

# Object Storage Service(OBS)

## API Reference

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# 1 Before You Start

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## 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](#).

In addition, OBS provides SDKs in multiple programming languages for you to use. For details, see [SDK Overview](#).

You are advised to use virtual hosts plus regional domain names to access OBS. For details, see [Request URI](#).

## Endpoints

An endpoint is a **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of all services, see [Regions and Endpoints](#).

OBS provides a different second-level domain name for each region. You can use the domain names provided by OBS or define your own domain names to access OBS.



## 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

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](#).

## Differences Between OBS 3.0 and OBS 2.0

OBS architecture has evolved for two generations, OBS 2.0 and OBS 3.0. Now, a newly created bucket and objects in the bucket are stored in the storage of OBS 3.0, but existing buckets in the storage of OBS 2.0 are still retained there.

Basic OBS features and functions are supported by both OBS 3.0 and OBS 2.0. However, some new features are supported only by OBS 3.0, such as object storage class, federated authentication, image processing, and cross-region replication.

You can check the bucket version information on OBS Console or use the **Head Bucket** API operation to check whether your bucket is in OBS 2.0 or OBS 3.0. The details are as follows:

### Method 1: Log in to OBS Console and check the bucket basic information.

If the **Bucket Version** is **3.0**, the bucket is stored in OBS 3.0. If not, the bucket is stored in OBS 2.0.

### Method 2: Perform the Head Bucket API operation to check the bucket version.

Sample Request:

```
HEAD / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 02:23:25 GMT
Authorization: authorization string
```

Sample Response:

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000163D80E4C5F20FDD5BD0085
x-obs-bucket-location: ap-southeast-1
Content-Type: application/xml
x-obs-version: 3.0
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS8wS9I00l4oMWmdniV7XmdAvfewrQq
Date: WED, 01 Jul 2015 02:23:25 GMT
Content-Length: 0
```

In this response, **x-obs-version: 3.0** indicates that the bucket is stored in the OBS 3.0. If this header does not exist or the value of this header is displayed otherwise, the bucket is stored in the OBS 2.0.

For more information about the **Head Bucket** API, see [Obtaining Bucket Metadata](#).

# 2 API Overview

## APIs for Basic Bucket Operations

Table 2-1 APIs for basic bucket operations

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

## APIs for Advanced Bucket Settings

Table 2-2 APIs for advanced bucket settings

API	Description
<a href="#">Configuring a Bucket Policy</a>	Creates or modifies a bucket policy. The existing policy in a bucket is overwritten by the policy in the request.
<a href="#">Obtaining Bucket Policy Information</a>	Obtains the policy of a bucket.

API	Description
<a href="#">Deleting a Bucket Policy</a>	Deletes the policy of a bucket.
<a href="#">Configuring a Bucket ACL</a>	Sets an ACL to control the read and write permissions on a bucket.
<a href="#">Obtaining Bucket ACL Information</a>	Obtains the ACL of a bucket.
<a href="#">Configuring Logging for a Bucket</a>	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.
<a href="#">Obtaining a Bucket Logging Configuration</a>	Obtains the logging configuration of a bucket.
<a href="#">Configuring Bucket Lifecycle Rules</a>	Configures rules to delete or migrate objects in a bucket.
<a href="#">Obtaining Bucket Lifecycle Configuration</a>	Obtains the lifecycle rules of a bucket.
<a href="#">Deleting Lifecycle Rules</a>	Deletes the lifecycle rules of a bucket.
<a href="#">Configuring Versioning for a Bucket</a>	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.
<a href="#">Obtaining Bucket Versioning Status</a>	Obtains the versioning status of a bucket.
<a href="#">Configuring Storage Class for a Bucket</a>	Creates or updates the default storage class of a bucket.
<a href="#">Obtaining Bucket Storage Class Information</a>	Obtains the default storage class of a bucket.
<a href="#">Configuring Cross-Region Replication for a Bucket</a>	Configures cross-region replication for a bucket. This allows you to copy an object from a region to another one.
<a href="#">Obtaining the Cross-Region Replication Configuration of a Bucket</a>	Obtains the cross-region replication configuration of a bucket.
<a href="#">Deleting the Cross-Region Replication Configuration of a Bucket</a>	Deletes the cross-region replication configuration of a bucket.
<a href="#">Configuring Tags for a Bucket</a>	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.

API	Description
<a href="#">Obtaining Bucket Tags</a>	Obtains the tags of a specified bucket.
<a href="#">Deleting Tags</a>	Deletes the tags of a bucket.
<a href="#">Configuring Bucket Storage Quota</a>	Sets a quota to limit how much space of a bucket can be used.
<a href="#">Querying Bucket Storage Quota</a>	Obtains the bucket quota.
<a href="#">Obtaining Storage Information of a Bucket</a>	Obtains the number of objects in a bucket and the space occupied by them.
<a href="#">Configuring Bucket Inventories</a>	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.
<a href="#">Obtaining a Specific Inventory of a Bucket</a>	Obtains an inventory rule of a bucket.
<a href="#">Listing All Inventories of a Bucket</a>	Obtains all inventory rules of a bucket.
<a href="#">Deleting Bucket Inventories</a>	Deletes an inventory rule of a bucket.
<a href="#">Configuring a Custom Domain Name for a Bucket</a>	Configures a custom domain name for a bucket. You can use the configured domain name to access the bucket.
<a href="#">Obtaining the Custom Domain Name of a Bucket</a>	Queries the custom domain name of a bucket.
<a href="#">Deleting the Custom Domain Name of a Bucket</a>	Deletes the custom domain name of a bucket.
<a href="#">Configuring Bucket Encryption</a>	Creates or updates the server-side encryption configuration for a bucket. This configuration is later used to encrypt newly uploaded objects.
<a href="#">Obtaining Bucket Encryption Configuration</a>	Queries the server-side encryption configuration of a bucket.
<a href="#">Deleting the Encryption Configuration of a Bucket</a>	Deletes the server-side encryption configuration of a bucket.
<a href="#">Configuring Direct Reading for Archive Objects in a Bucket</a>	Enables or disables direct reading for Archive objects in a bucket. This means objects can be downloaded without being restored.
<a href="#">Obtaining the Direct Reading Policy of Archive Objects in a Bucket</a>	Obtains the direct reading status of Archive objects in a bucket.

API	Description
<a href="#">Deleting the Direct Reading Policy of Archive Objects in a Bucket</a>	Deletes the direct reading configuration of Archive objects in a bucket.
<a href="#">Configuring Back-to-Source-by-Mirroring Rules</a>	Configures mirroring back-to-source rules for a bucket.
<a href="#">Obtaining Back-to-Source-by-Mirroring Rules</a>	Obtains mirroring back-to-source rules of a bucket.
<a href="#">Deleting Back-to-Source-by-Mirroring Rules</a>	Deletes mirroring back-to-source rules of a bucket.
<a href="#">Setting an Online Decompression Policy</a>	Configures the decompression rules for ZIP files in a bucket.
<a href="#">Obtaining an Online Decompression Policy</a>	Obtains the decompression rules for ZIP files in a bucket.
<a href="#">Deleting an Online Decompression Policy</a>	Deletes the decompression rules for ZIP files in a bucket.
<a href="#">Configuring a Default WORM Policy for a Bucket</a>	Configures the WORM policy and retention period for a bucket.
<a href="#">Obtaining the Default WORM Policy of a Bucket</a>	Returns the WORM policy of a bucket.

## APIs for Static Website Hosting

Table 2-3 APIs for static website hosting

API	Description
<a href="#">Configuring Static Website Hosting for a Bucket</a>	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.
<a href="#">Obtaining the Static Website Hosting Configuration of a Bucket</a>	Obtains the website hosting configuration of a bucket.
<a href="#">Deleting the Static Website Hosting Configuration of a Bucket</a>	Deletes the website hosting configuration of a bucket.

API	Description
<a href="#">Configuring Bucket CORS</a>	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.
<a href="#">Obtaining the CORS Configuration of a Bucket</a>	Obtains the CORS configuration of a bucket.
<a href="#">Deleting the CORS Configuration of a Bucket</a>	Deletes the CORS configuration of a bucket.
<a href="#">OPTIONS Bucket</a>	Checks whether the client has the permission to access the server. This operation is usually performed before cross-domain access.
<a href="#">OPTIONS Object</a>	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
<a href="#">Uploading an Object - PUT</a>	Uploads an object to a bucket.
<a href="#">Uploading an Object - POST</a>	Uploads an object to a bucket using a form.
<a href="#">Copying an Object</a>	Creates a copy for an existing object.
<a href="#">Downloading an Object</a>	Downloads an object.
<a href="#">Querying Object Metadata</a>	Obtains object metadata (such as expiration time, version number, and CORS configuration).
<a href="#">Deleting an Object</a>	Deletes an object. You can use <b>versionId</b> to specify a version to delete.
<a href="#">Deleting Objects</a>	Permanently deletes a batch of objects from a bucket.
<a href="#">Restoring Archive or Deep Archive Objects</a>	Restores objects from the Archive or Deep Archive (in OBT) storage class.
<a href="#">Appending an Object</a>	Appends data to an object. If the requested object cannot be found, it will be created.
<a href="#">Configuring an Object ACL</a>	Sets an ACL to control the read and write permissions on an object.

API	Description
<a href="#">Obtaining Object ACL Configuration</a>	Obtains the ACL of an object.
<a href="#">Modifying Object Metadata</a>	Adds, modifies, or deletes the existing object metadata.
<a href="#">Modifying an Object</a>	Modifies the content of an object in a parallel file system from a specified location.
<a href="#">Truncating an Object</a>	Truncates an object in a parallel file system to a specified size.
<a href="#">Renaming an Object</a>	Renames an object in a parallel file system.
<a href="#">Adding Object Tags</a>	Adds tags to an object.
<a href="#">Obtaining Object Tags</a>	Obtains tags of an object.
<a href="#">Deleting Object Tags</a>	Deletes tags of an object.
<a href="#">Configuring WORM Retention for an Object</a>	Configures or updates the retention period for objects uploaded to a bucket with WORM enabled.

## APIs for Multipart Uploads

Table 2-5 APIs for multipart uploads

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



# 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]**

**Table 3-1** URI parameters

Parameter	Type	Mandatory	Description
protocol	String	Yes	<p><b>Definition:</b> Protocol used for sending requests</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• HTTPS: HyperText Transfer Protocol Secure. Data is encrypted using SSL/TLS to provide secure and reliable communication. It is used to transmit sensitive information.</li> </ul> <p><b>Default value:</b> None</p>
bucket	String	No	<p><b>Definition:</b> Bucket name</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory	Description
domain	String	Yes	<p><b>Definition:</b> Endpoint of each region</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about region endpoints, see <a href="#">Regions and Endpoints</a>.</p> <p><b>Default value:</b> None</p>
port	String	No	<p><b>Definition:</b> Port enabled for sending requests. The value varies with software server deployment.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> In OBS, the default HTTP port is <b>80</b> and that of HTTPS is <b>443</b>.</p> <p><b>Default value:</b> If no port number is specified, the protocol uses the default value. Each transmission protocol has its default port number.</p>
object	String	No	<p><b>Definition:</b> 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.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Range:</b> The value is a string of 1 to 1024 characters.</p> <p><b>Default value:</b> None</p>

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

**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 **ap-southeast-1** 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.ap-southeast-1.myhuaweicloud.com/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.

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	<p><b>Definition:</b> Signature information contained in a request message</p> <p><b>Constraints:</b> This header is optional for anonymous requests and is mandatory for other requests.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Content-Length	String	Conditionally Yes	<p><b>Definition:</b> Length of a message (excluding the message header).</p> <p><b>Constraints:</b> It is optional for the PUT operation and mandatory for the operation of loading XML files.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
Content-Type	String	No	<p><b>Definition:</b> The content type of the requested resource, for example, <b>text/plain</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> 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.</p>
Date	String	Conditionally Yes	<p><b>Definition:</b> Time when a request is initiated, for example, <b>Wed, 27 Jun 2018 13:39:15 +0000</b></p> <p><b>Constraints:</b> This header is optional for anonymous requests or requests whose headers contain the <b>x-obs-date</b> field and mandatory for other requests.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
Host	String	Yes	<p><b>Definition:</b> Access domain name of a bucket. The format is <i>BucketName.Endpoint</i>.</p> <p>Example: examplebucketname.obs.region.myhuaweicloud.com</p> <p><b>Constraints:</b> The constraints on bucket names are as follows:</p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Range:</b> For details about region endpoints, see <a href="#">Regions and Endpoints</a>.</p> <p><b>Default value:</b> None</p>

### (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.

## 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 Overview

#### Function

Each time a client calls an OBS API, the HTTP request must be signed, so the server can verify the request signature and ensure secure access. By verifying a signature, OBS:

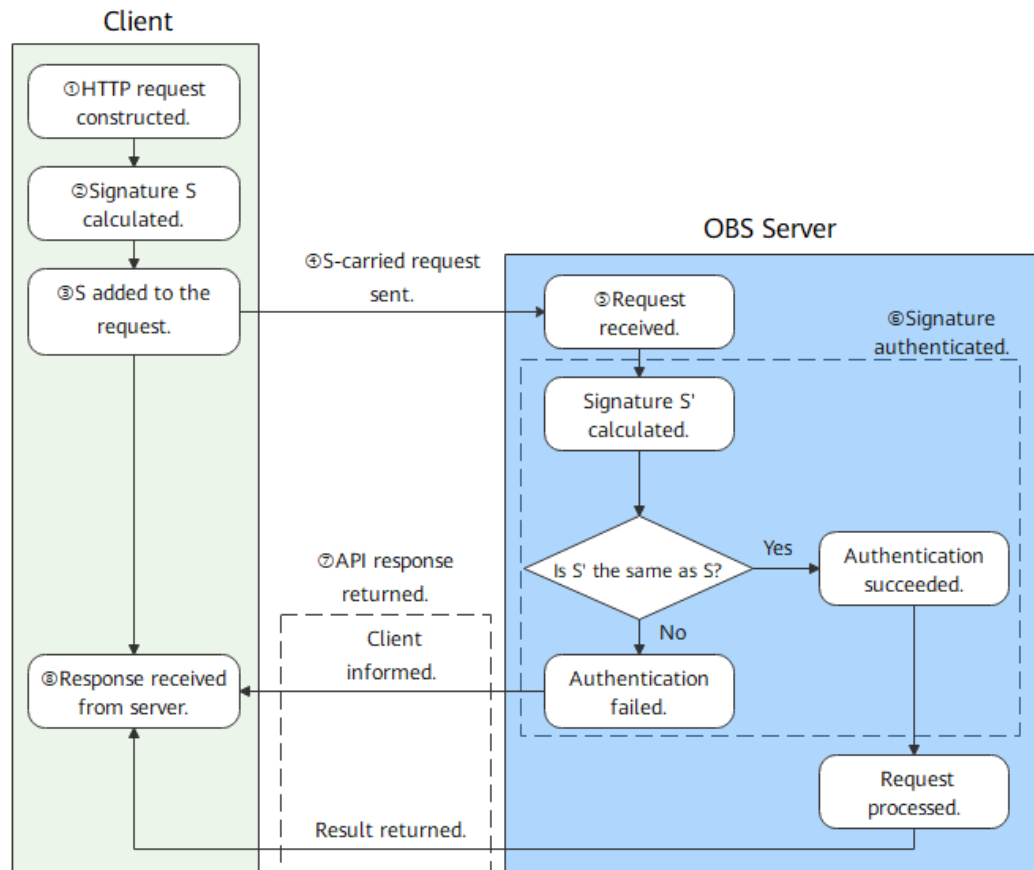
- **Prevents unauthorized access.** As signatures carry user information, OBS can verify the user information carried in a signature to check if any unauthorized users are attempting to access resources.
- **Prevents in-transit data tampering.** OBS compares the signature it received with the one it calculated to check if data was ever tampered with in transit.
- **Prevents the signature abuse.** Signatures have validity periods, which help reduce the risk of an unauthorized party reusing it for malicious purposes.

#### Signing and Verification

**Figure 3-1** shows how a signature is calculated and verified.



**Figure 3-1** Signing and verification



**Table 3-4** Signing and verification

Executor	No.	Step	Description
Client	1	HTTP request constructed.	An API request contains a URI, method, and headers, as well as an optional body. For details, see <a href="#">Constructing a Request</a> .
	2	Signature S calculated.	The signature is calculated based on the constructed request and an access key. You can calculate a signature (S) by: <ul style="list-style-type: none"> <li>• <a href="#">Using an Authorization Header</a></li> <li>• <a href="#">Using a Pre-Signed URL</a></li> <li>• <a href="#">Signing Browser-Based Upload Requests</a></li> </ul>
	3	S added to the request.	You can add a signature to: <ul style="list-style-type: none"> <li>• <a href="#">The Authorization header</a></li> <li>• <a href="#">The Query parameters</a></li> <li>• <a href="#">A form in browser-based uploads</a></li> </ul>
	4	S-carried request sent.	Your client sends the request that carries the signature to a server.

Execut or	No.	Step	Description
OBS server	5	Request received.	The server receives the request from the client.
	6	Signature authenticated.	The server calculates a signature (S') based on the received request and the access key you provided and compares S' with the received signature S. If they match, the authentication is successful. Otherwise, the request is rejected.
	7	API response returned.	<ul style="list-style-type: none"> <li>• If the authentication is successful, the server processes the request and then returns the processing result.</li> <li>• If the authentication fails, the server returns the status code <b>403 Forbidden</b> and error code <b>SignatureDoesNotMatch</b>. To fix this issue, see <a href="#">Why Don't the Signatures Match?</a></li> </ul>
Client	8	Response received from server.	Your client receives a response from the server.

### Comparison Between Signature Carrying Methods

OBS can carry a signature in a [header](#), [URL](#), or [browser-based upload](#). The third method is limited to making POST requests through a browser. The first two methods are compared in the following table:

**Table 3-5** Comparison between carrying a signature in a header and in a URL.

Item	Carrying Signature in Header	Carrying Signature in URL
Application	Using a header is the recommended method of carrying a signature in most cases.	Using a pre-signed URL is useful if you want to grant only temporary access. With this method, you do not need to provide your access key to third parties. You instead provide them a pre-signed URL. Be aware of the potential risk as this method will expose your data to Internet within the validity period.  A pre-signed URL is recommended for accessing OBS through a browser.
<b>Expires</b> support	No	Yes
<b>Date</b> support	Yes	No
Common APIs	All OBS APIs	GET and PUT
Time formatting	The <b>Date</b> header indicates when the request was generated, recorded using Greenwich Mean Time (GMT) in the RFC 1123 format.  If the value of <b>Date</b> is over 15 minutes away from the current server time, the server returns <b>403</b> , indicating that the request is invalid.	The <b>Expires</b> header indicates how long the pre-signed URL is valid, measured in seconds. When the specified period elapses, the pre-signed URL expires.
URL encoding required	No	Yes

## 3.2.2 Using an Authorization Header

### Function

Using a header for authentication is the most common method of carrying a signature, supported by all OBS APIs. With this method, the signature is carried in the **Authorization** header of a request, as shown in [Figure 3-2](#).

**Figure 3-2** An Authorization header

```

PUT / HTTP/1.1
Host: newbucketname2.obs.cn-north-4.myhuaweicloud.com
Content-Length: Length
Date: Fri, 06 Jul 2018 03:45:51 GMT
x-obs-acl:private
x-obs-storage-class:STANDARD
Authorization: OBS UDSIAMSTUBTEST000254:ydH8ffpcbS6YpeOMcEZfn0wE90c=
<CreateBucketConfiguration xmlns="http://obs.cn-north-4.myhuaweicloud.com/doc/2015-06-30/">
  <Location>cn-north-4</Location>
</CreateBucketConfiguration>
    
```

The header format is:

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

An **OBS** string, an access key ID (AK), and a signature comprise an **Authorization** header. The string **OBS** and AK are separated by a space, and the AK and signature are separated by a colon (:).

- To obtain an access key ID (AK), see [Access Keys](#).
- To calculate a signature, see [Table 3-6](#).

**Table 3-6** Calculating a signature carried in the Authorization header

Method	Description	Link
Using SDKs	All available OBS SDKs provide automatic calculation. Save time by using them directly.	<a href="#">Using SDKs</a>
Using signature generators	OBS provides graphical tools to make it easier to generate signatures.	<a href="#">Using a Signature Generator</a>
Manual calculation	You can manually calculate a signature using the provided signing algorithm.	<a href="#">Manually Calculating a Signature</a>

## Using SDKs

OBS SDKs provide built-in signature calculation, so you do not need to take care of this operation. [Table 3-7](#) lists the source code files for signature calculation for OBS SDKs in different languages.

**Table 3-7** Signature source files of OBS SDKs

Using SDKs	Signature Source File
Java	<a href="#">RestStorageService.java</a>

Using SDKs	Signature Source File
Python	<a href="#">auth.py</a>
Go	<a href="#">auth.go</a>
C	<a href="#">request.c</a>
Node.Js	<a href="#">utils.js</a>
Browser.Js	<a href="#">utils.js</a>
PHP	<a href="#">DefaultSignature.php</a>
.NET	<a href="#">Signer.cs</a>

### Using a Signature Generator

OBS provides a graphical tool to make it easier to generate signatures. You can find the tool [here](#). To learn how to use the tool, see [Using Signature Generators](#).

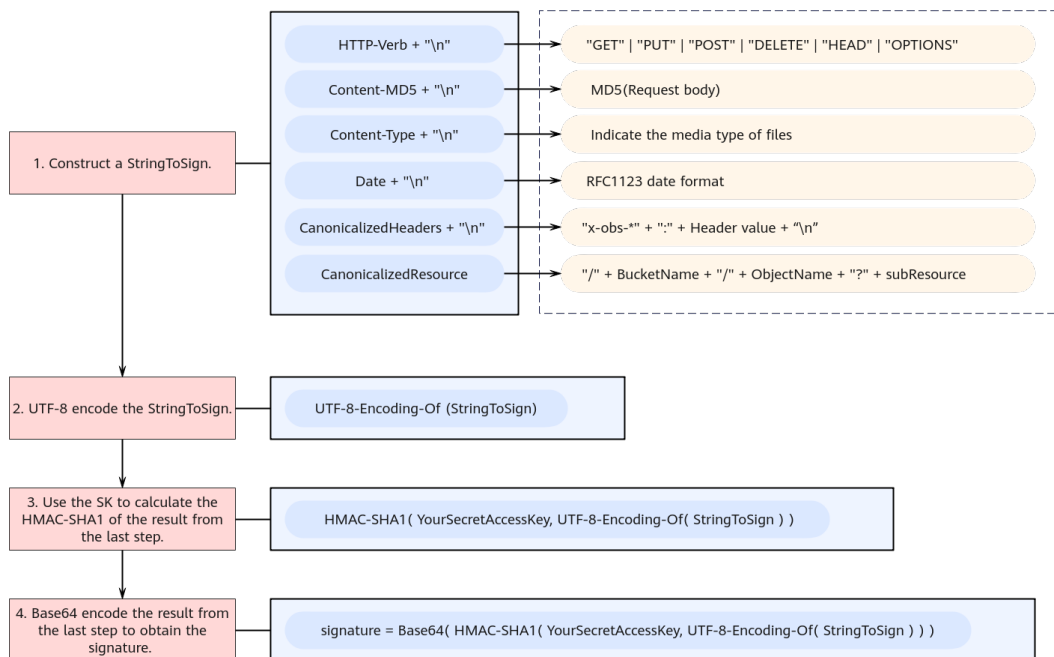
### Manually Calculating a Signature

Use the following algorithm to calculate the signature carried in the header:

Signature = Base64( HMAC-SHA1( Your\_SK, UTF-8-Encoding-Of( StringToSign ) ) )

The following figure shows how the signature carried in the header is calculated:

**Figure 3-3** Calculating a signature carried in the header



**Step 1** Construct a StringToSign. Below are the StringToSign structure and parameters. For more StringToSign examples, see [Example StringToSign](#).

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

**Table 3-8** Parameters required for constructing a StringToSign

Parameter	Type	Mandatory (Yes/No)	Description
HTTP-Verb	String	Yes	<p><b>Definition:</b> The HTTP method used to make a request (also called an operation). For RESTful APIs, HTTP methods include PUT, GET, DELETE, and other operations. Select a method based on the API to be called.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>GET:</b> Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.</li> <li>• <b>PUT:</b> Requests that a server update a specific resource, for example, creating a bucket or uploading an object.</li> <li>• <b>POST:</b> Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.</li> <li>• <b>DELETE:</b> Requests that a server delete a specific resource such as an object.</li> <li>• <b>HEAD:</b> Requests that a server return the description of a specific resource, for example, obtaining object metadata.</li> <li>• <b>OPTIONS</b> (not supported for signature generators): Requests that a server check whether the user has the permissions to perform an operation on a resource. CORS must be configured for the bucket.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
Content-MD5	String	No	<p><b>Definition:</b> The base64-encoded 128-bit MD5 digest of the request body based on RFC 1864.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> A string of 22 characters.</p> <p><b>Default value:</b> This parameter is left blank by default.</p>
Content-Type	String	No	<p><b>Definition:</b> The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> If this parameter is not included, an empty string is used by default. <a href="#">Table 3-9</a> shows an example.</p>
Date	String	Yes	<p><b>Definition:</b> When a request was made. If the value of <b>Date</b> is over 15 minutes away from the current server time, the server returns <b>403</b>, indicating that the request is invalid.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The value must be a GMT in RFC 1123 format.</li> <li>If <b>Date</b> and <b>x-obs-date</b> headers are both specified, <b>x-obs-date</b> applies.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
CanonicalizedHeaders	String	No	<p><b>Definition:</b> Additional headers defined by OBS that include the <b>x-obs-</b>prefix, for example, <b>x-obs-date</b>, <b>x-obs-acl</b>, and <b>x-obs-meta-*</b>. For each additional header, separate its name and value by a colon (:). In <b>x-obs-storage-class:STANDARD</b>, for example, <b>x-obs-storage-class</b> is the header name, and <b>STANDARD</b> is the header value.</p> <p><b>Constraints:</b></p> <ol style="list-style-type: none"> <li>Header names must be lowercase. The header value is case sensitive. An example header is <b>x-obs-storage-class:STANDARD</b>.</li> <li>A header name cannot contain non-ASCII or unrecognizable characters, which are also not recommended for header values. If such characters are necessary, they must be encoded and decoded in URL or Base64 on the client side, because the server side does not perform any decoding.</li> <li>A header cannot contain meaningless tabs or spaces. For example, <b>x-obs-meta-name: name</b> (with a meaningless space before <b>name</b>) must be changed to <b>x-obs-meta-name:name</b>.</li> <li>If multiple headers are involved, they must be sorted in ascending lexicographic order by header name.</li> <li>If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, <b>x-obs-meta-name:name1</b> and <b>x-obs-meta-name:name2</b> must be combined into <b>x-obs-meta-name:name1,name2</b>.</li> <li>Each header requires a new line, and each line ends with a newline character (\n).</li> </ol> <p><b>Range:</b> Determined by the API to be called</p> <p><b>Default value:</b> This parameter is left blank by default.</p>



Parameter	Type	Mandatory (Yes/No)	Description
CanonicalizedResource	String	Yes	<p><b>Definition:</b>            OBS resources specified in an HTTP request. The structure is as follows:            CanonicalizedResource = "/" + <i>bucket-name</i> + "/" + <i>object-name</i> + "?" + <i>sub-resource</i></p> <p>For example, if you want to call <b>GetObject</b> to obtain version <i>xxx</i> of object <b>object-test</b> stored in <b>bucket-test</b> and change <b>Content-Type</b> to <b>text/plain</b>, then <b>CanonicalizedResource</b> would be as follows:            /bucket-test/object-test?response-content-type=text/plain&amp;versionId=xxx</p> <ul style="list-style-type: none"> <li>• <i>bucket-name</i>:                If the bucket does not have a custom domain name associated, use its own name.                Otherwise, use its associated custom domain name. In <b>/obs.ccc.com/object</b>, for example, <b>obs.ccc.com</b> is a custom bucket domain name.                If an API operation does not require a bucket to be specified, for example, listing all buckets under an account, omit both the bucket name and object name by using, for example, <b>/</b>.</li> <li>• <i>object-name</i>:                The name of the required object. Follow the object naming rules.</li> <li>• <i>sub-resource</i>: Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&amp;) to separate them.                sub-resource identifiers: CDNNotifyConfiguration, acl, append, atname, backtosource, cors, customdomain, delete, deletebucket, directcoldaccess, encryption, inventory, length, lifecycle, location, logging, metadata, modify, name, notification, partNumber, policy, position, quota, rename, replication, restore, storageClass, storagePolicy, storageinfo, tagging, torrent, truncate, uploadId, uploads, versionId, versioning, versions, website,x-obs-security-token, object-lock, retention</li> </ul> <p>Response header sub-resources: response-cache-control, response-content-disposition, response-content-encoding, response-content-language, response-content-type, response-expires</p> <p>Image processing sub-resources: x-image-process, x-image-save-bucket, x-image-save-object</p> <p><b>Constraints:</b></p>

Parameter	Type	Mandatory (Yes/No)	Description
			<p>A sub-resource usually has only one value. Listing multiple values for the same resource key—for example, <b>key=value1&amp;key=value2</b>—is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> If this parameter is not specified, / is used.</p>

**Step 2** UTF-8 encode the result from step 1.

**Step 3** Use your SK to calculate the HMAC-SHA1 of the result from step 2.

**Step 4** Base64 encode the result from step 3 to obtain the signature.

----End

## Example StringToSign

The following are some StringToSign examples:

**Table 3-9** Obtaining an object

Request Headers	StringToSign
GET /object.txt HTTP/1.1 Host: bucket.obs.region.myhuaweicloud.com 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 3-10** Using a temporary AK/SK and security token to upload an object

Request Headers	StringToSign
PUT /object.txt HTTP/1.1 User-Agent: curl/7.15.5 Host: bucket.obs.region.myhuaweicloud.com 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 3-11** An object upload request containing an additional header

Request Headers	StringToSign
PUT /object.txt HTTP/1.1 User-Agent: curl/7.15.5 Host: bucket.obs.region.myhuaweicloud.com 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

**Table 3-12** Obtaining an object ACL

Request Headers	StringToSign
GET /object.txt?acl HTTP/1.1 Host: bucket.obs.region.myhuaweicloud.com 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 3-13** An object upload request carrying the Content-MD5 header

Request Headers	StringToSign
PUT /object.txt HTTP/1.1 Host: bucket.obs. <i>region</i> .myhuaweicloud.com 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

**Table 3-14** Using a custom domain name to upload an object

Request Headers	StringToSign
PUT /object.txt HTTP/1.1 Host: obs.ccc.com 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                     /obs.ccc.com/object.txt

## Examples for Calculating Content-MD5 in Java

You can choose to add the **Content-MD5** header when constructing the StringToSign. The code example below calculates the **Content-MD5** header value.

```
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();
            // Base64 encode the MD5 value of the string.
            String contentMd5 = encoder.encode(messageDigest.digest(exampleString.getBytes("utf-8")));
            System.out.println("Content-MD5:" + contentMd5);
        } catch (NoSuchAlgorithmException | UnsupportedEncodingException e)
        {
            e.printStackTrace();
        }
    }
}
```

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

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

The following is an example client request for creating a private bucket named **newbucketname2** in a given region:

```
PUT / HTTP/1.1
Host: newbucketname2.obs.region.myhuaweicloud.com
Content-Length: length
Date: Fri, 06 Jul 2018 03:45:51 GMT
x-obs-acl:private
x-obs-storage-class:STANDARD
Authorization: OBS UDSIAMSTUBTEST000254:ydH8ffpcbS6YpeOMcEZfn0wE90c=
<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
  <Location>region</Location>
</CreateBucketConfiguration>
```

## Code Examples

The signing code examples for different languages are as follows:

### 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", "backtosource", "cors", "customdomain",
        "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-image-process",
        "x-image-save-bucket", "x-image-save-object", "x-obs-security-token", "object-lock", "retention"));

    private String ak;
    private String sk;
    // UTF8-encode the character string.
    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("");
}

// Use the SK to calculate the HmacSHA1.
public String hmacSha1(String input) throws NoSuchAlgorithmException, InvalidKeyException,
UnsupportedEncodingException {
    SecretKeySpec signingKey = new SecretKeySpec(this.sk.getBytes(DEFAULT_ENCODING), "HmacSHA1");
    // Obtain a Mac instance and use the getInstance method to specify the HMAC-SHA1 for the
algorithm.
    Mac mac = Mac.getInstance("HmacSHA1");
    // Use the SK to initialize the Mac object.
    mac.init(signingKey);
    return Base64.getEncoder().encodeToString(mac.doFinal(input.getBytes(DEFAULT_ENCODING)));
}

// Construct a StringToSign.
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 the header contains x-obs-date, leave the Date header blank.
if(canonicalizedHeaders.containsKey("x-obs-date")) {
    date = "";
}

// Construct the StringToSign by concatenating HTTP-Verb, Content-MD5, Content-Type, and 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);

// Construct the StringToSign by concatenating CanonicalizedHeaders.
for(Map.Entry<String, String> entry : canonicalizedHeaders.entrySet()) {
    stringToSign.append(entry.getKey()).append(":").append(entry.getValue()).append(SIGN_SEP);
}

// Construct the StringToSign by concatenating 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 {

    // Construct a StringToSign.
    String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName);

    // Calculate the signature.
    return String.format("OBS %s:%s", this.ak, 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 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);

//Calculate and print the signature carried in the header.
System.out.println(demo.headerSignature("PUT", headers, queries, bucketName, objectName));
}
}
```

## 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" indicates when the request was generated.
date = datetime.utcnow().strftime('%a, %d %b %Y %H:%M:%S GMT')
canonicalizedHeaders = "x-obs-acl:private\n"
CanonicalizedResource = "/newbucketname2"

# Construct a StringToSign.
canonical_string = httpMethod + "\n" + "\n" + contentType + "\n" + date + "\n" + canonicalizedHeaders +
CanonicalizedResource

# Calculate the signature using "Signature = Base64( HMAC-SHA1( Your_SK, UTF-8-Encoding-
Of( StringToSign ) ) )".
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)
```

## C

Download [the sample code](#) for calculating a signature with the C language.



1. The API for calculating the signature is included in the **sign.h** header file.
2. The example code for calculating the signature is included in the **main.c** file.

## Addressing a Signature Mismatch

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.

Address the problem by referring to [Why Don't the Signatures Match?](#)

## 3.2.3 Using a Pre-Signed URL

### Function

OBS allows you to construct a URL for a specific operation. In such a URL, you use Query parameters to provide authentication information including the user AK, signature, and validity period. Anyone who has the URL can perform the specified operation. After receiving a request made using such a URL, OBS treats the requester as the user who issued the URL and processes the request. For example, if you construct a pre-signed URL for downloading an object and provide it to various users, they can use the URL to download the object without authentication, but they must do so within the validity period specified by the **Expires** parameter. One use case for a pre-signed URL is granting temporary access to your OBS resources without providing them with the SK.

The following is an example pre-signed URL:

```
GET /ObjectKey?AccessKeyId=AccessKeyID&Expires=ExpiresValue&Signature=signature HTTP/1.1  
Host: bucketname.obs.region.myhuaweicloud.com
```

The request format of downloading an object with a pre-signed URL containing a temporary AK/SK pair and security token:

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

### Query Parameters in a Pre-signed URL

To access OBS with a URL, you must include the Query parameters shown in [Table 3-15](#) in the URL.

**Table 3-15** Query parameters

Parameter	Type	Mandatory (Yes/No)	Description
AccessKeyId	String	Yes	<p><b>Definition:</b> The access key ID (AK) of the URL issuer. OBS authenticates the identity based on the provided AK and, if verified, treats the requester as the issuer. For details about how to obtain an AK, see <a href="#">Access Keys</a>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Expires	String	Yes	<p><b>Definition:</b> When a pre-signed 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> <i>Current time &lt; Expires &lt; 20 years after the current time.</i> Unit: second.</p> <p><b>Default value:</b> None</p>
Signature	String	Yes	<p><b>Definition:</b> The signature calculated based on the SK, Expires, and other parameters. OBS provides the following signature calculation methods for a URL:</p> <ul style="list-style-type: none"> <li>• <a href="#">Using SDKs for Signing</a></li> <li>• <a href="#">Using a Signature Generator</a></li> <li>• <a href="#">Manually Calculating a Signature</a></li> </ul>

Parameter	Type	Mandatory (Yes/No)	Description
x-obs-security-token	String	No	<b>Definition:</b> This parameter must be added as a request header if a temporary AK/SK is used. <b>Constraints:</b> None <b>Range:</b> For details about how to obtain a temporary AK/SK pair and security token, see <a href="#">Obtaining a Temporary AK/SK Pair and Security Token</a> . <b>Default value:</b> None

## Using SDKs for Signing

Table 3-16 Using SDKs for signing

SDK	Signature Source File
Java	<a href="#">AbstractClient.java</a>
Python	<a href="#">client.py</a>
Go	<a href="#">auth.go</a>
C	<a href="#">request.c</a>
Node.Js	<a href="#">utils.js</a>
Browser.Js	<a href="#">utils.js</a>
PHP	<a href="#">SendRequestTrait.php</a>
.NET	<a href="#">ObsClient temporary.cs</a>

## Using a Signature Generator

OBS provides a graphical tool to make it easier to generate signatures. You can find the tool [here](#). To learn how to use the tool, see [Using Signature Generators](#).

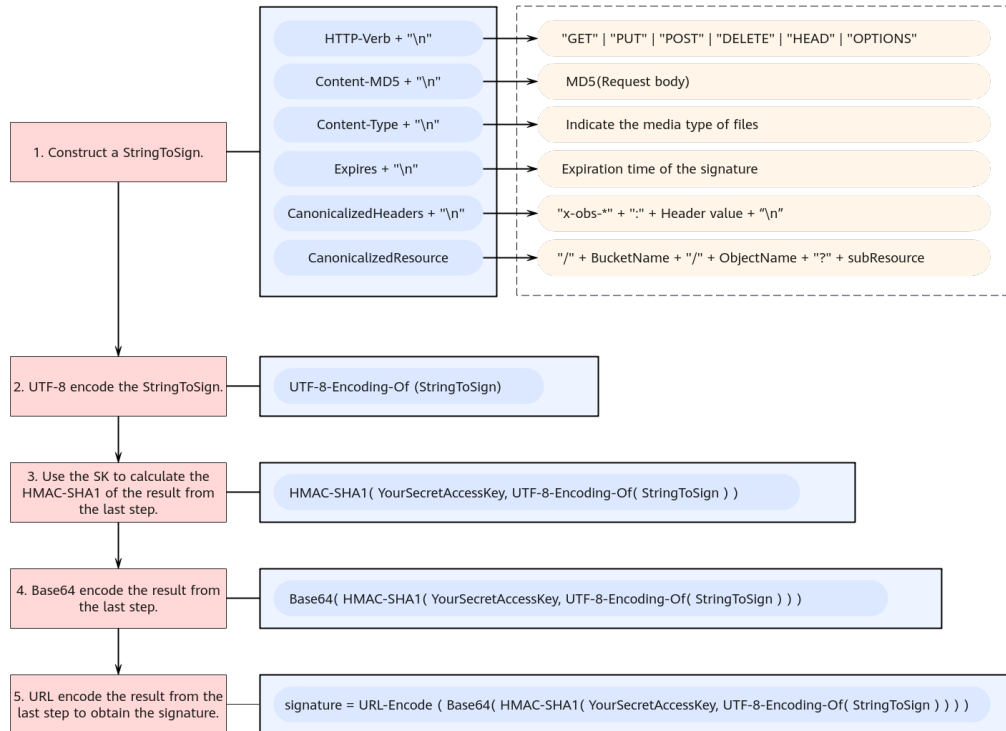
## Manually Calculating a Signature

Use this algorithm to calculate a signature:

Signature = URL-Encode( Base64( HMAC-SHA1( UTF-8-Encoding-Of( Your\_SK ), UTF-8-Encoding-Of( StringToSign ) ) ) )

The process of calculating a signature is as follows:

**Figure 3-4** Calculating a signature carried in a URL



**Step 1** Construct a StringToSign in the format shown below. [Table 3-17](#) describes the required parameters, and [Example StringToSign](#) provides some examples.

```

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

**Table 3-17** Parameters required for constructing a StringToSign

Parameter	Type	Mandatory (Yes/No)	Description
HTTP-Verb	String	Yes	<p><b>Definition:</b> The HTTP method used to make a request (also called an operation). For RESTful APIs, HTTP methods include PUT, GET, DELETE, and other operations. Select a method based on the API to be called.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>GET:</b> Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.</li> <li>• <b>PUT:</b> Requests that a server update a specific resource, for example, creating a bucket or uploading an object.</li> <li>• <b>POST:</b> Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.</li> <li>• <b>DELETE:</b> Requests that a server delete a specific resource such as an object.</li> <li>• <b>HEAD:</b> Requests that a server return the description of a specific resource, for example, obtaining object metadata.</li> <li>• <b>OPTIONS</b> (not supported for signature generators): Requests that a server check whether the user has the permissions to perform an operation on a resource. CORS must be configured for the bucket.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
Content-MD5	String	Yes	<p><b>Definition:</b> The base64-encoded 128-bit MD5 digest of the request body based on RFC 1864. This header can be used as a message integrity check to verify that the data was not tampered with in transit.</p> <p><b>Constraints:</b> If you want to allow users to access your OBS resources with a pre-signed URL in the browser, do not include Content-MD5, Content-Type, and CanonicalizedHeaders headers in signature calculation, because the browser cannot carry these headers. Requests with these headers will trigger a signature error on the server side.</p> <p><b>Range:</b> 0–24 characters (0 included, 24 excluded)</p> <p><b>Default value:</b> This parameter is left blank by default.</p>
Content-Type	String	Yes	<p><b>Definition:</b> The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> If this header is not contained in the request, an empty string is used. For details, see <a href="#">Table 3-18</a>. If this header is contained but not specified, its value is automatically specified based on the file name extension. If the file has no extension, <b>application/octet-stream</b> is used by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
Expires	String	Yes	<p><b>Definition:</b> When a pre-signed 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> <i>Current time</i> &lt; Expires &lt; 20 years after the current time. Unit: second.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
Canonicalized Headers	String	Yes	<p><b>Definition:</b> Additional headers defined by OBS that include the <b>x-obs-</b> prefix, for example, <b>x-obs-date</b>, <b>x-obs-acl</b>, and <b>x-obs-meta-*</b>. For each additional header, separate its name and value by a colon (:). In <b>x-obs-storage-class:STANDARD</b>, for example, <b>x-obs-storage-class</b> is the header name, and <b>STANDARD</b> is the header value.</p> <p><b>Constraints:</b></p> <ol style="list-style-type: none"> <li>Header names must be lowercase. The header value is case sensitive. An example header is <b>x-obs-storage-class:STANDARD</b>.</li> <li>A header name cannot contain non-ASCII or unrecognizable characters, which are also not recommended for header values. If such characters are necessary, they must be encoded and decoded in URL or Base64 on the client side, because the server side does not perform any decoding.</li> <li>A header cannot contain meaningless tabs or spaces. For example, <b>x-obs-meta-name: name</b> (with a meaningless space before <b>name</b>) must be changed to <b>x-obs-meta-name:name</b>.</li> <li>If multiple headers are involved, they must be sorted in ascending lexicographic order by header name.</li> <li>If a header has multiple values, these values need to be written together under their shared header name, separated by commas (.). For example, <b>x-obs-meta-name:name1</b> and <b>x-obs-meta-name:name2</b> must be combined into <b>x-obs-meta-name:name1,name2</b>.</li> <li>Each header requires a new line, and each line ends with a newline character (\n).</li> </ol> <p><b>Range:</b> Determined by the API to be called</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
Canonicalized Resource	String	Yes	<p><b>Definition:</b></p> <p>OBS resources specified in an HTTP request. The structure is as follows:</p> <pre>CanonicalizedResource = /bucket-name/object-name?sub-resource</pre> <p>For example, if you want to call <b>GetObject</b> to obtain version <b>xxx</b> of object <b>object-test</b> stored in <b>bucket-test</b> and change <b>Content-Type</b> to <b>text/plain</b>, then <b>CanonicalizedResource</b> would be as follows:</p> <pre>/bucket-test/object-test?response-content-type=text/plain&amp;versionId=xxx</pre> <ul style="list-style-type: none"> <li>• <i>bucket-name</i>: If the bucket does not have a custom domain name associated, use its own name. Otherwise, use its associated custom domain name. In <b>/obs.ccc.com/object</b>, for example, <b>obs.ccc.com</b> is a custom bucket domain name. If an API operation does not require a bucket to be specified, for example, listing all buckets under an account, omit both the bucket name and object name by using, for example, <b>/</b>.</li> <li>• <i>object-name</i>: The name of the required object. Follow the object naming rules.</li> <li>• <i>sub-resource</i>: Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&amp;) to separate them. sub-resource identifiers: CDNNotifyConfiguration, acl, append, atname, backtosource, cors, customdomain, delete, deletebucket, directcoldaccess, encryption, inventory, length, lifecycle, location, logging, metadata, modify, name, notification, partNumber, policy, position, quota, rename, replication, restore, storageClass, storagePolicy, storageinfo, tagging, torrent, truncate, uploadId, uploads, versionId, versioning, versions, website,x-obs-security-token, object-lock, retention  Response header sub-resources: response-cache-control, response-content-disposition, response-content-encoding, response-content-language, response-content-type, response-expires  Image processing sub-resources: x-image-process, x-image-save-bucket, x-image-save-object</li> </ul> <p><b>Constraints:</b></p> <p>A sub-resource usually has only one value. Listing multiple values for the same resource key—for example,</p>

Parameter	Type	Mandatory (Yes/No)	Description
			<p><b>key=value1&amp;key=value2</b>—is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> If this parameter is not specified, / is used.</p>

 **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, because the browser cannot carry them. Otherwise, the server that received the request will return a signature error.

**Step 2** UTF-8 encode the result from step 1.

**Step 3** Use the SK to calculate the HMAC-SHA1 of the result from step 2.

**Step 4** Base64-encode the result from step 3.

**Step 5** URL-encode the result from step 4 to obtain the signature.

----End

## Example StringToSign

**Table 3-18** Downloading an object with a pre-signed URL

Request Headers	StringToSign
GET /objectkey? AccessKeyId=MFyfvK41ba2giqM7Uio6P znpdUKGpownRZlmVmHc&Expires=15 32779451&Signature=0Akylf43Bm3mD 1bh2rM3dmVp1Bo%3D HTTP/1.1  Host: examplebucket.obs.region.myhuaweicloud.com	GET \n \n \n 1532779451\n /examplebucket/objectkey

**Table 3-19** Downloading an object with a pre-signed URL that carries a temporary AK/SK and security token

Request Headers	StringToSign
GET /objectkey? AccessKeyId=MFyfvK41ba2giqM7Uio6P znpdUKGpownRZlmVmHc&Expires=15 32779451&Signature=0Akylf43Bm3mD 1bh2rM3dmVp1Bo%3D&x-obs- security-token=YwkaRTbdY8g7q... HTTP/1.1 Host: examplebucket.obs.region.myhuaweicloud.com	GET \n \n \n 1532779451\n /examplebucket/objectkey?x-obs- security-token=YwkaRTbdY8g7q...

## Code Examples

The following are some code examples for calculating a signature carried in a pre-signed URL:

### 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", "atname", "backtosource", "cors", "customdomain",
        "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-image-process",
        "x-image-save-bucket", "x-image-save-object", "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}\\.\\.\\.\\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;
}

// UTF-8 encode the string.
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");
    // Obtain a Mac instance and use the getInstance method to specify the HMAC-SHA1 for the
    algorithm.
    Mac mac = Mac.getInstance("HmacSHA1");
    // Use the SK to initialize the Mac object.
```

```
        mac.init(signingKey);
        return Base64.getEncoder().encodeToString(mac.doFinal(input.getBytes(DEFAULT_ENCODING)));
    }

    // Construct a StringToSign.
    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;
        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();
            }
        }

        // Construct the StringToSign by concatenating HTTP-Verb, Content-MD5, Content-Type, and Expires.
        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);

        // Construct the StringToSign by concatenating CanonicalizedHeaders.
        for (Map.Entry<String, String> entry : canonicalizedHeaders.entrySet()) {
            stringToSign.append(entry.getKey()).append(":").append(entry.getValue()).append(SIGN_SEP);
        }

        // Construct the StringToSign by concatenating 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("&");
    }
    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");
    }
    // Construct a StringToSign.
    String stringToSign = this.stringToSign(httpMethod, headers, queries, bucketName, objectName,
expires);

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

public String querySignature(String httpMethod, Map<String, String[]> headers, Map<String, String>
queries, long expires) throws Exception {
    // Construct a StringToSign.
    String stringToSign = this.stringToSign(httpMethod, headers, queries, "", "", expires);

    // Calculate the 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();
    if (bucketName == null || bucketName.isEmpty()) {
        URL.append("https://").append(endpoint).append("/").append(this.encodeObjectName(objectName)).appen
d("?");
    } else {
        URL.append("https://").append(bucketName).append(".").append(endpoint).append("/").append(this.encode
ObjectName(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 listBucketSignatureUrl(SignDemo demo, Map<String, String[]> headers, Map<String,
String> queries, String endpoint)
throws Exception {
    // Use Expires to configure the signature to expire 24 hours after its creation.
    long expires = (System.currentTimeMillis() + 86400000L) / 1000;
    // Create a signed URL for listing buckets. Requests do not contain bucket names or object names.
    String signature = demo.querySignature("GET", headers, queries, expires);
    System.out.println(signature);
    String URL = demo.getURL(endpoint, queries, "", "", signature, expires);
    System.out.println(URL);
}

public static void signatureUrl(SignDemo demo, Map<String, String[]> headers, Map<String, String>
queries, String endpoint)
throws Exception {
    String bucketName = "bucket-test";
    String objectName = "hello.jpg";
    // Use Expires to configure the signature to expire 24 hours after its creation.
    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);
}

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>";

    // If you use a URL to access OBS through a browser, headers cannot be included because this will
lead to a signature mismatch. To use headers, process it on the client.
    Map<String, String[]> headers = new HashMap<String, String[]>();
    Map<String, String> queries = new HashMap<String, String>();

    // Signature URL for listing buckets
    listBucketSignatureUrl(demo, headers, queries, endpoint);
    // Signature URL for non-listing buckets
    signatureUrl(demo, headers, queries, endpoint);
}
}
```

## Signature Algorithm in the C Programming Language

[Download the sample code](#) for calculating the signature in the C programming language.

1. The API for calculating the signature is contained in the **sign.h** header file.
2. The sample code for calculating the signature is contained in the **main.c** header file.

## Using a Pre-signed URL to Generate a Pre-defined Access URL

Combine the calculated signature with the host prefix to generate a pre-defined URL. Below is an example URL. Users obtaining this URL can enter it in the browser to download object **objectkey** from bucket **examplebucket.1532779451** (Sat Jul 28 20:04:11 CST 2024) indicates the expiration time of this URL.

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

In a Linux system, if you want to use **curl** to access the URL, escape the ampersand (&) with a backslash (\). The following example downloads object **objectkey** to file **output**:

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

## Addressing a Signature Mismatch

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.

Address the problem by referring to [Why Don't the Signatures Match?](#)

## 3.2.4 Signing Browser-Based Upload Requests

### Function

OBS supports browser-based uploads using POST requests. Authenticating such a request uses the signature carried in the form. Before calculating the signature for a POST request, you need to first create a security policy. This policy is used to restrict what is allowed in the browser-based upload request. For example, you can specify the prefix of an object to be uploaded must start with **prefix01** to make it easier to manage objects. The procedure is as follows:

- Step 1** Create a policy that specifies the conditions to restrict what you want to allow in the request, such as the bucket name and object name prefix.
- Step 2** Calculate a signature based on the policy.
- Step 3** Create a form that contains a valid signature and the policy. The created form is used to upload objects.

----End

### Step 1: Creating a Policy

The elements and syntax of a policy are as shown below. The example policy here allows users to upload objects prefixed with **user/** to the bucket **book** before 12:00 on December 31, 2024 (UTC time). The objects uploaded must allow **public-read** and the x-obs-security-token request header must be **YwkaRTbdY8g7q.....**



```
{ "expiration": "2024-12-31T12:00:00.000Z",
  "conditions": [
    {"x-obs-acl": "public-read" },
    {"x-obs-security-token": "YwkaRTbdY8g7q...." },
    {"bucket": "book" },
    ["starts-with", "$key", "user/"]
  ]
}
```

A policy consists of **Expiration** and **Conditions**.

## Expiration

**Table 3-20** Expiration time

Parameter	Type	Mandatory (Yes/No)	Description
expiration	String	Yes	<p><b>Definition:</b> When a signature expires. In the example above, "expiration": "2024-12-31T12:00:00.000Z" indicates that the signature becomes invalid after 12:00 on December 31, 2024.</p> <p><b>Constraints:</b> The value must be a UTC time in ISO 8601. Its format can be "yyyy-MM-dd'T'HH:mm:ss'Z'" or "yyyy-MM-dd'T'HH:mm:ss.SSS'Z'".</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## Conditions

You can use conditions to restrict what is allowed in the request. The example above requires the requested bucket name to be **book**, the object uploaded to use **user/** as the name prefix, and the ACL of the object to be **public-read**. A policy can restrict all form fields except AccessKeyId, Signature, file, policy, token, and field names that have an x-ignore- prefix. The following table lists the supported condition elements.

**Table 3-21** Condition elements that can be contained in a policy

Element	Type	Description	Match Type
x-obs-acl	String	<p><b>Definition:</b> Used to set a pre-defined ACL when creating an object</p> <p><b>Constraints:</b> Pre-defined policies must be displayed in character strings.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private</li> <li>• public-read</li> <li>• public-read-write</li> </ul> <p>For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a>.</p> <p><b>Default value:</b> private</p>	Exact Matches starts-with
content-length-range	int	The maximum and minimum allowable size for the uploaded content. Example: ["content-length-range", 1048576, 10485760]	Specifying Ranges
Cache-Control, Content-Type, Content-Disposition, Content-Encoding, Expires	String	REST-specific headers.	Exact Matches starts-with

Element	Type	Description	Match Type
key	String	<p><b>Definition:</b> The name of the uploaded 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.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Range:</b> The value is a string of 1 to 1024 characters.</p> <p><b>Default value:</b> None</p>	Exact Matches starts-with

Element	Type	Description	Match Type
bucket	String	<p><b>Definition:</b> The requested bucket name.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Default value:</b> None</p> <p><b>NOTICE</b> If the policy contains the <b>key</b> condition element, it must also contain the <b>bucket</b> element.</p>	Exact Matches
success_action_redirect	String	The URL that the client is redirected to after a successful upload. For details, see <a href="#">Uploading an Object - POST</a> .	Exact Matches starts-with
success_action_status	String	The status code returned to the client upon successful upload if <b>success_action_redirect</b> is not specified. For details, see <a href="#">Uploading an Object - POST</a> .	Exact Matches

Element	Type	Description	Match Type
x-obs-meta-*	String	<p><b>Definition:</b> When creating an object, you can use a header starting with <b>x-obs-meta-</b> to define object metadata in an HTTP request. The custom metadata will be returned in the response when you retrieve the object or query the object metadata. For details, see <a href="#">Managing Object Metadata</a>.</p> <p>Example: <b>x-obs-meta-test: test metadata</b></p> <p><b>Constraints:</b> Both custom metadata keys and their values must conform to US-ASCII standards. If such characters are necessary, they must be encoded and decoded in URL or Base64 on the client side, because the server side does not perform any decoding.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>	Exact Matches starts-with
x-obs-*	String	Other headers prefixed with <b>x-obs-</b> .	Exact Matches starts-with

Element	Type	Description	Match Type
x-obs-security-token	String	<p><b>Definition:</b> This parameter must be added as a request header if a temporary AK/SK is used.</p> <p><b>Constraints:</b> This field is mandatory when a temporary AK/SK and security token are used for authentication.</p> <p><b>Range:</b> For details about how to obtain a temporary AK/SK pair and security token, see <a href="#">Obtaining a Temporary AK/SK Pair and Security Token</a>.</p> <p><b>Default value:</b> None</p>	Exact Matches

The table below describes the supported condition matching types:

**Table 3-22** Condition matching

Condition Match Type	Description
Exact Matches	<p>The default type. The form field value must match the value specified in conditions. This example indicates the object ACL must be set to <b>public-read</b>:</p> <pre>{ "x-obs-acl": "public-read" }</pre> <p>This example is an alternate way to indicate that the ACL must be set to <b>public-read</b>:</p> <pre>[ "eq", "\$x-obs-acl", "public-read" ]</pre>
Starts With	<p>The form field value must start with the specified value. This example indicates the object key must start with <b>user/</b>:</p> <pre>[ "starts-with", "\$key", "user/" ]</pre>
Matching Any Content	<p>To allow any content within a form field, use "starts-with" with an empty value (""). This example allows any value for <b>success_action_redirect</b>:</p> <pre>[ "starts-with", "\$success_action_redirect", "" ]</pre>

Condition Match Type	Description
Specifying Ranges	Only used to restrict the size of the uploaded file. Separate the upper and lower limits with a comma (,). 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 3-23** Characters that must be escaped in a policy

Escape Sequence	Description
\\	Backslash
\\$	Dollar symbol
\b	Backspace
\f	Form feed
\n	New line
\r	Carriage return
\t	Horizontal tab
\v	Vertical tab
\uxxxx	All Unicode characters

## Example Requests and Policies

The following tables provide some example requests and policies.

**Example 1:** Uploading an object named **testfile.txt** to the bucket **examplebucket** and setting the object ACL to **public-read**

Request	Policy
<pre>POST / HTTP/1.1 Host: examplebucket.obs.region.myhuaweicloud.com 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"  ewogICJleHBpcmF0aW9uJjogJlJwMTktMDctMDZUMTI6MDA6MDAuMDAwWiIsCiAgImNvbmlkbnRpdGlbnMiOiBbCiAgICB7ImJ1Y2tldCI6ICJleGFtcGxlYnVja2V0IiB9LAogICAgWyJlcSIsICJka2V5IiwgInRlc3RmaWxlnR4dCJdLAoJeyJ4LW9icy1hY2wiOiAicHVibGljLXJlYWQiIH0sCiAgICBblmVxliwgliRDb250ZW50LVR5cGUlLCAidGV4dC9wbGFpbiJdLAogICAgWyJjb250ZW50LWxlbmd0aC1yYW5nZSIsIDYsIDF0aW9uXQogIF0kFkQo= --7e32233530b26 Content-Disposition: form-data; name="Signature"  xxl7bZs/5FgtBUggOdQ88DPZUo0=</pre>	<pre>{   "expiration":     "2019-07-01T12:00:00.000Z",   "conditions": [     {"bucket": "examplebucket" },     ["eq", "\$key", "testfile.txt"],     {"x-obs-acl": "public-read" },     ["eq", "\$Content-Type", "text/plain"]   ] }</pre>



Request	Policy
<pre>--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--</pre>	

**Example 2:** Uploading an object named **file/obj1** to the bucket **examplebucket** and configuring the four user-defined metadata items



Request	Policy
Content-Disposition: form-data; name="x-obs-meta-test2"  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--	

## Step 2: Calculating a Signature

The following table shows the ways to calculate a form-carried signature:

**Table 3-24** Calculating a signature

Method	Description	Link
Using SDKs	All available OBS SDKs provide automatic calculation. Save time by using them directly.	<a href="#">Using SDKs for Signing</a>
Manually calculating a signature	You can manually calculate a signature based on the provided signing algorithm.	<a href="#">Using a Signing Algorithm</a>

## Using SDKs for Signing

**Table 3-25** Signature source files of OBS SDKs

Using SDKs	Signature Source File
Java	<a href="#">AbstractClient.java</a>
Python	<a href="#">client.py</a>
Go	<a href="#">temporary_other.go</a>
C	-
Node.Js	<a href="#">utils.js</a>
Browser.Js	<a href="#">utils.js</a>
PHP	<a href="#">SendRequestTrait.php</a>
.NET	-

## Using a Signing Algorithm

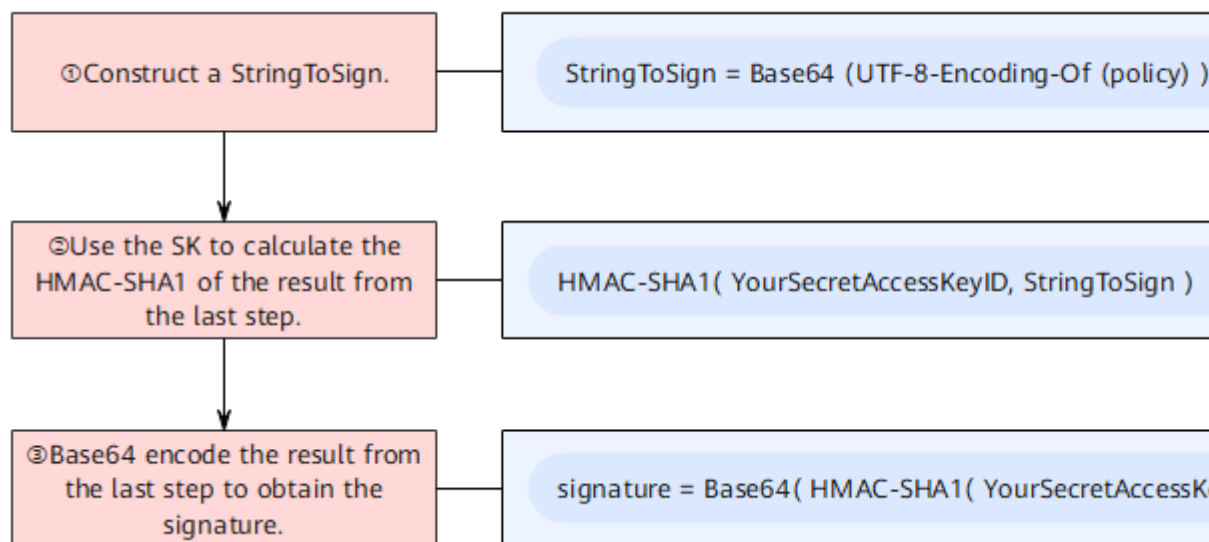
Use the following algorithm to calculate a signature carried in a form:

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

The process of calculating a signature is as follows:

1. Construct the StringToSign by encoding the created policy in UTF8 and then in Base64.
2. Use the SK to calculate the HMAC-SHA1 of the result from step 1.
3. Base64 encode the result from step 2 to obtain the signature.

**Figure 3-5** Calculating a form signature



## Code Examples

The following are some code examples for calculating a signature carried in a form:

### Java

```
import java.text.SimpleDateFormat;
import java.util.ArrayList;
import java.util.Base64;
import java.util.Collections;
import java.util.Date;
import java.util.List;
import java.util.TimeZone;

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

public class SignDemo {

    private static final String DEFAULT_ENCODING = "UTF-8";
    private static final String EXPIRATION_DATE_FORMATTER = "yyyy-MM-dd'T'HH:mm:ss.SSS'Z'";
    private static final TimeZone GMT_TIMEZONE = TimeZone.getTimeZone("GMT");
    private static final long DEFAULT_EXPIRE_SECONDS = 300;

    private String ak;
    private String sk;

    private String join(List items) {
        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(",");
            }
        }
        return sb.toString();
    }

    // Construct a StringToSign.
    private String stringToSign(String[] tmpConditions, String expiration) {
        List conditions = new ArrayList<>();
        Collections.addAll(conditions, tmpConditions);
        return "{\expiration\":" + "\"" + expiration + "\",\" + "\"conditions\":" + join(conditions) + "\"}";
    }

    private String getFormatExpiration(Date requestDate, long expires) {
        requestDate = requestDate != null ? requestDate : new Date();
        SimpleDateFormat expirationDateFormat = new SimpleDateFormat(EXPIRATION_DATE_FORMATTER);
        expirationDateFormat.setTimeZone(GMT_TIMEZONE);
        Date expiryDate = new Date(requestDate.getTime() + (expires <= 0 ? DEFAULT_EXPIRE_SECONDS :
expires) * 1000);
        return expirationDateFormat.format(expiryDate);
    }

    // Calculate the signature.
    public String postSignature(String policy) throws Exception {
        byte[] policyBase64 = Base64.getEncoder().encode(policy.getBytes(DEFAULT_ENCODING));
        SecretKeySpec signingKey = new SecretKeySpec(this.sk.getBytes(DEFAULT_ENCODING), "HmacSHA1");
        Mac mac = Mac.getInstance("HmacSHA1"); mac.init(signingKey);
        return Base64.getEncoder().encodeToString(mac.doFinal(policyBase64));
    }

    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 authExpiration = demo.getFormatExpiration(null, 0);
String[] tmpConditions = { "{\"bucket\": \"bucketName\" }", "[\"starts-with\", \"$key\", \"obj\"]" };
String policy = demo.stringToSign(tmpConditions, authExpiration);
String policyBase64 = Base64.getEncoder().encodeToString(policy.getBytes(DEFAULT_ENCODING));
String signature = demo.postSignature(policy);

// Print the signature that carries AccessKeyId, policy, and Signature in a form.
System.out.println("authExpiration=" + authExpiration);
System.out.println("policy=" + policy);
System.out.println("policyBase64=" + policyBase64);
System.out.println("Signature=" + signature);

// Print the signature that carries token in a form.
System.out.println("token=" + demo.ak + ":" + signature + ":" + policyBase64);
}
}
```

## Python

```
# coding=utf-8
import binascii
import hashlib
import hmac
import os
import time
from datetime import datetime

import pytz

class SignatureDemo:
    EXPIRATION_DATE_FORMATTER = "%Y-%m-%dT%H:%M:%S.%f"

    DEFAULT_ENCODING = "UTF-8"

    # Set the default expiration time to 300 (5 minutes).
    DEFAULT_EXPIRE_SECONDS = 300

    GMT_TIMEZONE = "GMT"

    def __init__(self, ak=None, sk=None):
        self.ak = ak
        self.sk = sk

    # Specify request_date and expires as timestamps, for example, 1675651495.979.
    def get_format_expiration(self, request_date, expires):
        request_date = request_date if request_date else time.time()
        expiry_date = request_date + (expires if expires > 0 else self.DEFAULT_EXPIRE_SECONDS)
        expiration = datetime.fromtimestamp(expiry_date, pytz.timezone(self.GMT_TIMEZONE)).strftime(
            self.EXPIRATION_DATE_FORMATTER[:-3] + "Z"
        )
        return expiration

    def post_signature(self, policy):
        # If binascii or encode("base64") is used, newline characters must be removed.
        policy_base64 = binascii.b2a_base64(policy.encode(self.DEFAULT_ENCODING)).rstrip()
        hashed = hmac.new(self.sk.encode(self.DEFAULT_ENCODING), policy_base64, hashlib.sha1)
        return binascii.b2a_base64(hashed.digest()).rstrip()

    @staticmethod
    def string_to_sign(conditions, expiration):
        return "{\"expiration\": \"\" + \"\" + expiration + \"\", \"conditions\": [\" + \"\".join(conditions) + "]}"
```

```
if __name__ == "__main__":
    demo = SignatureDemo()

    # 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 = os.getenv('HUAWEICLOUD_SDK_AK')
    demo.sk = os.getenv('HUAWEICLOUD_SDK_SK')

    auth_expiration = demo.get_format_expiration(None, 0)
    conditions_example = [
        {"bucket": "bucketName"},
        [{"starts-with": "$key", "obj"}]
    ]

    post_policy = demo.string_to_sign(conditions_example, auth_expiration)
    policy_base64 =
    binascii.b2a_base64(post_policy.encode(demo.DEFAULT_ENCODING)).rstrip().decode(demo.DEFAULT_ENCODING)
    signature = demo.post_signature(post_policy).decode(demo.DEFAULT_ENCODING)

    # Print the signature that carries AccessKeyId, policy, and signature in a form.
    print("authExpiration=" + auth_expiration)
    print("policy=" + post_policy)
    print("policyBase64=" + policy_base64)
    print("Signature=" + signature)

    # Print the signature that carries token in a form.
    print("token=" + demo.ak + ":" + signature + ":" + policy_base64)
```

## 3.2.5 Using Signature Generators

OBS provides graphical tools to make it easier to generate signatures.

**Table 3-26** Signature generators

Signature Carrying Method	Signature Generator
Using an authorization header	<a href="#">Signature generator</a>
Using a pre-signed URL	<a href="#">Signature generator</a>

### Procedure

Use the signature generator as follows:

#### In an Authorization Header

- Step 1** [Open the signature generator](#).
- Step 2** Enter the AK and SK. For details, see [Access Keys](#).
- Step 3** Configure StringToSign parameters.

**Table 3-27** Parameter description

Parameter	Type	Mandatory (Yes/No)	Description
HTTP-Verb	String	Yes	<p><b>Definition:</b> The HTTP method used to make a request (also called an operation). For RESTful APIs, HTTP methods include PUT, GET, DELETE, and other operations. Select a method based on the API to be called.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>GET:</b> Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.</li> <li>• <b>PUT:</b> Requests that a server update a specific resource, for example, creating a bucket or uploading an object.</li> <li>• <b>POST:</b> Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.</li> <li>• <b>DELETE:</b> Requests that a server delete a specific resource such as an object.</li> <li>• <b>HEAD:</b> Requests that a server return the description of a specific resource, for example, obtaining object metadata.</li> <li>• <b>OPTIONS</b> (not supported for signature generators): Requests that a server check whether the user has the permissions to perform an operation on a resource. CORS must be configured for the bucket.</li> </ul> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
Content-MD5	String	No	<p><b>Definition:</b> The base64-encoded 128-bit MD5 digest of the request body based on RFC 1864. This header can be used as a message integrity check to verify that the data was not tampered with in transit.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> 0-24 characters (0 included, 24 excluded)</p> <p><b>Default value:</b> This parameter is left blank by default.</p>
Content-Type	String	No	<p><b>Definition:</b> The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> If this header is not included in the request, an empty string is used. For details, see <a href="#">Table 3-9</a>. If this header is contained but not specified, its value is automatically specified based on the file name extension. If the file has no extension, <b>application/octet-stream</b> is used by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
Date	String	Yes	<p><b>Definition:</b> When a request was made. If the value of <b>Date</b> is over 15 minutes away from the current server time, the server returns <b>403</b>, indicating that the request is invalid.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The value must be a GMT in RFC 1123 format.</li> <li>If <b>Date</b> and <b>x-obs-date</b> headers are both specified, <b>x-obs-date</b> applies.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
CanonicalizedHeaders	String	No	<p><b>Definition:</b> Additional headers defined by OBS that include the <b>x-obs-</b>prefix, for example, <b>x-obs-date</b>, <b>x-obs-acl</b>, and <b>x-obs-meta-*</b>. For each additional header, separate its name and value by a colon (:). In <b>x-obs-storage-class:STANDARD</b>, for example, <b>x-obs-storage-class</b> is the header name, and <b>STANDARD</b> is the header value.</p> <p><b>Constraints:</b></p> <ol style="list-style-type: none"> <li>A header name cannot contain non-ASCII or unrecognizable characters, which are also not recommended for header values. If such characters are necessary, they must be encoded and decoded in URL or Base64 on the client side, because the server side does not perform any decoding.</li> <li>If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, <b>x-obs-meta-name:name1</b> and <b>x-obs-meta-name:name2</b> must be combined into <b>x-obs-meta-name:name1,name2</b>.</li> <li>You do not need to handle the case conversion or lexicographical sorting of header names, which are automatically handled by the software.</li> </ol> <p><b>Range:</b> Determined by the API to be called</p> <p><b>Default value:</b> This parameter is left blank by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
CanonicalizedResource	String	Yes	<p><b>Definition:</b></p> <p>OBS resources specified in an HTTP request. The structure is as follows:  <b>CanonicalizedResource</b> = <code>/bucket-name/object-name?sub-resource</code></p> <p>For example, if you want to call <b>GetObject</b> to obtain version <b>xxx</b> of object <b>object-test</b> stored in <b>bucket-test</b> and change <b>Content-Type</b> to <b>text/plain</b>, then <b>CanonicalizedResource</b> would be as follows:  <code>/bucket-test/object-test?response-content-type=text/plain&amp;versionId=xxx</code></p> <ul style="list-style-type: none"> <li> <p><i>bucket-name</i>:                      If the bucket does not have a custom domain name associated, use its own name.                      Otherwise, use its associated custom domain name. In <code>/obs.ccc.com/object</code>, for example, <b>obs.ccc.com</b> is a custom bucket domain name.</p> <p>If an API operation does not require a bucket to be specified, for example, listing all buckets under an account, omit both the bucket name and object name by using, <code>/</code>.</p> </li> <li> <p><i>object-name</i>:                      The name of the required object. Follow the object naming rules.</p> </li> <li> <p><i>sub-resource</i>: Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&amp;) to separate them.                      sub-resource identifiers: CDNNotifyConfiguration, acl, append, atname, backtosource, cors, customdomain, delete, deletebucket, directcoldaccess, encryption, inventory, length, lifecycle, location, logging, metadata, modify, name, notification, partNumber, policy, position, quota, rename, replication, restore, storageClass, storagePolicy, storageinfo, tagging, torrent, truncate, uploadId, uploads, versionId, versioning, versions, website,x-obs-security-token, object-lock, retention</p> <p>Response header sub-resources: response-cache-control, response-content-disposition, response-content-encoding, response-content-language, response-content-type, response-expires</p> <p>Image processing sub-resources: x-image-process, x-image-save-bucket, x-image-save-object</p> </li> </ul> <p><b>Constraints:</b></p>

Parameter	Type	Mandatory (Yes/No)	Description
			<p>A sub-resource usually has only one value. Listing multiple values for the same resource key—for example, <b>key=value1&amp;key=value2</b>—is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> If this parameter is not specified, / is used.</p>

**Step 4** Click **Generate Signed Authorization Header**.

----End

### In a Pre-signed URL

**Step 1** [Open the signature generator](#).

**Step 2** Enter the AK and SK. For details, see [Access Keys](#).

**Step 3** Configure StringToSign parameters.

**Table 3-28** Parameter description

Parameter	Type	Mandatory (Yes/No)	Description
HTTP-Verb	String	Yes	<p><b>Definition:</b> The HTTP method used to make a request (also called an operation). For RESTful APIs, HTTP methods include PUT, GET, DELETE, and other operations. Select a method based on the API to be called.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>GET:</b> Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.</li> <li>• <b>PUT:</b> Requests that a server update a specific resource, for example, creating a bucket or uploading an object.</li> <li>• <b>POST:</b> Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.</li> <li>• <b>DELETE:</b> Requests that a server delete a specific resource such as an object.</li> <li>• <b>HEAD:</b> Requests that a server return the description of a specific resource, for example, obtaining object metadata.</li> <li>• <b>OPTIONS</b> (not supported for signature generators): Requests that a server check whether the user has the permissions to perform an operation on a resource. CORS must be configured for the bucket.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
Content-MD5	String	No	<p><b>Definition:</b> The base64-encoded 128-bit MD5 digest of the request body based on RFC 1864. This header can be used as a message integrity check to verify that the data was not tampered with in transit.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> 0-24 characters (0 included, 24 excluded)</p> <p><b>Default value:</b> This parameter is left blank by default.</p>
Content-Type	String	No	<p><b>Definition:</b> The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> If this header is not contained in the request, an empty string is used. For details, see <a href="#">Table 3-9</a>. If this header is contained but not specified, its value is automatically specified based on the file name extension. If the file has no extension, <b>application/octet-stream</b> is used by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
Expires	String	Yes	<p><b>Definition:</b> When a pre-signed 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> <i>Current time</i>&lt;Expires&lt;<i>20 years after the current time</i>. Unit: second.</p> <p><b>NOTE</b> You just need to specify a validity period for the signature in the signature generator, which will automatically produce a Unix timestamp based on the current time. For example, to configure a signature to be valid for 10 minutes, you specify <b>600</b> for <b>Expires</b>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
CanonicalizedHeaders	String	No	<p><b>Definition:</b> Additional headers defined by OBS that include the <b>x-obs-</b>prefix, for example, <b>x-obs-date</b>, <b>x-obs-acl</b>, and <b>x-obs-meta-*</b>. For each additional header, separate its name and value by a colon (:). In <b>x-obs-storage-class:STANDARD</b>, for example, <b>x-obs-storage-class</b> is the header name, and <b>STANDARD</b> is the header value.</p> <p><b>Constraints:</b></p> <ol style="list-style-type: none"> <li>1. A header name cannot contain non-ASCII or unrecognizable characters, which are also not recommended for header values. If such characters are necessary, they must be encoded and decoded in URL or Base64 on the client side, because the server side does not perform any decoding.</li> <li>2. If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, <b>x-obs-meta-name:name1</b> and <b>x-obs-meta-name:name2</b> must be combined into <b>x-obs-meta-name:name1,name2</b>.</li> <li>3. You do not need to handle the case conversion or lexicographical sorting of header names, which are automatically handled by the software.</li> </ol> <p><b>Range:</b> Determined by the API to be called</p> <p><b>Default value:</b> This parameter is left blank by default.</p>



Parameter	Type	Mandatory (Yes/No)	Description
CanonicalizedResource	String	Yes	<p><b>Definition:</b></p> <p>OBS resources specified in an HTTP request. The structure is as follows:  <b>CanonicalizedResource</b> = <code>/bucket-name/object-name?sub-resource</code></p> <p>For example, if you want to call <b>GetObject</b> to obtain version <b>xxx</b> of object <b>object-test</b> stored in <b>bucket-test</b> and change <b>Content-Type</b> to <b>text/plain</b>, then <b>CanonicalizedResource</b> would be as follows:  <code>/bucket-test/object-test?response-content-type=text/plain&amp;versionId=xxx</code></p> <ul style="list-style-type: none"> <li>• <i>bucket-name</i>: If the bucket does not have a custom domain name associated, use its own name. Otherwise, use its associated custom domain name. In <code>/obs.ccc.com/object</code>, for example, <b>obs.ccc.com</b> is a custom bucket domain name. If an API operation does not require a bucket to be specified, for example, listing all buckets under an account, omit both the bucket name and object name by using, for example, <code>/</code>.</li> <li>• <i>object-name</i>: The name of the required object. Follow the object naming rules.</li> <li>• <i>sub-resource</i>: Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&amp;) to separate them. sub-resource identifiers: CDNNotifyConfiguration, acl, append, atname, backtosource, cors, customdomain, delete, deletebucket, directcoldaccess, encryption, inventory, length, lifecycle, location, logging, metadata, modify, name, notification, partNumber, policy, position, quota, rename, replication, restore, storageClass, storagePolicy, storageinfo, tagging, torrent, truncate, uploadId, uploads, versionId, versioning, versions, website,x-obs-security-token, object-lock, retention Response header sub-resources: response-cache-control, response-content-disposition, response-content-encoding, response-content-language, response-content-type, response-expires Image processing sub-resources: x-image-process, x-image-save-bucket, x-image-save-object</li> </ul> <p><b>Constraints:</b></p>

Parameter	Type	Mandatory (Yes/No)	Description
			<p>A sub-resource usually has only one value. Listing multiple values for the same resource key—for example, <b>key=value1&amp;key=value2</b>—is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> If this parameter is not specified, / is used.</p>

**Step 4** Click **Generate Signed Query URL**.

----End

## Addressing a Signature Mismatch

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?](#)

## 3.3 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 2xx (indicating successes) to 4xx or 5xx (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 3-29](#).

**Table 3-29** 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: <b>keep-alive, close</b> Default value: none
Date	The date and time at which OBS responds to the request. Type: string Default value: none
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 <b>A</b> when an object is uploaded and the ETag value has changed to <b>B</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.

# 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 [Regions and 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
```

```
obtained.
public static String securityKey = System.getenv("HUAWAICLOUD_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.com/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.com");
    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();
    }
}
```

```
        // 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;
    }
}
```

## 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 [Regions and 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();

    }
}
```



```
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;
```

```
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 [Regions and Endpoints](#).

## 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.com/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 + "]");
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",  
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;  
    }  
}
```

# 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.com
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.

**Table 5-1** Additional request headers

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-bucket-type	No	String	<p><b>Definition:</b> This header specifies the type of buckets contained in the list.</p> <p>Example: <b>x-obs-bucket-type: POSIX</b></p> <p><b>Constraints:</b> If this header is not carried, the list of all buckets and parallel file systems is obtained.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>OBJECT:</b> Obtain the list of all buckets.</li> <li>• <b>POSIX:</b> Obtain the list of all parallel file systems.</li> </ul> <p><b>Default value:</b> If the request header is not carried, the default value is blank, indicating that both <b>OBJECT</b> and <b>POSIX</b> are carried.</p>

## 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.com/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 3-29](#).

## 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	<b>Definition:</b> List of buckets. It is the parent node of <b>Owner</b> and <b>Buckets</b> . <b>Range:</b> None
<b>Owner</b>	XML	<b>Definition:</b> Owner of the bucket. <b>Range:</b> For details, see <a href="#">Table 5-3</a> .
<b>Buckets</b>	XML	<b>Definition:</b> List of buckets returned. <b>Range:</b> For details, see <a href="#">Table 5-4</a> .

**Table 5-3**

Parameter	Type	Description
ID	String	<b>Definition:</b> Domain ID (account ID) of the owner. <b>Range:</b> For details, see <a href="#">Domain ID</a> .

**Table 5-4**

Parameter	Type	Description
<b>Bucket</b>	XML	<b>Definition:</b> Detailed bucket information, including the bucket name and creation time. <b>Range:</b> For details, see <a href="#">Table 5-5</a> .



**Table 5-5** Bucket parameters

Parameter	Type	Description
Name	String	<b>Definition:</b> Bucket name <b>Range:</b> The value is a string of 3 to 63 characters.
Creation Date	String	<b>Definition:</b> Time (UTC) when the bucket is created. The date is in the ISO8601 format, for example, 2025-06-28T08:57:41.047Z. <b>Range:</b> The value is a string of 24 characters.
Location	String	<b>Definition:</b> Region where a bucket is located <b>Range:</b> For more information about valid OBS regions and endpoints, see <a href="#">Regions and Endpoints</a> .
BucketType	String	<b>Definition:</b> Bucket type <b>Range:</b> <ul style="list-style-type: none"><li>• <b>OBJECT</b>: object bucket</li><li>• <b>POSIX</b>: parallel file system</li></ul>

## 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.com
Accept: */*
Date: Mon, 25 Jun 2018 05:37:12 +0000
Authorization: OBS GKDF4C7Q6SI0IPGTXJN:9HXkVQliQKw33UEmyBI4rWrzmic=
```

## 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"?>
<ListAllMyBucketsResult xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/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.
- When creating a bucket in OBS, you can enable the multi-AZ mode for the bucket or disable it. With the multi-AZ mode disabled, data in a bucket is stored in a single AZ by default. With the multi-AZ mode enabled, data in a bucket is stored redundantly in multiple AZs, improving reliability. However, buckets created before are still in the single AZ mode.
- 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), **DEEP\_ARCHIVE** (Deep 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. 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.
- Deep Archive: The Deep Archive storage class (under limited beta testing) is suitable for storing data that is barely (once every few years) accessed. This storage class costs less than the Archive storage class, but takes longer time (usually several hours) to restore data.

## Request Syntax

```
PUT / HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Content-Length: length
Date: date
Authorization: authorization
x-obs-az-redundancy: 3az
<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.com/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.

**Table 5-6** Additional request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	<p><b>Definition:</b> When creating a bucket, you can use this parameter to set a pre-defined ACL.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private: A bucket or an object can be accessed only by its owner.</li> <li>• public-read: If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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 <b>x</b> to user B's bucket, user B does not have the control over object <b>x</b>. If user A sets the <b>bucket-owner-full-control</b> policy for object <b>x</b>, user B then has the control over object <b>x</b>.</li> </ul>

Header	Type	Mandatory (Yes/No)	Description
			<b>Default value:</b> private
x-obs-storage-class	String	No	<p><b>Definition:</b> When creating a bucket, you can add this header to set the default storage class for the bucket.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD (Standard storage)</li> <li>• WARM (Infrequent Access storage)</li> <li>• COLD (Archive storage)</li> <li>• DEEP_ARCHIVE (Deep Archive storage)</li> </ul> <p><b>Default value:</b> STANDARD</p>
x-obs-grant-read	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-grant-read:id=tenant-ID</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> id=tenant-ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-write	String	No	<p><b>Definition:</b> 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: <b>x-obs-grant-write:id=tenant-ID</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> id=tenant-ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>
x-obs-grant-read-acp	String	No	<p><b>Definition:</b> Grant the READ_ACP permission to all users in a specified domain to allow them to read the bucket ACL. Example: <b>x-obs-grant-read-acp:id=Account ID</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> id=tenant-ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

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

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read-delivered	String	No	<p><b>Definition:</b> Grants the READ permission to all users in a specified domain. By default, the read permission is granted on all objects in the bucket.</p> <p>Example: <b>x-obs-grant-read-delivered:id=tenant-ID</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> id=tenant-ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>
x-obs-grant-full-control-delivered	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-grant-full-control-delivered:id=tenant-ID</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> id=tenant-ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>



Header	Type	Mandatory (Yes/No)	Description
x-obs-az-redundancy	String	No	<p><b>Definition:</b> When creating a bucket, you can use this header to set the data redundancy policy for the bucket.</p> <p><b>Constraints:</b> If a region does not support multi-AZ storage, even if this header is specified, the bucket is still single-AZ.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>3az:</b> multi-AZ</li> </ul> <p><b>Default value:</b> If this header is not specified, single AZ applies.</p>
x-obs-fs-file-interface	String	No	<p><b>Definition:</b> This header can be carried when you want to create a parallel file system.</p> <p>Example: <b>x-obs-fs-file-interface:Enabled</b></p> <p><b>Range:</b> Enabled</p> <p><b>Default value:</b> If the header is specified, the value must be <b>Enabled</b>. There is no default value.</p>
x-obs-epid	String	No	<p><b>Definition:</b> Enterprise project ID. Users who have enabled the enterprise project function can obtain this ID in <b>UUID</b> format from the enterprise project service. The default project ID is <b>0</b>. This header can be not included. This header is not required for users who have not enabled the enterprise project function.</p> <p>Example: <b>x-obs-epid:9892d768-2d13-450f-aac7-ed0e44c2585f</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value can be 0 or your actual enterprise project ID.</p> <p><b>Default value:</b> 0</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-bucket-type	String	No	<p><b>Definition:</b> You can add this header to specify what type of bucket you will create. You can choose to create a bucket or a parallel file system. Example: <b>x-obs-bucket-type:OBJECT</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>OBJECT:</b> a bucket</li> <li>• <b>POSIX:</b> a parallel file system.</li> </ul> <p><b>Default value:</b> If the header is specified, the value must be manually entered. There is no default value. If the header is not specified, <b>OBJECT</b> is used by default.</p>
x-obs-bucket-object-lock-enabled	String	No	<p><b>Definition:</b> When creating a bucket, you can use this header to enable WORM for the bucket. Example: <b>x-obs-bucket-object-lock-enabled:true</b></p> <p><b>Constraints:</b> Only object buckets are supported.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> WORM is enabled.</li> </ul> <p><b>Default value:</b> If the header is set to <b>true</b>, the object lock policy of the bucket is enabled. If the header is not set to <b>true</b> or is not carried, the object lock policy is disabled.</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption	String	No	<p><b>Definition:</b> When creating a bucket, you can use this header to specify an encryption method for the bucket. Example: <b>x-obs-server-side-encryption: kms</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• obs</li> </ul> <p><b>Default value:</b> If the header is specified, the value must be manually entered. There is no default value. If the header is not specified, bucket encryption is disabled.</p>
x-obs-server-side-data-encryption	String	No	<p><b>Definition:</b> When creating a bucket, you can use this header to specify an encryption algorithm for server-side encryption. Example: <b>x-obs-server-side-data-encryption: AES256</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• AES256</li> </ul> <p>You can set this header to <b>AES256</b> if <b>x-obs-server-side-encryption:kms</b> is used. You can set this header to <b>AES256</b> if <b>x-obs-server-side-encryption:obs</b> is used.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-kms-key-id	String	No if <b>x-obs-server-side-encryption-kms</b> is used.	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p>Type: string</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-sse-kms-key-project-id	String	This parameter can be used only when <b>x-obs-server-side-encryption-kms-key-id</b> is included.	<p><b>Definition:</b> ID of the project (not an enterprise project) where the KMS CMK belongs when SSE-KMS is used</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> A project ID (not an enterprise project ID) that matches the <b>KMSMasterKeyID</b> specified by <b>x-obs-server-side-encryption-kms-key-id</b></p> <p><b>Default value:</b> None</p>

## Request Elements

This request can use additional elements. For details about additional elements, see [Table 5-7](#).

**Table 5-7** Additional request elements

Element	Type	Mandatory (Yes/No)	Description
Location	String	No	<p><b>Definition:</b> Specifies the region where a bucket will be created.</p> <ul style="list-style-type: none"> <li>When the endpoint of the CN North-Beijing1 region is used for bucket creation: <ul style="list-style-type: none"> <li>if <b>location</b> is not included, the bucket will be created in CN North-Beijing1 (cn-north-1) by default.</li> <li>if another region, for example, CN-Hong Kong (ap-southeast-1), is specified for <b>location</b>, the bucket will be created in the CN-Hong Kong region.</li> </ul> </li> <li>When the endpoint of a region other than CN North-Beijing1 is used for bucket creation, <b>location</b> must be set to the region that the used endpoint corresponds to. For example, if <b>obs.ap-southeast-1.myhuaweicloud.com</b> is used, you must set <b>location</b> to <b>ap-southeast-1</b>.</li> </ul> <p><b>Range:</b> For details about OBS regions and endpoints, see <a href="#">Regions and Endpoints</a>.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.com</b> is used as the endpoint and no region is specified, <b>cn-north-1</b> (the CN North-Beijing1 region) is used by default.</p>

## 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 3-29](#).

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 157

<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.com/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.com
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
x-obs-acl:public-read
x-obs-storage-class:STANDARD
Authorization: OBS H4IPJX0TQTHTEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 157

<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.com/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 Bucket with AZ Redundancy

```
PUT / HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.com
```

```
Content-Length: length
Date: date
Authorization: authorization
x-obs-az-redundancy: 3az
<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
  <Location>region</Location>
</CreateBucketConfiguration>
```

## Sample Response: Creating a Bucket with AZ Redundancy

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
Location: /examplebucket
x-obs-id-2: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCT9W2tvcLmMJ+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.com
Accept: /*/*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 157
x-obs-fs-file-interface: Enabled

<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.com/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: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCT9W2tvcLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 0
```

## Sample Request: Creating a Bucket with WORM Enabled

```
PUT / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: /*/*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC: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: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCT9W2tvcLmMJ+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 H4IPJX0TQTHTEBQQCEC:iqSPeUBl66PwXDApxjRk6hlcN4=
x-obs-grant-read: id=783fc6vz2cf2442c096evxxxxxxxxxxxxx
x-obs-grant-write: id=3u3fc6vz2cf24mc830fhsxxxxxxxxxxxxx
x-obs-grant-read-acp: id=902su2vz2cf2vire.239caxxxxxxxxxxxxxx
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTeau73DIKTh4wPYzoZf5w3KacolerP4
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](#).

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.com

Date: date
Authorization: authorization
```

### Request Syntax (for multi-version objects)

```
GET /?versions HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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	<p><b>Definition:</b> Name prefix that the objects to be listed must contain.</p> <p><b>Constraints:</b> The value must comply with the format of the object name.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
marker	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> This parameter is used only for listing non-versioned objects.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
max-keys	Integer	No	<p><b>Definition:</b> The maximum number of objects returned in the response in alphabetical order</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value ranges from <b>1</b> to <b>1000</b>. If the specified value is greater than <b>1000</b>, only 1,000 objects are returned.</p> <p><b>Default value:</b> 1000</p>

Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	<p><b>Definition:</b></p> <p>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 <b>CommonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>CommonPrefixes</b>.</p> <p>For example, there are three objects (<b>abcd</b>, <b>abcde</b>, and <b>bbcde</b>) in a bucket. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>CommonPrefixes</b> with <b>bbcde</b> as the prefix.</p> <p>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 <b>[delimiter=/]</b> to list the content in the current directory, but not list subdirectories, thereby improving the listing efficiency.</p> <p><b>Constraints:</b></p> <p>None</p> <p><b>Range:</b></p> <p>The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Type	Mandatory (Yes/No)	Description
key-marker	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> This field is used only for listing versioned objects.</p> <p><b>Range:</b> The value of <b>NextKeyMarker</b> in the response body of the last request</p> <p><b>Default value:</b> None</p>
version-id-marker	String	No	<p><b>Definition:</b> 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 <b>key_marker</b>. A maximum of 1,000 objects can be returned at a time. <b>key_marker</b> specifies the object name, and <b>version_id_marker</b> specifies the version of the specified object.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This parameter is only used for listing objects with multiple versions.</li> <li>If the value of <b>version_id_marker</b> is not a version ID that belongs to the object specified by <b>key_marker</b>, <b>version_id_marker</b> does not take effect.</li> </ul> <p><b>Range:</b> Object version ID, that is, the value of <b>nextVersionIdMarker</b> in the response body of the last request</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encoding-type	String	No	<p><b>Definition:</b> Encodes some elements in the response based on the specified encoding type. If Delimiter, Marker (or KeyMarker), Prefix, NextMarker (or NextKeyMarker), and Key contain control characters that are not supported by XML 1.0 standards, you can configure <b>encoding-type</b> to encode Delimiter, Marker (or KeyMarker), Prefix (including the Prefix in CommonPrefixes), NextMarker (or NextKeyMarker), and Key in the response.</p> <p><b>Constraints:</b> Currently, only URL encoding is supported.</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not configure this parameter, encoding is not applied.</p>

## Request Headers

This request uses common request headers. For details, see [Table 3-3](#).

## 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 3-29](#).

## 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	<b>Definition:</b> A list of objects in a bucket <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None
Contents	XML	<b>Definition:</b> Object metadata Parent: ListBucketResult <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None
CommonPrefixes	XML	<b>Definition:</b> Group information. If you specify a delimiter in the request, the response contains group information in <b>CommonPrefixes</b> . Parent: ListBucketResult <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None

Parameter	Type	Description
Delimiter	String	<p><b>Definition:</b> 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 <b>CommonPrefix</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>CommonPrefix</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefix</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefix</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>commonPrefix</b> with <b>bbcde</b> as the prefix.</p> <p>Parent: ListBucketResult</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
EncodingType	String	<p><b>Definition:</b> Encodes some elements in the response based on the specified type. If encoding-type is specified in the request, Delimiter, Marker, Prefix (including the Prefix in CommonPrefixes), NextMarker, and Key in the response will be encoded.</p> <p>Parent: ListBucketResult</p> <p><b>Constraints:</b> Currently, only URL encoding is supported.</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not configure this parameter, encoding is not applied.</p>

Parameter	Type	Description
ETag	String	<p><b>Definition:</b> 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 <b>A</b> when an object is uploaded, but this value has changed to <b>B</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.</p> <p>Parent: ListBucketResult.Contents</p> <p><b>Restriction:</b> 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.</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
Type	String	<p><b>Definition:</b> Object type</p> <p>Parent: ListBucketResult.Contents</p> <p><b>Constraints:</b> This parameter is returned when the object is not a <b>Normal</b> object.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Normal: normal objects</li> <li>• APPENDABLE: appendable objects</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
ID	String	<p><b>Definition:</b> Domain ID of the object owner Parent: ListBucketResult.Contents.Owner</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> <a href="#">DomainId</a></p> <p><b>Default value:</b> None</p>
IsTruncated	Boolean	<p><b>Definition:</b> Whether all results are returned in the response. Parent: ListBucketResult</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> Not all results are returned.</li> <li>• <b>false:</b> All results are returned.</li> </ul> <p><b>Default value:</b> None</p>
Key	String	<p><b>Definition:</b> 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 <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>. Parent: ListBucketResult.Contents</p> <p><b>Constraints:</b> See <a href="#">Object Overview</a>.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>



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

Parameter	Type	Description
MaxKeys	String	<p><b>Definition:</b> The maximum number of objects returned in the response in alphabetical order Parent: ListBucketResult</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value ranges from 1 to 1000. If a value larger than 1000 is specified, 1000 is used.</p> <p><b>Default value:</b> 1000</p>
Name	String	<p><b>Definition:</b> Bucket name Parent: ListBucketResult</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
Owner	XML	<p><b>Definition:</b> User information, including the domain ID and name of the object owner Parent: ListBucketResult.Contents</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
DisplayName	String	<p><b>Definition:</b> Name of the object owner Parent: ListBucketResult.Contents.Owner</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Prefix	String	<p><b>Definition:</b> Name prefix that the objects to be listed must contain. Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> 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</p> <p><b>Constraints:</b> The prefix you specified must already exist in the bucket.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
Size	String	<p><b>Definition:</b> Object size in bytes Parent: ListBucketResult.Contents</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value ranges from 0 TB to 48.8 TB, in bytes.</p> <p><b>Default value:</b> None</p>
StorageClass	String	<p><b>Definition:</b> Storage class of an object. Parent: ListBucketResult.Contents</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> </ul> <p><b>Default value:</b> None</p>

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

Parameter	Type	Description
ListVersionsResult	Container	<p><b>Definition:</b> Container for the list of objects (including versioned objects)</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
Name	String	<p><b>Definition:</b> Bucket name Parent: ListVersionsResult</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
EncodingType	String	<p><b>Definition:</b> Encodes some elements in the response based on the specified type. If encoding-type is specified in the request, Delimiter, KeyMarker, Prefix (including the Prefix in CommonPrefixes), NextKeyMarker, and Key in the response will be encoded. Parent: ListVersionsResult</p> <p><b>Constraints:</b> Currently, only URL encoding is supported.</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not configure this parameter, encoding is not applied.</p>

Parameter	Type	Description
Prefix	String	<p><b>Definition:</b> Name prefix that the objects to be listed must contain.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> 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.</p> <p>Parent: ListVersionsResult</p> <p><b>Constraints:</b> The prefix you specified must already exist in the bucket.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
KeyMarker	String	<p><b>Definition:</b> 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.</p> <p>Assume that you have the following objects: <b>test/a</b>, <b>test/b</b>, <b>test/c</b>, and <b>test/d</b>. If you specify <b>test/b</b> as the marker, <b>test/c</b> and <b>test/d</b> are returned.</p> <p>Parent: ListVersionsResult</p> <p><b>Constraints:</b> This parameter is used only for listing versioned objects.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

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

Parameter	Type	Description
MaxKeys	String	<b>Definition:</b> The maximum number of objects returned in the response in alphabetical order Parent: ListVersionsResult <b>Constraints:</b> None <b>Range:</b> The value ranges from 1 to 1000. If a value larger than 1000 is specified, 1000 is used. <b>Default value:</b> 1000
IsTruncated	Boolean	<b>Definition:</b> Whether all results are returned in the response. Parent: ListVersionsResult <b>Constraints:</b> None <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Not all results are returned.</li><li>• <b>false:</b> All results are returned.</li></ul> <b>Default value:</b> None
Version	Container	<b>Definition:</b> Container that contains the version information Parent: ListVersionsResult <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None



Parameter	Type	Description
DeleteMarker	Container	<p><b>Definition:</b> Container that contains objects with delete markers Parent: ListVersionsResult</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Key	String	<p><b>Definition:</b> 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 <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p>Parent: ListVersionsResult.Version   ListVersionsResult.DeleteMarker</p> <p><b>Constraints:</b> See <a href="#">Object Overview</a>.</p> <p><b>Range:</b> The value can contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
VersionId	String	<p><b>Definition:</b> Version ID of the object. Parent: ListVersionsResult.Version   ListVersionsResult.DeleteMarker</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
IsLatest	Boolean	<p><b>Definition:</b> Whether the object is of the latest version Parent: ListVersionsResult.Version   ListVersionsResult.DeleteMarker</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• true: The version is the latest.</li> <li>• false: The version is not the latest.</li> </ul> <p><b>Default value:</b> None</p>
LastModified	Date	<p><b>Definition:</b> Time (UTC) when an object was last modified Parent: ListVersionsResult.Version   ListVersionsResult.DeleteMarker</p> <p><b>Constraints:</b> The date is in the ISO8601 format. Example: <b>2018-01-01T00:00:00.000Z</b></p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
ETag	String	<p><b>Definition:</b> 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 <b>A</b> when an object is uploaded, but this value has changed to <b>B</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.</p> <p>Parent: ListVersionsResult.Version</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
Type	String	<p><b>Definition:</b> Object type</p> <p>Parent: ListVersionsResult.Version</p> <p><b>Constraints:</b> This parameter is returned when the object is not a <b>Normal</b> object.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• NORMAL: normal objects</li> <li>• APPENDABLE: appendable objects</li> </ul> <p><b>Default value:</b> None</p>
Size	String	<p><b>Definition:</b> Object size in bytes</p> <p>Parent: ListVersionsResult.Version</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value ranges from 0 TB to 48.8 TB, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
Owner	Container	<p><b>Definition:</b> User information, including the domain ID and name of the object owner Parent: ListVersionsResult.Version   ListVersionsResult.DeleteMarker</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
ID	String	<p><b>Definition:</b> Domain ID of the object owner Parent: ListVersionsResult.Version.Owner   ListVersionsResult.DeleteMarker.Owner</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> <a href="#">DomainId</a></p> <p><b>Default value:</b> None</p>
DisplayName	String	<p><b>Definition:</b> Name of the object owner Parent: ListVersionsResult.Version.Owner   ListVersionsResult.DeleteMarker.Owner</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

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

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#).

## Sample Request: Listing All Objects

```
GET / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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.ap-southeast-1.myhuaweicloud.com/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>b4bf1b36d9ca43d984fbc9491b6fce9</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.com
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Name>examplebucket</Name>
  <Prefix>obj</Prefix>
  <Marker>obj001</Marker>
```

```
<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>b4bf1b36d9ca43d984fbc9491b6fce9</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.com
Accept: */*
Date: WED, 01 Jul 2015 02:29:45 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iZeDESIMx8K2YODk7vleVpyO8DI=
```

## 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.ap-southeast-1.myhuaweicloud.com/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>b4bf1b36d9ca43d984fbc9491b6fce9</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 H4lPJX0TQHTHEBQQCEC:iqSPeUBl66PwXDApxjRk6hlcN4=
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCWqA48YKdA2aExVAgcpwubHQO5wd9ww
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>
```



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

Header	Type	Mandatory (Yes/No)	Description
Access-Control-Request-Headers	String	No	<p><b>Definition:</b> HTTP headers in a request</p> <p><b>Constraints:</b> 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 (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Range:</b> An HTTP-compliant header value</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-12](#) may be used.

**Table 5-12** Additional response headers

Header	Type	Description
x-obs-bucket-location	String	<p><b>Definition:</b> The region where the bucket resides.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-storage-class	String	<p><b>Definition:</b> Default storage class of the bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD (Standard storage)</li> <li>• WARM (Infrequent Access storage)</li> <li>• COLD(Archive storage)</li> <li>• DEEP_ARCHIVE (Deep Archive storage)</li> </ul> <p><b>Default value:</b> None</p>
x-obs-version	String	<p><b>Definition:</b> OBS version of the bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• 3.0: bucket of the latest version</li> <li>• --: bucket of an earlier version</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-fs-file-interface	String	<b>Definition:</b> Whether it is a parallel file system <b>Constraints:</b> If this header field is not carried, the bucket is not a parallel file system. <b>Range:</b> The value can be <b>Enabled</b> (parallel file system). <b>Default value:</b> None
x-obs-epid	String	<b>Definition:</b> Enterprise project ID for the current bucket. Users who have enabled the enterprise project function can obtain the ID from the enterprise project service. <b>Constraints:</b> The value is a UUID. This parameter is not required if you have not enabled an enterprise project. <b>Range:</b> See <a href="#">How Do I Obtain an Enterprise Project ID?</a> <b>Default value:</b> None

Header	Type	Description
x-obs-az-redundancy	String	<p><b>Definition:</b> Specifies an AZ redundancy type. Value <b>3az</b> indicates that data is stored in multiple AZs in the same region. If this header field is not carried, data is stored in a single AZ.</p> <p><b>Constraints:</b> Multi-AZ redundancy is not available for Archive and Deep Archive storage. If the region where the bucket is located does not support multi-AZ storage, single-AZ storage is used by default.</p> <p><b>Range:</b> If multi-AZ storage is configured for the bucket, <b>3az</b> is returned. If single-AZ storage is configured for the bucket, <b>None</b> is returned.</p> <p><b>Default value:</b> None</p>
Access-Control-Allow-Origin	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>

Header	Type	Description
Access-Control-Allow-Headers	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>
Access-Control-Max-Age	Integer	<p><b>Definition:</b> Value of <b>MaxAgeSeconds</b> in the CORS configuration of the server when CORS is configured for buckets.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> An integer greater than or equal to 0, in seconds</p> <p><b>Default value:</b> 3000</p>
Access-Control-Allow-Methods	String	<p><b>Definition:</b> Indicates that methods in the rule are included in the response if <b>Access-Control-Request-Method</b> in the request meets the CORS configuration requirements when CORS is configured for buckets.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• GET</li> <li>• PUT</li> <li>• HEAD</li> <li>• POST</li> <li>• DELETE</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
Access-Control-Expose-Headers	String	<p><b>Definition:</b>  <b>ExposeHeader</b> 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 <b>Content-Length</b> and <b>Content-Type</b>. If the browser needs to access other headers, you need to configure them in this parameter.</p> <p><b>Constraints:</b>            Spaces, wildcard characters (*), ampersands (&amp;), colons (:), less-than signs (&lt;), and full-width characters are not allowed.</p> <p><b>Range:</b>            None</p> <p><b>Default value:</b>            None</p>

## 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: Getting CORS Configuration (with No Headers Specified)

```
HEAD / HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 02:30:25 GMT
Authorization: OBS H4lPJX0TQTHHEBQQCEC:niCQCuGiZpETKlyx1datxHZyYlk=
```

## 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+pl/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.com
Accept: */*
Date: WED, 01 Jul 2015 02:30:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:niCQCuGIZpETKlyx1datxHZyYlk=
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+pl/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.

### Request Syntax

```
GET /?location HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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.com/doc/2015-06-30/">region</Location>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## 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  
Host: examplebucket.obs.region.myhuaweicloud.com  
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSKWojmaMyRXqofHgapbETDyl2LM9rUw  
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.com/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.com
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.

## Response Syntax

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

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## 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.com
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 H4lPJX0TQTHTEBQQCEC:iqSpEUBl66PwXDApxjRk6hlcN4=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>
```

## Sample Request: Deleting a Non-Empty Bucket

```
DELETE / HTTP/1.1
Authorization: OBS H4lPJX0TQTHTEBQQCEC:iqSpEUBl66PwXDApxjRk6hlcN4=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: "0000018A4E4D04BBD304AD8E409873EC</RequestId>
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>hME9234LDBKRfFuobDsmyUiP5Oq71oYo1vEL348QzfXHUoGs1RU1TgrOMUKTEMtA</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.com
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](#).

### Request Elements

The request body is a JSON string that contains the bucket policy information. For details, see [Bucket Policy Parameters](#).

### 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 3-29](#).

### 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.com
Date: WED, 01 Jul 2015 02:32:25 GMT
Authorization: OBS H4IPJX0TQTHHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
  "Statement": [
    {
      "Sid": "Stmnt1375240018061",
      "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
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.com
Date: WED, 01 Jul 2015 02:33:28 GMT
Authorization: OBS H4IPJX0TQTHHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
  "Statement": [
    {
      "Sid": "Stmnt1375240018062",
      "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: N0I2REZDOUJDZFERDU4QjA2MTI4NTU1M1TYwNTcwOUFBQUBFBQUBFYmJiYmJiYmJD  
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.com  
Date: WED, 01 Jul 2015 02:34:34 GMT  
Authorization: OBS H4IPJX0TQTHHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=  
  
{  
  "Statement": [  
    {  
      "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: BKOVGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPtOfCACEuCMIIAObRK1n  
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.**

URL validation whitelist: <http://console.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.com
Date: WED, 01 Jul 2015 02:34:34 GMT
Authorization: OBS H4lPJX0TQTHHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

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

## Sample Response 4

```
HTTP/1.1 204 No Content
x-obs-request-id: A603000001604A7DFE4A4AF31E301891
x-obs-id-2: BK0vGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMIIAObRK1n
Date: WED, 01 Jul 2015 02:34:34 GMT
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.com
Date: WED, 01 Jul 2015 02:32:25 GMT
Authorization: OBS H4lPJX0TQTHHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
  "Statement": [
```

```
{
  "Sid": "Stmnt1375240018061",
  "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: BK0vGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMIIAObRK1n
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.

### Request Syntax

```
GET /?policy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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 3-29](#).

## Response Elements

The response body is a JSON string that contains the bucket policy information. For details, see [Bucket Policy Parameters](#).

## 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.com  
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: BK0vGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMIIAObRK1n  
Date: WED, 01 Jul 2015 02:35:46 GMT  
Content-Length: 509  
Server: OBS  
  
{  
  "Statement": [  
    {  
      "Sid": "Stmt1375240018061",  
      "Effect": "Allow",  
      "Principal": {  
        "ID": [  
          "domain/domainiddomainiddomainiddo006666:user/useriduseriduseridus004001",  
          "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.com  
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 3-29](#).

## 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.com  
Date: WED, 01 Jul 2015 02:36:06 GMT  
Authorization: OBS H4lPJX0TQHTHEBQQCEC: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.com
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>
    </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	<p><b>Definition:</b> Uses the canned ACL for a bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private</li> <li>• public-read</li> <li>• public-read-write</li> <li>• public-read-delivered</li> <li>• public-read-write-delivered</li> </ul> <p>For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a>.</p> <p><b>Default value:</b> private</p>

## Request Elements

This request carries ACL information in elements to specify an ACL. [Table 3-3](#) describes the elements.

**Table 5-15** Additional request elements

Element	Type	Mandatory (Yes/No)	Description
Owner	XML	Yes	<p><b>Definition:</b> Owner information of a bucket. Owner is the parent node of ID.</p> <p><b>Constraints:</b> None</p>

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

Element	Type	Mandatory (Yes/No)	Description
Permission	String	Yes	<p><b>Definition:</b> Permissions to be granted. For details, see <a href="#">access permissions controlled by a bucket ACL</a>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• READ: Grants the permission to obtain the list of objects in the bucket and the metadata of the bucket.</li> <li>• READ_ACP: Grants the permission to read the ACL of the bucket.</li> <li>• WRITE: Grants the permission to upload objects to the bucket and allows the authorizer to delete and overwrite existing objects in a bucket.</li> <li>• WRITE_ACP: Grants the permission to update the ACL of the bucket.</li> <li>• FULL_CONTROL: Grants the permission to read, write, read ACL, and write ACL of the bucket.</li> </ul> <p><b>Default value:</b> None</p>
Canned	String	No	<p><b>Definition:</b> Grants permissions to all users.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> Everyone</p> <p><b>Default value:</b> None</p>

Element	Type	Man dato ry (Yes/ No)	Description
Delivered	Boolean	No	<p><b>Definition:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• true: The bucket ACL is applied to all objects in the bucket.</li> <li>• false: The bucket ACL is not applied to any objects in the bucket.</li> </ul> <p><b>Default value:</b> false</p>

## 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 3-29](#).

## 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 /?acl 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 H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDAPxjRk6hlcN4=
Content-Length: 727

<AccessControlPolicy xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbc9491b6fce9</ID>
```

```
</Owner>
<AccessControlList>
  <Grant>
    <Grantee>
      <ID>b4bf1b36d9ca43d984fbc9491b6fce9</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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT78HTIBuhe0FbtSprb/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 H4IPJX0TQTHTEBQQCEC:iqSPeUBl66PwXDApxjRk6hlcN4=
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
```

## 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.com
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.region.myhuaweicloud.com/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 3-29](#).

## Response Elements

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

**Table 5-16** Response elements

Element	Description
Owner	Bucket owner Type: XML
ID	Account ID Type: string

Element	Description
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 <b>Everyone</b> .
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.com
Accept: */*
Date: WED, 01 Jul 2015 02:39:28 GMT
Authorization: OBS H4lPIX0TQTHTHEBQQCEC:X7HtzGslEkzJbd8vo1DRu30Vrs=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436B69D82F14E93528658
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSjTh8661+HF5y8uAnTOBlpNO133hji+
Content-Type: application/xml
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbc9491b6fce9</ID>
  </Owner>
  <AccessControlList>
```

```
<Grant>
  <Grantee>
    <ID>b4bf1b36d9ca43d984fbc9491b6fce9</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.com
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
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

Element	Description	Mandatory
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: <b>FULL_CONTROL, READ, WRITE</b>	No

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 <b>FULL_CONTROL</b> 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

## 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 <i>[dd/MMM/yyyy:HH:mm:ss Z]</i> format
Remote IP	xx.xx.xx.xx	Request IP address
Requester	787f2f92b20943998a4fe2ab75eb09b8	ID of the requester <ul style="list-style-type: none"> <li>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.</li> <li>When an anonymous user initiates a request, this parameter value is <b>Anonymous</b>.</li> </ul>
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

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 <ul style="list-style-type: none"> <li>STANDARD: Standard storage</li> <li><b>STANDARD_IA</b> (also <b>WARM</b>): Infrequent Access storage class</li> <li><b>COLD</b>: Archive storage class</li> <li><b>DEEP_ARCHIVE</b>: Deep Archive storage class</li> </ul>
TargetStorageClass	GLACIER	Storage class that the object will be transitioned to
DentryName	12456%2Ffile.txt	<ul style="list-style-type: none"> <li>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.</li> <li>For a bucket, the value of this field is -.</li> </ul>



## 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 3-29](#).

## 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.com  
Accept: */*  
Date: WED, 01 Jul 2015 02:40:06 GMT  
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mCOjER/L4ZZUY9qr6AOnkEiwVk=  
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

<BucketLoggingStatus>
</BucketLoggingStatus>
```

## Sample Response: Disabling Bucket Log Dump

```
x-obs-id-2: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCSalxuWjLa91ewuXRolcCKZFjFgCrYn0
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.com
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.com/doc/2015-06-30/">
<Agency>agency-name</Agency>
<LoggingEnabled>
  <TargetBucket>bucketName</TargetBucket>
  <TargetPrefix>prefix</TargetPrefix>
  <TargetGrants>
    <Grant>
      <Grantee>
        <ID>id</ID>
      </Grantee>
    </Grant>
  </TargetGrants>
</LoggingEnabled>
</BucketLoggingStatus>
```

```
<Permission>permission</Permission>
</Grant>
</TargetGrants>
</LoggingEnabled>
</BucketLoggingStatus>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## 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 <b>FULL_CONTROL</b> permission when creating the bucket. Logging permissions control access to different logs. Type: string Value options: <b>FULL_CONTROL, READ, WRITE</b>

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.com
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Agency>agency-name</Agency>
  <LoggingEnabled>
    <TargetBucket>log-bucket</TargetBucket>
    <TargetPrefix>mybucket-access_log-</TargetPrefix>
    <TargetGrants>
      <Grant>
        <Grantee>
          <ID>b4bf1b36d9ca43d984fbc9491b6fce9</ID>
        </Grantee>
        <Permission>READ</Permission>
      </Grant>
    </TargetGrants>
  </LoggingEnabled>
</BucketLoggingStatus>
```

## 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.com
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.

**Table 5-20** Request headers

Parameter	Mandatory (Yes/No)	Type	Description
Content-SHA256	Yes	String	<p><b>Definition:</b> 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</p> <p>Example: <b>ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=</b></p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## 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. For details, see [Lifecycle Elements](#).

**Table 5-21** Response elements for lifecycle configuration

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

Parameter	Mandatory (Yes/No)	Type	Description
Rule	Yes	XML	<p><b>Definition:</b> A specific lifecycle rule.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-22</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-22** Rule parameter description

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

Parameter	Mandatory (Yes/No)	Type	Description
NoncurrentVersionTransition	Yes if the <b>Transition</b> , <b>Expiration</b> , <b>AbortIncompleteMultipartUpload</b> , and <b>NoncurrentVersionExpiration</b> elements are absent.	XML	<p><b>Definition:</b> Transition time and the object storage class after transition</p> <p><b>Constraints:</b> This parameter is only available for historical object versions.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-25</a>.</p> <p><b>Default value:</b> None</p>
NoncurrentVersionExpiration	No	XML	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> This parameter is only available for historical object versions.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-26</a>.</p> <p><b>Default value:</b> None</p>
AbortIncompleteMultipartUpload	Yes if the <b>Transition</b> , <b>Expiration</b> , <b>NoncurrentVersionExpiration</b> , and <b>NoncurrentVersionTransition</b> elements are absent.	XML	<p><b>Definition:</b> Expiration attribute of fragments in an unassembled multipart task.</p> <p><b>Constraints:</b> Tag-based filtering is not supported.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-27</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory (Yes/No)	Type	Description
Filter	Either Filter or Prefix can be configured at the same level under <a href="#">Rule</a> . Prefix can be a child node of Filter.	XML	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> If there are multiple filtering criteria, use the AND logic to combine them.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-28</a>.</p> <p><b>Default value:</b> None</p>
ID	No	String	<p><b>Definition:</b> ID of a rule.</p> <p><b>Constraints:</b> Only letters, digits, periods (.), underscores (_), and hyphens (-) are allowed.</p> <p><b>Range:</b> The value is a string of 0 to 255 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
Prefix	Yes	String	<p><b>Definition:</b> Object name prefix. It identifies the objects the rule applies to.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• 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 <b>abc</b> configured in the system, another rule with the object prefix starting with <b>abc</b> cannot be configured.</li> <li>• 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.</li> </ul> <p><b>Range:</b> The value is a string of 0 to 255 characters.</p> <p><b>Default value:</b> None</p>
Status	Yes	String	<p><b>Definition:</b> Whether the rule is enabled</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Enabled: The rule is enabled.</li> <li>• Disabled: The rule is disabled.</li> </ul> <p><b>Default value:</b> None</p>

**Table 5-23** Transition parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Date	Yes if the <b>Days</b> element is absent.	String	<p><b>Definition:</b> Specifies that OBS executes lifecycle rules for objects before the specified date.</p> <p><b>Constraints:</b> 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, <b>2018-01-01T00:00:00.000Z</b> indicates that objects whose last modification time is earlier than <b>2018-01-01T00:00:00.000Z</b> 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.</p> <p><b>Range:</b> Character string in the date format.</p> <p><b>Default value:</b> None</p>
Days	Yes if the <b>Date</b> element is absent.	Integer	<p><b>Definition:</b> Number of days (since the last update was made to the object) after which the lifecycle rule takes effect</p> <p><b>Constraints:</b> This parameter is only available for the latest object version.</p> <p><b>Range:</b> The value is an integer ranging from 0 to 2147483647.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
StorageClass	Yes if the <b>Transition</b> or <b>NoncurrentVersionTransition</b> element is present.	String	<p><b>Definition:</b> The storage class to which the object is transitioned.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>WARM:</b> Infrequent Access storage class</li> <li>• <b>COLD:</b> Archive storage class</li> <li>• <b>DEEP_ARCHIVE:</b> Deep Archive storage class</li> </ul> <p><b>Default value:</b> None</p>

**Table 5-24** Expiration parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Date	Yes if the <b>Days</b> element is absent.	String	<p><b>Definition:</b> Specifies that OBS executes lifecycle rules for objects before the specified date.</p> <p><b>Constraints:</b> 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, <b>2018-01-01T00:00:00.000Z</b> indicates that objects whose last modification time is earlier than <b>2018-01-01T00:00:00.000Z</b> 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.</p> <p><b>Range:</b> Character string in the date format.</p> <p><b>Default value:</b> None</p>
Days	Yes if the <b>Date</b> element is absent.	Integer	<p><b>Definition:</b> Number of days (since the last update was made to the object) after which the lifecycle rule takes effect</p> <p><b>Constraints:</b> This parameter is only available for the latest object version.</p> <p><b>Range:</b> The value is an integer ranging from 0 to 2147483647.</p> <p><b>Default value:</b> None</p>

**Table 5-25** NoncurrentVersionTransition parameter description

Parameter	Mandatory (Yes/No)	Type	Description
NoncurrentDays	Yes if the <b>NoncurrentVersionExpiration</b> or <b>NoncurrentVersionTransition</b> element is present.	Integer	<p><b>Definition:</b> Number of days an object is historical before the specified rule takes effect</p> <p><b>Constraints:</b> This parameter is only available for historical object versions.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• If only one transition is involved, the time should be at least one day later.</li> <li>• If multiple transitions are involved, the latter transition should be at least one day later than the former transition.</li> <li>• 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.</li> </ul> <p><b>Default value:</b> None</p>
StorageClass	Yes if the <b>Transition</b> or <b>NoncurrentVersionTransition</b> element is present.	String	<p><b>Definition:</b> The storage class to which the object is transitioned.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>WARM:</b> Infrequent Access storage class</li> <li>• <b>COLD:</b> Archive storage class</li> <li>• <b>DEEP_ARCHIVE:</b> Deep Archive storage class</li> </ul> <p><b>Default value:</b> None</p>

**Table 5-26** NoncurrentVersionExpiration parameter description

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

**Table 5-27** AbortIncompleteMultipartUpload parameter description

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

**Table 5-28** Filter parameter description

Parameter	Mandatory (Yes/No)	Type	Description
And	Yes if there are multiple Prefix and Tag rules.	XML	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• And must have child nodes.</li> <li>• If Filter has <b>Tag</b> 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. (<b>Tag</b> and Prefix can be included in And.)</li> </ul> <p><b>Range:</b> For details, see <a href="#">Table 5-29</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory (Yes/No)	Type	Description
Tag	No	Container	<p><b>Definition:</b> Object tag, which is used to identify what objects match the rule.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If Tag is configured as a child node of <b>Filter</b>, 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.</li> <li>• If Tag is configured under <b>And</b>, there can be a maximum of 10 Tag nodes, and the tag keys must be different.</li> <li>• If <b>AbortIncompleteMultipartUpload</b> exists as a child node of <b>Rule</b>, Tag cannot be configured to filter fragments.</li> <li>• If the tags in multiple rules overlap and lifecycle actions conflict, the configuration is not allowed. For example, rule 1 uses one tag (<i>key1, value1</i>) and deletes objects 90 days after creation, while rule 2 uses two tags (<i>key1, value1; key2, value2</i>) 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.</li> </ul> <p><b>Range:</b> For details, see <a href="#">Table 5-30</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-29** And parameter description

Parameter	Mandatory (Yes/No)	Type	Description
Tag	No	Container	<p><b>Definition:</b> Tag element, which is used to identify the objects that can match the current rule.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If Tag is configured as a child node of <b>Filter</b>, 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.</li> <li>• If Tag is configured under <b>And</b>, there can be a maximum of 10 Tag nodes, and the tag keys must be different.</li> <li>• If <b>AbortIncompleteMultipartUpload</b> exists as a child node of <b>Rule</b>, Tag cannot be configured to filter fragments.</li> <li>• If the tags in multiple rules overlap and lifecycle actions conflict, the configuration is not allowed. For example, rule 1 uses one tag (<i>key1, value1</i>) and deletes objects 90 days after creation, while rule 2 uses two tags (<i>key1, value1; key2, value2</i>) 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.</li> </ul> <p><b>Range:</b> For details, see <a href="#">Table 5-30</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-30** Tag parameter description

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

## 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 3-29](#).

## 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 /?lifecycle HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 03:05:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:DpSAlmLX/BTdJxU5HOEwflhM0WI=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyl=
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>
```

```
<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 H4lPJX0TQTHHEBQQCEC:iqSPeUBl66PwXDApxjRk6hlcN4=
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: tt0lizQ7YSTFtMJ3sie6qA==

<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 H4lPJX0TQTHHEBQQCEC:iqSPeUBl66PwXDApxjRk6hlcN4=
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>
```

```
<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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSMYkLcGTyUsgJe2Rdsg2P8JwMsJV6n
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 H4IPJX0TQTHHEBQQCEC: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 H4IPJX0TQTHHEBQQCEC: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>
```

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

## Sample Response: Deleting Fragments

```
HTTP/1.1 200 OK
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCTIN+gINMVGtTicAnVXkTVDjR5xKSLuH
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.com
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.com/doc/2015-06-30/">
  <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>
  <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 3-29](#).

## 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	<p><b>Definition:</b> Container for lifecycle configuration rules. Multiple rules can be configured. LifecycleConfiguration is the parent node of <a href="#">Rule</a>.</p> <p><b>Range:</b> None</p>
Rule	Container	<p><b>Definition:</b> Container for a specific lifecycle rule.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-32</a>.</p>



**Table 5-32** Rule parameter description

Parameter	Type	Description
Transition	XML	<b>Definition:</b> The transition time and the object storage class after transition (valid only for the latest object version). <b>Range:</b> For details, see <a href="#">Table 5-33</a> . <b>Default value:</b> None
Expiration	XML	<b>Definition:</b> Container for the object expiration rule. <b>Range:</b> For details, see <a href="#">Table 5-34</a> .
NoncurrentVersionTransition	XML	<b>Definition:</b> Transition time of historical object versions and the object storage class after transition. <b>Range:</b> For details, see <a href="#">Table 5-35</a> .
NoncurrentVersionExpiration	XML	<b>Definition:</b> 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. <b>Range:</b> For details, see <a href="#">Table 5-36</a> .
AbortIncompleteMultipartUpload	XML	<b>Definition:</b> Container for specifying when the unassembled parts (fragments) in an incomplete upload will expire. <b>Range:</b> For details, see <a href="#">Table 5-37</a> .
Filter	XML	<b>Definition:</b> 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. <b>Range:</b> For details, see <a href="#">Table 5-38</a> .

Parameter	Type	Description
ID	String	<b>Definition:</b> ID of a rule. <b>Range:</b> The value is a string of 0 to 255 characters.
Prefix	String	<b>Definition:</b> Object name prefix. It identifies the objects the rule applies to. <b>Range:</b> The value is a string of 0 to 255 characters.
Status	String	<b>Definition:</b> Whether the rule is enabled <b>Range:</b> <ul style="list-style-type: none"> <li>• Enabled: The rule is enabled.</li> <li>• Disabled: The rule is disabled.</li> </ul>

**Table 5-33** Transition parameter description

Parameter	Type	Description
Date	String	<b>Definition:</b> ID of the rule to be queried <b>Range:</b> 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, <b>2018-01-01T00:00:00.000Z</b> indicates that objects whose last modification time is earlier than <b>2018-01-01T00:00:00.000Z</b> 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	<b>Definition:</b> Specifies the number of days (since the latest update to the latest object version) after which the lifecycle rule is executed. <b>Range:</b> None

Parameter	Type	Description
StorageClass	String	<p><b>Definition:</b> The storage class to which the object is transitioned.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>WARM:</b> Infrequent Access storage class</li> <li>• <b>COLD:</b> Archive storage class</li> <li>• <b>DEEP_ARCHIVE:</b> Deep Archive storage class</li> </ul>

**Table 5-34** Expiration parameter description

Parameter	Type	Description
Date	String	<p><b>Definition:</b> ID of the rule to be queried</p> <p><b>Range:</b> 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, <b>2018-01-01T00:00:00.000Z</b> indicates that objects whose last modification time is earlier than <b>2018-01-01T00:00:00.000Z</b> 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.</p>
Days	Integer	<p><b>Definition:</b> Specifies the number of days (since the latest update to the latest object version) after which the lifecycle rule is executed.</p> <p><b>Range:</b> None</p>

**Table 5-35** NoncurrentVersionTransition parameter description

Parameter	Type	Description
NoncurrentDays	Integer	<p><b>Definition:</b> Number of days when the specified rule takes effect after the object becomes a historical version.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• If only one transition is involved, the time should be at least one day later.</li> <li>• If multiple transitions are involved, the latter transition should be at least one day later than the former transition.</li> <li>• 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.</li> </ul>
StorageClass	String	<p><b>Definition:</b> The storage class to which the object is transitioned.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>WARM:</b> Infrequent Access storage class</li> <li>• <b>COLD:</b> Archive storage class</li> <li>• <b>DEEP_ARCHIVE:</b> Deep Archive storage class</li> </ul>

**Table 5-36** NoncurrentVersionExpiration parameter description

Parameter	Type	Description
NoncurrentDays	Integer	<p><b>Definition:</b> Number of days when the specified rule takes effect after the object becomes a historical version.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• If only one transition is involved, the time should be at least one day later.</li> <li>• If multiple transitions are involved, the latter transition should be at least one day later than the former transition.</li> <li>• 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.</li> </ul>

**Table 5-37** AbortIncompleteMultipartUpload parameter description

Parameter	Type	Description
DaysAfterInitiation	Integer	<p><b>Definition:</b> Number of days fragments are present before being deleted</p> <p><b>Range:</b> None</p>

**Table 5-38** Filter parameter description

Parameter	Type	Description
And	XML	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-39</a>.</p>

Parameter	Type	Description
Tag	Container	<p><b>Definition:</b> Object tag, which is used to identify what objects match the rule.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-40</a>.</p>

**Table 5-39** And parameter description

Parameter	Type	Description
Tag	Container	<p><b>Definition:</b> Tag element, which is used to identify the objects that can match the rule.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-40</a>.</p>

**Table 5-40** Tag parameter description

Parameter	Type	Description
Key	String	<p><b>Definition:</b> The key of the tag.</p> <p><b>Range:</b> 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: *&lt;&gt; \_/?!;</p>
Value	String	<p><b>Definition:</b> The value of the tag.</p> <p><b>Range:</b> The key value is case-sensitive and consists of 0 to 255 characters. It can be blank and cannot contain the following characters: *&lt;&gt; \_/?!;</p>

## Error Responses

[Table 5-41](#) describes possible special errors in the request.

**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.com
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSEMKZSleboCA1eAukgYOOAd7oX3ZONn
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>
```

## 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.com  
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 3-29](#).

### 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
```



```
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 03:12:22 GMT
Authorization: OBS H4lPIX0TQTHTHEBQQCEC: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.

Only the bucket owner can set versioning for the bucket.

## Request Syntax

```
PUT /?versioning HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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	<p><b>Definition:</b> Root node of versioning configuration, which is the parent node of Status.</p> <p><b>Constraints:</b> None</p>
Status	String	Yes	<p><b>Definition:</b> Versioning status of the bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>Enabled: Versioning is enabled.</li> <li>Suspended: Versioning is suspended.</li> </ul> <p><b>Default value:</b> None</p>

## 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 3-29](#).

## 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.com  
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: WED, 01 Jul 2015 03:14:18 GMT  
Content-Length: 0
```

## Sample Request: Suspending Versioning

```
PUT /?versioning HTTP/1.1  
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBI66PwXDApxjRk6hlcN4=  
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
```

## 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.com
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.com/doc/2015-06-30/">
  <Status>status</Status>
</VersioningConfiguration>
```

### Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

### Response Elements

This response contains elements to specify the bucket versioning status. [Table 5-43](#) describes the elements.

**Table 5-43** Response elements

Parameter	Type	Description
VersioningConfiguration	XML	<b>Definition:</b> Root node of versioning configuration, which is the parent node of Status. <b>Constraints:</b> None
Status	String	<b>Definition:</b> Versioning status of the bucket. <b>Constraints:</b> None <b>Range:</b> <ul style="list-style-type: none"><li>Enabled: Versioning is enabled.</li><li>Suspended: Versioning is suspended.</li></ul> <b>Default value:</b> 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:15:20 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:4N5qQIoluLO9xMY0m+8Iln/UWXM=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436BBA4930622B4FC9F17
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSQIrNJ5/Ag6EPN8DAwWIPWgBc/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.ap-southeast-1.myhuaweicloud.com/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.

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.com
Date: date
Content-Type: type
Content-Length: length
Authorization: authorization

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<StorageClass xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/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
StorageClasses	Yes	String	<p><b>Definition:</b> The default storage class for a bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>● STANDARD: Standard storage</li> <li>● WARM: Infrequent Access storage</li> <li>● COLD: Archive storage</li> <li>● DEEP_ARCHIVE: Deep Archive storage (limited OBT)</li> </ul> <p><b>Default value:</b> If no default storage class is configured for a bucket, the default value is STANDARD (Standard).</p>

## Response Syntax

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

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:18:19 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:Tf6XbndPx/yNgfAVQ6KIXr7tMj4=
Content-Length: 87

<StorageClass xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">STANDARD</StorageClass>
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF2600000164368E704B571F328A8797
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSlsw3tPtUn6damTI5acQmQAcEfmTwl3
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.com
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: type
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<StorageClass xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">STANDARD</StorageClass>
```

### Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

### 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	<b>Definition:</b> Default storage class of the bucket. <b>Range:</b> <ul style="list-style-type: none"><li>• STANDARD: Standard storage</li><li>• WARM: Infrequent Access storage</li><li>• COLD: Archive storage</li><li>• DEEP_ARCHIVE: Deep Archive storage (limited OBT)</li></ul>

## 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
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 03:20:28 GMT
Authorization: OBS H4lPJX0TQTHTHEBQQCEC:0zVTSdKG6OFClH2dKvmsVGyCQyw=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436BE45820FDF3A65B42C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSJju1CZy3ZfRVVW5hiNd024lRFdUoqWy
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">STANDARD</StorageClass>
```

## 5.2.15 Configuring Cross-Region Replication for a Bucket

### Functions

Cross-region replication refers to the automatic and asynchronous replication of objects across buckets in different regions. By activating cross-region replication, OBS can copy new objects and modified objects from a source bucket in one region to a destination bucket in a different region.

#### NOTE

An IAM agency is required for configuring cross-region replication. For details, see [Creating an Agency for Cross-Region Replication](#).

To configure cross-region replication for a bucket, the following two requirements must be met:

1. The versioning statuses of the source and destination buckets are the same. For details, see [Configuring Versioning for a Bucket](#).
2. The source bucket's owner and agency (OBS) have the write permission for the destination bucket (with a bucket policy configured), and the agency (OBS) also has the read permission for the source bucket. This permission delegation needs to be implemented by using a bucket policy.

For details about how to configure the bucket policy, see [Configuring a Bucket Policy](#). After the bucket policy is set, the agency (OBS) can read objects from the source bucket and copy objects to the destination bucket.

## Request Syntax

```
PUT /?replication HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
x-obs-date: date
Content-SHA256: SHA256
Authorization: authorization string
Content-Length: contentlength

<ReplicationConfiguration>
  <Agency>testAcy</Agency>
  <Rule>
    <ID>rule1</ID>
    <Prefix>key-prefix</Prefix>
    <Status>rule-status</Status>
    <Destination>
      <Bucket>targetbucketname</Bucket>
      <StorageClass>STANDARD</StorageClass>
      <DeleteData>Enabled</DeleteData>
    </Destination>
    <HistoricalObjectReplication>Enabled</HistoricalObjectReplication>
  </Rule>
</ReplicationConfiguration>
```

## Request Parameters

This request contains no message parameters.

## Request Headers

The request uses one header, as described in the following table.

**Table 5-46** Request header for cross-region replication

Parameter	Mandatory (Yes/No)	Type	Description
Content-SHA256	Yes	string	<p><b>Definition:</b> 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</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## Request Elements

The request body contains elements to specify the replication configuration for the bucket in XML format. The following table lists request elements:

**Table 5-47** Bucket replication configuration elements

Parameter	Mandatory (Yes/No)	Type	Description
ReplicationConfiguration	Yes	Container	<p><b>Definition:</b> Container of cross-region replication rules. ReplicationConfiguration is the parent node of <a href="#">Rule</a> and Agency.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket can have 1 to 100 cross-region replication rules.</li> <li>• The size of the request body for configuring a cross-region replication rule at a time cannot exceed 50 KB.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
Rule	Yes	Container	<p><b>Definition:</b> Container of a specified cross-region replication rule.</p> <p><b>Constraints:</b> A bucket can have 1 to 100 cross-region replication rules.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-48</a>.</p> <p><b>Default value:</b> None</p>
Agency	Yes	String	<p><b>Definition:</b> Name of the agency created by the user for cross-region replication.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value is a string of 0 to 64 characters.</p> <p><b>Default value:</b> None</p>

**Table 5-48** Rule parameter description

Parameter	Mandatory (Yes/No)	Type	Description
ID	No	String	<p><b>Definition:</b> ID of the cross-region replication rule.</p> <p><b>Constraints:</b> The rule ID must be unique.</p> <p><b>Range:</b> The value is a string of 0 to 255 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
Status	Yes	String	<p><b>Definition:</b> Whether to enable the cross-region replication rule.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>Enabled: The rule is enabled.</li> <li>Disabled: The rule is disabled.</li> </ul> <p><b>Default value:</b> None</p>
Prefix	Yes	String	<p><b>Definition:</b> The prefix of an object name, applicable to one or more objects.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>If the <b>Prefix</b> is left blank, the cross-region replication rule is applied to the whole bucket.</li> <li>The prefix characters between rules cannot overlap. For example, two rules are configured, the prefix of rule 1 is <b>object</b>, and the prefix of rule 2 is <b>obj</b>. Both prefixes contain <b>obj</b>.</li> </ul> <p><b>Range:</b> The value is a UTF-8 string of 1 to 1024 characters.</p> <p><b>Default value:</b> None</p>
Destination	Yes	Container	<p><b>Definition:</b> Container for the destination bucket information.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-49</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
HistoricalObjectReplication	No	String	<p><b>Definition:</b> Whether to replicate historical objects that meet the cross-region replication rule.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Enabled: Replicate historical objects that meet the cross-region replication rule.</li> <li>• Disabled: Historical objects that meet the cross-region replication rule are not replicated.</li> </ul> <p><b>Default value:</b> If this parameter is not set, Disabled is used by default.</p>

**Table 5-49** Destination parameters

Parameter	Mandatory (Yes/No)	Type	Description
Bucket	Yes	String	<p><b>Definition:</b> Name of the destination bucket for cross-region replication. The bucket is used to store object copies identified by the cross-region replication rule.</p> <p><b>Constraints:</b> If the replication configuration contains multiple rules, the rules must specify the same bucket as the destination bucket.</p> <p><b>Range:</b> The value can contain 3 to 63 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
StorageClass	No	String	<p><b>Definition:</b> The storage class to which objects replicated to the destination bucket will be changed.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD: Standard storage</li> <li>• WARM: Infrequent Access storage</li> <li>• COLD: Archive storage</li> <li>• DEEP_ARCHIVE: Deep Archive storage (limited OBT)</li> </ul> <p><b>Default value:</b> None</p>
DeleteData	No	String	<p><b>Definition:</b> Whether to synchronously delete objects with the same names in the destination bucket through cross-region replication after the objects in the source bucket are deleted.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Enabled: The deletion of objects in the source bucket will be synchronized to the destination bucket.</li> <li>• Disabled: The deletion of objects in the source bucket will not be synchronized to the destination bucket.</li> </ul> <p><b>Default value:</b> If this parameter is not set, Disabled is used by default.</p>

## Response Syntax

```
HTTP/1.1 status_code
Server: OBS
Date:date
Content-Length: contentlength
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned for this request.

## Sample Request

```
PUT /?replication HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Wed, 27 Jun 2018 13:39:15 +0000
Authorization: OBS H4IPJX0TQTHHEBQQCEC:CdeqU0Vg9xNdJMZ0PGPgh5EnkO0=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jM0I5SCN55/OtMyl=
Content-Length: 330

<ReplicationConfiguration>
  <Agency>testAcy</Agency>
  <Rule>
    <ID>Rule-1</ID>
    <Status>Enabled</Status>
    <Prefix></Prefix>
    <Destination>
      <Bucket>dstbucket</Bucket>
      <StorageClass>STANDARD</StorageClass>
      <DeleteData>Enabled</DeleteData>
    </Destination>
    <HistoricalObjectReplication>Enabled</HistoricalObjectReplication>
  </Rule>
</ReplicationConfiguration>
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: B59500000164417839932E5A2295674C
x-obs-id-2: 32AAAQAAEAABKAAQAAEAABAAAQAAEAABCStv51t2NMMx+Ou+ow7IWW4Sxo231fKe
Date: Wed, 27 Jun 2018 13:39:15 GMT
Content-Length: 0
```

## 5.2.16 Obtaining the Cross-Region Replication Configuration of a Bucket

### Functions

This operation obtains the replication configuration information of a specified bucket. To perform this operation, you must have the **GetReplicationConfiguration** permission.

### Request Syntax

```
GET /?replication HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
```



```
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  
Date: date  
Server:OBS  
Content-Length: contentlength  
  
<?xml version="1.0" encoding="UTF-8"?>  
<ReplicationConfiguration xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2006-03-01/">  
  
  <Agency>testAcy</Agency>  
  <Rule>  
    <ID>rule1</ID>  
    <Status>Enabled</Status>  
    <Prefix></Prefix>  
    <Destination>  
      <Bucket>exampletargetbucket</Bucket>  
      <StorageClass>WARM</StorageClass>  
      <DeleteData>Enabled</DeleteData>  
    </Destination>  
    <HistoricalObjectReplication>Enabled</HistoricalObjectReplication>  
  </Rule>  
</ReplicationConfiguration>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains elements to detail the configuration. The following table describes the elements.

**Table 5-50** Elements for obtaining bucket replication configuration

Parameter	Type	Description
ReplicationConfigura-tion	Container	<p><b>Definition:</b> Container of cross-region replication rules. ReplicationConfiguration is the parent node of <a href="#">Rule</a> and Agency.</p> <p><b>Range:</b> None</p>
Rule	Container	<p><b>Definition:</b> Container of a specified cross-region replication rule.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-51</a>.</p>
Agency	String	<p><b>Definition:</b> Name of the agency created by the user.</p> <p><b>Range:</b> The value is a string of 0 to 64 characters.</p>

**Table 5-51** Rule parameter description

Parameter	Type	Description
ID	String	<p><b>Definition:</b> ID of the cross-region replication rule.</p> <p><b>Range:</b> The value is a string of 0 to 255 characters.</p>
Status	String	<p><b>Definition:</b> Whether to enable the cross-region replication rule.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Enabled: The rule is enabled.</li> <li>• Disabled: The rule is disabled.</li> </ul>

Parameter	Type	Description
Prefix	String	<p><b>Definition:</b> Prefix of an object name.</p> <p><b>Range:</b> The value is a UTF-8-encoded character sequence containing 1 to 1024 characters. The prefix characters of different rules cannot overlap. For example, two rules are configured, the prefix of rule 1 is <b>object</b>, and the prefix of rule 2 is <b>obj</b>. Both prefixes contain <b>obj</b>.</p>
Destination	Container	<p><b>Definition:</b> Container for the destination bucket information.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-52</a>.</p>
HistoricalObjectReplication	String	<p><b>Definition:</b> Whether to replicate historical objects that meet the cross-region replication rule.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Enabled: Replicate historical objects that meet the cross-region replication rule.</li> <li>• Disabled: Historical objects that meet the cross-region replication rule are not replicated.</li> </ul>

**Table 5-52** Destination parameters

Parameter	Type	Description
Bucket	String	<p><b>Definition:</b> Bucket used to store object copies that are marked by rules.</p> <p><b>Range:</b> The value can contain 3 to 63 characters.</p>

Parameter	Type	Description
StorageClass	String	<p><b>Definition:</b> The storage class to which objects replicated to the destination bucket will be changed.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD: Standard storage</li> <li>• WARM: Infrequent Access storage</li> <li>• COLD: Archive storage</li> <li>• DEEP_ARCHIVE: Deep Archive storage (limited OBT)</li> </ul>
DeleteData	String	<p><b>Definition:</b> Whether to synchronously delete objects with the same names in the destination bucket through cross-region replication after the objects in the source bucket are deleted.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Enabled: The deletion of objects in the source bucket will be synchronized to the destination bucket.</li> <li>• Disabled: The deletion of objects in the source bucket will not be synchronized to the destination bucket.</li> </ul>

## Error Responses

The following table describes the error response for this request.

**Table 5-53** Error response elements

Error Code	Description	HTTP Response Code	SOAP Error Code Prefix
NoSuchReplication-Configuration	Cross-region replication configuration does not exist.	404 not found	Client

## Sample Request

```
GET /?replication HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Wed, 27 Jun 2018 13:42:40 +0000
Authorization: OBS H4IPJX0TQTHTHEBQQCEC;jGHvIInfRyOkT/EpySpua1hlBuY=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: B59500000164417B57D02F7EF8823152
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShu6lz4vgk5G3E32OFclPEZZgdOEYE/
Content-Type: application/xml
Date: Wed, 27 Jun 2018 13:42:39 GMT
Content-Length: 337

<?xml version="1.0" encoding="utf-8"?>
<ReplicationConfiguration xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2006-03-01/">
  <Rule>
    <ID>Rule-1</ID>
    <Status>Enabled</Status>
    <Prefix></Prefix>
    <Destination>
      <Bucket>dstbucket</Bucket>
      <StorageClass>STANDARD</StorageClass>
      <DeleteData>Enabled</DeleteData>
    </Destination>
    <HistoricalObjectReplication>Enabled</HistoricalObjectReplication>
  </Rule>
  <Agency>testAcy</Agency>
</ReplicationConfiguration>
```

## 5.2.17 Deleting the Cross-Region Replication Configuration of a Bucket

### Functions

You can perform this operation to delete the bucket replication configuration. To perform this operation, you must have the **DeleteReplicationConfiguration** permission.

### Request Syntax

```
DELETE /?replication HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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/1.1 204 No Content
Server: OBS
Date: date
Connection: keep-alive
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned for this request.

## Sample Request

```
DELETE /?replication HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Wed, 27 Jun 2018 13:45:50 GMT
Authorization: OBS H4lPIX0TQTHTHEBQQCEC:3ycNYD0CfMf0gOmmXzdGJ58KjHU=
```

## Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 900B000001643FE6BBCC9C9F54FA7A7E
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCS8Exs52zCf9duxPLnBircmGa/JOCjec
Date: Wed, 27 Jun 2018 13:45:50 GMT
```

## 5.2.18 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.com
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.

## Request Headers

[Table 5-54](#) lists the request header.

**Table 5-54** Request headers

Header	Type	Mandatory	Description
Content-SHA256	String	Yes	Base64-encoded 256-bit SHA256 digest of the message according to SHA. Example: <b>ogX9qClMrVJUBiUSIKDFM0qO41jJM0I55CN55/OtMyI=</b>

## Request Elements

In this request, you must configure bucket tags in the request body. The tag configuration is uploaded in XML format. [Table 5-55](#) describes the configuration elements.

**Table 5-55** Bucket tag configuration elements

Header	Type	Mandatory (Yes/No)	Description
Tagging	XML	Yes	<b>Definition:</b> Root element for TagSet and Tag <b>Constraints:</b> None

Header	Type	Mandatory (Yes/No)	Description
TagSet	XML	Yes	<p><b>Definition:</b> Parent element of Tag. Parent: Tagging</p> <p><b>Constraints:</b> A maximum of 20 tags can be set for a bucket. That means a TagSet can contain a maximum of 20 Tag nodes.</p>
Tag	XML	Yes	<p><b>Definition:</b> Information element of Tag Parent: TagSet</p> <p><b>Constraints:</b> A maximum of 20 tags can be set for a bucket. That means a TagSet can contain a maximum of 20 Tag nodes.</p>
Key	String	Yes	<p><b>Definition:</b> Name of a tag. Parent: Tag.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A tag key can contain a maximum of 36 characters.</li> <li>• Tag keys and values cannot contain commas (,), asterisks (*), vertical bars ( ), slashes (/), less-than signs (&lt;), greater-than signs (&gt;), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server.</li> </ul> <p><b>Range:</b> A string between 1 and 36 characters long.</p> <p><b>Default value:</b> None</p>



Header	Type	Man dato ry (Yes/ No)	Description
Value	String	Yes	<p><b>Definition:</b> Tag value. Parent: Tag.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A key value can contain a maximum of 43 characters.</li> <li>• Tag keys and values cannot contain commas (,), asterisks (*), vertical bars ( ), slashes (/), less-than signs (&lt;), greater-than signs (&gt;), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server.</li> </ul> <p><b>Range:</b> A string of 0 (included) to 43 (excluded) characters.</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

## 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 5-56](#).

**Table 5-56** 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.com
Accept: */*
Date: Wed, 27 Jun 2018 13:22:50 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:Pf1ZyGvVYg2BzOjokZ/BAeR1mEQ=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM015SCN55/OtMyl=
Content-Length: 182

<Tagging xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/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
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSEZp87iEirC6DggPB5cN49pSvHBWClg
Date: Wed, 27 Jun 2018 13:22:50 GMT
```

## 5.2.19 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.com
```

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.ap-southeast-1.myhuaweicloud.com/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 3-29](#).

## Response Elements

This response contains elements to detail bucket tag configuration. [Table 5-57](#) describes the elements.

**Table 5-57** Bucket tag configuration elements

Header	Type	Description
Tagging	XML	<b>Definition:</b> Parent element of TagSet and Tag.  <b>Constraints:</b> None

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

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

## 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 5-58](#).

**Table 5-58** 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.com
Accept: */*
Date: Wed, 27 Jun 2018 13:25:44 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:H1INcyc5i0XIHqYTfuzkPxLZUPM=
```

## Sample Response

```
HTTP/1.1 200 OK
x-obs-request-id: 0002B7532E0000015BEB35330C5884X1
x-obs-id-2: s12w20LYNQqSb7moq4ibgJwmQRSmVQV+rFBqplOGYkXUpXeS/nOmbkyD+E35K79j
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"?>
<Tagging xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <TagSet>
    <Tag>
      <Key>TagName1</Key>
      <Value>TageSetVaule1</Value>
    </Tag>
  </TagSet>
</Tagging>
```

## 5.2.20 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.com
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 3-29](#).

### 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 /?tagging HTTP/1.1
User-Agent: curl/7.19.7
Host: examplebucket.obs.region.myhuaweicloud.com
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
```

## 5.2.21 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.com
Date: date
Content-Length: length
Authorization: authorization

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

## 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 5-59](#) describes the element.

**Table 5-59** 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 3-29](#).

## 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.com  
Accept: /*/*  
Date: WED, 01 Jul 2015 03:24:37 GMT  
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:k/rbwnYaqYf0Ae6F0M3OJQ0dml8=  
Content-Length: 106  
  
<Quota xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">  
<StorageQuota>10240000</StorageQuota>  
</Quota>
```



## Sample Response

```
HTTP/1.1 100 Continue
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435E09A2BCA388688AA08
x-obs-id-2: 32AAAQAAEAABSAAgAAEAAABAAAQAAEAABCSHbmBecv7ohDSvqaRObpxzgzJ9+l8xT
Date: WED, 01 Jul 2015 03:24:37 GMT
Content-Length: 0
```

## 5.2.22 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.com
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.com/doc/2015-06-30/">

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

### Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

### Response Elements

This response contains elements of information about the bucket quota. [Table 5-60](#) describes the elements.

**Table 5-60** 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:27:45 GMT
Authorization: OBS H4IPJX0TQTHHEBQQCEC:8m4bW1gFCNeXQIfu45uO2gpo7l8=
```

## 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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <StorageQuota>0</StorageQuota>
</Quota>
```

## 5.2.23 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.com
```

```
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.com/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 3-29](#).

## Response Elements

This response contains elements of information about the used storage capacity of a bucket. [Table 5-61](#) describes the elements.

**Table 5-61** 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

## 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.com
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Size>25490</Size>
  <ObjectNumber>24</ObjectNumber>
</GetBucketStorageInfoResult>
```

## 5.2.24 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.com
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>
```

```

<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 5-62** Request parameters

Parameter	Description	Mandatory
id	<p>ID of the inventory configuration, which must be consistent with the inventory configuration ID in the message body.</p> <p>Type: string</p> <p>Specifications: A maximum of 64 characters</p> <p>There is no default value.</p> <p>Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)</p>	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 5-63](#) lists the configuration elements.

**Table 5-63** 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 <b>true</b> , the inventory is generated. If not, the inventory will not be generated. Type: boolean Value options: <b>true, false</b> 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

Element	Description	Mandatory
Frequency	Intervals when inventories are generated. You can set this parameter to <b>Daily</b> or <b>Weekly</b> . 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: <b>Daily, Weekly</b>	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: <b>CSV</b>	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 <b>BucketInventory</b> by default. Type: string Parent: Destination	No
IncludedObjectVersions	Indicates whether versions of objects are included in an inventory. <ul style="list-style-type: none"> <li>If this parameter is set to <b>All</b>, all the versions of objects are included in the inventory, and versioning related fields are added to the inventory, including: <b>VersionId</b>, <b>IsLatest</b>, and <b>DeleteMarker</b>.</li> <li>If this parameter is set to <b>Current</b>, the inventory contains only the current objects versions at the time when the inventory is generated. No versioning fields are displayed in the inventory.</li> </ul> Type: string Parent: InventoryConfiguration Value options: <b>All, Current</b>	Yes

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 <b>OptionalFields</b> can contain multiple field elements. Type: string Parent: OptionalFields Value options: <b>Size, LastModifiedDate, StorageClass, ETag, IsMultipartUploaded, ReplicationStatus, EncryptionStatus</b>	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 3-29](#).

## 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 5-64](#).

**Table 5-64** 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



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.com
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: 32AAAQAAEAAABAAAQAAEAAABAAAQAAEAAABCSIGTuRtBfo7lpHSt0ZknhdDHmlwd/p
Date: Tue, 08 Jan 2019 08:12:38 GMT
Content-Length: 0
```

## 5.2.25 Obtaining a Specific Inventory of a Bucket

### Functions

OBS uses the GET method to obtain a specific inventory of a bucket.

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.com
Accept: */*
Date: date
Authorization: authorization string
```

## Request Parameters

**Table 5-65** Request parameters

Parameter	Description	Mandatory
id	<p>ID of the inventory configuration that you want to obtain.</p> <p>Type: string</p> <p>Specifications: A maximum of 64 characters</p> <p>There is no default value.</p> <p>Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)</p>	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.com/doc/2015-06-30/">
  <Id>configuration-id</Id>
  <IsEnabled>true</IsEnabled>
  <Destination>
    <Format>CSV</Format>
    <Bucket>destbucket</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>

```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

[Table 5-66](#) lists elements contained in the response body.

**Table 5-66** Elements in a response body to the request for bucket inventory configurations

Element	Description
InventoryConfigura- tion	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 <b>true</b> , the inventory is generated. If not, the inventory will not be generated. Type: boolean Value options: <b>true</b> , <b>false</b> Parent: InventoryConfiguration

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 <b>Daily</b> or <b>Weekly</b> . 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: <b>Daily, Weekly</b>
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: <b>CSV</b>
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 <b>BucketInventory</b> by default. Type: string Parent: Destination

Element	Description
IncludedObjectVersions	<p>Indicates whether versions of objects are included in an inventory.</p> <ul style="list-style-type: none"> <li>If this parameter is set to <b>All</b>, all the versions of objects are included in the inventory, and versioning related fields are added to the inventory, including: <b>VersionId</b>, <b>IsLatest</b>, and <b>DeleteMarker</b>.</li> <li>If this parameter is set to <b>Current</b>, the inventory contains only the current objects versions at the time when the inventory is generated. No versioning fields are displayed in the inventory.</li> </ul> <p>Type: string Parent: InventoryConfiguration Value options: <b>All</b>, <b>Current</b></p>
OptionalFields	<p>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.</p> <p>Type: container Parent: InventoryConfiguration Child: Field</p>
Field	<p>Optional fields. The <b>OptionalFields</b> can contain multiple field elements.</p> <p>Type: string Parent: OptionalFields Value options: <b>Size</b>, <b>LastModifiedDate</b>, <b>StorageClass</b>, <b>ETag</b>, <b>IsMultipartUploaded</b>, <b>ReplicationStatus</b>, <b>EncryptionStatus</b></p>

## 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 5-67](#).

**Table 5-67** 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

## Sample Request

```
GET /?inventory&id=id1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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.com/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>
```

## 5.2.26 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.com
Accept: */*
Date: date
Authorization: authorization string
```

### Request Parameters

This request message does not contain the request 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
Content-Type: application/xml
Date: date
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListInventoryConfiguration xmlns="http://obs.region.myhuaweicloud.com/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 3-29](#).

## Response Elements

[Table 5-68](#) lists elements contained in the response body.

**Table 5-68** Bucket inventory configuration elements

Element	Description
ListInventoryConfigu- ration	List of bucket inventories. Type: container

Element	Description
InventoryConfigura- tion	Bucket inventory configuration. For details about the configuration elements, see <a href="#">Table 5-66</a> .  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.com
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSBjn5O7Jv9CqvUMO0BenehRdl1n8rR
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.com/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>
```



## 5.2.27 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.com
Accept: */*
Date: date
Authorization: authorization string
```

### Request Parameters

Table 5-69 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 3-29](#).

## 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.com
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSyB46jGSQsu06m1nyleKxTuJ+H27ooC
Date: Tue, 08 Jan 2019 13:14:03 GMT
```

## 5.2.28 Configuring a Custom Domain Name for a Bucket

### Functions

OBS uses the PUT method to configure a custom domain name for a bucket. After the configuration is successful, you can access the bucket through the domain name.

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

Ensure that the custom domain name can correctly resolve to the OBS service through DNS.

### Request Syntax

```
PUT /?customdomain=domainname HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.com
Accept: */*
Date: date
Authorization: authorization string
Content-Length: 0
```

## Request Parameters

Table 5-70 Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
customdomain	Yes	String	<b>Definition:</b> Custom domain name of a bucket. <b>Constraints:</b> A bucket can have a maximum of 30 domain names. One custom domain name can be used for only one bucket. <b>Range:</b> The value is a string of 0 to 256 characters. <b>Default value:</b> None

## Request Header

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

This request involves no elements.

## Response Syntax

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: request id
x-obs-id-2: id
Date: date
Content-Length: 0
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## 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 /?customdomain=obs.ccc.com HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Mon, 14 Jan 2019 08:31:36 +0000
Authorization: OBS UDSIAMSTUBTEST000094:u2kJF4kENs6KIIDcAZpAKSKPtnc=
Content-Length: 0
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 000001697692CC5380E9D272E6D8F830
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSsfu2GXj9gScHhFnrrTPY2cFOEZuvta
Date: Wed, 13 Mar 2019 10:22:05 GMT
Content-Length: 0
```

## 5.2.29 Obtaining the Custom Domain Name of a Bucket

### Functions

OBS uses the GET method to obtain the custom domain name of a 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 custom domain names.

### Request Syntax

```
GET /?customdomain HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.com
Accept: */*
Date: date
Authorization: authorization string
```

### Request Parameters

This request message does not contain the request parameters.

### Request Header

This request uses common headers. For details, see [Table 3-3](#).

### Request Elements

This request involves no elements.

### Response Syntax

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: request id
x-obs-id-2: id
Content-Type: application/xml
Date: date
```

```
Content-Length: 272
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketCustomDomainsResult xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Domains>
    <DomainName>domainname</DomainName>
    <CreateTime>createtime</CreateTime>
  </Domains>
</ListBucketCustomDomainsResult>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

The response returns the custom domain name of the bucket in the form of message elements. [Table 5-71](#) lists details about each element.

**Table 5-71** Response elements

Parameter	Type	Description
ListBucketCustomDomainsResult	Container	<b>Definition:</b> Container of the returned custom domain name ListBucketCustomDomainsResult is the parent node of <a href="#">Domains</a> . <b>Range:</b> None
Domains	Container	<b>Definition:</b> Custom domain name elements <b>Range:</b> For details, see <a href="#">Domains parameters</a> .

**Table 5-72** Domains parameters

Parameter	Type	Description
DomainName	String	<b>Definition:</b> Custom domain name <b>Range:</b> The value is a string of 0 to 256 characters.

Parameter	Type	Description
CreateTime	String	<p><b>Definition:</b> Time when a custom domain name was created.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>The value must be a UTC time that complies with the ISO 8601 standard. Example: <b>2018-01-01T00:00:00.000Z</b></li> <li>The value is a string of 24 characters.</li> </ul>

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#).

## Sample Request

```
GET /?customdomain HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Mon, 14 Jan 2019 08:31:45 +0000
Authorization: OBS UDSIAMSTUBTEST000094:veTm8B18MPLFqNyGh2wmQqovZ2U=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 000001697693130C80E9D2D29FA84FC2
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSM80AI9weqGUsIFJScVxSKIG4DmYPX9
Content-Type: application/xml
Date: Wed, 13 Mar 2019 10:22:24 GMT
Content-Length: 272

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketCustomDomainsResult xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Domains>
    <DomainName>obs.ccc.com</DomainName>
    <CreateTime>2019-03-13T10:22:05.912Z</CreateTime>
  </Domains>
</ListBucketCustomDomainsResult>
```

## 5.2.30 Deleting the Custom Domain Name of a Bucket

### Functions

OBS uses the DELETE method to delete the custom domain name of a 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 custom domain names.

## Request Syntax

```
DELETE /?customdomain=domainname HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.com
Accept: */*
Date: date
Authorization: authorization string
```

## Request Parameters

**Table 5-73** Request parameters

Parameter	Mandato ry (Yes/No)	Type	Description
customdom ain	Yes	String	<b>Definition:</b> Custom domain name to be deleted <b>Constraints:</b> None <b>Range:</b> The value is a string of 0 to 256 characters. <b>Default value:</b> None

## Request Header

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

This request involves no elements.

## Response Syntax

```
HTTP/1.1 204 No Content
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 3-29](#).

## 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 /?customdomain=obs.ccc.com HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.com
Accept: */*
Date: Mon, 14 Jan 2019 08:27:50 +0000
Authorization: OBS UDSIAMSTUBTEST000094:ACgHHA1z+dqZhqS7D2SbU8ugluw=
```

## Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 000001697694073F80E9D3D43BB10B8F
x-obs-id-2: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCSyjWyXNRPSnFymJW0AI59GKpW0Qm9UJ
Date: Wed, 13 Mar 2019 10:23:26 GMT
```

## 5.2.31 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) and OBS-managed keys (SSE-OBS). 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.com
Accept: */*
Date: date
Authorization: authorization string
Content-Length: length

<ServerSideEncryptionConfiguration>
  <Rule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>kms</SSEAlgorithm>
      <KMSMasterKeyID>kmskeyid-value</KMSMasterKeyID>
    </ApplyServerSideEncryptionByDefault>
  </Rule>
</ServerSideEncryptionConfiguration>
```



## Request Syntax (SSE-OBS)

```
PUT /?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.com
Accept: */*
Date: date
Authorization: authorization string
Content-Length: length

<ServerSideEncryptionConfiguration>
  <Rule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>AES256</SSEAlgorithm>
    </ApplyServerSideEncryptionByDefault>
  </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 5-74](#) lists the configuration elements.

**Table 5-74** Configuration elements of bucket encryption

Parameter	Mandatory (Yes/No)	Type	Description
ServerSideEncryptionConfiguration	Yes	Container	<p><b>Definition:</b> Root element of the default bucket encryption configuration. ServerSideEncryptionConfiguration is the parent node of <a href="#">Rule</a>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
Rule	Yes	Container	<p><b>Definition:</b> The child element of the default bucket encryption configuration. Rule is the parent node of ApplyServerSideEncryptionByDefault.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Rule parameters</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-75** Rule parameter description

Parameter	Mandatory (Yes/No)	Type	Description
ApplyServerSideEncryptionByDefault	Yes	Container	<p><b>Definition:</b> The child element of the default bucket encryption configuration.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-76</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-76** ApplyServerSideEncryptionByDefault parameters

Parameter	Mandatory (Yes/No)	Type	Description
SSEAlgorithm	Yes	String	<p><b>Definition:</b> Server-side encryption algorithm used for the default encryption configuration of a bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>kms:</b> SSE-KMS encryption and the AES256 algorithm are used.</li> <li>• <b>AES256:</b> SSE-OBS encryption and the AES256 algorithm are used.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
KMSMasterKeyID	No	String	<p><b>Definition:</b> KMS master key ID used in SSE-KMS encryption.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If this parameter is not specified, the default master key will be used.</li> <li>• If <b>BucketKeyEnabled</b> is set to <b>true</b>, the value of <b>KMSMasterKeyID</b> is the ID of the master key created on KMS.</li> </ul> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <i>regionID:domainID:key/key_id</i></li> <li>• <i>key_id</i></li> </ul> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li>• <i>regionID</i> indicates the ID of the region where the key belongs. You can obtain the ID from <a href="#">Regions and Endpoints</a>.</li> <li>• <i>domainID</i> indicates the ID of the account to which the key belongs. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</li> <li>• <i>key_id</i> indicates the ID of the key created in DEW. For details about how to obtain the key ID, see <a href="#">Viewing a CMK</a>.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
ProjectID	No	String	<p><b>Definition:</b> ID of the project where the KMS master key belongs when SSE-KMS is used.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If the project is not the default one, you must use this parameter to specify the project ID.</li> <li>• If <b>KMSMasterKeyID</b> is not specified, do not set the project ID.</li> <li>• 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.</li> </ul> <p><b>Range:</b> Project ID that matches <b>KMSMasterKeyID</b>, that is, the ID of the project to which the master key with the specified <b>KMSMasterKeyID</b> belongs</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

## 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 (SSE-KMS AES256)

```
PUT /?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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.com/doc/2015-06-30/">
  <Rule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>kms</SSEAlgorithm>
      <KMSMasterKeyID>4f1cd4de-ab64-4807-920a-47fc42e7f0d0</KMSMasterKeyID>
    </ApplyServerSideEncryptionByDefault>
  </Rule>
</ServerSideEncryptionConfiguration>
```

## Sample Response (SSE-KMS AES256)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643670AC06E7B9A7767921
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vzpgtohkiFm
Date: Thu, 21 Feb 2019 03:05:34 GMT
Content-Length: 0
```

## Sample Request (SSE-OBS)

```
PUT /?encryption HTTP/1.1
User-Agent: curl/7.29.0
Host: bucketname.obs.region.myhuaweicloud.com
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.com/doc/2015-06-30/">
  <Rule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>AES256</SSEAlgorithm>
    </ApplyServerSideEncryptionByDefault>
  </Rule>
</ServerSideEncryptionConfiguration>
```

## Sample Response (SSE-OBS)

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF26000001643670AC06E7B9A7767921
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vzpgtohkiFm
Date: Thu, 21 Feb 2019 03:05:34 GMT
Content-Length: 0
```

## 5.2.32 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.com
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
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.com/doc/2015-06-30/">
  <Rule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>kms</SSEAlgorithm>
      <KMSMasterKeyID>kmskeyid-value</KMSMasterKeyID>
      <ProjectID>projectid</ProjectID>
    </ApplyServerSideEncryptionByDefault>
  </Rule>
</ServerSideEncryptionConfiguration>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains the following elements to detail bucket encryption configuration:

**Table 5-77** Configuration elements of bucket encryption

Parameter	Type	Description
ServerSideEncryptionConfiguration	Container	<p><b>Definition:</b> Root element of the default bucket encryption configuration. ServerSideEncryptionConfiguration is the parent node of <a href="#">Rule</a>.</p> <p><b>Range:</b> None</p>
Rule	Container	<p><b>Definition:</b> Child element of the default bucket encryption configuration. Rule is the parent node of ApplyServerSideEncryptionByDefault.</p> <p><b>Range:</b> For details, see <a href="#">Rule parameters</a>.</p>

**Table 5-78** Rule parameter description

Parameter	Type	Description
ApplyServerSideEncryptionByDefault	Container	<p><b>Definition:</b> The child element of the default bucket encryption configuration.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-76</a>.</p>

**Table 5-79** ApplyServerSideEncryptionByDefault parameters

Parameter	Type	Description
SSEAlgorithm	String	<p><b>Definition:</b> Server-side encryption algorithm used for the default encryption configuration of a bucket.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>kms:</b> SSE-KMS encryption and the AES256 algorithm are used.</li> <li>• <b>AES256:</b> SSE-OBS encryption and the AES256 algorithm are used.</li> </ul>



Parameter	Type	Description
KMSMasterKeyID	String	<p><b>Definition:</b> KMS master key ID used in SSE-KMS encryption.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <i>regionID.domainID:key key_id</i></li> <li>• <i>key_id</i></li> </ul> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li>• <i>regionID</i> indicates the ID of the region where the key belongs. You can obtain the ID from <a href="#">Regions and Endpoints</a>.</li> <li>• <i>domainID</i> indicates the ID of the account to which the key belongs. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</li> <li>• <i>key_id</i> indicates the ID of the key created in DEW. For details about how to obtain the key ID, see <a href="#">Viewing a CMK</a>.</li> </ul>
ProjectID	String	<p><b>Definition:</b> ID of the project where the KMS master key belongs when SSE-KMS is used.</p> <p><b>Range:</b> Project ID that matches <b>KMSMasterKeyID</b>, that is, the ID of the project to which the master key with the specified <b>KMSMasterKeyID</b> belongs</p>

## 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 5-80](#).

**Table 5-80** 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.com
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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vzpgtohkiFm
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.com/doc/2015-06-30/">
  <Rule>
    <ApplyServerSideEncryptionByDefault>
      <SSEAlgorithm>kms</SSEAlgorithm>
      <KMSMasterKeyID>4f1cd4de-ab64-4807-920a-47fc42e7f0d0</KMSMasterKeyID>
    </ApplyServerSideEncryptionByDefault>
  </Rule>
</ServerSideEncryptionConfiguration>
```

## 5.2.33 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.com
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 3-29](#).

## 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 /examplebucket?encryption HTTP/1.1  
User-Agent: curl/7.29.0  
Host: examplebucket.obs.region.myhuaweicloud.com  
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSyB46jGSQsu06m1nyleKxTuJ+H27ooC  
Date: Tue, 08 Jan 2019 13:14:03 GMT
```

## 5.2.34 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.

 **NOTE**

Direct reading is only available in some regions. For details, see [Function Overview](#).

## Request Syntax

```
PUT /?directcoldaccess HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Content-SHA256: SHA256
Content-Length: length

<DirectColdAccessConfiguration>
  <Status>status</Status>
</DirectColdAccessConfiguration>
```

## Request Parameters

This request contains no message parameters.

## Request Headers

[Table 5-81](#) lists the request headers.

**Table 5-81** Request headers

Parameter	Mandatory (Yes/No)	Type	Description
Content-SHA256	Yes	String	<p><b>Definition:</b> 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</p> <p>Example: <b>ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyl=</b></p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## Request Elements

This request contains elements to configure the direct reading status in XML format for Archive objects. [Table 5-82](#) lists the request elements.

**Table 5-82** Elements required to configure the direct reading status for Archive objects

Parameter	Mandatory (Yes/No)	Type	Description
DirectColdAccessConfiguration	Yes	Container	<p><b>Definition:</b> Root node for the configuration of the direct reading for Archive objects. DirectColdAccessConfiguration is the parent node of Status.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Status	Yes	String	<p><b>Definition:</b> Indicates the direct reading status for a bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>Enabled: The direct reading policy is enabled for Archive objects.</li> <li>Disabled: The direct reading policy is disabled for Archive objects.</li> </ul> <p><b>Default value:</b> None</p>

## 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 3-29](#).

## 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.com
Date: Fri, 26 Apr 2019 07:37:36 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM015SCN55/OtMyl=
Content-Length: 92

<DirectColdAccessConfiguration>
  <Status>Enabled</Status>
</DirectColdAccessConfiguration>
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 0000016A58940244809DEF00122E6802
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCStOlo1yxthHHo2GIS3WGgt1ekAlh3Vy
Date: Fri, 26 Apr 2019 07:37:36 GMT
Content-Length: 0
```

## 5.2.35 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.com
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.com/doc/2015-06-30/">
  <Status>Enabled</Status>
</DirectColdAccessConfiguration>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains elements to indicate the direct reading status of Archive objects. [Table 5-83](#) describes the elements.

**Table 5-83** Response elements

Parameter	Type	Description
DirectColdAccess-Configuration	Container	<p><b>Definition:</b> Indicates the direct reading information of Archive objects.</p> <p><b>Range:</b> None</p>
Status	String	<p><b>Definition:</b> 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.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>Enabled: The direct reading policy is enabled for Archive objects.</li> <li>Disabled: The direct reading policy is disabled for Archive objects.</li> <li>If the Status parameter is not specified, the direct reading policy is disabled for Archive objects in the bucket.</li> </ul>

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:15:20 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:4N5qQIoluLO9xMY0m+8IIn/UWXM=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 0000016A6C21AD79654C09D9AA45EB5D
x-obs-id-2: 32AAAQAAEAAABAAAQAAEAAABAAAQAAEAAABCSmfq4hegf1QZv8/ewfveE4B566v5DZ8
Content-Type: application/xml
Date: Tue, 30 Apr 2019 02:45:07 GMT
Content-Length: 192

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DirectColdAccessConfiguration xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Status>Enabled</Status>
</DirectColdAccessConfiguration>
```

## 5.2.36 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.com
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 3-29](#).

## 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 /?directcoldaccess HTTP/1.1  
User-Agent: curl/7.29.0  
Host: examplebucket.obs.region.myhuaweicloud.com  
Accept: */*  
Date: Tue, 30 Apr 2019 03:04:48 GMT  
Authorization: OBS H4lPJX0TQTHHEBQQCEC:5DGAS7SBbMC1YTC4tNXy57Zl2Fo=
```

## 5.2.37 Configuring Back-to-Source-by-Mirroring Rules

### Functions

This operation configures back-to-source-by-mirroring rules for a specified bucket. The API is idempotent. If there is already an identical rule for the bucket, a success message is returned with status code 200. Otherwise, status code 201 is returned.

### Request Syntax

```
PUT /?mirrorBackToSource HTTP/1.1  
Host: bucketname.obs.region.myhuaweicloud.com  
Authorization: authorization  
Content-Type: application/json  
Content-Length: length  
Date: date  
  
policy json body
```

## Request Parameters

This request contains no message parameters.

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

**Table 5-84** Request elements

Parameter	Mandatory (Yes/No)	Type	Description
rules	Yes	Container	<p><b>Definition:</b> Number of rules. <b>rules</b> is the parent node of <b>id</b>, <b>condition</b>, and <b>redirect</b>.</p> <p><b>Constraints:</b> For the same bucket, prefixes of different rules cannot contain each other or have duplicate starting characters. The same agency is recommended.</p> <p><b>Range:</b> A maximum of 10 back-to-source-by-mirroring rules can be created for each bucket. Therefore, the value range of the array length is from 1 to 10. For details, see <a href="#">Table 5-85</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-85** rules parameters

Parameter	Mandatory (Yes/No)	Type	Description
id	Yes	String	<p><b>Definition:</b> Unique ID of a back-to-source rule configured for the current bucket.</p> <p><b>Constraints:</b> The rule ID must be unique in the bucket.</p> <p><b>Range:</b> The value is a string of 1 to 256 characters. Only uppercase letters, lowercase letters, digits, underscores (_), and hyphens (-) are allowed.</p> <p><b>Default value:</b> None</p>
condition	Yes	Container	<p><b>Definition:</b> Condition for triggering back-to-source. This parameter is the parent node of httpErrorcodeReturnedEquals and objectKeyPrefixEquals.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-86</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
redirect	Yes	Container	<p><b>Definition:</b> Parameters for implementing the back-to-source function. This parameter is the parent node of agency, publicSource, retryConditions, passQueryString, mirrorFollowRedirect, replaceKeyWith, replaceKeyPrefixWith, vpcEndpointURN, redirectWithoutReferer, and mirrorAllowHttpMethod.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-87</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-86** condition parameters

Parameter	Mandatory (Yes/No)	Type	Description
httpErrorCodeReturnedEquals	Yes	Integer	<p><b>Definition:</b> Error code that triggers the back-to-source function. When this error is returned for a download request, the back-to-source function is triggered.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> 404: The object does not exist in the OBS bucket.</p> <p><b>Default value:</b> 404</p>

Parameter	Mandatory (Yes/No)	Type	Description
objectKeyPrefix-Equals	No	String	<p><b>Definition:</b> Prefix of the object name that triggers the back-to-source function. The back-to-source function is performed only when the specified object name prefix is contained in the request.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If this parameter is left blank, all objects are matched by default.</li> <li>• For the same bucket, prefixes of different rules cannot contain each other or have duplicate beginning characters.</li> </ul> <p><b>Range:</b> The value is a string of 0 to 1023 characters and can contain any characters.</p> <p><b>Default value:</b> None</p>

**Table 5-87** redirect parameters

Parameter	Mandatory (Yes/No)	Type	Description
agency	Yes	String	<p><b>Definition:</b> Agency name. With an agency, the customer can grant OBS the permissions to query whether a specified object exists in the bucket and to upload objects to the bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
publicSource	No	Container	<p><b>Definition:</b> Configuration of the source that can be publicly accessed. This parameter is mandatory when the source is a public accessible resource. publicSource is the parent node of sourceEndpoint.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-88</a>.</p> <p><b>Default value:</b> None</p>
retryConditions	No	Array	<p><b>Definition:</b> Condition for switching the source address.</p> <p><b>Constraints:</b> 4XX and error codes starting with 4 cannot be configured together. 5XX and error codes starting with 5 cannot be configured together.</p> <p><b>Range:</b> 4XX, 5XX, 400–499, and 500–599 (a maximum of 20 error codes can be configured at the same time)</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
passQueryString	Yes	Boolean	<p><b>Definition:</b> Whether to carry the request character string.</p> <p><b>Constraints:</b> If this parameter is set to <b>true</b> but the <b>query</b> parameter contains the signature information, the signature information is removed and the remaining parameters are passed.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• false: The <b>queryString</b> value in the OBS request is not passed to the source.</li> <li>• true: The <b>queryString</b> value in the OBS request is passed to the source.</li> </ul> <p><b>Default value:</b> false</p>
mirrorFollowRedirect	Yes	Boolean	<p><b>Definition:</b> Whether to obtain resources by redirecting the request based on the 3XX response from the source</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• false: OBS transparently passes the 3XX response and does not return resources.</li> <li>• true: OBS returns resources by redirecting the request based on the 3XX response.</li> </ul> <p><b>Default value:</b> false</p>

Parameter	Mandatory (Yes/No)	Type	Description
mirrorHTTPHeader	No	Container	<p><b>Definition:</b> Rules for passing HTTP headers. mirrorHTTPHeader is the parent node of passAll, pass, remove, and set.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-90</a>.</p> <p><b>Default value:</b> None</p>
replaceKeyWith	No	String	<p><b>Definition:</b> Whether to add a prefix or suffix when downloading objects from the source.</p> <p><b>Constraints:</b> If both <b>replaceKeyWith</b> and <b>ReplaceKeyPrefixWith</b> are left blank, <b>ReplaceKeyPrefixWith</b> takes effect. The request is invalid if both the parameters are specified.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>prefix\${key}suffix: The prefix or suffix needs to be added.</li> <li>\${key}: No prefix or suffix needs to be added.</li> </ul> <p>\${key} indicates keywords. The total length of the prefix and suffix ranges from 0 to 1023.</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory (Yes/No)	Type	Description
replaceKeyPrefixWith	No	String	<p><b>Definition:</b> Character string used to replace <b>objectKeyPrefixEquals</b>. If you need to replace the current object name prefix when downloading the object from the source, specify this parameter.</p> <p><b>Constraints:</b> If both <b>replaceKeyWith</b> and <b>ReplaceKeyPrefixWith</b> are left blank, <b>ReplaceKeyPrefixWith</b> takes effect. The request is invalid if both the parameters are specified.</p> <p><b>Range:</b> The value is a string of 0 to 1023 characters.</p> <p><b>Default value:</b> None</p>
vpcEndpointURN	No	String	<p><b>Definition:</b> URN of VPC Endpoint service.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value is a string of 0 to 127 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
redirectWithoutReferer	No	Boolean	<p><b>Definition:</b> Whether to skip carrying the original host as the referer header to the destination address for redirection.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> false: The original host is carried as the referer header to the destination address for redirection. true: The original host is not carried as the referer header to the destination address for redirection.</p> <p><b>Default value:</b> false</p>
mirrorAllowHttpMethod	No	Array	<p><b>Definition:</b> Request method that supports transparent transmission.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• GET: requests to obtain objects in a bucket</li> <li>• HEAD: requests to obtain the metadata of an object in a bucket</li> </ul> <p><b>Default value:</b> None</p>

**Table 5-88** publicSource parameters

Parameter	Mandatory (Yes/No)	Type	Description
sourceEndpoint	No	Container	<b>Definition:</b> Source address that can be publicly accessed. sourceEndpoint is the parent node of master and slave. <b>Constraints:</b> None <b>Range:</b> For details, see <a href="#">Table 5-89</a> . <b>Default value:</b> None

**Table 5-89** sourceEndpoint parameters

Parameter	Mandatory (Yes/No)	Type	Description
master	No	Array	<p><b>Definition:</b> Master source address. If the source is a bucket that can be accessed over HTTP network, the address is the bucket domain name. If the source is a private bucket provided by other cloud vendors, the address is a region domain name.</p> <p><b>Constraints:</b> The master source address is preferentially used during the back-to-source process. If one to five master source addresses are configured, they are accessed in polling mode. If two or more master addresses are configured, when the first request fails and the retry conditions are met, an address other than the one involved in the first request is used to retry.</p> <p><b>Range:</b> The format of a single source address is <b>https://xxx.yyy.zzz</b> or <b>http://xxx.yyy.zzz</b>. The value is a string of 10 to 255 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
slave	No	Array	<p><b>Definition:</b> Slave source address. If the source is a bucket that can be accessed over HTTP network, the address is the bucket domain name. If the source is a private bucket provided by other cloud vendors, the address is a region domain name.</p> <p><b>Constraints:</b> A back-to-source request will retry a slave source address when master ones are not available. A maximum of five slave addresses can be configured.</p> <p><b>Range:</b> The format of a single source address is <b>https://xxx.yyy.zzz</b> or <b>http://xxx.yyy.zzz</b>. The value is a string of 10 to 255 characters.</p> <p><b>Default value:</b> None</p>

**Table 5-90** mirrorHTTPHeader parameters

Parameter	Mandatory (Yes/No)	Type	Description
passAll	No	Boolean	<p><b>Definition:</b> Whether to pass all HTTP headers to the source.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• <b>passAll</b> and <b>pass</b> are mutually exclusive.</li> <li>• The following HTTP header types do not support transparent transmission:               <ol style="list-style-type: none"> <li>1. Headers starting with the following prefixes:                   <ol style="list-style-type: none"> <li>a. x-obs-</li> <li>b. x-amz-</li> </ol> </li> <li>2. All standard HTTP headers, for example:                   <ol style="list-style-type: none"> <li>a. Content-Length</li> <li>b. Authorization</li> <li>c. Date</li> </ol> </li> </ol> </li> </ul> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• false: Do not transparently transmit all HTTP headers to the source.</li> <li>• true: All HTTP headers are transparently transmitted to the source.</li> </ul> <p><b>Default value:</b> false</p>
pass	No	Array	<p><b>Definition:</b> The list of HTTP headers to be transparently transmitted.</p> <p><b>Constraints:</b> Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p><b>Range:</b> A maximum of 10 HTTP headers can be displayed. The length of each HTTP header ranges from 1 to 63.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
remove	No	Array	<p><b>Definition:</b> List of HTTP headers that cannot be transparently transmitted.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The remove operation takes precedence over the <b>pass</b> and <b>passAll</b> operations.</li> <li>Only letters, digits, hyphens (-), and underscores (_) are allowed.</li> </ul> <p><b>Range:</b> A maximum of 10 HTTP headers can be displayed. The length of each HTTP header ranges from 1 to 63.</p> <p><b>Default value:</b> None</p>
set	No	Array	<p><b>Definition:</b> List of HTTP header values to be transparently transmitted.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The set operation has a higher priority than the <b>remove</b>, <b>pass</b>, and <b>passAll</b> operations.</li> <li>If a custom header contains the <b>Referer</b> header, <b>redirectWithoutReferer</b> must be set to <b>true</b>. Otherwise, there will be an overwriting.</li> </ul> <p><b>Range:</b> A maximum of 10 HTTP headers can be displayed in a set. Each HTTP header contains a key and a value. For details about keys and values, see <a href="#">Table 5-91</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-91** set parameters

Parameter	Mandatory (Yes/No)	Type	Description
key	No	String	<p><b>Definition:</b> Keyword of the HTTP header that needs to be transparently transmitted.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• Each key is unique.</li> <li>• Only letters, digits, hyphens (-), and underscores (_) are allowed.</li> </ul> <p><b>Range:</b> The value is a string of 1 to 63 characters.</p> <p><b>Default value:</b> None</p>
value	No	String	<p><b>Definition:</b> Value of the HTTP header that needs to be transparently transmitted.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value is a string of 1 to 2048 characters.</p> <p><b>Default value:</b> None</p>

## Response Syntax

```
HTTP/1.1 status
Server: OBS
Date: date
Content-Length: length
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.



## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#) and [Table 6-3](#).

## Sample Request

```
PUT /?mirrorBackToSource HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Authorization: OBS H4IPJX0TQHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=
Content-Type: application/json
Content-Length: 1049
Date: Tue, 21 Jul 2020 15:38:30 GMT

{
  "rules": [{
    "id": "abc123",
    "condition": {
      "httpErrorCodeReturnedEquals": "404",
      "objectKeyPrefixEquals": "video/"
    },
    "redirect": {
      "agency": "agency",
      "publicSource": {
        "sourceEndpoint": {
          "master": ["http://bucket1.xxx.yyy.com", "https://bucket2.xxx.yyy.com"],
          "slave": ["http://bucket3.xxx.yyy.com", "https://bucket4.xxx.yyy.com"]
        }
      },
      "retryConditions": ["4XX", "5XX"],
      "passQueryString": true,
      "mirrorFollowRedirect": true,
      "redirectWithoutReferer": true,
      "mirrorAllowHttpMethod": ["HEAD"],
      "mirrorHttpHeader": {
        "passAll": false,
        "pass": ["content-encoding"],
        "remove": ["content-type"],
        "set": [{
          "key": "helloworld",
          "value": "2222"
        }]
      },
      "replaceKeyWith": "prefix${key}suffix",
      "replaceKeyPrefixWith": "picture/",
      "vpcEndpointURN": "001"
    }
  ]
}
```

## Sample Response

```
HTTP/1.1 201 Created
Server: OBS
Date: Tue, 07 Jul 2020 07:29:13 GMT
Content-Length: 0
```

## 5.2.38 Obtaining Back-to-Source-by-Mirroring Rules

### Functions

This operation queries the back-to-source rules of a specified bucket. If such a rule exists, a success message is returned with status code 200.

## Request Syntax

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

## 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
Date: date
Content-Type: type
Content-Length: length

policy json body
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#) and [Table 6-3](#).

## Sample Request

```
GET /?mirrorBackToSource HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=
Date: Tue, 21 Jul 2020 22:28:46 GMT
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
Date: Tue, 07 Jul 2020 07:28:46 GMT
Content-Type: application/json
Content-Length: 1063
{
  "rules": [{
    "id": "abc123",
    "condition": {
```

```
    "httpErrorReturnedEquals": 404,
    "objectKeyPrefixEquals": "video/"
  },
  "redirect": {
    "agency": "agency",
    "publicSource": {
      "sourceEndpoint": {
        "master": ["http://bucket1.xxx.yyy.com", "https://bucket2.xxx.yyy.com"],
        "slave": ["http://bucket3.xxx.yyy.com", "https://bucket4.xxx.yyy.com"]
      }
    }
  },
  "retryConditions": ["4XX", "5XX"],
  "passQueryString": true,
  "mirrorFollowRedirect": true,
  "redirectWithoutReferer": true,
  "mirrorHttpHeader": {
    "passAll": false,
    "pass": ["content-encoding"],
    "remove": ["content-type"],
    "set": [{
      "key": "helloworld",
      "value": "2222"
    }]
  }
},
"replaceKeyWith": "prefix${key}suffix",
"replaceKeyPrefixWith": "picture/",
"vpcEndpointURN": "001"
}
}
```

## 5.2.39 Deleting Back-to-Source-by-Mirroring Rules

### Functions

This operation deletes back-to-source-by-mirroring rules for a specified bucket. When the deletion succeeds, a success message is returned with the status code of 204.

### Request Syntax

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

### 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  
Date: date
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#) and [Table 6-3](#).

## Sample Request

```
DELETE /?mirrorBackToSource HTTP/1.1  
Host: bucketname.obs.region.myhuaweicloud.com  
Authorization: OBS H4IPJX0TQTHHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=  
Date: Tue, 21 Jul 2020 17:28:46 GMT
```

## Sample Response

```
HTTP/1.1 204 No Content  
Server: OBS  
Date: Tue, 07 Jul 2020 07:38:30 GMT
```

## 5.2.40 Setting an Online Decompression Policy

### Functions

Sets the policy for decompressing ZIP files in a bucket. The API is idempotent. If there is already the same rule for the bucket, a success message is returned with status code 200, or status code 201 is returned.

### Request Syntax

```
PUT /?obscompresspolicy HTTP/1.1  
Host: bucketname.obs.region.myhuaweicloud.com  
Authorization: authorization  
Content-Type: application/json  
Content-Length: length  
Date: date  
  
policy json body
```

### Request Parameters

This request contains no message parameters.

### Request Headers

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

**Table 5-92** Request elements

Parameter	Description	Mandatory
rules	<p>Number of rules.</p> <p>Type: container</p> <p>Range: [1, 10]</p> <p><b>NOTE</b> For the same bucket, prefixes of different rules cannot contain each other or have duplicate beginning characters. The same agency is recommended.</p>	Yes

**Table 5-93** Rule parameters

Parameter	Description	Mandatory
id	<p>Name of a decompression policy. It is the unique ID of the decompression policy configured for the current bucket.</p> <p>Type: string</p> <p>The value can contain 1 to 256 characters, matching the regular expression of <code>^[a-zA-Z0-9_-]{1, 256}\$</code>. It consists of only uppercase letters, lowercase letters, digits, underscores (_), and hyphens (-), for example, <code>event_0001</code>.</p>	Yes
project	<p>Project ID.</p> <p>Type: string</p>	Yes
agency	<p>Agency name. With an agency, the customer can grant OBS the permissions to query whether a specified object exists in the bucket and upload objects to the bucket.</p> <p>Type: string</p>	Yes
events	<p>Trigger event type.</p> <p>Type: string</p> <p>Supported event types:</p> <ul style="list-style-type: none"> <li>["ObjectCreated:*"]</li> <li>["ObjectCreated:Put"]</li> <li>["ObjectCreated:Post"]</li> <li>["ObjectCreated:Copy"]</li> <li>["ObjectCreated:CompleteMultipartUpload"]</li> </ul>	Yes

Parameter	Description	Mandatory
prefix	Rule prefix. Type: string Range: [0, 1023]	No
suffix	Rule suffix. Type: string Fixed value: <b>.zip</b>	Yes
overwrite	Method of processing the unzipped file if it has the same name as an existing file. Type: integer <b>0</b> : Skip without overwriting; <b>1</b> : Do not overwrite (rename the file with the CRC32 value); <b>2</b> : Overwrite the existing file.	Yes
decompresspath	Path for storing decompressed files. If the value is not empty, it must end with a slash (/) but cannot start with a slash (/). Type: string Range: [0, 800]	No
policytype	Type of the decompression policy. Type: string Fixed value: decompress	Yes

#### NOTE

The total length of the decompression policy name, decompression path, and IAM agency name cannot exceed 800 characters.

## Response Syntax

```
HTTP/1.1 status  
Server: OBS  
Date: date  
Content-Length: length
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#) and [Table 6-3](#).

## Sample Request

```
PUT /?obscompresspolicy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=
Content-Type: application/json
Content-Length: 497
Date: Tue, 21 Jul 2020 15:38:30 GMT

{
  "rules": [{
    "id": "ruleid",
    "project": "your project id",
    "agency": "testagency",
    "events": ["ObjectCreated:*"],
    "prefix": "decompress",
    "suffix": ".zip",
    "overwrite": 0,
    "decompresspath": "after-decompress/",
    "policytype": "decompress"
  }]
}
```

## Sample Response

```
HTTP/1.1 201 Created
Server: OBS
Date: Tue, 07 Jul 2020 07:29:13 GMT
Content-Length: 0
```

## 5.2.41 Obtaining an Online Decompression Policy

### Functions

Queries the decompression policy of ZIP files in a specified bucket. If such a rule exists, a success message is returned with status code 200.

### Request Syntax

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

### 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
Date: date
Content-Type: type
Content-Length: length

policy json body
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#) and [Table 6-3](#).

## Sample Request

```
GET /?obscompresspolicy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Authorization: OBS H4lPjX0TQTHtHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=
Date: Tue, 21 Jul 2020 22:28:46 GMT
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
Date: Tue, 07 Jul 2020 07:28:46 GMT
Content-Type: application/json
Content-Length: 497

{
  "rules": [{
    "id": "ruleid",
    "project": "your project id",
    "agency": "testagency",
    "events": ["ObjectCreated:*"],
    "prefix": "decompress",
    "suffix": ".zip",
    "overwrite": 0,
    "decompresspath": "after-decompress/"
  }]
}
```

## 5.2.42 Deleting an Online Decompression Policy

### Functions

Deletes the ZIP file decompression policy for a bucket. When the deletion succeeds, a success message is returned with the status code of 204.

### Request Syntax

```
DELETE /?obscompresspolicy HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
```



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

## 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  
Date: date
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#) and [Table 6-3](#).

## Sample Request

```
DELETE /?obscompresspolicy HTTP/1.1  
Host: bucketname.obs.region.myhuaweicloud.com  
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0Mwsl2Zpo=  
Date: Tue, 21 Jul 2020 17:28:46 GMT
```

## Sample Response

```
HTTP/1.1 204 No Content  
Server: OBS  
Date: Tue, 07 Jul 2020 07:38:30 GMT
```

## 5.2.43 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.com
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
  <ObjectLockEnabled>Enabled</ObjectLockEnabled>
  <Rule>
    <DefaultRetention>
      <Days>integer</Days>
      <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 5-94](#).

## Request Elements

**Table 5-94** Request elements

Parameter	Mandatory (Yes/No)	Type	Description
ObjectLockConfiguration	Yes	Container	<p><b>Definition:</b> Container for bucket-level WORM configurations. ObjectLockConfiguration is the parent node of ObjectLockEnabled and Rule.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-95</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-95** Parameters in ObjectLockConfiguration

Parameter	Mandatory (Yes/No)	Type	Description
ObjectLockEnabled	No	String	<p><b>Definition:</b> Bucket-level WORM status.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> Enabled: Bucket-level WORM is enabled.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
Rule	Yes when ObjectLockEnabled is set to Enabled. If this parameter is not specified, the default bucket-level WORM policy will be cleared.	Container	<p><b>Definition:</b> Rule container of a bucket-level WORM policy. Rule is the parent node of DefaultRetention.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-96</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-96** Rule parameter description

Parameter	Mandatory (Yes/No)	Type	Description
DefaultRetention	Yes if Rule is specified	Container	<p><b>Definition:</b> Container of a bucket-level WORM policy. DefaultRetention is the parent node of Mode, Days, and Years.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-97</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-97** DefaultRetention parameters

Parameter	Mandatory (Yes/No)	Type	Description
Mode	Yes if Default Retention is specified	String	<b>Definition:</b> WORM retention policy of a bucket. <b>Constraints:</b> None <b>Range:</b> COMPLIANCE: compliance mode <b>Default value:</b> None
Days	If the Default Retention container is included, you must specify either <b>Days</b> or <b>Years</b> , but you cannot specify both at the same time.	Integer	<b>Definition:</b> Number of retention days. <b>Constraints:</b> Only one of <b>Days</b> and <b>Years</b> can be set to a value other than 0. The value must be within the allowed range. <b>Range:</b> 1 to 36500 <b>Default value:</b> None

Parameter	Mandatory (Yes/No)	Type	Description
Years	If the Default Retention container is included, you must specify either <b>Years</b> or <b>Days</b> , but you cannot specify both at the same time.	Integer	<p><b>Definition:</b> Default retention years.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>One year is considered as 365 days, regardless of the leap year.</li> <li>Only one of <b>Days</b> and <b>Years</b> can be set to a value other than 0. The value must be within the allowed range.</li> </ul> <p><b>Range:</b> 1 to 100</p> <p><b>Default value:</b> None</p>

## Response Syntax

HTTP/1.1 status\_code  
Date: date  
Content-Length: length

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

[Table 5-98](#) describes possible special errors in this request.

**Table 5-98** Error Responses

Error Code	Description	HTTP Status Code
InvalidRequest	The object lock is disabled for the bucket.	400

Error Code	Description	HTTP Status Code
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.com
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4lPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Type: application/xml
Content-Length: 157
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.com/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.

```
PUT /?object-lock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4lPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Type: application/xml
Content-Length: 157
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.com/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
```

## 5.2.44 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.com
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
Content-Length: length

<?xml version="1.0" encoding="UTF-8"?>
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.com/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 3-29](#).



## Response Elements

[Table 5-99](#) describes the elements of the default bucket-level WORM policy in the response.

**Table 5-99** Elements of the default bucket-level WORM policy

Parameter	Type	Description
ObjectLockConfiguration	Container	<p><b>Definition:</b> Container for bucket-level WORM configurations. ObjectLockConfiguration is the parent node of ObjectLockEnabled and Rule.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-100</a>.</p>

**Table 5-100** ObjectLockConfiguration parameters

Parameter	Type	Description
ObjectLockEnabled	String	<p><b>Definition:</b> Bucket-level WORM status.</p> <p><b>Range:</b> Enabled: Bucket-level WORM is enabled.</p>
Rule	Container	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-101</a>.</p>

**Table 5-101** Rule parameter description

Parameter	Type	Description
DefaultRetention	Container	<p><b>Definition:</b> Container of the bucket-level default WORM policy. DefaultRetention is the parent node of Mode, Days, and Years.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-102</a>.</p>

**Table 5-102** DefaultRetention parameters

Parameter	Type	Description
Mode	String	<b>Definition:</b> Default retention policy. <b>Range:</b> COMPLIANCE: compliance mode
Days	Integer	<b>Definition:</b> Default retention days. <b>Range:</b> 1 to 36500
Years	Integer	<b>Definition:</b> Default retention years. <b>Range:</b> 1 to 100

## Error Responses

[Table 5-103](#) describes possible special errors in this request.

**Table 5-103** 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](#).

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvc1nTGxpMXTE6ynw=
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"?>
<ObjectLockConfiguration xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <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.com
Accept: */*
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 0
```

## Sample Response 2

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAAABAAAQAAEAABCT9W2tcvLmMJ+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.com/doc/2015-06-30/">
  <ObjectLockEnabled>Enabled</ObjectLockEnabled>
  <Rule>
    <DefaultRetention>
      <Mode>COMPLIANCE</Mode>
      <Days>10</Days>
      <Years>0</Years>
    </DefaultRetention>
  </Rule>
</ObjectLockConfiguration>
```

## 5.2.45 Configuring Public Access Block for a Bucket

### Functions

This API creates or modifies the public access block configuration of an OBS bucket by enabling or disabling the feature.

To perform this operation, you must have the **PutBucketPublicAccessBlock** permission. The bucket owner can perform this operation by default and can grant this permission to others by using a bucket policy or a user policy.

---

**⚠ CAUTION**

If public access block is enabled, existing public access permissions are ignored and new public access permissions cannot be configured. If public access block is disabled, existing public access permissions continue to apply and new public access permissions can be configured.

---

## Request Syntax

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

<?xml version="1.0" encoding="UTF-8"?>
<PublicAccessBlockConfiguration>
  <BlockPublicAcls>boolean</BlockPublicAcls>
  <IgnorePublicAcls>boolean</IgnorePublicAcls>
  <BlockPublicPolicy>boolean</BlockPublicPolicy>
  <RestrictPublicBuckets>boolean</RestrictPublicBuckets>
</PublicAccessBlockConfiguration>
```

## Request Parameters

This request contains no parameters.

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

This request can use additional elements. For details about additional elements, see [Table 5-104](#).

**Table 5-104** Request Elements

Element	Type	Mandatory (Yes/No)	Description
PublicAccessBlockConfiguration	XML	Yes	<b>Definition:</b> Root node of the <b>PublicAccessBlockConfiguration</b> parameter. <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None

Element	Type	Mandatory (Yes/No)	Description
BlockPublicAccess	Boolean	No	<p><b>Definition:</b> Whether to prohibit specifying the ACL as public access to a bucket or objects in the bucket. If the parameter is set to <b>true</b>, the following applies:</p> <ul style="list-style-type: none"> <li>• If you specify an ACL as public access when uploading an object, the object fails to be uploaded and the error "403 Access Denied" is returned.</li> <li>• If you specify an ACL as public access when modifying a bucket ACL or an object ACL, the ACL fails to be modified and the error "403 Access Denied" is returned.</li> </ul> <p><b>Constraints:</b> This configuration does not affect existing buckets or objects.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> This feature is enabled.</li> <li>• <b>false:</b> This feature is disabled.</li> </ul> <p><b>Default value:</b> false</p>
BlockPublicPolicy	Boolean	No	<p><b>Definition:</b> Whether to prohibit the configuration of a bucket policy that allows public access to a bucket. If this parameter is set to <b>true</b>, such a bucket policy will fail to be configured and the error "403 Access Denied" will be returned.</p> <p><b>Constraints:</b> This configuration does not affect existing buckets.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> This feature is enabled.</li> <li>• <b>false:</b> This feature is disabled.</li> </ul> <p><b>Default value:</b> false</p>

Element	Type	Mandatory (Yes/No)	Description
IgnorePublicAcls	Boolean	No	<p><b>Definition:</b> Whether to ignore the existing ACL that allows public access to the bucket or objects in the bucket. If this parameter is set to <b>true</b>, the public access ACL of the bucket or objects in the bucket becomes invalid.</p> <p><b>Constraints:</b> This configuration does not affect existing ACLs or prohibit the configuration of new public access ACLs.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> This feature is enabled.</li> <li>• <b>false:</b> This feature is disabled.</li> </ul> <p><b>Default value:</b> false</p>
RestrictPublicBuckets	Boolean	No	<p><b>Definition:</b> Whether to restrict the existing public bucket policy. If this parameter is set to <b>true</b>, only the cloud service and bucket owner accounts are allowed to access the bucket.</p> <p><b>Constraints:</b> This configuration does not affect existing bucket policies or prohibit the configuration of new public bucket policies.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> This feature is enabled.</li> <li>• <b>false:</b> This feature is disabled.</li> </ul> <p><b>Default value:</b> false</p>

## Response Syntax

HTTP/1.1 status\_code  
Date: date

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

[Table 5-105](#) describes possible special errors in this request.

**Table 5-105** Error Responses

Error	Description	HTTP Status Code
InvalidRequest	<b>BlockPublicAcls</b> , <b>BlockPublicPolicy</b> , <b>IgnorePublicAcls</b> , and <b>RestrictPublicBuckets</b> are not specified. At least one of them must be specified.	400
MethodNotAllowed	The involved method is not allowed (the corresponding feature is disabled).	405

For other errors, see [Table 6-2](#).

### Sample Request: Setting All Four Parameters to true

```
put /?publicAccessBlock HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Sat, 16 Nov 2024 08:59:07 GMT
Authorization: OBS H4IPJX0TQHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 288

<?xml version="1.0" encoding="UTF-8"?>
<PublicAccessBlockConfiguration>
  <BlockPublicAcls>true</BlockPublicAcls>
  <IgnorePublicAcls>true</IgnorePublicAcls>
  <BlockPublicPolicy>true</BlockPublicPolicy>
  <RestrictPublicBuckets>true</RestrictPublicBuckets>
</PublicAccessBlockConfiguration>
```

### Sample Response: Setting All Four Parameters to true

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: Sat, 16 Nov 2024 08:59:08 GMT
Content-Length: 0
```

### Sample Request: Setting Only BlockPublicAcls to true

```
PUT /?publicAccessBlock HTTP/1.1
User-Agent: curl/7.29.0
```

```
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Sat, 16 Nov 2024 08:59:07 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 147

<?xml version="1.0" encoding="UTF-8"?>
<PublicAccessBlockConfiguration>
  <BlockPublicAcls>true</BlockPublicAcls>
</PublicAccessBlockConfiguration>
```

### Sample Response: Setting Only BlockPublicAcls to true

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: Sat, 16 Nov 2024 08:59:08 GMT
Content-Length: 0
```

## 5.2.46 Obtaining the Public Access Block Configuration of a Bucket

### Functions

This API returns the public access block configuration of an OBS bucket.

To perform this operation, you must have the **GetBucketPublicAccessBlock** permission. The bucket owner can perform this operation by default and can grant this permission to others by using a bucket policy or a user policy.

### Request Syntax

```
GET /?publicAccessBlock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
```

### Request Parameters

This request contains no parameters.

### Request Headers

This request uses common headers. For details, see [Table 3-3](#).

### Request Elements

The request contains no elements.

### Response Syntax

```
HTTP/1.1 status_code
Date: date
x-obs-request-id: 000001934E7A99E2530672D3A3903140
x-obs-id-2: 36AAAQAAEAABAAAQAAEAABAAAQAAEAABAAAaI=AAAAAAAAAAAAAAAAAAAAAAAAAAAA
Content-Length: length
```



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PublicAccessBlockConfiguration xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <BlockPublicAcls>boolean</BlockPublicAcls>
  <IgnorePublicAcls>boolean</IgnorePublicAcls>
  <BlockPublicPolicy>boolean</BlockPublicPolicy>
  <RestrictPublicBuckets>boolean</RestrictPublicBuckets>
</PublicAccessBlockConfiguration>
```

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

The response contains elements specifying the public access block configuration of an OBS bucket. [Table 5-106](#) describes these elements.

**Table 5-106** Response Elements

Element	Type	Description
PublicAccessBlockConfiguration	XML	<b>Definition:</b> The public access block configuration of a bucket.
BlockPublicAcls	Boolean	<b>Definition:</b> Whether to prohibit specifying the ACL as public access to a bucket or objects in the bucket. If the parameter is set to <b>true</b> , the following applies: <ul style="list-style-type: none"> <li>If you specify an ACL as public access when uploading an object, the object fails to be uploaded and the error "403 Access Denied" is returned.</li> <li>If you specify an ACL as public access when modifying a bucket ACL or an object ACL, the ACL fails to be modified and the error "403 Access Denied" is returned.</li> </ul> <b>Range:</b> <ul style="list-style-type: none"> <li><b>true:</b> This feature is enabled.</li> <li><b>false:</b> This feature is disabled.</li> </ul>
IgnorePublicAcls	Boolean	<b>Definition:</b> Whether to ignore the existing ACL that allows public access to the bucket or objects in the bucket. If this parameter is set to <b>true</b> , the public access ACL of the bucket or objects in the bucket becomes invalid. <b>Range:</b> <ul style="list-style-type: none"> <li><b>true:</b> This feature is enabled.</li> <li><b>false:</b> This feature is disabled.</li> </ul>

Element	Type	Description
BlockPublic Policy	Boolean	<b>Definition:</b> Whether to prohibit the configuration of a bucket policy that allows public access to a bucket. If this parameter is set to <b>true</b> , such a bucket policy will fail to be configured and the error "403 Access Denied" will be returned. <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: This feature is enabled.</li><li>• <b>false</b>: This feature is disabled.</li></ul>
RestrictPublicBuckets	Boolean	<b>Definition:</b> Whether to restrict the existing public bucket policy. If this parameter is set to <b>true</b> and the existing bucket policy allows public access, only the cloud service and bucket owner accounts are allowed to access the bucket. <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: This feature is enabled.</li><li>• <b>false</b>: This feature is disabled.</li></ul>

## Error Responses

[Table 5-107](#) describes possible special errors in this request.

**Table 5-107** Error Responses

Error	Description	HTTP Status Code
MethodNotAllowed	The involved method is not allowed (the corresponding feature is disabled).	405

For other errors, see [Table 6-2](#).

## Sample Request

```
GET /?publicAccessBlock HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Sat, 16 Nov 2024 08:59:07 GMT
Authorization: OBS H4IPJX0TQHTHEBQQCEC:75/Y4Ng1izvc1nTGxpMXTE6ynw=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
```

```
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: Sat, 16 Nov 2024 08:59:08 GMT
Content-Length: 348

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PublicAccessBlockConfiguration xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <BlockPublicAcls>false</BlockPublicAcls>
  <IgnorePublicAcls>false</IgnorePublicAcls>
  <BlockPublicPolicy>false</BlockPublicPolicy>
  <RestrictPublicBuckets>false</RestrictPublicBuckets>
</PublicAccessBlockConfiguration>
```

## 5.2.47 Deleting the Public Access Block Configuration of a Bucket

### Functions

This API deletes the public access block configuration of an OBS bucket.

To perform this operation, you must have the **DeleteBucketPublicAccessBlock** permission. The bucket owner can perform this operation by default and can grant this permission to others by using a bucket policy or a user policy.

### Request Syntax

```
DELETE /?publicAccessBlock HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
```

### Request Parameters

This request contains no parameters.

### Request Headers

This request uses common headers. For details, see [Table 3-3](#).

### Request Elements

The request contains no elements.

### Response Syntax

```
HTTP/1.1 status_code
Date: date
x-obs-request-id: 000001934E955019530676A1BE382FF6
x-obs-id-2: 36AAAQAAEAABSAAGAAEAABAAAQAAEAABAAAaI=AAAAAAAAAAAAAAAAAAAAAAAAAAAA
```

### Response Headers

This response uses common headers. For details, see [Table 3-29](#).

### Response Elements

This response contains no elements.

## Error Responses

[Table 5-108](#) describes possible special errors in this request.

**Table 5-108** Error Responses

Error	Description	HTTP Status Code
MethodNotAllowed	The involved method is not allowed (the corresponding feature is disabled).	405

For other errors, see [Table 6-2](#).

## Sample Request

```
DELETE /?publicAccessBlock HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Sat, 16 Nov 2024 08:59:07 GMT
Authorization: OBS H4lPJX0TQHTHEBQQCEC:75/Y4Ng1izvc1nTGxpMXTE6ynw=
```

## Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: Sat, 16 Nov 2024 08:59:08 GMT
```

## 5.2.48 Obtaining the Public Access Status of a Bucket

### Functions

This API obtains the public access status of an OBS bucket.

To perform this operation, you must have the **GetBucketPublicStatus** permission. The bucket owner can perform this operation by default and can grant this permission to others by using a bucket policy or a user policy.

### Request Syntax

```
GET /?bucketStatus HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
```

### Request Parameters

This request contains no parameters.

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

The request contains no elements.

## Response Syntax

```
HTTP/1.1 status_code
Date: date
x-obs-request-id: 000001934E7A99E2530672D3A3903140
x-obs-id-2: 36AAAQAAEAABAAAQAAEAABAAAQAAEAABAAAal=AAAAAAAAAAAAAAAAAAAAAAAAAAAA
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<BucketStatus xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <IsPublic>boolean</IsPublic>
</BucketStatus>
```

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains elements to specify the public access status of the bucket. [Table 5-109](#) describes the elements.

**Table 5-109** Response Elements

Element	Type	Description
BucketStatus	XML	<b>Definition:</b> Public status of a bucket. It is the parent node of IsPublic.
IsPublic	Boolean	<b>Definition:</b> Public access status of the bucket. <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> public</li><li>• <b>false:</b> non-public</li></ul>

## Error Responses

[Table 5-110](#) describes possible special errors in this request.

**Table 5-110** Error Responses

Error	Description	HTTP Status Code
MethodNotAllowed	The involved method is not allowed (the corresponding feature is disabled).	405

For other errors, see [Table 6-2](#).

## Sample Request

```
GET /?bucketStatus HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Sat, 16 Nov 2024 08:59:07 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: Sat, 16 Nov 2024 08:59:08 GMT
Content-Length: 160

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<BucketStatus xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <IsPublic>false</IsPublic>
</BucketStatus>
```

## 5.2.49 Obtaining the Public Access Status of a Bucket Policy

### Functions

This API obtains the public access status of an OBS bucket policy.

To perform this operation, you must have the **GetBucketPolicyPublicStatus** permission. The bucket owner can perform this operation by default and can grant this permission to others by using a bucket policy or a user policy.

### Request Syntax

```
GET /?policyStatus HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
```

### Request Parameters

This request contains no parameters.

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

The request contains no elements.

## Response Syntax

```
HTTP/1.1 status_code
Date: date
x-obs-request-id: 000001934E7A99E2530672D3A3903140
x-obs-id-2: 36AAAQAAEAABAAAQAAEAABAAAQAAEAABAAAal=AAAAAAAAAAAAAAAAAAAAAAAAAAAA
Content-Length: length

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PolicyStatus xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <IsPublic>boolean</IsPublic>
</PolicyStatus>
```

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains elements to specify the public access status of the bucket policy. [Table 5-111](#) describes the elements.

**Table 5-111** Response Elements

Element	Type	Description
PolicyStatus	XML	<b>Definition:</b> Public status of a bucket policy. It is the parent node of IsPublic.
IsPublic	Boolean	<b>Definition:</b> Public access status of the bucket policy. <b>Range:</b> <ul style="list-style-type: none"> <li>• <b>true:</b> public</li> <li>• <b>false:</b> non-public</li> </ul>

## Error Responses

[Table 5-112](#) describes possible special errors in this request.

**Table 5-112** Error Responses

Error	Description	HTTP Status Code
NoSuchBucketPolicy	The bucket policy does not exist.	404
MethodNotAllowed	The involved method is not allowed (the corresponding feature is disabled).	405

For other errors, see [Table 6-2](#).

## Sample Request

```
GET /?policyStatus HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Sat, 16 Nov 2024 08:59:07 GMT
Authorization: OBS H4IPJX0TQHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: Sat, 16 Nov 2024 08:59:08 GMT
Content-Length: 159

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<PolicyStatus xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <IsPublic>>false</IsPublic>
</NoSuchBucketPolicy>
```

## 5.3 Static Website Hosting

### 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.com
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 5-113](#).

**Table 5-113** Elements for redirecting all website requests

Element	Description	Mandatory
WebsiteConfiguration	Root node configured on the website Type: container Parent: none	Yes

Element	Description	Mandatory
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 5-114](#).

**Table 5-114** Elements for adding rules that redirect requests

Element	Description	Mandatory
WebsiteConfiguration	Root element for the website configuration Type: container Parent: none	Yes
IndexDocument	<b>Suff</b> element Type: container Parent: WebsiteConfiguration	Yes

Element	Description	Mandatory
Suffix	<p><i>Suffix</i> that is appended to a request initiated for a directory on the website endpoint. For example, if the <i>suffix</i> is <b>index.html</b> and you request for <b>samplebucket/images/</b>, the data that is returned will be for the object with the key name <b>images/index.html</b> in the <b>samplebucket</b> bucket. <i>Suffix</i> cannot be empty or contain slashes (/).</p> <p>Type: string Parent: IndexDocument</p>	Yes
ErrorDocument	<p><i>Key</i> element</p> <p>Type: container Parent: WebsiteConfiguration</p>	No
Key	<p>Object key that is used when a 4XX error occurs. This element identifies the page that is returned when a 4XX error occurs.</p> <p>Type: string Parent: ErrorDocument Condition: Required when <b>ErrorDocument</b> is specified.</p>	No
RoutingRules	<p><b>Routing</b> element</p> <p>Type: container Parent: WebsiteConfiguration</p>	No
RoutingRule	<p>Element of a redirection rule. A redirection rule contains a <b>Condition</b> and a <b>Redirect</b>. When the <b>Condition</b> is matched, <b>Redirect</b> takes effect.</p> <p>Type: container Parent: RoutingRules At least the <i>RoutingRule</i> element is required.</p>	Yes
Condition	<p>Element for describing a condition that must be met for the specified redirection to apply.</p> <p>Type: container Parent: RoutingRule</p>	No

Element	Description	Mandatory
KeyPrefixEquals	<p>Object key name prefix when the redirection is applied.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>To redirect the request for object <b>ExamplePage.html</b>, the <b>KeyPrefixEquals</b> is set to <b>ExamplePage.html</b>.</li> </ul> <p>Type: string</p> <p>Parent: Condition</p> <p>Condition: Required when the ancestor element <b>Condition</b> is specified and sibling <b>HttpErrorCodeReturnedEquals</b> is not specified. If two conditions are specified, both conditions must be true for the <b>Redirect</b> to be applied.</p>	No
HttpErrorCodeReturnedEquals	<p>HTTP error code returned after the <b>Redirect</b> has taken effect. The specified <b>Redirect</b> is applied only when the error code returned equals this value.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>If you want to redirect requests to <b>NotFound.html</b> when HTTP error code 404 is returned, set <b>HttpErrorCodeReturnedEquals</b> to 404 in <b>Condition</b>, and set <b>ReplaceKeyWith</b> to <b>NotFound.html</b> in <b>Redirect</b>.</li> </ul> <p>Type: string</p> <p>Parent: Condition</p> <p>Condition: Required when ancestor element <b>Condition</b> is specified and sibling <b>KeyPrefixEquals</b> is not specified. If multiple conditions are specified, the <b>Redirect</b> takes effect only after all conditions are met.</p>	No

Element	Description	Mandatory
Redirect	<p>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.</p> <p>Type: container Parent: RoutingRule</p>	Yes
Protocol	<p>Protocol used in the redirection request</p> <p>Type: string Parent: Redirect Value options: <b>http, https</b> Condition: Not required if one of the siblings is present.</p>	No
HostName	<p>Host name used in the redirection request.</p> <p>Type: string Parent: Redirect Condition: Not required if one of the siblings is present.</p>	No
ReplaceKeyPrefixWith	<p>The object name prefix used in the redirection request. OBS replaces the value of <b>KeyPrefixEquals</b> with the value you specified here for <b>ReplaceKeyPrefixWith</b>.</p> <p>Example: To redirect all requests for <b>docs</b> (objects in the <b>docs</b> directory) to <b>documents</b> (objects in the <b>documents</b> directory), set <b>KeyPrefixEquals</b> to <b>docs</b> under <b>Condition</b> and <b>ReplaceKeyPrefixWith</b> to <b>documents</b> under <b>Redirect</b>. This way, requests for object <b>docs/a.html</b> will be redirected to <b>documents/a.html</b>.</p> <p>Type: string Parent: Redirect Condition: Not required if one of the siblings is present. Can be present only if ReplaceKeyWith is not provided.</p>	No

Element	Description	Mandatory
ReplaceKeyWith	<p>The object name used in the redirection request. OBS replaces the entire object name in the request with the value you specified here for <b>ReplaceKeyWith</b>.</p> <p>Example:</p> <p>To redirect requests for all objects in the <b>docs</b> directory to <b>documents/error.html</b>, set <b>KeyPrefixEquals</b> to <b>docs</b> under <b>Condition</b> and <b>ReplaceKeyWith</b> to <b>documents/error.html</b> under <b>Redirect</b>. This way, requests for both objects <b>docs/a.html</b> and <b>docs/b.html</b> will be redirected to <b>documents/error.html</b>.</p> <p>Type: string Parent: Redirect Condition: Not required if one of the siblings is present. Can be present only if <b>ReplaceKeyPrefixWith</b> is not provided.</p>	No
HttpRedirectCode	<p>HTTP status code returned after the redirection request</p> <p>Type: string Parent: Redirect Condition: Not required if one of the siblings is present.</p>	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 3-29](#).

## 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: 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:40:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:pUK7Yp0yebnq4P6gqzVjoS7whoM=
Content-Length: 194

<WebsiteConfiguration xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <RedirectAllRequestsTo>
    <HostName>www.huaweicloud.com</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/AoFUX971xx8s67V3cCQtXWk
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:iqSPeUBI66PwXDApxjRk6hlcN4=
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:iqSPeUBI66PwXDApxjRk6hlcN4=
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>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/zwgqIM0fMNpeFthi
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 H4lPJX0TQHTHEBQQCEC: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
```



## 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:iqSPeUBl66PwXDApxjRk6hlcN4=
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.com
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
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<WebsiteConfiguration xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
  <RedirectAllRequestsTo>
    <HostName>hostName</HostName>
  </RedirectAllRequestsTo>
</WebsiteConfiguration>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains elements the same as those used by the PutBucketWebsite request. For details, see [Request Elements](#).

## Error Responses

[Table 5-115](#) describes possible special errors in this request.

**Table 5-115** 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:41:54 GMT
Authorization: OBS H4IPJX0TQHTHEBQQCEC:Yxt1Ru+feHE0S94R7dcBp+hflnl=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
```

```
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.com/doc/2015-06-30/">

  <RedirectAllRequestsTo>
    <HostName>www.huaweicloud.com</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.com
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 3-29](#).

## 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.com
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: BF2600000164363786230E2001DC0807
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.

## Request Syntax

```
PUT /?cors HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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 5-116](#).

**Table 5-116** CORS request headers

Header	Type	Mandatory (Yes/No)	Description
Content-SHA256	String	Yes	<p><b>Definition:</b> 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</p> <p>Example: <b>ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyl=</b></p> <p><b>Default value:</b> None</p>

## Request Elements

In this request body, you must configure the CORS rules for a bucket in XML format. [Table 5-117](#) describes the specific configuration elements.

**Table 5-117** CORS configuration elements

Element	Type	Mandatory (Yes/No)	Description
CORSConfiguration	Container	Yes	<p><b>Definition:</b> Root node of CORSRules. Parent: none</p> <p><b>Constraints:</b> The maximum size is 64 KB.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
CORSRule	Container	Yes	<p><b>Definition:</b> CORS rules Parent: CORSConfiguration</p> <p><b>Constraints:</b> CORSConfiguration can contain a maximum of 100 rules.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
ID	String	No	<p><b>Definition:</b> The ID of a CORS rule. Parent: CORSRule</p> <p><b>Constraints:</b> The ID cannot be longer than 255 characters.</p> <p><b>Range:</b> A string of 1 to 255 characters.</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
AllowedMethod	String	Yes	<p><b>Definition:</b> The allowed HTTP methods (types of operations on buckets and objects) for a cross-origin request. Parent: CORSRule</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The following HTTP methods are supported:</p> <ul style="list-style-type: none"> <li>• GET</li> <li>• PUT</li> <li>• HEAD</li> <li>• POST</li> <li>• DELETE</li> </ul> <p><b>Default value:</b> None</p>
AllowedOrigin	String	Yes	<p><b>Definition:</b> The origin that is allowed to access the bucket. Parent: CORSRule</p> <p><b>Constraints:</b> Only English domain names are supported. Regular expressions are used to match. Each rule allows at most one asterisk (*). For example, <b>https://*.vbs.example.com</b>.</p> <p><b>Range:</b> The value must comply with the CORS protocol and contain 0 to 20480 characters.</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
AllowedHeader	String	No	<p><b>Definition:</b> What headers are allowed in a CORS request. If a CORS request contains the <b>Access-Control-Request-Headers</b> header, the headers listed in this header must match the headers in the <b>AllowedHeader</b> element so that the request can be considered valid. The matching is based on regular expressions.</p> <p>Parent: CORSRule</p> <p><b>Constraints:</b> At most one asterisk (*) is allowed. Spaces, ampersands (&amp;), colons (:), less-than signs (&lt;), and full-width characters are not allowed.</p> <p><b>Range:</b> The value must comply with the CORS protocol and contain 0 to 20480 characters.</p> <p><b>Default value:</b> None</p>
MaxAgeSeconds	Integer	No	<p><b>Definition:</b> How long the response can be cached on a client</p> <p>Parent: CORSRule</p> <p><b>Constraints:</b> Each CORS rule can contain at most one <b>MaxAgeSeconds</b>.</p> <p><b>Range:</b> An integer greater than or equal to 0, in seconds</p> <p><b>Default value:</b> 3000</p>



Element	Type	Mandatory (Yes/No)	Description
ExposeHeader	String	No	<p><b>Definition:</b> 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 <b>Content-Length</b> and <b>Content-Type</b>. If the browser needs to access other headers, you need to configure them in this parameter.</p> <p>Parent: CORSRule</p> <p><b>Constraints:</b> Spaces, asterisks (*), ampersands (&amp;), colons (:), less-than signs (&lt;), and full-width characters are not allowed.</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 03:51:52 GMT
```

```
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:lq7BGoqE9yyhdEwE6KojJ7ysVxU=  
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyl=  
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: 32AAAQAEEAABSAAGAAEAABAAAQAEEAABCSYi6wLC4bkrvuS9sqnlRjxK2a5Fe3ry  
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: HwVUAzsyD0rroMp/eldwQ==
```

```
<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: 32AAAQAEEAABSAAGAAEAABAAAQAEEAABCTPXg+yj9IXC9r6mgmWgfSfqQGvHM3rS  
x-obs-request-id: 0000018A3A14051AD2886D166EE13D98  
Server: OBS  
Content-Length: 0  
Date: WED, 01 Jul 2015 02:37:22 GMT
```

## 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.com
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.com/doc/2015-06-30/">
  <CORSRule>
    ...
  </CORSRule>
</CORSConfiguration>
```

### Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

### Response Elements

This response contains elements to detail the configuration. [Table 5-118](#) describes the elements.

**Table 5-118** CORS configuration elements

Element	Description
CORSConfiguration	Root node of <b>CORSRules</b> 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: <b>GET, PUT, HEAD, POST, DELETE</b> 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 <b>Access-Control-Request-Headers</b> of CORS requests. The value contains 0 to 20480 characters. If a request contains <b>Access-Control-Request-Headers</b> , 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 <b>MaxAgeSeconds</b> . Type: integer Parent: CORSRule

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 5-119](#) describes possible special errors in this request.

**Table 5-119** Special error

Error Code	Description	HTTP Status Code
NoSuchCORSConfigura-tion	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.com
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSpngwvC5TskcLGh7Fz5KRmCFIayuY8p
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:54:36 GMT
Content-Length: 825

<?xml version="1.0" encoding="utf-8"?>
<CORSConfiguration xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
  <CORSRule>
    <ID>783fc6652cf246c096ea836694f71855</ID>
    <AllowedMethod>POST</AllowedMethod>
    <AllowedMethod>GET</AllowedMethod>
    <AllowedMethod>HEAD</AllowedMethod>
    <AllowedMethod>PUT</AllowedMethod>
    <AllowedMethod>DELETE</AllowedMethod>

    <AllowedOrigin>obs.ap-southeast-1.myhuaweicloud.com</AllowedOrigin>
    <AllowedOrigin>obs.example.com</AllowedOrigin>
    <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>
```

## 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.com  
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 3-29](#).

### 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
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 03:56:41 GMT
Authorization: OBS H4lPJX0TQHTHEBQQCEC:mKUs/uIPb8BP0ZhvMd4wEy+Ebil=
```

## Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: BF26000001643639F290185BB27F793A
x-obs-id-2: 32AAAQAAEAABSAAGAAEAABAAAQAAEAABCSLWMRFJfckapW+ktT/+1AnAz7XINU0b
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.com
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 5-120](#).

**Table 5-120** 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: <b>GET, PUT, HEAD, POST, DELETE</b>	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 5-121](#).

**Table 5-121** 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



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: <b>GET, PUT, HEAD, POST, DELETE</b>
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 5-122](#) describes possible special errors in the request.

**Table 5-122** 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

Error Code	Description	HTTP Status Code
AccessForbidden	<p>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.</p> <p>When CORS and OPTIONS are configured for a bucket, origin, method, and headers do not match any rule.</p>	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.com
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIYimJvOyJncCLNm5y/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
    
```

## Request Syntax

```
OPTIONS /object HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Origin: origin
Access-Control-Request-Method: method
```

## Request Parameters

This request contains no message parameters.

## Request Headers

[Table 5-123](#) describes headers used by this request.

**Table 5-123** 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: <b>GET, PUT, HEAD, POST, DELETE</b>	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 5-124](#).

**Table 5-124** 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: <b>GET, PUT, HEAD, POST, DELETE</b>
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 5-125](#) describes possible special errors in the request.

**Table 5-125** 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

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.com
Accept: */*
Date: WED, 01 Jul 2015 04:02:19 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC: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

## 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](#).

## 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.com
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 5-126](#).

### 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.

**Table 5-126** Request headers

Header	Type	Mandatory (Yes/No)	Description
Content-MD5	String	No	<b>Definition:</b> Base64-encoded 128-bit MD5 digest of the message according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b> <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None
x-obs-acl	String	No	<b>Definition:</b> When creating an object, you can use this parameter to set a pre-defined ACL. <b>Constraints:</b> Pre-defined policies must be displayed in character strings. <b>Range:</b> <ul style="list-style-type: none"><li>• private</li><li>• public-read</li><li>• public-read-write</li></ul> For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a> . <b>Default value:</b> private



Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-grant-read: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> The value must be a valid ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>
x-obs-grant-read-acp	String	No	<p><b>Definition:</b> When creating an object, you can use this header to grant all users in a domain the permissions to obtain the object ACL.</p> <p>Example: <b>x-obs-grant-read-acp: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> The value must be a valid ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-write-acp	String	No	<p><b>Definition:</b> When creating an object, you can use this header to grant all users in a domain the permission to write the object ACL. Example: <b>x-obs-grant-write-acp: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> The value must be a valid ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>
x-obs-grant-full-control	String	No	<p><b>Definition:</b> 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: <b>x-obs-grant-full-control: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> The value must be a valid ID. For details, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-storage-class: STANDARD</b></p> <p><b>Constraints:</b> The value is case-sensitive.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> By default, the storage class of the bucket is inherited.</p>
x-obs-meta-*	String	No	<p><b>Definition:</b> When creating an object, you can use a header starting with <b>x-obs-meta-</b> 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 <a href="#">Managing Object Metadata</a>.</p> <p>Example: <b>x-obs-meta-test: test metadata</b></p> <p><b>Constraints:</b> Both metadata keys and their values must conform to US-ASCII standards.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-persistent-headers	String	No	<p><b>Definition:</b></p> <p>When creating an object, you can add the <b>x-obs-persistent-headers</b> header in an HTTP request to specify one or more user-defined response headers. User-defined response headers will be returned in the response header when you retrieve the object or query the object metadata.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• Response headers customized in this way cannot be prefixed with <b>x-obs-</b>. For example, you should use <b>key1</b> instead of <b>x-obs-key1</b>.</li> <li>• Standard HTTP headers, such as <b>host</b>, <b>content-md5</b>, <b>origin</b>, <b>range</b>, and <b>Content-Disposition</b>, cannot be specified as user-defined headers.</li> <li>• The total length of this header and the custom metadata cannot exceed 8 KB.</li> <li>• If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.</li> <li>• If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using <b>?UTF-8?B?&lt;(str)&gt;?=&lt;=</b>, but does not decode the value. For instance, value <b>key1:abbc</b> will be returned as <b>key1: =? UTF-8?B?abbc?=&lt;=</b>.</li> <li>• The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.</li> <li>• Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2)...</li> </ul> <p>Note: Items, such as <b>key1</b> and <b>key2</b>, are user-defined headers. If they contain non-ASCII or unrecognizable characters, they can be URL or Base64 encoded. The server processes these headers as strings, but does not decode them. Items, such as <i>value1</i> and <i>value2</i> are the values of the corresponding headers. <b>base64_encode</b> indicates that the value is encoded using Base64. A user-</p>

Header	Type	Mandatory (Yes/No)	Description
			<p>defined header and its Base64-encoded value are connected using a colon (:) to form a key-value pair. All key-value pairs are separated with a comma (,) and are placed in the <b>x-obs-persistent-headers</b> header. The server then decodes the uploaded value.</p> <p>Example: <b>x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWUy</b></p> <p>The returned header for downloading the object or obtaining the object metadata is <b>key1:value1</b> or <b>key2:value2</b> respectively.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-website-redirect-location	String	No	<p><b>Definition:</b></p> <p>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.</p> <p>In the following example, the request header sets the redirection to an object (<b>anotherPage.html</b>) in the same bucket:</p> <pre>x-obs-website-redirect-location:/ anotherPage.html</pre> <p>In the following example, the request header sets the object redirection to an external URL:</p> <pre>x-obs-website-redirect-location:http:// www.example.com/</pre> <p><b>Constraints:</b></p> <p>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	<p><b>Definition:</b> Indicates that SSE-KMS is used. Example: <b>x-obs-server-side-encryption: kms</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> kms, or AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	No	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The key used for encrypting an object. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> 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: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</li> </ul> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
success-action-redirect	String	No	<p><b>Definition:</b> The redirection address used when requests were successfully responded to.</p> <ul style="list-style-type: none"> <li>If the value is valid and the request is successful, OBS returns status code 303. <b>Location</b> contains <b>success_action_redirect</b> as well as the bucket name, object name, and object ETag.</li> <li>If this parameter value is invalid, OBS ignores this parameter. In such case, the <b>Location</b> header is the object address, and OBS returns the response code based on whether the operation succeeds or fails.</li> </ul> <p><b>Constraints:</b> The value must be a valid URL, for example, <b>http://domainname</b> or <b>https://domainname</b>.</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None</p>
x-obs-expires	Integer	No	<p><b>Definition:</b> 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.)</p> <p>You can configure this field when uploading an object or modify this field by using the metadata modification API after the object is uploaded.</p> <p>Example: <b>x-obs-expires:3</b></p> <p><b>Constraints:</b> 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.</p> <p><b>Range:</b> The value is an integer greater than 0.</p> <p><b>Default value:</b> None</p>



Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	<p><b>Definition:</b> Object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: <b>x-obs-tagging:TagA=A&amp;TagB&amp;TagC</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.</li> <li>• If there is no equal sign (=) in a configuration, the tag value is considered left blank.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-object-lock-mode	String	No, but required when <b>x-obs-object-lock-retain-until-date</b> is present	<p><b>Definition:</b> WORM mode applied to the object. Example: <b>x-obs-object-lock-mode:COMPLIANCE</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• Only COMPLIANCE (compliance mode) is supported.</li> <li>• This parameter must be used together with <b>x-obs-object-lock-retain-until-date</b>.</li> </ul> <p><b>Range:</b> COMPLIANCE</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> When the WORM policy of the object expires. Example: <b>x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The value must be a UTC time that complies with the ISO 8601 standard. Example: <b>2015-07-01T04:11:15Z</b></li> <li>This parameter must be used together with <b>x-obs-object-lock-mode</b>.</li> </ul> <p><b>Range:</b> The time must be later than the current time.</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-127](#) might also be needed.

**Table 5-127** Additional response headers

Header	Type	Description
x-obs-version-id	String	<p><b>Definition:</b> Version ID of the object. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server. Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>

Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> The MD5 value of the key used for encryption. Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>
x-obs-storage-class	String	<p><b>Definition:</b> Storage class of an object</p> <p><b>Constraints:</b> This header is returned when the storage class of an object is not Standard.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> None</p>

## 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: Uploading an Object

```
PUT /object01 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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: 32AAAWJAMAAABAAAQAAEAABAAAQAAEAABCTzu4Jp2lquWuXsjnLyPPIT3cfGhqPoY
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.com
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSReVRNuas0knl+Y96iXZA7BLUgj06Z
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.com
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]
```

## 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: GcVgfeOJHx8JZHThRqkPsbKdB583fYbr3RBbHT6mMrBstReVILBZbMAdLiBYy1l
Date: WED, 01 Jul 2015 04:17:12 GMT
x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAVURTRkha
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.com
Accept: */*
Date: WED, 01 Jul 2015 04:17:50 GMT
Authorization: OBS H4IPJX0TQHTHEBQQCEC: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: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCSEKhBpS4BB3dSMNqMtuNxQDD9XvOw5h
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.com
Accept: */*
Date: WED, 01 Jul 2015 04:17:12 GMT
x-obs-website-redirect-location: http://www.example.com/
Authorization: OBS H4IPJX0TQHTHEBQQCEC: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: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCtmxB5ufMj7/GzP8TFwTbp33u0xhn2Z
ETag: "1072e1b96b47d7ec859710068aa70d57"
Date: WED, 01 Jul 2015 04:17:12 GMT
x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAVURTRkha
Content-Length: 0
```

## Sample Request: Uploading an Object Using a Signed URL

```
PUT /object02?
AccessKeyId=H4IPJX0TQTHTHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrurzRNZxwS72CXeX
M%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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: DCD2FC9CAB7800001439A51DB2B2577
x-obs-id-2: 32AAAUJAIABAAQAEEAABAAQAEEAABCTmxB5ufMj/7/GzP8TFwTbp33u0xhn2Z
ETag: "1072e1b96b47d7ec859710068aa70d57"
Date: Fri, 27 Jul 2018 10:52:31 GMT
x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAVURTRkha
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.com
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: a39E0UgAIAABAAQAEEAABAAQAEEAABCTPOUJu5XINyU32fvKjM/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.com
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]
```

## 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: 32AAAWJAMAAABAAAQAAEAABAAAQAAEAABCTzu4Jp2lquWuXsjnLyPPi3cfGhqPoY
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



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.com
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"
```

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 5-128](#).

**Table 5-128** Request headers for obtaining CORS configuration

Header	Type	Mandatory (Yes/No)	Description
Origin	String	Yes	<p><b>Definition:</b> Where a cross-domain request is from (usually a domain name), specified in a preflight request</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> An HTTP-compliant header value</p> <p><b>Default value:</b> None</p>
Access-Control-Request-Headers	String	No	<p><b>Definition:</b> HTTP headers in a request. Multiple headers can be included.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> An HTTP-compliant header value</p> <p><b>Default value:</b> None</p>

### NOTE

If an error is still displayed after CORS has been configured, rectify the fault by referring to [Why Is an Error Reported Even If CORS Has Been Configured?](#)

## Request Elements

This request uses form elements. [Table 5-129](#) describes the form elements.

**Table 5-129** Form elements

Element	Type	Mandatory (Yes/No)	Description
file	Binary or text	Yes	<p><b>Definition:</b> 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 <b>key</b>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This parameter must be the last to specify. Otherwise, the parameters that follow it will be discarded.</li> <li>• A request can contain only one <b>file</b> parameter.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
key	String	Yes	<p><b>Definition:</b> 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.</p> <p>For example, if the access path is <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Constraints:</b> See <a href="#">Object Overview</a>.</p> <p><b>Range:</b> 1 to 1,024 characters</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
AccessKeyld	String	Yes when the restrictions are met	<p><b>Definition:</b> Access key ID (AK) of the requester.</p> <p><b>Constraints:</b> This parameter is mandatory if there is security policy parameter <b>policy</b> or <b>signature</b> in the request.</p> <p><b>Range:</b> AK of a user.</p> <p><b>Default value:</b> None</p>
policy	String	Yes when the restrictions are met	<p><b>Definition:</b> A security policy</p> <p><b>Constraints:</b> This parameter is mandatory if <b>AccessKeyld</b> or <b>signature</b> is provided in the form.</p> <p><b>Range:</b> For the policy format, see <a href="#">Signing Browser-Based Upload Requests</a>.</p> <p><b>Default value:</b> None</p>
signature	String	Yes when the restrictions are met	<p><b>Definition:</b> A signature string calculated based on StringToSign.</p> <p><b>Constraints:</b> This parameter is mandatory if <b>AccessKeyld</b> or <b>policy</b> is provided in the form.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
token	String	No	<p><b>Definition:</b> Specifies the access key, signature, and security policy of the requester all together.</p> <p><b>Constraints:</b> The priority of a token is higher than that of a separately specified AK, signature, or security policy.</p> <p>Example: For HTML: <code>&lt;input type="text" name="token" value="ak:signature:policy" /&gt;</code></p> <p><b>Range:</b> The value must be in the <i>ak:signature:policy</i> format.</p> <p><b>Default value:</b> None</p>
x-obs-acl	String	No	<p><b>Definition:</b> Used to set a pre-defined ACL when creating an object</p> <p>Examples: In POLICY: {"acl": "public-read" }</p> <p>For HTML: <code>&lt;input type="text" name="acl" value="public-read" /&gt;</code></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private</li> <li>• public-read</li> <li>• public-read-write</li> <li>• public-read-delivered</li> <li>• public-read-write-delivered</li> </ul> <p>For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a>.</p> <p><b>Default value:</b> private</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-grant-read	String	No	<p><b>Definition:</b> Used to — when creating an object — grant all users in a domain the permissions to read the object and obtain the object metadata</p> <p>Examples: In POLICY: {'grant-read': 'id=domainId1' }, For HTML: &lt;input type="text" name="grant-read" value="id=domainId1" /&gt;</p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>
x-obs-grant-read-acp	String	No	<p><b>Definition:</b> Used to — when creating an object — grant all users in a domain the permission to obtain the object ACL.</p> <p>Examples: In POLICY: {"grant-read-acp": "id=domainId1" }, For HTML: &lt;input type="text" name="grant-read-acp" value="id=domainId1" /&gt;</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-grant-write-acp	String	No	<p><b>Definition:</b> Used to — when creating an object — grant all users in a domain the permission to write the object ACL.</p> <p>Examples: In POLICY: {"grant-write-acp": "id=domainId1" }, For HTML: &lt;input type="text" name="grant-write-acp" value="id=domainId1" /&gt;</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>
x-obs-grant-full-control	String	No	<p><b>Definition:</b> 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.</p> <p>Examples: In POLICY: {"grant-full-control": "id=domainId1" }, For HTML: &lt;input type="text" name="grant-full-control" value="id=domainId1" /&gt;</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	<p><b>Definition:</b> Used to — when creating an object — specify its storage class.</p> <p><b>Examples:</b> In POLICY: {"storage-class": "STANDARD" }, For HTML: <code>&lt;input type="text" name="x-obs-storage-class" value="STANDARD" /&gt;</code></p> <p><b>Constraints:</b> The value is case-sensitive.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> If you do not use this header, the object storage class is the default storage class of the bucket.</p>
Cache-Control	String	No	<p><b>Definition:</b> Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the HTTP requirements for the Cache-Control header.</p> <p><b>Default value:</b> None</p>



Element	Type	Mandatory (Yes/No)	Description
Content-Type	String	No	<p><b>Definition:</b> Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.</p> <p>Example: In POLICY: ["starts-with", "\$Content-Type", "text/"], For HTML: <code>&lt;input type="text" name="content-type" value="text/plain" /&gt;</code></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> None</p>
Content-Disposition	String	No	<p><b>Definition:</b> Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the HTTP requirements for the Content-Disposition header.</p> <p><b>Default value:</b> None</p>
Content-Encoding	String	No	<p><b>Definition:</b> Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the HTTP requirements for the Content-Encoding header.</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
Expires	String	No	<p><b>Definition:</b> Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the HTTP requirements for the Expires header.</p> <p><b>Default value:</b> None</p>
success_action_redirect	String	No	<p><b>Definition:</b> Where a successful request is redirected</p> <ul style="list-style-type: none"> <li>If the value is valid and the request is successful, OBS returns status code 303. <b>Location</b> contains <b>success_action_redirect</b> as well as the bucket name, object name, and object ETag.</li> <li>If the value is invalid, OBS ignores this parameter. <b>Location</b> contains the object address, and OBS returns the response code based on the actual result.</li> </ul> <p>Examples: In POLICY: {"success_action_redirect": "http://123458.com"}, For HTML: <code>&lt;input type="text" name="success_action_redirect" value="http://123458.com" /&gt;</code></p> <p><b>Constraints:</b> The value must start with <b>http</b> or <b>https</b>.</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-meta-*	String	No	<p><b>Definition:</b> 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 <a href="#">Managing Object Metadata</a>.</p> <p><b>Examples:</b> In POLICY: {" x-obs-meta-test ": " test metadata " }, For HTML: <code>&lt;input type="text" name=" x-obs-meta-test " value=" test metadata " /&gt;</code></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Managing Object Metadata</a>.</p> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-persistent-headers	String	No	<p><b>Definition:</b> Used when creating an object to define one or more response headers. The user-defined response headers are returned when you obtain the object or query its metadata.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• User-defined headers cannot contain the <b>x-obs-</b> prefix. For example, you should use <b>key1</b> instead of <b>x-obs-key1</b>.</li> <li>• Do not use standard HTTP headers, such as <b>host</b>, <b>content-md5</b>, <b>origin</b>, <b>range</b>, and <b>Content-Disposition</b>.</li> <li>• The total length of this header and the custom metadata cannot exceed 8 KB.</li> <li>• If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.</li> <li>• The server does not decode a value that would contain non-US-ASCII or unrecognizable characters after being decoded. Instead, the server encapsulates such a value using <b>?UTF-8?B?&lt;(str)&gt;?=?</b>. For instance, <b>key1:abbc</b> will be returned as <b>key1: =?UTF-8?B?abbc?=?</b>.</li> <li>• The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.</li> <li>• Format: x-obs-persistent-headers: <i>key1:base64_encode(value1),key2:base64_encode(value2)...</i> <i>key1</i> and <i>key2</i> indicate user-defined headers. If they contain non-ASCII or unrecognizable characters, they can be encoded using URL or Base64. The server processes these headers as character strings, but does not decode them. <i>value1</i> is the value of <i>key1</i>; <i>value2</i> of <i>key2</i>. <b>base64_encode</b> indicates Base64 encoding. A key and its Base64-encoded value are connected using a colon (:) to form a pair. Key-value pairs are separated with commas (,) and carried in the <b>x-obs-persistent-headers</b> header. The server then decodes the uploaded value.</li> </ul>

Element	Type	Mandatory (Yes/No)	Description
			<p>Examples:</p> <p>In POLICY: {"x-obs-persistent-headers": "key1:dmFsdWUx,key2:dmFsdWUy" },</p> <p>For HTML:  <pre>&lt;input type="text" name="x-obs-persistent-headers" value="key1:dmFsdWUx,key2:dmFsdWUy" /&gt;</pre></p> <p>When downloading the object or obtaining its metadata, <i>key1.value1</i> and <i>key2.value2</i> are returned.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
success_action_status	String	No	<p><b>Definition:</b> The status code returned for a successful request.</p> <p>Examples:</p> <p>In POLICY: ["starts-with", "\$success_action_status", ""],</p> <p>For HTML:  <pre>&lt;input type="text" name="success_action_status" value="200" /&gt;</pre></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If this parameter is set to <b>200</b> or <b>204</b>, the response body is left blank.</li> <li>• If this parameter is set to <b>201</b>, the response message contains an XML document that describes the response.</li> <li>• If this parameter is not specified or is invalid, the status code is <b>204</b>.</li> </ul> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• 200: The request is processed successfully.</li> <li>• 201: The request is successful and a new resource is created.</li> <li>• 204: The request is successful, but no content is returned.</li> </ul> <p><b>Default value:</b> None</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2K.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	<p><b>Definition:</b> Indicates that SSE-KMS is used for server-side encryption. Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	No	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>

Element	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header must be used with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The key used for encrypting an object. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 256-bit key. It must be used with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> The MD5 value of the key used for encryption. Used to check whether any error occurs during the key transmission. Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This header is used only when SSE-C is used.</li> <li>• This header is a Base64-encoded 128-bit MD5 value. It must be used with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</li> </ul> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>
x-obs-expires	Integer	No	<p><b>Definition:</b> 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: <b>x-obs-expires:3</b></p> <p><b>Constraints:</b> 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.</p> <p><b>Range:</b> The value is an integer greater than 0.</p> <p><b>Default value:</b> None</p>



Element	Type	Mandatory (Yes/No)	Description
x-obs-object-lock-mode	String	No, but required when <b>x-obs-object-lock-retain-until-date</b> is present.	<p><b>Definition:</b> WORM mode applied to the object. Example: <b>x-obs-object-lock-mode:COMPLIANCE</b></p> <p><b>Constraints:</b> Currently, only COMPLIANCE (compliance mode) is supported. This parameter must be used with <b>x-obs-object-lock-retain-until-date</b>.</p> <p><b>Range:</b> COMPLIANCE</p> <p><b>Default value:</b> None</p>
x-obs-object-lock-retain-until-date	String	No, but required when <b>x-obs-object-lock-mode</b> is present.	<p><b>Definition:</b> When the WORM policy of the object expires. Example: <b>x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z</b></p> <p><b>Constraints:</b> The value must be a UTC time that complies with the ISO 8601 standard. Example: <b>2015-07-01T04:11:15Z</b> This parameter must be used with <b>x-obs-object-lock-mode</b>.</p> <p><b>Range:</b> The time must be later than the current time.</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-130](#) may be used.

**Table 5-130** Additional response headers

Header	Type	Description
x-obs-version-id	String	<p><b>Definition:</b> Object version ID.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If versioning is enabled for the bucket, the object version ID will be returned.</li> <li>• If versioning is suspended for the bucket, a string <b>null</b> is returned.</li> </ul> <p><b>Range:</b> The value is automatically generated by the server.</p> <p><b>Default value:</b> None</p>
Access-Control-Allow-Origin	String	<p><b>Definition:</b> Returned if the request origin meets the CORS configured on the server.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>
Access-Control-Allow-Headers	String	<p><b>Definition:</b> Returned if the request headers meet the CORS configured on the server.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>

Header	Type	Description
Access-Control-Max-Age	Integer	<p><b>Definition:</b> Value of <b>MaxAgeSeconds</b> in the CORS configuration on the server when CORS is configured for buckets.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> An integer greater than or equal to 0, in seconds</p> <p><b>Default value:</b> 3000</p>
Access-Control-Allow-Methods	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• GET</li> <li>• PUT</li> <li>• HEAD</li> <li>• POST</li> <li>• DELETE</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
Access-Control-Expose-Headers	String	<p><b>Definition:</b>  <b>ExposeHeader</b> 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 <b>Content-Length</b> and <b>Content-Type</b>. If the browser needs to access other headers, you need to configure them as additional headers.</p> <p><b>Constraints:</b>            Spaces, asterisks (*), ampersands (&amp;), colons (:), less-than signs (&lt;), and full-width characters are not allowed.</p> <p><b>Range:</b>            None</p> <p><b>Default value:</b>            None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b>            The encryption method used by the server.            Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b>            This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>● kms</li> <li>● AES256</li> </ul> <p><b>Default value:</b>            None</p>

Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Constraints:</b> Only for SSE-C server-side encryption.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> The MD5 value of the key used for encryption. Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> Only for SSE-C server-side encryption.</p> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>

## 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: Uploading an Object Using POST

```
POST / HTTP/1.1
Date: WED, 01 Jul 2015 04:15:23 GMT
Host: examplebucket.obs.region.myhuaweicloud.com
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"

ew0KICAiZXhaaXJhdGlvbil6IClyMDE1LTA3LTAxVDEyOjAwOjAwLjAwMmFoiLA0KICAiY29uZGl0aW9ucyI6IFsNCiA
glCB7ImJ1Y2tldCl6ICJleG1hcGxlYnVja2V0liB9LA0KICAgIHsiYWNsljogInB1YmxpYy1yZWFKliB9LA0KICAgIHsiRX
haaXJlcyI6IClxMDAwliB9LA0KICAgIFsiZXEiLCAiJGtleSlsiCjVYmplY3QwMSJdLA0KICAgIFsic3RhcncRzLXdPdGgiLC
AijENvbnRlbnQtVHlwZSIsICJ0ZXh0LyJdLA0KICBdDQp9DQo=
--7db143f50da2
Content-Disposition: form-data; name="signature"

Vk6rwO0Nq09BLhvNSIYwSJTRQ+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
```

```
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: OTBFMkJBMDDBDMjZDMDAwMDAxMzNCNDQyQTkwMDYzRkRBQUFBQUFBQWJiYmJiYmJi
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.com/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.com
Accept-Encoding: identity
Content-Length: 947
Content-Type: multipart/form-data; boundary=9431149156168
```

```
User-Agent: OBS/Test
--9431149156168
Content-Disposition: form-data; name="x-obs-acl"

public-read
--9431149156168
Content-Disposition: form-data; name="AccessKeyId"

H4IPJX0TQHTHEBQQCEC
--9431149156168
Content-Disposition: form-data; name="key"

my-obs-object-key-demo
--9431149156168
Content-Disposition: form-data; name="signature"

WNww8P1ZiWdqPQqjXeLmAfzPDAI=
--9431149156168
Content-Disposition: form-data; name="policy"

eyJleHBpcmF0aW9uIjoieMjAxOC0wNy0xN1QwODozNDoyM1oiLCAiY29uZGl0aW9ucyI6W3siY29udGVudC10eX
BlJoidGV4dC9wbGFpbjI9LHsieC1vYnMtYWNSIjoicHVibGllLXJlYXQifSxbInN0YXJ0cy13aXRoliwglRidWnrZXQiL
CAill0sWyJzdGFydHMtd2l0aCIsIiCka2V5liwglidXX0=
--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.com/my-obs-object-key-demo
ETag: "17a83fc8d431273405bd266114b7e034"
x-obs-request-id: 5DEB00000164A728A7C7F4E032214CFA
x-obs-id-2: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCswj2PcBE0YcoLHUDO7GSj+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.com

--9431149156168
Content-Disposition: form-data; name="key"
obj01

--9431149156168
Content-Disposition: form-data; name="token"
UDSIAMSTUBTEST002538:XsVcTzR2/
A284oE4VH9qPndGcuE=:eyJjb25kaXRpb25zljogW3siYnVja2V0IjogInRlc3QzMdAzMDU4NzE2NjI2ODkzNjcuMT
IifSwgeyJDb250ZW50LVR5cGUiOiAiYXBwbGljYXRpb24veG1sIn0sIjZXEiLCAiGtleSisiCjVYmoudHh0I1dLCAiZ
XhwaXJhdGlvbiI6IiClyMDIyLTA5LTA5VDEyOjA5OjI3WjI9

--9431149156168
Content-Disposition: form-data; name="file"; filename="myfile"
```



```
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.com/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.cn-north-4..com
Content-Type: multipart/form-data; boundary=148828969260233905620870
Content-Length: 1639
Origin: www.example.com
Access-Control-Request-Headers:acc_header_1

--148828969260233905620870
Content-Disposition: form-data; name="key"

object01
--148828969260233905620870
Content-Disposition: form-data; name="ObsAccessKeyId"

55445349414d5354554254455354303030303033
--148828969260233905620870
Content-Disposition: form-data; name="signature"

396246666f6f42793872792f7a3958524f6c44334e4e69763950553d--7db143f50da2
--148828969260233905620870
Content-Disposition: form-data; name="policy"

65794a6c65484270636d463061573975496a6f694d6a41794d7930774e6930784e565178...
--148828969260233905620870
Content-Disposition: form-data; name="x-obs-expires"

4
--148828969260233905620870
Content-Disposition: form-data; name="file"; filename="test.txt"
Content-Type: text/plain

01234567890
--148828969260233905620870
Content-Disposition: form-data; name="submit"

Upload
--148828969260233905620870--
```

## 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.cn-north-4..com/my-obs-object-key-demo
x-obs-expiration: expiry-date="Tue, 20 Jun 2023 00:00:00 GMT"
ETag: "d41d8cd98f00b204e9800998ecf8427e"
```





## References

The following table lists the links to the POST description and sample code for different SDK languages:

<a href="#">Java</a>	<a href="#">Python</a>	C: not supported	Go: not supported	<a href="#">BrowserJS</a>	.NET: not supported	<a href="#">Android</a>	iOS: not supported	<a href="#">PHP</a>	<a href="#">Node.js</a>
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## 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**.

### 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 or Deep Archive Objects

If source objects are in the Archive or Deep 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

## Request Syntax

```
PUT /destinationObjectName HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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 5-131** Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	<p><b>Definition:</b> When copying an object, you can use this parameter to set a pre-defined ACL.</p> <p>Example: <b>x-obs-acl: acl</b></p> <p><b>Constraints:</b> Use character strings.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private</li> <li>• public-read</li> <li>• public-read-write</li> </ul> <p>For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a>.</p> <p><b>Default value:</b> private</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-grant-read-acp	String	No	<p><b>Definition:</b> When copying an object, you can use this header to grant all users in a domain the permissions to obtain the object ACL.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-grant-write-acp	String	No	<p><b>Definition:</b> When copying an object, you can use this header to grant all users in a domain the permissions to write the object ACL.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-full-control	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-copy-source	String	Yes	<p><b>Definition:</b> 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: <b>x-obs-copy-source: /source_bucket/sourceObject</b></p> <p><b>Constraints:</b> Full-width characters and percent signs (%) must be URL-encoded.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>



Header	Type	Mandatory (Yes/No)	Description
x-obs-metadata-directive	String	No	<p><b>Definition:</b> Indicates whether the metadata of the target object is copied from the source object or replaced with the metadata contained in the request.</p> <p>Example: <b>x-obs-metadata-directive: metadata_directive</b></p> <p><b>Constraints:</b> Values other than <b>COPY</b> or <b>REPLACE</b> 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 <b>REPLACE</b>. 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.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• COPY</li> <li>• REPLACE</li> </ul> <p><b>Default value:</b> COPY</p>
x-obs-copy-source-if-match	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-copy-source-if-match: etag</b></p> <p><b>Constraints:</b> This parameter can be used with <b>x-obs-copy-source-if-unmodified-since</b> but cannot with other conditional copy headers.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-if-none-match	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-copy-source-if-none-match: etag</b></p> <p><b>Constraints:</b> This parameter can be used with <b>x-obs-copy-source-if-modified-since</b> but cannot with other conditional copy headers.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-if-unmodified-since	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.</li> <li>• This parameter can be used with <b>x-obs-copy-source-if-match</b> but cannot with other conditional copy parameters.</li> <li>• Format: HTTP time string complying with the format specified at <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a>, which can be any of the following:               <ol style="list-style-type: none"> <li>1. <b>EEE, dd MMM yyyy HH:mm:ss z</b></li> <li>2. <b>EEEE, dd-MMM-yy HH:mm:ss z</b></li> <li>3. <b>EEE MMM dd HH:mm:ss yyyy</b></li> </ol> </li> </ul> <p>Examples:</p> <ol style="list-style-type: none"> <li>1. <b>x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT</b></li> <li>2. <b>x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT</b></li> <li>3. <b>x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994</b></li> </ol> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-copy-source-if-modified-since	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.</li> <li>• This parameter can be used with <b>x-obs-copy-source-if-none-match</b> but cannot with other conditional copy parameters.</li> <li>• Format: HTTP time string complying with the format specified at <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a>, which can be any of the following:             <ol style="list-style-type: none"> <li>1. <b>EEE, dd MMM yyyy HH:mm:ss z</b></li> <li>2. <b>EEEE, dd-MMM-yy HH:mm:ss z</b></li> <li>3. <b>EEE MMM dd HH:mm:ss yyyy</b></li> </ol> </li> </ul> <p>Examples:</p> <ol style="list-style-type: none"> <li>1. x-obs-copy-source-if-modified-since: Sun, 06 Nov 1994 08:49:37 GMT</li> <li>2. x-obs-copy-source-if-modified-since: Sunday, 06-Nov-94 08:49:37 GMT</li> <li>3. x-obs-copy-source-if-modified-since: Sun Nov 6 08:49:37 1994</li> </ol> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-storage-class: STANDARD</b></p> <p><b>Constraints:</b> The value is case-sensitive.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> By default, the storage class of the bucket is inherited.</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-persistent-headers	String	No	<p><b>Definition:</b></p> <p>When copying an object, you can add the <b>x-obs-persistent-headers</b> header in an HTTP request to specify one or more user-defined response headers. User-defined response headers will be returned in the response header when you retrieve the target object or query the metadata of the target object.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>Response headers customized in this way cannot be prefixed with <b>x-obs-</b>. For example, you should use <b>key1</b> instead of <b>x-obs-key1</b>.</li> <li>Standard HTTP headers, such as <b>host</b>, <b>content-md5</b>, <b>origin</b>, <b>range</b>, and <b>Content-Disposition</b>, cannot be specified as user-defined headers.</li> <li>The total length of this header and the custom metadata cannot exceed 8 KB.</li> <li>If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.</li> <li>If the source object already has a user-defined response header, this header will not be copied to the target object.</li> <li>If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using <b>?UTF-8?B?&lt;(str)&gt;?=&lt;value&gt;</b>, but does not decode the value. For instance, value <b>key1:abbc</b> will be returned as <b>key1: =? UTF-8?B?abbc?=&lt;value&gt;</b> in the response.</li> <li>The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.</li> <li>Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2)...</li> </ul> <p>Note: Items, such as <b>key1</b> and <b>key2</b>, are user-defined headers. If they contain non-ASCII or unrecognizable characters, they can be encoded using URL or Base64. The server</p>

Header	Type	Mandatory (Yes/No)	Description
			<p>processes these headers as character strings, but does not decode them. Items, such as <i>value1</i> and <i>value2</i> are the values of the corresponding headers. <b>base64_encode</b> indicates that the value is encoded using Base64. A user-defined header and its Base64-encoded value are connected using a colon (:) to form a key-value pair. All key-value pairs are separated with a comma (,) and are placed in the <b>x-obs-persistent-headers</b> header. The server then decodes the uploaded value.</p> <p>Example: <b>x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWUy</b></p> <p>The returned header for downloading the target object or obtaining the metadata of the target object is <b>key1:value1</b> or <b>key2:value2</b> respectively.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-website-redirect-location	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2K.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	<p><b>Definition:</b> Indicates that SSE-KMS is used for server-side encryption. Objects are encrypted using SSE-KMS. Example: <b>x-obs-server-side-encryption: kms</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	No	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>



Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The algorithm used to encrypt a target object. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The key used to encrypt a target object. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</li> </ul> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>
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.	<p><b>Definition:</b> Indicates the algorithm used to decrypt a source object.</p> <p>Example: <b>x-obs-copy-source-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header must be used together with <b>x-obs-copy-source-server-side-encryption-customer-key</b> and <b>x-obs-copy-source-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> Indicates the key used to decrypt a source object.</p> <p>Example: <b>x-obs-copy-source-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-copy-source-server-side-encryption-customer-algorithm</b> and <b>x-obs-copy-source-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
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.	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This header is used only when SSE-C is used.</li> <li>This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-copy-source-server-side-encryption-customer-algorithm</b> and <b>x-obs-copy-source-server-side-encryption-customer-key</b>.</li> </ul> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
success-action-redirect	String	No	<p><b>Definition:</b> The redirection address used when requests were successfully responded to.</p> <ul style="list-style-type: none"> <li>• If the value is valid and the request is successful, OBS returns status code 303. <b>Location</b> contains <b>success_action_redirect</b> as well as the bucket name, object name, and object ETag.</li> <li>• If this parameter value is invalid, OBS ignores this parameter. In such case, the <b>Location</b> header is the object address, and OBS returns the response code based on whether the operation succeeds or fails.</li> </ul> <p><b>Constraints:</b> The value must be a valid URL, for example, <b>http://domainname</b> or <b>https://domainname</b>.</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None</p>
x-obs-tagging-directive	String	No	<p><b>Definition:</b> Used to specify how object tags are copied. If this header is not contained, tags are not copied from source objects to destination ones.</p> <p>Example: <b>x-obs-tagging-directive:COPY</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>COPY:</b> Tags of source objects are copied to the target objects.</li> <li>• <b>REPLACE:</b> The tags specified in the request are added to the target objects.</li> </ul> <p><b>Default value:</b> REPLACE</p>

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	<p><b>Definition:</b> WORM mode applied to the object. Example: <b>x-obs-object-lock-mode:COMPLIANCE</b></p> <p><b>Constraints:</b> This parameter must be used together with <b>x-obs-object-lock-retain-until-date</b>.</p> <p><b>Range:</b> COMPLIANCE</p> <p><b>Default value:</b> None</p>
x-obs-object-lock-retain-until-date	String	No, but required when x-obs-object-lock-mode is present.	<p><b>Definition:</b> When the WORM policy of the object expires. Example: <b>x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The value must be a UTC time that complies with the ISO 8601 standard. Example: <b>2015-07-01T04:11:15Z</b></li> <li>This parameter must be used together with <b>x-obs-object-lock-mode</b>.</li> </ul> <p><b>Range:</b> The time must be later than the current time.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-tagging	String	No	<b>Definition:</b> Object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: <b>x-obs-tagging:TagA=A&amp;TagB&amp;TagC</b> <b>Constraints:</b> <ul style="list-style-type: none"><li>• If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.</li><li>• If there is no equal sign (=) in a configuration, the tag value is considered left blank.</li></ul> <b>Range:</b> None <b>Default value:</b> 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.com/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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-132](#) may be used.

**Table 5-132** Additional response headers

Header	Type	Description
x-obs-copy-source-version-id	String	<p><b>Definition:</b> Version ID of the source object</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-version-id	String	<p><b>Definition:</b> Version ID of the target object</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server. Example: <b>x-obs-server-side-encryption: kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> The MD5 value of the key used for encryption. Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>



Header	Type	Description
x-obs-storage-class	String	<p><b>Definition:</b> Storage class of an object.</p> <p><b>Constraints:</b> This header is returned when the storage class of an object is not Standard.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> Storage class of an object.</p>

## Response Elements

This response contains elements of a copy result. [Table 5-133](#) describes the elements.

**Table 5-133** Response elements

Element	Type	Description
CopyObjectResult	XML	<p><b>Definition:</b> The copy results</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
LastModified	String	<p><b>Definition:</b> Time (UTC) when an object was last modified</p> <p><b>Constraints:</b> The date is in the ISO8601 format. Example: <b>2018-01-01T00:00:00.000Z</b></p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Element	Type	Description
ETag	String	<p><b>Definition:</b> 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 <b>A</b> when an object is uploaded, but this value has changed to <b>B</b> when the object is downloaded, it indicates that the object content has been changed.</p> <p><b>Constraints:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## 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.com
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: MDAxQjlxQTYxQzZMDAwMDAxMzQwMzFCRTgwMDUyOTNBQUFBQUFBQWJiYmJiYmJi
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.com/doc/2015-06-30/">
  <LastModified>2015-07-01T00:48:07.706Z</LastModified>
  <ETag>"507e3fff69b69bf57d303e807448560b"</ETag>
</CopyObjectResult>
```

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 04:20:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:4BLYv+1UxfRSHBMvvrhVLDszxvcY=
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/qBZmbN6AloX9mrrSNYdLxwvbO0tLR/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.com/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 or Deep Archive Objects

If the object you want to download is in the Archive or Deep 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** header (indicating the expiry date of the object) is returned when the object is successfully downloaded. If you send a request to download Archive or Deep 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.com
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 5-134](#).

### 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.

**Table 5-134** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
response-content-type	String	No	<p><b>Definition:</b>  <b>Content-Type</b> is rewritten in the response.</p> <p><b>Constraints:</b>  None</p> <p><b>Range:</b>  See the Content-Type values defined in HTTP.</p> <p><b>Default value:</b>  None</p>
response-content-language	String	No	<p><b>Definition:</b>  <b>Content-Language</b> is rewritten in the response.</p> <p><b>Constraints:</b>  None</p> <p><b>Range:</b>  See the Content-Language values defined in HTTP.</p> <p><b>Default value:</b>  None</p>
response-expires	String	No	<p><b>Definition:</b>  <b>Expires</b> is rewritten in the response.</p> <p><b>Constraints:</b>  None</p> <p><b>Range:</b>  See the Expires values defined in HTTP.</p> <p><b>Default value:</b>  None</p>

Parameter	Type	Mandatory (Yes/No)	Description
response-cache-control	String	No	<p><b>Definition:</b>  <b>Cache-Control</b> is rewritten in the response.</p> <p><b>Constraints:</b>            None</p> <p><b>Range:</b>            See the Cache-control values defined in HTTP.</p> <p><b>Default value:</b>            None</p>
response-content-disposition	String	No	<p><b>Definition:</b>  <b>Content-Disposition</b> is rewritten in the response.</p> <p>Example:            response-content-disposition=attachment;            filename*=utf-8"name1</p> <p>In this example, the downloaded object is renamed <b>name1</b>. If the new name contains any full-width characters, such characters must be URL-encoded.</p> <p><b>Constraints:</b>            None</p> <p><b>Range:</b>            None</p> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
response-content-encoding	String	No	<p><b>Definition:</b>  <b>Content-Encoding</b> is rewritten in the response.</p> <p><b>Constraints:</b>  None</p> <p><b>Range:</b>  See the Content-Encoding values defined in HTTP.</p> <p><b>Default value:</b>  None</p>
versionId	String	No	<p><b>Definition:</b>  Indicates the version ID of the object to be obtained.</p> <p><b>Constraints:</b>  None</p> <p><b>Range:</b>  The value must contain 32 characters.</p> <p><b>Default value:</b>  None. If this parameter is not configured, the latest version of the object is obtained.</p>

Parameter	Type	Mandatory (Yes/No)	Description
x-image-process	String	No	<b>Definition:</b> Image processing command or style. An example is provided as follows: Command: x-image-process= <b>image/commands</b> Style: x-image-process= <b>style/style-name</b> For details, see the <a href="#">Image Processing Feature Guide</a> . <b>Constraints:</b> None <b>Range:</b> Command format: <b>image/commands</b> Style format: <b>style/style-name</b> <b>Default value:</b> If no commands are entered, the original image will be returned.
attname	String	No	<b>Definition:</b> <b>Content-Disposition</b> is rewritten in the response. Example: attname=name1 This example renames the downloaded object as <b>name1</b> . <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None

## Request Headers

This request uses common headers. In addition, you can add additional headers to this request. [Table 5-135](#) describes the additional headers.



**Table 5-135** Request headers

Header	Type	Mandatory (Yes/No)	Description
Range	String	No	<p><b>Definition:</b> Obtains the object content within the scope defined by <b>Range</b>. If the parameter value is invalid, the entire object is obtained.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• <b>Range</b> value starts from 0, and the maximum value equals the object length minus 1. The start value of <b>Range</b> 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: <b>bytes=0-4</b> Example 2: <b>bytes=1024</b> Example 3: <b>bytes=10-20, 30-40</b> (multiple ranges)</li> <li>• After the <b>Range</b> 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 <b>Range</b> field.</li> </ul> <p><b>Range:</b> <b>Range</b> value starts from 0, and the maximum value equals the object length minus 1.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
If-Modified-Since	HTTP time string complying with the format specified at <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a> .	No	<p><b>Definition:</b> Returns the object only if it has been modified since the time specified by this header. Otherwise, <b>304 Not Modified</b> is returned.</p> <p><b>Constraints:</b> The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.</p> <p><b>Range:</b> HTTP time string complying with the format specified at <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a>.</p> <ol style="list-style-type: none"> <li>1. EEE, dd MMM yyyy HH:mm:ss z</li> <li>2. EEEE, dd-MMM-yy HH:mm:ss z</li> <li>3. EEE MMM dd HH:mm:ss yyyy</li> </ol> <p>Examples:</p> <ol style="list-style-type: none"> <li>1. if-modified-since: Sun, 06 Nov 1994 08:49:37 GMT</li> <li>2. if-modified-since: Sunday, 06-Nov-94 08:49:37 GMT</li> <li>3. if-modified-since: Sun Nov 6 08:49:37 1994</li> </ol> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
If-Unmodified-Since	HTTP time string complying with the format specified at <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a> .	No	<p><b>Definition:</b> If the object has not been modified since the time specified by this header, it is returned. Otherwise, 412 (precondition failed) is returned.</p> <p><b>Constraints:</b> The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.</p> <p><b>Range:</b> HTTP time string complying with the format specified at <a href="http://www.ietf.org/rfc/rfc2616.txt">http://www.ietf.org/rfc/rfc2616.txt</a>.</p> <ol style="list-style-type: none"> <li>EEE, dd MMM yyyy HH:mm:ss z</li> <li>EEEE, dd-MMM-yy HH:mm:ss z</li> <li>EEE MMM dd HH:mm:ss yyyy</li> </ol> <p>Examples:</p> <ol style="list-style-type: none"> <li>if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT</li> <li>if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT</li> <li>if-unmodified-since: Sun Nov 6 08:49:37 1994</li> </ol> <p><b>Default value:</b> None</p>
If-Match	String	No	<p><b>Definition:</b> Returns the object only if its ETag is the same as the one specified by this header. Otherwise, <b>412 Precondition Failed</b> is returned.</p> <p>ETag example: <b>0f64741bf7cb1089e988e4585d0d3434</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> Object ETag</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
If-None-Match	String	No	<p><b>Definition:</b> Returns the object only if its ETag is different from the one specified by this header. Otherwise, <b>304 Not Modified</b> is returned.</p> <p>ETag example: <b>0f64741bf7cb1089e988e4585d0d3434</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> Object ETag</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> Indicates the encryption algorithm used when SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Constraints:</b> This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> Indicates the encryption key used when SSE-C is used. This key is used to decrypt objects. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNvaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> 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: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

## Request Elements

This request involves no elements.

## 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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-136](#) may be used.

**Table 5-136** Additional response headers

Header	Type	Description
x-obs-expiration	String	<p><b>Definition:</b> Expiration time of an object.</p> <p><b>Constraints:</b> When an object has its lifecycle rule, the object expiration time is subject to its lifecycle rule. This header field is use <b>expiry-date</b> 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 <b>expiry-date</b> and <b>rule-id</b> to describe the detailed expiration information of objects. If no lifecycle rule is configured, this header field is not contained in the response.</p> <p><b>Range:</b> The time format is EEE, dd MMM yyyy HH:mm:ss z. Example: <b>expiry-date=Sun, 06 Nov 1994 08:49:37 GMT</b></p> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-website-redirect-location	String	<p><b>Definition:</b> 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.</p> <p>To another object in the same bucket: x-obs-website-redirect-location:/anotherPage.html</p> <p>To an external URL: x-obs-website-redirect-location:http://www.example.com/</p> <p>OBS obtains the specified value from the header and stores it in the object metadata <b>WebsiteRedirectLocation</b>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>• OBS supports redirection for objects in the root directory of a bucket, not for those in folders.</li> </ul> <p><b>Default value:</b> None</p>
x-obs-delete-marker	Boolean	<p><b>Definition:</b> Whether the deleted object is a delete marker. If the object is not marked as deleted, the response does not contain this header.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> The deleted object is a delete marker.</li> <li>• <b>false:</b> The deleted object is not a delete marker.</li> </ul> <p><b>Default value:</b> false</p>

Header	Type	Description
x-obs-version-id	String	<p><b>Definition:</b> Object version ID.</p> <p><b>Constraints:</b> If the object has no version number specified, the response does not contain this header.</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server.</p> <p>Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>



Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> Indicates a decryption algorithm. This header is included in a response if SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> Indicates the MD5 value of a key used to decrypt objects. This header is included in a response if SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>
x-obs-object-type	String	<p><b>Definition:</b> Object type</p> <p><b>Constraints:</b> This header is returned when the object is not a Normal object.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Appendable: objects generated by appending</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-next-append-position	Integer	<p><b>Definition:</b> Indicates the position that should be provided in the next request.</p> <p><b>Constraints:</b> This header field is returned when the object is an appendable object.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-tagging-count	String	<p><b>Definition:</b> Number of tags associated with an object. Example: <b>x-obs-tagging-count:1</b></p> <p><b>Constraints:</b> This parameter is returned only when the user has the permission to read tags.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
Authorization: OBS H4lPJX0TQTHHEBQQCEC:NxtSMS0jaVxLlnxIO9awaMTn47s=
```

## Sample Response: Downloading an Object

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E
Accept-Ranges: bytes
```

```
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.com  
Accept: */*  
Date: Mon, 14 Sep 2020 09:59:04 GMT  
Range:bytes=20-30  
Authorization: OBS H4IPJX0TQTHHEBQQCEC:mNPLWQMDWg30PTkAWiJLaLL3ALg=
```

**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.com  
Accept: */*  
Date: Mon, 14 Sep 2020 10:02:43 GMT  
Range:bytes=20-30,40-50  
Authorization: OBS H4IPJX0TQTHHEBQQCEC:ZwM7Vk2d7sD9o8zRsRkKehgKQDkk=
```

## 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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSIBWFOVW8eeWujkqSnolANC2mNR1cdf  
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
```

```
[ 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: Downloading a Resized Image

```
GET /example.jpg?x-image-process=image/resize,w_100 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 04:20:51 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC:9Nsx45WjaVxlLnxLO9awasXn83N=
```

## Sample Response: Downloading a Resized Image

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E
x-image-process:image/resize,w_100
Accept-Ranges: bytes
ETag: "3b46eaf02d3b6b1206078bb86a7b7013"
Last-Modified: WED, 01 Jul 2015 01:20:29 GMT
Content-Type: image/jpeg
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSQwxJ2I1VvxD/Xgwuw2G2RQax30gdXU
Date: WED, 01 Jul 2015 04:20:51 GMT
Content-Length: 49
[ 49 Bytes object content]
```

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
If-Match: 682e760adb130c60c120da3e333a8b09
Authorization: OBS H4IPJX0TQTHTEBQQCEC: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: 5DEB0000164A21E1FC826C58F6BA001
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=EQmDuOhaLUrzzRNZxwS72CXeX
M%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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: 804F0000164DB5E5B7FB908D3BA8E00
ETag: "682e760adb130c60c120da3e333a8b09"
Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT
Content-Type: application/octet-stream
x-obs-id-2: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCTlpxlLjhVK/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.com
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: 804F0000164DB5E5B7FB908D3BA8E00
ETag: "682e760adb130c60c120da3e333a8b09"
Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT
Content-Type: application/octet-stream
x-obs-id-2: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCTlpxlLjhVK/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.com
Accept: */*
Date: WED, 01 Jul 2015 04:24:33 GMT
Authorization: OBS H4lPJX0TQHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=
```

## Sample Response: Downloading an Object and Renaming It (with attname 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: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCTlpxlLjhVK/heKOWIP8Wn2lWmQoerfw
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+46HMjmp176XRal=
```

## 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+46HMjmp176XRal=
```

## 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: G001118A6803675AFFFD3043F7F91D0
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]
```

## 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+46HMjmp176XRal=
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 5-138](#).

## 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.com
Date: date
Authorization: authorization
```

## Request Parameters

[Table 5-137](#) describes the request parameters.

**Table 5-137** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	<p><b>Definition:</b> Version ID of the object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

In addition, the request can use additional headers shown in [Table 5-138](#).



**Table 5-138** Request headers

Header	Type	Mandatory (Yes/No)	Description
Origin	String	No	<b>Definition:</b> Origin specified in a preflight request that makes a cross-domain request, usually as a domain name. <b>Constraints:</b> You can enter multiple origins, with one separated from another using a line break. Each origin can contain at most one wildcard character (*). <b>Range:</b> The value that complies with the CORS <b>Default value:</b> None
Access-Control-Request-Headers	String	No	<b>Definition:</b> Indicates the HTTP headers that are allowed in a request. The request can use multiple HTTP headers. <b>Constraints:</b> 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. <b>Range:</b> The value that complies with the CORS <b>Default value:</b> None

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> Indicates the decryption algorithm used when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> Indicates the decryption key used when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-key: K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

## Request Elements

This request involves no elements.

## 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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-139](#) may be used.

**Table 5-139** Additional response headers

Header	Type	Description
x-obs-expiration	String	<p><b>Definition:</b> Expiration details</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> When an object has its lifecycle rule, the object expiration time is subject to its lifecycle rule. This header field is use <b>expiry-date</b> 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 <b>expiry-date</b> and <b>rule-id</b> to describe the detailed expiration information of objects. If no lifecycle rule is configured, this header field is not contained in the response.</p> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-website-redirect-location	String	<p><b>Definition:</b> 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.</p> <p>To another object in the same bucket: x-obs-website-redirect-location:/anotherPage.html</p> <p>To an external URL: x-obs-website-redirect-location:http://www.example.com/</p> <p>OBS obtains the specified value from the header and stores it in the object metadata <b>WebsiteRedirectLocation</b>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>• OBS supports redirection for objects in the root directory of a bucket, not for those in folders.</li> </ul> <p><b>Default value:</b> None</p>
x-obs-version-id	String	<p><b>Definition:</b> Version ID of the object. If the object has no version number specified, the response does not contain this header.</p> <p><b>Constraints:</b> The value must contain 32 characters.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Description
Access-Control-Allow-Origin	String	<p><b>Definition:</b> Returned if the request origin meets the CORS configured on the server.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>
Access-Control-Allow-Headers	String	<p><b>Definition:</b> Returned if the request headers meet the CORS configured on the server.</p> <p><b>Constraints:</b> At most one asterisk (*) is allowed. Spaces, ampersands (&amp;), colons (:), less-than signs (&lt;), and full-width characters are not allowed.</p> <p><b>Range:</b> The value that complies with the CORS</p> <p><b>Default value:</b> None</p>
Access-Control-Max-Age	Integer	<p><b>Definition:</b> <b>MaxAgeSeconds</b> in the CORS rules of the bucket. It specifies the time your client can cache the response for a cross-origin request.</p> <p><b>Constraints:</b> Each CORS rule can contain at most one <b>MaxAgeSeconds</b>.</p> <p><b>Range:</b> An integer greater than or equal to 0, in seconds</p> <p><b>Default value:</b> 3000</p>

Header	Type	Description
Access-Control-Allow-Methods	String	<p><b>Definition:</b> 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.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• GET</li> <li>• PUT</li> <li>• HEAD</li> <li>• POST</li> <li>• DELETE</li> </ul>
Access-Control-Expose-Headers	String	<p><b>Definition:</b> <b>ExposeHeader</b> 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 <b>Content-Length</b> and <b>Content-Type</b>. If the browser needs to access other headers, you need to configure them as additional headers.</p> <p><b>Constraints:</b> Spaces, asterisks (*), ampersands (&amp;), colons (:), less-than signs (&lt;), and full-width characters are not allowed.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server. Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> Indicates a decryption algorithm. This header is included in a response if SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> Indicates the MD5 value of a key used to decrypt objects. This header is included in a response if SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5: 4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> Base64-encoded MD5 value of the key, for example, <b>4XvB3tbNTN+tIEVa0/fGaQ==</b>.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>



Header	Type	Description
x-obs-storage-class	String	<p><b>Definition:</b> Storage class of an object.</p> <p><b>Constraints:</b> This header is returned only when the storage class of an object is not Standard.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> None</p>
x-obs-restore	String	<p><b>Definition:</b> Restore status of an object. For example, <b>ongoing-request="true"</b> indicates that the object is being restored. <b>ongoing-request="false"</b>, <b>expiry-date="Wed, 7 Nov 2012 00:00:00 GMT"</b> indicates that the object has been restored, where <b>expiry-date</b> indicates when the restored object expires.</p> <p><b>Constraints:</b> This header is returned only when Archive or Deep Archive objects are being restored or has been restored.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-object-type	String	<p><b>Definition:</b> Object type</p> <p><b>Constraints:</b> This header is returned only when the object is not a Normal object.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• Appendable: objects generated by appending</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-next-append-position	Integer	<b>Definition:</b> Indicates the position that should be provided in the next request. <b>Constraints:</b> This header is returned only when the object is an Appendable object. <b>Range:</b> None <b>Default value:</b> None
x-obs-uploadId	String	<b>Definition:</b> Indicates the ID of a multipart task. <b>Constraints:</b> This header is returned only when the object is created from a multipart upload. <b>Range:</b> None <b>Default value:</b> None
x-obs-tagging-count	String	<b>Definition:</b> Number of tags associated with an object. Example: <b>x-obs-tagging-count:1</b> <b>Constraints:</b> This header is returned only when you have the permission to read tags. <b>Range:</b> None <b>Default value:</b> None

Header	Type	Description
x-obs-object-lock-mode	String	<p><b>Definition:</b> WORM mode applied to the object. Example: <b>x-obs-object-lock-mode:COMPLIANCE</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>The user must have the GetObjectRetention permission.</li> </ul> <p><b>Range:</b> Currently, only COMPLIANCE (compliance mode) is supported.</p> <p><b>Default value:</b> None</p>
x-obs-object-lock-retain-until-date	String	<p><b>Definition:</b> When an object lock expires. Example: <b>x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The value must be a UTC time that complies with the ISO 8601 standard. Example: <b>2015-07-01T04:11:15Z</b></li> <li>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.</li> <li>The user must have the GetObjectRetention permission.</li> </ul> <p><b>Range:</b> The value must be later than the current time.</p> <p><b>Default value:</b> None</p>

## 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

```
HEAD /object1 HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 04:19:25 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:/cARjk81I2iExMfQqn6iT3qEZ74=
```

## 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:iqSPeUBI66PwXDApxjRk6hlcN4=
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShLiL70qeT0g5qpMquCeztsnr1jlmRs
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

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.com
Date: date
Authorization: authorization
```

## Request Parameters

[Table 5-140](#) describes the request parameters.

### NOTICE

For deleting an object, only parameters listed in [Table 5-140](#) are supported. If the request contains parameters that cannot be identified by OBS, the server returns the 400 error code.

**Table 5-140** Request parameters

Parameter	Description	Mandatory
versionId	<p><b>Definition:</b> Version ID of the object to be deleted.</p> <p>Type: string</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>	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*  
Date: *date*

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

If versioning is enabled for the bucket, the headers listed in [Table 5-141](#) may also be used.

**Table 5-141** Additional response headers

Header	Description
x-obs-delete-marker	<p><b>Definition:</b> Whether an object has a delete marker. If the object is not marked as deleted, the response does not contain this header.</p> <p>Type: boolean</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• true</li> <li>• false</li> </ul> <p><b>Default value:</b> false</p>
x-obs-version-id	<p><b>Definition:</b> Object version ID. If the object has no version number specified, the response does not contain this header.</p> <p>Type: string</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 04:19:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:MfK9JcN5FHCrJmjv7iRkRrce2s=
```

## Sample Response

```
HTTP/1.1 204 No Content
Server: OBS
x-obs-request-id: 8DF400000163D3F51DEA05AC9CA066F1
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSgkM4Dij80gAeFY8pAZlwx72QhDeBZ5
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.com
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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMxsgGHKQrlqST9veFKpDgE50
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.com
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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMxsgGHKQrlqST9veFKpDgE50
x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F
Server: OBS
Date: WED, 01 Jul 2015 02:37:22 GMT
x-obs-version-id: G001118A6456208AFFFFD24829FCF614
```

## 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.com
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 5-142](#) describes the elements.



**Table 5-142** Request elements

Parameter	Mandatory (Yes/No)	Type	Description
Delete	Yes	XML	<p><b>Definition:</b> List of objects to be deleted. Delete is the parent node of Object and Quiet.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-143</a>.</p> <p><b>Default value:</b> None</p>
EncodingType	No	String	<p><b>Definition:</b> The encoding type of the object name to be deleted and the object name in the response. If an object name contains control characters that are not supported by the XML 1.0 standard, you can use this parameter to specify the encoding type of the object name.</p> <p><b>Constraints:</b> Only the URL encoding type is supported.</p> <p><b>Range:</b> url</p> <p><b>Default value:</b> None</p>

**Table 5-143** Delete parameters

Parameter	Mandatory (Yes/No)	Type	Description
Quiet	No	Boolean	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> If this parameter is not set, the default value False is used. If the value is False, the system ignores the value.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• True: Only the results of objects that fail to be deleted are returned.</li> <li>• False: All object results are returned.</li> </ul> <p><b>Default value:</b> False</p>
Object	Yes	XML	<p><b>Definition:</b> Object to be deleted. Object is the parent node of Key and VersionId.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-144</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-144** Object parameters

Parameter	Mandatory (Yes/No)	Type	Description
Key	Yes	String	<b>Definition:</b> Name of the object to be deleted. <b>Constraints:</b> If EncodingType is specified, the object name must be encoded as specified. <b>Range:</b> 1 to 1,024 characters <b>Default value:</b> None
VersionId	No	String	<b>Definition:</b> Version ID of the object to be deleted. For details about how to obtain an object version, see <a href="#">Listing Objects in a Bucket</a> . <b>Constraints:</b> None <b>Range:</b> The value must contain 32 characters. <b>Default value:</b> 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.

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.com/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 3-29](#).

## Response Elements

This response uses elements to return results of deleted objects in a batch. [Table 5-145](#) describes the elements.

**Table 5-145** Response elements

Parameter	Type	Description
DeleteResult	Container	<p><b>Definition:</b> Root node of the response message. DeleteResult is the parent node of Deleted, Error, and EncodingType.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-146</a>.</p>

**Table 5-146** DeleteResult parameters

Parameter	Type	Description
Deleted	Container	<p><b>Definition:</b> Container for successful deletion results. Deleted is the parent node of Key, VersionId, DeleteMarker, and DeleteMarkerVersionId.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-147</a>.</p>
Error	Container	<p><b>Definition:</b> Container for the deletion failure result. Error is the parent node of Key, VersionId, Code, and Message.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-148</a>.</p>
EncodingType	String	<p><b>Definition:</b> The type of encoding for the object name in the response. If this parameter is set in the request, the object name in the response will be encoded.</p> <p><b>Range:</b> url</p>

**Table 5-147** Deleted parameters

Parameter	Type	Description
Key	String	<p><b>Definition:</b> Object name in each deletion result</p> <p><b>Range:</b> 1 to 1,024 characters</p>
VersionId	String	<p><b>Definition:</b> Version ID of the deleted object</p> <p><b>Range:</b> The value must contain 32 characters.</p>
DeleteMarker	Boolean	<p><b>Definition:</b> If this element is specified, <b>true</b> will be returned when you create or delete a delete marker in a bucket with versioning enabled.</p> <p>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 <b>null</b> and creates a delete marker with a version ID of <b>null</b>.</p> <p>For more information, see <a href="#">Deleting Objects from an OBS Bucket</a>.</p> <p><b>Range:</b> true</p>
DeleteMarkerVersionId	String	<p><b>Definition:</b> Version ID of a delete marker to create or delete.</p> <p>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:</p> <ul style="list-style-type: none"> <li>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.</li> <li>You send a request that has both the object key and version ID (that identifies a delete marker) specified.</li> </ul> <p>For more information, see <a href="#">Deleting Objects from an OBS Bucket</a>.</p> <p><b>Range:</b> The value must contain 32 characters.</p>

**Table 5-148** Error parameters

Parameter	Type	Description
Key	String	<b>Definition:</b> Object name in each deletion result <b>Range:</b> 1 to 1,024 characters
Code	String	<b>Definition:</b> Error code of a deletion failure <b>Range:</b> None
Message	String	<b>Definition:</b> Error message of a deletion failure <b>Range:</b> None
VersionId	String	<b>Definition:</b> Version ID of the deleted object <b>Range:</b> The value must contain 32 characters.

## 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: ogX9qClMrVJUBiUSIKDFM0qO41jJM015SCN55/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+0KYIPBq0f
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
```

## Sample Request: Specifying versionId to Delete Multiple Delete Markers

```
POST /?delete HTTP/1.1
Authorization: OBS H4IPJX0TQTHTEBQQCEC:iqSPeUBI66PwXDApxjRk6hlcN4=
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>G001118A646F2ACEFFFD24530CFB5D8</VersionId>
  </Object>
  <Object>
    <Key>object2</Key>
    <VersionId>G001118A646F2ACEFFFD24530CFB5D9</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>G001118A646F2ACEFFFD24530CFB5D9</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>G001118A646F2ACEFFFD24530CFB5D9</DeleteMarkerVersionId>
  </Deleted>
  <Deleted>
    <Key>object2</Key>
    <VersionId>G001118A646F2ACEFFFD24530CFB5D8</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>G001118A646F2ACEFFFD24530CFB5D8</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:iqSPeUBI66PwXDApxjRkK6hlcN4=
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>buloGEikvQr7lmiZEtHxD9nO2owRwBRGQfbap4E9MFTp1YJJV66rkJNLI7cs3Zlz</HostId>
</Error>
```

## 5.4.8 Restoring Archive or Deep Archive Objects

### Functions

To obtain the content of an object in the Archive or Deep 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 or Deep 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.com
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	<b>Definition:</b> Version ID of the Archive or Deep Archive object to be restored <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> 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 5-149** Request elements

Element	Type	Mandatory (Yes/No)	Description
RestoreRequest	Container	Yes	<b>Definition:</b> Container for the restore information <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None
Days	Integer	Yes	<b>Definition:</b> 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. <b>Constraints:</b> 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. <b>Range:</b> The value ranges from 1 to 30, in days. <b>Default value:</b> None

Element	Type	Mandatory (Yes/No)	Description
RestoreJob	Container	No	<b>Definition:</b> Container for the restore options <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None
Tier	String	No	<b>Definition:</b> Retrieval speed tier. You can select a tier that suits your retrieval needs. <b>NOTE</b> To restore a large number of objects from the Deep Archive storage class, you are advised to use the standard restore. The restore time spent depends on the object size and data volume restored. <b>Range:</b> <ul style="list-style-type: none"><li>• <b>Expedited</b> indicates that objects can be quickly restored from Archive storage within 1 to 5 minutes and from Deep Archive storage (in a beta test) within 3 to 5 hours.</li><li>• <b>Standard</b> indicates that objects can be restored from Archive storage within 3 to 5 hours and from Deep Archive storage (in a beta test) within 5 to 12 hours.</li></ul> <b>Default value:</b> Standard

## Response Syntax

HTTP/1.1 *status\_code*  
Date: *date*

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

**Table 5-150** List of OBS access error codes

Error Code	Description	HTTP Status Code
RestoreAlreadyIn-Progress	<b>Definition:</b> The object is being restored. The request conflicts with another. <b>ErrorMessage:</b> Object restore is already in progress	409 Conflict
ObjectHasAlready Restored	<b>Definition:</b> The objects have been restored and the retention period of the objects cannot be shortened. <b>ErrorMessage:</b> After restoring an archived object, you cannot shorten the restoration period of the archived object	409 Conflict
MalformedXML	<b>Definition:</b> Invalid value for the <b>Days</b> field (supposed to be an integer) <b>ErrorMessage:</b> The XML you provided was not well-formed or did not validate against our published schema	400 Bad Request
InvalidArgument	<b>Definition:</b> Invalid value for the <b>Days</b> field (valid range: 1 to 30). <b>ErrorMessage:</b> restoration days should be at least 1 and at most 30	400 Bad Request
MalformedXML	<b>Definition:</b> Invalid value for the <b>Tier</b> field. <b>ErrorMessage:</b> The XML you provided was not well-formed or did not validate against our published schema	400 Bad Request
InvalidObjectState	<b>Definition:</b> The restored object is not in the Archive or Deep Archive storage. <b>ErrorMessage:</b> Restore is not allowed, as object's storage class is not COLD or DEEP_ARCHIVE	403 Forbidden

## Sample Request

```
POST /object?restore HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 04:39:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:kaEwOixnSVuS6lf3Q0Lnd6kxm5A=
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: 32AAAUGAIAABAAAQAAEAABAAAQAAEAABCSLbWis23RR95NVpkbWUdlm8Dq+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.

## 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) or **DEEP\_ARCHIVE** (Deep Archive), this API cannot be called.
7. If cross-region replication is configured for a bucket, this API operation cannot be used.
8. Object appending is not available for parallel file systems.

## Request Syntax

```
POST /ObjectName?append&position=Position HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
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 5-151](#).

**Table 5-151** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
append	String	Yes	<p><b>Definition:</b> Indicates that the object is uploaded in an append manner.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
position	Integer	Yes	<p><b>Definition:</b> Location for the append upload</p> <p><b>Constraints:</b> Max. 5 GB</p> <p><b>Range:</b> For an object to be appended, the value of <b>position</b> must be set to <b>0</b> when the object is uploaded for the first time. The value of <b>position</b> will be carried in the <b>x-obs-next-append-position</b> header of the response returned by the server when the object is successfully uploaded next time.</p> <p><b>Default value:</b> None</p>

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

[Table 5-152](#) 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 5-153](#).

**Table 5-152** Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	<p><b>Definition:</b> When first calling this API, you can use this parameter to set a pre-defined object ACL.</p> <p><b>Constraints:</b> Use character strings.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private</li> <li>• public-read</li> <li>• public-read-write</li> </ul> <p>For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a>.</p> <p><b>Default value:</b> private</p>
x-obs-grant-read	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-grant-read: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>



Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read-acp	String	No	<p><b>Definition:</b> When first calling this API, you can use this header to grant all users in a domain the permissions to obtain the object ACL.</p> <p>Example: <b>x-obs-grant-read-acp: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-grant-write-acp	String	No	<p><b>Definition:</b> When first calling this API, you can use this header to grant all users in a domain the permissions to write the object ACL.</p> <p>Example: <b>x-obs-grant-write-acp: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-grant-full-control	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-grant-full-control: id=domainID</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-storage-class	String	No	<p><b>Definition:</b> For the first write, you can use this header field to configure the object storage class. Example: <b>x-obs-storage-class:STANDARD</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• Archive and Deep Archive objects do not support append uploads.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> </ul> <p><b>Default value:</b> If you do not use this header, the object storage class is the default storage class of the bucket.</p>
x-obs-meta-*	String	No	<p><b>Definition:</b> For the first write, you can use a header starting with <b>x-obs-meta-</b> 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: <b>x-obs-meta-test:test metadata</b></p> <p><b>Constraints:</b> This parameter can only be passed in HTTP request headers and cannot exceed 8 KB.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-persistent-headers	String	No	<p><b>Definition:</b></p> <p>For the first appending, you can add the <b>x-obs-persistent-headers</b> header in an HTTP request to specify one or more user-defined response headers. User-defined response headers will be returned in the response header when you retrieve the object or query the object metadata.</p> <p>Format: <b>x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2)...</b></p> <p>Note: Items, such as <b>key1</b> and <b>key2</b>, are user-defined headers. If they contain non-ASCII or unrecognizable characters, they can be encoded using URL or Base64. The server processes these headers as character strings, but does not decode them. Items, such as <i>value1</i> and <i>value2</i> are the values of the corresponding headers. <b>base64_encode</b> indicates that the value is encoded using Base64. A user-defined header and its Base64-encoded value are connected using a colon (:) to form a key-value pair. All key-value pairs are separated with a comma (,) and are placed in the <b>x-obs-persistent-headers</b> header. The server then decodes the uploaded value.</p> <p>Example: <b>x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWUy</b></p> <p>The returned header for downloading the object or obtaining the object metadata is <b>key1:value1</b> or <b>key2:value2</b> respectively.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• Response headers customized in this way cannot be prefixed with <b>x-obs-</b>. For example, you should use <b>key1</b> instead of <b>x-obs-key1</b>.</li> <li>• Standard HTTP headers, such as <b>host</b>, <b>content-md5</b>, <b>origin</b>, <b>range</b>, and <b>Content-Disposition</b>, cannot be specified as user-defined headers.</li> <li>• The total length of this header and the custom metadata cannot exceed 8 KB.</li> <li>• If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.</li> </ul>

Header	Type	Mandatory (Yes/No)	Description
			<ul style="list-style-type: none"> <li>If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using <b>UTF-8?B?&lt;(str)&gt;?=?</b>, but does not decode the value. For instance, value <b>key1:abbc</b> will be returned as <b>key1: =?UTF-8?B?abbc?=?</b> in the response.</li> <li>The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-website-redirect-location	String	No	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2K.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-expires	Integer	No	<p><b>Definition:</b> 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: <b>x-obs-expires:3</b></p> <p><b>Constraints:</b> 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.</p> <p><b>Range:</b> The value is an integer greater than 0.</p> <p><b>Default value:</b> None</p>
x-obs-tagging	String	No	<p><b>Definition:</b> An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: <b>x-obs-tagging:TagA=A&amp;TagB&amp;TagC</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This request header takes effect only for the first append operation.</li> <li>• If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.</li> <li>• If there is no equal sign (=) in a configuration, the tag value is considered left blank.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

**Table 5-153** 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.	<p><b>Definition:</b> Indicates that SSE-KMS is used. Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	No	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> Indicates the encryption algorithm used when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Constraints:</b> This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> Indicates the encryption key used when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

### NOTE

The ETag returns the hash value of the data to be uploaded, not the hash value of the entire object.



**Table 5-154** Additional response headers

Header	Type	Description
x-obs-version-id	String	<p><b>Definition:</b> Version ID of the object. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server.</p> <p>Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>

Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> Indicates the encryption algorithm. This header is included in a response when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> Indicates the MD5 value of the key for encrypting objects. This header is included in a response when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-key-MD5: 4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>
x-obs-next-append-position	Integer	<p><b>Definition:</b> Indicates the position to be provided for the next request.</p> <p><b>Constraints:</b> This header is returned when the object is an Appendable object.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## 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) or **DEEP\_ARCHIVE** (Deep Archive), this API cannot be called. If you still call this API, OBS returns **409 Conflict** with the error code of **ObjectNotAppendable**.
6. If cross-region replication is configured for a bucket, this API operation cannot be used. Otherwise, OBS returns **400 Bad Request** and the error code is **OperationNotSupported**.

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.com
Expires: Wed, 27 Jun 2015 13:45:50 GMT
Date: Wed, 08 Jul 2015 06:57:01 GMT
Content-Type: image/jpeg
Content-Length: 1458
Authorization: OBS H4IPJX0TQHTHEBQQCEC: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
ETag: "d41d8cd98f00b204e9800998ecf8427e"
Content-Length: 0
Server: OBS
x-obs-request-id: 8DF400000163D3F0FD2A03D2D30B0542
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTJCqTmsA1XRplrmrJdvcEWvZyjbztdd
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.com
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 H4lPJX0TQTHHEBQQCEC: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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSrVITYwsA4p9GEW+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 H4lPJX0TQTHHEBQQCEC: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
```

## 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.com
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 5-155](#) describes the request parameters.

**Table 5-155** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
versionId	No	String	<p><b>Definition:</b> 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 <a href="#">Listing Objects in a Bucket</a>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None. If this parameter is not configured, the latest version of the object is specified.</p>

## 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 5-156](#).

**Table 5-156** Request elements

Parameter	Mandatory (Yes/No)	Type	Description
AccessControlList	Yes	XML	<p><b>Definition:</b> Access control list. AccessControlList is the parent node of Grant, Grantee, and Permission.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-157</a>.</p> <p><b>Default value:</b> None</p>
Owner	Yes	XML	<p><b>Definition:</b> Owner information of a bucket. Owner is the parent node of ID.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-158</a>.</p> <p><b>Default value:</b> None</p>
Canned	No	String	<p><b>Definition:</b> Grants permissions to all users.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> Everyone</p> <p><b>Default value:</b> None</p>

**Table 5-157** AccessControlList parameters

Parameter	Mandatory (Yes/No)	Type	Description
Grant	No	XML	<p><b>Definition:</b> Used to identify users and their permissions. Grant is the parent node of Grantee and Delivered.</p> <p><b>Constraints:</b> An ACL of an object can contain a maximum of 100 grants.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-159</a>.</p> <p><b>Default value:</b> None</p>
Grantee	No	XML	<p><b>Definition:</b> Grantee information</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Permission	No	String	<p><b>Definition:</b> Granted permissions</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• READ: Allows the grantee to obtain the object content and metadata.</li> <li>• READ_ACP: Allows the grantee to read the ACL attributes of an object.</li> <li>• WRITE_ACP: Allows the grantee to update the ACL of an object.</li> <li>• FULL_CONTROL: The grantee has the READ, READ_ACP, and WRITE_ACP permissions on the object.</li> </ul> <p><b>Default value:</b> None</p>

**Table 5-158** Owner parameters

Parameter	Mandatory (Yes/No)	Type	Description
ID	Yes	String	<p><b>Definition:</b> Account ID of the authorized user.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about how to obtain the domain ID of a user, see <a href="#">Obtaining Account, IAM User, Project, User Group, Region, and Agency Information</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-159** Grant parameters

Parameter	Mandatory (Yes/No)	Type	Description
Grantee	No	XML	<p><b>Definition:</b> Grantee information</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory (Yes/No)	Type	Description
Delivered	No	Boolean	<p><b>Definition:</b> Whether an object ACL inherits the ACL of a bucket.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• true: The object inherits the bucket ACL.</li> <li>• false: The object does not inherit the bucket ACL.</li> </ul> <p><b>Default value:</b> true</p>

## 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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-160](#) may be used.

**Table 5-160** Additional response headers

Parameter	Type	Description
x-obs-version-id	String	<p><b>Definition:</b> Version ID of the object whose ACL is modified.</p> <p><b>Range:</b> The value must contain 32 characters.</p>

## 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 /obj2?acl HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 04:42:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:8xAODun1ofjkwHm8YhtN0QEcy9M=
Content-Length: 727

<AccessControlPolicy xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbc9491b6fce9</ID>
  </Owner>
  <Delivered>>false</Delivered>
  <AccessControlList>
    <Grant>
      <Grantee>
        <ID>b4bf1b36d9ca43d984fbc9491b6fce9</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: 32AAAUgAIAABAAAQAAEAAABAAAQAAEAAABCTjCqTmsA1XRplrmrJdvcEwvZyjbztd
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=G001118A6803675AFFFD3043F7F91D0 HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBL66PwXDpxjRkK6hlcN4=
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>
```

```
<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: 32AAQAEEAABSAAGAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
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.com
Date: date
Authorization: authorization
```

### Request Parameters

The request parameters required are described in [Table 5-161](#).

**Table 5-161** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
acl	Yes	String	<p><b>Definition:</b> Indicates that the request is to obtain the object ACL.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
versionId	No	String	<p><b>Definition:</b> Version number of an object. For details about how to obtain the version ID of an object, see <a href="#">Listing Objects in a Bucket</a>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None. If this parameter is not configured, the latest version of the object is specified.</p>

## 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.region.myhuaweicloud.com/doc/2015-06-30/">
  <Owner>
    <ID>id</ID>
  </Owner>
  <Delivered>true</Delivered>
  <AccessControlList>
```

```
<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 3-29](#).

In addition to the common response headers, the headers listed in [Table 5-162](#) may be used.

**Table 5-162** Additional response headers

Parameter	Type	Description
x-obs-version-id	String	<b>Definition:</b> Version number of an object. <b>Range:</b> The value must contain 32 characters.

## Response Elements

The response message of the request returns the ACL information of the object. [Table 5-163](#) describes the elements.

**Table 5-163** Response elements

Parameter	Type	Description
AccessControlList	XML	<b>Definition:</b> List of users and their permissions for the bucket. AccessControlList is the parent node of Grant, Grantee, and Permission. <b>Range:</b> For details, see <a href="#">Table 5-164</a> .
ID	String	<b>Definition:</b> Domain ID of the user. <b>Range:</b> None

Parameter	Type	Description
Delivered	Boolean	<b>Definition:</b> Whether an object ACL inherits the ACL of a bucket. <b>Range:</b> <ul style="list-style-type: none"><li>• true: The object inherits the bucket ACL.</li><li>• false: The object does not inherit the bucket ACL.</li></ul>

**Table 5-164** AccessControlList parameters

Parameter	Type	Description
Grant	XML	<b>Definition:</b> Used to identify users and their permissions. Grant is the parent node of Grantee and Delivered. <b>Range:</b> None
Grantee	XML	<b>Definition:</b> Grantee information. <b>Range:</b> None
Permission	String	<b>Definition:</b> Permissions of a specified user for the bucket. <b>Range:</b> <ul style="list-style-type: none"><li>• READ: Allows the grantee to obtain the object content and metadata.</li><li>• READ_ACP: Allows the grantee to read the ACL attributes of an object.</li><li>• WRITE_ACP: Allows the grantee to update the ACL of an object.</li><li>• FULL_CONTROL: The grantee has the READ, READ_ACP, and WRITE_ACP permissions on the object.</li></ul>

## Error Responses

No special error responses are returned. For details about error responses, see [Table 6-2](#).

## Sample Request

```
GET /object011?acl HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 04:45:55 GMT
Authorization: OBS H4lPJX0TQTHTHEBQQCEC:YcmvNQxltGjFeeC1K2HeUEp8MMM=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E650F3065C2295674C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS+wsHqRuA2Tx+mXUpNtBbWLPMLe9Clx
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.region.myhuaweicloud.com/doc/2015-06-30/">
  <Owner>
    <ID>b4bf1b36d9ca43d984fbc9491b6fce9</ID>
  </Owner>
  <Delivered>>false</Delivered>
  <AccessControlList>
    <Grant>
      <Grantee>
        <ID>b4bf1b36d9ca43d984fbc9491b6fce9</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 H4lPJX0TQTHTHEBQQCEC: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>
```

```
<ID>d6s58yhn83f3081577800575ee4cf</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.com
Content-Type: application/xml
Content-Length: length
Authorization: authorization
Date: date
<Optional Additional Header>
<object Content>
```



## Request Parameters

**Table 5-165** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	<p><b>Definition:</b> Version ID of the object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## 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.

**Table 5-166** Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-metadata-directive	String	Yes	<p><b>Definition:</b> Metadata operation directive.</p> <p><b>Constraints:</b> If you want to change the storage class of an object by modifying its metadata, <b>x-obs-metadata-directive</b> must be set to <b>REPLACE_NEW</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>REPLACE_NEW:</b> 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.</li> <li>• <b>REPLACE:</b> All original metadata is replaced by metadata specified in the request. Metadata that is not specified (except for <b>x-obs-storage-class</b>) is deleted.</li> </ul> <p><b>Default value:</b> None</p>
Cache-Control	String	No	<p><b>Definition:</b> It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the Cache-Control values defined in HTTP.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
Content-Disposition	String	No	<p><b>Definition:</b> It specifies the name of an object when it is downloaded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the Content-Disposition values defined in HTTP.</p> <p><b>Default value:</b> None</p>
Content-Encoding	String	No	<p><b>Definition:</b> It specifies the content encoding format when an object is downloaded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the Content-Encoding values defined in HTTP.</p> <p><b>Default value:</b> None</p>
Content-Language	String	No	<p><b>Definition:</b> It specifies the content language format when an object is downloaded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the Content-Language values defined in HTTP.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
Content-Type	String	No	<p><b>Definition:</b> It specifies the file type of an object when it is downloaded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details about the common content types, see <a href="#">Common Content Types</a>.</p> <p><b>Default value:</b> None</p>
Expires	String	No	<p><b>Definition:</b> It specifies the expiration time of a cached web page when an object is downloaded.</p> <p><b>CAUTION</b> This parameter is not used to set the object expiration time, which is set using <b>x-obs-expires</b>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> See the Expires values defined in HTTP.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	<p><b>Definition:</b> 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.</p> <p>In the following example, the request header sets the redirection to an object (<b>anotherPage.html</b>) in the same bucket: x-obs-website-redirect-location:/anotherPage.html</p> <p>In the following example, the request header sets the object redirection to an external URL: x-obs-website-redirect-location:http://www.example.com/</p> <p><b>Constraints:</b> The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-storage-class	String	No	<p><b>Definition:</b> Specifies the storage class of an object. Example: <b>x-obs-storage-class: STANDARD</b></p> <p><b>Constraints:</b> The value is case-sensitive.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-meta-*	String	No	<p><b>Definition:</b> Custom metadata of the object. You can add a header starting with <b>x-obs-meta-</b> 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.</p> <p>Example: <b>x-obs-meta-test: test metadata</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The custom metadata keys are case-insensitive, but are stored in lowercase by OBS. The key values are case-sensitive.</li> <li>• 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.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-expire	Integer	No	<p><b>Definition:</b> Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted.</p> <p>Example: <b>x-obs-expire:3</b></p> <p><b>Constraints:</b> 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.</p> <p><b>Range:</b> The value is an integer greater than 0.</p> <p><b>Default value:</b> None</p>

Header	Type	Man dator y (Yes/ No)	Description
x-obs-tagging	String	No	<p><b>Definition:</b> An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: <b>x-obs-tagging:TagA=A&amp;TagB&amp;TagC</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.</li> <li>• If there is no equal sign (=) in a configuration, the tag value is considered left blank.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## Request Elements

This request involves no elements.

## Response Syntax

HTTP/1.1 *status\_code*  
Date: *date*  
Content-Length: *length*  
Etag: *etag*  
Last-Modified: *time*

## Response Headers

**Table 5-167** Additional response headers

Header	Type	Description
x-obs-metadata-directive	String	<p><b>Definition:</b> Metadata operation directive.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>● <b>REPLACE_NEW:</b> 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.</li> <li>● <b>REPLACE:</b> All original metadata is replaced by metadata specified in the request. Metadata that is not specified (except for <b>x-obs-storage-class</b>) is deleted.</li> </ul> <p><b>Default value:</b> None</p>
Cache-Control	String	<p><b>Definition:</b> It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Constraints:</b> If a request carries this header field, the response message must contain this header field.</p> <p><b>Range:</b> See the Cache-control values defined in HTTP.</p> <p><b>Default value:</b> None</p>
Content-Disposition	String	<p><b>Definition:</b> It specifies the name of an object when it is downloaded.</p> <p><b>Constraints:</b> If a request carries this header field, the response message must contain this header field.</p> <p><b>Range:</b> See the Content-Disposition values defined in HTTP.</p> <p><b>Default value:</b> None</p>



Header	Type	Description
Content-Encoding	String	<p><b>Definition:</b> It specifies the content encoding format when an object is downloaded.</p> <p><b>Constraints:</b> If a request carries this header field, the response message must contain this header field.</p> <p><b>Range:</b> See the Content-Encoding values defined in HTTP.</p> <p><b>Default value:</b> None</p>
Content-Language	String	<p><b>Definition:</b> It specifies the content language format when an object is downloaded.</p> <p><b>Constraints:</b> If a request carries this header field, the response message must contain this header field.</p> <p><b>Range:</b> See the Content-Language values defined in HTTP.</p> <p><b>Default value:</b> None</p>
Expires	String	<p><b>Definition:</b> It specifies the expiration time of a cached web page when an object is downloaded.</p> <p><b>Constraints:</b> If a request carries this header field, the response message must contain this header field.</p> <p><b>Range:</b> See the Expires values defined in HTTP.</p> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-website-redirect-location	String	<p><b>Definition:</b> 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 (<b>anotherPage.html</b>) 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/</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If a request carries this header field, the response message must contain this header field.</li> <li>• The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-storage-class	String	<p><b>Definition:</b> It specifies the storage class of an object.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If a request carries this header field, the response message must contain this header field.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-meta-*	String	<p><b>Definition:</b> Custom metadata of the object. You can add custom metadata headers that start with <b>x-obs-meta-</b> 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.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If a request carries this header field, the response message must contain this header field.</li> <li>• 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.</li> <li>• The custom metadata keys are case-insensitive, but are stored in lowercase by OBS. The key values are case-sensitive.</li> <li>• 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.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-expires	Integer	<p><b>Definition:</b> Specifies when an object expires. It is measured in days.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• If a request carries this header field, the response message must contain this header field.</li> </ul> <p><b>Range:</b> The value is an integer greater than 0.</p> <p><b>Default value:</b> None</p>

## 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: 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.com
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.com
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
```

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 14:24:33 GMT
Authorization: OBS H4IPJX0TQTHHEBQQCEC: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.com
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 5-168](#) describes the parameters.

**Table 5-168** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
modify	Yes	String	<p><b>Definition:</b> If this parameter is carried, the request uploads data by modifying the object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
position	Yes	Integer	<p><b>Definition:</b> The position where the object is modified (counting from the first character). Unit: byte.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> 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).</p> <p><b>Default value:</b> None</p>

## 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

```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## 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.com
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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRplrmrJdvcEWvZyjbztd
```

## 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.com
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 5-169](#) describes the parameters.

**Table 5-169** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
truncate	Yes	String	<p><b>Definition:</b> If this parameter is carried, the request uploads data by truncating the object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
length	Yes	Integer	<p><b>Definition:</b> Size of the object after the truncation Unit: byte.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> 0 to 54975581388800 (50 TB)</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).



## 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.com
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: 32AAAUgAIAABAAAQAAEAAABAAAQAAEAAABCsgkM4Dij80gAeFY8pAZIwx72QhDeBZ5
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.com
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 5-170](#) describes the parameters.

**Table 5-170** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
name	Yes	String	<p><b>Definition:</b> Name of the object after renaming.</p> <p><b>Constraints:</b> An absolute path is required. For example, <b>name=/dir1/file1</b>.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
rename	Yes	String	<p><b>Definition:</b> If this parameter is carried, the request renames an object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

## 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.com
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">
```

```
<Tagging>
  <TagSet>
    <Tag>
      <Key>Key</Key>
      <Value>Value</Value>
    </Tag>
  </TagSet>
</Tagging>
```

## Request Parameters

[Table 5-171](#) describes the parameters in the request.

**Table 5-171** 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 <b>x-obs-version-id</b> . Type: string	No

## Request Headers

[Table 5-172](#) describes the headers in the request.

**Table 5-172** 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: <b>n58IG6hfM7vql4K0vnWpog==</b>	Yes

## Request Elements

In this request body, you need to configure the object tags in XML. [Table 5-173](#) describes the tag elements to be configured.

**Table 5-173** 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 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

In addition to common error codes, this API also returns others. [Table 5-174](#) lists the common errors and possible causes.

**Table 5-174** 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/OtMyl=
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.

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 5-175](#) describes the parameters in the request.

**Table 5-175** 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 <b>x-obs-version-id</b> . 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>
```

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

For more information about the object tag elements returned in the response, see [Table 5-173](#).

## Error Responses

In addition to common error codes, this API also returns others. [Table 5-176](#) lists the common errors and possible causes.

**Table 5-176** 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=G001018455096CE60000530600000DD 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: G001018455096CE60000530600000DD
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,



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 5-177](#) describes the parameters in the request.

**Table 5-177** 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 <b>x-obs-version-id</b> . 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
```

## 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=G001018455096CE60000530600000DD 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: G001018455096CE60000530600000DD
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.

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.com
Date: date
Authorization: authorization

<Retention>
  <Mode>String</Mode>
  <RetainUntilDate>Timestamp</RetainUntilDate>
</Retention>
```

## Request Parameters

[Table 5-178](#) describes the request parameters.

**Table 5-178** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
retention	Yes	String	<p><b>Definition:</b> Indicates that the operation is to configure or modify the retention period of an object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
versionId	No	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None. If this parameter is not configured, the latest version of the object is specified.</p>

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

## Request Elements

**Table 5-179** Request elements

Parameter	Mandatory (Yes/No)	Type	Description
Retention	Yes	Container	<p><b>Definition:</b> Container for object-level WORM policy configuration. Retention is the parent node of Mode and RetainUntilDate.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> For details, see <a href="#">Table 5-180</a>.</p> <p><b>Default value:</b> None</p>

**Table 5-180** Retention parameters

Parameter	Mandatory (Yes/No)	Type	Description
Mode	Yes	String	<p><b>Definition:</b> Retention policy of the object.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> COMPLIANCE: compliance mode</p> <p><b>Default value:</b> None</p>
RetainUntilDate	Yes	Long	<p><b>Definition:</b> Example: <b>1435728035000</b></p> <p><b>Constraints:</b> The specified time must be later than the current time and can be extended but not shortened.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

## Response Syntax

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

## Response Headers

This response uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains no elements.

## Error Responses

[Table 5-181](#) describes possible special errors in this request.

**Table 5-181** 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.com
Date: WED, 01 Jul 2015 02:25:05 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC: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. For details about the multipart upload process, see [Multipart Upload](#).

### Request Syntax

```
GET /?uploads&max-uploads=max HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
```

## Request Parameters

This request uses parameters to specify the query range for multipart uploads. [Table 5-182](#) describes the parameters.

**Table 5-182** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
delimiter	No	String	<p><b>Definition:</b> 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 <b>CommonPrefix</b>. Multipart uploads with objects that contain <b>CommonPrefix</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> 1 to 1,024 characters</p> <p><b>Default value:</b> None</p>
prefix	No	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> The value must comply with the format of the object name.</p> <p><b>Range:</b> 1 to 1,024 characters</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
max-uploads	No	Integer	<p><b>Definition:</b> Maximum number of multipart tasks that can be listed at a time. Unit: count</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value ranges from <b>1</b> to <b>1000</b>. If the specified value is greater than <b>1000</b>, only 1,000 objects are returned.</p> <p><b>Default value:</b> 1000</p>
key-marker	No	String	<p><b>Definition:</b> Lists multipart uploads that follow the value of <b>key-marker</b>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value of <b>NextKeyMarker</b> in the response body of the last request</p> <p><b>Default value:</b> None</p>
upload-id-marker	No	String	<p><b>Definition:</b> Lists multipart uploads that follow the value of <b>upload-id-marker</b> of <b>key-marker</b>.</p> <p><b>Constraints:</b> This parameter is valid only when it is used together with <b>key-marker</b>.</p> <p><b>Range:</b> The value of <b>NextUploadIdMarker</b> in the response body of the last request</p> <p><b>Default value:</b> None</p>



Parameter	Mandatory (Yes/No)	Type	Description
encoding-type	No	String	<p><b>Definition:</b> Encoding type for some elements in the response. If Delimiter, KeyMarker, Prefix, NextKeyMarker, and Key contain control characters that are not supported by the XML 1.0 standard, you can set encoding-type to encode Delimiter, KeyMarker, Prefix (including the Prefix in CommonPrefixes), NextKeyMarker, and Key in response.</p> <p><b>Constraints:</b> Currently, only URL encoding is supported.</p> <p><b>Range:</b> url</p> <p><b>Default value:</b> None. If you do not configure this parameter, encoding is not applied.</p>

## 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"?>
<ListMultipartUploadsResult xmlns="http://obs.region.myhuaweicloud.com/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>
  </Upload>
</ListMultipartUploadsResult>

```

```
<Initiated>initiatedDate</Initiated>
</Upload>
</ListMultipartUploadsResult>
```

## Response Headers

The response to the request uses common headers. For details, see [Table 3-29](#).

## Response Elements

This response contains elements of information about the multipart uploads. [Table 5-183](#) describes the elements.

**Table 5-183** Response elements

Parameter	Type	Description
ListMultipartUploadsResult	Container	<p><b>Definition:</b> Container for listing multipart upload results. ListMultipartUploadsResult is the parent node of Bucket, KeyMarker, UploadIdMarker, NextKeyMarker, NextUploadIdMarker, MaxUploads, IsTruncated, Upload, Prefix, Delimiter and CommonPrefixes.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-184</a>.</p>

**Table 5-184** Elements in a ListMultipartUploadsResult response

Parameter	Type	Description
Bucket	String	<p><b>Definition:</b> Name of the bucket to which the multipart upload was initiated</p> <p><b>Range:</b> The value can contain 3 to 63 characters.</p>
EncodingType	String	<p><b>Definition:</b> Encodes some elements in the response based on the specified type. If encoding-type is specified in the request, Delimiter, KeyMarker, Prefix (including the Prefix in CommonPrefixes), NextKeyMarker, and Key in the response will be encoded.</p> <p><b>Range:</b> url</p>

Parameter	Type	Description
KeyMarker	String	<p><b>Definition:</b> Object key where the multipart upload listing begins</p> <p><b>Range:</b> 1 to 1,024 characters</p>
UploadIdMarker	String	<p><b>Definition:</b> Upload ID where the multipart upload listing begins</p> <p><b>Range:</b> The value is a string greater than 0 and less than or equal to 32.</p>
NextKeyMarker	String	<p><b>Definition:</b> Value of <b>KeyMarker</b> in a subsequent request if a multipart upload list is truncated</p> <p><b>Range:</b> 1 to 1,024 characters</p>
NextUploadIdMarker	String	<p><b>Definition:</b> Value of <b>UploadMarker</b> in a subsequent request if a multipart upload list is truncated.</p> <p><b>Range:</b> The value is a string greater than 0 and less than or equal to 32.</p>
MaxUploads	Integer	<p><b>Definition:</b> Maximum of multipart uploads to be returned at a time Unit: count</p> <p><b>Range:</b> The value ranges from 1 to 1000. If the value is out of the range, the default value 1000 is used.</p>
IsTruncated	Boolean	<p><b>Definition:</b> Whether the returned list is truncated.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>● <b>true:</b> Not all results are returned.</li> <li>● <b>false:</b> All results are returned.</li> </ul>

Parameter	Type	Description
Upload	Container	<p><b>Definition:</b> Container for storing multipart upload information. Upload is the parent node of Key, UploadId, Initiator, Owner, StorageClass, and Initiated.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-185</a>.</p>
ListMultipartUploadsResult.Prefix	String	<p><b>Definition:</b> Prefix carried in a request.</p> <p><b>Range:</b> 1 to 1,024 characters</p>
Delimiter	String	<p><b>Definition:</b> Delimiter in a request.</p> <p><b>Range:</b> The value is a string of 1 to 1024 characters.</p>
CommonPrefixes	Container	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-188</a>.</p>

**Table 5-185** Upload response elements

Parameter	Type	Description
Key	String	<p><b>Definition:</b> Name of the object in the initiated multipart upload.</p> <p><b>Range:</b> 1 to 1,024 characters</p>
UploadId	String	<p><b>Definition:</b> ID of the multipart upload</p> <p><b>Range:</b> The value must contain 1 to 32 characters.</p>

Parameter	Type	Description
Initiator	Container	<p><b>Definition:</b> Creator of the multipart upload task. Initiator is the parent node of ID.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-186</a>.</p>
Owner	Container	<p><b>Definition:</b> Owner of the part. Owner is the parent node of ID.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-187</a>.</p>
StorageClass	String	<p><b>Definition:</b> Indicates the storage class that will be used for an object to be uploaded in parts.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD: Standard storage</li> <li>• WARM: Infrequent Access storage</li> <li>• COLD: Archive storage</li> <li>• DEEP_ARCHIVE: Deep Archive storage (limited OBT)</li> </ul>
Initiated	Date	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> None</p>

**Table 5-186** Initiator response elements

Parameter	Type	Description
ID	String	<p><b>Definition:</b> URN of the multipart upload initiator. The format is <b>domainID</b>/<i>{domainId}</i>:<b>userID</b>/<i>{userId}</i>.</p> <p><b>Range:</b> None</p>

**Table 5-187** Owner response elements

Parameter	Type	Description
ID	String	<b>Definition:</b> Domain ID of the multipart upload initiator. The format is <i>{domainId}</i> . <b>Range:</b> None

**Table 5-188** CommonPrefixes response elements

Parameter	Type	Description
CommonPrefixes.Prefix	String	<b>Definition:</b> Indicates different prefixes in the CommonPrefixes group information. <b>Range:</b> 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.com
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: 32AAAQAAEAAABAAAQAAEAAABAAAQAAEAAABCSDaHP+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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Bucket>examplebucket</Bucket>
  <KeyMarker/>
  <UploadIdMarker/>
  <Delimiter/>
  <Prefix/>
  <MaxUploads>1000</MaxUploads>
  <IsTruncated>>false</IsTruncated>
```

```
<Upload>
  <Key>obj2</Key>
  <UploadId>00000163D40171ED8DF4050919BD02B8</UploadId>
  <Initiator>
    <ID>domainID/b4bf1b36d9ca43d984fbc9491b6fce9:userID/71f390117351534r88115ea2c26d1999</ID>
  </Initiator>
  <Owner>
    <ID>b4bf1b36d9ca43d984fbc9491b6fce9</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.com
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.ap-southeast-1.myhuaweicloud.com/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-**

**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.com
Date: date
Authorization: authorization
```

## Request Parameters

This request uses parameters to specify a multipart upload. [Table 5-189](#) describes the parameters.



**Table 5-189** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
uploads	String	Yes	<p><b>Definition:</b> Indicates a multipart upload.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This parameter is an empty string.</li> <li>If this parameter is not included, the request is treated as an ordinary POST upload.</li> </ul> <p><b>Range:</b> An empty string.</p> <p><b>Default value:</b> None</p>
encoding-type	String	No	<p><b>Definition:</b> Encoding type for <b>Key</b> in the response. If <b>Key</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>Key</b>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not specify this parameter, encoding is not applied.</p>

## Request Headers

The request can use additional headers shown in [Table 5-190](#).

**Table 5-190** Request headers

Header	Type	Mandatory (Yes/No)	Description
x-obs-acl	String	No	<p><b>Definition:</b> When initiating a multipart upload, you can add this header to set an object ACL.</p> <p>Example: <b>x-obs-acl: public-read-write</b></p> <p><b>Constraints:</b> Use character strings.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• private</li> <li>• public-read</li> <li>• public-read-write</li> </ul> <p>For details about each policy, see the "Configuring an ACL Using Header Fields" section in <a href="#">ACLs</a>.</p> <p><b>Default value:</b> private</p>
x-obs-grant-read	String	No	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-grant-read: ID=domainID.</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-read-acp	String	No	<b>Definition:</b> 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: <b>x-obs-grant-read-acp: ID=domainID</b> . <b>Constraints:</b> Use commas (,) to separate multiple domains. <b>Range:</b> None <b>Default value:</b> None
x-obs-grant-write-acp	String	No	<b>Definition:</b> 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: <b>x-obs-grant-write-acp: ID=domainID</b> <b>Constraints:</b> Use commas (,) to separate multiple domains. <b>Range:</b> None <b>Default value:</b> None

Header	Type	Mandatory (Yes/No)	Description
x-obs-grant-full-control	String	No	<p><b>Definition:</b> 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: <b>x-obs-grant-full-control: ID=domainID.</b></p> <p><b>Constraints:</b> Use commas (,) to separate multiple domains.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-storage-class	String	No	<p><b>Definition:</b> When initiating a multipart upload, you can add this header to specify the storage class for the object. Example: <b>x-obs-storage-class: STANDARD</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If you do not use this header, the object storage class is the default storage class of the bucket.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• STANDARD</li> <li>• WARM</li> <li>• COLD</li> <li>• DEEP_ARCHIVE</li> </ul> <p><b>Default value:</b> By default, the storage class of the bucket is inherited.</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-persistent-headers	String	No	<p><b>Definition:</b></p> <p>When initiating a multipart upload, you can add the <b>x-obs-persistent-headers</b> header in an HTTP request to specify one or more user-defined response headers. After all parts in the multipart upload are merged, user-defined response headers will be returned in the response header when you retrieve the object or query the object metadata.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• Response headers customized in this way cannot be prefixed with <b>x-obs-</b>. For example, you should use <b>key1</b> instead of <b>x-obs-key1</b>.</li> <li>• Standard HTTP headers, such as <b>host</b>, <b>content-md5</b>, <b>origin</b>, <b>range</b>, and <b>Content-Disposition</b>, cannot be specified as user-defined headers.</li> <li>• The total length of this header and the custom metadata cannot exceed 8 KB.</li> <li>• If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.</li> <li>• If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using <b>?UTF-8?B?&lt;(str)&gt;?=&lt;=</b>, but does not decode the value. For instance, value <b>key1:abbc</b> will be returned as <b>key1:=?UTF-8?B?abbc?=&lt;=</b> in the response.</li> <li>• The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.</li> <li>• Format: <b>x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2)...</b>                      Note: Items, such as <b>key1</b> and <b>key2</b>, are user-defined headers. If they contain non-ASCII or unrecognizable characters, they can be encoded using URL or Base64. The server processes these headers as character strings, but does not decode them. Items, such as</li> </ul>

Header	Type	Mandatory (Yes/No)	Description
			<p><i>value1</i> and <i>value2</i> are the values of the corresponding headers. <b>base64_encode</b> indicates that the value is encoded using Base64. A user-defined header and its Base64-encoded value are connected using a colon (:) to form a key-value pair. All key-value pairs are separated with a comma (,) and are placed in the <b>x-obs-persistent-headers</b> header. The server then decodes the uploaded value.</p> <p>Example: <b>x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWU</b></p> <p>After all parts in the multipart upload are assembled, headers <b>key1: <i>value1</i></b> and <b>key2: <i>value2</i></b> will be returned, respectively, when you download the object and obtain the object metadata.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-website-redirect-location	String	No	<p><b>Definition:</b> 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.</p> <p>To another object in the same bucket: x-obs-website-redirect-location:/anotherPage.html</p> <p>To an external URL: x-obs-website-redirect-location:http://www.example.com/</p> <p>OBS obtains the specified value from the header and stores it in the object metadata <b>WebsiteRedirectLocation</b>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS supports redirection for objects in the root directory of a bucket, not for those in folders.</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	No. This header is required when SSE-KMS is used.	<p><b>Definition:</b> Indicates that SSE-KMS is used. Example: <b>x-obs-server-side-encryption: kms</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>kms</li> <li>AES256</li> </ul> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-kms-key-id	String	No	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This header is used only when SSE-C is used.</li> <li>• This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>



Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> The key used for encrypting an object. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This header is used only when SSE-C is used.</li> <li>• This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	String	No. This header is required when SSE-C is used.	<p><b>Definition:</b> 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: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This header is used only when SSE-C is used.</li> <li>• This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</li> </ul> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-expires	Integer	No	<p><b>Definition:</b> 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).</p> <p>Example: <b>x-obs-expires:3</b></p> <p><b>Constraints:</b> This parameter can be configured only when uploading the object. It cannot be modified by calling a metadata modification API.</p> <p><b>Range:</b> An integer greater than or equal to 0, in days</p> <p><b>Default value:</b> None</p>
x-obs-tagging	String	No	<p><b>Definition:</b> An object's tag information in key-value pairs. Multiple tags can be added at the same time.</p> <p>Example: <b>x-obs-tagging:TagA=A&amp;TagB&amp;TagC</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.</li> <li>• If there is no equal sign (=) in a configuration, the tag value is considered left blank.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> WORM mode to be applied to an object. Example: <b>x-obs-object-lock-mode:COMPLIANCE</b></p> <p><b>Constraints:</b> This parameter must be used together with <b>x-obs-object-lock-retain-until-date</b>.</p> <p><b>Range:</b> Only COMPLIANCE (compliance mode) is supported.</p> <p><b>Default value:</b> None</p>
x-obs-object-lock-retain-until-date	String	No, but required when x-obs-object-lock-mode is present.	<p><b>Definition:</b> When the WORM policy of the object expires. Example: <b>x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• The value must be a UTC time that complies with the ISO 8601 standard. Example: <b>2015-07-01T04:11:15Z</b></li> <li>• This parameter must be used together with <b>x-obs-object-lock-mode</b>.</li> </ul> <p><b>Range:</b> The time must be later than the current time.</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-meta-*	String	No	<p><b>Definition:</b> When initiating a multipart upload, you can use a header starting with <b>x-obs-meta-</b> 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 <a href="#">Managing Object Metadata</a>.</p> <p>Example: <b>x-obs-meta-test: test metadata</b></p> <p><b>Constraints:</b> This parameter can only be passed in HTTP request headers and cannot exceed 8 KB.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

For details about other common message headers, see [Table 3-3](#).

## Request Elements

This request involves no elements.

## 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.com/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 3-29](#).

**Table 5-191** Additional response headers

Header	Type	Description
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server. Example: <b>x-obs-server-side-encryption: kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> The MD5 value of the encryption key. Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

## 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 5-192](#) describes the elements.

**Table 5-192** Response elements

Element	Type	Description
InitiateMultipartUploadResult	XML	<p><b>Definition:</b> Container of a multipart upload task.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Element	Type	Description
Bucket	String	<p><b>Definition:</b> Indicates the bucket name in the multipart upload.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.)</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
Key	String	<p><b>Definition:</b> 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.</p> <p>For example, if the access path is <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Constraints:</b> See <a href="#">Object Overview</a>.</p> <p><b>Range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Element	Type	Description
UploadId	String	<p><b>Definition:</b> ID of the multipart upload, which is used to specify a multipart upload in uploading parts</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>
EncodingType	String	<p><b>Definition:</b> Encoding type for the name of an object in a multipart upload. If <b>encoding-type</b> is specified in the request, the Key in the response is encoded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not specify this parameter, encoding is not applied.</p>

## 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.com
Date: WED, 01 Jul 2015 05:14:52 GMT
Authorization: OBS AKIAIOSFODNN7EXAMPLE:VGhpcyBtZXNzYWdlIHNPZ25lZGgieSRlbHZpbmc=
```

## 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.com/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.com
Date: WED, 01 Jul 2015 05:15:43 GMT
x-obs-grant-write-acp:ID=52f24s3593as5730ea4f722483579ai7,ID=a93fcas852f24s3596ea8366794f7224
Authorization: OBS AKIAIOSFODNN7EXAMPLE:VGhpcyBtZXNzYWdlIHNPZ2Z5LzGGieSRlbHZpbmc=
```

## 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: BB78000001648457112DF37DFDADD7AD
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.com/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.

#### 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.com
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 5-193](#) describes the parameters.

**Table 5-193** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
partNumber	Integer	Yes	<b>Definition:</b> Indicates the ID of a part to be uploaded. <b>Constraints:</b> None <b>Range:</b> An integer ranging from 1 to 10000. <b>Default value:</b> None
uploadId	String	Yes	<b>Definition:</b> Indicates a multipart upload ID. <b>Constraints:</b> None <b>Range:</b> None <b>Default value:</b> None

## Request Headers

This request uses common headers. For details, see [Table 3-3](#).

**Table 5-194** 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.	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>Indicates the encryption algorithm used when SSE-C is used.</li> <li>This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

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.	<p><b>Definition:</b> The key used for encrypting an object. Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This header is used only when SSE-C is used for encryption.</li> <li>• This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Header	Type	Mandatory (Yes/No)	Description
x-obs-server-side-encryption-customer-key-MD5	String	No.	<p>This header is required when SSE-C is used. The MD5 value must be the same as that used to initiate multipart upload tasks.</p> <p><b>Definition:</b> 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: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> 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 <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

## 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 3-29](#).

**Table 5-195** Additional response headers

Header	Type	Description
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server.</p> <p>Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> The algorithm used for encryption.</p> <p>Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

Header	Type	Description
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> The MD5 value of the encryption key.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> Base64-encoded MD5 value of the key ID.</p> <p><b>Default value:</b> None</p>

## 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**.
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.com
Accept: */*
Date: WED, 01 Jul 2015 05:15:55 GMT
Authorization: OBS H4lPJX0TQTHTEBQQCEC:ZB0hFwaHubi1aKHv7dSZjts40g=
```

```
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/EOEVSMa04GXVvy0z9WI+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:ZB0hFwaHubi1aKHv7dSZjts40g=  
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/EOEVSMa04GXVvy0z9WI+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
```

## 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. For details about the multipart upload, see [Multipart Upload](#). 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.com
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 5-196](#) describes the parameters.

**Table 5-196** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
partNumber	Yes	Integer	<p><b>Definition:</b> Indicates the ID of a part to be uploaded.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> An integer ranging from 1 to 10000.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
uploadId	Yes	String	<p><b>Definition:</b> ID of a multipart upload task.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>

## Request Headers

In addition to the common message headers, the request uses two extended headers. [Table 5-197](#) describes the common message headers.

**Table 5-197** Request headers

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source	Yes	String	<p><b>Definition:</b> Indicates the source object to be copied.</p> <p>Example: <b>x-obs-copy-source:</b>/ <i>SourceBucketName</i>/ <i>SourceObjectName</i></p> <p><b>Constraints:</b> Full-width characters and percent signs (%) must be URL-encoded.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-range	No	Integer	<b>Definition:</b> Byte range of the part to be copied in the source object. <b>Constraints:</b> None <b>Range:</b> The minimum value is 0 and the maximum value is the object length minus 1. <b>Default value:</b> None
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	<b>Definition:</b> Indicates the encryption algorithm for the part copy when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b> <b>Constraints:</b> This header must be used together with <b>x-obs-server-side-encryption-customer-key</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b> . <b>Range:</b> <b>AES256:</b> SSE-C encryption and the AES256 algorithm are used. <b>Default value:</b> None

Parameter	Mandatory (Yes/No)	Type	Description
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	<p><b>Definition:</b> Indicates the key used to encrypt the target part when SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVAobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
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	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-server-side-encryption-customer-algorithm</b> and <b>x-obs-server-side-encryption-customer-key</b>.</p> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-server-side-encryption-customer-algorithm	Yes only when SSE-C is used to copy a source object	String	<p><b>Definition:</b> Indicates the encryption algorithm for the source object when SSE-C is used.</p> <p>Example: <b>x-obs-copy-source-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header must be used together with <b>x-obs-copy-source-server-side-encryption-customer-key</b> and <b>x-obs-copy-source-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> <b>AES256:</b> SSE-C encryption and the AES256 algorithm are used.</p> <p><b>Default value:</b> None</p>
x-obs-copy-source-server-side-encryption-customer-key	Yes only when SSE-C is used to copy a source object	String	<p><b>Definition:</b> Indicates the key for decrypting the source object when SSE-C is used.</p> <p>Example: <b>x-obs-copy-source-server-side-encryption-customer-key: K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 256-bit key and must be used together with <b>x-obs-copy-source-server-side-encryption-customer-algorithm</b> and <b>x-obs-copy-source-server-side-encryption-customer-key-MD5</b>.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-server-side-encryption-customer-key-MD5	Yes only when SSE-C is used to copy a source object	String	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is a Base64-encoded 128-bit MD5 value and must be used together with <b>x-obs-copy-source-server-side-encryption-customer-algorithm</b> and <b>x-obs-copy-source-server-side-encryption-customer-key</b>.</p> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>
x-obs-copy-source-if-match	No	String	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-copy-source-if-match: etag</b></p> <p><b>Constraints:</b> This parameter can be used with <b>x-obs-copy-source-if-unmodified-since</b> but cannot with other conditional copy headers.</p> <p><b>Range:</b> The ETag of the source object</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-if-none-match	No	String	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-copy-source-if-none-match: etag</b></p> <p><b>Constraints:</b> This parameter can be used with <b>x-obs-copy-source-if-modified-since</b> but cannot with other conditional copy headers.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-if-unmodified-since	No	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This parameter can be used with <b>x-obs-copy-source-if-match</b> but cannot with other conditional copy parameters.</li> <li>• The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.</li> </ul> <p><b>Range:</b> The value is an HTTP time character string in the format specified by RFC2616. Select one of the following formats:</p> <ol style="list-style-type: none"> <li>1. <b>EEE, dd MMM yyyy HH:mm:ss z</b></li> <li>2. <b>EEEE, dd-MMM-yy HH:mm:ss z</b></li> <li>3. <b>EEE MMM dd HH:mm:ss yyyy</b></li> </ol> <p>Examples:</p> <ol style="list-style-type: none"> <li>1. <b>x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT</b></li> <li>2. <b>x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT</b></li> <li>3. <b>x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994</b></li> </ol> <p><b>Default value:</b> None</p>



Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-if-modified-since	No	String	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This parameter can be used with <b>x-obs-copy-source-if-none-match</b> but cannot with other conditional copy parameters.</li> <li>• The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.</li> </ul> <p><b>Range:</b> The value is an HTTP time character string in the format specified by RFC2616. Select one of the following formats:</p> <ol style="list-style-type: none"> <li>1. <b>EEE, dd MMM yyyy HH:mm:ss z</b></li> <li>2. <b>EEEE, dd-MMM-yy HH:mm:ss z</b></li> <li>3. <b>EEE MMM dd HH:mm:ss yyyy</b></li> </ol> <p>Examples:</p> <ol style="list-style-type: none"> <li>1. <b>x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT</b></li> <li>2. <b>x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT</b></li> <li>3. <b>x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994</b></li> </ol> <p><b>Default value:</b> None</p>

## Request Elements

This request involves no elements.

## Response Syntax

```
HTTP/1.1 status_code
Date: date

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CopyPartResult xmlns="http://obs.region.myhuaweicloud.com/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 3-29](#).

**Table 5-198** Additional response headers

Parameter	Type	Description
x-obs-server-side-encryption	String	<p><b>Definition:</b> This parameter specifies the encryption mode for the part copy. Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>kms: SSE-KMS is used.</li> <li>AES256: SSE-OBS is used and the AES256 algorithm is used.</li> </ul>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> 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 <a href="#">Viewing a Key</a>. This header can be used to specify the encryption key only when the <b>x-obs-server-side-encryption</b> header is set to <b>kms</b> (that is, the KMS encryption is used).</p> <p><b>Range:</b> 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 <a href="#">Viewing Key Details</a>.</p>
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> Indicates an encryption algorithm. This header is included in a response if SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm:AES256</b></p> <p><b>Range:</b> <b>AES256:</b> SSE-C encryption and the AES256 algorithm are used.</p>

Parameter	Type	Description
x-obs-server-side-encryption-customer-key-MD5	String	<p><b>Definition:</b> Indicates the MD5 value of the key for encrypting objects. This header is included in a response when SSE-C is used.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==</b></p> <p><b>Range:</b> MD5 value of the key.</p>

## Response Elements

This response contains elements of a part copy result. [Table 5-199](#) describes the elements.

**Table 5-199** Response elements

Parameter	Type	Description
LastModified	String	<p><b>Definition:</b> Indicates the latest time an object was modified. The time is in the ISO8601 format.</p> <p>Example: 2018-01-01T00:00:00.000Z</p> <p><b>Range:</b> None</p>
ETag	String	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> The value must contain 32 characters.</p>

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 05:16:32 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:dSnnpawDSsLg/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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIjP2efLy5o8sTTComwBb2He0j11Ne
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.ap-southeast-1.myhuaweicloud.com/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:dSnnpawDSsLg/xXxaqFzrAmMw=
x-obs-copy-source: /examplebucket/object01?versionId=G001118A6456208AFFFFD24829FCF614
```

## Sample Response: Specifying versionId to Copy a Part

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40ABBD20405D30B0542
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIjP2efLy5o8sTTComwBb2He0j11NeContent-
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.ap-southeast-1.myhuaweicloud.com/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. For details about the multipart upload, see [Multipart Upload](#). 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.com
Date: date
Authorization: auth
```

### Request Parameters

This request uses parameters to specify which parts in a multipart upload will be listed. [Table 5-200](#) describes the parameters.

**Table 5-200** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
uploadId	Yes	String	<p><b>Definition:</b> ID of the multipart upload</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>
max-parts	No	Integer	<p><b>Definition:</b> The maximum number of parts in a single response Unit: count</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value ranges from <b>1</b> to <b>1000</b>. If the specified value is greater than <b>1000</b>, <b>1000</b> is used.</p> <p><b>Default value:</b> 1000</p>

Parameter	Mandatory (Yes/No)	Type	Description
part-number-marker	No	Integer	<p><b>Definition:</b> Specifies the start position of the listing. Only the uploaded parts whose sequence numbers are greater than the value of this parameter are listed.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> An integer ranging from 1 to 10000.</p> <p><b>Default value:</b> None</p>
encoding-type	No	String	<p><b>Definition:</b> Encoding type for <b>Key</b> in the response. If <b>Key</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>Key</b>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> url</p> <p><b>Default value:</b> None</p>

## 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.com/doc/2015-06-30/">
  <Bucket>BucketName</Bucket>
  <Key>object</Key>
  <UploadId>uploadid</UploadId>
  <Initiator>

```

```

<ID>id</ID>
</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 3-29](#).

## Response Elements

This response uses elements to return information about uploaded parts. [Table 5-201](#) describes the elements.

**Table 5-201** Response elements

Parameter	Type	Description
ListPartsResult	Container	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-202</a>.</p>

**Table 5-202** ListPartsResult response elements

Parameter	Type	Description
Bucket	String	<p><b>Definition:</b> Bucket name</p> <p><b>Range:</b> The value can contain 3 to 63 characters.</p>

Parameter	Type	Description
EncodingType	String	<b>Definition:</b> Encoding type of an object key. If this parameter is specified in the request, the <b>Key</b> in the response is encoded. <b>Range:</b> url
Key	String	<b>Definition:</b> Object name <b>Range:</b> 1 to 1,024 characters
UploadId	String	<b>Definition:</b> Upload task ID <b>Range:</b> The value must contain 1 to 32 characters.
Initiator	Container	<b>Definition:</b> Creator of the multipart upload task. Initiator is the parent node of ID. <b>Range:</b> For details, see <a href="#">Table 5-203</a> .
Owner	Container	<b>Definition:</b> Owner of the part. Owner is the parent node of ID. <b>Range:</b> For details, see <a href="#">Table 5-204</a> .
StorageClass	String	<b>Definition:</b> Storage class <b>Range:</b> <ul style="list-style-type: none"> <li>• STANDARD (Standard storage)</li> <li>• WARM (Infrequent Access storage)</li> <li>• COLD (Archive storage)</li> <li>• DEEP_ARCHIVE (Deep Archive storage)</li> </ul>
PartNumberMarker	Integer	<b>Definition:</b> Start number of the uploaded parts in the listing result. <b>Range:</b> 1-10000



Parameter	Type	Description
NextPartNumberMarker	Integer	<p><b>Definition:</b> If not all parts are returned, the NextPartNumberMarker element is included in the response request, indicating the value of PartNumberMarker in the next request.</p> <p><b>Range:</b> 1-10000</p>
MaxParts	Integer	<p><b>Definition:</b> Maximum number of parts in a single response. Unit: count</p> <p><b>Range:</b> 1-10000</p>
IsTruncated	Boolean	<p><b>Definition:</b> Whether the returned part list is truncated.</p> <p><b>Range:</b> <b>true:</b> Not all results are returned. <b>false:</b> All results are returned.</p>
Part	Container	<p><b>Definition:</b> Container for storing part information. Part is the parent node of PartNumber, LastModified, ETag, and Size.</p> <p><b>Range:</b> For details, see <a href="#">Table 5-205</a>.</p>

**Table 5-203** Initiator response elements

Parameter	Type	Description
ID	String	<p><b>Definition:</b> URN of the multipart upload initiator. The format is <b>domainID</b>/<i>{domainId}</i>:<b>userID</b>/<i>{userId}</i>.</p> <p><b>Range:</b> None</p>

**Table 5-204** Owner response elements

Parameter	Type	Description
ID	String	<p><b>Definition:</b> Domain ID of the multipart upload initiator. The format is <i>{domainId}</i>.</p> <p><b>Range:</b> None</p>

**Table 5-205** Part response elements

Parameter	Type	Description
PartNumber	Integer	<p><b>Definition:</b> ID of the uploaded part.</p> <p><b>Range:</b> 1-10000</p>
LastModified	Date	<p><b>Definition:</b> Time when a part was uploaded. The time is in the ISO8601 format. Example: 2018-01-01T00:00:00.000Z</p> <p><b>Range:</b> None</p>
ETag	String	<p><b>Definition:</b> 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.</p> <p><b>Range:</b> None</p>
Size	Integer	<p><b>Definition:</b> Size of the uploaded part.</p> <p><b>Range:</b> None</p>

## 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 user'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.com
Accept: */*
Date: WED, 01 Jul 2015 05:20:35 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC:xkAbdSrBPrz5yqzuZdJnk5oL/yU=
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40C099A04EF4DD1BDD9
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSK71fr+hDnzB0JBvQC1B9+S12AWxC41
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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
  <Bucket>test333</Bucket>
  <Key>obj2</Key>
  <UploadId>00000163D40171ED8DF4050919BD02B8</UploadId>
  <Initiator>
    <ID>domainID/domainiddomainiddomainiddo000008:userID/useriduseriduseriduseriduserid000008</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  $-3$ .

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.com
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>
```

**Request Parameters**

This request uses parameters to specify the ID of a multipart upload whose parts will be assembled. [Table 5-206](#) describes the parameters.

**Table 5-206** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
uploadId	String	Yes	<p><b>Definition:</b> Multipart upload ID.</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encoding-type	String	No	<p><b>Definition:</b> Encodes the Key in the response based on the specified type. If <b>Key</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>Key</b>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not configure this parameter, encoding is not applied.</p>

## 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 5-207](#) describes the elements.

**Table 5-207** Request elements

Element	Type	Man dato ry (Yes /No)	Description
CompleteMultipartUpload	XML	Yes	<p><b>Definition:</b> List of parts to be assembled</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
PartNumber	Integer	Yes	<p><b>Definition:</b> Part number</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> [1,10000]</p> <p><b>Default value:</b> None</p>
ETag	String	Yes	<p><b>Definition:</b> 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.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## Response Syntax

```

HTTP/1.1 status_code
Date: date
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<CompleteMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
  <Location>http://example-Bucket.region.myhuaweicloud.com/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 3-29](#).

In addition to the common response headers, the message headers listed in [Table 5-208](#) may be used.

**Table 5-208** Additional response headers

Header	Type	Description
x-obs-version-id	String	<p><b>Definition:</b> Version of the object after parts are assembled.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption	String	<p><b>Definition:</b> The encryption method used by the server. Example: <b>x-obs-server-side-encryption:kms</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-KMS is used.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• kms</li> <li>• AES256</li> </ul> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>



Header	Type	Description
x-obs-server-side-encryption-customer-algorithm	String	<p><b>Definition:</b> The algorithm used for encryption. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> AES256</p> <p><b>Default value:</b> None</p>

## Response Elements

This response uses elements to return the result of assembling parts. [Table 5-209](#) describes the elements.

**Table 5-209** Response elements

Element	Type	Description
Location	String	<p><b>Definition:</b> Path of the object after parts are assembled.</p> <p><b>Constraints:</b> Format: http:// bucketName.obs.<i>region</i>.myhuaweicloud.com/ objectName</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Element	Type	Description
Bucket	String	<p><b>Definition:</b> Bucket where parts are assembled</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• 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.</li> </ul> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
EncodingType	String	<p><b>Definition:</b> Encoding type of an object key. If <b>Key</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>Key</b>.</p> <p><b>Constraints:</b> None</p> <p><b>Range:</b> URL</p> <p><b>Default value:</b> None. If you do not configure this parameter, encoding is not applied.</p>

Element	Type	Description
Key	String	<p><b>Definition:</b> 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 <b>examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Constraints:</b> See <a href="#">Object Overview</a>.</p> <p><b>Range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
ETag	String	<p><b>Definition:</b> The ETag that uniquely identifies the object after its parts were assembled, calculated based on the ETag of each part.</p> <p><b>Constraints:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## 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.com
Accept: */*
Date: WED, 01 Jul 2015 05:23:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:dOfK9iLLcKxo58tRp3fWeDoYzKA=
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>acbd18db4cc2f85cedef654fcc4a4d8</ETag>
  </Part>
</CompleteMultipartUpload>
```

## Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D4625BE3075019BD02B8
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSN8D1AfQclvyGBZ9+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.com/doc/2015-06-30/">
  <Location>http://examplebucket.obs.region.myhuaweicloud.com/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. For details about the multipart upload, see [Multipart Upload](#). 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.com
Date: date
Authorization: auth
```

## Request Parameters

This request uses message parameters to specify the multipart upload task number. [Table 5-210](#) describes the parameters.

**Table 5-210** Request parameters

Parameter	Mandatory (Yes/No)	Type	Description
uploadId	Yes	String	<b>Definition:</b> ID of the multipart upload <b>Constraints:</b> None <b>Range:</b> The value must contain 1 to 32 characters. <b>Default value:</b> 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 3-29](#).

## 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](#).

## Sample Request

```
DELETE /object02?uploadId=00000163D46218698DF407362295674C HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: WED, 01 Jul 2015 05:28:27 GMT
Authorization: OBS H4lPJX0TQHTHEBQQCEC: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, SSE-OBS, 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-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.

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).

#### 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 5-211](#) 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 5-211** Headers used in SSE-KMS

Header	Type	Description
x-obs-server-side-encryption	String	<b>Definition:</b> Encryption mode. Example: <b>x-obs-server-side-encryption: AES256</b> <b>Constraints:</b> None <b>Range:</b> <ul style="list-style-type: none"><li>kms: SSE-KMS is used.</li><li>AES256: SSE-OBS is used and the AES256 algorithm is used.</li></ul> <b>Default value:</b> None

Header	Type	Description
x-obs-server-side-encryption-kms-key-id	String	<p><b>Definition:</b> ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see <a href="#">Viewing a Key</a>.</p> <p><b>Constraints:</b> This header can only be used when you specify <b>kms</b> for the <b>x-obs-server-side-encryption</b> header.</p> <p><b>Default value:</b> If you specify <b>kms</b> 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.</p>

## 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
```



```
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */*
Date: Wed, 06 Jun 2018 09:08:21 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC: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: 32AAAUJAIABAAAQAAEAABAAQAAEAABCTv7cHmAnGfBAGXUHeibUsiETTnqIcQc
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.com
Accept: */*
Date: Wed, 06 Jun 2018 09:08:50 GMT
Authorization: OBS H4IPJX0TQTHTEBQQCEC:f3/PWjkXYTYGs5IPOctTNEI2QENU=
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: 32AAAUJAIABAdiAEAAABA09AEAAABCTv7cHmAn12BAG83ibUsiET5eqlCqg
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.com
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 H4IPJX0TQTHTEBQQCEC:SH3uTrElaGWarV11uTq325kTVCl=
x-obs-copy-source: /bucket/srcobject1
```

## Sample Response: Using a Key to Encrypt an Object Copy

```
HTTP/1.1 200 OK
Server: OBS
```

```
x-obs-request-id: BB78000001648480AF3900CED7F15155
ETag: "d8bffdffbab5345d91ac05141789d2477"
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+32AAAUJAIABAAAQAAEAABAAAQAAEAABCS
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.com
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: "d8bffdffbab5345d91ac05141789d2477"
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+32AAAUJAIABAAAQAAEAABAAAQAAEAABCS
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 5-212](#) 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](#).

**Table 5-212** Headers used in SSE-OBS

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption	Yes	String	<p><b>Definition:</b> Encryption mode. Example: <b>x-obs-server-side-encryption: AES256</b></p> <p><b>Constraints:</b> None</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>kms: SSE-KMS is used.</li> <li>AES256: SSE-OBS is used and the AES256 algorithm is used.</li> </ul> <p><b>Default value:</b> None</p>

## 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"
        }
      }
    }
  ]
}
```

## 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.com
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: 32AAAUJAIABAAAQAAEAABAAAQAAEAABCTv7cHmAnGfBAGXUHeibUsiETTnqICqC
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.com
x-obs-server-side-encryption: AES256
Accept: /*/*
Date: Wed, 06 Jun 2018 09:10:29 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:SH3uTrElagWarVI1uTq325kTVCl=
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+32AAAUJAIABAAAQAAEAABAAAQAAEAABCS
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.com
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+32AAAUJAIABAAAQAAEAABAAAQAAEAABCS
Date: Wed, 06 Jun 2018 09:10:29 GMT
Content-Length: 0
```

## 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 5-213** Headers used for encrypting objects in SSE-C

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption-customer-algorithm	Yes	String	<p><b>Definition:</b> Indicates the encryption algorithm for the object when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header is included in a response if SSE-C is used for server-side encryption.</p> <p><b>Range:</b> <b>AES256:</b> SSE-C encryption and the AES256 algorithm are used.</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-server-side-encryption-customer-key	Yes	String	<p><b>Definition:</b> The key for encrypting objects when SSE-C is used. Its value is a Base64-encoded 256-bit key.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobn cnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is used only when SSE-C is used for encryption.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>
x-obs-server-side-encryption-customer-key-MD5	Yes	String	<p><b>Definition:</b> 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.</p> <p>Example: <b>x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN +tIEVa0/fGaQ==</b></p> <p><b>Constraints:</b> This header is used only when SSE-C is used for encryption.</p> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>

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](#)

- **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 5-214** 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	<p><b>Definition:</b> Indicates the algorithm for decrypting the source object when SSE-C is used. Example: <b>x-obs-server-side-encryption-customer-algorithm: AES256</b></p> <p><b>Constraints:</b> This header is used only when SSE-C is used for encryption.</p> <p><b>Range:</b> <b>AES256:</b> SSE-C encryption and the AES256 algorithm are used.</p> <p><b>Default value:</b> None</p>
x-obs-copy-source-server-side-encryption-customer-key	Yes	String	<p><b>Definition:</b> Indicates the Base64 value of the key for decrypting the source object when SSE-C is used. Example: <b>x-obs-copy-source-server-side-encryption-customer-algorithm: K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=</b></p> <p><b>Constraints:</b> This header is used only when SSE-C is used for encryption.</p> <p><b>Range:</b> None</p> <p><b>Default value:</b> None</p>

Parameter	Mandatory (Yes/No)	Type	Description
x-obs-copy-source-server-side-encryption-customer-key-MD5	Yes	String	<p><b>Definition:</b> 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.</p> <p><b>Example:</b> <code>x-obs-copy-source-server-side-encryption-customer-key:4XvB3tbNTN+tIEVa0/fGaQ==</code></p> <p><b>Constraints:</b> This header is used only when SSE-C is used for encryption.</p> <p><b>Range:</b> MD5 value of the key.</p> <p><b>Default value:</b> None</p>

### 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.com
Accept: */*
Date: Wed, 06 Jun 2018 09:12:00 GMT
Authorization: OBS H4!PJX0TQTHHEBQQCEC:mZSfafoM+llApk0HG0Thlqeccu0=
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: 32AAAUgAIAABAAAQAAEAAABAAAQAAEAABCSAJ8bTNJV0X+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.com
```



```
Accept: /*/*
Date: Wed, 06 Jun 2018 09:20:10 GMT
Authorization: OBS H4lPJX0TQTHHEBQQCEC: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=H4lPJX0TQTHHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrrzRNZxwS72CXeX
M%3D HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
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: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxlJhVK/heKOWIP8Wn2lWmQoerfw
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.

**Table 5-215** 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 5-216** 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 5-217** 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-OBS	Object encrypted using SSE-KMS	HTTPS
Object encrypted using SSE-C	Object encrypted using SSE-KMS	HTTPS

Source Object	Target Object	Transfer Protocol
Non-encrypted object	Object encrypted using SSE-C	HTTPS
Object encrypted using SSE-KMS	Object encrypted using SSE-C	HTTPS
Object encrypted using SSE-OBS	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-OBS	Non-encrypted object	HTTP or HTTPS
Object encrypted using SSE-C	Non-encrypted object	HTTP or HTTPS
Non-encrypted object	Object encrypted using SSE-OBS	HTTPS
Object encrypted using SSE-KMS	Object encrypted using SSE-OBS	HTTPS
Object encrypted using SSE-OBS	Object encrypted using SSE-OBS	HTTPS
Object encrypted using SSE-C	Object encrypted using SSE-OBS	HTTPS

**Table 5-218** 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-OBS	Part encrypted using SSE-KMS	HTTP or HTTPS
Object encrypted using SSE-C	Part encrypted using SSE-KMS	HTTP or HTTPS

Source Object	Target Part	Transfer Protocol
Non-encrypted object	Part encrypted using SSE-C	HTTPS
Object encrypted using SSE-KMS	Part encrypted using SSE-C	HTTPS
Object encrypted using SSE-OBS	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-OBS	Non-encrypted part	HTTP or HTTPS
Object encrypted using SSE-C	Non-encrypted part	HTTP or HTTPS
Non-encrypted object	Part encrypted using SSE-OBS	HTTP or HTTPS
Object encrypted using SSE-KMS	Part encrypted using SSE-OBS	HTTP or HTTPS
Object encrypted using SSE-OBS	Part encrypted using SSE-OBS	HTTP or HTTPS
Object encrypted using SSE-C	Part encrypted using SSE-OBS	HTTP or HTTPS

# 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 3xx, 4xx or 5xx 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 3xx, 4xx, or 5xx

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 <a href="#">Table 6-2</a> .

Element	Description
Message	Details the error in the XML error response body. For details about error messages, see <a href="#">Table 6-2</a> .
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 <b>bucketName</b> .	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 <b>Content-MD5</b> 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.

Status Code	Error Code	Error Message	Solution
400 Bad Request	CustomDomainAlreadyExist	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	<ul style="list-style-type: none"> <li>The size of the file uploaded using the PUT, POST, or Append methods of SDKs or APIs exceeds 5 GB.</li> <li>The part uploaded is larger than 5 GB in size.</li> <li>The size of the bucket configurations exceeds 20 KB.</li> <li>The file size exceeds the upper limit defined in the policy of the POST form.</li> <li>The size of the file uploaded using the multipart upload of SDKs or APIs or the resumable upload of SDKs exceeds 48.8 TB.</li> </ul>	Modify the conditions specified in the upload policy or reduce the object size.
400 Bad Request	EntityTooSmall	<ul style="list-style-type: none"> <li>The part uploaded, except the last one, is smaller than 100 KB.</li> <li>The file size is smaller than the lower limit defined in the policy of the POST form.</li> </ul>	Modify the conditions specified in the upload policy or increase the object size.
400 Bad Request	IllegalLocation-ConstraintException	A request without <b>Location</b> 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 <b>Location</b> 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	IncorrectNumberOfFilesInPostRequest	Each POST request must contain one file to be uploaded.	Carry a file to be uploaded.

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 <a href="#">submit a service ticket</a> for technical support.
400 Bad Request	InvalidDefaultStorageClass	The default storage class is invalid.	Check which storage classes can be used.
400 Bad Request	InvalidEncryptionAlgorithmError	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	InvalidLocationConstraint	The specified <b>Location</b> in the bucket creation request is invalid or does not exist.	Correct the <b>Location</b> 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	InvalidPolicyDocument	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	InvalidRedirectLocation	Invalid redirect location.	Specifies the correct IP address.



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 <a href="#">submit a service ticket</a> 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 <b>Logging</b> 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.

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	MissingRequired-Header	Required headers are missing in the request.	Provide required headers.
400 Bad Request	MissingSecurity-Header	A required header is not provided.	Provide required headers.
400 Bad Request	MultipleContentLengths	There are multiple Content-Length headers.	Check the encapsulation header or <a href="#">submit a service ticket</a> 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.	<a href="#">Submit a service ticket</a> 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.

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	AccessDenied	The access is denied when setting a bucket policy or ACL that allows public access.	Specify a private bucket policy or ACL.
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	DeregisterUserId	The user has been deregistered.	Top up or re-register.
403 Forbidden	InArrearOrInsufficientBalance	The subscriber owes fees or the account balance is insufficient, and the subscriber does not have the permission to perform an operation.	Top up.
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	NotSignedUp	You have not registered with the system.	Register OBS.

Status Code	Error Code	Error Message	Solution
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. For details, see <a href="#">Why Don't the Signatures Match?</a>
403 Forbidden	VirtualHostingAccessDomainNameRequired	Virtual hosting access domain name is not used.	Use the virtual hosting access domain name. For details, see <a href="#">Constructing a Request</a> .
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 <b>restricted</b> or <b>frozen</b> .	Address the <b>restricted</b> or <b>frozen</b> 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	NoSuchLifecycleConfiguration	The requested lifecycle rule does not exist.	Configure a lifecycle rule first.

Status Code	Error Code	Error Message	Solution
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.
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 <a href="#">submit a service ticket</a> 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.

Status Code	Error Code	Error Message	Solution
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.	<a href="#">Submit a service ticket</a> 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.
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 and Deep 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.

Status Code	Error Code	Error Message	Solution
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.	<a href="#">Submit a service ticket</a> for technical support.
501 Not Implemented	ServiceNotImplemented	The request method is not implemented by the server.	<a href="#">Submit a service ticket</a> for technical support.
503 Service Unavailable	ServiceUnavailable	The server is overloaded or has internal errors.	Try again later or <a href="#">submit a service ticket</a> for technical support.
503 Service Unavailable	SlowDown	Too frequent requests. Reduce your request frequency.	Too frequent requests. Reduce your request frequency.

**Table 6-3** OEF error codes

Status Code	Error Code	Error Message	Solution
500 Internal Server Error	SYS.0001	Internal service error.	<a href="#">Submit a service ticket</a> for technical support.
404 Not Found	SYS.0003	Unsupported API.	Use another API.
401 Unauthorized	SYS.0004	Unauthenticated request.	<a href="#">Submit a service ticket</a> for technical support.
403 Forbidden	SYS.0005	No access permission.	<a href="#">Submit a service ticket</a> for technical support.
400 Bad Request	SYS.0006	Incorrect request format.	Check the request format.

Status Code	Error Code	Error Message	Solution
400 Bad Request	SYS.0007	Invalid request for range download.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0008	Token expired.	Use a valid token.
431 Request Header Fields Too Large	SYS.0009	The number of headers in the HTTP request exceeds the upper limit.	Reduce the number of headers in the HTTP request.
400 Bad Request	SYS.0010	Invalid request parameters.	Check the request parameters.
429 Too Many Requests	SYS.0011	The number of requests has exceeded the upper limit.	Reduce the number of requests.
400 Bad Request	SYS.0012	The request body is oversized.	Reduce the request body size.
403 Forbidden	SYS.0013	Token update is required due to permission changes.	Update the token.
404 Not Found	SYS.0014	The bucket does not exist.	Try with another bucket name.
404 Not Found	SYS.0015	The object does not exist.	Try with another object name.
500 Internal Server Error	SYS.0016	OBS access error.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0018	Internal request error. Possible causes: incorrect request format or network disconnection.	Check the request format and network connectivity.
500 Internal Server Error	SYS.0019	Failed to access the bucket policy.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0020	Failed to access the background task management service.	<a href="#">Submit a service ticket</a> for technical support.
403 Forbidden	SYS.0021	Restricted account.	Top up your account.
403 Forbidden	SYS.0022	The account is frozen.	Top up or register a new account.



Status Code	Error Code	Error Message	Solution
400 Bad Request	SYS.0023	Incorrect region.	Try with another region name.
500 Internal Server Error	SYS.0024	Failed to access an authorized service.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0025	Incorrect response content.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0026	Incorrect read response content.	<a href="#">Submit a service ticket</a> for technical support.
400 Bad Request	SYS.0027	The agency does not have any permissions.	<a href="#">Submit a service ticket</a> for technical support.
400 Bad Request	SYS.0028	The agency does not exist.	Try with another agency.
400 Bad Request	SYS.0029	Invalid OBS region domain name.	Try with another OBS region domain name.
400 Bad Request	SYS.0030	OBS region domain name is not matched.	Try with another OBS region domain name.
500 Internal Server Error	SYS.0031	Failed to authorize OBS to automatically create an agency.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0032	Failed to authorize OBS to automatically modify an agency.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0033	Failed to grant OBS to automatically create custom permissions.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0034	Failed to grant OBS to automatically query custom permissions.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0035	Failed to grant OBS to automatically update custom permissions.	<a href="#">Submit a service ticket</a> for technical support.
400 Bad Request	SYS.0036	Invalid project ID.	Try with another project ID.
400 Bad Request	SYS.0037	Insufficient permissions granted to the agency.	<a href="#">Submit a service ticket</a> for technical support.

Status Code	Error Code	Error Message	Solution
400 Bad Request	SYS.0038	Multi-range download is not supported.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0039	Invalid account ID.	Enter the correct tenant ID.
500 Internal Server Error	SYS.0040	An error occurred when initializing the SDK client.	<a href="#">Submit a service ticket</a> for technical support.
400 Bad Request	SYS.0041	Failed to replace the magic parameter.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0042	Server processing times out.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0043	Failed to deserialize the JSON character string.	<a href="#">Submit a service ticket</a> for technical support.
500 Internal Server Error	SYS.0044	An error occurred when obtaining the internal cache status.	<a href="#">Submit a service ticket</a> for technical support.

# 7 Permissions and Supported Actions

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## 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, enterprise projects, 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

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
- IAM projects/Enterprise projects: the authorization scope of a custom policy. A custom policy can be applied to IAM projects or enterprise projects or both. Policies that contain actions for both IAM and enterprise projects can be used and applied for both IAM and Enterprise Management. Policies that contain actions only for IAM projects can be used and applied to IAM only. For differences between IAM projects and enterprise projects, see [What Are the Differences Between IAM and Enterprise Management?](#)

 NOTE

The check mark (√) indicates that an action takes effect. The cross mark (x) indicates that an action does not take effect.

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, configuring cross-region replication, 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	Enterprise Project
Listing all buckets	<a href="#">Listing Buckets</a>	obs:bucket:ListAllMyBuckets	Supported	Supported
Creating a bucket	<a href="#">Creating a Bucket</a>	obs:bucket:CreateBucket	Supported	Supported
Listing objects in a bucket	<a href="#">Listing Objects in a Bucket</a>	obs:bucket:ListBucket	Supported	Supported
Listing object versions in a bucket	<a href="#">Listing Objects in a Bucket</a>	obs:bucket:ListBucketVersions	Supported	Supported

Permission	API	Action	IAM Project	Enterprise Project
Determining whether a bucket exists and obtaining the bucket metadata	<a href="#">Obtaining Bucket Metadata</a>	obs:bucket:HeadBucket	Supported	Supported
Obtaining the bucket location	<a href="#">Obtaining Bucket Location</a>	obs:bucket:GetBucketLocation	Supported	Supported
Deleting a bucket	<a href="#">Deleting Buckets</a>	obs:bucket:DeleteBucket	Supported	Supported
Configuring a bucket policy	<a href="#">Configuring a Bucket Policy</a>	obs:bucket:PutBucketPolicy	Supported	Supported
Obtain the bucket policy configurations	<a href="#">Obtaining Bucket Policy Information</a>	obs:bucket:GetBucketPolicy	Supported	Supported
Deleting a bucket policy	<a href="#">Deleting a Bucket Policy</a>	obs:bucket:DeleteBucketPolicy	Supported	Supported
Configuring the bucket ACL	<a href="#">Configuring a Bucket ACL</a>	obs:bucket:PutBucketAcl	Supported	Supported
Obtaining the bucket ACL information	<a href="#">Obtaining Bucket ACL Information</a>	obs:bucket:GetBucketAcl	Supported	Supported
Configuring logging for a bucket	<a href="#">Configuring Logging for a Bucket</a>	obs:bucket:PutBucketLogging	Supported	Supported
Obtaining the logging configurations of a bucket	<a href="#">Obtaining a Bucket Logging Configuration</a>	obs:bucket:GetBucketLogging	Supported	Supported
Configuring or deleting a lifecycle rule	<a href="#">Configuring Bucket Lifecycle Rules</a> <a href="#">Deleting Lifecycle Rules</a>	obs:bucket:PutLifecycleConfiguration	Supported	Supported
Obtaining the lifecycle rule configurations	<a href="#">Obtaining Bucket Lifecycle Configuration</a>	obs:bucket:GetLifecycleConfiguration	Supported	Supported
Configuring versioning for a bucket	<a href="#">Configuring Versioning for a Bucket</a>	obs:bucket:PutBucketVersioning	Supported	Supported

Permission	API	Action	IAM Project	Enterprise Project
Obtaining the versioning configurations of a bucket	<a href="#">Obtaining Bucket Versioning Status</a>	obs:bucket:GetBucketVersioning	Supported	Supported
Configuring storage class for a bucket	<a href="#">Configuring Storage Class for a Bucket</a>	obs:bucket:PutBucketStoragePolicy	Supported	Supported
Obtaining the storage class of a bucket	<a href="#">Obtaining Bucket Storage Class Information</a>	obs:bucket:GetBucketStoragePolicy	Supported	Supported
Configuring cross-region replication for a bucket	<a href="#">Configuring Cross-Region Replication for a Bucket</a>	obs:bucket:PutReplicationConfiguration	Supported	Supported
Obtaining the cross-region replication configuration of a bucket	<a href="#">Obtaining the Cross-Region Replication Configuration of a Bucket</a>	obs:bucket:GetReplicationConfiguration	Supported	Supported
Deleting the cross-region replication configuration of a bucket	<a href="#">Deleting the Cross-Region Replication Configuration of a Bucket</a>	obs:bucket>DeleteReplicationConfiguration	Supported	Supported
Adding tags to a bucket	<a href="#">Configuring Tags for a Bucket</a>	obs:bucket:PutBucketTagging	Supported	Supported
Obtaining bucket tags	<a href="#">Obtaining Bucket Tags</a>	obs:bucket:GetBucketTagging	Supported	Supported
Deleting bucket tags	<a href="#">Deleting Tags</a>	obs:bucket>DeleteBucketTagging	Supported	Supported
Limiting storage capacity for a bucket	<a href="#">Configuring Bucket Storage Quota</a>	obs:bucket:PutBucketQuota	Supported	Supported
Querying the storage capacity limit of a bucket	<a href="#">Querying Bucket Storage Quota</a>	obs:bucket:GetBucketQuota	Supported	Supported
Querying the used capacity of a bucket	<a href="#">Obtaining Storage Information of a Bucket</a>	obs:bucket:GetBucketStorage	Supported	Supported

Permission	API	Action	IAM Project	Enterprise Project
Configuring inventories for a bucket	<a href="#">Configuring Bucket Inventories</a>	obs:bucket:PutBucketInventoryConfiguration	Supported	Supported
Obtaining a specific inventory or listing all inventories of a bucket	<a href="#">Obtaining a Specific Inventory of a Bucket</a> <a href="#">Listing All Inventories of a Bucket</a>	obs:bucket:GetBucketInventoryConfiguration	Supported	Supported
Deleting bucket inventories	<a href="#">Deleting Bucket Inventories</a>	obs:bucket:DeleteBucketInventoryConfiguration	Supported	Supported
Configuring a user-defined domain name for a bucket	<a href="#">Configuring a Custom Domain Name for a Bucket</a>	obs:bucket:PutBucketCustomDomainConfiguration	Supported	Supported
Obtaining the user-defined domain name of a bucket	<a href="#">Obtaining the Custom Domain Name of a Bucket</a>	obs:bucket:GetBucketCustomDomainConfiguration	Supported	Supported
Deleting the user-defined domain name of a bucket	<a href="#">Deleting the Custom Domain Name of a Bucket</a>	obs:bucket:DeleteBucketCustomDomainConfiguration	Supported	Supported
Configuring or deleting encryption for a bucket	<a href="#">Configuring Bucket Encryption</a> <a href="#">Deleting the Encryption Configuration of a Bucket</a>	obs:bucket:PutEncryptionConfiguration	Supported	Supported
Obtaining the encryption configurations of a bucket	<a href="#">Obtaining Bucket Encryption Configuration</a>	obs:bucket:GetEncryptionConfiguration	Supported	Supported
Configuring direct reading for a bucket	<a href="#">Configuring Direct Reading for Archive Objects in a Bucket</a>	obs:bucket:PutDirectColdAccessConfiguration	Supported	Supported

Permission	API	Action	IAM Project	Enterprise Project
Obtaining the direct reading configurations of a bucket	<a href="#">Obtaining the Direct Reading Policy of Archive Objects in a Bucket</a>	obs:bucket:GetDirectColdAccessConfiguration	Supported	Supported
Deleting the direct reading configurations of a bucket	<a href="#">Deleting the Direct Reading Policy of Archive Objects in a Bucket</a>	obs:bucket:DeleteDirectColdAccessConfiguration	Supported	Supported
Configuring static website hosting for a bucket	<a href="#">Configuring Static Website Hosting for a Bucket</a>	obs:bucket:PutBucketWebsite	Supported	Supported
Obtaining the static website hosting configurations of a bucket	<a href="#">Obtaining the Static Website Hosting Configuration of a Bucket</a>	obs:bucket:GetBucketWebsite	Supported	Supported
Deleting the static website hosting configurations of a bucket	<a href="#">Deleting the Static Website Hosting Configuration of a Bucket</a>	obs:bucket:DeleteBucketWebsite	Supported	Supported
Configuring or deleting CORS rules for a bucket	<a href="#">Configuring Bucket CORS</a> <a href="#">Deleting the CORS Configuration of a Bucket</a>	obs:bucket:PutBucketCORS	Supported	Supported
Obtaining the CORS configurations of a bucket	<a href="#">Obtaining the CORS Configuration of a Bucket</a>	obs:bucket:GetBucketCORS	Supported	Supported
Configuring a default WORM policy for a bucket	<a href="#">Configuring a Default WORM Policy for a Bucket</a>	obs:bucket:PutBucketObjectLockConfiguration	Supported	Supported
Obtaining the default WORM policy of a bucket	<a href="#">Obtaining the Default WORM Policy of a Bucket</a>	obs:bucket:GetBucketObjectLockConfiguration	Supported	Supported



Permission	API	Action	IAM Project	Enterprise Project
Listing initiated multipart uploads in a bucket	<a href="#">Listing Initiated Multipart Uploads in a Bucket</a>	obs:bucket:ListBucketMultipartUploads	Supported	Supported
Configuring public access block for a bucket	<a href="#">Configuring Public Access Block for a Bucket</a>	obs:bucket:PutBucketPublicAccessBlock	Supported	Supported
Obtaining the public access block configuration of a bucket	<a href="#">Obtaining the Public Access Block Configuration of a Bucket</a>	obs:bucket:GetBucketPublicAccessBlock	Supported	Supported
Deleting the public access block configuration of a bucket	<a href="#">Deleting the Public Access Block Configuration of a Bucket</a>	obs:bucket:DeleteBucketPublicAccessBlock	Supported	Supported
Obtaining the public access status of a bucket	<a href="#">Obtaining the Public Access Status of a Bucket</a>	obs:bucket:GetBucketPublicStatus	Supported	Supported
Obtaining the public access status of a bucket policy	<a href="#">Obtaining the Public Access Status of a Bucket Policy</a>	obs:bucket:GetBucketPolicyPublicStatus	Supported	Supported

## 7.3 Object Actions

**Table 7-2** Object actions

Permission	API	Action	IAM Project	Enterprise Project
Uploading objects using PUT or POST, appending objects, initiating multipart uploads, uploading parts, copying parts, assembling parts, modifying objects, truncating objects, renaming objects	<a href="#">Uploading an Object - PUT</a> <a href="#">Uploading an Object - POST</a> <a href="#">Appending an Object</a> <a href="#">Initiating a Multipart Upload</a> <a href="#">Uploading Parts</a> <a href="#">Completing a Multipart Upload</a> <a href="#">Modifying an Object</a> <a href="#">Truncating an Object</a> <a href="#">Renaming an Object</a>	obs:object:PutObject	Supported	Supported
Copying an object	<a href="#">Copying an Object</a>	obs:object:GetObject obs:object:PutObject	Supported	Supported
Obtaining the content and metadata of an object	<a href="#">Downloading an Object</a> <a href="#">Querying Object Metadata</a>	obs:object:GetObject	Supported	Supported
Obtaining the content and metadata of a specific object version	<a href="#">Downloading an Object</a> <a href="#">Querying Object Metadata</a>	obs:object:GetObjectVersion	Supported	Supported
Deleting a single object or a batch of objects	<a href="#">Deleting an Object</a> <a href="#">Deleting Objects</a>	obs:object:DeleteObject	Supported	Supported

Permission	API	Action	IAM Project	Enterprise Project
Deleting a single object version or a batch of object versions	<a href="#">Deleting an Object</a> <a href="#">Deleting Objects</a>	obs:object:DeleteObjectVersion	Supported	Supported
Restoring Archive objects	<a href="#">Restoring Archive or Deep Archive Objects</a>	obs:object:RestoreObject	Supported	Supported
Configuring the object ACL	<a href="#">Configuring an Object ACL</a>	obs:object:PutObjectAcl	Supported	Supported
Configuring the ACL for a specific object version	<a href="#">Configuring an Object ACL</a>	obs:object:PutObjectVersionAcl	Supported	Supported
Obtaining the object ACL information	<a href="#">Obtaining Object ACL Configuration</a>	obs:object:GetObjectAcl	Supported	Supported
Obtaining the ACL information of a specific object version	<a href="#">Obtaining Object ACL Configuration</a>	obs:object:GetObjectVersionAcl	Supported	Supported
Modifying object metadata	<a href="#">Modifying Object Metadata</a>	obs:object:ModifyObjectMetadata	Supported	Supported
Listing uploaded parts	<a href="#">Listing Uploaded Parts that Have Not Been Assembled</a>	obs:object:ListMultipartUploadParts	Supported	Supported
Aborting a multipart upload	<a href="#">Canceling a Multipart Upload Task</a>	obs:object:AbortMultipartUpload	Supported	Supported
Configuring WORM retention for an object	<a href="#">Configuring WORM Retention for an Object</a>	obs:object:PutObjectRetention	Supported	Supported
Obtaining the object-level WORM retention configuration	<a href="#">Querying Object Metadata</a>	obs:object:GetObject	Supported	Supported
Adding object tags	<a href="#">Adding Object Tags</a>	obs:object:PutObjectTagging	Not supported	Not supported

Permission	API	Action	IAM Project	Enterprise Project
Obtaining object tags	<b>Obtaining Object Tags</b>	obs:object:GetObjectTagging	Not supported	Not supported
Deleting object tags	<b>Deleting Object Tags</b>	obs:object:DeleteObjectTagging	Not supported	Not supported

# 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.

**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.

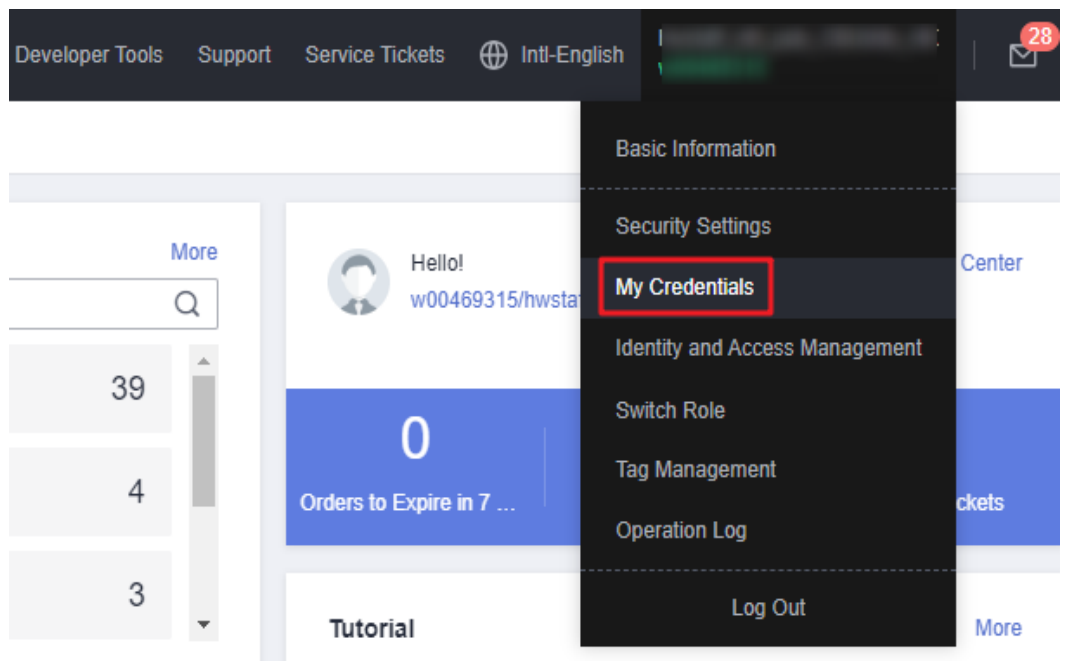
----End

## 8.3 Obtaining Account, IAM User, Project, User Group, Region, and Agency Information

### Obtaining Account, IAM User, and Project Information

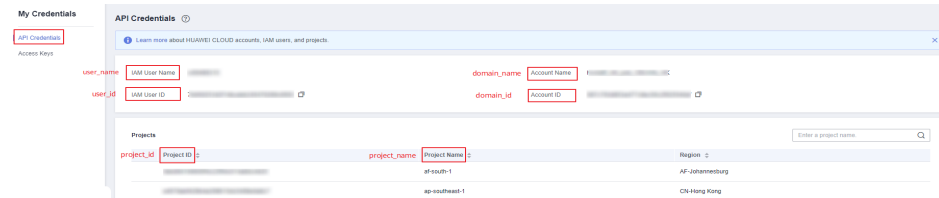
- **Using the console**
  - a. On the Huawei Cloud homepage, click **Console** in the upper right corner.
  - b. Hover over the username in the upper right corner and choose **My Credentials**.

**Figure 8-1** Going to the **My Credentials** page



- 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

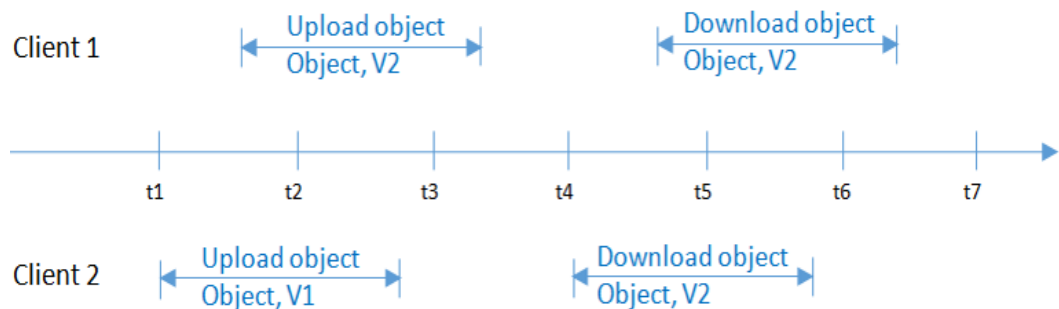
occurs, query whether the data has been successfully uploaded to the server. If not, upload the data again.

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

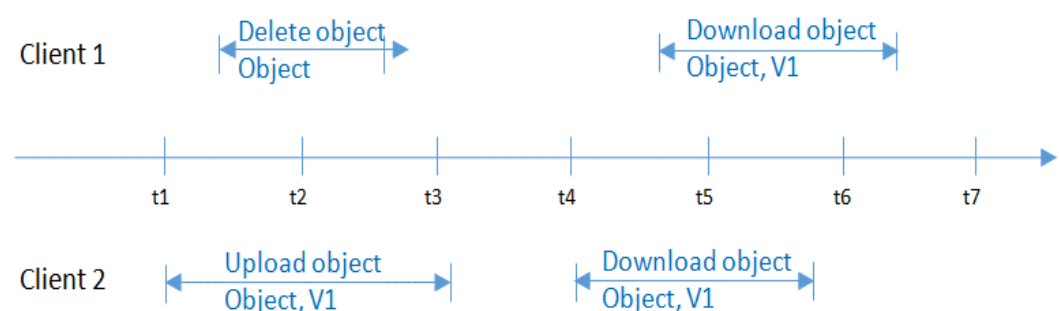
1. When client1 is uploading an object V1, client2 is uploading an object V2 with the same name. After the successful uploads, both client1 and client2 can access the latest object data V2, as shown in [Figure 8-3](#).

**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](#).

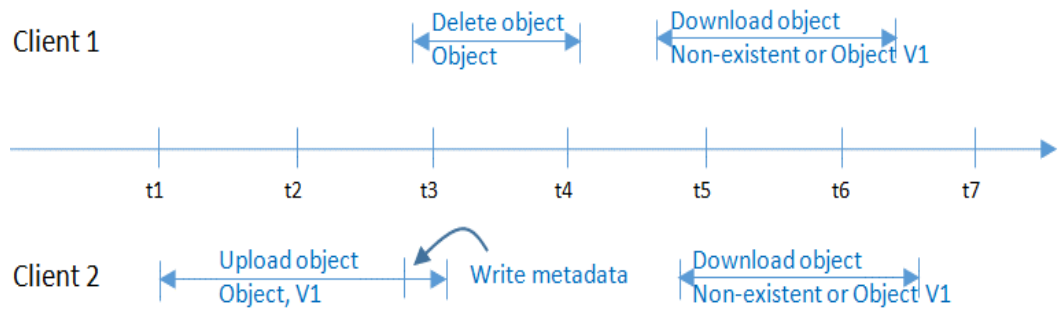
**Figure 8-4** Concurrent upload and deletion of the same object (1)



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](#).

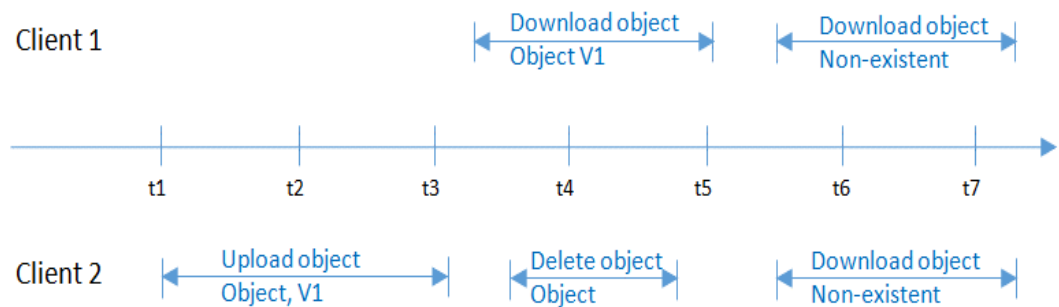


**Figure 8-5** Concurrent upload and deletion of the same object (2)



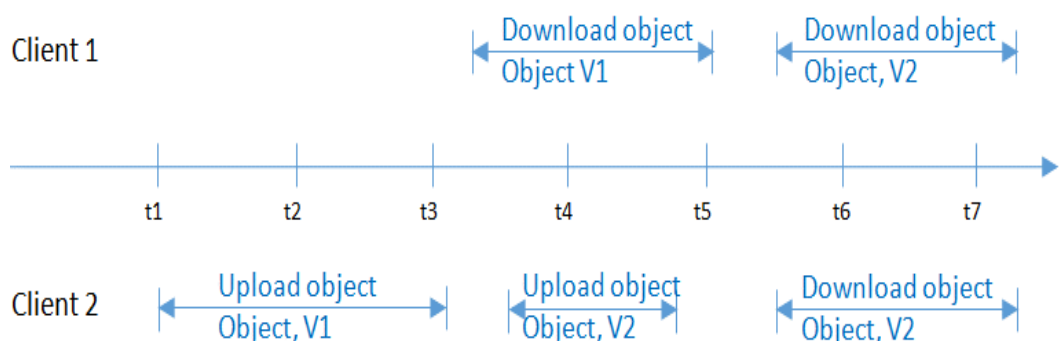
4. When client1 is downloading an object, client2 deletes an object with the same name. In this scenario, client1 may have downloaded a full copy or only part of the object data. After a deletion success message is returned to client2, an attempt to download the object will fail, and an error will be 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**.

**Figure 8-8** Concurrently uploading the same part of the same object

