **https://***domainname*. **Range**: URL **Default value**: None
x-obs-tagging-directive	String	No	**Definition**: Used to specify how object tags are copied. If this header is not contained, tags are not copied from source objects to destination ones. Example: **x-obs-tagging-directive:COPY** **Constraints**: None **Range**: ● **COPY**: Tags of source objects are copied to the target objects. ● **REPLACE**: The tags specified in the request are added to the target objects. **Default value**: REPLACE

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Header	Type	Mandatory (Yes/No)	Description
x-obs-object-lock-mode	String	No, but required when **x-obs-object-lock-retain-until-date** is present	**Definition**: WORM mode applied to the object. Example: **x-obs-object-lock-mode:COMPLIANCE** **Constraints**: This parameter must be used together with **x-obs-object-lock-retain-until-date**. **Range**: COMPLIANCE **Default value**: None
x-obs-object-lock-retain-until-date	String	No, but required when **x-obs-object-lock-mode** is present.	**Definition**: When the WORM policy of the object expires. Example: **x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z** **Constraints**: ● The value must be a UTC time that complies with the ISO 8601 standard. Example: **2015-07-01T04:11:15Z** ● This parameter must be used together with **x-obs-object-lock-mode**. **Range**: The time must be later than the current time. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	**Definition**: Object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: **x-obs-tagging:TagA=A&TagB&TagC** **Constraints**: • If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. • If there is no equal sign (=) in a configuration, the tag value is considered left blank. **Range**: None **Default value**: None

For details about other headers, see **Table 3-3**.

Request Elements

This request contains no elements.

Response Syntax

```
HTTP/1.1 status_code
Content-Type: application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CopyObjectResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <LastModified>modifiedDate</LastModified>
   <ETag>etagValue</ETag>
</CopyObjectResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-101** may be used.

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Table 5-101 Additional response headers

Header	Type	Description
x-obs-copy-source-version-id	String	**Definition**: Version ID of the source object **Constraints**: None **Range**: None **Default value**: None
x-obs-version-id	String	**Definition**: Version ID of the target object **Constraints**: None **Range**: None **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption: kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None

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Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: The MD5 value of the key used for encryption. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

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Header	Type	Description
x-obs-storage-class	String	**Definition**: Storage class of an object. **Constraints**: This header is returned when the storage class of an object is not Standard. **Range**: • WARM • COLD **Default value**: Storage class of an object.

Response Elements

This response contains elements of a copy result. **Table 5-102** describes the elements.

Table 5-102 Response elements

Element	Type	Description
CopyObjectResult	XML	**Definition**: The copy results **Constraints**: None **Range**: None **Default value**: None
LastModified	String	**Definition**: Time (UTC) when an object was last modified **Constraints**: The date is in the ISO8601 format. Example: **2018-01-01T00:00:00.000Z** **Range**: None **Default value**: None

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Element	Type	Description
ETag	String	**Definition**: 128-bit MD5 digest of the Base64 code of a new object. ETag is the unique identifier of the object content. It can be used to determine whether the object content is changed. For example, if the ETag value is **A** when an object is uploaded, but this value has changed to **B** when the object is downloaded, it indicates that the object content has been changed. **Constraints**: If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Range**: The value must contain 32 characters. **Default value**: None

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Copying an Object

Copy the object **srcobject** in bucket **bucket** to the **destobject** object in bucket **examplebucket**.

```
PUT /destobject HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:19:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:2rZR+iaH8xUewvUKuicLhLHpNoU=
x-obs-copy-source: /bucket/srcobject
```

Sample Response: Copying an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 001B21A61C6C00000134031BE8005293
x-obs-id-2: MDAxQjIxQTYxQzZDMDAwMDAxMzQwMzFCRTgwMDUyOTNBQUFBQUFBQWJiYmJiYmJi
Date: WED, 01 Jul 2015 04:19:21 GMT
Content-Length: 249

<?xml version="1.0" encoding="utf-8"?>
<CopyObjectResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <LastModified>2015-07-01T00:48:07.706Z</LastModified>
  <ETag>"507e3fff69b69bf57d303e807448560b"</ETag>
</CopyObjectResult>
```

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Sample Request: Copying an Object Version

Copy a multi-version object and copy the object **srcobject** whose version number is **AAABQ4uBLdLc0vycq3gAAAAEVURTRkha** in bucket **bucket** to the **destobject** object in bucket **examplebucket**.

```
PUT /destobject HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:20:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:4BLYv+1UxfRSHBMvrhVLDszxvcY=
x-obs-copy-source: /bucket/srcobject?versionId=AAABQ4uBLdLc0vycq3gAAAAEVURTRkha
```

Sample Response: Copying an Object Version

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: DCD2FC9CAB78000001438B8A9C898B79
x-obs-id-2: DB/qBZmbN6AIoX9mrrSNYdLxwvbO0tLR/l6/XKTT4NmZspzharwp5Z74ybAYVOgr
Content-Type: application/xml
x-obs-version-id: AAABQ4uKnOrc0vycq3gAAAAFVURTRkha
x-obs-copy-source-version-id: AAABQ4uBLdLc0vycq3gAAAAEVURTRkha
Date: WED, 01 Jul 2015 04:20:29 GMT
Transfer-Encoding: chunked

<?xml version="1.0" encoding="utf-8"?>
<CopyObjectResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <LastModified>2015-07-01T01:48:07.706Z</LastModified>
  <ETag>"507e3fff69b69bf57d303e807448560b"</ETag>
</CopyObjectResult>
```

5.4.4 Downloading an Object

Functions

This operation downloads an object from OBS. Before using this GET operation, check that you have the read permission for the target object. If the object owner has granted anonymous users the read permission for the object, anonymous users can access this object without using the authentication header field.

Server-Side Encryption

If the object uploaded to the server is encrypted on the server using the encryption key provided by the client, downloading the object requires including the encryption key in the message.

Versioning

By default, the GET operation returns the current version of an object. If the current version of the object is a delete marker, OBS returns a code meaning that the object does not exist. To obtain an object of a specified version, the **versionId** parameter can be used to specify the desired version.

Archive Objects

If the object you want to download is in the Archive storage class, ensure that this object has been restored before you download it. The response varies depending on the object's restore state. If an object has been restored, the **x-obs-restore**

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header (indicating the expiry date of the object) is returned when the object is successfully downloaded. If you send a request to download Archive objects that have not been restored or are being restored, a **403 Forbidden** error will be returned.

Request Syntax

```
GET /ObjectName HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Range:bytes=byte_range
<Optional Additional Header>
```

NOTE

The **Range** field is optional. If it is not specified, the entire object is downloaded.

Request Parameters

In a **GET** request, you can override values for a set of message headers using the request parameters. Message headers that you can override are **Content-Type**, **Content-Language**, **Expires**, **Cache-Control**, **Content-Disposition**, and **Content-Encoding**. If the target object has multiple versions, use the **versionId** parameter to specify the version to be downloaded. For details, see **Table 5-103**.

NOTE

OBS does not process Accept-Encoding carried in a request or compress or decompress the uploaded data. The client determines whether to compress or decompress the data. Some HTTP clients may decompress data based on the Content-Encoding returned by the server. The client program needs to determine whether to decompress and how to decompress the data. To decompress the data, it can modify Content-Encoding (the object metadata stored in OBS) or rewrite Content-Encoding the object is downloaded. If an object download request specifies the rewrite header, the standard HTTP message header returned by OBS is subject to the rewrite content specified in the request.

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Table 5-103 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
response-content-type	String	No	**Definition**: **Content-Type** is rewritten in the response. **Constraints**: None **Range**: See the Content-Type values defined in HTTP. **Default value**: None
response-content-language	String	No	**Definition**: **Content-Language** is rewritten in the response. **Constraints**: None **Range**: See the Content-Language values defined in HTTP. **Default value**: None
response-expires	String	No	**Definition**: **Expires** is rewritten in the response. **Constraints**: None **Range**: See the Expires values defined in HTTP. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
response-cache-control	String	No	**Definition**: **Cache-Control** is rewritten in the response. **Constraints**: None **Range**: See the Cache-control values defined in HTTP. **Default value**: None
response-content-disposition	String	No	**Definition**: **Content-Disposition** is rewritten in the response. Example: response-content-disposition=attachment; filename*=utf-8''name1 In this example, the downloaded object is renamed **name1**. If the new name contains any full-width characters, such characters must be URL-encoded. **Constraints**: None **Range**: None **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
response-content-encoding	String	No	**Definition**: **Content-Encoding** is rewritten in the response. **Constraints**: None **Range**: See the Content-Encoding values defined in HTTP. **Default value**: None
versionId	String	No	**Definition**: Indicates the version ID of the object to be obtained. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None. If this parameter is not configured, the latest version of the object is obtained.
attname	String	No	**Definition**: **Content-Disposition** is rewritten in the response. Example: attname=name1 This example renames the downloaded object as **name1**. **Constraints**: None **Range**: None **Default value**: None

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Request Headers

This request uses common headers. In addition, you can add additional headers to this request. **Table 5-104** describes the additional headers.

Table 5-104 Request headers

Header	Type	Mandatory (Yes/No)	Description
Range	String	No	**Definition**: Obtains the object content within the scope defined by **Range**. If the parameter value is invalid, the entire object is obtained. **Constraints**: • **Range** value starts from 0, and the maximum value equals the object length minus 1. The start value of **Range** is mandatory. If only the start value is specified, the system obtains the object content from the start value to default maximum value. bytes=byte_range Example 1: **bytes=0-4** Example 2: **bytes=1024** Example 3: **bytes=10-20, 30-40** (multiple ranges) • After the **Range** header field is carried, the value of ETag in the response message is the ETag of the object instead of the ETag of the object in the **Range** field. **Range**: **Range** value starts from 0, and the maximum value equals the object length minus 1. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
If-Modified-Since	HTTP time string complying with the format specified at **http://www.ietf.org/rfc/rfc2616.txt**.	No	**Definition**: Returns the object only if it has been modified since the time specified by this header. Otherwise, **304 Not Modified** is returned. **Constraints**: The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. **Range**: HTTP time string complying with the format specified at **http://www.ietf.org/rfc/rfc2616.txt**. 1. EEE, dd MMM yyyy HH:mm:ss z 2. EEEE, dd-MMM-yy HH:mm:ss z 3. EEE MMM dd HH:mm:ss yyyy Examples: 1. if-modified-since: Sun, 06 Nov 1994 08:49:37 GMT 2. if-modified-since: Sunday, 06-Nov-94 08:49:37 GMT 3. if-modified-since: Sun Nov 6 08:49:37 1994 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
If-Unmodified-Since	HTTP time string complying with the format specified at **http://www.ietf.org/rfc/rfc2616.txt**.	No	**Definition**: If the object has not been modified since the time specified by this header, it is returned. Otherwise, 412 (precondition failed) is returned. **Constraints**: The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. **Range**: HTTP time string complying with the format specified at **http://www.ietf.org/rfc/rfc2616.txt**. 1. EEE, dd MMM yyyy HH:mm:ss z 2. EEEE, dd-MMM-yy HH:mm:ss z 3. EEE MMM dd HH:mm:ss yyyy Examples: 1. if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT 2. if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT 3. if-unmodified-since: Sun Nov 6 08:49:37 1994 **Default value**: None
If-Match	String	No	**Definition**: Returns the object only if its ETag is the same as the one specified by this header. Otherwise, **412 Precondition Failed** is returned. ETag example: **0f64741bf7cb1089e988e4585d0d3434** **Constraints**: None **Range**: Object ETag **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
If-None-Match	String	No	**Definition**: Returns the object only if its ETag is different from the one specified by this header. Otherwise, **304 Not Modified** is returned. ETag example: **0f64741bf7cb1089e988e4585d0d3434** **Constraints**: None **Range**: Object ETag **Default value**: None
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the encryption algorithm used when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the encryption key used when SSE-C is used. This key is used to decrypt objects. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the MD5 value of the encryption key when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

Request Elements

This request involves no elements.

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Response Syntax

```
HTTP/1.1 status_code
Content-Type: type
Date: date
Content-Length: length
Etag: etag
Last-Modified: time

<Object Content>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-105** may be used.

Table 5-105 Additional response headers

Header	Type	Description
x-obs-expiration	String	**Definition**: Expiration time of an object. **Constraints**: When an object has its lifecycle rule, the object expiration time is subject to its lifecycle rule. This header field is use **expiry-date** to describe the object expiration date. If the lifecycle rule is configured only for the entire bucket not individual objects, the object expiration time is subject to the bucket lifecycle rule. This header field uses the **expiry-date** and **rule-id** to describe the detailed expiration information of objects. If no lifecycle rule is configured, this header field is not contained in the response. **Range**: The time format is EEE, dd MMM yyyy HH:mm:ss z. Example: **expiry-date=Sun, 06 Nov 1994 08:49:37 GMT** **Default value**: None

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Header	Type	Description
x-obs-website-redirect-location	String	**Definition**: Indicates where an object request is redirected. If the bucket that contains the object is configured with Website settings, this parameter can be set in the object metadata so that the request for the object can be redirected to another object in the same bucket or an external URL after the website returns a 301 redirect response. To another object in the same bucket: x-obs-website-redirect-location:/anotherPage.html To an external URL: x-obs-website-redirect-location:http://www.example.com/ OBS obtains the specified value from the header and stores it in the object metadata **WebsiteRedirectLocation**. **Constraints**: ● The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. ● OBS supports redirection for objects in the root directory of a bucket, not for those in folders. **Default value**: None
x-obs-delete-marker	Boolean	**Definition**: Whether the deleted object is a delete marker. If the object is not marked as deleted, the response does not contain this header. **Range**: ● **true**: The deleted object is a delete marker. ● **false**: The deleted object is not a delete marker. **Default value**: false

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Header	Type	Description
x-obs-version-id	String	**Definition**: Object version ID. **Constraints**: If the object has no version number specified, the response does not contain this header. **Range**: The value must contain 32 characters. **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

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Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: Indicates a decryption algorithm. This header is included in a response if SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: None **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: Indicates the MD5 value of a key used to decrypt objects. This header is included in a response if SSE-C is used. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None
x-obs-object-type	String	**Definition**: Object type **Constraints**: This header is returned when the object is not a Normal object. **Range**: • Appendable: objects generated by appending **Default value**: None

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Header	Type	Description
x-obs-next-append-position	Integer	**Definition**: Indicates the position that should be provided in the next request. **Constraints**: This header field is returned when the object is an appendable object. **Range**: None **Default value**: None
x-obs-tagging-count	String	**Definition**: Number of tags associated with an object. Example: **x-obs-tagging-count:1** **Constraints**: This parameter is returned only when the user has the permission to read tags. **Range**: None **Default value**: None

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Downloading an Object

```
GET /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
```

Sample Response: Downloading an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E
Accept-Ranges: bytes
```

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```
ETag: "3b46eaf02d3b6b1206078bb86a7b7013"
Last-Modified: WED, 01 Jul 2015 01:20:29 GMT
Content-Type: binary/octet-stream
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSQwxJ2I1VvxD/Xgwuw2G2RQax30gdXU
Date: WED, 01 Jul 2015 04:24:33 GMT
Content-Length: 4572

[4572 Bytes object content]
```

Sample Request: Downloading a Specified Range of an Object

Download the specified range of an object (download a range of an object).

```
GET /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Mon, 14 Sep 2020 09:59:04 GMT
Range:bytes=20-30
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mNPLWQMDWg30PTkAWiqJaLl3ALg=
```

Download the specified range of an object (download multiple ranges of an object).

```
GET /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Mon, 14 Sep 2020 10:02:43 GMT
Range:bytes=20-30,40-50
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:ZwM7Vk2d7sD9o8zRsRKehgKQDkk=
```

Sample Response: Downloading a Specified Range of an Object

Download the specified range of an object (download a range of an object).

```
HTTP/1.1 206 Partial Content
Server: OBS
x-obs-request-id: 000001748C0DBC35802E360C9E869F31
Accept-Ranges: bytes
ETag: "2200446c2082f27ed2a569601ca4e360"
Last-Modified: Mon, 14 Sep 2020 01:16:20 GMT
Content-Range: bytes 20-30/4583
Content-Type: binary/octet-stream
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSn2JHu4okx9NBRNZAvBGawa3lt3g31g
Date: Mon, 14 Sep 2020 09:59:04 GMT
Content-Length: 11

[ 11 Bytes object content]
```

Download the specified range of an object (download multiple ranges of an object).

```
HTTP/1.1 206 Partial Content
Server: OBS
x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E
Accept-Ranges: bytes
ETag: "2200446c2082f27ed2a569601ca4e360"
Last-Modified: Mon, 14 Sep 2020 01:16:20 GMT
Content-Type: multipart/byteranges;boundary=35bcf444-e65f-4c76-9430-7e4a68dd3d26
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSIBWFOVW8eeWujkqSnoIANC2mNR1cdF
Date: Mon, 14 Sep 2020 10:02:43 GMT
Content-Length: 288

--35bcf444-e65f-4c76-9430-7e4a68dd3d26
Content-type: binary/octet-stream
Content-range: bytes 20-30/4583
```

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```
[ 11 Bytes object content]
--35bcf444-e65f-4c76-9430-7e4a68dd3d26
Content-type: binary/octet-stream
Content-range: bytes 40-50/4583
[ 11 Bytes object content]
--35bcf444-e65f-4c76-9430-7e4a68dd3d26
```

Sample Request: Checking the ETag Value of an Object

Download an object if its ETag value is matched.

```
GET /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
If-Match: 682e760adb130c60c120da3e333a8b09
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
```

Sample Response: Checking the ETag Value of an Object (ETag Mismatch)

If the object's ETag value is not **682e760adb130c60c120da3e333a8b09**, the system displays a download failure message.

```
HTTP/1.1 412 Precondition Failed
Server: OBS
x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E
Content-Type: application/xml
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSQwxJ2I1VvxD/Xgwuw2G2RQax30gdXU
Date: WED, 01 Jul 2015 04:20:51 GMT

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Error>
  <Code>PreconditionFailed</Code>
  <Message>At least one of the pre-conditions you specified did not hold</Message>
  <RequestId>8DF400000163D3F2A89604C49ABEE55E</RequestId>
  <HostId>ha0ZGaSKVm+uLOrCXXtx4Qn1aLzvoeblctVXRAqA7pty10mzUUW/yOzFue04lBqu</HostId>
  <Condition>If-Match</Condition>
</Error>
```

Sample Response: Checking the ETag Value of an Object (ETag Matched)

If the object's ETag value is **682e760adb130c60c120da3e333a8b09**, the download is successful.

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 5DEB00000164A21E1FC826C58F6BA001
Accept-Ranges: bytes
ETag: "682e760adb130c60c120da3e333a8b09"
Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT
Content-Type: application/octet-stream
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSbkdml1sLSvKnoHaRcOwRI+6+ustDwk
Date: Mon, 16 Jul 2015 08:04:00 GMT
Content-Length: 8

[ 8 Bytes object content]
```

Sample Request: Downloading an Object Using a Signed URL

```
GET /object02?
AccessKeyId=H4IPJX0TQTHTHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrzrzRNZxwS72CXeXM%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
```

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```
Accept: */*
Date: Fri, 27 Jul 2018 10:52:31 GMT
```

Sample Response: Downloading an Object Using a Signed URL

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 804F00000164DB5E5B7FB908D3BA8E00
ETag: "682e760adb130c60c120da3e333a8b09"
Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT
Content-Type: application/octet-stream
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxILjhVK/heKOWIP8Wn2IWmQoerfw
Date: Fri, 27 Jul 2018 10:52:31 GMT
Content-Length: 8

[ 8 Bytes object content]
```

Sample Request: Downloading an Object and Renaming It (with response-content-disposition Used)

Use the response-content-disposition parameter to download and rename an object.

```
GET /object01?response-content-disposition=attachment; filename*=utf-8''name1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
```

Sample Response: Downloading an Object and Renaming It (with response-content-disposition Used)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 804F00000164DB5E5B7FB908D3BA8E00
ETag: "682e760adb130c60c120da3e333a8b09"
Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT
Content-Type: application/octet-stream
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxILjhVK/heKOWIP8Wn2IWmQoerfw
Date: Fri, 27 Jul 2018 10:52:31 GMT
Content-Length: 8
Content-Disposition: attachment; filename*=utf-8''name1

[ 8 Bytes object content]
```

Sample Request: Downloading an Object and Renaming It (with attname Used)

Use the attname parameter to download and rename an object.

```
GET /object01?attname=name1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
```

Sample Response: Downloading an Object and Renaming It (with attname Used)

```
HTTP/1.1 200 OK
Server: OBS
```

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```
x-obs-request-id: 804F00000164DB5E5B7FB908D3BA8E00
ETag: "682e760adb130c60c120da3e333a8b09"
Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT
Content-Type: application/octet-stream
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxILjhVK/heKOWIP8Wn2IWmQoerfw
Date: Fri, 27 Jul 2018 10:52:31 GMT
Content-Length: 8
Content-Disposition: attachment; filename*=utf-8''name1

[ 8 Bytes object content]
```

Sample Request: Sending a Request That Includes Custom Response Headers

```
GET /obj001?response-expires=Thu%2C%2001%20Feb%202015%2017%3A00%3A00%20GMT HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 02:37:22 GMT
Authorization: OBS UDSIAMSTUBTEST000003:2tod8LyZOGA0+46HMjmp176XRaI=
```

Sample Response: Sending a Request That Includes Custom Response Headers

```
Server: OBS
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65
Accept-Ranges: bytes
ETag: "21e7e5efb6b73de19e691d6c4e32a9cf"
Content-Disposition: attachment
Date: WED, 01 Jul 2015 02:37:22 GMT
Expires: Thu, 01 Feb 2015 17:00:00 GMT
Content-Type: binary/octet-stream
Content-Length: 392

[392 Bytes object content]
```

Sample Request: Specifying a Version ID to Download a Specific Object Version

```
GET /obj001?versionId=G001118A6803675AFFFFD3043F7F91D0 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 02:37:22 GMT
Authorization: OBS UDSIAMSTUBTEST000003:2tod8LyZOGA0+46HMjmp176XRaI=
```

Sample Response: Specifying a Version ID to Download a Specific Object Version

```
Server: OBS
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65
Accept-Ranges: bytes
x-obs-version-id: G001118A6803675AFFFFD3043F7F91D0
ETag: "21e7e5efb6b73de19e691d6c4e32a9cf"
Content-Disposition: attachment
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: binary/octet-stream
Content-Length: 392

[392 Bytes object content]
```

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Sample Request: Downloading an Object Stored Using Server-Side Encryption

```
GET /obj001 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 02:37:22 GMT
Authorization: OBS UDSIAMSTUBTEST000003:2tod8LyZOGA0+46HMjmp176XRaI=
x-obs-server-side-encryption-customer-key:d09s2lKS9cmQO9135fQXMCV8fsOP02aDWd441g
x-obs-server-side-encryption-customer-key-MD5:ZjQpad35Fiw1322Fwa
x-obs-server-side-encryption-customer-algorithm:AES256
```

Sample Response: Downloading an Object Stored Using Server-Side Encryption

```
Server: OBS
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65
Accept-Ranges: bytes
ETag: "21e7e5efb6b73de19e691d6c4e32a9cf"
Content-Disposition: attachment
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: binary/octet-stream
Content-Length: 392
x-obs-server-side-encryption-customer-key-MD5:ZjQpad35Fiw1322Fwa
x-obs-server-side-encryption-customer-algorithm:AES256

[392 Bytes object content]
```

5.4.5 Querying Object Metadata

Functions

Users with the read permission on objects can perform the HeadObject operation to obtain metadata of objects. The object metadata is included in the response.

SSE-C headers are required if you want to obtain the metadata of an object encrypted using SSE-C. For details, see **Table 5-107**.

Versioning

By default, this operation returns the latest metadata of an object. If the object has a delete marker, status code 404 is returned. To obtain the object metadata of a specified version, the **versionId** parameter can be used to specify the desired version.

Request Syntax

```
HEAD /ObjectName HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

Table 5-106 describes the request parameters.

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Table 5-106 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Definition**: Version ID of the object. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

In addition, the request can use additional headers shown in **Table 5-107**.

Table 5-107 Request headers

Header	Type	Mandatory (Yes/No)	Description
Origin	String	No	**Definition**: Origin specified in a preflight request that makes a cross-domain request, usually as a domain name. **Constraints**: You can enter multiple origins, with one separated from another using a line break. Each origin can contain at most one wildcard character (*). **Range**: The value that complies with the CORS **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
Access-Control-Request-Headers	String	No	**Definition**: Indicates the HTTP headers that are allowed in a request. The request can use multiple HTTP headers. **Constraints**: You can enter multiple allowed headers, with one separated from another using a line break. Each header can contain at most one wildcard character (*). Spaces, ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: The value that complies with the CORS **Default value**: None
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the decryption algorithm used when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the decryption key used when SSE-C is used. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the MD5 value of the decryption key when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

Request Elements

This request involves no elements.

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Response Syntax

```
HTTP/1.1 status_code
Content-Type: type
Date: date
Content-Length: length
Etag: etag
Last-Modified: time
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-108** may be used.

Table 5-108 Additional response headers

Header	Type	Description
x-obs-expiration	String	**Definition**: Expiration details **Constraints**: None **Range**: When an object has its lifecycle rule, the object expiration time is subject to its lifecycle rule. This header field is use **expiry-date** to describe the object expiration date. If the lifecycle rule is configured only for the entire bucket not individual objects, the object expiration time is subject to the bucket lifecycle rule. This header field uses the **expiry-date** and **rule-id** to describe the detailed expiration information of objects. If no lifecycle rule is configured, this header field is not contained in the response. **Default value**: None

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Header	Type	Description
x-obs-website-redirect-location	String	**Definition**: Indicates where an object request is redirected. If the bucket that contains the object is configured with Website settings, this parameter can be set in the object metadata so that the request for the object can be redirected to another object in the same bucket or an external URL after the website returns a 301 redirect response. To another object in the same bucket: x-obs-website-redirect-location:/anotherPage.html To an external URL: x-obs-website-redirect-location:http://www.example.com/ OBS obtains the specified value from the header and stores it in the object metadata **WebsiteRedirectLocation**. **Constraints**: ● The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. ● OBS supports redirection for objects in the root directory of a bucket, not for those in folders. **Default value**: None
x-obs-version-id	String	**Definition**: Version ID of the object. If the object has no version number specified, the response does not contain this header. **Constraints**: The value must contain 32 characters. **Range**: None **Default value**: None

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Header	Type	Description
Access-Control-Allow-Origin	String	**Definition**: Returned if the request origin meets the CORS configured on the server. **Constraints**: None **Range**: The value that complies with the CORS **Default value**: None
Access-Control-Allow-Headers	String	**Definition**: Returned if the request headers meet the CORS configured on the server. **Constraints**: At most one asterisk (*) is allowed. Spaces, ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: The value that complies with the CORS **Default value**: None
Access-Control-Max-Age	Integer	**Definition**: **MaxAgeSeconds** in the CORS rules of the bucket. It specifies the time your client can cache the response for a cross-origin request. **Constraints**: Each CORS rule can contain at most one **MaxAgeSeconds**. **Range**: An integer greater than or equal to 0, in seconds **Default value**: 3000

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Header	Type	Description
Access-Control-Allow-Methods	String	**Definition**: Indicates that methods in the rule are included in the response if Access-Control-Request-Method in the request meets the CORS configuration requirements when CORS is configured for buckets. **Range**: • GET • PUT • HEAD • POST • DELETE
Access-Control-Expose-Headers	String	**Definition**: **ExposeHeader** in the CORS rules of the bucket. It specifies additional headers allowed in the response by a CORS rule, which are used to provide extra information to clients. By default, a browser can access only headers **Content-Length** and **Content-Type**. If the browser needs to access other headers, you need to configure them as additional headers. **Constraints**: Spaces, asterisks (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. **Range**: None **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None

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Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: Indicates a decryption algorithm. This header is included in a response if SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: None **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: Indicates the MD5 value of a key used to decrypt objects. This header is included in a response if SSE-C is used. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: Base64-encoded MD5 value of the key, for example, **4XvB3tbNTN+tIEVa0/fGaQ==**. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

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Header	Type	Description
x-obs-storage-class	String	**Definition**: Storage class of an object. **Constraints**: This header is returned only when the storage class of an object is not Standard. **Range**: • WARM • COLD **Default value**: None
x-obs-restore	String	**Definition**: Restore status of an object. For example, **ongoing-request="true"** indicates that the object is being restored. **ongoing-request="false", expiry-date="Wed, 7 Nov 2012 00:00:00 GMT"** indicates that the object has been restored, where **expiry-date** indicates when the restored object expires. **Constraints**: This header is returned only when Archive objects are being restored or has been restored. **Range**: None **Default value**: None
x-obs-object-type	String	**Definition**: Object type **Constraints**: This header is returned only when the object is not a Normal object. **Range**: • Appendable: objects generated by appending **Default value**: None

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Header	Type	Description
x-obs-next-append-position	Integer	**Definition**: Indicates the position that should be provided in the next request. **Constraints**: This header is returned only when the object is an Appendable object. **Range**: None **Default value**: None
x-obs-uploadId	String	**Definition**: Indicates the ID of a multipart task. **Constraints**: This header is returned only when the object is created from a multipart upload. **Range**: None **Default value**: None
x-obs-tagging-count	String	**Definition**: Number of tags associated with an object. Example: **x-obs-tagging-count:1** **Constraints**: This header is returned only when you have the permission to read tags. **Range**: None **Default value**: None

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Header	Type	Description
x-obs-object-lock-mode	String	**Definition**: WORM mode applied to the object. Example: **x-obs-object-lock-mode:COMPLIANCE** **Constraints**: • This parameter is returned only when the object has any object-level WORM retention policy configured or has a default bucket-level WORM policy applied. • The user must have the GetObjectRetention permission. **Range**: Currently, only COMPLIANCE (compliance mode) is supported. **Default value**: None
x-obs-object-lock-retain-until-date	String	**Definition**: When an object lock expires. Example: **x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z** **Constraints**: • The value must be a UTC time that complies with the ISO 8601 standard. Example: **2015-07-01T04:11:15Z** • This parameter is returned only when the object has any object-level WORM retention policy configured or has a default bucket-level WORM policy applied. • The user must have the GetObjectRetention permission. **Range**: The value must be later than the current time. **Default value**: None

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
HEAD /object1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:19:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:/cARjk81l2iExMfQqn6iT3qEZ74=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E4BB5905C41B6E65B6
Accept-Ranges: bytes
ETag: "3b46eaf02d3b6b1206078bb86a7b7013"
Last-Modified: WED, 01 Jul 2015 01:19:21 GMT
Content-Type: binary/octet-stream
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSD3nAiTaBoeyt9oHp9vTYtXnLDmwV6D
Date: WED, 01 Jul 2015 04:19:21 GMT
Content-Length: 4572
```

Sample Request: Obtaining Object Metadata from a Versioning-enabled Bucket

```
HEAD /object1?versionId=G001118A49821905FFFFD28739D419DA HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

Sample Response: Obtaining Object Metadata from a Versioning-enabled Bucket

```
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShLiL70qeT0g5qpMquCeztsnr1jJmRs
Accept-Ranges: bytes
x-obs-request-id: 0000018A4986DDCDD24538ACF6B54255
Server: OBS
ETag: \
x-obs-tagging-count: 0
Last-Modified: Thu, 31 Aug 2013 02:52:57 GMT
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: text/plain
x-obs-version-id: G001118A49821905FFFFD28739D419DA
```

5.4.6 Deleting an Object

Functions

You can perform this operation to delete an object. If you try to delete an object that does not exist, OBS will return a success message.

Versioning

When versioning is enabled for a bucket, a delete request that does not specify a version ID cannot permanently delete the object. Instead, OBS creates a delete

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marker with a unique version ID. When versioning is suspended for a bucket, a delete request that does not specify a version ID deletes the object whose version ID is **null** and creates a delete marker with a version ID of **null**.

To delete an object of a specified version, the **versionId** parameter can be used to specify the desired version.

WORM

OBS automatically enables versioning when you enable WORM for a bucket. If you delete an object without specifying a version ID, OBS does not really delete this object thanks to versioning, but inserts a delete marker with a unique version ID, which turns into the current version. If you specify a version ID when deleting an object protected by WORM, OBS prevents you from deleting this object and returns a 403 error. Delete markers are not protected by WORM.

Request Syntax

```
DELETE /ObjectName HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

Table 5-109 describes the request parameters.

NOTICE

For deleting an object, only parameters listed in **Table 5-109** are supported. If the request contains parameters that cannot be identified by OBS, the server returns the 400 error code.

Table 5-109 Request parameters

Parameter	Description	Mandatory
versionId	**Definition**: Version ID of the object to be deleted. Type: string **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None	No

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Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

If versioning is enabled for the bucket, the headers listed in **Table 5-110** may also be used.

Table 5-110 Additional response headers

Header	Description
x-obs-delete-marker	**Definition**: Whether an object has a delete marker. If the object is not marked as deleted, the response does not contain this header. Type: boolean **Constraints**: None **Range**: • **true** • **false** **Default value**: false
x-obs-version-id	**Definition**: Object version ID. If the object has no version number specified, the response does not contain this header. Type: string **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None

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Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
DELETE /object2 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:19:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:MfK9JCnSFHCrJmjv7iRkRrrce2s=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 8DF400000163D3F51DEA05AC9CA066F1
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSgkM4Dij80gAeFY8pAZIwx72QhDeBZ5
Date: WED, 01 Jul 2015 04:19:21 GMT
```

Sample Request: Specifying versionId to Delete a Specific Object Version

```
DELETE /object2?versionId=G001118A49821905FFFFD28739D419DA HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

Sample Response: Specifying versionId to Delete a Specific Object Version

```
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50
x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F
Server: OBS
Date: WED, 01 Jul 2015 02:37:22 GMT
x-obs-version-id: G001118A49821905FFFFD28739D419DA
```

Sample Request: Specifying versionId to Delete a Delete Marker

```
DELETE /object2?versionId=G001118A6456208AFFFFD24829FCF614
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

Sample Response: Specifying versionId to Delete a Delete Marker

```
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50
x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F
Server: OBS
Date: WED, 01 Jul 2015 02:37:22 GMT
x-obs-version-id: G001118A6456208AFFFFD24829FCF614
```

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5.4.7 Deleting Objects

Functions

This operation can be used to batch delete some objects in a bucket. The deletion cannot be undone. After the operation is implemented, the returned information contains the implementation result of each object in the specified bucket. OBS deletes the objects synchronously. The deletion result of each object is returned to the request user.

Objects in batches can be deleted in **verbose** or **quiet** mode. With **verbose** mode, OBS returns results of successful and failed deletion in an XML response; with **quiet** mode, OBS only returns results of failed deletion in an XML response. OBS uses the **verbose** mode by default and you can specify the **quiet** mode in the request body.

For batch deletion, the request header must contain **Content-SHA256** and **Content-Length**, so that the message body can be identified if network transmission error is detected at the server side.

Request Syntax

```
POST /?delete HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
Content-SHA256: SHA256
Content-Length: length

<?xml version="1.0" encoding="UTF-8"?>
<Delete>
   <Quiet>true</Quiet>
   <Object>
      <Key>Key</Key>
      <VersionId>VersionId</VersionId>
   </Object>
   <Object>
      <Key>Key</Key>
   </Object>
</Delete>
```

Request Parameters

This request involves no parameters.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request uses elements to specify the list of objects to be deleted in a batch. **Table 5-111** describes the elements.

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Table 5-111 Request elements

Parameter	Mandatory (Yes/No)	Type	Description
Delete	Yes	XML	**Definition**: List of objects to be deleted. Delete is the parent node of Object and Quiet. **Constraints**: None **Range**: For details, see **Table 5-112**. **Default value**: None

Table 5-112 Delete parameters

Parameter	Mandatory (Yes/No)	Type	Description
Quiet	No	Boolean	**Definition**: Whether to use the quiet mode. If this parameter is set to True, only the results of objects that fail to be deleted are returned. **Constraints**: If this parameter is not set, the default value False is used. If the value is False, the system ignores the value. **Range**: • True: Only the results of objects that fail to be deleted are returned. • False: All object results are returned. **Default value**: False

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Parameter	Mandatory (Yes/No)	Type	Description
Object	Yes	XML	**Definition**: Object to be deleted. Object is the parent node of Key and VersionId. **Constraints**: None **Range**: For details, see **Table 5-113**. **Default value**: None

Table 5-113 Object parameters

Parameter	Mandatory (Yes/No)	Type	Description
Key	Yes	String	**Definition**: Name of the object to be deleted. **Range**: 1 to 1,024 characters **Default value**: None
VersionId	No	String	**Definition**: Version ID of the object to be deleted. For details about how to obtain an object version, see **Listing Objects in a Bucket**. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None

A maximum of 1,000 objects can be deleted at a time. If you send a request for deleting more than 1,000 objects, OBS returns an error message.

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After concurrent tasks are assigned, OBS may encounter an internal error during cyclic deletion of multiple objects. In that case, the metadata still exists when the object index data is deleted, which means data inconsistency.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Type: application/xml
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DeleteResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
<Deleted>
   <Key>Key</Key>
</Deleted>
<Error>
   <Key>Key</Key>
   <Code>ErrorCode</Code>
   <Message>Message</Message>
</Error>
</DeleteResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response uses elements to return results of deleted objects in a batch. **Table 5-114** describes the elements.

Table 5-114 Response elements

Parameter	Type	Description
DeleteResult	Container	**Definition**: Root node of the response message. DeleteResult is the parent node of Deleted, Error, and EncodingType. **Range**: For details, see **Table 5-115**.

Table 5-115 DeleteResult parameters

Parameter	Type	Description
Deleted	Container	**Definition**: Container for successful deletion results. Deleted is the parent node of Key, VersionId, DeleteMarker, and DeleteMarkerVersionId. **Range**: For details, see **Table 5-116**.

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Parameter	Type	Description
Error	Container	**Definition**: Container for the deletion failure result. Error is the parent node of Key, VersionId, Code, and Message. **Range**: For details, see **Table 5-117**.

Table 5-116 Deleted parameters

Parameter	Type	Description
Key	String	**Definition**: Object name in each deletion result **Range**: 1 to 1,024 characters
VersionId	String	**Definition**: Version ID of the deleted object **Range**: The value must contain 32 characters.
DeleteMarker	Boolean	**Definition**: If this element is specified, **true** will be returned when you create or delete a delete marker in a bucket with versioning enabled. When versioning is enabled for a bucket, a delete request that does not specify a version ID cannot permanently delete the object. Instead, OBS creates a delete marker with a unique version ID. When versioning is suspended for a bucket, a delete request that does not specify a version ID deletes the object whose version ID is **null** and creates a delete marker with a version ID of **null**. For more information, see **Deleting Objects from an OBS Bucket**. **Range**: true

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Parameter	Type	Description
DeleteMarkerVersionId	String	**Definition**: Version ID of a delete marker to create or delete. If you create or delete a delete marker in a bucket with versioning enabled, OBS returns this element in the response. This element will be returned in either of the following cases: • You send a request that has only the object name but not the version ID specified. In this case, OBS creates a delete marker and returns its version ID in the response. • You send a request that has both the object key and version ID (that identifies a delete marker) specified. For more information, see **Deleting Objects from an OBS Bucket**. **Range**: The value must contain 32 characters.

Table 5-117 Error parameters

Parameter	Type	Description
Key	String	**Definition**: Object name in each deletion result **Range**: 1 to 1,024 characters
Code	String	**Definition**: Error code of a deletion failure **Range**: None
Message	String	**Definition**: Error message of a deletion failure **Range**: None
VersionId	String	**Definition**: Version ID of the deleted object **Range**: The value must contain 32 characters.

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Error Responses

1. If the resolution result of an XML request contains more than 1,000 objects, OBS returns **400 Bad Request**.

2. If the object key in an XML request is invalid (for example, containing more than 1,024 characters after being encoded with UTF-8), OBS returns **400 Bad Request**.

3. If the request header does not contain Content-SHA256, OBS returns **400 Bad Request**.

Other errors are included in **Table 6-2**.

Sample Request

```
POST /test333?delete HTTP/1.1
User-Agent: curl/7.29.0
Host: 127.0.0.1
Accept: */*
Date: WED, 01 Jul 2015 04:34:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:8sjZWJlWmYmYnK5JqXaFFQ+vHEg=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 188

<?xml version="1.0" encoding="utf-8"?>
<Delete>
  <Quiet>true</Quiet>
  <Object>
    <Key>obja02</Key>
  </Object>
  <Object>
    <Key>obja02</Key>
  </Object>
</Delete>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3FE4CE80340D30B0542
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCRhY0FBWRm6qjOE1ACBZwS+0KYlPBq0f
Content-Type: application/xml
Date: WED, 01 Jul 2015 04:34:21 GMT
Content-Length: 120

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DeleteResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/"/>
```

Sample Request: Specifying versionId to Delete Multiple Delete Markers

```
POST /?delete HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: Y4+cxEPU7U9sgVFpRbdtUQ==

<Delete>
   <Object>
      <Key>object1</Key>
      <VersionId>G001118A646F2ACEFFFFD24530CFB5D8</VersionId>
   </Object>
   <Object>
      <Key>object2</Key>
```

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```
    <VersionId>G001118A646F2ACEFFFFD24530CFB5D9</VersionId>
  </Object>
</Delete>
```

Sample Response: Specifying versionId to Delete Multiple Delete Markers

```
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50
x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F
Server: OBS
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Length: 545
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DeleteResult  xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <Deleted>
    <Key>object1</Key>
    <VersionId>G001118A646F2ACEFFFFD24530CFB5D9</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>G001118A646F2ACEFFFFD24530CFB5D9</DeleteMarkerVersionId>
  </Deleted>
  <Deleted>
    <Key>object2</Key>
    <VersionId>G001118A646F2ACEFFFFD24530CFB5D8</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>G001118A646F2ACEFFFFD24530CFB5D8</DeleteMarkerVersionId>
  </Deleted>
</DeleteResult>
```

Sample Request: Sending a Request in Wrong XML Format

The <Delete> end tag is missing.

```
POST /?delete HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: Y4+cxEPU7U9sgVFpRbdtUQ==

<Delete>
  <Quiet>true</Quiet>
  <Object>
    <Key>object1</Key>
  </Object>
  <Object>
    <Key>object2</Key>
  </Object>
```

Sample Response: Sending a Request in Wrong XML Format

```
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50
x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F
Server: OBS
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Length: 545
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Error>
  <Code>MalformedXML</Code>
  <Message>The XML you provided was not well-formed or did not validate against our published
schema</Message>
  <RequestId>0000018A647F5559D385F15A331DF49B</RequestId>
  <HostId>buloGEikvQr7lmiZEtHxD9nO2owRwBRGQfbap4E9MFTp1YJJV66rkJNLl7cs3Zlz</HostId>
</Error>
```

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5.4.8 Restoring Archive Objects

Functions

To obtain the content of an object in the Archive storage class, you need to restore the object first and then you can download it. After an object is restored, a copy of the object is saved in the Standard storage class. By doing so, the object in the Archive storage class and its copy in the Standard storage class co-exist in the bucket. The copy will be automatically deleted once its retention period ends.

Versioning

By default, this operation returns the latest version of an object. If the object has a delete marker, status code 404 is returned. To restore an object of a specified version, the **versionId** parameter can be used to specify the desired version.

Request Syntax

```
POST /ObjectName?restore&versionId=VersionID HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization string
Content-MD5: MD5

<RestoreRequest>
  <Days>NumberOfDays</Days>
  <RestoreJob>
     <Tier>RetrievalOption</Tier>
  </RestoreJob>
</RestoreRequest>
```

Request Parameters

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Definition**: Version ID of the Archive object to be restored **Constraints**: None **Range**: None **Default value**: None. If this parameter is not configured, the latest version of the object is specified.

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Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

Table 5-118 Request elements

Element	Type	Mandatory (Yes/No)	Description
RestoreRequest	Container	Yes	**Definition**: Container for the restore information **Constraints**: None **Range**: None **Default value**: None
Days	Integer	Yes	**Definition**: After an object is restored, a Standard copy of it is generated. This parameter specifies how long the Standard copy can be retained, that is, the validity period of the restored object. **Constraints**: The retention period starts from the first 08:00 (Beijing time) after the object retrieval is initiated. For example, if the retention period is one day and the retrieval is initiated any time between 08:00 on the 27th day and 08:00 on the 28th day, the expiration is always at 08:00 on the 29th day. **Range**: The value ranges from 1 to 30, in days. **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
RestoreJob	Container	No	**Definition**: Container for the restore options **Constraints**: None **Range**: None **Default value**: None
Tier	String	No	**Definition**: Retrieval speed tier. You can select a tier that suits your retrieval needs. **Range**: • **Expedited** indicates that objects can be quickly restored from Archive storage within 1 to 5 minutes. • **Standard** indicates that objects can be restored from Archive storage within 3 to 5 hours. **Default value**: Standard

Response Syntax

```
HTTP/1.1 status_code
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

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Error Responses

Table 5-119 List of OBS access error codes

Error Code	Description	HTTP Status Code
RestoreAlreadyIn-Progress	**Definition**: The object is being restored. The request conflicts with another. ErrorMessage: Object restore is already in progress	409 Conflict
ObjectHasAlready Restored	**Definition**: The objects have been restored and the retention period of the objects cannot be shortened. ErrorMessage: After restoring an archived object, you cannot shorten the restoration period of the archived object	409 Conflict
MalformedXML	**Definition**: Invalid value for the **Days** field (supposed to be an integer) ErrorMessage: The XML you provided was not well-formed or did not validate against our published schema	400 Bad Request
InvalidArgument	**Definition**: Invalid value for the **Days** field (valid range: 1 to 30). ErrorMessage: restoration days should be at least 1 and at most 30	400 Bad Request
MalformedXML	**Definition**: Invalid value for the **Tier** field. ErrorMessage: The XML you provided was not well-formed or did not validate against our published schema	400 Bad Request
InvalidObjectState	**Definition**: The restored object is not in the Archive storage. ErrorMessage: Restore is not allowed, as object's storage class is not COLD	403 Forbidden

Sample Request

```
POST /object?restore HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
```

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```
Accept: */*
Date: WED, 01 Jul 2015 04:39:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:kaEwOixnSVuS6If3Q0Lnd6kxm5A=
Content-Length: 183

<RestoreRequest>
  <Days>2</Days>
  <RestoreJob>
    <Tier>Expedited</Tier>
  </RestoreJob>
</RestoreRequest>
```

Sample Response

```
HTTP/1.1 202 Accepted
Server: OBS
x-obs-request-id: A2F500000163F374CCBB2063F834C6C4
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSLbWIs23RR95NVpkbWlJdlm8Dq+wQBw
Date: WED, 01 Jul 2015 04:39:46 GMT
Content-Length: 0
```

5.4.9 Appending an Object

Functions

The AppendObject operation adds data to the end of an object in a specified bucket. If there is no namesake object in the bucket, a new object is created.

The object created using the **AppendObject** operation is an appendable object, and the object uploaded using the **PUT** operation is a normal object.

NOTE

Uploaded objects must be stored in buckets. Only the users who have the write permission to a bucket can upload objects to the bucket. The name of each object in the same bucket must be unique.

To ensure that data is not damaged during transmission, you can add the **Content-MD5** parameter to the request header. After receiving the data, OBS performs MD5 verification for the data. If the data is inconsistent, OBS returns an error message.

This operation allows you to specify the **x-obs-acl** parameter when creating an appendable object and set the permission control policy for the object.

This operation supports server-side encryption.

Relationship with Other Operations

1. If you perform the PUT operation on an existing appendable object, the appendable object is overwritten by the newly uploaded object and the object type changes to normal. If you perform the other way around, an error occurs.
2. An appendable object will be changed to a normal object after being copied. An appendable object cannot be copied and saved as an appendable object.

WORM

If a bucket has WORM enabled, an append operation on this bucket will fail, with a 403 error returned.

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Constraints

1. The last modification time of the object is updated each time an appending upload is performed.
2. If the SSE-C encryption mode is used on the server side, the appending upload is the same as the initialization segment. In this case, the request headers such as **x-obs-server-side-encryption** must be carried.
3. For the server-side encryption (SSE-KMS), the request header such as **x-obs-server-side-encryption** is specified only when the file is uploaded for the first time and no object with the same name exists in the bucket.
4. The length of each appended upload cannot exceed the upper limit (5 GB) of the object length.
5. The maximum number of append-only writes for each appendable object is 10,000.
6. If the object storage class is **COLD** (Archive), this API cannot be called.
7. Object appending is not available for parallel file systems.

Request Syntax

```
POST /ObjectName?append&position=Position HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Type: application/xml
Content-Length: length
Authorization: authorization
Date: date
<Optional Additional Header>
<object Content>
```

Request Parameters

The request needs to specify parameters in the message, indicating that the request is for append upload and the upload location must be specified. For details about the parameters, see **Table 5-120**.

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Table 5-120 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
append	String	Yes	**Definition**: Indicates that the object is uploaded in an append manner. **Constraints**: None **Range**: None **Default value**: None
position	Integer	Yes	**Definition**: Location for the append upload **Constraints**: Max. 5 GB **Range**: For an object to be appended, the value of **position** must be set to **0** when the object is uploaded for the first time. The value of **position** will be carried in the **x-obs-next-append-position** header of the response returned by the server when the object is successfully uploaded next time. **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Table 5-121 describes the additional message headers that a request can use when **position=0**.

This request can use the server-side encryption request headers. For details, see **Table 5-122**.

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Table 5-121 Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	**Definition**: When first calling this API, you can use this parameter to set a pre-defined object ACL. **Constraints**: Use character strings. **Range**: • private • public-read • public-read-write For details about each policy, see the "Configuring an ACL Using Header Fields" section in **ACLs**. **Default value**: private
x-obs-grant-read	String	No	**Definition**: When first calling this API, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. Example: **x-obs-grant-read: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read-acp	String	No	**Definition**: When first calling this API, you can use this header to grant all users in a domain the permissions to obtain the object ACL. Example: **x-obs-grant-read-acp: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None
x-obs-grant-write-acp	String	No	**Definition**: When first calling this API, you can use this header to grant all users in a domain the permissions to write the object ACL. Example: **x-obs-grant-write-acp: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None
x-obs-grant-full-control	String	No	**Definition**: When first calling this API, you can use this header to grant all users in a domain the permissions to read the object, obtain the object metadata and ACL, and write the object ACL. Example: **x-obs-grant-full-control: id=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	**Definition**: For the first write, you can use this header field to configure the object storage class. Example: **x-obs-storage-class:STANDARD** **Constraints**: ● Archive objects do not support append uploads. ● The value is case-sensitive. **Range**: ● STANDARD ● WARM **Default value**: If you do not use this header, the object storage class is the default storage class of the bucket.
x-obs-meta-*	String	No	**Definition**: For the first write, you can use a header starting with **x-obs-meta-** to define object metadata in an HTTP request. Custom metadata will be returned in the response header when you retrieve or query the metadata of the object. Example: **x-obs-meta-test:test metadata** **Constraints**: This parameter can only be passed in HTTP request headers and cannot exceed 8 KB. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	**Definition**: If a bucket is configured with the static website hosting function, it will redirect requests for this object to another object in the same bucket or to an external URL. OBS stores the value of this header in the object metadata. **Constraints**: The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2K. **Range**: None **Default value**: None
x-obs-expires	Integer	No	**Definition**: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. (The calculation starts from when the object was last modified). Example: **x-obs-expires:3** **Constraints**: The value must be greater than the number of days that have passed since the object was created. For example, if the object was uploaded 10 days ago, you must specify a value greater than 10. **Range**: The value is an integer greater than 0. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	**Definition**: An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: **x-obs-tagging:TagA=A&TagB&TagC** **Constraints**: ● This request header takes effect only for the first append operation. ● If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. ● If there is no equal sign (=) in a configuration, the tag value is considered left blank. **Range**: None **Default value**: None

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Table 5-122 Server encryption request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	**Definition**: Indicates that SSE-KMS is used. Example: **x-obs-server-side-encryption:kms** **Constraints**: None **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	No	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the encryption algorithm used when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the encryption key used when SSE-C is used. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: Indicates the MD5 value of the encryption key when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
ETag: etag
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

NOTE

The ETag returns the hash value of the data to be uploaded, not the hash value of the entire object.

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Table 5-123 Additional response headers

Header	Type	Description
x-obs-version-id	String	**Definition**: Version ID of the object. If versioning is enabled for the bucket, the object version ID will be returned. **Constraints**: None **Range**: None **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

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Header	Type	Description
x-obs-server-side-encryption-bucket-key-enabled	String	**Definition**: Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: ● **true**: The bucket key is enabled. ● **false**: The bucket key is disabled. **Default value**: false
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: Indicates the encryption algorithm. This header is included in a response when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: None **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: Indicates the MD5 value of the key for encrypting objects. This header is included in a response when SSE-C is used. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: None **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

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Header	Type	Description
x-obs-next-append-position	Integer	**Definition**: Indicates the position to be provided for the next request. **Constraints**: This header is returned when the object is an Appendable object. **Range**: None **Default value**: None

Response Elements

This response contains no elements.

Error Responses

1. If the object length exceeds the limit due to the appending upload, OBS returns **400 Bad Request** and the error code is **AppendTooLarge**.
2. If the value of position is different from the original length of the current object, OBS returns **409 Conflict** and the error code is **PositionNotEqualToLength**.
3. If an object with the same object name exists in a bucket and the object type is not Appendable, OBS returns **409 Conflict** and the error code is **ObjectNotAppendable**.
4. If the number of write times of an object exceeds 10000, OBS returns **409 Conflict** and the error code is **ObjectNotAppendable**.
5. If the object storage class is **COLD** (Archive), this API cannot be called. If you still call this API, OBS returns **409 Conflict** with the error code of **ObjectNotAppendable**.

Other errors are included in **Table 6-2**.

Sample Request: Append Upload

```
POST /object?append&position=0 HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Expires: Wed, 27 Jun 2015 13:45:50 GMT
Date: Wed, 08 Jul 2015 06:57:01 GMT
Content-Type: image/jpg
Content-Length: 1458
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:kZoYNv66bsmc10+dcGKw5x2PRrk=

[1458 bytes of object data]
```

Sample Response: Append Upload

```
HTTP/1.1 200 OK
Date: Wed, 27 Jun 2015 13:45:50 GMT
```

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```
ETag: "d41d8cd98f00b204e9800998ecf8427e"
Content-Length: 0
Server: OBS
x-obs-request-id: 8DF400000163D3F0FD2A03D2D30B0542
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRpIrmrJdvcEWvZyjbztdd
x-obs-next-append-position: 1458
```

Sample Request: Append Upload (with redirect and a User-Defined Header Used)

The bucket **examplebucket** exists but the object **obj001** does not exist. Create an object by making the API call for the append operation. Set the redirection header field as follows: **"x-obs-website-redirect-location":"http://www.example.com/"**, and set the user-defined header field to: **"x-obs-meta-redirect":"redirect"**. The request is as follows:

```
POST /obj001?append&position=0 HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Expires: Wed, 27 Jun 2015 13:45:50 GMT
Date: Wed, 08 Jul 2015 06:57:01 GMT
x-obs-website-redirect-location: http://www.example.com/
x-obs-meta-redirect: redirect
Content-Length: 6
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:kZoYNv66bsmc10+dcGKw5x2PRrk=

[6 bytes of object data]
```

Sample Response: Append Upload (with redirect and a User-Defined Header Used)

```
HTTP/1.1 200 OK
Date: Wed, 27 Jun 2015 13:45:50 GMT
ETag: "9516dfb15f51c7ee19a4d46b8c0dbe1d"
Content-Length: 0
Server: OBS
x-obs-request-id: 5DEB00000164A3150AC36F8F0C120D50
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSrVlTYwsA4p9GEW+LYqotSl5BYDxHfT
x-obs-next-append-position: 6
```

Sample Request: Appending Data to an Object in a Versioning-enabled Bucket

```
POST /object01?append&position=0 HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/octet-stream

[1458 bytes of object data]
```

Sample Response: Appending Data to an Object in a Versioning-enabled Bucket

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSZbDadL1f7fYU44bvRLvc0l6D10+wzG
x-obs-request-id: 0000018A2BCBB3ABD3046B99E3ED2E30
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
x-obs-next-append-position: 4
ETag: "56468d5607a5aaf1604ff5e15593b003"
x-obs-version-id: G001118A6803675AFFFFD3043F7F91D0
```

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5.4.10 Configuring an Object ACL

Functions

OBS supports the control of access permission for objects. By default, only the object creator has the read and write permissions for the object. However, the creator can set a public access policy to assign the read permission to all other users. Even if the ACL is configured for an object encrypted in the SSE-KMS mode, the inter-tenant access is unavailable.

You can set an access control policy when uploading an object or make a call of an API operation to modify or obtain the object ACL. An object ACL supports a maximum of 100 grants.

This section explains how to modify an object ACL and change access permission on an object.

Versioning

By default, this operation modifies the ACL of the latest version of an object. To specify a specified version, the request can carry the **versionId** parameter.

Request Syntax

```
PUT /ObjectName?acl HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization

<AccessControlPolicy>
   <Owner>
      <ID>ID</ID>
   </Owner>
   <Delivered>true</Delivered>
   <AccessControlList>
      <Grant>
         <Grantee>
            <ID>ID</ID>
         </Grantee>
         <Permission>permission</Permission>
      </Grant>
   </AccessControlList>
</AccessControlPolicy>
```

Request Parameters

Table 5-124 describes the request parameters.

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Table 5-124 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
versionId	No	String	**Definition**: Object version ID The ACL of the specified object version is to be changed. For details about how to obtain the version ID of an object, see **Listing Objects in a Bucket**. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None. If this parameter is not configured, the latest version of the object is specified.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

The request message carries the ACL information of the object by using message elements. For the meanings of the elements, see **Table 5-125**.

Table 5-125 Request elements

Parameter	Mandatory (Yes/No)	Type	Description
AccessControlList	Yes	XML	**Definition**: Access control list. AccessControlList is the parent node of Grant, Grantee, and Permission. **Constraints**: None **Range**: For details, see **Table 5-126**. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Owner	Yes	XML	**Definition**: Owner information of a bucket. Owner is the parent node of ID. **Constraints**: None **Range**: For details, see **Table 5-127**. **Default value**: None
Canned	No	String	**Definition**: Grants permissions to all users. **Constraints**: None **Range**: Everyone **Default value**: None

Table 5-126 AccessControlList parameters

Parameter	Mandatory (Yes/No)	Type	Description
Grant	No	XML	**Definition**: Used to identify users and their permissions. Grant is the parent node of Grantee and Delivered. **Constraints**: An ACL of an object can contain a maximum of 100 grants. **Range**: For details, see **Table 5-128**. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Grantee	No	XML	**Definition**: Grantee information **Constraints**: None **Range**: None **Default value**: None
Permission	No	String	**Definition**: Granted permissions **Constraints**: None **Range**: • READ: Allows the grantee to obtain the object content and metadata. • READ_ACP: Allows the grantee to read the ACL attributes of an object. • WRITE_ACP: Allows the grantee to update the ACL of an object. • FULL_CONTROL: The grantee has the READ, READ_ACP, and WRITE_ACP permissions on the object. **Default value**: None

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Table 5-127 Owner parameters

Parameter	Mandatory (Yes/No)	Type	Description
ID	Yes	String	**Definition**: Account ID of the authorized user. **Constraints**: None **Range**: For details about how to obtain the domain ID of a user, see **Obtaining Account, IAM User, Project, User Group, Region, and Agency Information**. **Default value**: None

Table 5-128 Grant parameters

Parameter	Mandatory (Yes/No)	Type	Description
Grantee	No	XML	**Definition**: Grantee information **Constraints**: None **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
Delivered	No	Boolean	**Definition**: Whether an object ACL inherits the ACL of a bucket. **Constraints**: None **Range**: • true: The object inherits the bucket ACL. • false: The object does not inherit the bucket ACL. **Default value**: true

Response Syntax

```
HTTP/1.1 status_code
Content-Length: length
Content-Type: application/xml
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-129** may be used.

Table 5-129 Additional response headers

Parameter	Type	Description
x-obs-version-id	String	**Definition**: Version ID of the object whose ACL is modified. **Range**: The value must contain 32 characters.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request

```
PUT /obj2?acl HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:42:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:8xAODun1ofjkwHm8YhtN0QEcy9M=
Content-Length: 727

<AccessControlPolicy xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
  </Owner>
  <Delivered>false</Delivered>
  <AccessControlList>
    <Grant>
      <Grantee>
        <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
      </Grantee>
      <Permission>FULL_CONTROL</Permission>
    </Grant>
    <Grant>
      <Grantee>
        <ID>783fc6652cf246c096ea836694f71855</ID>
      </Grantee>
      <Permission>READ</Permission>
    </Grant>
    <Grant>
      <Grantee>
        <Canned>Everyone</Canned>
      </Grantee>
      <Permission>READ</Permission>
    </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3F0FD2A03D2D30B0542
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRpIrmrJdvcEWvZyjbztdd
Date: WED, 01 Jul 2015 04:42:34 GMT
Content-Length: 0
```

Sample Request: Configuring the ACL for a Specific Object Version

```
PUT /object01?acl&versionId=G001118A6803675AFFFFD3043F7F91D0 HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml

<AccessControlPolicy  xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
   <Owner>
      <ID>d029cb567d46458sp0x75800575ee4cf</ID>
   </Owner>
   <Delivered>false</Delivered>
   <AccessControlList>
      <Grant>
         <Grantee>
            <ID>f98sx63gg849422e8f330af1349c588f</ID>
         </Grantee>
         <Permission>FULL_CONTROL</Permission>
      </Grant>
      <Grant>
         <Grantee>
```

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```
            <ID>fa558a82a84946sn98u30af195as3hi5</ID>
         </Grantee>
         <Permission>READ</Permission>
      </Grant>
      <Grant>
         <Grantee>
            <Canned>Everyone</Canned>
         </Grantee>
         <Permission>READ</Permission>
      </Grant>
   </AccessControlList>
</AccessControlPolicy>
```

Sample Response: Configuring the ACL for a Specific Object Version

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
x-obs-version-id: G001118A6803675AFFFFD3043F7F91D0
```

5.4.11 Obtaining Object ACL Configuration

Functions

The implementation of this operation returns the ACL configuration of an object. You can perform this operation to view the ACL of an object, as long as you have the read permission for the object ACL.

Versioning

By default, this operation obtains the ACL of the latest version of an object. If the object has a delete marker, status code 404 is returned. To obtain the ACL of a specified version, the **versionId** parameter can be used to specify the desired version.

Request Syntax

```
GET /ObjectName?acl HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

The request parameters required are described in **Table 5-130**.

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Table 5-130 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
acl	Yes	String	**Definition**: Indicates that the request is to obtain the object ACL. **Constraints**: None **Range**: None **Default value**: None
versionId	No	String	**Definition**: Version number of an object. For details about how to obtain the version ID of an object, see **Listing Objects in a Bucket**. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None. If this parameter is not configured, the latest version of the object is specified.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
Content-Type: application/xml

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AccessControlPolicy xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
   <Owner>
      <ID>id</ID>
   </Owner>
   <Delivered>true</Delivered>
   <AccessControlList>
```

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```
    <Grant>
      <Grantee>
        <ID>id</ID>
      </Grantee>
      <Permission>permission</Permission>
    </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the headers listed in **Table 5-131** may be used.

Table 5-131 Additional response headers

Parameter	Type	Description
x-obs-version-id	String	**Definition**: Version number of an object. **Range**: The value must contain 32 characters.

Response Elements

The response message of the request returns the ACL information of the object. **Table 5-132** describes the elements.

Table 5-132 Response elements

Parameter	Type	Description
AccessControlList	XML	**Definition**: List of users and their permissions for the bucket. AccessControlList is the parent node of Grant, Grantee, and Permission. **Range**: For details, see **Table 5-133**.
ID	String	**Definition**: Domain ID of the user. **Range**: None

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Parameter	Type	Description
Delivered	Boolean	**Definition**: Whether an object ACL inherits the ACL of a bucket. **Range**: • true: The object inherits the bucket ACL. • false: The object does not inherit the bucket ACL.

Table 5-133 AccessControlList parameters

Parameter	Type	Description
Grant	XML	**Definition**: Used to identify users and their permissions. Grant is the parent node of Grantee and Delivered. **Range**: None
Grantee	XML	**Definition**: Grantee information. **Range**: None
Permission	String	**Definition**: Permissions of a specified user for the bucket. **Range**: • READ: Allows the grantee to obtain the object content and metadata. • READ_ACP: Allows the grantee to read the ACL attributes of an object. • WRITE_ACP: Allows the grantee to update the ACL of an object. • FULL_CONTROL: The grantee has the READ, READ_ACP, and WRITE_ACP permissions on the object.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

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Sample Request

```
GET /object011?acl HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:45:55 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:YcmvNQxItGjFeeC1K2HeUEp8MMM=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E650F3065C2295674C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS+wsHqRuA2Tx+mXUpNtBbWLPMle9CIx
Content-Type: application/xml
Date: WED, 01 Jul 2015 04:45:55 GMT
Content-Length: 769

<?xml version="1.0" encoding="utf-8"?>
<AccessControlPolicy xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
  </Owner>
  <Delivered>false</Delivered>
  <AccessControlList>
    <Grant>
      <Grantee>
        <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
      </Grantee>
      <Permission>FULL_CONTROL</Permission>
    </Grant>
    <Grant>
      <Grantee>
        <ID>783fc6652cf246c096ea836694f71855</ID>
      </Grantee>
      <Permission>READ</Permission>
      </Grant>
    <Grant>
      <Grantee>
        <Canned>Everyone</Canned>
      </Grantee>
      <Permission>READ_ACP</Permission>
    </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

Sample Request: Obtaining the ACL of a Specific Object Version

```
GET /object01?acl&versionId=G001118A6803675AFFFFD3043F7F91D0 HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

Sample Response: Obtaining the ACL of a Specific Object Version

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
x-obs-version-id: G001118A6803675AFFFFD3043F7F91D0

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AccessControlPolicy  xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
   <Owner>
```

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```
    <ID>d6s58yhnm83f3081577800575ee4cf</ID>
  </Owner>
  <Delivered>false</Delivered>
  <AccessControlList>
    <Grant>
      <Grantee>
        <ID>f262a63g69422e8f330af1349c588f</ID>
      </Grantee>
      <Permission>READ</Permission>
    </Grant>
    <Grant>
      <Grantee>
        <ID>c965gfda2a849422e8f3985562432dsaa</ID>
      </Grantee>
      <Permission>FULL_CONTROL</Permission>
    </Grant>
    <Grant>
      <Grantee>
        <Canned>Everyone</Canned>
      </Grantee>
      <Permission>READ</Permission>
    </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

5.4.12 Modifying Object Metadata

Functions

This operation modifies, deletes, or adds metadata to uploaded objects in a bucket.

Request Syntax

```
PUT /ObjectName?metadata HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Type: application/xml
Content-Length: length
Authorization: authorization
Date: date
<Optional Additional Header>
<object Content>
```

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Request Parameters

Table 5-134 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Definition**: Version ID of the object. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None

Request Headers

NOTE

OBS supports the six HTTP request headers: Cache-Control, Expires, Content-Encoding, Content-Disposition, Content-Type, and Content-Language. It saves these header values in the metadata of the object. When the object is downloaded or queried, the saved values are set for corresponding HTTP headers and returned to the client.

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Table 5-135 Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-metadata-directive	String	Yes	**Definition**: Metadata operation directive. **Constraints**: If you want to change the storage class of an object by modifying its metadata, **x-obs-metadata-directive** must be set to **REPLACE_NEW**. **Range**: • **REPLACE_NEW**: The metadata that has an existing value is replaced. A value is assigned to the metadata that does not have a value. The metadata that is not specified remains unchanged. Custom metadata is replaced. • **REPLACE**: All original metadata is replaced by metadata specified in the request. Metadata that is not specified (except for **x-obs-storage-class**) is deleted. **Default value**: None
Cache-Control	String	No	**Definition**: It specifies the cache behavior of the web page when an object is downloaded. **Constraints**: None **Range**: See the Cache-Control values defined in HTTP. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
Content-Disposition	String	No	**Definition**: It specifies the name of an object when it is downloaded. **Constraints**: None **Range**: See the Content-Disposition values defined in HTTP. **Default value**: None
Content-Encoding	String	No	**Definition**: It specifies the content encoding format when an object is downloaded. **Constraints**: None **Range**: See the Content-Encoding values defined in HTTP. **Default value**: None
Content-Language	String	No	**Definition**: It specifies the content language format when an object is downloaded. **Constraints**: None **Range**: See the Content-Language values defined in HTTP. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
Content-Type	String	No	**Definition**: It specifies the file type of an object when it is downloaded. **Constraints**: None **Range**: For details about the common content types, see **Common Content Types**. **Default value**: None
Expires	String	No	**Definition**: It specifies the expiration time of a cached web page when an object is downloaded. **CAUTION** This parameter is not used to set the object expiration time, which is set using **x-obs-expires**. **Constraints**: None **Range**: See the Expires values defined in HTTP. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	**Definition**: If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. In the following example, the request header sets the redirection to an object (**anotherPage.html**) in the same bucket: x-obs-website-redirect-location:/anotherPage.html In the following example, the request header sets the object redirection to an external URL: x-obs-website-redirect-location:http://www.example.com/ **Constraints**: The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. **Range**: None **Default value**: None
x-obs-storage-class	String	No	**Definition**: Specifies the storage class of an object. Example: **x-obs-storage-class: STANDARD** **Constraints**: The value is case-sensitive. **Range**: ● STANDARD ● WARM ● COLD **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-meta-*	String	No	**Definition**: Custom metadata of the object. You can add a header starting with **x-obs-meta-** in the request to define metadata. The custom metadata will be returned in the response when you retrieve the object or query the object metadata. Example: **x-obs-meta-test: test metadata** **Constraints**: ● The total size of all custom metadata cannot exceed 8K. To measure the size, calculate the sum of bytes of all UTF-8 encoded keys and values. ● The custom metadata keys are case-insensitive, but are stored in lowercase by OBS. The key values are case-sensitive. ● Both custom metadata keys and their values must conform to US-ASCII standards. If non-ASCII or unrecognizable characters are required, they must be encoded and decoded in URL or Base64 on the client, because the server does not perform such operations. **Range**: None **Default value**: None
x-obs-expires	Integer	No	**Definition**: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. Example: **x-obs-expires:3** **Constraints**: The value must be greater than the number of days that have passed since the object was created. For example, if the object was uploaded 10 days ago, you must specify a value greater than 10. **Range**: The value is an integer greater than 0. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	**Definition**: An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: **x-obs-tagging:TagA=A&TagB&TagC** **Constraints**: • If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. • If there is no equal sign (=) in a configuration, the tag value is considered left blank. **Range**: None **Default value**: None

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
Etag: etag
Last-Modified: time
```

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Response Headers

Table 5-136 Additional response headers

Header	Type	Description
x-obs-metadata-directive	String	**Definition**: Metadata operation directive. **Range**: • **REPLACE_NEW**: The metadata that has an existing value is replaced. A value is assigned to the metadata that does not have a value. The metadata that is not specified remains unchanged. Custom metadata is replaced. • **REPLACE**: All original metadata is replaced by metadata specified in the request. Metadata that is not specified (except for **x-obs-storage-class**) is deleted. **Default value**: None
Cache-Control	String	**Definition**: It specifies the cache behavior of the web page when an object is downloaded. **Constraints**: If a request carries this header field, the response message must contain this header field. **Range**: See the Cache-control values defined in HTTP. **Default value**: None
Content-Disposition	String	**Definition**: It specifies the name of an object when it is downloaded. **Constraints**: If a request carries this header field, the response message must contain this header field. **Range**: See the Content-Disposition values defined in HTTP. **Default value**: None

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Header	Type	Description
Content-Encoding	String	**Definition**: It specifies the content encoding format when an object is downloaded. **Constraints**: If a request carries this header field, the response message must contain this header field. **Range**: See the Content-Encoding values defined in HTTP. **Default value**: None
Content-Language	String	**Definition**: It specifies the content language format when an object is downloaded. **Constraints**: If a request carries this header field, the response message must contain this header field. **Range**: See the Content-Language values defined in HTTP. **Default value**: None
Expires	String	**Definition**: It specifies the expiration time of a cached web page when an object is downloaded. **Constraints**: If a request carries this header field, the response message must contain this header field. **Range**: See the Expires values defined in HTTP. **Default value**: None

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Header	Type	Description
x-obs-website-redirect-location	String	**Definition**: If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. In the following example, the request header sets the redirection to an object (**anotherPage.html**) in the same bucket: x-obs-website-redirect-location:/anotherPage.html In the following example, the request header sets the object redirection to an external URL: x-obs-website-redirect-location:http://www.example.com/ **Constraints**: ● If a request carries this header field, the response message must contain this header field. ● The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. **Range**: None **Default value**: None
x-obs-storage-class	String	**Definition**: It specifies the storage class of an object. **Constraints**: ● If a request carries this header field, the response message must contain this header field. ● The value is case-sensitive. **Range**: ● STANDARD ● WARM ● COLD **Default value**: None

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Header	Type	Description
x-obs-meta-*	String	**Definition**: Custom metadata of the object. You can add custom metadata headers that start with **x-obs-meta-** for easy object management. When you retrieve or query the metadata of the object, the added custom metadata headers will be returned in the response. **Constraints**: ● If a request carries this header field, the response message must contain this header field. ● The total size of all custom metadata cannot exceed 8K. To measure the size, calculate the sum of bytes of all UTF-8 encoded keys and values. ● The custom metadata keys are case-insensitive, but are stored in lowercase by OBS. The key values are case-sensitive. ● Both custom metadata keys and their values must conform to US-ASCII standards. If non-ASCII or unrecognizable characters are required, they must be encoded and decoded in URL or Base64 on the client, because the server does not perform such operations. **Range**: None **Default value**: None
x-obs-expires	Integer	**Definition**: Specifies when an object expires. It is measured in days. **Constraints**: ● The value must be greater than the number of days that have passed since the object was created. For example, if the object was uploaded 10 days ago, you must specify a value greater than 10. ● If a request carries this header field, the response message must contain this header field. **Range**: The value is an integer greater than 0. **Default value**: None

Response Elements

This response contains no elements.

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Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request: Adding Metadata for an Object

Add the following metadata to the object: **Content-Type:application/zip** and **x-obs-meta-test:meta**.

```
PUT /object?metadata HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 14:24:33 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
x-obs-metadata-directive:REPLACE_NEW
Content-Type:application/zip
x-obs-meta-test:meta
```

Sample Response: Adding Metadata for an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E4BB5905C41B6E65B6
Accept-Ranges: bytes
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSD3nAiTaBoeyt9oHp9vTYtXnLDmwV6D
Date: WED, 01 Jul 2015 04:19:21 GMT
Content-Length: 0
x-obs-metadata-directive:REPLACE_NEW
x-obs-meta-test:meta
```

Sample Request: Editing Metadata of an Object

If metadata **x-obs-meta-test:testmeta** exists in the object and the value of **x-obs-storage-class** is **WARM**, change the metadata **x-obs-meta-test** of the object to **newmeta** and change **x-obs-storage-class** to **COLD**.

```
PUT /object?metadata HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 14:24:33 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
x-obs-metadata-directive:REPLACE_NEW
x-obs-meta-test:newmeta
x-obs-storage-class:COLD
```

Sample Response: Editing Metadata of an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E4BB5905C41B6E65B6
Accept-Ranges: bytes
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSD3nAiTaBoeyt9oHp9vTYtXnLDmwV6D
Date: WED, 01 Jul 2015 04:19:21 GMT
Content-Length: 0
x-obs-metadata-directive:REPLACE_NEW
x-obs-meta-test:newmeta
x-obs-storage-class:COLD
```

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Sample Request: Deleting Metadata of an Object

Metadata **x-obs-meta-test:newmeta** and **Content-Type:application/zip** exist in the object, and delete **x-obs-meta-test**.

```
PUT /object?metadata HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 14:24:33 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
x-obs-metadata-directive:REPLACE
Content-Type:application/zip
```

Sample Response: Deleting Metadata of an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E4BB5905C41B6E65B6
Accept-Ranges: bytes
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSD3nAiTaBoeyt9oHp9vTYtXnLDmwV6D
Date: WED, 01 Jul 2015 04:19:21 GMT
Content-Length: 0
x-obs-metadata-directive:REPLACE
```

5.4.13 Modifying an Object

Functions

This operation can modify an object from a specified position.

NOTE

This API is supported only by parallel file systems. For details about how to create a parallel file system, see **Sample Request: Creating a Parallel File System**.

Request Syntax

```
PUT /ObjectName?modify&position=Position HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Content-Type: type
Content-Length: length
Authorization: authorization
Date: date
<object Content>
```

Request Parameters

The request needs to specify parameters in the message, indicating that the upload is for modification, and specifying the position in the object to be modified. **Table 5-137** describes the parameters.

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Table 5-137 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
modify	Yes	String	**Definition**: If this parameter is carried, the request uploads data by modifying the object. **Constraints**: None **Range**: None **Default value**: None
position	Yes	Integer	**Definition**: The position where the object is modified (counting from the first character). Unit: byte. **Constraints**: None **Range**: The value is an integer greater than or equal to 0, and the length of the file after the modification cannot exceed 54975581388800 (50 TB). **Default value**: None

Request headers

This request uses common request headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: Date
ETag: etag
Content-Length: length
Server: OBS
x-obs-request-id: request-id
x-obs-id-2: id
```

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Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /ObjectName?modify&position=Position HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: Wed, 08 Jul 2015 06:57:01 GMT
Content-Type: image/jpg
Content-Length: 1458
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:kZoYNv66bsmc10+dcGKw5x2PRrk=

[1458 bytes of object data]
```

Sample Response

```
HTTP/1.1 200
Date: Wed, 08 Jul 2015 06:57:02 GMT
ETag: "d41d8cd98f00b204e9800998ecf8427e"
Content-Length: 0
Server: OBS
x-obs-request-id: 8DF400000163D3F0FD2A03D2D30B0542
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRpIrmrJdvcEWvZyjbztd
```

5.4.14 Truncating an Object

Functions

This operation can truncate an object to a specified size.

NOTE

This API is supported only by parallel file systems. For details about how to create a parallel file system, see **Sample Request: Creating a Parallel File System**.

Request Syntax

```
PUT /ObjectName?truncate&length=Length HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Authorization: authorization
Content-Length: length
Date: date
```

Request Parameters

The request needs to specify parameters in the message, indicating that this is to truncate an object to a specified size. **Table 5-138** describes the parameters.

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Table 5-138 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
truncate	Yes	String	**Definition**: If this parameter is carried, the request uploads data by truncating the object. **Constraints**: None **Range**: None **Default value**: None
length	Yes	Integer	**Definition**: Size of the object after the truncation Unit: byte. **Constraints**: None **Range**: 0 to 54975581388800 (50 TB) **Default value**: None

Request headers

This request uses common request headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 204 status_code
Server: OBS
x-obs-request-id: request-id
x-obs-id-2: id
Date: Date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
PUT /ObjectName?truncate&length=1000 HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 1
Date: WED, 01 Jul 2015 04:19:20 GMT
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 8DF400000163D3F51DEA05AC9CA066F1
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSgkM4Dij80gAeFY8pAZIwx72QhDeBZ5
Date: WED, 01 Jul 2015 04:19:21 GMT
```

5.4.15 Renaming an Object

Functions

This operation can rename an object.

NOTE

This API is supported only by parallel file systems. For details about how to create a parallel file system, see **Sample Request: Creating a Parallel File System**. Renaming an object is a non-idempotent operation.

Request Syntax

```
POST /ObjectName?name=Name&rename HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Authorization: authorization
Date: date
```

Request Parameters

The request needs to specify parameters in the message, indicating that this is a renaming operation, specifying the new name. **Table 5-139** describes the parameters.

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Table 5-139 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
name	Yes	String	**Definition**: Name of the object after renaming. **Constraints**: An absolute path is required. For example, **name=/dir1/file1**. **Range**: None **Default value**: None
rename	Yes	String	**Definition**: If this parameter is carried, the request renames an object. **Constraints**: None **Range**: None **Default value**: None

Request Headers

This request uses common request headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 204 status_code
Server: OBS
x-obs-request-id: request-id
x-obs-id-2: id
Date: Date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details about error responses, see **Table 6-2**.

Sample Request

```
POST /ObjectName?name=file2&rename HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Date: WED, 01 Jul 2015 04:19:20 GMT
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 8DF400000163D3F51DEA05AC9CA066F1
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSgkM4Dij80gAeFY8pAZIwx72QhDeBZ5
Date: WED, 01 Jul 2015 04:19:21 GMT
```

5.4.16 Adding Object Tags

Functions

This operation adds or updates the tag information for an object. An object tag is a key-value pair.

If you do not specify a version ID in a request, make sure that you have the **PutObjectTagging** permission. If you do specify a version ID in a request, make sure that you have the **PutObjectTagging** and **PutObjectVersionTagging** permissions. By default, only the object owner can perform this operation. The object owner can grant this permission to others by using a bucket or user policy.

Tags are added to the current version of an object by default. You can use the **versionId** parameter to add tags to any other version. If the version you are adding tags to is a delete marker, OBS returns **404 Not Found**.

NOTE

- Tags cannot be set for files in parallel file systems.
- An object can have up to 10 tags.
- Constraints on the tag key and value:

  A tag key is case sensitive and must be unique. It cannot be left blank or exceed 128 characters. The following characters are not allowed: =*<>\,|/?!;

  A tag value is case sensitive and can be left blank. It cannot exceed 255 characters. The following characters are not allowed: =*<>\,|?!;

Request Syntax

```
PUT /objectname?tagging&versionId=versionid HTTP/1.1
Date: date
Authorization: authorization string
Content-MD5: md5
<?xml version="1.0" encoding="UTF-8">
```

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```
<Tagging>
   <TagSet>
      <Tag>
         <Key>Key</Key>
         <Value>Value</Value>
      </Tag>
   </TagSet>
</Tagging>
```

Request Parameters

Table 5-140 describes the parameters in the request.

Table 5-140 Request parameters

Parameter	Description	Mandatory
tagging	Indicates an object tagging request. Type: string	Yes
versionId	ID of the object version that the tag will be added to. Its response header is **x-obs-version-id**. Type: string	No

Request Headers

Table 5-141 describes the headers in the request.

Table 5-141 Request headers

Header	Description	Mandatory
Content-MD5	Base64-encoded 128-bit MD5 digest of the message according to RFC 1864. You can also configure the Content-SHA256 header whose value is the Base64-encoded SHA-256 digest of the message. Configure either Content-MD5 or Content-SHA256. Type: string Example: **n58IG6hfM7vqI4K0vnWpog==**	Yes

Request Elements

In this request body, you need to configure the object tags in XML. Table 5-142 describes the tag elements to be configured.

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Table 5-142 Object tag elements

Header	Description	Mandatory
Tagging	Root element for TagSet and Tag Type: container Parent: none	Yes
TagSet	A collection for a set of tags. Type: container Parent: Tagging	Yes
Tag	Information element of Tag Type: container Parent: TagSet	Yes
Key	Tag name Type: string Parent: Tag	Yes
Value	Tag value Type: string Parent: Tag	Yes

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
Content-Length: length
Date: date
```

Response Headers

This response uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

In addition to common error codes, this API also returns others. **Table 5-143** lists the common errors and possible causes.

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Table 5-143 Error codes of object tagging

Error Code	Description	HTTP Status Code
InvalidTag	The provided object tag was invalid.	400
BadRequest	The number of object tags exceeded the upper limit.	400
MalformedXML	The XML file was malformed.	400
EntityTooLarge	The request body was too long.	400
AccessDenied	No permission to configure object tags.	403
MethodNotAllowed	Method not allowed, because the corresponding feature was not enabled.	405

Sample Request

```
PUT /objectname?tagging&versionId=G001018455096CE600005306000000DD HTTP/1.1
User-Agent: curl/7.29.0
Accept: */*
Date: Wed, 27 Jun 2018 13:22:50 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:Pf1ZyGvVYg2BzOjokZ/BAeR1mEQ=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 182
  <TagSet>
    <Tag>
      <Key>TagName1</Key>
      <Value>TageSetVaule1</Value>
    </Tag>
  </TagSet>
</Tagging>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643FEBA09B1ED46932CD07
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSEZp87iEirC6DggPB5cN49pSvHBWClg
Date: Wed, 27 Jun 2018 13:22:50 GMT
```

5.4.17 Obtaining Object Tags

Functions

This operation returns tags of an object.

If you do not specify a version ID in a request, make sure that you have the **GetObjectTagging** permission. If you do specify a version ID in a request, make sure that you have the **GetObjectTagging** and **GetObjectVersionTagging** permissions. By default, only the object owner can perform this operation. The object owner can grant this permission to others by using a bucket or user policy.

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OBS returns the tags of the current object version by default. You can use the **versionId** parameter to retrieve tags of any other version. If the version you are retrieving tags from is a delete marker, OBS returns **404 Not Found**.

NOTE

Tags are not supported for files in parallel file systems.

Request Syntax

```
GET /objectname?tagging&versionId=versionid HTTP/1.1
Date: date
Authorization: authorization string
```

Request Parameters

Table 5-144 describes the parameters in the request.

Table 5-144 Request parameters

Parameter	Description	Mandatory (Yes/No)
tagging	Indicates an object tag request. Type: string	Yes
versionId	ID of the tagged object version. Its corresponding response header is **x-obs-version-id**. Type: string	No

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
x-obs-version-id: version id
Content-Type: application/xml
Content-Length: length
Date: date
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
   <TagSet>
      <Tag>
         <Key>key</Key>
         <Value>value</Value>
      </Tag>
   </TagSet>
</Tagging>
```

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Response Headers

This response uses common headers. For details, see **Table 3-19**.

Response Elements

For more information about the object tag elements returned in the response, see **Table 5-142**.

Error Responses

In addition to common error codes, this API also returns others. **Table 5-145** lists the common errors and possible causes.

Table 5-145 Error codes of obtaining object tags

Error Code	Description	HTTP Status Code
NoSuchTagSet	No tags were configured for the specified object.	404

Sample Request

```
GET /objectname?tagging&versionId=G001018455096CE600005306000000DD HTTP/1.1
User-Agent: curl/7.29.0
Accept: */*
Date: Wed, 27 Jun 2018 13:25:44 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:H1INcyc5i0XlHqYTfuzkPxLZUPM=
```

Sample Response

```
HTTP/1.1 200 OK
x-obs-request-id: 0002B7532E0000015BEB35330C5884X1
x-obs-id-2: s12w20LYNQqSb7moq4ibgJwmQRSmVQV+rFBqplOGYkXUpXeS/nOmbkyD+E35K79j
x-obs-version-id: G001018455096CE600005306000000DD
Content-Type: application/xml
Date: Wed, 27 Jun 2018 13:25:44 GMT
Content-Length: 441

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
  <TagSet>
    <Tag>
      <Key>TagName1</Key>
      <Value>TageSetVaule1</Value>
    </Tag>
  </TagSet>
</Tagging>
```

5.4.18 Deleting Object Tags

Functions

This operation deletes tags from an object.

If you do not specify a version ID in a request, make sure that you have the **DeleteObjectTagging** permission. If you do specify a version ID in a request,

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make sure that you have the **DeleteObjectTagging** and **DeleteObjectVersionTagging** permissions. By default, only the object owner can perform this operation. The object owner can grant this permission to others by using a bucket or user policy.

OBS deletes tags from the current object version by default. You can use the **versionId** parameter to delete tags from any other version. If the version you are deleting tags from is a delete marker, OBS returns **404 Not Found**.

NOTE

Tags are not supported for files in parallel file systems.

Request Syntax

```
DELETE /objectname?tagging&versionId=versionid  HTTP/1.1
Date: date
Authorization: authorization string
```

Request Parameters

Table 5-146 describes the parameters in the request.

Table 5-146 Request parameters

Parameter	Description	Mandatory (Yes/No)
tagging	Indicates an object tag request. Type: string	Yes
versionId	ID of the tagged object version. Its corresponding response header is **x-obs-version-id**. Type: string	No

Request Headers

This request uses common headers. For details, see Table 3-3.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
x-obs-request-id: request id
x-obs-id-2: id
x-obs-version-id: version id
Content-Length: length
Date: date
```

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Response Headers

This request uses common headers. For details, see **Table 3-3**.

Response Elements

This response contains no elements.

Error Responses

No special error responses are returned. For details, see **Table 6-2**. If the object has no tags or the tag deletion is successful, OBS returns a 204 error.

Sample Request

```
DELETE /objectname?tagging&versionId=G001018455096CE600005306000000DD HTTP/1.1
User-Agent: curl/7.19.7
Accept: */*
Date: Wed, 27 Jun 2018 13:46:58 GMT
Authorization: authorization string
```

Sample Response

```
HTTP/1.1 204 No Content
x-obs-request-id: 0002B7532E0000015BEB2C212E53A17L
x-obs-id-2: CqT+86nnOkB+Cv9KZoVgZ28pSgMF+uGQBUC68flvkQeq6CxoCz65wWFMNBpXvea4
x-obs-version-id: G001018455096CE600005306000000DD
Content-Length: 0
Date: Wed, 27 Jun 2018 13:46:58 GMT
```

5.4.19 Configuring WORM Retention for an Object

Functions

This operation configures or updates the retention period for objects uploaded to a bucket with WORM enabled.

- If you do not configure a retention period or apply the default bucket-level protection rule to the object when you upload an object, you can perform this operation to configure a retention period for the object.
- If you already configure a retention period or apply the default bucket-level protection rule to the object when you upload an object, you can perform this operation to prolong the retention period for the object.
- The retention period of an object can only be modified, but not deleted.

  NOTE

  To configure or update the retention period of an object, you must have the PutObjectRetention permission.

Versioning

OBS automatically enables versioning when you enable WORM for a bucket. In such case, the object you uploaded to the bucket will be assigned a version ID. An object-level WORM policy is applied to the current object version by default, but you can specify a version ID to make the policy applied to a specific object version.

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The WORM configuration does not apply to a delete marker with a unique version ID.

Multipart Upload

Before a multipart upload is complete, the default bucket-level WORM policy is not automatically applied to the object parts uploaded. Besides, you cannot configure an object-level WORM policy using a header when you upload a part or assemble the object parts, or for a part that is already uploaded to the bucket. You can call this API to configure a WORM retention policy for the new object after the object parts are assembled.

Request Syntax

```
PUT /ObjectName?retention&versionId=versionid HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization

<Retention>
   <Mode>String</Mode>
   <RetainUntilDate>Timestamp</RetainUntilDate>
</Retention>
```

Request Parameters

Table 5-147 describes the request parameters.

Table 5-147 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
retention	Yes	String	**Definition**: Indicates that the operation is to configure or modify the retention period of an object. **Constraints**: None **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
versionId	No	String	**Definition**: Object version ID The WORM policy of the specified object version is to be changed. If this parameter is not carried, the operation applies to the current object version. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None. If this parameter is not configured, the latest version of the object is specified.

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

Table 5-148 Request elements

Parameter	Mandatory (Yes/No)	Type	Description
Retention	Yes	Container	**Definition**: Container for object-level WORM policy configuration. Retention is the parent node of Mode and RetainUntilDate. **Constraints**: None **Range**: For details, see **Table 5-149**. **Default value**: None

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Table 5-149 Retention parameters

Parameter	Mandatory (Yes/No)	Type	Description
Mode	Yes	String	**Definition**: Retention policy of the object. **Constraints**: None **Range**: COMPLIANCE: compliance mode **Default value**: None
RetainUntilDate	Yes	Long	**Definition**: Example: **1435728035000** **Constraints**: The specified time must be later than the current time and can be extended but not shortened. **Range**: None **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
```

Response Headers

This response uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

Table 5-150 describes possible special errors in this request.

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Table 5-150 Error Responses

Error Code	Description	HTTP Status Code
InvalidRequest	The object lock is disabled for the bucket.	400
InvalidRequest	The retention period date must be later than the current or the configured date.	400
MalformedObjectLockError	Invalid policy configuration format.	400

For other errors, see **Table 6-2**.

Sample Request

```
PUT /objectname?retention HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Type: application/xml
Content-Length: 157
<Retention>
    <Mode>COMPLIANCE</Mode>
    <RetainUntilDate>1435728035000</RetainUntilDate>
</Retention>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

5.5 Operations on Multipart Upload

5.5.1 Listing Initiated Multipart Uploads in a Bucket

Functions

You can use this API to query all initiated multipart uploads that have not been completed or canceled in a bucket.

Request Syntax

```
GET /?uploads&max-uploads=max HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

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Request Parameters

This request uses parameters to specify the query range for multipart uploads. Table 5-151 describes the parameters.

Table 5-151 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
delimiter	No	String	**Definition**: For a multipart upload that contains delimiters, the string between the first character and the first delimiter in the object name (excluding the prefix specified in the request, if any) are returned as **CommonPrefix**. Multipart uploads with objects that contain **CommonPrefix** are considered as a group and returned as one record. The record contains no information about the tasks, only informing the user that the group involves multipart uploads. **Constraints**: None **Range**: 1 to 1,024 characters **Default value**: None
prefix	No	String	**Definition**: Name prefix that the objects of the multipart tasks to be listed must contain. If a prefix is specified, the response only contains tasks whose names start with the prefix value. **Constraints**: The value must comply with the format of the object name. **Range**: 1 to 1,024 characters **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
max-uploads	No	Integer	**Definition**: Maximum number of multipart tasks that can be listed at a time. Unit: count **Constraints**: None **Range**: The value ranges from **1** to **1000**. If the specified value is greater than **1000**, only 1,000 objects are returned. **Default value**: 1000
key-marker	No	String	**Definition**: Lists multipart uploads that follow the value of **key-marker**. **Constraints**: None **Range**: The value of **NextKeyMarker** in the response body of the last request **Default value**: None
upload-id-marker	No	String	**Definition**: Lists multipart uploads that follow the value of **upload-id-marker** of **key-marker**. **Constraints**: This parameter is valid only when it is used together with **key-marker**. **Range**: The value of **NextUploadIdMarker** in the response body of the last request **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

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Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListMultipartUploadsResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Bucket>bucketname</Bucket>
   <KeyMarker/>
   <UploadIdMarker/>
   <NextKeyMarker>nextMarker</NextKeyMarker>
   <NextUploadIdMarker>idMarker</NextUploadIdMarker>
   <MaxUploads>maxUploads</MaxUploads>
   <IsTruncated>true</IsTruncated>
   <Upload>
      <Key>key</Key>
      <UploadId>uploadID</UploadId>
      <Initiator>
         <ID>domainID/domainID:userID/userID</ID>
      </Initiator>
      <Owner>
         <ID>ownerID</ID>
      </Owner>
      <StorageClass>storageclass</StorageClass>
      <Initiated>initiatedDate</Initiated>
   </Upload>
</ListMultipartUploadsResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains elements of information about the multipart uploads. **Table 5-152** describes the elements.

Table 5-152 Response elements

Parameter	Type	Description
ListMultipartUploadsResult	Container	**Definition**: Container for listing multipart upload results. ListMultipartUploadsResult is the parent node of Bucket, KeyMarker, UploadIdMarker, NextKeyMarker, NextUploadIdMarker, MaxUploads, IsTruncated, Upload, Prefix, Delimiter and CommonPrefixes. **Range**: For details, see **Table 5-153**.

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Table 5-153 Elements in a ListMultipartUploadsResult response

Parameter	Type	Description
Bucket	String	**Definition**: Name of the bucket to which the multipart upload was initiated **Range**: The value can contain 3 to 63 characters.
KeyMarker	String	**Definition**: Object key where the multipart upload listing begins **Range**: 1 to 1,024 characters
UploadIdMarker	String	**Definition**: Upload ID where the multipart upload listing begins **Range**: The value is a string greater than 0 and less than or equal to 32.
NextKeyMarker	String	**Definition**: Value of **KeyMarker** in a subsequent request if a multipart upload list is truncated **Range**: 1 to 1,024 characters
NextUploadIdMarker	String	**Definition**: Value of **UploadMarker** in a subsequent request if a multipart upload list is truncated. **Range**: The value is a string greater than 0 and less than or equal to 32.
MaxUploads	Integer	**Definition**: Maximum of multipart uploads to be returned at a time Unit: count **Range**: The value ranges from 1 to 1000. If the value is out of the range, the default value 1000 is used.

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Parameter	Type	Description
IsTruncated	Boolean	**Definition**: Whether the returned list is truncated. **Range**: • **true**: Not all results are returned. • **false**: All results are returned.
Upload	Container	**Definition**: Container for storing multipart upload information. Upload is the parent node of Key, UploadId, Initiator, Owner, StorageClass, and Initiated. **Range**: For details, see **Table 5-154**.
ListMultipartUploadsResult.Prefix	String	**Definition**: Prefix carried in a request. **Range**: 1 to 1,024 characters
Delimiter	String	**Definition**: Delimiter in a request. **Range**: The value is a string of 1 to 1024 characters.
CommonPrefixes	Container	**Definition**: Indicates group information. If you specify a delimiter in the request, the response contains group information in CommonPrefixes. CommonPrefixes is the parent node of Prefix. **Range**: For details, see **Table 5-157**.

Table 5-154 Upload response elements

Parameter	Type	Description
Key	String	**Definition**: Name of the object in the initiated multipart upload. **Range**: 1 to 1,024 characters

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Parameter	Type	Description
UploadId	String	**Definition**: ID of the multipart upload **Range**: The value must contain 1 to 32 characters.
Initiator	Container	**Definition**: Creator of the multipart upload task. Initiator is the parent node of ID. **Range**: For details, see **Table 5-155**.
Owner	Container	**Definition**: Owner of the part. Owner is the parent node of ID. **Range**: For details, see **Table 5-156**.
StorageClass	String	**Definition**: Indicates the storage class that will be used for an object to be uploaded in parts. **Range**: • STANDARD: Standard storage • WARM: Infrequent Access storage • COLD: Archive storage
Initiated	Date	**Definition**: Indicates the time (UTC) when the multipart upload task is initiated. The date is in the ISO8601 format, for example, 2018-01-01T00:00:00.000Z. **Range**: None

Table 5-155 Initiator response elements

Parameter	Type	Description
ID	String	**Definition**: URN of the multipart upload initiator. The format is **domainID/***{domainId}***:userID/***{userId}*. **Range**: None

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Table 5-156 Owner response elements

Parameter	Type	Description
ID	String	**Definition**: Domain ID of the multipart upload initiator. The format is *{domainId}*. **Range**: None

Table 5-157 CommonPrefixes response elements

Parameter	Type	Description
CommonPrefixes.Prefix	String	**Definition**: Indicates different prefixes in the CommonPrefixes group information. **Range**: None

Error Responses

If the value of **maxUploads** is a non-integer or smaller than 0, OBS returns **400 Bad Request**.

Other errors are included in **Table 6-2**.

Sample Request: Listing Initiated Multipart Uploads

```
GET /?uploads HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:51:21 GMT
Authorization: OBS UDSIAMSTUBTEST000008:XdmZgYQ+ZVy1rjxJ9/KpKq+wrU0=
```

Sample Response: Listing Initiated Multipart Uploads

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D405534D046A2295674C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSDaHP+a+Bp0RI6Mm9XvCOrf7q3qvBQW
Content-Type: application/xml
Date: WED, 01 Jul 2015 04:51:21 GMT
Content-Length: 681

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListMultipartUploadsResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Bucket>examplebucket</Bucket>
  <KeyMarker/>
  <UploadIdMarker/>
  <Delimiter/>
  <Prefix/>
  <MaxUploads>1000</MaxUploads>
  <IsTruncated>false</IsTruncated>
```

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```
 <Upload>
  <Key>obj2</Key>
  <UploadId>00000163D40171ED8DF4050919BD02B8</UploadId>
  <Initiator>
    <ID>domainID/b4bf1b36d9ca43d984fbcb9491b6fce9:userID/71f390117351534r88115ea2c26d1999</ID>
  </Initiator>
  <Owner>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
  </Owner>
  <StorageClass>STANDARD</StorageClass>
  <Initiated>2015-07-01T02:30:54.582Z</Initiated>
 </Upload>
</ListMultipartUploadsResult>
```

Sample Request: Listing Initiated Multipart Uploads (with a Prefix and Delimiter Specified)

The following example describes how to list two initiated multipart uploads (with objects **multipart-object001** and **part2-key02** in bucket **examplebucket**. In this listing operation, **prefix** is set to **multipart** and **object001** is set to **delimiter**.

```
GET /?uploads&delimiter=object001&prefix=multipart HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 04:51:21 GMT
Authorization: OBS UDSIAMSTUBTEST000008:XdmZgYQ+ZVy1rjxJ9/KpKq+wrU0=
```

Sample Response: Listing Initiated Multipart Uploads (with a Prefix and Delimiter Specified)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 5DEB00000164A27A1610B8250790D703
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSq3ls2ZtLDD6pQLcJq1yGITXgspSvBR
Content-Type: application/xml
Date: WED, 01 Jul 2015 04:51:21 GMT
Content-Length: 681
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListMultipartUploadsResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Bucket>newbucket0001</Bucket>
  <KeyMarker></KeyMarker>
  <UploadIdMarker>
  </UploadIdMarker>
  <Delimiter>object</Delimiter>
  <Prefix>multipart</Prefix>
  <MaxUploads>1000</MaxUploads>
  <IsTruncated>false</IsTruncated>
  <CommonPrefixes>
    <Prefix>multipart-object001</Prefix>
  </CommonPrefixes>
</ListMultipartUploadsResult>
```

5.5.2 Initiating a Multipart Upload

Functions

Before using this operation, make an API operation call to create a multipart upload task. The system will return a globally unique upload ID as the multipart upload identifier. You can use this ID to upload, assemble, and list parts. Create a multipart upload task does not affect the object that has the same name as object to be uploaded in multiple parts. You can create more than one multipart upload tasks for an object. This operation request can contain headers **x-obs-acl**, **x-obs-**

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meta-*, **Content-Type**, and **Content-Encoding**. The headers are recorded in the multipart upload metadata.

This operation supports server-side encryption.

WORM

If a bucket has WORM enabled, you can configure object-level retention policies when initiating multipart uploads. You can specify the **x-obs-object-lock-mode** and **x-obs-object-lock-retain-until-date** headers when you initiate a multipart upload to protect the object assembled. If you do not specify these two headers but have configured a default bucket-level WORM policy, this default policy automatically applies to the object newly assembled. You can also configure or update a WORM retention policy after the object is assembled.

Different from uploads with PUT and POST, a multipart upload only requires that the date specified in the **x-obs-object-lock-retain-until-date** header be no later than the initiation time, but does not have to be later than the completion time of the multipart upload. When the default bucket-level WORM policy is applied, the protection starts when the object parts are assembled and ends once the default bucket-level protection period expires. Before assembling the object parts uploaded, the multipart upload can be canceled and will not be affected by the WORM configuration.

Request Syntax

```
POST /ObjectName?uploads  HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: authorization
```

Request Parameters

This request uses parameters to specify a multipart upload. **Table 5-158** describes the parameters.

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Table 5-158 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
uploads	String	Yes	**Definition**: Indicates a multipart upload. **Constraints**: • This parameter is an empty string. • If this parameter is not included, the request is treated as an ordinary POST upload. **Range**: An empty string. **Default value**: None

Request Headers

The request can use additional headers shown in **Table 5-159**.

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Table 5-159 Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	**Definition**: When initiating a multipart upload, you can add this header to set an object ACL. Example: **x-obs-acl: public-read-write** **Constraints**: Use character strings. **Range**: • private • public-read • public-read-write For details about each policy, see the "Configuring an ACL Using Header Fields" section in **ACLs**. **Default value**: private
x-obs-grant-read	String	No	**Definition**: When initiating a multipart upload, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. Example: **x-obs-grant-read: ID=domainID**. **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read-acp	String	No	**Definition**: When initiating a multipart upload, you can use this header to grant all users in a domain the permissions to obtain the object ACL. Example: **x-obs-grant-read-acp: ID=domainID**. **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None
x-obs-grant-write-acp	String	No	**Definition**: When initiating a multipart upload, you can use this header to grant all users in a domain the permissions to write the object ACL. Example: **x-obs-grant-write-acp: ID=***domainID* **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-full-control	String	No	**Definition**: When initiating a multipart upload, you can use this header to grant all users in a domain the following permissions: Permissions to read objects, obtain object metadata, obtain object ACLs, and write object ACLs. Example: **x-obs-grant-full-control: ID=domainID**. **Constraints**: Use commas (,) to separate multiple domains. **Range**: None **Default value**: None
x-obs-storage-class	String	No	**Definition**: When initiating a multipart upload, you can add this header to specify the storage class for the object. Example: **x-obs-storage-class: STANDARD** **Constraints**: ● If you do not use this header, the object storage class is the default storage class of the bucket. ● The value is case-sensitive. **Range**: ● STANDARD ● WARM ● COLD **Default value**: By default, the storage class of the bucket is inherited.

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Header	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	**Definition**: If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. To another object in the same bucket: x-obs-website-redirect-location:/anotherPage.html To an external URL: x-obs-website-redirect-location:http://www.example.com/ OBS obtains the specified value from the header and stores it in the object metadata **WebsiteRedirectLocation**. **Constraints**: • The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. • OBS supports redirection for objects in the root directory of a bucket, not for those in folders. **Default value**: None
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	**Definition**: Indicates that SSE-KMS is used. Example: **x-obs-server-side-encryption: kms** **Constraints**: None **Range**: • kms • AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-kms-key-id	String	No	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-bucket-key-enabled	String	No	**Definition**: Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled. **Default value**: false

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: ● This header is used only when SSE-C is used. ● This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	**Definition**: The key used for encrypting an object. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	**Definition**: The MD5 value of the encryption key. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: ● This header is used only when SSE-C is used. ● This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None
x-obs-expires	Integer	No	**Definition**: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. (The calculation starts from when the object was last modified). Example: **x-obs-expires:3** **Constraints**: This parameter can be configured only when uploading the object. It cannot be modified by calling a metadata modification API. **Range**: An integer greater than or equal to 0, in days **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	**Definition**: An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: **x-obs-tagging:TagA=A&TagB&TagC** **Constraints**: • If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. • If there is no equal sign (=) in a configuration, the tag value is considered left blank. **Range**: None **Default value**: None
x-obs-object-lock-mode	String	No, but required when **x-obs-object-lock-retain-until-date** is present.	**Definition**: WORM mode to be applied to an object. Example: **x-obs-object-lock-mode:COMPLIANCE** **Constraints**: This parameter must be used together with **x-obs-object-lock-retain-until-date**. **Range**: Only COMPLIANCE (compliance mode) is supported. **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-object-lock-retain-until-date	String	No, but required when **x-obs-object-lock-mode** is present.	**Definition**: When the WORM policy of the object expires. Example: **x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z** **Constraints**: • The value must be a UTC time that complies with the ISO 8601 standard. Example: **2015-07-01T04:11:15Z** • This parameter must be used together with **x-obs-object-lock-mode**. **Range**: The time must be later than the current time. **Default value**: None
x-obs-meta-*	String	No	**Definition**: When initiating a multipart upload, you can use a header starting with **x-obs-meta-** in the HTTP request to define object metadata for easy management. The custom metadata will be returned in the response when you retrieve the object or query the object metadata. For details, see **Managing Object Metadata**. Example: **x-obs-meta-test: test metadata** **Constraints**: This parameter can only be passed in HTTP request headers and cannot exceed 8 KB. **Range**: None **Default value**: None

For details about other common message headers, see **Table 3-3**.

Request Elements

This request involves no elements.

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Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length
Connection: status

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<InitiateMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Bucket>BucketName</Bucket>
   <Key>ObjectName</Key>
   <UploadId>uploadID</UploadId>
</InitiateMultipartUploadResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Table 5-160 Additional response headers

Header	Type	Description
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption: kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

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Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: The MD5 value of the encryption key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

Response Elements

This response contains elements that indicate the multipart upload ID and the bucket and object names, which are used for uploading and assembling parts. **Table 5-161** describes the elements.

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Table 5-161 Response elements

Element	Type	Description
InitiateMultipartUploadResult	XML	**Definition**: Container of a multipart upload task. **Constraints**: None **Range**: None **Default value**: None
Bucket	String	**Definition**: Indicates the bucket name in the multipart upload. **Constraints**: • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Range**: None **Default value**: None

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Element	Type	Description
Key	String	**Definition**: Name of the object in the multipart upload. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is **examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt**, the object name is **folder/test.txt**. **Constraints**: See **Object Overview**. **Range**: The value must contain 1 to 1,024 characters. **Default value**: None
UploadId	String	**Definition**: ID of the multipart upload, which is used to specify a multipart upload in uploading parts **Constraints**: None **Range**: The value must contain 1 to 32 characters. **Default value**: None

Error Responses

1. If the AK or signature was invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
2. If the bucket was not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
3. If the user did not have the write permission for the specified bucket, OBS returns **403 Forbidden** and the error code is **AccessDenied**.

Other errors are included in **Table 6-2**.

Sample Request: Initiating a Multipart Upload

```
POST /objectkey?uploads  HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 05:14:52 GMT
Authorization: OBS AKIAIOSFODNN7EXAMPLE:VGhpcyBtZXNzYWdlIHNpZ25lZGGieSRlbHZpbmc=
```

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Sample Response: Initiating a Multipart Upload

```
HTTP/1.1 200 OK
Server: OBS
x-obs-id-2: Weag1LuByRx9e6j5Onimru9pO4ZVKnJ2Qz7/C1NPcfTWAtRPfTaOFg==
x-obs-request-id: 996c76696e6727732072657175657374
Date: WED, 01 Jul 2015 05:14:52 GMT
Content-Length: 303

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<InitiateMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <Bucket>bucketname</Bucket>
  <Key>objectkey</Key>
  <UploadId>DCD2FC98B4F70000013DF578ACA318E7</UploadId>
</InitiateMultipartUploadResult>
```

Sample Request: Initiating a Multipart Upload (with the ACL Configured)

```
POST /objectkey?uploads  HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.eu
Date: WED, 01 Jul 2015 05:15:43 GMT
x-obs-grant-write-acp:ID=52f24s3593as5730ea4f722483579ai7,ID=a93fcas852f24s3596ea8366794f7224
Authorization: OBS AKIAIOSFODNN7EXAMPLE:VGhpcyBtZXNzYWdlIHNpZ25lZGGieSRlbHZpbmc=
```

Sample Response: Initiating a Multipart Upload (with the ACL Configured)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTnv+daB51p+IVhAvWN7s5rSKhcWqDFs
x-obs-request-id: BB78000001648457112DF37FDFADD7AD
Date: WED, 01 Jul 2015 05:15:43 GMT
Content-Length: 303

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<InitiateMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
  <Bucket>bucketname</Bucket>
  <Key>objectkey</Key>
  <UploadId>000001648453845DBB78F2340DD460D8</UploadId>
</InitiateMultipartUploadResult>
```

5.5.3 Uploading Parts

Functions

After a multipart upload task is created, you can upload parts for this task using the obtained multipart upload ID. When parts are uploaded in a multipart upload of an object, the upload sequence does not affect part merging, namely, multiple parts can be uploaded concurrently.

Ensure that the part size ranges from 100 KB to 5 GB and the size of the last part ranges from 0 to 5 GB. Otherwise, an error will be reported when you assemble parts. The upload part ID ranges from 1 to 10,000.

This operation supports server-side encryption.

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NOTICE

The value of **partNumber** in a multipart task is unique. If you upload a part of the same **partNumber** repeatedly, the last part uploaded will overwrite the previous one. When multiple concurrent uploading of the same **partNumber** part of the same object is performed, the Last Write Win policy is applied. The time of **Last Write** is defined as the time when the metadata of the part is created. To ensure data accuracy, the client must be locked to ensure concurrent upload of the same part of the same object. Concurrent upload of different parts of the same object does not need to be locked.

Request Syntax

```
PUT /ObjectName?partNumber=partNum&uploadId=uploadID  HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Content-Length: length
Authorization: authorization
Content-MD5:md5
<object Content>
```

Request Parameters

This request uses parameters to specify the upload task ID and part number. **Table 5-162** describes the parameters.

Table 5-162 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
partNumber	Integer	Yes	**Definition**: Indicates the ID of a part to be uploaded. **Constraints**: None **Range**: An integer ranging from 1 to 10000. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
uploadId	String	Yes	**Definition**: Indicates a multipart upload ID. **Constraints**: None **Range**: None **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

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Table 5-163 Server-side encryption request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used. The encryption algorithm must be the same as that used to initiate multipart upload tasks.	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: ● Indicates the encryption algorithm used when SSE-C is used. ● This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: AES256 **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used. The key must be the same as that used to initiate multipart upload tasks.	**Definition**: The key used for encrypting an object. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: • This header is used only when SSE-C is used for encryption. • This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None

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Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used. The MD5 value must be the same as that used to initiate multipart upload tasks.	**Definition**: The MD5 value of the encryption key. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is used only when SSE-C is used for encryption. This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
ETag: etag
Content-Length: length
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

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Table 5-164 Additional response headers

Header	Type	Description
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-bucket-key-enabled	String	**Definition**: Whether to enable the SSE-KMS bucket key feature. **Constraints**: If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled. **Default value**: false

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Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: AES256 **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: The MD5 value of the encryption key. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: Base64-encoded MD5 value of the key ID. **Default value**: None

Response Elements

This response contains no elements.

Error Responses

1. If a part number is not within the range from 1 to 10000, OBS returns **400 Bad Request**.
2. If a part size has exceeded 5 GB, the error code **400 Bad Request** is returned.
3. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
4. Check whether the bucket exists. If the bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.

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5. View the bucket ACL to check whether the user has the read permission for the requested bucket. If the user does not have the read permission, OBS returns **403 AccessDenied**.
6. Check whether the multipart upload task exists. If the task does not exist, OBS returns **404 Not Found** and the error code is **NoSuchUpload**.
7. Check whether the request user is the initiator of the multipart upload task. If not, OBS returns **403 Forbidden** and the error code is **AccessDenied**.

Other errors are included in **Table 6-2**.

Sample Request

```
PUT /object02?partNumber=1&uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 05:15:55 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:ZB0hFwaHubi1aKHv7dSZjJts40g=
Content-Length: 102015348

[102015348 Byte part content]
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40956A703289CA066F1
ETag: "b026324c6904b2a9cb4b88d6d61c81d1"
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCUQu/EOEVSMa04GXVwy0z9WI+BsDKvfh
Date: WED, 01 Jul 2015 05:15:55 GMT
Content-Length: 0
```

Sample Request: Uploading a Part, with Server-Side Encryption Headers Included

```
PUT /object02?partNumber=1&uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 05:15:55 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:ZB0hFwaHubi1aKHv7dSZjJts40g=
Content-Length: 102015348
x-obs-server-side-encryption-customer-key: g0lCfA3Dv40jZz5SQJ1ZukLRFqtd093ksp192
x-obs-server-side-encryption-customer-key-MD5: Eo93ne1X/iTcs0132
x-obs-server-side-encryption-customer-algorithm: AES256

[102015348 Byte part content]
```

Sample Response: Uploading a Part, with Server-Side Encryption Headers Included

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40956A703289CA066F1
ETag: "b026324c6904b2a9cb4b88d6d61c81d1"
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCUQu/EOEVSMa04GXVwy0z9WI+BsDKvfh
Date: WED, 01 Jul 2015 05:15:55 GMT
Content-Length: 0
x-obs-server-side-encryption-customer-algorithm: AES256
x-obs-server-side-encryption-customer-key-MD5: Eo93ne1X/iTcs0132
```

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5.5.4 Copying Parts

Functions

After a multipart upload task is created, you can upload parts for this task using the obtained multipart upload ID. Alternatively, you can make an API call to copy a part or a whole uploaded object as a part.

This operation supports server-side encryption.

NOTICE

You cannot determine whether a request is successful only based on the **status_code** in the returned HTTP header. If **200** is returned for **status_code**, the server has received the request and started to process the request. The copy is successful only when the body in the response contains ETag.

Copy the source object and save it as **part1**. If a **part1** already exists before the copying, the original **part1** will be overwritten by the newly copied **part1**. After the copy is successful, only the latest **part1** is displayed. The old **part1** data will be deleted. Therefore, ensure that the target part does not exist or has no value when using the part copy operation. Otherwise, data may be deleted by mistake. The source object in the copy process does not change.

Archive Objects

If source objects are in the Archive storage class, ensure that these objects have been restored before you copy them. If the source object is not restored or is being restored, the copy fails and error **403 Forbidden** is returned. The fault is described as follows:

ErrorCode: InvalidObjectState

ErrorMessage: Operation is not valid for the source object's storage class

Request Syntax

```
PUT /ObjectName?partNumber=partNum&uploadId=UploadID HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
x-obs-copy-source: sourceobject
x-obs-copy-source-range:bytes=start-end
Authorization: authorization
Content-Length: length
```

Request Parameters

To copy a part, you need to specify the part number of the target part and the multipart upload task number. **Table 5-165** describes the parameters.

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Table 5-165 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
partNumber	Yes	Integer	**Definition**: Indicates the ID of a part to be uploaded. **Constraints**: None **Range**: An integer ranging from 1 to 10000. **Default value**: None
uploadId	Yes	String	**Definition**: ID of a multipart upload task. **Constraints**: None **Range**: The value must contain 1 to 32 characters. **Default value**: None

Request Headers

In addition to the common message headers, the request uses two extended headers. **Table 5-166** describes the common message headers.

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Table 5-166 Request headers

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source	Yes	String	**Definition**: Indicates the source object to be copied. Example: **x-obs-copy-source:**/*SourceBucketName*/*SourceObjectName* **Constraints**: Full-width characters and percent signs (%) must be URL-encoded. **Range**: None **Default value**: None
x-obs-copy-source-range	No	Integer	**Definition**: Byte range of the part to be copied in the source object. **Constraints**: None **Range**: The minimum value is 0 and the maximum value is the object length minus 1. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption-customer-algorithm	Yes only when SSE-C is used. The encryption algorithm must be the same as that used to initiate multipart upload tasks.	String	**Definition**: Indicates the encryption algorithm for the part copy when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header must be used together with **x-obs-server-side-encryption-customer-key** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: **AES256**: SSE-C encryption and the AES256 algorithm are used. **Default value**: None
x-obs-server-side-encryption-customer-key	Yes only when SSE-C is used. The key must be the same as that used to initiate multipart upload tasks.	String	**Definition**: Indicates the key used to encrypt the target part when SSE-C is used. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is a Base64-encoded 256-bit key and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption-customer-key-MD5	Yes only when SSE-C is used. The MD5 value must be the same as that used to initiate multipart upload tasks.	String	**Definition**: Indicates the MD5 value of the key for encrypting the part when SSE-C is used. The MD5 value is used to ensure data integrity during key transmission. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-server-side-encryption-customer-algorithm** and **x-obs-server-side-encryption-customer-key**. **Range**: MD5 value of the key. **Default value**: None
x-obs-copy-source-server-side-encryption-customer-algorithm	Yes only when SSE-C is used to copy a source object	String	**Definition**: Indicates the encryption algorithm for the source object when SSE-C is used. Example: **x-obs-copy-source-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header must be used together with **x-obs-copy-source-server-side-encryption-customer-key** and **x-obs-copy-source-server-side-encryption-customer-key-MD5**. **Range**: **AES256**: SSE-C encryption and the AES256 algorithm are used. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-server-side-encryption-customer-key	Yes only when SSE-C is used to copy a source object	String	**Definition**: Indicates the key for decrypting the source object when SSE-C is used. Example: **x-obs-copy-source-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is a Base64-encoded 256-bit key and must be used together with **x-obs-copy-source-server-side-encryption-customer-algorithm** and **x-obs-copy-source-server-side-encryption-customer-key-MD5**. **Range**: None **Default value**: None
x-obs-copy-source-server-side-encryption-customer-key-MD5	Yes only when SSE-C is used to copy a source object	String	**Definition**: Indicates the MD5 value of the key for the source object when SSE-C is used. The MD5 value is used to ensure data integrity during key transmission. Example: **x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is a Base64-encoded 128-bit MD5 value and must be used together with **x-obs-copy-source-server-side-encryption-customer-algorithm** and **x-obs-copy-source-server-side-encryption-customer-key**. **Range**: MD5 value of the key. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-if-match	No	String	**Definition**: Indicates that the source object is copied only if its ETag matches the one specified in this header. Otherwise, a 412 status code (failed precondition) is returned. Example: **x-obs-copy-source-if-match: etag** **Constraints**: This parameter can be used with **x-obs-copy-source-if-unmodified-since** but cannot with other conditional copy headers. **Range**: The ETag of the source object **Default value**: None
x-obs-copy-source-if-none-match	No	String	**Definition**: Indicates that the source object is copied only if its ETag does not match the one specified in this header. Otherwise, a 412 status code (failed precondition) is returned. Example: **x-obs-copy-source-if-none-match: etag** **Constraints**: This parameter can be used with **x-obs-copy-source-if-modified-since** but cannot with other conditional copy headers. **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-if-unmodified-since	No	String	**Definition**: Objects are copied only if the source object has not been modified after the time specified by this parameter. Otherwise, error code 412 (the precondition is not met) is returned. **Constraints**: ● This parameter can be used with **x-obs-copy-source-if-match** but cannot with other conditional copy parameters. ● The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. **Range**: The value is an HTTP time character string in the format specified by RFC2616. Select one of the following formats: 1. **EEE, dd MMM yyyy HH:mm:ss z** 2. **EEEE, dd-MMM-yy HH:mm:ss z** 3. **EEE MMM dd HH:mm:ss yyyy** Examples: 1. **x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT** 2. **x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT** 3. **x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994** **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-if-modified-since	No	String	**Definition**: Objects are copied only if the source object has been modified after the time specified by this parameter. Otherwise, error code 412 (the precondition is not met) is returned. **Constraints**: • This parameter can be used with **x-obs-copy-source-if-none-match** but cannot with other conditional copy parameters. • The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. **Range**: The value is an HTTP time character string in the format specified by RFC2616. Select one of the following formats: 1. **EEE, dd MMM yyyy HH:mm:ss z** 2. **EEEE, dd-MMM-yy HH:mm:ss z** 3. **EEE MMM dd HH:mm:ss yyyy** Examples: 1. **x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT** 2. **x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT** 3. **x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994** **Default value**: None

Request Elements

This request involves no elements.

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Response Syntax

```
HTTP/1.1 status_code
Date: date

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CopyPartResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
>
   <LastModified>modifiedDate</LastModified>
   <ETag>etag</ETag>
</CopyPartResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Table 5-167 Additional response headers

Parameter	Type	Description
x-obs-server-side-encryption	String	**Definition**: This parameter specifies the encryption mode for the part copy. Example: **x-obs-server-side-encryption:kms** **Range**: • kms: SSE-KMS is used. • AES256: SSE-OBS is used and the AES256 algorithm is used.
x-obs-server-side-encryption-kms-key-id	String	**Definition**: If the SSE-KMS encryption is used with a specified key, the key ID is required. For details about how to obtain the key ID, see **Viewing a Key**. This header can be used to specify the encryption key only when the **x-obs-server-side-encryption** header is set to **kms** (that is, the KMS encryption is used). **Range**: If you choose to use KMS for encryption but do not set this header, the value of this header is the ID of the default key. If you want to use a custom key, obtain the key ID by referring to **Viewing Key Details**.
x-obs-server-side-encryption-bucket-key-enabled	Boolean	**Definition**: Whether to enable the SSE-KMS bucket key feature. If you set this header to **true**, you must also specify **x-obs-server-side-encryption-kms-key-id** to specify the key ID. **Range**: • **true**: The bucket key is enabled. • **false**: The bucket key is disabled.

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Parameter	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: Indicates an encryption algorithm. This header is included in a response if SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Range**: **AES256**: SSE-C encryption and the AES256 algorithm are used.
x-obs-server-side-encryption-customer-key-MD5	String	**Definition**: Indicates the MD5 value of the key for encrypting objects. This header is included in a response when SSE-C is used. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Range**: MD5 value of the key.

Response Elements

This response contains elements of a part copy result. **Table 5-168** describes the elements.

Table 5-168 Response elements

Parameter	Type	Description
LastModified	String	**Definition**: Indicates the latest time an object was modified. The time is in the ISO8601 format. Example: 2018-01-01T00:00:00.000Z **Range**: None
ETag	String	**Definition**: ETag value of the target part. It is the unique identifier of the part content and is used to verify data integrity when assembling parts. **Range**: The value must contain 32 characters.

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Error Responses

1. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
2. Check whether the source bucket or destination bucket exists. If the source bucket or destination bucket does not exist, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
3. If the source object does not exist, OBS returns **404 Not Found** and the error code is **NoSuchKey**.
4. If the user does not have the read permission for the specified object, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
5. If the user does not have the write permission for the destination bucket, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
6. If the specified task does not exist, OBS returns **404 Not Found** and the error code is **NoSuchUpload**.
7. If the user is not the initiator of the multipart upload task, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
8. When the size of a copied part has exceeded 5 GB, OBS returns **400 Bad Request**.
9. If a part number is not within the range from 1 to 10000, OBS returns error code **400 Bad Request**.

Other errors are included in **Table 6-2**.

Sample Request

```
PUT /tobject02?partNumber=2&uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 05:16:32 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:dSnpnNpawDSsLg/xXxaqFzrAmMw=
x-obs-copy-source: /destbucket/object01
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40ABBD20405D30B0542
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIJpD2efLy5o8sTTComwBb2He0j11Ne
Content-Type: application/xml
Date: WED, 01 Jul 2015 05:16:32 GMT
Transfer-Encoding: chunked

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CopyPartResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <LastModified>2015-07-01T05:16:32.344Z</LastModified>
  <ETag>"3b46eaf02d3b6b1206078bb86a7b7013"</ETag>
</CopyPartResult>
```

Sample Request: Specifying versionId to Copy a Part

```
PUT /tobject02?partNumber=2&uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 05:16:32 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:dSnpnNpawDSsLg/xXxaqFzrAmMw=
x-obs-copy-source: /examplebucket/object01?versionId=G001118A6456208AFFFFD24829FCF614
```

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Sample Response: Specifying versionId to Copy a Part

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40ABBD20405D30B0542
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIJpD2efLy5o8sTTComwBb2He0j11NeContent-
Type: application/xml
Date: WED, 01 Jul 2015 05:16:32 GMT
Transfer-Encoding: chunked

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CopyPartResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <LastModified>2015-07-01T05:16:32.344Z</LastModified>
  <ETag>"3b46eaf02d3b6b1206078bb86a7b7013"</ETag>
</CopyPartResult>
```

5.5.5 Listing Uploaded Parts that Have Not Been Assembled

Functions

You can use this API to query all parts of an uncompleted multipart upload task. The size of each part listed by this API is the same as the size of the part uploaded.

Request Syntax

```
GET /ObjectName?uploadId=uploadid&max-parts=max&part-number-marker=marker HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: auth
```

Request Parameters

This request uses parameters to specify which parts in a multipart upload will be listed. **Table 5-169** describes the parameters.

Table 5-169 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
uploadId	Yes	String	**Definition**: ID of the multipart upload **Constraints**: None **Range**: The value must contain 1 to 32 characters. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
max-parts	No	Integer	**Definition**: The maximum number of parts in a single response Unit: count **Constraints**: None **Range**: The value ranges from **1** to **1000**. If the specified value is greater than **1000**, **1000** is used. **Default value**: 1000
part-number-marker	No	Integer	**Definition**: Specifies the start position of the listing. Only the uploaded parts whose sequence numbers are greater than the value of this parameter are listed. **Constraints**: None **Range**: An integer ranging from 1 to 10000. **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListPartsResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Bucket>BucketName</Bucket>
   <Key>object</Key>
   <UploadId>uploadid</UploadId>
   <Initiator>
      <ID>id</ID>
```

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```
  </Initiator>
  <Owner>
    <ID>ownerid</ID>
  </Owner>
  <StorageClass>storageclass</StorageClass>
  <PartNumberMarker>partNmebermarker</PartNumberMarker>
  <NextPartNumberMarker>nextPartnumberMarker</NextPartNumberMarker>
  <MaxParts>maxParts</MaxParts>
  <IsTruncated>true</IsTruncated>
  <Part>
    <PartNumber>partNumber</PartNumber>
    <LastModified>modifiedDate</LastModified>
    <ETag>etag</ETag>
    <Size>size</Size>
  </Part>
</ListPartsResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response uses elements to return information about uploaded parts. **Table 5-170** describes the elements.

Table 5-170 Response elements

Parameter	Type	Description
ListPartsResult	Container	**Definition**: Container that stores the result of listing parts. ListPartsResult is the parent node of Bucket, Key, UploadId, Initiator, Owner, StorageClass, PartNumberMarker, NextPartNumberMarker, MaxParts, IsTruncated and Part. **Range**: For details, see **Table 5-171**.

Table 5-171 ListPartsResult response elements

Parameter	Type	Description
Bucket	String	**Definition**: Bucket name **Range**: The value can contain 3 to 63 characters.
Key	String	**Definition**: Object name **Range**: 1 to 1,024 characters

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Parameter	Type	Description
UploadId	String	**Definition**: Upload task ID **Range**: The value must contain 1 to 32 characters.
Initiator	Container	**Definition**: Creator of the multipart upload task. Initiator is the parent node of ID. **Range**: For details, see **Table 5-172**.
Owner	Container	**Definition**: Owner of the part. Owner is the parent node of ID. **Range**: For details, see **Table 5-173**.
StorageClass	String	**Definition**: Storage class **Range**: • STANDARD (Standard storage) • WARM (Infrequent Access storage) • COLD (Archive storage)
PartNumberMarker	Integer	**Definition**: Start number of the uploaded parts in the listing result. **Range**: 1–10000
NextPartNumberMarker	Integer	**Definition**: If not all parts are returned, the NextPartNumberMarker element is included in the response request, indicating the value of PartNumberMarker in the next request. **Range**: 1–10000
MaxParts	Integer	**Definition**: Maximum number of parts in a single response. Unit: count **Range**: 1–10000

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Parameter	Type	Description
IsTruncated	Boolean	**Definition**: Whether the returned part list is truncated. **Range**: **true**: Not all results are returned. **false**: All results are returned.
Part	Container	**Definition**: Container for storing part information. Part is the parent node of PartNumber, LastModified, ETag, and Size. **Range**: For details, see **Table 5-174**.

Table 5-172 Initiator response elements

Parameter	Type	Description
ID	String	**Definition**: URN of the multipart upload initiator. The format is **domainID/***{domainId}***:userID/***{userId}*. **Range**: None

Table 5-173 Owner response elements

Parameter	Type	Description
ID	String	**Definition**: Domain ID of the multipart upload initiator. The format is *{domainId}*. **Range**: None

Table 5-174 Part response elements

Parameter	Type	Description
PartNumber	Integer	**Definition**: ID of the uploaded part. **Range**: 1–10000

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Parameter	Type	Description
LastModified	Date	**Definition**: Time when a part was uploaded. The time is in the ISO8601 format. Example: 2018-01-01T00:00:00.000Z **Range**: None
ETag	String	**Definition**: ETag value of the uploaded part. It is the unique identifier of the part content and is used to verify data consistency when parts are assembled. **Range**: None
Size	Integer	**Definition**: Size of the uploaded part. **Range**: None

Error Responses

1. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
2. If the requested bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
3. If the requested multipart upload task does not exist, OBS returns **404 Not Found** and the error code is **NoSuchUpload**.
4. OBS determines whether the use's domain ID has the read permission for the specified bucket. If the user does not have the permission, OBS returns **403 Forbidden** and the error code is **AccessDenied**.

Other errors are included in **Table 6-2**.

Sample Request

```
GET /object02?uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 05:20:35 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:xkABdSrBPrz5yqzuZdJnK5oL/yU=
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40C099A04EF4DD1BDD9
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSK71fr+hDnzB0JBvQC1B9+S12AWxC41
```

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```
Content-Type: application/xml
Date: WED, 01 Jul 2015 05:20:35 GMT
Content-Length: 888

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListPartsResult xmlns="http://obs.eu-west-101.myhuaweicloud.eu/doc/2015-06-30/">
  <Bucket>test333</Bucket>
  <Key>obj2</Key>
  <UploadId>00000163D40171ED8DF4050919BD02B8</UploadId>
  <Initiator>
    <ID>domainID/domainiddomainiddomainiddo000008:userID/useriduseriduseriduseridus000008</ID>
  </Initiator>
  <Owner>
    <ID>domainiddomainiddomainiddo000008</ID>
  </Owner>
  <StorageClass>STANDARD</StorageClass>
  <PartNumberMarker>0</PartNumberMarker>
  <NextPartNumberMarker>2</NextPartNumberMarker>
  <MaxParts>1000</MaxParts>
  <IsTruncated>false</IsTruncated>
  <Part>
    <PartNumber>1</PartNumber>
    <LastModified>2018-06-06T07:39:32.522Z</LastModified>
    <ETag>"b026324c6904b2a9cb4b88d6d61c81d1"</ETag>
    <Size>2058462721</Size>
  </Part>
  <Part>
    <PartNumber>2</PartNumber>
    <LastModified>2018-06-06T07:41:03.344Z</LastModified>
    <ETag>"3b46eaf02d3b6b1206078bb86a7b7013"</ETag>
    <Size>4572</Size>
  </Part>
</ListPartsResult>
```

5.5.6 Completing a Multipart Upload

Functions

After all parts are uploaded, you can call this API to assemble specified parts into an object. Before performing this operation, you cannot download the uploaded data. When merging parts, you need to copy the additional message header information recorded during the initialization of the multipart upload task to the object metadata. The processing process is the same as that of the common upload object with these message headers. In the case of merging parts concurrently, the Last Write Win policy must be followed but the time for initiating Last Write is specified as the time when a part multipart upload is initiated.

As long as the multipart upload is not aborted, all uploaded parts occupy the space. However, after you assembled the specified parts, the uploaded but not assembled parts will be deleted to free up space.

You can send a request for downloading all or some data of the generated multipart by specifying a range.

You can send a request for deleting all parts uploaded in a multipart upload. Deleted data cannot be restored.

The merged parts do not use the MD5 value of entire object as the ETag. Their ETag is calculated as follows: $MD5(M_1M_2...M_N)$-N, where M_n is the MD5 value of part n (N is the total number of parts). As described in the **Sample Request**, there are three parts and each part has an MD5 value. The MD5 values of the three parts are recalculated to obtain a new MD5 value. Then -N is added to the right of the MD5 value to get the ETag of the combined parts. In this example, -N is **-3**.

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If the response to an object assembling request timed out and error 500 or 503 was returned, you can first obtain the object metadata of the multipart upload task. Then, check whether the value of header **x-obs-uploadId** in the response is the same as the ID of the current multipart upload task. If they are, it means the object parts have been successfully assembled on the server and you do not need to try again. For details, see **Consistency of Concurrent Operations**.

WORM

If a bucket has WORM enabled, the WORM protection will be automatically applied to the object generated after a multipart upload is complete. If you specify WORM headers and a retention expiration date when you initiate a multipart upload, the protection for the assembled object ends on the specified date. If you do not specify WORM headers during the initiation, but have configured the default bucket-level retention policy, this default policy is automatically applied and the protection starts when the multipart upload is complete. After a multipart upload is complete, you can still configure object-level WORM retention policies for the assembled object.

Versioning

If a bucket has versioning enabled, a unique version ID is generated for an object created from a multipart upload in this bucket and the version ID is returned in response header **x-obs-version-id**. If versioning is suspended for a bucket, the object version obtained after the merge is **null**. For details about the versioning statuses of a bucket, see **Configuring Versioning for a Bucket**.

NOTICE

If 10 parts are uploaded but only nine parts are selected for merge, the parts that are not merged will be automatically deleted by the system. The parts that are not merged cannot be restored after being deleted. Before combining the parts, adopt the interface used to list the parts that have been uploaded to check all parts to ensure that no part is missed.

Request Syntax

```
POST /ObjectName?uploadId=uploadID HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Content-Length: length
Authorization: authorization
<CompleteMultipartUpload>
   <Part>
      <PartNumber>partNum</PartNumber>
      <ETag>etag</ETag>
   </Part>
   <Part>
      <PartNumber>partNum</PartNumber>
      <ETag>etag</ETag>
   </Part>
   <Part>
      <PartNumber>partNum</PartNumber>
      <ETag>etag</ETag>
   </Part>
</CompleteMultipartUpload>
```

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Request Parameters

This request uses parameters to specify the ID of a multipart upload whose parts will be assembled. **Table 5-175** describes the parameters.

Table 5-175 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
uploadId	String	Yes	**Definition**: Multipart upload ID. **Range**: The value must contain 32 characters. **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request uses elements to specify the list of parts to be assembled. **Table 5-176** describes the elements.

Table 5-176 Request elements

Element	Type	Mandatory (Yes/No)	Description
CompleteMultipartUpload	XML	Yes	**Definition**: List of parts to be assembled **Constraints**: None **Range**: None **Default value**: None

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Element	Type	Mandatory (Yes/No)	Description
PartNumber	Integer	Yes	**Definition**: Part number **Constraints**: None **Range**: [1,10000] **Default value**: None
ETag	String	Yes	**Definition**: ETag value returned upon successful upload of a part. It is the unique identifier of the part content. This parameter is used to verify data consistency when parts are merged. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None

Response Syntax

```
HTTP/1.1 status_code
Date: date
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CompleteMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Location>http://example-Bucket.obs.region.myhuaweicloud.eu/example-Object</Location>
   <Bucket>bucketname</Bucket>
   <Key>ObjectName</Key>
   <ETag>ETag</ETag>
</CompleteMultipartUploadResult>
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

In addition to the common response headers, the message headers listed in **Table 5-177** may be used.

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Table 5-177 Additional response headers

Header	Type	Description
x-obs-version-id	String	**Definition**: Version of the object after parts are assembled. **Constraints**: None **Range**: The value must contain 32 characters. **Default value**: None
x-obs-server-side-encryption	String	**Definition**: The encryption method used by the server. Example: **x-obs-server-side-encryption:kms** **Constraints**: This header is included in a response if SSE-KMS is used. **Range**: • kms • AES256 **Default value**: None
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

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Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	**Definition**: The algorithm used for encryption. Example: **x-obs-server-side-encryption-customer-algorithm:AES256** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: AES256 **Default value**: None

Response Elements

This response uses elements to return the result of assembling parts. **Table 5-178** describes the elements.

Table 5-178 Response elements

Element	Type	Description
Location	String	**Definition**: Path of the object after parts are assembled. **Constraints**: Format: http://bucketName.obs.*region*.myhuaweicloud.eu/objectName **Range**: None **Default value**: None

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Element	Type	Description
Bucket	String	**Definition**: Bucket where parts are assembled **Constraints**: • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Range**: None **Default value**: None
Key	String	**Definition**: Object name obtained after part assembling. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is **examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt**, the object name is **folder/test.txt**. **Constraints**: See **Object Overview**. **Range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Element	Type	Description
ETag	String	**Definition**: The ETag that uniquely identifies the object after its parts were assembled, calculated based on the ETag of each part. **Constraints**: If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Range**: The value must contain 32 characters. **Default value**: None

Error Responses

1. If no message body exists, OBS returns **400 Bad Request**.
2. If the message body format is incorrect, OBS returns **400 Bad Request**.
3. If the part information in the message body is not sorted by part sequence number, OBS returns **400 Bad Request** and the error code is **InvalidPartOrder**.
4. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
5. If the requested bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
6. If the requested multipart upload does not exist, OBS returns **404 Not Found** and error code **NoSuchUpload**.
7. If the user is not the initiator of the task, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
8. If the request part list contains a part that does not exist, OBS returns **400 Bad Request** and the error code is **InvalidPart**.
9. If the part's ETag contained in the request list is incorrect, OBS returns **400 Bad Request** with an error code of **InvalidPart**.
10. If the size of a part other than the last part is smaller than 100 KB, OBS returns **400 Bad Request**.
11. If the size of the object is greater than 48.8 TB after parts being merged, OBS returns status code **400 Bad Request**.

Other errors are included in **Table 6-2**.

Sample Request

```
POST /object02?uploadId=00000163D46218698DF407362295674C HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 05:23:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:dOfK9iILcKxo58tRp3fWeDoYzKA=
```

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```
Content-Length: 422

<?xml version="1.0" encoding="utf-8"?>
<CompleteMultipartUpload>
  <Part>
    <PartNumber>1</PartNumber>
    <ETag>a54357aff0632cce46d942af68356b38</ETag>
  </Part>
  <Part>
    <PartNumber>2</PartNumber>
    <ETag>0c78aef83f66abc1fa1e8477f296d394</ETag>
  </Part>
  <Part>
    <PartNumber>3</PartNumber>
    <ETag>acbd18db4cc2f85cedef654fccc4a4d8</ETag>
  </Part>
</CompleteMultipartUpload>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D4625BE3075019BD02B8
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSN8D1AfQcIvyGBZ9+Ee+jU6zv1iYdO4
Content-Type: application/xml
Date: WED, 01 Jul 2015 05:23:46 GMT
Content-Length: 326

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CompleteMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.eu/doc/2015-06-30/">
   <Location>http://examplebucket.obs.region.myhuaweicloud.eu/object02</Location>
   <Bucket>examplebucket</Bucket>
   <Key>object02</Key>
   <ETag>"03f814825e5a691489b947a2e120b2d3-3"</ETag>
</CompleteMultipartUploadResult>
```

5.5.7 Canceling a Multipart Upload Task

Functions

You can call this API to cancel a multipart upload task. You cannot upload or list parts after operations to merge parts or abort a multipart upload are performed.

Request Syntax

```
DELETE /ObjectName?uploadId=uplaodID HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.eu
Date: date
Authorization: auth
```

Request Parameters

This request uses message parameters to specify the multipart upload task number. **Table 5-179** describes the parameters.

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Table 5-179 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
uploadId	Yes	String	**Definition**: ID of the multipart upload **Constraints**: None **Range**: The value must contain 1 to 32 characters. **Default value**: None

Request Headers

This request uses common headers. For details, see **Table 3-3**.

Request Elements

This request involves no elements.

Response Syntax

```
HTTP/1.1 status_code
Date: date
```

Response Headers

The response to the request uses common headers. For details, see **Table 3-19**.

Response Elements

This response contains no elements.

Error Responses

1. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
2. If the requested bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
3. If you are neither the initiator of a multipart upload nor the bucket owner, OBS returns **403 Forbidden**.
4. If the operation is successful, OBS returns **204 No Content** to the user.

Other errors are included in **Table 6-2**.

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Sample Request

```
DELETE /object02?uploadId=00000163D46218698DF407362295674C HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: WED, 01 Jul 2015 05:28:27 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:QmM2d1DBXZ/b8drqtEv1QJHPbM0=
```

Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 8DF400000163D463E02A07EC2295674C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTp5YDlzn0UgqG3laRfkHLGyz7RpR9ON
Date: WED, 01 Jul 2015 05:28:27 GMT
```

5.6 Server-Side Encryption

5.6.1 Server-Side Encryption Overview

You can configure server-side encryption for objects, so that they will be encrypted or decrypted when you upload them to or download them from a bucket.

The encryption and decryption happen on the server side.

The encryption methods provided include SSE-KMS and SSE-C. All of them use the AES-256 algorithm.

With SSE-KMS, OBS uses the keys provided by KMS for server-side encryption. You can create custom keys on KMS to encrypt your objects.

With SSE-C, OBS uses the keys and MD5 values provided by customers for server-side encryption.

When server-side encryption is used, the returned ETag value is not the object's MD5 value. OBS will verify the object's MD5 value as long as the upload request includes the **Content-MD5** header, no matter whether server-side encryption is used or not.

When server-side encryption is used, you are advised to use HTTPS to transmit and receive data.

5.6.2 SSE-KMS

Functions

With SSE-KMS, OBS uses the keys provided by Key Management Service (KMS) for server-side encryption. You can create custom keys on KMS to encrypt your objects. If you do not specify a key, OBS creates a default key the first time you upload an object to the bucket. Custom keys or default keys are used to encrypt and decrypt data encryption keys (DEKs).

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NOTE

When a custom KMS key in a non-default IAM project is used to encrypt objects, only the key owner can upload or download the encrypted objects.

When the default KMS key in a region is used to encrypt an object, this default key belongs to the object owner. Only the key owner (also the object owner) can upload or download this object.

Newly Added Headers

Two headers are added for SSE-KMS. You can configure the headers listed in **Table 5-180** to use SSE-KMS.

You can also configure the default encryption for a bucket to encrypt objects you upload to the bucket. After default encryption is enabled for a bucket, any object upload request without encryption header included will inherit the bucket's encryption settings. For details, see **Configuring Bucket Encryption**.

Table 5-180 Headers used in SSE-KMS

Header	Type	Description
x-obs-server-side-encryption	String	**Definition**: Encryption mode. Example: **x-obs-server-side-encryption:AES256** **Constraints**: None **Range**: • kms: SSE-KMS is used. • AES256: SSE-OBS is used and the AES256 algorithm is used. **Default value**: None

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Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	**Definition**: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see **Viewing a Key**. **Constraints**: This header can only be used when you specify **kms** for the **x-obs-server-side-encryption** header. **Default value**: If you specify **kms** for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

APIs Where SSE-KMS Headers Apply

You can configure headers about SSE-KMS in the APIs below:

- **Uploading Objects - PUT**
- **Uploading Objects - POST**: **x-obs-server-side-encryption** and **x-obs-server-side-encryption-kms-key-id** need to be placed in the form instead of headers.
- **Copying Objects** (The newly added headers apply to object copies.)
- **Initiating a Multipart Upload**

You can configure a bucket policy to restrict the request headers for a specified bucket. For example, if you require that object upload requests do not contain header **x-obs-server-side-encryption:"kms"**, you can use the following bucket policy:

```
{
   "Statement": [
      {
         "Sid": "DenyUnEncryptedObjectUploads",
         "Effect": "Deny",
         "Principal": "*",
         "Action": "PutObject",
         "Resource": "YourBucket/*",
         "Condition": {
            "StringNotEquals": {
               "x-obs-server-side-encryption": "kms"
            }
         }
      }
   ]
}
```

Sample Request: Using the Default Key to Encrypt an Object

```
PUT /encryp1 HTTP/1.1
User-Agent: curl/7.29.0
```

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```
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 06 Jun 2018 09:08:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:f3/7eS6MFbW3JO4+7I5AtyAQENU=
x-obs-server-side-encryption:kms
Content-Length: 5242
Expect: 100-continue

[5242 Byte object contents]
```

Sample Response: Using the Default Key to Encrypt an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D45AA81D038B6AE4C482
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: kms
x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/
522d6070-5ad3-4765-9737-9312ddc72cdb
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTv7cHmAnGfBAGXUHeibUsiETTNqlCqC
Date: Wed, 06 Jun 2018 09:08:21 GMT
Content-Length: 0
```

Sample Request: Using a Custom Key to Encrypt an Object

```
PUT /encryp1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 06 Jun 2018 09:08:50 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:f3/PWjkXYTYGs5lPOctTNEI2QENU=
x-obs-server-side-encryption:kms
x-obs-server-side-encryption-kms-key-id: 522d6070-5ad3-4765-43a7-a7d1-ab21f498482d
Content-Length: 5242
Expect: 100-continue

[5242 Byte object contents]
```

Sample Response: Using a Custom Key to Encrypt an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D45AA81D038B6AE4C482
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: kms
x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/
522d6070-5ad3-4765-43a7-a7d1-ab21f498482d
x-obs-id-2: 32AAAUJAIAABAdiAEAABA09AEAABCTv7cHmAn12BAG83ibUsiET5eqlCqg
Date: Wed, 06 Jun 2018 09:08:50 GMT
Content-Length: 0
```

Sample Request: Using a Key to Encrypt an Object Copy

```
PUT /destobject HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
x-obs-server-side-encryption:kms
x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/
522d6070-5ad3-4765-9737-9312ddc72cdb
Accept: */*
Date: Wed, 06 Jun 2018 09:10:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:SH3uTrElaGWarVI1uTq325kTVCI=
x-obs-copy-source: /bucket/srcobject1
```

Sample Response: Using a Key to Encrypt an Object Copy

```
HTTP/1.1 200 OK
Server: OBS
```

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```
x-obs-request-id: BB78000001648480AF3900CED7F15155
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: kms
x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/
522d6070-5ad3-4765-9737-9312ddc72cdb
x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS
Date: Wed, 06 Jun 2018 09:10:29 GMT
Content-Length: 0
```

Sample Request: Uploading an Encrypted Object Using a Signed URL

```
PUT /destobject?AccessKeyId=UI3SN1SRUQE14OYBKTZB&Expires=1534152518&x-obs-server-side-
encryption=kms&Signature=chvmG7%2FDA%2FDCQmTRJu3xngldJpg%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 06 Jun 2018 09:10:29 GMT
```

Sample Response: Uploading an Encrypted Object Using a Signed URL

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB78000001648480AF3900CED7F15155
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: kms
x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/
522d6070-5ad3-4765-9737-9312ddc72cdb
x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS
Date: Wed, 06 Jun 2018 09:10:29 GMT
Content-Length: 0
```

5.6.3 SSE-OBS

Functions

With SSE-OBS, OBS uses the keys provided by itself for server-side encryption. Unlike SSE-KMS where KMS manages keys, in SSE-OBS, OBS manages keys.

Newly Added Headers

Use the headers listed in **Table 5-181** to implement SSE-OBS.

You can also configure the default encryption for a bucket to encrypt objects you upload to the bucket. After the default encryption is configured for a bucket, if upload requests for that bucket do not contain encryption headers, the default encryption applies to the uploaded objects. For more information about configuring bucket encryption, see **Configuring Bucket Encryption**.

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Table 5-181 Headers used in SSE-OBS

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption	Yes	String	**Definition**: Encryption mode. Example: **x-obs-server-side-encryption:AES256** **Constraints**: None **Range**: • kms: SSE-KMS is used. • AES256: SSE-OBS is used and the AES256 algorithm is used. **Default value**: None

APIs Where SSE-OBS Headers Apply

You can configure headers about SSE-OBS in the APIs below:

- **Uploading Objects - PUT**
- **Uploading Objects - POST** (**x-obs-server-side-encryption** should be put in the form, instead of the header.)
- **Copying Objects** (The newly added headers apply to object copies.)
- **Initiating a Multipart Upload**

You can configure a bucket policy to restrict the request headers for a specified bucket. For example, if you require that object upload requests do not contain header **x-obs-server-side-encryption:"AES256"**, you can use the following bucket policy:

```
{
   "Statement": [
      {
         "Sid": "DenyUnEncryptedObjectUploads",
         "Effect": "Deny",
         "Principal": "*",
         "Action": "PutObject",
         "Resource": "YourBucket/*",
         "Condition": {
            "StringNotEquals": {
               "x-obs-server-side-encryption": "AES256"
            }
         }
      }
   ]
}
```

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Sample Request: Using the Default Key to Encrypt an Object

```
PUT /encryp1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 06 Jun 2018 09:08:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:f3/7eS6MFbW3JO4+7I5AtyAQENU=
x-obs-server-side-encryption:AES256
Content-Length: 5242
Expect: 100-continue

[5242 Byte object contents]
```

Sample Response: Using the Default Key to Encrypt an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D45AA81D038B6AE4C482
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: AES256
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTv7cHmAnGfBAGXUHeibUsiETTNqlCqC
Date: Wed, 06 Jun 2018 09:08:21 GMT
Content-Length: 0
```

Sample Request: Copying an Object as an Encrypted Object

```
PUT /destobject HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
x-obs-server-side-encryption:AES256
Accept: */*
Date: Wed, 06 Jun 2018 09:10:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:SH3uTrElaGWarVI1uTq325kTVCI=
x-obs-copy-source: /bucket/srcobject1
```

Sample Response: Copying an Object as an Encrypted Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB78000001648480AF3900CED7F15155
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: AES256
x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS
Date: Wed, 06 Jun 2018 09:10:29 GMT
Content-Length: 0
```

Sample Request: Uploading an Encrypted Object Using a Signed URL

```
PUT /destobject?AccessKeyId=UI3SN1SRUQE14OYBKTZB&Expires=1534152518&x-obs-server-side-
encryption=AES256&Signature=chvmG7%2FDA%2FDCQmTRJu3xngldJpg%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 06 Jun 2018 09:10:29 GMT
```

Sample Response: Uploading an Encrypted Object Using a Signed URL

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB78000001648480AF3900CED7F15155
ETag: "d8bffdfbab5345d91ac05141789d2477"
x-obs-server-side-encryption: AES256
x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS
Date: Wed, 06 Jun 2018 09:10:29 GMT
Content-Length: 0
```

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5.6.4 SSE-C

Functions

With SSE-C used, OBS uses the keys and MD5 values provided by customers for server-side encryption.

Newly Added Headers

OBS does not store your encryption keys. If you lost them, you lost the objects. Six headers are added to support SSE-C.

The following table lists headers that are required when you use SSE-C to encrypt objects.

Table 5-182 Headers used for encrypting objects in SSE-C

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption-customer-algorithm	Yes	String	**Definition**: Indicates the encryption algorithm for the object when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: This header is included in a response if SSE-C is used for server-side encryption. **Range**: **AES256**: SSE-C encryption and the AES256 algorithm are used. **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption-customer-key	Yes	String	**Definition**: The key for encrypting objects when SSE-C is used. Its value is a Base64-encoded 256-bit key. Example: **x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is used only when SSE-C is used for encryption. **Range**: None **Default value**: None
x-obs-server-side-encryption-customer-key-MD5	Yes	String	**Definition**: Indicates the MD5 value of the key for encrypting objects when SSE-C is used. Its value is a Base64-encoded MD5 value. The MD5 value is used to ensure data integrity during key transmission. Example: **x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is used only when SSE-C is used for encryption. **Range**: MD5 value of the key. **Default value**: None

APIs where the newly added headers apply:

- **Uploading an Object - PUT**
- **Uploading an Object - POST**
- **Copying an Object**: The newly added headers apply to the object copy.
- **Querying Object Metadata**
- **Downloading an Object**

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- **Initiating a Multipart Upload**
- **Uploading Parts**
- **Copying Parts**: The newly added headers apply to target parts.

The following table lists three headers that are added for CopyObject and UploadPart-Copy operations to support source objects encrypted using SSE-C.

Table 5-183 Headers for source objects encrypted by SSE-C

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-server-side-encryption-customer-algorithm	Yes	String	**Definition**: Indicates the algorithm for decrypting the source object when SSE-C is used. Example: **x-obs-server-side-encryption-customer-algorithm: AES256** **Constraints**: This header is used only when SSE-C is used for encryption. **Range**: **AES256**: SSE-C encryption and the AES256 algorithm are used. **Default value**: None
x-obs-copy-source-server-side-encryption-customer-key	Yes	String	**Definition**: Indicates the Base64 value of the key for decrypting the source object when SSE-C is used. Example: **x-obs-copy-source-server-side-encryption-customer-algorithm: K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=** **Constraints**: This header is used only when SSE-C is used for encryption. **Range**: None **Default value**: None

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Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-server-side-encryption-customer-key-MD5	Yes	String	**Definition**: Indicates the MD5 value of the key for decrypting the source object when SSE-C is used. The MD5 value is used to ensure data integrity during key transmission. Example: **x-obs-copy-source-server-side-encryption-customer-key:4XvB3tbNTN+tIEVa0/fGaQ==** **Constraints**: This header is used only when SSE-C is used for encryption. **Range**: MD5 value of the key. **Default value**: None

Sample Request: Uploading an Object Encrypted with SSE-C

```
PUT /encryp2 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
Date: Wed, 06 Jun 2018 09:12:00 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mZSfafoM+llApk0HGOThlqeccu0=
x-obs-server-side-encryption-customer-algorithm:AES256
x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=
x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==
Content-Length: 5242

[5242 Byte object contents]
```

Sample Response: Uploading an Object Encrypted with SSE-C

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D45E0017055619BD02B8
ETag: "0f91242c7f3d86f98ae572a686d0696e"
x-obs-server-side-encryption-customer-algorithm: AES256
x-obs-server-side-encryption-customer-key-MD5: 4XvB3tbNTN+tIEVa0/fGaQ==
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSSAJ8bTNJV0X+Ote1PtuWecqyMh6zBJ
Date: Wed, 06 Jun 2018 09:12:00 GMT
Content-Length: 0
```

Sample Request: Copying an SSE-C Encrypted Object and Saving It as a KMS Encrypted Object

```
PUT /kmsobject HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
```

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```
Accept: */*
Date: Wed, 06 Jun 2018 09:20:10 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mZSfafoM+llApk0HGOThlqeccu0=
x-obs-copy-source-server-side-encryption-customer-algorithm:AES256
x-obs-copy-source-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/
9Cw=
x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==
x-obs-server-side-encryption: kms
x-obs-copy-source: /examplebucket/encryp2
Content-Length: 5242

[5242 Byte object contents]
```

Sample Response: Copying an SSE-C Encrypted Object and Saving It as a KMS Encrypted Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BB7800000164848E0FC70528B9D92C41
ETag: "1072e1b96b47d7ec859710068aa70d57"
x-obs-server-side-encryption: kms
x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/
522d6070-5ad3-4765-9737-9312ddc72cdb
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTkkRzQXs9ECzZcavVRncBqqYNkoAEsr
Date: Wed, 06 Jun 2018 09:20:10 GMT
Content-Length: 0
```

Sample Request: Uploading an SSE-C Encrypted Object Using a Signed URL

```
PUT /encrypobject?
AccessKeyId=H4IPJX0TQTHTHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrzrzRNZxwS72CXeX
M%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.eu
Accept: */*
x-obs-server-side-encryption-customer-algorithm: AES256
x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=
x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==
Content-Length: 5242
Expect: 100-continue

[5242 Byte object contents]
```

Sample Response: Uploading an SSE-C Encrypted Object Using a Signed URL

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 804F00000164DB5E5B7FB908D3BA8E00
ETag: "1072e1b96b47d7ec859710068aa70d57"
x-obs-server-side-encryption-customer-algorithm: AES256
x-obs-server-side-encryption-customer-key-MD5: 4XvB3tbNTN+tIEVa0/fGaQ==
x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxILjhVK/heKOWIP8Wn2IWmQoerfw
Content-Length: 0
```

5.6.5 API Operations Related to Server-Side Encryption

This section lists the operations related to server-side encryption and describes HTTP protocols applicable to the operations.

The following table describes the requirements on the transmission protocols used by the API operation related to server-side encryption.

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Table 5-184 Requirements for the transmission protocol used by the operations related to the SSE-C

Operation	Transfer Protocol
PutObject	HTTPS
PostObject	HTTPS
InitiateMultipartUpload	HTTPS
HeadObject	HTTPS
GetObject	HTTPS
UploadPart	HTTPS
CompleteMultipartUpload	HTTP or HTTPS

Table 5-185 Requirements for the transfer protocol used by the operations related to the SSE-KMS

Operation	Transfer Protocol
PutObject	HTTPS
PostObject	HTTPS
InitiateMultipartUpload	HTTPS
HeadObject	HTTP or HTTPS
GetObject	HTTPS
UploadPart	HTTPS
CompleteMultipartUpload	HTTP or HTTPS

Table 5-186 Requirements for transfer protocol used by the CopyObject operation

Source Object	Target Object	Transfer Protocol
Non-encrypted object	Object encrypted using SSE-KMS	HTTPS
Object encrypted using SSE-KMS	Object encrypted using SSE-KMS	HTTPS
Object encrypted using SSE-C	Object encrypted using SSE-KMS	HTTPS
Non-encrypted object	Object encrypted using SSE-C	HTTPS

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Source Object	Target Object	Transfer Protocol
Object encrypted using SSE-KMS	Object encrypted using SSE-C	HTTPS
Object encrypted using SSE-C	Object encrypted using SSE-C	HTTPS
Non-encrypted object	Non-encrypted object	HTTP or HTTPS
Object encrypted using SSE-KMS	Non-encrypted object	HTTP or HTTPS
Object encrypted using SSE-C	Non-encrypted object	HTTP or HTTPS

Table 5-187 Requirements for the transfer protocol used by the UploadPart-Copy operation

Source Object	Target Part	Transfer Protocol
Non-encrypted object	Part encrypted using SSE-KMS	HTTP or HTTPS
Object encrypted using SSE-KMS	Part encrypted using SSE-KMS	HTTP or HTTPS
Object encrypted using SSE-C	Part encrypted using SSE-KMS	HTTP or HTTPS
Non-encrypted object	Part encrypted using SSE-C	HTTPS
Object encrypted using SSE-KMS	Part encrypted using SSE-C	HTTPS
Object encrypted using SSE-C	Part encrypted using SSE-C	HTTPS
Non-encrypted object	Non-encrypted part	HTTP or HTTPS
Object encrypted using SSE-KMS	Non-encrypted part	HTTP or HTTPS
Object encrypted using SSE-C	Non-encrypted part	HTTP or HTTPS

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6 Error Codes

If an API call fails, no result data is returned. You can locate the cause of the error according to the error code of each API. If an API call fails, HTTP status code 3*xx*, 4*xx* or 5*xx* is returned. The response body contains the specific error code and information. If you are unable to locate the cause of an error, contact the Huawei Cloud customer service and provide the error code to help you address the problem as soon as possible.

Error Response Syntax

When an error occurs, the response header information contains:

- Content-Type: application/xml
- HTTP error status code 3*xx*, 4*xx*, or 5*xx*

The response body also contains information about the error. The following is an error response example that shows common elements in the Representational State Transfer (REST) error response body.

```
<?xml version="1.0" encoding="UTF-8"?>
<Error>
<Code>NoSuchKey</Code>
<Message>The resource you requested does not exist</Message>
<Resource>/example-bucket/object</Resource>
<RequestId>001B21A61C6C0000013402C4616D5285</RequestId>
<HostId>RkRCRDJENDc5MzdGQkQ4OUY3MTI4NTQ3NDk2Mjg0M0FB
QUFBQUFBYmJiYmJiYmJD</HostId>
</Error>
```

Table 6-1 describes the meaning of each element.

Table 6-1 Error response elements

Element	Description
Error	Root element that describes the error in an XML response body
Code	HTTP return code that corresponds to the error in the XML response body. For details about error codes, see Table 6-2.

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Element	Description
Message	Details the error in the XML error response body. For details about error messages, see **Table 6-2**.
RequestId	ID of the request whose error response is returned. The ID is used for locating the error.
HostId	ID of the server that returns an error response
Resource	Bucket or object related to an error.

NOTE

Some error responses contain more detailed information. It is recommended that all error information be logged for easier rectification of errors.

Description

If OBS encounters an error when processing a request, a response containing the error code and description is returned. **Table 6-2** describes the error codes of OBS.

Table 6-2 Error codes

Status Code	Error Code	Error Message	Solution
301 Moved Permanently	PermanentRedirect	The requested bucket can be accessed only through the specified address. Send subsequent requests to the address.	Send the request to the returned redirection address.
301 Moved Permanently	WebsiteRedirect	The website request lacks **bucketName**.	Put the bucket name in the request and try again.
307 Moved Temporarily	TemporaryRedirect	Temporary redirection. If the DNS is updated, the request is redirected to the bucket.	The system automatically redirects the request or sends the request to the redirection address.
400 Bad Request	BadDigest	The specified value of **Content-MD5** does not match the value received by OBS.	Check whether the MD5 value carried in the header is the same as that calculated by the message body.
400 Bad Request	BadDomainName	The domain name is invalid.	Use a valid domain name.
400 Bad Request	BadRequest	Invalid request parameters.	Modify the parameters according to the error details in the message body.

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Status Code	Error Code	Error Message	Solution
400 Bad Request	CustomDomainAreadyExist	The configured domain already exists.	It has been configured and does not need to be configured again.
400 Bad Request	CustomDomainNotExist	Delete the domain that does not exist.	It is not configured or has been deleted. You do not need to delete it.
400 Bad Request	EntityTooLarge	• The size of the file uploaded using the PUT, POST, or Append methods of SDKs or APIs exceeds 5 GB. • The part uploaded is larger than 5 GB in size. • The size of the bucket configurations exceeds 20 KB. • The file size exceeds the upper limit defined in the policy of the POST form. • The size of the file uploaded using the multipart upload of SDKs or APIs or the resumable upload of SDKs exceeds 48.8 TB.	Modify the conditions specified in the upload policy or reduce the object size.
400 Bad Request	EntityTooSmall	• The part uploaded, except the last one, is smaller than 100 KB. • The file size is smaller than the lower limit defined in the policy of the POST form.	Modify the conditions specified in the upload policy or increase the object size.
400 Bad Request	IllegalLocation-ConstraintException	A request without **Location** is sent for creating a bucket in a non-default region.	Send the bucket creation request to the default region, or send the request with the **Location** of the non-default region.
400 Bad Request	IncompleteBody	No complete request body is received due to network or other problems.	Upload the object again.
400 Bad Request	IncorrectNumber-OfFilesInPost Request	Each POST request must contain one file to be uploaded.	Carry a file to be uploaded.

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Status Code	Error Code	Error Message	Solution
400 Bad Request	InvalidArgument	Invalid parameter.	Modify the parameter according to the error details in the message body.
400 Bad Request	InvalidBucket	The bucket to be accessed does not exist.	Change the bucket name.
400 Bad Request	InvalidBucketName	The bucket name specified in the request is invalid, which may have exceeded the maximum length, or contain special characters that are not allowed.	Change the bucket name.
400 Bad Request	InvalidContentLength	Invalid Content-Length value.	Check the encapsulation header or **submit a service ticket** for technical support.
400 Bad Request	InvalidDefaultStorageClass	The default storage class is invalid.	Check which storage classes can be used.
400 Bad Request	InvalidEncryptio-nAlgorithmError	Incorrect encryption algorithm. The object cannot be decrypted due to incorrect encryption header carried when downloading the SSE-C encrypted object.	Carry the correct encryption header when downloading the object.
400 Bad Request	InvalidLocation-Constraint	The specified **Location** in the bucket creation request is invalid or does not exist.	Correct the **Location** in the bucket creation request.
400 Bad Request	InvalidPart	One or more specified parts are not found. The parts may not be uploaded or the specified entity tags (ETags) do not match the parts' ETags.	Merge the parts correctly according to the ETags.
400 Bad Request	InvalidPartOrder	Parts are not listed in ascending order by part number.	Sort the parts in ascending order and merge them again.
400 Bad Request	InvalidPolicyDo-cument	The content of the form does not meet the conditions specified in the policy document.	Modify the policy in the constructed form according to the error details in the message body and try again.
400 Bad Request	InvalidRedirect-Location	Invalid redirect location.	Specifies the correct IP address.

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Status Code	Error Code	Error Message	Solution
400 Bad Request	InvalidRequest	Invalid request.	Modify the parameter according to the error details in the message body.
400 Bad Request	InvalidRequestBody	The request body is invalid. The request requires a message body but no message body is uploaded.	Upload the message body in the correct format.
400 Bad Request	InvalidTargetBucketForLogging	The delivery group has no ACL permission for the target bucket.	Configure the target bucket ACL and try again.
400 Bad Request	KeyTooLongError	The provided key is too long.	Use a shorter key.
400 Bad Request	KMS.DisabledException	The customer master key (CMK) is disabled in SSE-KMS mode.	Change a key and try again, or **submit a service ticket** for technical support.
400 Bad Request	KMS.NotFoundException	The customer master key (CMK) does not exist in SSE-KMS mode.	Retry with the correct CMK.
400 Bad Request	MalformedACLError	The provided XML file is in an incorrect format or does not meet format requirements.	Use the correct XML format to retry.
400 Bad Request	MalformedError	The XML format in the request is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedLoggingStatus	The XML format of **Logging** is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedPolicy	The bucket policy does not pass.	Modify the bucket policy according to the error details returned in the message body.
400 Bad Request	MalformedQuotaError	The Quota XML format is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedXML	An XML file of a configuration item is in incorrect format.	Use the correct XML format to retry.
400 Bad Request	MaxMessageLengthExceeded	Copying an object does not require a message body in the request.	Remove the message body and retry.

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Status Code	Error Code	Error Message	Solution
400 Bad Request	MetadataTooLarge	The size of the metadata header has exceeded the upper limit.	Reduce the size of the metadata header.
400 Bad Request	MissingRegion	No region contained in the request and no default region defined in the system.	Carry the region information in the request.
400 Bad Request	MissingRequestBodyError	This error code is returned after you send an empty XML file.	Provide the correct XML file.
400 Bad Request	MissingRequiredHeader	Required headers are missing in the request.	Provide required headers.
400 Bad Request	MissingSecurityHeader	A required header is not provided.	Provide required headers.
400 Bad Request	MultipleContentLengths	There are multiple Content-Length headers.	Check the encapsulation header or **submit a service ticket** for technical support.
400 Bad Request	TooManyBuckets	You have attempted to create more buckets than allowed.	Delete some buckets and try again.
400 Bad Request	TooManyCustomDomains	Too many custom domains are configured.	Delete some custom domains and try again.
400 Bad Request	TooManyWrongSignature	The request is rejected due to high-frequency errors.	Replace the Access Key and try again.
400 Bad Request	UnexpectedContent	The request requires a message body which is not carried by the client, or the request does not require a message body but the client carries the message body.	Try again according to the instruction.
400 Bad Request	UserKeyMustBeSpecified	This operation is available only to specific users.	**Submit a service ticket** for technical support.
400 Bad Request	ContentSHA256Mismatch	The object's SHA-256 value calculated by the client is different from that calculated by the server.	Check whether the SHA-256 value calculated by the client is correct.
400 Bad Request	FileGatewayBucket	Bucket inventories cannot be configured for parallel file systems.	Use an object bucket.

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Status Code	Error Code	Error Message	Solution
403 Forbidden	AccessDenied	Access denied, because the request does not carry a date header or the header format is incorrect.	Provide a correct date header in the request.
403 Forbidden	AccessDenied	The object you specified is immutable and cannot be deleted.	Wait until the WORM retention expires and then modify or delete the object.
403 Forbidden	AccessForbidden	Insufficient permission. No CORS configuration exists for the bucket or the CORS rule does not match.	Modify the CORS configuration of the bucket or send the matched OPTIONS request based on the CORS configuration of the bucket.
403 Forbidden	AllAccessDisabled	You have no permission to perform the operation. The bucket name is forbidden.	Change the bucket name.
403 Forbidden	InsufficientStorageSpace	Insufficient storage space.	If the quota is exceeded, increase quota or delete some objects.
403 Forbidden	InvalidAccessKeyId	The access key ID provided by the customer does not exist in the system.	Provide correct access key Id.
403 Forbidden	InvalidObjectState	You need to restore Archive objects before downloading them.	Restore the object first.
403 Forbidden	RequestTimeTooSkewed	There was a large time offset between the OBS server time and the time when the client initiated a request. For security purposes, OBS verifies the time offset between the client and server. If the offset is longer than 15 minutes, the OBS server will reject your requests and this error message is reported.	Check whether there is a large time offset between the client time and server time. If there is, adjust the client time based on your local time (UTC) and try again.
403 Forbidden	SignatureDoesNotMatch	The provided signature does not match the signature calculated by OBS.	Check your secret access key and signature calculation method.

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Status Code	Error Code	Error Message	Solution
403 Forbidden	VirtualHostDomainRequired	Virtual hosting access domain name is not used.	Use the virtual hosting access domain name. For details, see **Constructing a Request**.
403 Forbidden	Unauthorized	The user has not been authenticated in real name.	Authenticate the user's real name and try again.
403 Forbidden	UserRestricted	The account resource is **restricted** or **frozen**.	Address the **restricted** or **frozen** resource.
404 Not Found	NoSuchBucket	The specified bucket does not exist.	Create a bucket and perform the operation again.
404 Not Found	NoSuchBucketPolicy	No bucket policy exists.	Configure a bucket policy.
404 Not Found	NoSuchCORSConfiguration	No CORS configuration exists.	Configure CORS first.
404 Not Found	NoSuchCustomDomain	The requested user account does not exist.	Set a user account first.
404 Not Found	NoSuchKey	The specified key does not exist.	Upload the object first.
404 Not Found	NoSuchLifecycle-Configuration	The requested lifecycle rule does not exist.	Configure a lifecycle rule first.
404 Not Found	NoSuchUpload	The specified multipart upload does not exist. The upload ID does not exist or the multipart upload has been terminated or completed.	Use the existing part or reinitialize the part.
404 Not Found	NoSuchVersion	The specified version ID does not match any existing version.	Use a correct version ID.
404 Not Found	NoSuchWebsiteConfiguration	The requested website does not exist.	Configure the website first.
405 Method Not Allowed	MethodNotAllowed	The specified method is not allowed against the requested resource. The message "Specified method is not supported." is returned.	The method is not allowed.
405 Method Not Allowed	FsNotSupport	The parallel file system does not support this API.	The method is not allowed.

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Status Code	Error Code	Error Message	Solution
408 Request Timeout	RequestTimeout	The socket connection to the server has no read or write operations within the timeout period.	Check the network and try again, or **submit a service ticket** for technical support.
409 Conflict	BucketAlreadyExists	The requested bucket name already exists. The bucket namespace is shared by all users of OBS. Select another name and retry.	Change the bucket name.
409 Conflict	BucketAlreadyOwnedByYou	Your previous request for creating the namesake bucket succeeded and you already own it.	No more buckets need to be created.
409 Conflict	BucketNotEmpty	The bucket that you tried to delete is not empty.	Delete the objects in the bucket and then delete the bucket.
409 Conflict	InvalidBucketState	Invalid bucket status. After cross-region replication is configured, bucket versioning cannot be disabled.	Enable bucket versioning or cancel cross-region replication.
409 Conflict	OperationAborted	A conflicting operation is being performed on this resource. Retry later.	Try again later.
409 Conflict	ServiceNotSupported	The request method is not supported by the server.	**Submit a service ticket** for technical support.
409 Conflict	FsObjectConflict	The current and new names of an object in a parallel file system did not indicate the same type of object — file or directory, or the new name has already been used.	Ensure the new name indicates a consistent object type (file or directory) and has yet been used.
409 Conflict	FsRenameConflict	The rename operation conflicts with another operation that is being performed on the object.	Check the service logic to prevent unexpected operation results caused by concurrent operations on the same object.
409 Conflict	DirectoryNotEmpty	Non-empty directories cannot be deleted.	Empty the directory first.

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Status Code	Error Code	Error Message	Solution
409 ObjectNotAppendable	ObjectNotAppendable	The object is not appendable.	Check the bucket type. Parallel file systems do not support append upload. Check the object type. Archive objects are not appendable.
411 Length Required	MissingContentLength	The HTTP header Content-Length is not provided.	Provide the Content-Length header.
412 Precondition Failed	PreconditionFailed	At least one of the specified preconditions is not met.	Modify according to the condition prompt in the returned message body.
414 URI Too Long	Request-URI Too Large	The URI used in the request was too long.	Shorten the URI length.
416 Client Requested Range Not Satisfiable	InvalidRange	The requested range cannot be obtained.	Retry with the correct range.
429 Too Many Requests	TooManyRequests	There are too many requests in a short period of time. For example, there are too many concurrent requests for the metadata of the same object or bucket, such as concurrent object metadata modification, object upload, and object write.	Reduce the number of requests or concurrent requests.
500 Internal Server Error	InternalError	An internal error occurs. Retry later.	**Submit a service ticket** for technical support.
501 Not Implemented	ServiceNotImplemented	The request method is not implemented by the server.	**Submit a service ticket** for technical support.
503 Service Unavailable	ServiceUnavailable	The server is overloaded or has internal errors.	Try again later or **submit a service ticket** for technical support.
503 Service Unavailable	SlowDown	Too frequent requests. Reduce your request frequency.	Too frequent requests. Reduce your request frequency.

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7 Permissions and Supported Actions

7.1 Introduction

This section describes fine-grained permissions management for your OBS. If your Huawei Cloud account does not require individual IAM users, skip this section.

By default, new IAM users do not have any permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

For details about policies and roles related to OBS in IAM, see **Permissions Management**. For more information about the syntax structure and examples of IAM permissions, see **IAM Permissions**.

You can grant users permissions by using **roles** and **policies**. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

NOTE

- Policy-based authorization is useful if you want to allow or deny the access to an API.
- Because of caching, it takes about 15 to 30 minutes for the OBS role to take effect after being granted to users and user groups. After an OBS policy is granted, it takes about 5 minutes for the policy to take effect.

An account has all of the permissions required to call all APIs, but IAM users must have the required permissions specifically assigned. The required permissions are determined by the actions supported by the API. Only users with the policies allowing for those actions can call the API successfully. For example, if an IAM user needs to create buckets using an API, the user must have been granted permissions that allow the **obs:bucket:CreateBucket** action.

Supported Actions

There are two kinds of policies: system-defined policies and custom policies. If the permissions preset in the system do not meet your requirements, you can create

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custom policies and apply these policies to user groups for refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permissions: statements in a policy that allow or deny certain operations
- APIs: REST APIs that can be called by a user who has been granted specific permissions
- Actions: specific operations that are allowed or denied in a custom policy

OBS supports the following actions in custom policies:

- **Bucket-related actions** include actions supported by all OBS bucket-related APIs, such as the APIs for listing all buckets, creating and deleting buckets, configuring bucket policies, and configuring bucket logging.
- **Object-related actions** include APIs for uploading, downloading, and deleting objects.

7.2 Bucket Actions

Table 7-1 Bucket actions

Permission	API	Action	IAM Project
Listing all buckets	**Listing Buckets**	obs:bucket:ListAllMyBuckets	Supported
Creating a bucket	**Creating a Bucket**	obs:bucket:CreateBucket	Supported
Listing objects in a bucket	**Listing Objects in a Bucket**	obs:bucket:ListBucket	Supported
Listing object versions in a bucket	**Listing Objects in a Bucket**	obs:bucket:ListBucketVersions	Supported
Determining whether a bucket exists and obtaining the bucket metadata	**Obtaining Bucket Metadata**	obs:bucket:HeadBucket	Supported
Obtaining the bucket location	**Obtaining Bucket Location**	obs:bucket:GetBucketLocation	Supported
Deleting a bucket	**Deleting Buckets**	obs:bucket:DeleteBucket	Supported
Configuring a bucket policy	**Configuring a Bucket Policy**	obs:bucket:PutBucketPolicy	Supported
Obtain the bucket policy configurations	**Obtaining Bucket Policy Information**	obs:bucket:GetBucketPolicy	Supported

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Permission	API	Action	IAM Project
Deleting a bucket policy	**Deleting a Bucket Policy**	obs:bucket:DeleteBucketPolicy	Supported
Configuring the bucket ACL	**Configuring a Bucket ACL**	obs:bucket:PutBucketAcl	Supported
Obtaining the bucket ACL information	**Obtaining Bucket ACL Information**	obs:bucket:GetBucketAcl	Supported
Configuring logging for a bucket	**Configuring Logging for a Bucket**	obs:bucket:PutBucketLogging	Supported
Obtaining the logging configurations of a bucket	**Obtaining a Bucket Logging Configuration**	obs:bucket:GetBucketLogging	Supported
Configuring or deleting a lifecycle rule	**Configuring Bucket Lifecycle Rules** **Deleting Lifecycle Rules**	obs:bucket:PutLifecycleConfiguration	Supported
Obtaining the lifecycle rule configurations	**Obtaining Bucket Lifecycle Configuration**	obs:bucket:GetLifecycleConfiguration	Supported
Configuring versioning for a bucket	**Configuring Versioning for a Bucket**	obs:bucket:PutBucketVersioning	Supported
Obtaining the versioning configurations of a bucket	**Obtaining Bucket Versioning Status**	obs:bucket:GetBucketVersioning	Supported
Configuring storage class for a bucket	**Configuring Storage Class for a Bucket**	obs:bucket:PutBucketStoragePolicy	Supported
Obtaining the storage class of a bucket	**Obtaining Bucket Storage Class Information**	obs:bucket:GetBucketStoragePolicy	Supported
Adding tags to a bucket	**Configuring Tags for a Bucket**	obs:bucket:PutBucketTagging	Supported
Obtaining bucket tags	**Obtaining Bucket Tags**	obs:bucket:GetBucketTagging	Supported
Deleting bucket tags	**Deleting Tags**	obs:bucket:DeleteBucketTagging	Supported

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Permission	API	Action	IAM Project
Limiting storage capacity for a bucket	Configuring Bucket Storage Quota	obs:bucket:PutBucketQuota	Supported
Querying the storage capacity limit of a bucket	Querying Bucket Storage Quota	obs:bucket:GetBucketQuota	Supported
Querying the used capacity of a bucket	Obtaining Storage Information of a Bucket	obs:bucket:GetBucketStorage	Supported
Configuring inventories for a bucket	Configuring Bucket Inventories	obs:bucket:PutBucketInventoryConfiguration	Supported
Obtaining a specific inventory or listing all inventories of a bucket	Obtaining a Specific Inventory of a Bucket Listing All Inventories of a Bucket	obs:bucket:GetBucketInventoryConfiguration	Supported
Deleting bucket inventories	Deleting Bucket Inventories	obs:bucket:DeleteBucketInventoryConfiguration	Supported
Configuring or deleting encryption for a bucket	Configuring Bucket Encryption Deleting the Encryption Configuration of a Bucket	obs:bucket:PutEncryptionConfiguration	Supported
Obtaining the encryption configurations of a bucket	Obtaining Bucket Encryption Configuration	obs:bucket:GetEncryptionConfiguration	Supported
Configuring direct reading for a bucket	Configuring Direct Reading for Archive Objects in a Bucket	obs:bucket:PutDirectColdAccessConfiguration	Supported
Obtaining the direct reading configurations of a bucket	Obtaining the Direct Reading Policy of Archive Objects in a Bucket	obs:bucket:GetDirectColdAccessConfiguration	Supported
Deleting the direct reading configurations of a bucket	Deleting the Direct Reading Policy of Archive Objects in a Bucket	obs:bucket:DeleteDirectColdAccessConfiguration	Supported

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Permission	API	Action	IAM Project
Configuring static website hosting for a bucket	**Configuring Static Website Hosting for a Bucket**	obs:bucket:PutBucketWebsite	Supported
Obtaining the static website hosting configurations of a bucket	**Obtaining the Static Website Hosting Configuration of a Bucket**	obs:bucket:GetBucketWebsite	Supported
Deleting the static website hosting configurations of a bucket	**Deleting the Static Website Hosting Configuration of a Bucket**	obs:bucket:DeleteBucketWebsite	Supported
Configuring or deleting CORS rules for a bucket	**Configuring Bucket CORS** **Deleting the CORS Configuration of a Bucket**	obs:bucket:PutBucketCORS	Supported
Obtaining the CORS configurations of a bucket	**Obtaining the CORS Configuration of a Bucket**	obs:bucket:GetBucketCORS	Supported
Configuring a default WORM policy for a bucket	**Configuring a Default WORM Policy for a Bucket**	obs:bucket:PutBucketObjectLockConfiguration	Supported
Obtaining the default WORM policy of a bucket	**Obtaining the Default WORM Policy of a Bucket**	obs:bucket:GetBucketObjectLockConfiguration	Supported
Listing initiated multipart uploads in a bucket	**Listing Initiated Multipart Uploads in a Bucket**	obs:bucket:ListBucketMultipartUploads	Supported

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7.3 Object Actions

Table 7-2 Object actions

Permission	API	Action	IAM Project
Uploading objects using PUT or POST, appending objects, initiating multipart uploads, uploading parts, copying parts, assembling parts, modifying objects, truncating objects, renaming objects	**Uploading an Object - PUT** **Uploading an Object - POST** **Appending an Object** **Initiating a Multipart Upload** **Uploading Parts** **Completing a Multipart Upload** **Modifying an Object** **Truncating an Object** **Renaming an Object**	obs:object:PutObject	Supported
Copying an object	**Copying an Object**	obs:object:GetObject obs:object:PutObject	Supported
Obtaining the content and metadata of an object	**Downloading an Object** **Querying Object Metadata**	obs:object:GetObject	Supported
Obtaining the content and metadata of a specific object version	**Downloading an Object** **Querying Object Metadata**	obs:object:GetObjectVersion	Supported
Deleting a single object or a batch of objects	**Deleting an Object** **Deleting Objects**	obs:object:DeleteObject	Supported
Deleting a single object version or a batch of object versions	**Deleting an Object** **Deleting Objects**	obs:object:DeleteObjectVersion	Supported

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Permission	API	Action	IAM Project
Restoring Archive objects	Restoring Archive Objects	obs:object:RestoreObject	Supported
Configuring the object ACL	Configuring an Object ACL	obs:object:PutObjectAcl	Supported
Configuring the ACL for a specific object version	Configuring an Object ACL	obs:object:PutObjectVersionAcl	Supported
Obtaining the object ACL information	Obtaining Object ACL Configuration	obs:object:GetObjectAcl	Supported
Obtaining the ACL information of a specific object version	Obtaining Object ACL Configuration	obs:object:GetObjectVersionAcl	Supported
Modifying object metadata	Modifying Object Metadata	obs:object:ModifyObjectMetaData	Supported
Listing uploaded parts	Listing Uploaded Parts that Have Not Been Assembled	obs:object:ListMultipartUploadParts	Supported
Aborting a multipart upload	Canceling a Multipart Upload Task	obs:object:AbortMultipartUpload	Supported
Configuring WORM retention for an object	Configuring WORM Retention for an Object	obs:object:PutObjectRetention	Supported
Obtaining the object-level WORM retention configuration	Querying Object Metadata	obs:object:GetObject	Supported
Adding object tags	Adding Object Tags	obs:object:PutObjectTagging	Not supported
Obtaining object tags	Obtaining Object Tags	obs:object:GetObjectTagging	Not supported
Deleting object tags	Deleting Object Tags	obs:object:DeleteObjectTagging	Not supported

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8 Appendixes

8.1 Status Codes

Table 8-1 lists the status codes and prompt message returned by the server to the user.

Table 8-1 Status codes

Status Code	Description
2xx	Indicates that the server has successfully returned the requested data.
4xx	Indicates that the request sent from the client is incorrect, so the server does not create or modify data.
5xx	Indicates that an error occurs on the server, and the user does not know whether the request has been successfully sent.

NOTE

Send API requests using the HTTP/HTTPS format that complies with **https://www.ietf.org/rfc/rfc2616.txt**.

8.2 Obtaining Access Keys (AK/SK)

NOTE

To access OBS using access keys as an IAM user, the programmatic access must be enabled. For details, see **Viewing or Modifying IAM User Information**.

When you call APIs, you need to use the AK and SK for authentication. To obtain the AK and SK, perform the following steps:

Step 1 Log in to the console.

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Step 2 Hover over the username in the upper right corner and choose **My Credentials** from the drop-down list.

Step 3 Choose **Access Keys**.

Step 4 Click **Create Access Key**.

Step 5 Enter an access key description (optional) and click **OK**.

Step 6 Enter the verification code sent to your mobile phone, virtual MFA device, or email, and click **OK**.

NOTE

This step is required only when you have enabled operation protection.

Step 7 Click **Download** to obtain the access key file.

NOTE

Keep AKs and SKs properly to prevent information leakage.

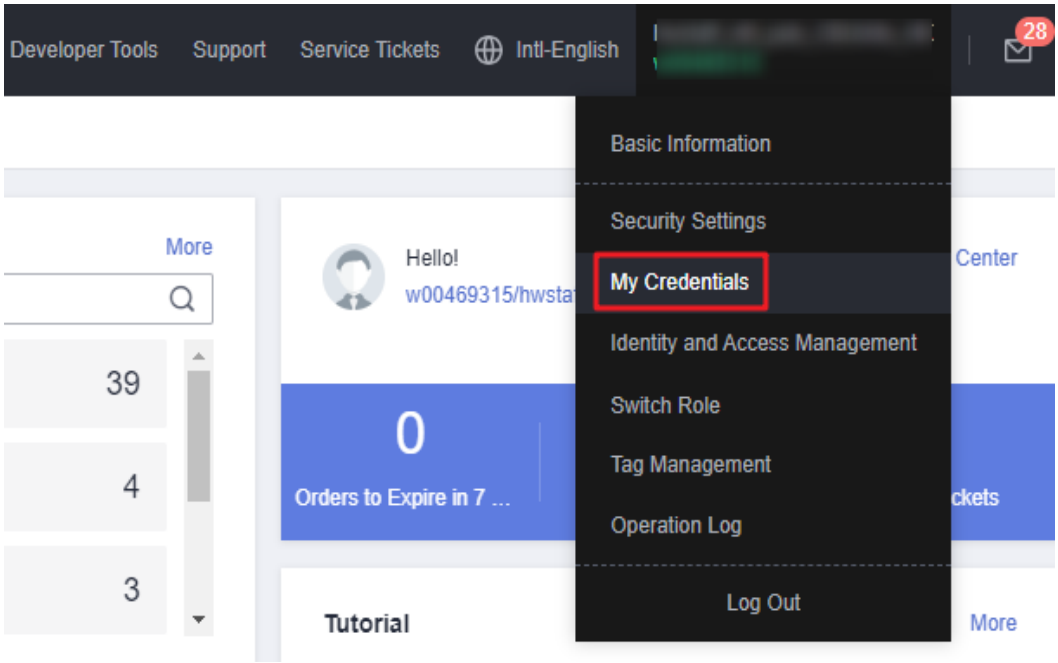
----End

8.3 Obtaining Account, IAM User, Project, User Group, Region, and Agency Information

Obtaining Account, IAM User, and Project Information

- **Using the console**
  a. On the Huawei Cloud homepage, click **Console** in the upper right corner.
  b. Hover over the username in the upper right corner and choose **My Credentials**.

Figure 8-1 Going to the **My Credentials** page



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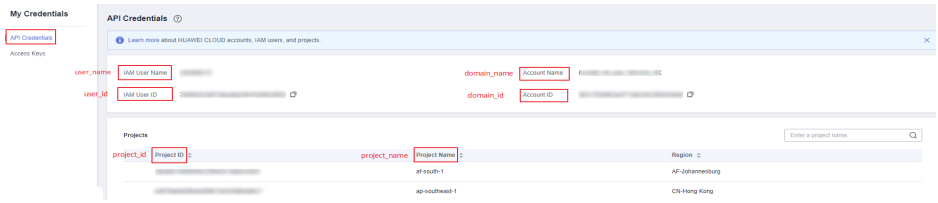
c. On the **API Credentials** page, view the account name, account ID, IAM user name, IAM user ID, project name, and project ID.

The project ID varies depending on the region where your service is located.

Figure 8-2 Viewing the account, user, and project information



- **Calling an API**
  - To obtain a user ID, see **Listing IAM Users**.
  - To obtain a project ID, see **Querying Project Information**.

Obtaining User Group Information

Step 1 Log in to the Huawei Cloud console, access the IAM console, and choose **User Groups** in the navigation pane.

Step 2 Expand the details of the desired user group and view its name and ID.

----End

Obtaining Region Information

Step 1 Log in to the Huawei Cloud console, access the IAM console, and choose **Projects** in the navigation pane.

Step 2 View the content in the **Project Name** column. The content in this column indicates the ID of the region where the project belongs.

----End

Obtaining Agency Information

Step 1 Log in to the Huawei Cloud console, access the IAM console, and choose **Agencies** in the navigation pane.

Step 2 Hover over the desired agency to view its name (in the first line) and ID (in the second line) in the dark pop-up box.

----End

8.4 Consistency of Concurrent Operations

After a success message is returned in response to a client's write or deletion request, the client can obtain the latest data. If a client that initiates a write request times out in waiting for a response, or the server returns HTTP response status code **500** or **503**, the subsequent read operations may fail. If such an error

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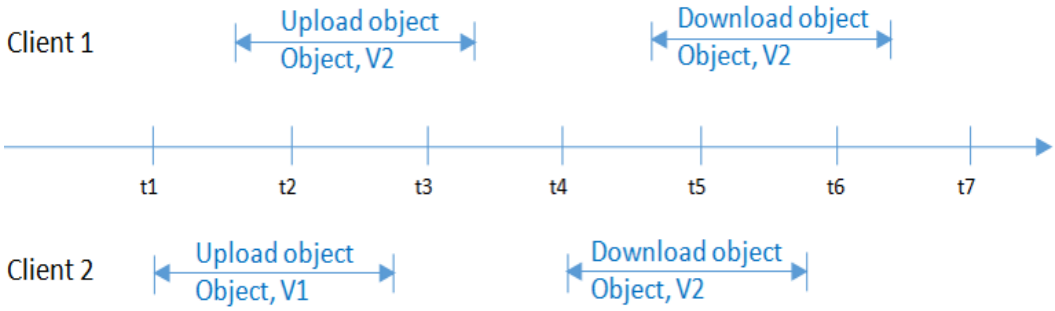
occurs, query whether the data has been successfully uploaded to the server. If not, upload the data again.

If a client simultaneously uploads, queries, or deletes the same object or bucket, these operations may reach the system at different times and have different latency periods, so different results may return. For example, if multiple clients simultaneously upload the same object, the latest upload request received by the system will replace the previous one. If you want to prevent an object from being simultaneously accessed, you must add a lock mechanism for the object in upper-layer applications.

Example of Concurrent Operations

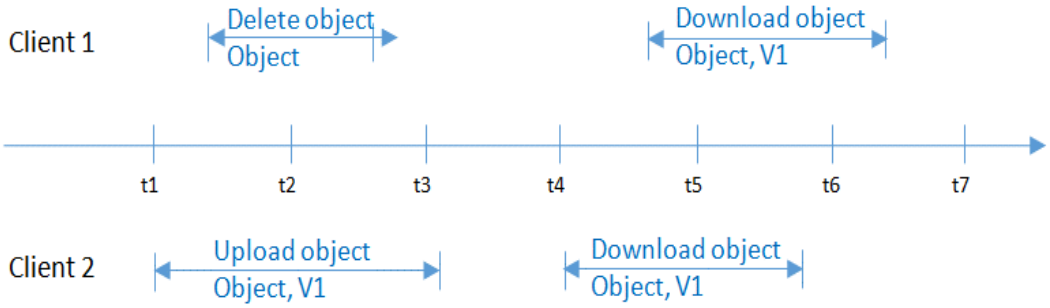
1. When client1 is uploading an object V1, client2 is uploading an object V2 with the same name. After the successful uploads, both client1 and client2 can access the latest object data V2, as shown in **Figure 8-3**.

Figure 8-3 Concurrent upload of the same object



2. When client2 is uploading an object V1 and object metadata is not written yet, client1 deletes an object with the same name. In this scenario, the upload operation of client2 is still successful, and both client1 and client2 can access data object V1, as shown in **Figure 8-4**.

Figure 8-4 Concurrent upload and deletion of the same object (1)



3. When client2 has successfully uploaded an object V1 and object metadata is still being written, client1 deletes an object with the same name. In this scenario, the upload operation of client2 is still successful. However, when client1 and client2 attempt to download the object, they may be able to access data object V1, or an error may be returned indicating that the object does not exist, as shown in **Figure 8-5**.

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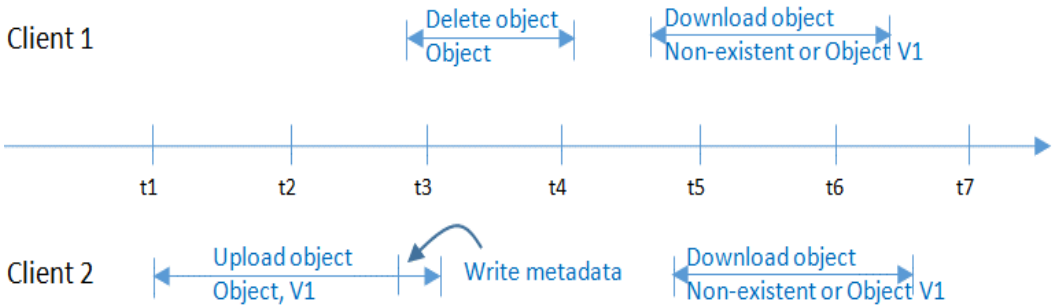
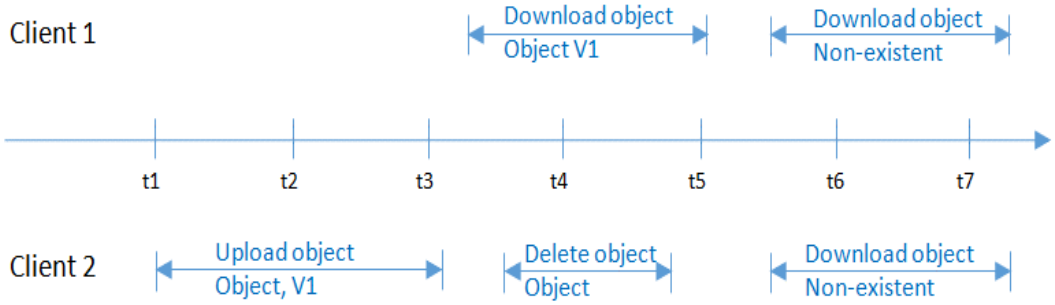
Figure 8-5 Concurrent upload and deletion of the same object (2)



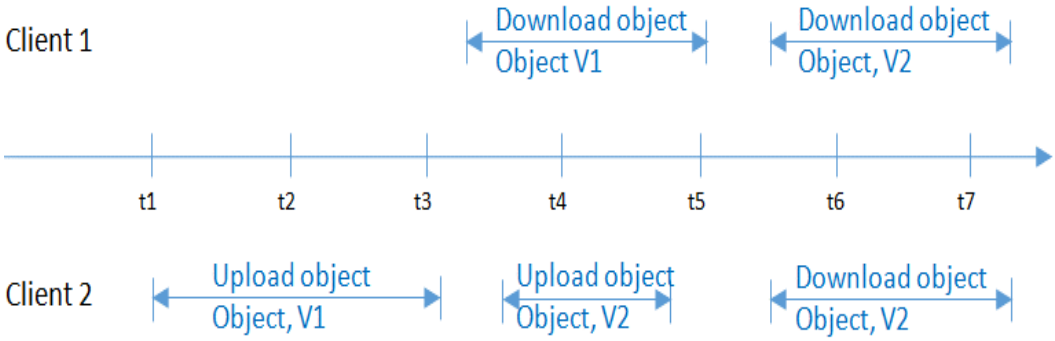
4. When client1 is downloading an object, client2 deletes an object with the same name. In this scenario, client1 may have downloaded a full copy or only part of the object data. After a deletion success message is returned to client2, an attempt to download the object will fail, and an error will be returned indicating that the object does not exist, as shown in **Figure 8-6**.

Figure 8-6 Concurrent download and deletion of the same object



5. When client1 is downloading an object, client2 is updating an object with the same name. In this scenario, client1 may have downloaded a full copy or only part of the object data. After an update success message is returned to client 2, an attempt to download the object will succeed, and the latest data will be returned, as shown in **Figure 8-7**.

Figure 8-7 Concurrent download and update of the same object



6. When client2 is uploading part V1 of an object, client1 is uploading part V2 of the same object. After part V2 is uploaded successfully, both client1 and client2 can list the information about the multipart whose entity tag (ETag) is part V2, as shown in **Figure 8-8**.

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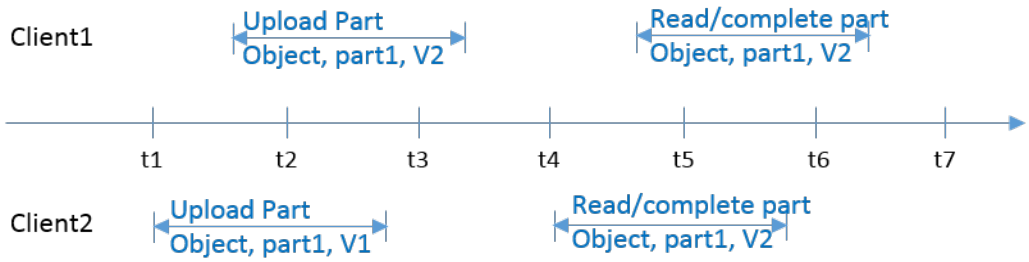
Figure 8-8 Concurrently uploading the same part of the same object



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