Object Storage Service(OBS)

API Reference

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1 Before You Start

1.1 Overview

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

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

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

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

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 the **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 Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of services, see **Regions and Endpoints**.

OBS provides a second-level domain name for each region. You can use the domain name provided by OBS or a custom domain name to access OBS.

1.3 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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS8wS9l00ll4oMWmdniV7XmdAvfewrQq

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

APIs for Advanced Bucket Settings

Table 2-2 APIs for advanced bucket settings

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

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

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

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

APIs for Static Website Hosting

Table 2-3 APIs for static website hosting

API	Description
Configuring Static Website Hosting for a Bucket	Creates or updates the website hosting configuration of a bucket. You can host static website resources such as HTML web pages, flash files, or audio and video files in an OBS bucket, so that you can provide these hosted resources using the bucket's website endpoint to end users.
Obtaining the Static Website Hosting Configuration of a Bucket	Obtains the website hosting configuration of a bucket.
Deleting the Static Website Hosting Configuration of a Bucket	Deletes the website hosting configuration of a bucket.

API	Description
Configuring Bucket CORS	Configures cross-origin resource sharing (CORS) for a bucket. Static website resources stored in a bucket in a domain can be configured with CORS to accept requests from a different domain.
Obtaining the CORS Configuration of a Bucket	Obtains the CORS configuration of a bucket.
Deleting the CORS Configuration of a Bucket	Deletes the CORS configuration of a bucket.
OPTIONS Bucket	Checks whether the client has the permission to access the server. This operation is usually performed before cross-domain access.
OPTIONS Object	Checks whether the client has the permission to access the server. This operation is usually performed before cross-domain access.

APIs for Object Operations

Table 2-4 APIs for object operations

API	Description
Uploading an Object - PUT	Uploads an object to a bucket.
Uploading an Object - POST	Uploads an object to a bucket using a form.
Copying an Object	Creates a copy for an existing object.
Downloading an Object	Downloads an object.
Querying Object Metadata	Obtains object metadata (such as expiration time, version number, and CORS configuration).
Deleting an Object	Deletes an object. You can use versionId to specify a version to delete.
Deleting Objects	Permanently deletes a batch of objects from a bucket.
Restoring Archive or Deep Archive Objects	Restores objects from the Archive or Deep Archive (in OBT) storage class.
Appending an Object	Appends data to an object. If the requested object cannot be found, it will be created.
Configuring an Object ACL	Sets an ACL to control the read and write permissions on an object.

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

APIs for Multipart Uploads

Table 2-5 APIs for multipart uploads

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

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

Paramet er	Description	Mandat ory
protocol	Protocol used for sending requests, which can be either HTTP or HTTPS. HTTPS is a protocol that ensures secure access to resources.	Yes
bucket	Resource path of a bucket, identifying only one bucket in OBS	No
domain	Domain name or IP address of the server for saving resources	Yes
port	Port enabled for protocols used for sending requests. The value varies with software server deployment. If no port number is specified, the protocol uses the default value. Each transmission protocol has its default port number. In OBS, the default HTTP port number is 80 and that of HTTPS is 443 .	No
object	An object path used in the request	No

Paramet er	Description	Mandat ory
param	A specific resource contained by a bucket or object. Default value of this parameter indicates that the bucket or object itself is obtained.	No

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.
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	Description	Mandatory
Authorization	Signature information contained in a request message	Conditionally required
	Type: string	
	No default value.	
	Conditional: optional for anonymous requests and required for other requests.	
Content- Length	The message length (excluding headers) defined in RFC 2616	Conditionally required
	Type: string	
	No default value.	
	Conditional: optional for PUT requests, but mandatory for the requests that load XML content	
Content-Type	The content type of the requested resource, for example, text/plain	No
	Type: string	
	No default value.	
Date	Time when a request is initiated, for example, Wed, 27 Jun 2018 13:39:15 +0000.	Conditionally required
	Type: string	
	No default value.	
	Conditional: optional for anonymous requests or those requests containing header x-obs-date , required for other requests.	
Host	The host address. for example, bucketname.obs.region.myhuaweicloud.com.	Yes
	Type: string	
	No default value.	

(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.

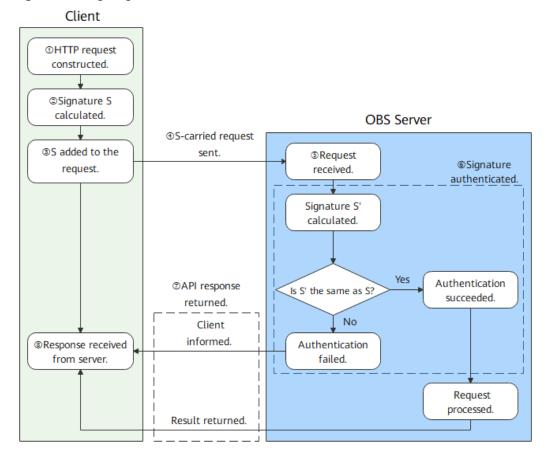


Figure 3-1 Signing and verification

Table 3-4 Signing and verification

Execut	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 Constructing a Request .
	2	Signature S calculated.	The signature is calculated based on the constructed request and an access key. You can calculate a signature (S) by: • Using an Authorization Header • Using a Pre-Signed URL • Signing Browser-Based Upload Requests
	3	S added to the request.	You can add a signature to: The Authorization header The Query parameters A form in browser-based uploads
	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.	If the authentication is successful, the server processes the request and then returns the processing result.
			 If the authentication fails, the server returns the status code 403 Forbidden and error code SignatureDoesNotMatch. To fix this issue, see Why Don't the Signatures Match?
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.
Expires support	No	Yes
Date support	Yes	No
Common APIs	All OBS APIs	GET and PUT
Time formatting	The Date header indicates when the request was generated, recorded using Greenwich Mean Time (GMT) in the RFC 1123 format. If the value of Date is over 15 minutes away from the current server	The Expires header indicates how long the pre-signed URL is valid, measured in seconds. When the specified period elapses, the presigned URL expires.
	time, the server returns 403, indicating that the request is invalid.	
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



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.	Using SDKs
Using signature generators	OBS provides graphical tools to make it easier to generate signatures.	Using a Signature Generator
Manual calculation	You can manually calculate a signature using the provided signing algorithm.	Manually Calculating a Signature

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	RestStorageService.java

Using SDKs	Signature Source File
Python	auth.py
Go	auth.go
С	request.c
Node.Js	utils.js
Browser.Js	utils.js
PHP	DefaultSignature.php
.NET	Signer.cs

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**.

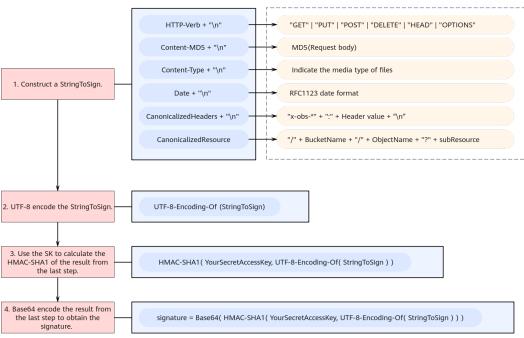
Manually Calculating a Signature

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

Signature = Base64(HMAC-SHA1(YourSecretAccessKeyID, 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

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
HTTP- Verb	Stri	Yes	Explanation:
verb	ng		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.
			Restrictions:
			None
			Value range:
			 GET: Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.
			PUT: Requests that a server update a specific resource, for example, creating a bucket or uploading an object.
			POST: Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.
			DELETE: Requests that a server delete a specific resource such as an object.
			HEAD: Requests that a server return the description of a specific resource, for example, obtaining object metadata.
			OPTIONS (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.
			Default value:
			None

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Conte nt- MD5	Stri ng	No	Explanation: The base64-encoded 128-bit MD5 digest of the request body based on RFC 1864. Restrictions: None Value range: A string of 22 characters. Default value:
Carata	Chu:	Na	This parameter is left blank by default.
Conte nt- Type	Stri ng	No	Explanation: The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file. Restrictions: None Value range: See What Is Content-Type (MIME)? Default value: If this parameter is not included, an empty string is used by default. Table 3-9 shows an example.
Date	Stri ng	Yes	Explanation: When a request was made. If the value of Date is over 15 minutes away from the current server time, the server returns 403, indicating that the request is invalid. Restrictions: The value must be a GMT in RFC 1123 format. If Date and x-obs-date headers are both specified, x-obs-date applies. Value range: None Default value: None

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Cano nicaliz	Stri ng	No	Explanation:
edHe aders	9		Additional headers defined by OBS that include the x-obs- prefix, for example, x-obs-date, x-obs-acl, and x-obs- meta-*. For each additional header, separate its name and value by a colon (:). In x-obs-storage-class:STANDARD, for example, x-obs-storage-class is the header name, and STANDARD is the header value.
			Restrictions:
			 Header names must be lowercase. The header value is case sensitive. An example header is x-obs-storage- class:STANDARD.
			2. 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.
			3. A header cannot contain meaningless tabs or spaces. For example, x-obs-meta-name : name (with a meaningless space before name) must be changed to x-obs-meta-name :name.
			4. If multiple headers are involved, they must be sorted in ascending lexicographic order by header name.
			5. If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, x-obs-metaname:name1 and x-obs-meta-name:name2 must be combined into x-obs-meta-name:name1,name2.
			6. Each header requires a new line, and each line ends with a newline character (\n).
			Value range:
			Determined by the API to be called
			Default value:
			This parameter is left blank by default.

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Cano nicaliz edRes	Stri ng	Yes	Explanation: OBS resources specified in an HTTP request. The structure
ource			is as follows: CanonicalizedResource = "/" + bucket-name + "/" + object-name + "?" + sub-resource
			For example, if you want to call GetObject to obtain version <i>xxx</i> of object object-test stored in bucket-test and change Content-Type to text/plain , then CanonicalizedResource would be as follows: /bucket-test/object-test?response-content-type=text/plain&versionId=xxx
			bucket-name. If the bucket does not have a custom domain name associated, use its own name.
			Otherwise, use its associated custom domain name. In / obs.ccc.com/object, for example, obs.ccc.com 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, /.
			object-name: The name of the required object. Follow the object naming rules.
			 sub-resource: Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&) to separate them. sub-resource identifiers: CDNNotifyConfiguration, acl,
			append, attname, 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
			Restrictions:

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
			A sub-resource usually has only one value. Listing multiple values for the same resource key—for example, key=value1&key=value2 —is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.
			Value range:
			None
			Default value:
			If this parameter is not specified, / is used.

- **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	GET \n
Host: bucket.obs. <i>region</i> .myhuaweicloud.com Date: Sat, 12 Oct 2015 08:12:38 GMT	\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	PUT\n
User-Agent: curl/7.15.5	\n
Host:	text/plain\n
bucket.obs. <i>region</i> .myhuaweicloud.com	\n
x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT	x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT\n
x-obs-security-token: YwkaRTbdY8g7q	x-obs-security-
content-type: text/plain Content-Length: 5913339	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. <i>region</i> .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	GET \n
Host: bucket.obs. <i>region</i> .myhuaweicloud.com Date: Sat, 12 Oct 2015 08:12:38 GMT	\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	PUT\n
Host: bucket.obs. <i>region</i> .myhuaweicloud.com x-obs-date:Tue, 15 Oct 2015 07:20:09	I5pU0r4+sgO9Emgl1KMQUg==\n \n \n
GMT Content-MD5: I5pU0r4+sgO9Emgl1KMQUg== Content-Length: 5913339	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	PUT\n
Host: obs.ccc.com	I5pU0r4+sgO9Emgl1KMQUg==\n
x-obs-date:Tue, 15 Oct 2015 07:20:09	\n
GMT	\n
Content-MD5: I5pU0r4+sgO9Emgl1KMQUg==	x-obs-date:Tue, 15 Oct 2015 07:20:09 GMT\n
Content-Length: 5913339	/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( YourSecretAccessKeyID, 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 > entry: canonicalized Resource. entry Set ()) \ \{
          stringToSign.append(entry.getKey());
          if(this.isValid(entry.getValue())) {
             stringToSign.append("=").append(entry.getValue());
          stringToSign.append("&");
       string To Sign. delete Char At (string To Sign. 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 ToSign = 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.
yourSecretAccessKeyID = 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( YourSecretAccessKeyID, UTF-8-Encoding-
Of(StringToSign)))"
if IS_PYTHON2:
  hashed = hmac.new(yourSecretAccessKeyID, canonical_string, hashlib.sha1)
  encode_canonical = binascii.b2a_base64(hashed.digest())[:-1]
else:
  hashed = hmac.new(yourSecretAccessKeyID.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	Туре	Mand atory (Yes/ No)	Description
AccessKeyId	String	Yes	Explanation : 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 Access Keys.
			Restrictions:
			None
			Value range:
			None
			Default value:
			None
Expires	String	Yes	Explanation:
			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.
			Restrictions:
			None
			Value range:
			Current time <expires<20 after="" current="" second.<="" td="" the="" time.="" unit:="" years=""></expires<20>
			Default value:
			None
Signature	String	Yes	Explanation:
			The signature calculated based on the SK, Expires, and other parameters.
			OBS provides the following signature calculation methods for a URL:
			Using SDKs for Signing
			Using a Signature Generator
			Manually Calculating a Signature

Parameter	Туре	Mand atory (Yes/ No)	Description
x-obs-	String	No	Explanation:
security- token			This parameter must be added as a request header if a temporary AK/SK is used.
			Restrictions:
			None
			Value range:
			For details about how to obtain a temporary AK/SK pair and security token, see Obtaining a Temporary AK/SK Pair and Security Token.
			Default value:
			None

Using SDKs for Signing

Table 3-16 Using SDKs for signing

SDK	Signature Source File
Java	AbstractClient.java
Python	client.py
Go	auth.go
С	request.c
Node.Js	utils.js
Browser.Js	utils.js
PHP	SendRequestTrait.php
.NET	ObsClient.temporary.cs

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**.

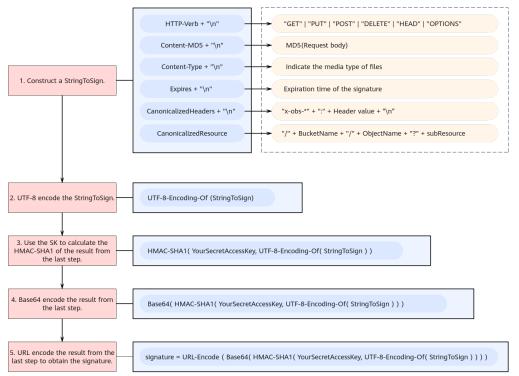
Manually Calculating a Signature

Use this algorithm to calculate a signature:

 $Signature = URL-Encode(\ Base 64(\ HMAC-SHA1(\ UTF-8-Encoding-Of(\ YourSecret Access KeyID\),\ UTF-8-Encoding-Of(\ String To Sign\)\)\)\)$

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

Param eter	Ty pe	Man dato ry (Yes /No)	Description
HTTP- Verb	Stri	Yes	Explanation: 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. Restrictions: None Value range: GET: Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object. PUT: Requests that a server update a specific resource, for example, creating a bucket or uploading an object. POST: Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts. DELETE: Requests that a server delete a specific resource such as an object. HEAD: Requests that a server return the description of a specific resource, for example, obtaining object metadata. OPTIONS (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. Default value:
			None

Param eter	Ty pe	Man dato ry (Yes /No)	Description
Conten	Stri	Yes	Explanation:
t-MD5	ng		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.
			Restrictions:
			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.
			Value range:
			0–24 characters (0 included, 24 excluded)
			Default value:
			This parameter is left blank by default.
Conten	Stri	Yes	Explanation:
t-Type	ng		The file type of an object—for example, text/plain— which determines what format and encoding a browser uses to read the file.
			Restrictions:
			None
			Value range:
			See What Is Content-Type (MIME)?
			Default value:
			If this header is not contained in the request, an empty string is used. For details, see Table 3-18 . 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, application/octet-stream is used by default.

Param eter	Ty pe	Man dato ry (Yes /No)	Description
Expires	Stri	Yes	Explanation:
	ng		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.
			Restrictions:
			None
			Value range:
			Current time <expires<20 after="" current="" second.<="" td="" the="" time.="" unit:="" years=""></expires<20>
			Default value:
			None

Param eter	Ty pe	Man dato ry (Yes /No)	Description
Canoni calized Header s	Stri ng	Yes	Explanation: Additional headers defined by OBS that include the x-obs- prefix, for example, x-obs-date, x-obs-acl, and x-obs-meta-*. For each additional header, separate its name and value by a colon (:). In x-obs-storage-class:STANDARD, for example, x-obs-storage-class is the header name, and STANDARD is the header value.
			Restrictions:
			Header names must be lowercase. The header value is case sensitive. An example header is x-obs-storage-class:STANDARD.
			2. 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.
			3. A header cannot contain meaningless tabs or spaces. For example, x-obs-meta-name : name (with a meaningless space before name) must be changed to x-obs-meta-name :
			4. If multiple headers are involved, they must be sorted in ascending lexicographic order by header name.
			5. If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, x-obs-metaname:name1 and x-obs-meta-name:name2 must be combined into x-obs-meta-name:name1,name2.
			6. Each header requires a new line, and each line ends with a newline character (\n).
			Value range:
			Determined by the API to be called
			Default value:
			None

Param eter	Ty pe	Man dato ry (Yes /No)	Description
Canoni calized Resour ce	Stri	Yes	Explanation: OBS resources specified in an HTTP request. The structure is as follows: CanonicalizedResource = /bucket-namel object-namel sub-resource For example, if you want to call GetObject to obtain version xxx of object object-test stored in bucket-test and change Content-Type to text/plain, then CanonicalizedResource would be as follows: /bucket-test/object-test?response-content-type=text/plain&versionid=xxx • bucket-name: If the bucket does not have a custom domain name associated, use its own name. Otherwise, use its associated custom domain name. In /obs.ccc.com/object, for example, obs.ccc.com 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, /. • object-name: The name of the required object. Follow the object naming rules. • sub-resource: Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&) to separate them. sub-resource identifiers: CDNNotifyConfiguration, acl, append, attname, 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-cachecontrol, 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 Restrictions: A sub-resource usually has only one value. Listing
			multiple values for the same resource key—for example,

Param eter	Ty pe	Man dato ry (Yes /No)	Description
			key=value1&key=value2—is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.
			Value range:
			None
			Default value:
			If this parameter is not specified, / is used.

MOTE

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	GET \n \n \n 1532779451\n
Host: examplebucket.obs. <i>region</i> .myhuaweicl oud.com	/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. <i>region</i> .myhuaweicl oud.com	GET \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 presigned 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", "attname", "backtosource", "cors", "customdomain",
"delete",
"deletebucket", "directcoldaccess", "encryption", "inventory", "length", "lifecycle", "location",
"logging",
"metadata", "mirrorBackToSource", "modify", "name", "notification", "obscompresspolicy",
"""" "response-cache-contr
         "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",
         "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 \parallel bucketName.length() > 63 \parallel bucketName.length() < 3) {
        return false;
     }
     if (!Pattern.matches("^[a-z0-9][a-z0-9.-]+$", bucketName)) {
        return false;
     if (Pattern.matches("(\d{1,3}\\.){3}\d{1,3}", bucketName)) {
        return false;
     String[] fragments = bucketName.split("\\.");
     for (int i = 0; i < fragments.length; i++) {
        if (Pattern.matches("^-.*", fragments[i]) || Pattern.matches(".*-$", fragments[i])
              || Pattern.matches("^$", fragments[i])) {
           return false;
        }
     }
     return true;
  }
  // 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 ToSign(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()) {
       string To Sign.append (entry.get Key ()). append (":"). append (entry.get Value ()). 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 getURL(String endpoint, Map<String, String> queries, String bucketName, String
objectName, String signature, long expires) throws UnsupportedEncodingException {
     StringBuilder URL = new StringBuilder();
URL.append("https://").append(bucketName).append(".").append(endpoint).append("/").append(this.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 main(String[] args) throws Exception {
     SignDemo demo = new SignDemo();
     /* Hard-coded or plaintext AK and SK are risky. For security purposes, encrypt your AK and SK and
store them in the configuration file or environment variables.
     In this example, the AK and SK are stored in environment variables for identity authentication. Before
running the code in this example, configure environment variables HUAWEICLOUD_SDK_AK and
HUAWEICLOUD_SDK_SK. */
```

```
demo.ak = System.getenv("HUAWEICLOUD_SDK_AK");
  demo.sk = System.getenv("HUAWEICLOUD_SDK_SK");
    String endpoint = "<your-endpoint>";

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

    // 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>();

    // 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);
}
```

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. The objects uploaded must allow **public-read** and the x-obs-security-token request header must be **YwkaRTbdY8g7q....**.

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

Expiration

Table 3-20 Expiration time

Paramet er	Туре	Ma nd ato ry (Ye s/N o)	Description
Expiratio	Strin	Yes	Explanation:
n	n g		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.
			Restrictions:
			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'".
			Value range:
			None
			Default value:
			None

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	Туре	Description	Match Type
x-obs-acl	Strin g	The ACL that must be used in the request.	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

Element	Туре	Description	Match Type
Cache-Control, Content-Type, Content- Disposition, Content- Encoding, Expires	Strin g	REST-specific headers.	Exact Matches starts-with
key	Strin g	The acceptable key name of the uploaded object.	Exact Matches starts-with
bucket	Strin g	The acceptable bucket name. NOTICE If the policy contains the key condition element, it must also contain the bucket element.	Exact Matches
success_action_re direct	Strin g	The URL that the client is redirected to after a successful upload. For details, see Uploading an Object - POST.	Exact Matches starts-with
success_action_st atus	Strin g	The status code returned to the client upon successful upload if success_action_redirect is not specified. For details, see Uploading an Object - POST.	Exact Matches
x-obs-meta-*	Strin g	User-defined metadata. Keywords in this element cannot include non-ASCII or unrecognizable characters. If such characters are necessary, they must be encoded and decoded on the client side in either URL or Base64. The server does not perform decoding.	Exact Matches starts-with
x-obs-*	Strin g	Other headers prefixed with x-obs- .	Exact Matches starts-with
x-obs-security- token	Strin g	A security token. This header is mandatory if you are using a temporary AK/SK and security token for authentication. For details about how to obtain a temporary access key and security token, see Obtaining a Temporary Access Key and Security Token Through a Token.	Exact Matches

The table below describes the supported condition matching types:

Table 3-22 Condition matching

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

Escape Sequence	Description
\r	Carriage return
\t	Horizontal tab
\v	Vertical tab
\u xxxx	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
POST / HTTP/1.1 Host: examplebucket.obs. <i>region</i> .myhuaweicl oud.com	{ "expiration": "2019-07-01T12:00:00.000Z", "conditions": [
Content-Type: multipart/form-data; boundary=7e32233530b26 Content-Length: 12507e32233530b26 Content-Disposition: form-data; name="key" testfile.txt	{"bucket": "examplebucket" }, ["eq", "\$key", "testfile.txt"], {"x-obs-acl": "public-read" }, ["eq", "\$Content-Type", "text/plain"]] }
7e32233530b26 Content-Disposition: form-data; name="x-obs-acl"	
public-read7e32233530b26 Content-Disposition: form-data; name="content-type"	
text/plain7e32233530b26 Content-Disposition: form-data; name="AccessKeyId"	
UDSIAMSTUBTEST0000027e32233530b26 Content-Disposition: form-data; name="policy"	
ewoglCJleHBpcmF0aW9uljogljlwMTkt MDctMDFUMTI6MDA6MDAuMDAwWi IsCiAgImNvbmRpdGlvbnMiOiBbCiA- glCB7ImJ1Y2tldCl6ICJleGFtcGxlYnV- ja2V0IiB9LAoglCAgWyJlcSIslCI- ka2V5IiwgInRlc3RmaWxlLnR4dCJdLAoJ eyJ4LW9icy1hY2wiOiAicHVibGljLXJ- lYWQiIH0sCiAglCBbImVxliw- gliRDb250ZW50LVR5cGUiLCAidGV4dC 9wbGFpbiJdLAoglCAg- WyJjb250ZW50LWxlbmd0aC1yYW5nZS IsIDYsIDEwXQoglF0KfQo=	
7e32233530b26 Content-Disposition: form-data; name="Signature"	
xxl7bZs/5FgtBUggOdQ88DPZUo0=	

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

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

Request	Policy
POST / HTTP/1.1	{
Host:	"expiration":
examplebucket.obs. <i>region</i> .myhuaweicl oud.com	"2019-07-01T12:00:00.000Z", "conditions": [
Content-Type: multipart/form-data;	{"bucket": "examplebucket" },
boundary=7e329d630b26	["starts-with", "\$key", "file/"],
Content-Length: 1597	{"x-obs-meta-test1":"value1"},
7e3542930b26	["eq", "\$x-obs-meta-test2", "value2"],
Content-Disposition: form-data; name="key"	["starts-with", "\$x-obs-meta-test3", "doc"],
file/obj1	["starts-with", "\$x-obs-meta-test4", ""]
7e3542930b26]
Content-Disposition: form-data; name="AccessKeyId"	}
UDSIAMSTUBTEST000002	
7e3542930b26	
Content-Disposition: form-data; name="policy"	
ewoglCJleHBpcmF0aW9uljogljlwMTkt MDctMDFUMTI6MDA6MDAuMDAwWi IsCiAglmNvbmRpdGlvbnMiOiBbCiA- glCB7lmJ1Y2tldCl6lCJleGFtcGxlYnV- ja2V0liB9LAoglCAgWyJzdGFydHMtd2l0 aClslClka2V5liwglmZpbGUvll0sCiAglCB 7lngtb2JzLW1ldGEtdGVzdDEiOiJ2YWx1 ZTEifSwKlCAglFsiZXEiL- CAiJHgtb2JzLW1ldGEtdGVzdDliLCAidm FsdWUyll0sCiAglCBblnN0YXJ0cy13aXR oliwgliR4LW9icy1tZXRhLXRlc3Qzliwgl mRvYyJdLAoglCAgWyJzdG- FydHMtd2l0aClslClkeC1vYnMtbWV0YS 10ZXN0NClslCliXQoglF0KfQo=	
7e3542930b26	
Content-Disposition: form-data; name="Signature"	
HTId8hcaisn6FfdWKqSJP9RN4Oo=	
7e3542930b26	
Content-Disposition: form-data; name="x-obs-meta-test1"	
value1	
7e3542930b26	

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.	Using SDKs for Signing
Manually calculating a signature	You can manually calculate a signature based on the provided signing algorithm.	Using a Signing Algorithm

Using SDKs for Signing

Table 3-25 Signature source files of OBS SDKs

Using SDKs	Signature Source File
Java	AbstractClient.java
Python	client.py
Go	temporary_other.go
С	-
Node.Js	utils.js
Browser.Js	utils.js
PHP	SendRequestTrait.php
.NET	-

Using a Signing Algorithm

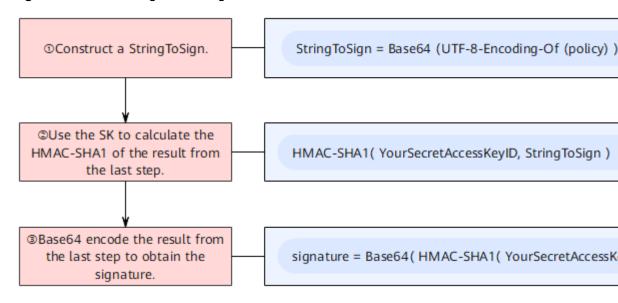
Use the following algorithm to calculate a signature carried in a form:

```
Signature = Base64( HMAC-SHA1( YourSecretAccessKeyID, 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.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; ↓
  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\": \"bucket\"ame\" }", "[\"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 AccessKeyld, 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()
  signature = demo.post_signature(post_policy)
  # 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	Signature generator
Using a pre-signed URL	Signature generator

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

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
HTTP- Verb	Stri ng	Yes	Explanation: 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.
			Restrictions:
			None
			Value range:
			 GET: Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.
			 PUT: Requests that a server update a specific resource, for example, creating a bucket or uploading an object.
			 POST: Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.
			 DELETE: Requests that a server delete a specific resource such as an object.
			 HEAD: Requests that a server return the description of a specific resource, for example, obtaining object metadata.
			 OPTIONS (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.
			Default value:
			None

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Conte nt- MD5	Stri ng	No	Explanation: 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. Restrictions: None Value range: 0-24 characters (0 included, 24 excluded) Default value: This parameter is left blank by default.
Conte nt- Type	Stri ng	No	Explanation: The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file. Restrictions: None Value range: See What Is Content-Type (MIME)? Default value: If this header is not included in the request, an empty string is used. For details, see Table 3-9. 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, application/octet-stream is used by default.

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Date	Stri ng	Yes	Explanation: When a request was made. If the value of Date is over 15 minutes away from the current server time, the server returns 403, indicating that the request is invalid. Restrictions: The value must be a GMT in RFC 1123 format. If Date and x-obs-date headers are both specified, x-obs-date applies. Value range: None Default value: None
Cano nicaliz edHe aders	Stri ng	No	Explanation: Additional headers defined by OBS that include the x-obsprefix, for example, x-obs-date, x-obs-acl, and x-obsmeta-*. For each additional header, separate its name and value by a colon (:). In x-obs-storage-class:STANDARD, for example, x-obs-storage-class is the header name, and STANDARD is the header value. Restrictions: 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. 2. If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, x-obs-metaname:name1 and x-obs-meta-name:name1,name2. 3. You do not need to handle the case conversion or lexicographical sorting of header names, which are automatically handled by the software. Value range:
			Determined by the API to be called Default value: This parameter is left blank by default.

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Cano nicaliz edRes ource	Stri	-	Explanation: OBS resources specified in an HTTP request. The structure is as follows: CanonicalizedResource = bucket-name object-name?sub-resource For example, if you want to call GetObject to obtain version xxx of object object-test stored in bucket-test and change Content-Type to text/plain, then CanonicalizedResource would be as follows: /bucket-test/object-test?response-content-type=text/plain&versionId=xxx • bucket-name: If the bucket does not have a custom domain name associated, use its own name. Otherwise, use its associated custom domain name. In / obs.ccc.com/object, for example, obs.ccc.com 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, /. • object-name: The name of the required object. Follow the object naming rules. • sub-resource. Arrange multiple sub-resources in ascending lexicographic order and use ampersands (&) to separate them. sub-resource identifiers: CDNNotifyConfiguration, acl, append, attname, 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, uploadld, uploads, versionld, 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 Restrictions:

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
			A sub-resource usually has only one value. Listing multiple values for the same resource key—for example, key=value1&key=value2 —is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.
			Value range:
			None
			Default value:
			If this parameter is not specified, / is used.

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

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
HTTP-	Stri	Yes	Explanation:
Verb	ng		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.
			Restrictions:
			None
			Value range:
			 GET: Requests that a server return a specific resource, for example, obtaining a bucket list or downloading an object.
			PUT: Requests that a server update a specific resource, for example, creating a bucket or uploading an object.
			 POST: Requests that a server add a resource or perform special operations such as initiating a multipart upload or assembling parts.
			DELETE: Requests that a server delete a specific resource such as an object.
			HEAD: Requests that a server return the description of a specific resource, for example, obtaining object metadata.
			OPTIONS (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.
			Default value:
			None

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Conte nt- MD5	Stri ng	No	Explanation: 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. Restrictions: None Value range: 0-24 characters (0 included, 24 excluded) Default value: This parameter is left blank by default.
Conte nt- Type	Stri ng	No	Explanation: The file type of an object—for example, text/plain—which determines what format and encoding a browser uses to read the file. Restrictions: None Value range: See What Is Content-Type (MIME)? Default value: If this header is not contained in the request, an empty string is used. For details, see Table 3-9. 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, application/octet-stream is used by default.

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Expire s	Stri ng	Yes	Explanation:
3	rig		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.
			Restrictions:
			None
			Value range:
			Current time <expires<20 after="" current="" second.<="" td="" the="" time.="" unit:="" years=""></expires<20>
			NOTE 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 600 for Expires.
			Default value:
			None

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Cano nicaliz	Stri ng	No	Explanation:
edHe aders	iig		Additional headers defined by OBS that include the x-obs- prefix, for example, x-obs-date, x-obs-acl, and x-obs- meta-*. For each additional header, separate its name and value by a colon (:). In x-obs-storage-class:STANDARD, for example, x-obs-storage-class is the header name, and STANDARD is the header value.
			Restrictions:
			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.
			2. If a header has multiple values, these values need to be written together under their shared header name, separated by commas (,). For example, x-obs-metaname:name1 and x-obs-meta-name:name2 must be combined into x-obs-meta-name:name1,name2.
			3. You do not need to handle the case conversion or lexicographical sorting of header names, which are automatically handled by the software.
			Value range:
			Determined by the API to be called
			Default value:
			This parameter is left blank by default.

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
Cano nicaliz edRes ource	Stri	Yes	Explanation: OBS resources specified in an HTTP request. The structure is as follows: CanonicalizedResource = bucket-name object-name?sub-resource For example, if you want to call GetObject to obtain version xxx of object object-test stored in bucket-test and change Content-Type to text/plain, then CanonicalizedResource would be as follows: bucket-test/object-test?response-content-type=text/plain&versionId=xxx bucket-name:
			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 Restrictions:

Para meter	Typ e	Ma nda tor y (Ye s/N o)	Description
			A sub-resource usually has only one value. Listing multiple values for the same resource key—for example, key=value1&key=value2 —is not recommended. If you do so, only the first sub-resource value is used to calculate the signature.
			Value range:
			None
			Default value:
			If this parameter is not specified, / is used.

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: keep-alive, close 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 A when an object is uploaded and the ETag value has changed to B when the object is downloaded, it indicates that the object content is changed. The actual ETag is the hash value of the object, which only reflects the changed content rather than the metadata. An uploaded object or copied object has a unique ETag after being encrypted using MD5. If an object is uploaded in the multipart mode, the MD5 splits ETag regardless of the encryption method. In this case, the ETag is not an MD5 digest. Type: string		
x-obs-id-2 A special symbol that helps troubleshoot faults. Type: string Default value: none			
x-reserved- indicator	A special symbol that helps troubleshoot faults. Type: string Default value: none		
x-obs-request-id	The value created by OBS to uniquely identify the request. OBS uses this value to troubleshoot faults. Type: string Default value: none		

(Optional) Response Body

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

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.enity.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 **HIAWEICIOUD SDK AK** and

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 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();
    }
} 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. No Such Algorithm Exception;
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. Url Encoded Form Entity;
import org.apache.http.client.methods.CloseableHttpResponse;
import\ org. apache. http. client. methods. Http Get;
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\ or g. apache. http. impl. client. Close able Http Client;
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
  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 {
        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.

```
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;
```

```
trv {
     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 {
       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) {
     return null;
```

 $\mathbf{5}_{\mathsf{APIs}}$

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

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 5-1 Additional request headers

Header	Description	Mandator y (Yes/No)
x-obs-bucket-type	This header field is used to specify the content to be obtained.	No
	Value:	
	OBJECT: Obtain the list of all buckets.	
	 POSIX: Obtain the list of all parallel file systems. 	
	If this header is not carried, the list of all buckets and parallel file systems is obtained.	
	Example: x-obs-bucket-type: POSIX	

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

Element	Description
ListAllMyBucketsResult	List of buckets created by the user Type: XML
Owner	Bucket owner information, including the tenant ID. Type: XML
ID	Domain ID (account ID) of a user. Type: string
Buckets	Buckets owned by the user Type: XML
Bucket	Details about a bucket Type: XML
Name	Bucket name Type: string
CreationDate	Creation time of the bucket Type: string
Location	Location of the bucket Type: string
BucketType	Bucket type Type: string OBJECT: indicates a bucket. POSIX: a parallel file system.

Error Responses

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

Sample Request

GET / HTTP/1.1

User-Agent: curl/7.29.0

Host: obs. region.myhuaweicloud.com

Accept: */*

Date: Mon, 25 Jun 2018 05:37:12 +0000

Authorization: OBS GKDF4C7Q6SI0IPGTXTJN:9HXkVQIiQKw33UEmyBI4rWrzmic=

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BF260000016435722C11379647A8A00A

```
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSGGDRUM62QZi3hGP8Fz3qOloYCfZ39U
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/">
  <ID>783fc6652cf246c096ea836694f71855</ID>
 </Owner>
 <Buckets>
  <Bucket>
   <Name>examplebucket01</Name>
   <CreationDate>2018-06-21T09:15:01.032Z</CreationDate>
   <Location>region</Location>
   <BucketType>OBJECT</BucketType>
  <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.

Ⅲ 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 enterpriselevel 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 longterm 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.my

<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 5-3 Additional request headers

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

Header	Туре	Mand atory (Yes/N o)	Description
			Default value : private
x-obs- storage- class	String	No	Explanation: When creating a bucket, you can add this header to set the default storage class for the bucket. Value range: STANDARD (Standard storage) WARM (Infrequent Access storage) COLD (Archive storage) DEEP_ARCHIVE (Deep Archive storage) Default value: STANDARD
x-obs- grant- read	String	No	Explanation: 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 multiversion objects in a bucket, and obtain bucket metadata. Example: x-obs-grant-read:id=tenant-ID Restrictions: None Value range: id=tenant-ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None

Header	Туре	Mand atory (Yes/N o)	Description
x-obs-	String	No	Explanation:
grant- write			Grants the WRITE permission to all users in a specified domain to create, delete, and overwrite all objects in a bucket; and initiate multipart uploads, upload parts, copy parts, assemble parts, and cancel multipart uploads.
			Example: x-obs-grant-write:id= tenant-ID
			Restrictions:
			None
			Value range:
			id=tenant-ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information.
			Default value:
			None
x-obs-	String	No	Explanation:
grant- read-acp			Grant the READ_ACP permission to all users in a specified domain to allow them to read the bucket ACL.
			Example: x-obs-grant-read-acp:id=Account ID
			Restrictions:
			None
			Value range:
			id= <i>tenant-ID</i> . For details, see Obtaining Account , IAM User , Project , User Group , Region , and Agency Information .
			Default value:
			None

Header	Туре	Mand atory (Yes/N o)	Description
x-obs- grant- write- acp	String	No	Explanation: Grants the WRITE_ACP permission to all users in a specified domain to allow them to modify the bucket ACL. Example: x-obs-grant-write-acp:id=Account ID Restrictions: None Value range: id=tenant-ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None
x-obs- grant- full- control	String	No	Explanation: Grants the FULL_CONTROL permission to all users in a specified domain. Example: x-obs-grant-full-control:id=tenant-ID Restrictions: None Value range: id=tenant-ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None

Header	Туре	Mand atory (Yes/N o)	Description
x-obs- grant- read- delivered	String	No	Explanation: Grants the READ permission to all users in a specified domain. By default, the read permission is granted on all objects in the bucket. Example: x-obs-grant-read-delivered:id=tenant-ID Restrictions: None Value range: id=tenant-ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None
x-obs- grant- full- control- delivered	String	No	Explanation: Grants the FULL_CONTROL permission to all users in a specified domain. By default, the FULL_CONTROL permission is granted on all objects in the bucket. Example: x-obs-grant-full-control-delivered:id=tenant-ID Restrictions: None Value range: id=tenant-ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None

Header	Туре	Mand atory (Yes/N o)	Description
x-obs-az-	String	No	Explanation:
redunda ncy			When creating a bucket, you can use this header to set the data redundancy policy for the bucket.
			Restrictions:
			If a region does not support multi-AZ storage, even if this header is specified, the bucket is still single-AZ.
			Value range:
			• 3az: multi-AZ
			Default value:
			If this header is not specified, single AZ applies.
x-obs-fs-	String	No	Explanation:
file- interface			This header can be carried when you want to create a parallel file system.
			Example: x-obs-fs-file-interface:Enabled
			Value range:
			Enabled
			Default value:
			If the header is specified, the value must be Enabled . There is no default value.
x-obs-	String	No	Explanation:
epid			Enterprise project ID. Users who have enabled the enterprise project function can obtain this ID in UUID format from the enterprise project service. The default project ID is 0 . This header can be not included. This header is not required for users who have not enabled the enterprise project function.
			Example: x-obs-epid:9892d768-2d13-450f- aac7-ed0e44c2585f
			Restrictions:
			None
			Value range:
			The value can be 0 or your actual enterprise project ID.
			Default value:
			0

Header	Туре	Mand atory (Yes/N o)	Description
x-obs-	String	No	Explanation:
bucket- type			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: x-obs-bucket-type:OBJECT
			Restrictions:
			None
			Value range:
			OBJECT: a bucket
			POSIX: a parallel file system.
			Default value:
			If the header is specified, the value must be manually entered. There is no default value. If the header is not specified, OBJECT is used by default.
x-obs-	String	No	Explanation:
bucket- object-			When creating a bucket, you can use this header to enable WORM for the bucket.
lock- enabled			Example: x-obs-bucket-object-lock-enabled:true
			Restrictions:
			Only object buckets are supported.
			Value range:
			true: WORM is enabled.
			Default value:
			If the header is specified, the value must be true . There is no default value. If the header is not specified, WORM is disabled.

Header	Туре	Mand atory (Yes/N o)	Description
x-obs- server- side- encryptio n	String	No	Explanation: When creating a bucket, you can use this header to specify an encryption method for the bucket. Example: x-obs-server-side-encryption: kms Restrictions: None Value range: • kms • obs Default value: 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.
x-obs- server- side- data- encryptio n	String	No	Explanation: When creating a bucket, you can use this header to specify an encryption algorithm for server-side encryption. Example: x-obs-server-side-data-encryption: AES256 Restrictions: None Value range: • AES256 You can set this header to AES256 if x-obs-server-side-encryption:kms is used. You can set this header to AES256 if x-obs-server-side-encryption:obs is used. Default value: None

Header	Туре	Mand atory (Yes/N o)	Description
x-obs- server- side- encryptio n-kms- key-id	String	No if x-obs-server-side-encryp tion:k ms is used.	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Type: string Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs- sse-kms- key- project- id	String	This param eter can be used only when x-obs-server-side-encryp tion-kms-key-id is include d.	Explanation: ID of the project (not an enterprise project) where the KMS CMK belongs when SSE-KMS is used Restrictions: None Value range: A project ID (not an enterprise project ID) that matches the KMSMasterKeyID specified by x-obs-server-side-encryption-kms-key-id Default value: None

Request Elements

This request can use additional elements. For details about additional elements, see **Table 5-4**.

Table 5-4 Additional request elements

Elemen	Туре	Mandator	Description
t	31	y (Yes/No)	•
Locatio	String	No	Explanation:
n			Specifies the region where a bucket will be created.
			 When the endpoint of the CN North- Beijing1 region is used for bucket creation:
			 if location is not included, the bucket will be created in CN North-Beijing1 (cn-north-1) by default.
			 if another region, for example, CN- Hong Kong (ap-southeast-1), is specified for location, the bucket will be created in the CN-Hong Kong region.
			 When the endpoint of a region other than CN North-Beijing1 is used for bucket creation, location must be set to the region that the used endpoint corresponds to. For example, if obs.ap- southeast-1.myhuaweicloud.com is used, you must set location to ap- southeast-1.
			Value range:
			For details about OBS regions and endpoints, see Regions and Endpoints .
			Default value:
			If obs.myhuaweicloud.com is used as the endpoint and no region is specified, cn-north-1 (the CN North-Beijing1 region) is used by default.

Response Syntax

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

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

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 H4IPJX0TQTHTHEBQQCEC: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 H4IPJX0TQTHTHEBQQCEC: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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz

Date: WED, 01 Jul 2015 02:25:06 GMT

Content-Length: 0

Sample Request: Creating a Parallel File System

PUT / HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Date: WED, 01 Jul 2015 02:25:05 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=

Content-Length: 157

x-obs-fs-file-interface: Enabled

<CreateBucketConfiguration xmlns="http://obs.region.myhuaweicloud.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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+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 H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=

x-obs-bucket-object-lock-enabled:true

Content-Length: 0

Sample Response: Creating a Bucket with WORM Enabled

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 00000184C11AC7A6809F881341842C02

x-reserved-indicator: Unauthorized

Location: /examplebucket

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz

Date: WED, 01 Jul 2015 02:25:06 GMT

Content-Length: 0

Sample Request: Creating a Bucket with Explicitly Configured Access Permissions

PUT / HTTP/1.1

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=

x-obs-grant-read: id=783fc6vz2cf2442c096evxxxxxxxxxxxx

x-obs-grant-write: id=3u3fc6vz2cf24mc830fhsxxxxxxxxxxxx

x-obs-grant-read-acp: id=902su2vz2cf2vire.239caxxxxxxxxxxxxx

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Date: WED, 01 Jul 2015 02:37:22 GMT

Content-Type: application/xml

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

<Location>region</Location>

</CreateBucketConfiguration>

Sample Response: Creating a Bucket with Explicitly Configured Access Permissions

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTeau73DlKTh4wPYzoZf5w3KacolerP4

x-obs-request-id: 0000018A2A22B72447CF01A99F32E2B0

Server: OBS

Content-Length: 0

Date: WED, 01 Jul 2015 02:37:22 GMT

Location: /examplebucket

5.1.3 Listing Objects in a Bucket

Functions

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

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

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

Request Syntax

GFT / 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 5-5** describes the parameters.

Table 5-5 Request parameters

Parame ter	Typ e	Man dato ry (Yes /No)	Description
prefix	Stri ng	No	Explanation: Name prefix that the objects to be listed must contain. Restrictions: The value must comply with the format of the object name. Value range: The value can contain 1 to 1,024 characters. Default value: None
marker	Stri ng	No	Explanation: 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. Restrictions: This parameter is used only for listing non-versioned objects. Value range: The value can contain 1 to 1,024 characters. Default value: None
max- keys	Inte ger	No	Explanation: The maximum number of objects returned in the response in alphabetical order Restrictions: None Value range: The value ranges from 1 to 1000. If the specified value is greater than 1000, only 1,000 objects are returned. Default value: 1000

Parame ter	Typ e	Man dato ry (Yes /No)	Description
delimite	Stri	No	Explanation:
r	ng		Separator used to group object names. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one CommonPrefixes . If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one CommonPrefixes .
			For example, there are three objects (abcd, abcde, and bbcde) in a bucket. If delimiter is set to d and prefix is set to a, objects abcd and abcde are grouped into a CommonPrefixes with abcd as the prefix. If only delimiter is set to d, objects abcd and abcde are grouped into a CommonPrefixes with abcd as the prefix, and bbcde is grouped separately into another CommonPrefixes with bbcd as the prefix.
			For a parallel file system, if this parameter is not specified, all the content in the directory is recursively listed by default, and subdirectories are also listed. In big data scenarios, parallel file systems usually have deep directory levels and each directory has a large number of files. In such case, you are advised to configure [delimiter=/] to list the content in the current directory, but not list subdirectories, thereby improving the listing efficiency.
			Restrictions:
			None
			Value range:
			The value can contain 1 to 1,024 characters.
			Default value:
			None

Parame ter	Typ e	Man dato ry (Yes /No)	Description
key- marker	Stri ng	No	Explanation: 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. Restrictions: This field is used only for listing versioned objects. Value range: The value of NextKeyMarker in the response body of the last request Default value:
			None
version- id- marker	Stri ng	No	Explanation: Version ID to start with when listing objects in a bucket. All objects following the specified value are listed in lexicographical order by object name and version ID. This parameter must be used together with key_marker. A maximum of 1,000 objects can be returned at a time. key_marker specifies the object name, and version_id_marker specifies the version of the specified object. Restrictions:
			 This parameter is only used for listing objects with multiple versions.
		 If the value of version_id_marker is not a version ID that belongs to the object specified by key_marker, version_id_marker does not take effect. 	
			Value range:
			Object version ID, that is, the value of nextVersionIdMarker in the response body of the last request
			Default value:
			None

Parame ter	Typ e	Man dato ry (Yes /No)	Description
encodin g-type	Stri	No	Explanation: 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 encoding-type to encode Delimiter, Marker (or KeyMarker), Prefix (including the Prefix in CommonPrefixes), NextMarker (or NextKeyMarker), and Key in the response. Restrictions: Currently, only URL encoding is supported. Value range: URL Default value: None. If you do not configure this parameter, encoding is not applied.

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 5-6**.

Table 5-6 Response elements

Parameter	Туре	Description
ListBucketRes	XML	Explanation:
ult		A list of objects in a bucket
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
Contents	XML	Explanation:
		Object metadata
		Parent: ListBucketResult
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
CommonPrefix	XML	Explanation:
es		Group information. If you specify a delimiter in the request, the response contains group information in CommonPrefixes .
		Parent: ListBucketResult
		Restrictions:
		None
		Value range:
		None
		Default value:
		None

Parameter	Туре	Description
Delimiter	String	Explanation:
		Separator used to group object names. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one CommonPrefix . If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one CommonPrefix .
		Assume that a bucket has objects abcd, abcde, and bbcde in it. If delimiter is set to d and prefix is set to a, objects abcd and abcde are grouped into a commonPrefix with abcd as the prefix. If only delimiter is set to d, objects abcd and abcde are grouped into a commonPrefix with abcd as the prefix, and bbcde is grouped separately into another commonPrefix with bbcd as the prefix. Parent: ListBucketResult
		Restrictions:
		None
		Value range:
		The value can contain 1 to 1,024 characters.
		Default value:
		None
EncodingType	String	Explanation:
		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.
		Parent: ListBucketResult
		Restrictions:
		Currently, only URL encoding is supported.
		Value range:
		URL
		Default value:
		None. If you do not configure this parameter, encoding is not applied.

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

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

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

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

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

Parameter	Туре	Description
Size	String	Explanation:
		Object size in bytes
		Parent: ListBucketResult.Contents
		Restrictions:
		None
		Value range:
		The value ranges from 0 TB to 48.8 TB, in bytes.
		Default value:
		None
StorageClass	String	Explanation:
		Storage class of an object.
		Parent: ListBucketResult.Contents
		Restrictions:
		None
		Value range:
		STANDARD
		WARM
		• COLD
		Default value:
		None

Table 5-7 Elements in the response message for listing versioned objects

Parameter	Туре	Description
ListVersionsResult	Contai	Explanation:
	ner	Container for the list of objects (including versioned objects)
		Restrictions:
		None
		Value range:
		None
		Default value:
		None

Parameter	Туре	Description
Name	String	Explanation:
		Bucket name
		Parent: ListVersionsResult
		Restrictions:
		A bucket name must be unique across all accounts and regions.
		A bucket name:
		 Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.
		 Cannot be formatted as an IP address.
		 Cannot start or end with a hyphen (-) or period (.).
		 Cannot contain two consecutive periods (), for example, mybucket.
		 Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, mybucket or mybucket.
		• 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.
		Value range:
		None
		Default value:
		None
EncodingType	String	Explanation:
	·	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
		Restrictions:
		Currently, only URL encoding is supported.
		Value range:
		URL
		Default value:
		None. If you do not configure this parameter, encoding is not applied.

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

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

Parameter	Туре	Description
MaxKeys	String	Explanation: The maximum number of objects returned in the response in alphabetical order Parent: ListVersionsResult Restrictions: None Value range: The value ranges from 1 to 1000. If a value larger than 1000 is specified, 1000 is used. Default value: 1000
IsTruncated	Boolea n	Explanation: Whether all results are returned in the response. Parent: ListVersionsResult Restrictions: None Value range: • true: Not all results are returned. • false: All results are returned. Default value: None
Version	Contai ner	Explanation: Container that contains the version information Parent: ListVersionsResult Restrictions: None Value range: None Default value: None

Parameter	Туре	Description	
DeleteMarker	Contai ner	Explanation: Container that contains objects with delete markers Parent: ListVersionsResult Restrictions: None Value range: None Default value: None	
Key	String	Explanation: Name of the versioned object. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt, the object name is folder/test.txt. Parent: ListVersionsResult.Version ListVersionsResult.DeleteMarker Restrictions: See Object Overview. Value range: The value can contain 1 to 1,024 characters. Default value: None	
VersionId	String	Explanation: Version ID of the object. Parent: ListVersionsResult.Version ListVersionsResult.DeleteMarker Restrictions: None Value range: The value must contain 32 characters. Default value: None	

Parameter	Туре	Description	
IsLatest	Boolea	Explanation:	
	n	Whether the object is of the latest version	
		Parent: ListVersionsResult.Version ListVersionsResult.DeleteMarker	
		Restrictions:	
		None	
		Value range:	
		true: The version is the latest.	
		false: The version is not the latest.	
		Default value:	
		None	
LastModified	Date	Explanation:	
		Time (UTC) when an object was last modified	
		Parent: ListVersionsResult.Version ListVersionsResult.DeleteMarker	
		Restrictions:	
		The date is in the ISO8601 format.	
		Example: 2018-01-01T00:00:00.000Z	
		Value range:	
		None	
		Default value:	
		None	

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

Parameter	Туре	Description
Owner	Contai	Explanation:
	ner	User information, including the domain ID and name of the object owner
		Parent: ListVersionsResult.Version ListVersionsResult.DeleteMarker
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
ID	String	Explanation:
		Domain ID of the object owner
		Parent: ListVersionsResult.Version.Owner ListVersionsResult.DeleteMarker.Owner
		Restrictions:
		None
		Value range:
		DomainId
		Default value:
		None
DisplayName	String	Explanation:
. ,		Name of the object owner
		Parent: ListVersionsResult.Version.Owner ListVersionsResult.DeleteMarker.Owner
		Restrictions:
		None
		Value range:
		None
		Default value:
		None

Parameter	Туре	Description
StorageClass	String	Explanation:
		Storage class of an object
		Parent: ListVersionsResult.Version
		Restrictions:
		None
		Value range:
		STANDARD
		WARM
		COLD
		Default value:
		None
CommonPrefixes	Contai	Explanation:
	ner	Group information. If you specify a delimiter in
		the request, the response contains group
		information in CommonPrefixes .
		Parent: ListVersionsResult
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
Prefix	String	Explanation:
		Indicates a different prefix in the group information in CommonPrefixes .
		Parent: ListVersionsResult.CommonPrefixes
		Restrictions:
		The prefix you specified must already exist in the bucket.
		Value range:
		The value can contain 1 to 1,024 characters.
		Default value:
		None

Error Responses

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

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>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   <DisplayName>ObjectOwnerName</DisplayName>
  </Owner>
  <StorageClass>STANDARD</StorageClass>
 </Contents>
</ListBucketResult>
```

Sample Request: Listing Some Objects

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

```
GET /?marker=obj001&prefix=obj HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.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>
```

Sample Request: Listing Some Objects

Assume that bucket **examplebucket** contains three objects: **abcd**, **abcde**, and **bbcde**. Set the prefix and the delimiter to **a** and **d** respectively to define a CommonPrefixes of **abcd**. 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/4qjFYLmYPgfYs/
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:iZeDESIMxBK2YODk7vleVpyO8DI=
```

Sample Response: Listing Object Versions

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435D758FBA857E0801874
```

```
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShn/xAyk/xHBX6qqGSB36WXrbco0X80
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>
  <lsLatest>true</lsLatest>
  <LastModified>2015-07-01T00:32:16.482Z</LastModified>
  <ETag>"2fa3bcaaec668adc5da177e67a122d7c"</ETag>
  <Size>12041</Size>
  <Owner>
   <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   <DisplayName>ObjectOwnerName</DisplayName>
  <StorageClass>STANDARD</StorageClass>
 </Version>
</ListVersionsResult>
```

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

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

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

```
HTTP/1.1 200 OK
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSWqA48YKdA2aExVAgcpwubHQO5wd9ww
x-obs-request-id: 0000018A2A5FE372D308213442F9065F
Server: OBS
x-obs-bucket-location: region
Content-Length: 497
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ListBucketResult xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <Name>examplebucket</Name>
  <Prefix>
  </Prefix>
  <Marker>
  </Marker>
  <MaxKeys>1000</MaxKeys>
  <IsTruncated>false</IsTruncated>
  <Contents>
     <Key>abcd.txt</Key>
     <LastModified>2014-08-25T01:47:00.838Z</LastModified>
     <ETag>"d41d8cd98f00b204e9800998ecf8427e"</ETag>
     <Size>0</Size>
     <Owner>
       <ID>d029cb567d464a93pdl9v800575ee4cf</ID>
     <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 5-8**.

Table 5-8 Request headers for obtaining CORS configuration

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

Header	Туре	Man dato ry (Yes/ No)	Description
Access-Control-Request- Headers	String	No	Explanation:
ricaders			HTTP headers in a request
			Restrictions:
			You can enter multiple allowed headers, with one separated from another using a line break. Each header can contain one wildcard character (*) at most. Spaces, ampersands (&), colons (:), and lessthan signs (<) are not allowed.
			Value range:
			An HTTP-compliant header value
			Default value:
			None

Request Elements

This request contains no elements.

Response Syntax

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

Response Headers

The response to the request uses common headers. For details, see Table 3-29.

In addition to the common response headers, the headers listed in **Table 5-9** may be used.

Table 5-9 Additional response headers

Header	Туре	Description	
x-obs-bucket-location	String	Explanation: The region where the bucket resides. Restrictions: None Value range: None Default value: None	
x-obs-storage-class	String	Explanation: Default storage class of the bucket. Restrictions: None Value range: • STANDARD (Standard storage) • WARM (Infrequent Access storage) • COLD(Archive storage) • DEEP_ARCHIVE (Deep Archive storage) Default value: None	
x-obs-version	String	Explanation: OBS version of the bucket. Restrictions: None Value range: • 3.0: bucket of the latest version •: bucket of an earlier version Default value: None	

Header	Туре	Description
x-obs-fs-file-interface	String	Explanation:
		Whether it is a parallel file system
		Restrictions:
		If this header field is not carried, the bucket is not a parallel file system.
		Value range:
		The value can be Enabled (parallel file system).
		Default value:
		None
x-obs-epid	String	Explanation:
		Enterprise project ID for the current bucket. Users who have enabled the enterprise project function can obtain the ID from the enterprise project service.
		Restrictions:
		The value is a UUID. This parameter is not required if you have not enabled an enterprise project.
		Value range:
		See How Do I Obtain an Enterprise Project ID?
		Default value:
		None

Header	Туре	Description
x-obs-az-redundancy	String	Explanation:
		Specifies an AZ redundancy type.
		Value 3az 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.
		Restrictions:
		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.
		Value range:
		If multi-AZ storage is configured for the bucket, 3az is returned. If single-AZ storage is configured for the bucket, None is returned.
		Default value:
		None
Access-Control-Allow-	String	Explanation:
Origin		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.
		Restrictions:
		None
		Value range:
		The value that complies with the CORS
		Default value:
		None

Header	Туре	Description
Access-Control-Allow- Headers	String	Explanation: 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. Restrictions: None Value range: The value that complies with the CORS Default value: None
Access-Control-Max-Age	Integer	Explanation: Value of MaxAgeSeconds in the CORS configuration of the server when CORS is configured for buckets. Restrictions: None Value range: An integer greater than or equal to 0, in seconds Default value: 3000
Access-Control-Allow-Methods	String	Explanation: 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. Restrictions: None Value range: GET PUT HEAD POST DELETE Default value: None

Header	Туре	Description
Access-Control-Expose- Headers	String	Explanation: ExposeHeader in the CORS rules of the bucket. It specifies additional headers allowed in the response by a CORS rule, which are used to provide extra information to clients. By default, a browser can access only headers Content-Length and Content-Type. If the browser needs to access other headers, you need to configure them in this parameter.
		Restrictions:
		Spaces, wildcard characters (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed.
		Value range:
		None
		Default value:
		None

Response Elements

This response contains no elements.

Error Responses

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

Sample Request: 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 H4IPJX0TQTHTHEBQQCEC: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+pI/OPLKdrtiQAF

Date: WED, 01 Jul 2015 02:30:25 GMT

x-obs-bucket-location: region

Access-Control-Allow-Origin: www.example.com Access-Control-Allow-Methods: POST,GET,HEAD,PUT Access-Control-Allow-Headers: AllowedHeader_1 Access-Control-Max-Age: 100

Access-Control-Expose-Headers: ExposeHeader_1

x-obs-version: 3.0 Content-Length: 0

5.1.5 Obtaining Bucket Location

Functions

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

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** 5-10 describes the elements.

Table 5-10 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

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 H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Date: WED, 01 Jul 2015 02:37:22 GMT

Content-Type: application/xml;charset=UTF-8

Sample Response: Deleting a Bucket That Does Not Exist

x-obs-id-2: "32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTBZPaontVN8iyR2NNEeTPRDdcmPVNFm

x-obs-request-id: "0000018A4E4567BD47CF110EE1B2A4DF

Server: OBS

Content-Length: 314

Date: WED, 01 Jul 2015 02:37:22 GMT

Content-Type: application/xml

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

<Error>

<Code>NoSuchBucket</Code>

<Message>The specified bucket does not exist</Message>

<RequestId>0000018A4E4567BD47CF110EE1B2A4DF</RequestId>

<HostId>DRmhM6VfpWGBYYGrx6tpvbs8yoGi+uvlu5/20rpZ/Y2kTuq9mRuCXeA84734xs0+</HostId>

<BucketName>examplebucket</BucketName>

</Error>

Sample Request: Deleting a Non-Empty Bucket

DELETE / HTTP/1.1

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=User-Agent: curl/7.29.0

Host: example bucket. obs. region. my huaweic loud. com

Date: WED, 01 Jul 2015 02:37:22 GMT

Content-Type: application/xml;charset=UTF-8

Sample Response: Deleting a Non-Empty Bucket

x-obs-id-2: "32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTBZPaontVN8iyR2NNEeTPRDdcmPVNFm

x-obs-request-id: "0000018A4E4567BD47CF110EE1B2A4DF

Server: OBS

Content-Length: 314

Date: WED, 01 Jul 2015 02:37:22 GMT

Content-Type: application/xml

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

<Error>

<Code>BucketNotEmpty</Code>

<Message>The bucket you tried to delete is not empty</Message>

<RequestId>0000018A4E4D04BBD304AD8E409873EC</RequestId>

<HostId>hME9234LDBKRFuuobDsmyUiP5Oq71oYo1vEL348QzfXHUoGs1RU1TgrOMUKTEMtA</HostId>

<BucketName>examplebucket</BucketName>

</Error>

5.2 Advanced Bucket Settings

5.2.1 Configuring a Bucket Policy

Functions

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

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

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

Request Syntax

PUT /?policy HTTP/1.1 Host: *bucketname*.obs.*region*.myhuaweicloud.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 H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
  "Statement": [
     {
       "Sid": "Stmt1375240018061",
       "Action": [
          "GetBucketLogging"
       "Effect": "Allow",
       "Resource": "logging.bucket",
       "Principal": {
          "ID": [
            "domain/783fc6652cf246c096ea836694f71855:user/*"
       }
    }
  ]
```

Sample Response 1

```
HTTP/1.1 204 No Content x-obs-request-id: 7B6DFC9BC71DD58B061285551605709 x-obs-id-2: N0I2REZDOUJDNzFERDU4QjA2MTI4NTU1MTYwNTcwOUFBQUFBQUFBYmJiYmJiYmJD Date: WED, 01 Jul 2015 02:32:25 GMT 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 H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=

{
    "Statement": [
        {
            "Sid": "Stmt1375240018062",
            "Action": [
                 "PutBucketLogging"
```

Sample Response 2

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

Sample Request 3

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

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

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

```
PUT /?policy HTTP/1.1
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:34:34 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
  "Statement": [
       "Effect": "Deny",
       "Action": ["*"],
       "Resource": [
          "examplebucket/*",
          "examplebucket"
       "NotPrincipal": {
          "ID": [
            "domain/783fc6652cf246c096ea836694f71855:user/71f3901173514e6988115ea2c26d1999",
            "domain/783fc6652cf246c096ea836694f71855"
       }
    }
  ]
```

Sample Response 3

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

Sample Request 4

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

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 H4IPJX0TQTHTHEBQQCEC: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: BKOvGmTlt6sda5X4G89PuMO4fabObGYmnpRGkaMba1LqPt0fCACEuCMllAObRK1n Date: WED, 01 Jul 2015 02:34:34 GMT Content-Length: 0 Server: OBS
```

5.2.2 Obtaining Bucket Policy Information

Functions

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

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

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

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

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

```
"Principal":{
    "ID":[
    "domain/domainiddomainiddo006666:user/useriduseriduseriduseridus004001",
    "domain/domainiddomainiddo006667: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 H4IPJX0TQTHTHEBQQCEC:jZiAT8Vx4azWEvPRMWi0X5BpJMA=
```

Sample Response

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

5.2.4 Configuring a Bucket ACL

Functions

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

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

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

Request Syntax

```
PUT /?acl HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization
Content-Type: application/xml
Content-Length: length
<AccessControlPolicy>
  <Owner>
     <ID>/D</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 5-11 Optional header for specifying canned ACLs

Header	Туре	Man dato ry (Yes/ No)	Description
x-obs-acl	String	No	Explanation:
			Uses the canned ACL for a bucket.
			Restrictions:
			None
			Value range:
			private
			public-read
			public-read-write
			public-read-delivered
			public-read-write-delivered
			For details about each policy, see the "Configuring an ACL Using Header Fields" section in ACLs.
			Default value:
			private

Request Elements

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

Table 5-12 Additional request elements

Element	Туре	Man dato ry (Yes/ No)	Description
Owner	XML	Yes	Explanation: Bucket owner information, including the ID Restrictions: None Value range: None Default value: None
ID	String	Yes	Explanation: Account ID of the authorized user. Restrictions: None Value range: None Default value: None
Grant	XML	No	Explanation: Container for the grantee and the granted permissions Restrictions: A single bucket can contain at most 100 grants in its ACL. Value range: None Default value: None

Element	Туре	Man dato ry (Yes/ No)	Description
Grantee	XML	No	Explanation: Grantee information Restrictions: None Value range: None Default value: None
Canned	String	No	Explanation: Grants permissions to all users. Restrictions: None Value range: Everyone Default value: None
Delivered	Boolean	No	Explanation: Whether the bucket ACL is applied to all objects in the bucket. Restrictions: None Value range: • true: The bucket ACL is applied to all objects in the bucket. • false: The bucket ACL is not applied to any objects in the bucket. Default value: false

Element	Туре	Man dato ry (Yes/ No)	Description
Permission	String	Yes	Explanation: Permissions to be granted. For details, see access permissions controlled by a bucket ACL. Restrictions: None Value range: • READ • READ_ACP • WRITE • WRITE_ACP • FULL_CONTROL Default value: None
AccessControlList	XML	Yes	Explanation: Indicates an ACL, which consists of three elements: Grant, Grantee, and Permission. Restrictions: None Value range: None Default value: None

Response Syntax

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

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

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:iqSPeUBl66PwXDApxjRKk6hlcN4=
Content-Length: 727
<AccessControlPolicy xmlns="http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
 <Owner>
  <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
 </Owner>
 <AccessControlList>
  <Grant>
   <Grantee>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   </Grantee>
   <Permission>FULL_CONTROL</Permission>
  </Grant>
  <Grant>
   <Grantee>
    <ID>783fc6652cf246c096ea836694f71855</ID>
   </Grantee>
   <Permission>READ</Permission>
   <Delivered>false</Delivered>
  </Grant>
  <Grant>
   <Grantee>
     <Canned>Everyone</Canned>
   </Grantee>
   <Permission>READ_ACP</Permission>
  </Grant>
 </AccessControlList>
</AccessControlPolicy>
```

Sample Response

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

Sample Request: Specifying Access Permissions Using Headers

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

Sample Response: Specifying Access Permissions Using Headers

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65

```
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

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 5-13** describes the elements.

Table 5-13 Response elements

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

Error Responses

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

Sample Request

GET /?acl HTTP/1.1 User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 02:39:28 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:X7HtzGsIEkzJbd8vo1DRu30vVrs=

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016436B69D82F14E93528658
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSjTh8661+HF5y8uAnTOBIpNO133hji+
Content-Type: application/xml
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>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
 </Owner>
 <AccessControlList>
  <Grant>
   <Grantee>
     <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   <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.



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 5-14 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
LoggingEnabled	Container for logging information. Present this element when enabling the logging function. Otherwise, absent it. You can add specific logging information in this element. Type: container	Yes only when you need to enable the logging function
Grant	Container for the grantee and the grantee's logging permissions. It describes who has the permission to access the generated log files. Type: container	No
Grantee	Container for the user that is granted with the logging permission. Type: container	No
ID	Account ID of the authorized user, which is globally unique. Type: string	No
Permission	Permissions of the grantee to the generated logs. Type: string Value options: FULL_CONTROL, READ, WRITE	No

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

Naming rules for access logs

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

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

The following is an example of a log object name:

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

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

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 5-15 Format of bucket access logs

Parameter	Example	Description	
BucketOwner	787f2f92b20943998a4fe2 ab75eb09b8	ID of the bucket owner	
Bucket	bucket	Bucket name	
Time	[13/Aug/2015:14:43:42 +0000]	Request timestamp in the [dd/MMM/yyyy:HH:mm:ss Z] format	
Remote IP	xx.xx.xx	Request IP address	
Requester	787f2f92b20943998a4fe2 ab75eb09b8	 When an account initiates a request, this parameter value is the account ID. When an IAM user initiates a request, this parameter value is the ID of the account where the IAM user belongs. When an anonymous user initiates a request, this parameter value is Anonymous. 	
RequestID	281599BACAD9376ECE14 1B842B94535B	Request ID	
Operation	REST.GET.BUCKET.LOCATI ON	Operation	
Key	-	Object name	
Request-URI	GET /bucket?location HTTP/1.1	Request URI	
HTTPStatus	200	Response 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	
TargetStorageClass	GLACIER	Storage class that the object will be transitioned to	
DentryName	12456%2Ffile.txt	 For a parallel file system, this field represents an internal identifier of a file or directory. Its value consists of a parent directory's inode number and a file or directory name and is displayed in the URL-encoded format. For a bucket, the value of this field is 	

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/L4ZZUY9qr6AOnkEiwvVk=
Content-Length: 528
<?xml version="1.0" encoding="UTF-8"?>
<BucketLoggingStatus>
 <Agency>agencyGrantPutLogging</Agency>
 <LoggingEnabled>
  <TargetBucket>log-bucket</TargetBucket>
  <TargetPrefix>mybucket-access_log-/</TargetPrefix>
  <TargetGrants>
   <Grant>
     <Grantee>
      <ID>783fc6652cf246c096ea836694f71855</ID>
     </Grantee>
     <Permission>READ</Permission>
   </Grant>
  </TargetGrants>
 </LoggingEnabled>
</BucketLoggingStatus>
```

Sample Response

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

Sample Request: Disabling Bucket Log Dump

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

<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 subresource 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"?>
SucketLoggingStatus 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>
          <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 5-16** describes the elements.

Table 5-16 Response elements

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

Element	Description
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: 32AAAQAAEAABAAAQAAEAABAAAQAAEABCShuQJoWFpS77C8bOv1mqURv0UY+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>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
     </Grantee>
     <Permission>READ</Permission>
    </Grant>
  </TargetGrants>
 </LoggingEnabled>
</BucketLoggingStatus>
```

5.2.8 Configuring Bucket Lifecycle Rules

Functions

This operation configures lifecycle rules that can delete or migrate objects from a bucket at a specified time. Typical application scenarios:

 Delete periodically uploaded files. Some files uploaded periodically need only to be retained for only one week or one month.

- Delete files that are frequently accessed within a certain period of time but are seldom accessed afterward. You can archive these files and then schedule the time for deletion.
- The minimum time for transitioning objects in a bucket to Infrequent Access and Archive is configurable. The value ranges from 24 to 8640.

You can perform this operation to create or update the lifecycle configuration of a bucket.

Ⅲ NOTE

- Expired objects deleted based on a lifecycle rule cannot be recovered.
- Multi-AZ storage is not available to the Archive or Deep Archive storage class. For this
 reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the
 Archive or Deep Archive storage class based on a lifecycle rule.

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.

The lifecycle configuration enables OBS to delete objects and transition object storage classes at a scheduled time. To prevent a user from doing so, the following permissions granted to the user must be revoked:

- DeleteObject
- DeleteObjectVersion
- PutLifecycleConfiguration

If you want to forbid a user to set the bucket lifecycle configuration, revoke the **PutLifecycleConfiguration** permission from the user.

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>
     </Filter>
     <Status>status</Status>
     <Expiration>
       <Days>days</Days>
     </Expiration>
     <NoncurrentVersionExpiration>
       <NoncurrentDays>days</NoncurrentDays>
     </NoncurrentVersionExpiration>
     <Transition>
     <Days>30</Days>
      <StorageClass>WARM</StorageClass>
     </Transition>
```

Request Parameters

This request contains no parameters.

Request Headers

Table 5-17 lists the request header.

Table 5-17 Request headers

Header	Description	Mandatory
Content- SHA256	Base64-encoded 256-bit SHA-256 digest of the message according to SHA.	Yes
	Type: string	
	Example: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5 SCN55/OtMyI=	

Request Elements

In this request body, you need to specify the lifecycle configuration in XML format. **Table 5-18** describes the specific configuration elements.

If the versioning of a bucket is enabled or suspended, you can set NoncurrentVersionTransition or NoncurrentVersionExpiration to control the lifecycle of historical object versions. The lifecycle of a historical version depends on the time when it becomes a historical one (time when the version is replaced by a new version) and the value of NoncurrentDays. If **NoncurrentDays** is set to 1 in an object deletion scenario, an object version will be deleted one day after it becomes historical. If the version V1 of object A is created on the first date of a month and new version V2 is uploaded on the fifth date of the month, V1 becomes a historical version. At 00:00 on the seventh date of the month, V1 will expire. If an object version does not meet the deletion conditions, but **NoncurrentDays** is set to 1 and **StorageClass** is set to **WARM**, the version transitions to the Infrequent Access storage class one day after it has become a historical version. For example, the V1 version of object A is created on the first day of a month, and its new version V2 is uploaded on the fifth day of the month. Then V1 becomes a historical version. One day later, that is, at 0 o'clock of the seventh day, V1 transitions to the

- Infrequent Access storage class. The deletion or transition of the object after the expiration time may be delayed. The delay is within 48 hours.
- Objects are processed according to the following procedures, if their latest versions meet the expiration rule and versioning is enabled or suspended for the bucket.
 - Versioning enabled:
 - If the latest object version is not a delete marker, a new delete marker will be inserted for the object.
 - If the latest object version is a delete marker and is the only version of the object, this latest version will be deleted.
 - If the object of the latest version has the DeleteMarker and the object has other versions, all versions of the object remain unchanged.
 - Versioning suspended:
 - If the latest version of the object does not have the DeleteMarker and is not the null version, the object generates a new DeleteMarker for the null version.
 - If the latest version of the object does not have the DeleteMarker but is the null version, this null version is overwritten by a new DeleteMarker generated for the null version.
 - If the latest object version is a delete marker and is the only version of the object, this latest version will be deleted.
 - If the object of the latest version has the DeleteMarker and the object has other versions, all versions of the object remain unchanged.
- The following lists the processing when the versioning is enabled or suspended for a bucket and objects of the latest versions meet the transition rules:
 - If the latest version of the object has the DeleteMarker, the storage class of this version will not be transitioned.
 - If the latest version of the object does not have the DeleteMarker and meets the transition rule, the storage class of this version will be transitioned.

Table 5-18 Response elements for lifecycle configuration

Name	Description	Mandatory
Date	Specifies that OBS executes lifecycle rules for objects before the specified date. The date must be compliant with the ISO8601 format, and the time must be compliant with the UTC format of 00:00:00. For example, 2018-01-01T00:00:00.000Z indicates that objects whose last modification time is earlier than 2018-01-01T00:00:00.000Z are deleted or transitioned to another storage class. Objects whose last modification time is equal to or later than the specified time are not deleted or transitioned to another storage class. Type: string Parent: Expiration, Transition	Required if the Days element is absent.
Days	Specifies the number of days (since the latest update to the latest object version) after which the lifecycle rule takes effect. Type: integer Parent: Expiration, Transition	Required if the Date element is absent.
StorageClass	The storage class to which the object is transitioned. Type: string Value options: WARM, COLD, DEEP_ARCHIVE Parent: Transition, NoncurrentVersion- Transition	Required if the Transition or NoncurrentV ersionTransiti on element is present.
Transition	Transition time and the object storage class after transition (valid only for the latest object version). Type: XML Child: Date or Days, StorageClass Parent: Rule	Required if the NoncurrentV ersionTransiti on, Expiration, AbortIncompl eteMultipart Upload, or NoncurrentV ersionExpirati on element is absent.

Name	Description	Mandatory
Expiration	Container for the object expiration rule (only applicable to the latest versions of objects). Type: XML Child: Date or Days Parent: Rule	Required if Transition, NoncurrentV ersionTransiti on, AbortIncompl eteMultipart Upload, or NoncurrentV ersionExpirati on is absent.
ID	Unique identifier of a rule. The value can contain a maximum of 255 characters. Type: string Parent: Rule	No
LifecycleConfigura- tion	Container for lifecycle rules. You can add multiple rules. The total size of the rules cannot exceed 20 KB. Type: XML Child: Rule Parent: none	Yes
NoncurrentDays	Number of days when the specified rule takes effect after the object becomes a historical version (only applicable to an object's historical version). Type: integer Parent: NoncurrentVersionExpiration, NoncurrentVersionTransition	Required if the NoncurrentV ersionExpirati on or NoncurrentV ersionTransiti on element is present.
NoncurrentVersion- Transition	Transition time of historical object versions and the object storage class after transition. Type: XML Child: NoncurrentDays, StorageClass Parent: Rule	Required if the Transition, Expiration, AbortIncompl eteMultipart Upload, or NoncurrentV ersionExpirati on element is absent.

Name	Description	Mandatory
NoncurrentVersio- nExpiration	Container for the expiration time of objects' historical versions. If versioning is enabled or suspended for a bucket, you can set NoncurrentVersionExpiration to delete historical versions of objects that match the lifecycle rule (only applicable to the historical versions of objects). Type: XML Child: NoncurrentDays Parent: Rule	No
AbortIncomplete- MultipartUpload	Container for specifying when the not merged parts (fragments) in an incomplete upload will be deleted. Type: XML Child: DaysAfterInitiation Parent: Rule NOTE AbortIncompleteMultipartUpload does not support filtering by tag.	Required if the Transition, Expiration, NoncurrentV ersionExpiration, or NoncurrentV ersionTransition element is absent.
DaysAfterInitiation	Specifies the number of days since the initiation of an incomplete multipart upload that OBS will wait before deleting the not merged parts (fragments) of the upload. Type: integer Parent: AbortIncompleteMultipartUpload	Required if the AbortIncompl eteMultipart Upload element is present.
Filter	A specific filter. The lifecycle rule will apply to the objects matching this filter in a bucket. You can filter objects by object key prefix, object tag, or both. If there are multiple filters in a rule, use the And logic to combine them. Type: XML Parent: Rule	Either Filter or Prefix can be configured at the same level as Rule, but Prefix can be a children node of Filter.

Name	Description	Mandatory
And	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.	Required if there are multiple Prefix and Tag elements.
	Type: XML	
	Parent: Filter	
	Constraints:	
	1. And must have children nodes.	
	2. If Filter has Tag or Prefix as its children node, And cannot be a children node at the same level as the Tag or Prefix children node under Filter. (Tag and Prefix can be included in And.)	
Tag	Specifies which objects can match the current Rule.	No
	Type: container	
	Parent: Filter or And	
	Constraints:	
	1. If Tag is configured as a children node of Filter, there can be only one Tag node. If Filter has a Prefix children node, there cannot be any Tag node at the same level with Prefix under Filter.	
	2. If Tag is configured under And, there can be a maximum of 10 Tag nodes, and the tag key values must be different.	
	3. If AbortIncompleteMultipartUpload exists in a children node of Rule, Tag cannot be configured to filter fragments.	
	4. If the tags in multiple rules overlap and lifecycle actions conflict, the configuration is not allowed. For example, rule 1 uses one tag (key1, value1) and deletes objects 90 days after creation, while rule 2 uses two tags (key1, value1 and key2, value2) and transitions objects to cold 120 days after creation. In this case, the tags in two rules overlap and lifecycle actions conflict, so such configuration is not allowed.	

Name	Description	Mandatory
Key	The key of the tag. Type: string Parent: Tag Constraints: 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: =*<> /?!;	Required if a tag is present.
Value	The value of the tag. Type: string Parent: Tag Constraints: A tag value is case sensitive and can be left blank. It cannot exceed 255 characters. The following characters are not allowed: =*<> ?!;	Required if a tag is present.
Prefix	Object name prefix that identifies one or more objects to which the rule applies. Type: string Parent: Rule Constraints: 1. When you configure a lifecycle rule by specifying a prefix, if the specified prefix and the prefix of an existing lifecycle rule overlap, OBS regards these two rules as one and forbids you to configure this rule. For example, if there is a rule with the object prefix abc configured in the system, another rule with the object prefix starting with abc cannot be configured. 2. 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.	Yes
Rule	Container for a specific lifecycle rule. Type: container Parent: LifecycleConfiguration	Yes

Name	Description	Mandatory
Status	Indicates whether the rule is enabled.	Yes
	Type: string	
	Parent: Rule	
	Value options: Enabled , Disabled	

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/OtMyI=
Content-Length: 919
<?xml version="1.0" encoding="utf-8"?>
<LifecycleConfiguration>
 <Rule>
  <ID>delete-2-days</ID>
  <Filter>
   <And>
     <Prefix>prefix</Prefix>
     <Tag><Key>key1</Key><Value>value1</Value></Tag>
     <Tag><Key>key2</Key><Value>value2</Value></Tag>
  </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>
<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>delete-2-days</ID>
     <Prefix>test/</Prefix>
     <Status>Enabled</Status>
     <Transition>
       <Days>30</Days>
       <StorageClass>WARM</StorageClass>
     </Transition>
     <Transition>
       <Days>60</Days>
       <StorageClass>COLD</StorageClass>
     </Transition>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Transitioning the Objects' Storage Class Only

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

Sample Request: Deleting Expired Objects Only

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: tt0lizQ7YSTFtMJ3sie6gA==
```

```
<LifecycleConfiguration>
  <Rule>
  <ID>delete-2-days</ID>
  <Prefix>test/</Prefix>
  <Status>Enabled</Status>
  <Expiration>
  <Days>70</Days>
  </Expiration>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Deleting Expired Objects Only

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

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

```
PUT /?lifecycle HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: 9CJYqNUbXEVhhawEx0ICRw==
<LifecycleConfiguration>
  <Rule>
     <ID>delete-2-days</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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSMYkLcGTyUsgSJe2Rdsg2P8JwMsJV6n
x-obs-request-id: 0000018A2BDA0816D2877F5D5622F0BA
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Deleting Historical Object Versions and Delete Markers

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

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 /?lifecvcle 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: PBgGafte2ACjUwYxdJA47Q==
<LifecycleConfiguration>
  <Rule>
     <ID>delete-2-days</ID>
     <Prefix>test/</Prefix>
     <Status>Enabled</Status>
     <AbortIncompleteMultipartUpload>
       <DaysAfterInitiation>10</DaysAfterInitiation>
     </AbortIncompleteMultipartUpload>
  </Rule>
</LifecycleConfiguration>
```

Sample Response: Deleting Fragments

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCTlN+glNMVGtTicAnVXkTVDjR5xKSLuH
x-obs-request-id: 0000018A2BE86742D2C6989CA79E136C
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 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>
</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 5-19** describes the elements.

Table 5-19 Response elements for lifecycle configuration

Element	Description
Date	Specifies that OBS executes lifecycle rules for objects before the specified date. The date must be compliant with the ISO8601 format, and the time must be compliant with the UTC format of 00:00:00. For example, 2018-01-01T00:00:00.000Z indicates that objects whose last modification time is earlier than 2018-01-01T00:00:00.000Z are deleted or transitioned to another storage class. Objects whose last modification time is equal to or later than the specified time are not deleted or transitioned to another storage class. Type: string Parent: Expiration, Transition
Days	Specifies the number of days (since the latest update to the latest object version) after which the lifecycle rule is executed. Type: integer Parent: Expiration, Transition
StorageClass	The storage class to which the object is transitioned. Type: string Value options: WARM, COLD Parent: Transition, NoncurrentVersionTransition
Transition	Transition time and the object storage class after transition (valid only for the latest object version). Type: XML Child: Date or Days Parent: Rule
Expiration	Container for the object expiration rule. Type: XML Child: Date or Days Parent: Rule

Element	Description
ID	Unique identifier of a rule. The value can contain a maximum of 255 characters. Type: string Parent: Rule
LifecycleConfiguration	Container for lifecycle rules. You can add multiple rules. The total size of the rules cannot exceed 20 KB. Type: XML Child: Rule Parent: none
NoncurrentDays	Number of days when the specified rule takes effect after the object becomes a historical version. Type: integer Parent: NoncurrentVersionExpiration, NoncurrentVersionTransition
NoncurrentVersionTransition	Transition time of historical object versions and the object storage class after transition. Type: XML Child: NoncurrentDays, StorageClass Parent: Rule
NoncurrentVersionExpiration	Container for the expiration time of objects' historical versions. If versioning is enabled or suspended for a bucket, you can set NoncurrentVersionExpiration to delete objects whose life cycles have expired. Type: XML Child: NoncurrentDays Parent: Rule
AbortIncompleteMultipar- tUpload	Container for specifying when the not merged parts (fragments) in an incomplete upload will be deleted. Type: XML Child: DaysAfterInitiation Parent: Rule
DaysAfterInitiation	Specifies the number of days since the initiation of an incomplete multipart upload that OBS will wait before deleting the not merged parts (fragments) of the upload. Type: integer Parent: AbortIncompleteMultipartUpload

Element	Description
Filter	A specific filter. The lifecycle rule will apply to the objects matching this filter in a bucket. You can filter objects by object key prefix, object tag, or both. If there are multiple filters in a rule, use the And logic to combine them. Type: XML Parent: Rule
And	The And logic among filtering criteria. The And logic can be used when both the object name prefix and object tag are used. Type: XML Parent: Filter
Tag	The Tag element. Type: container Parent: Filter or And
Key	The key of the tag. Type: string Parent: Tag
Value	The value of the tag. Type: string Parent: Tag
Prefix	Object name prefix identifying one or more objects to which the rule applies. Type: string Parent: Rule
Rule	Container for a specific lifecycle rule. Type: container Parent: LifecycleConfiguration
Status	Indicates whether the rule is enabled. Type: string Parent: Rule Value options: Enabled , Disabled

Error Responses

Table 5-20 describes possible special errors in the request.

Table 5-20 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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSEMKZSIeboCA1eAukgYOOAd7oX3ZONn
Content-Type: application/xml
Date: WED, 01 Jul 2015 03:06:56 GMT
Content-Length: 919
<?xml version="1.0" encoding="utf-8"?>
<LifecycleConfiguration>
 <Rule>
  <ID>delete-2-days</ID>
  <Filter>
   <Prefix>test/</Prefix>
  </Filter>
  <Status>Enabled</Status>
  <Expiration>
   <Days>2</Days>
  </Expiration>
  <NoncurrentVersionExpiration>
   <NoncurrentDays>5</NoncurrentDays>
  </NoncurrentVersionExpiration>
  <Transition>
   <Days>30</Days>
   <StorageClass>WARM</StorageClass>
  </Transition>
  <Transition>
   <Days>60</Days>
   <StorageClass>COLD</StorageClass>
  </Transition>
  <NoncurrentVersionTransition>
   <NoncurrentDays>30</NoncurrentDays>
   <StorageClass>WARM</StorageClass>
  </NoncurrentVersionTransition>
  <NoncurrentVersionTransition>
   <NoncurrentDays>60</NoncurrentDays>
   <StorageClass>COLD</StorageClass>
  </NoncurrentVersionTransition>
 </Rule>
</LifecycleConfiguration>
```

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 H4IPJX0TQTHTHEBQQCEC:5DGAS7SBbMC1YTC4tNXY57Zl2Fo=

Sample Response

HTTP/1.1 204 No Content

Server: OBS

x-obs-request-id: BF260000016436C2550A1EEA97614A98

x-obs-id-2: 32AAAQAAEAABSAAqAAEAABAAAQAAEAABCSB7A0KZEBOCutgcfZvaGVthTGOJSuyk

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 5-21** lists the request elements.

Table 5-21 Elements for configuring bucket versioning

Element	Description	Mandator y
VersioningConfiguration	Root node for configuring versioning Parent: none	Yes
Status	Versioning status of the bucket Type: string Parent: VersioningConfiguration Value options: Enabled, Suspended	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 /?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: Date: WED, 01 Jul 2015 03:14:18 GMT

Content-Length: 0

Sample Request: Suspending Versioning

PUT /?versioning HTTP/1.1

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Date: WED, 01 Jul 2015 02:37:22 GMT Content-Type: application/xml

<VersioningConfiguration>

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

Sample Response: Suspending Versioning

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSjqfl2JttwovZb7kTM+xkyQQyhNyOOC

x-obs-request-id: 0000018A2C044BC6D24722440C5EC81C

Server: OBS Content-Length: 0

Date: WED, 01 Jul 2015 02:37:22 GMT

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

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 5-22** describes the elements.

Table 5-22 Response elements

Element	Description
VersioningConfiguration	Element of versioning status information.
	Type: container
Status	Versioning status of the bucket.
	Type: string
	Value options: Enabled, Suspended

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:4N5qQloluLO9xMY0m+8lln/UWXM=

Sample Response

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

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<VersioningConfiguration xmlns="http://obs.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 of 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.

The default storage class of a bucket is Standard.

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 5-23**.

Table 5-23 Additional request elements

Element	Description	Mandatory
StorageClass	Specifies the default storage class for a bucket.	Yes
	Type: string	
	Value options: STANDARD , WARM , COLD , DEEP_ARCHIVE	
	The available storage classes are as follows: Standard (STANDARD), Infrequent Access (WARM), Archive (COLD), Deep Archive (DEEP_ARCHIVE).	

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</

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BF2600000164368E704B571F328A8797

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSIsw3tPtUn6damTI5acQmQAcEfmTwl3

Date: WED, 01 Jul 2015 03:18:19 GMT

Content-Length: 0

5.2.14 Obtaining Bucket Storage Class Information

Functions

This operation obtains the default storage class of a bucket.

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

Request Syntax

GET /?storageClass HTTP/1.1 Host: *bucketname*.obs.*region*.myhuaweicloud.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 5-24** describes the elements.

Table 5-24 Response elements

Element	Description	
StorageClass	Default storage class of the bucket.	
	Type: string. For details about the enumeration types, see Table 5-23 .	

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 H4IPJX0TQTHTHEBQQCEC:0zVTSdKG6OFCIH2dKvmsVGYCQyw=

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BF260000016436BE45820FDF3A65B42C

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSCju1CZy3ZfRVW5hiNd024lRFdUoqWy

Content-Type: application/xml

Date: WED, 01 Jul 2015 03:20:28 GMT

Content-Length: 142

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

<StorageClass xmlns="http://obs.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>
     <HistoricalObjectReplication>Enabled</HistoricalObjectReplication>
</ReplicationConfiguration>
```

Request Parameters

This request contains no message parameters.

Request Headers

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

Table 5-25 Request header for cross-region replication

Element	Description	Mandatory
Content-SHA256	Base64-encoded 256-bit SHA256 digest of the message according to SHA.	Yes

Request Elements

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

Table 5-26 Bucket replication configuration elements

Element	Description	Mandatory
ReplicationConfiguration	Container for the replication rules. A maximum of 100 rules can be configured. The size of the XML file can reach 50 KB.	Yes
	Type: container Child: Rule Parent: none	
Agency	Name of the agency, which can have a maximum of 64 characters. Type: string	Yes
	Parent: ReplicationConfiguration	
Rule	Container of a specified replication rule. The replication configuration must contain at least one rule. The maximum number of rules is 100.	Yes
	Type: container	
	Parent:	
	ReplicationConfiguration	
ID	Unique identifier of a rule, with a maximum length of 255 characters. Type: string Parent: Rule	No
Status	If the value of this element is Disabled , this rule will be ignored. Type: string Parent: Rule Value options: Enabled , Disabled	Yes
Prefix	Prefix of an object key name, applicable to one or more objects. If the Prefix is left blank, the cross-region replication rule is applied to the whole bucket. The prefix should be a UTF-8-encoded character sequence of 1 to 1,024 characters. Duplicate prefixes are not supported. Type: string	Yes
	Parent: Rule	

Element	Description	Mandatory
Destination	Container for the destination bucket information. Type: container Parent: Rule	Yes
Bucket	Bucket used to store object copies that are marked by rules. If the replication configuration contains multiple rules, the rules must specify the same bucket as the destination bucket. Type: string Parent: Destination	Yes
StorageClass	Storage class of an object Type: string Parent: Destination Value options: STANDARD, WARM, COLD	No
DeleteData	Keyword for synchronizing object deletion operations. If the value is Enabled , the object deletion for the source bucket will be replicated to the destination bucket. Type: string Parent: Destination Value options: Enabled and Disabled (If this element is absent from the request, Disabled is applied by default.)	No
HistoricalObjec- tReplication	Keyword for copying a historical object. If the value is Enabled , historical objects meeting this rule are copied. Type: string Parent: Rule Value options: Enabled and Disabled (If this element is absent from the request, Disabled is applied by default.)	No

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 H4IPJX0TOTHTHEBOOCEC:CdeqU0Vq9xNdJMZ0PGPqh5EnkO0=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
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>
</ReplicationConfiguration>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: B59500000164417839932E5A2295674C
x-obs-id-2: 32AAAQAAEAABKAAQAAEAABAAAQAAEAABCStv51t2NMMx+Ou+ow7IWV4Sxo231fKe
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 5-27 Bucket replication configuration elements

Element	Description
ReplicationConfigura- tion	Container for the replication rules. A maximum of 100 rules can be configured. The size of the XML file can reach 50 KB.
	Type: container Child: Rule
	Parent: none
Agency	Name of the agency, which can have a maximum of 64 characters.
	Type: string
	Parent: ReplicationConfiguration
Rule	Container of a specified replication rule.
	The replication configuration must contain at least one rule. The maximum number of rules is 100.
	Type: container
	Parent: ReplicationConfiguration
ID	Unique identifier of a rule, with a maximum length of 255 characters.
	Type: string
	Parent: Rule
Status	If the value of this element is Disabled , this rule will be ignored.
	Type: string
	Parent: Rule
	Value options: Enabled, Disabled
Prefix	Prefix of an object key name, applicable to one or more objects. If the Prefix is left blank, the cross-region replication rule is applied to the whole bucket.
	The prefix should be a UTF-8-encoded character sequence of 1 to 1,024 characters. Duplicate prefixes are not supported.
	Type: string
	Parent: Rule
Destination	Container for the destination bucket information.
	Type: container
	Parent: Rule

Element	Description
Bucket	Bucket used to store object copies that are marked by rules.
	If the replication configuration contains multiple rules, the rules must specify the same bucket as the destination bucket.
	Type: string
	Parent: Destination
StorageClass	Storage class of an object.
	Type: string
	Parent: Destination
	Value options: STANDARD, WARM, COLD
DeleteData	Keyword for synchronizing object deletion operations. If the value is Enabled , the object deletion for the source bucket will be replicated to the destination bucket.
	Type: string
	Parent: Destination
	Value options: Enabled and Disabled (If this element is absent from the request, Disabled is applied by default.)
HistoricalObjectReplica- tion	Keyword for copying a historical object. If the value is Enabled , historical objects meeting this rule are copied.
	Type: string
	Parent: Rule
	Value options: Enabled and Disabled (If this element is absent from the request, Disabled is applied by default.)

Error Responses

The following table describes the error response for this request.

Table 5-28 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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSHu6lz4vgk5G3E32OFcIPEZZgdOEYE/
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/">
  <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 H4IPJX0TQTHTHEBQQCEC: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.

Restrictions

A bucket can have up to 10 tags.

Request Syntax

Request Parameters

This request contains no message parameters.

Request Headers

Table 5-29 lists the request header.

Table 5-29 Request headers

Header	Description	Mandatory
Content- SHA256	Base64-encoded 256-bit SHA256 digest of the message according to SHA.	Yes
	Type: string	
	Example: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5 SCN55/OtMyI=	

Request Elements

In this request, you must configure bucket tags in the request body. The tag configuration is uploaded in XML format. **Table 5-30** describes the configuration elements.

Table 5-30 Bucket tag configuration elements

Header	Description	Mandatory
Tagging	Explanation:	Yes
	Root element for TagSet and Tag	
	Type: container	
	Parent: none	

Header	Description	Mandatory
TagSet	Explanation:	Yes
	Element of the tag set	
	Type: container	
	Parent: Tagging	
Tag	Explanation:	Yes
	Information element of Tag	
	Type: container	
	Parent: TagSet	
Key	Explanation:	Yes
	Name of a tag. Type: string. Parent: Tag.	
	Restrictions:	
	A tag key can contain a maximum of 36 characters.	
	• Tag keys and values cannot contain commas (,), asterisks (*), vertical bars (), slashes (/), less-than signs (<), greater-than signs (>), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server.	
	Value range:	
	A string between 0 and 36 characters long.	
	Default value:	
	None	

Header	Description	Mandatory
Value	Explanation:	Yes
	Tag value. Type: string. Parent: Tag.	
	Restrictions:	
	 A key value can contain a maximum of 43255 characters. 	
	• Tag keys and values cannot contain commas (,), asterisks (*), vertical bars (), slashes (/), less-than signs (<), greater-than signs (>), equal signs (=), backslashes (\), or ASCII control characters (0x00 to 0x1F). Tag keys and values must be URL encoded before being sent to a server.	
	Value range:	
	A string of 0 (included) to 43255 (excluded) characters.	
	Default value:	
	None	

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 5-31**.

Table 5-31 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: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
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

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 5-32** describes the elements.

Table 5-32 Elements for configuring bucket tags

Element	Description
Tagging	Element of the tag set and tag.
	Type: container
	Parent: none
TagSet	Element of the tag set.
	Type: container
	Parent: Tagging

Element	Description
Tag	Element of the tag information. Type: container
	Parent: TagSet
Key	Tag name.
	Type: string
	Parent: Tag
Value	Tag value.
	Type: string
	Parent: Tag

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 5-33**.

Table 5-33 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:H1INcyc5i0XlHqYTfuzkPxLZUPM=
```

Sample Response

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

- 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 5-34** describes the element.

Table 5-34 Additional request elements

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

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

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/rbwnYaqYf0Ae6F0M3OJQ0dmI8=

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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSHbmBecv7ohDSvqaRObpxzgzJ9+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** 5-35 describes the elements.

Table 5-35 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 H4IPJX0TQTHTHEBQQCEC:8m4bW1gFCNeXQlfu45uO2gpo7l8=

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BF260000016436B55D8DED9AE26C4D18

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSs2Q5vz5AfpAJ/CMNgCfo2hmDowp7M9

Content-Type: application/xml Date: WED, 01 Jul 2015 03:27:45 GMT

Content-Length: 150

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

<Quota xmlns="http://obs.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.

Ⅲ 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 5-36** describes the elements.

Table 5-36 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>
```

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

```
<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 5-37 Request parameters

Parameter	Description	Mandatory
id	ID of the inventory configuration, which must be consistent with the inventory configuration ID in the message body.	Yes
	Type: string	
	Specifications: A maximum of 64 characters	
	There is no default value.	
	Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	

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 5-38** lists the configuration elements.

Table 5-38 Bucket inventory configuration elements

Element	Description	Mandato ry
InventoryConfigu-	Inventory configuration.	Yes
ration	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.	Yes
	Type: string	
	Specifications: A maximum of 64 characters	
	There is no default value.	
	Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	
	Parent: InventoryConfiguration	
IsEnabled	Indicates whether the rule is enabled. If this parameter is set to true , the inventory is generated. If not, the inventory will not be generated.	Yes
	Type: boolean	
	Value options: true, false	
	Parent: InventoryConfiguration	
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	No
rielix	specified name prefix are included in the inventory.	NO
	Type: string	
	Parent: Filter	
Schedule	Time scheduled for generation of inventories. Type: container Parent: InventoryConfiguration	Yes
	Child: Frequency	

Element	Description	Mandato ry
Frequency	Intervals when inventories are generated. You can set this parameter to Daily or Weekly . An inventory is generated within one hour after it is configured for the first time. Then it is generated at the specified intervals. Type: string Parent: Schedule	Yes
	Value options: Daily , Weekly	
Destination	Destination bucket of an inventory. Type: container Parent: InventoryConfiguration	Yes
Format	Inventory format. Only the CSV format is supported.	Yes
	Type: string Parent: Destination Value options: CSV	
Bucket	Name of the bucket for saving inventories. Type: string Parent: Destination	Yes
Prefix	The name prefix of inventory files. If no prefix is configured, the names of inventory files will start with the BucketInventory by default. Type: string Parent: Destination	No
IncludedObjectVersions	 Indicates whether versions of objects are included in an inventory. If this parameter is set to All, all the versions of objects are included in the inventory, and versioning related fields are added to the inventory, including: VersionId, IsLatest, and DeleteMarker. If this parameter is set to Current, the inventory contains only the current objects versions at the time when the inventory is generated. No versioning fields are displayed in the inventory. Type: string Parent: InventoryConfiguration Value options: All, Current 	Yes

Element	Description	Mandato ry
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.	No
	Type: container	
	Parent: InventoryConfiguration	
	Child: Field	
Field	Optional fields. The OptionalFields can contain multiple field elements.	No
	Type: string	
	Parent: OptionalFields	
	Value options: Size, LastModifiedDate, StorageClass, ETag, IsMultipartUploaded, ReplicationStatus, EncryptionStatus	

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 5-39**.

Table 5-39 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
PrefixExistInclusionRela- tionship	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>
 <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>
</l></l></l></l></l><
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 000001682C8545B0680893425D60AB83
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSIGTuRtBfo7lpHSt0ZknhdDHmllwd/p
Date: Tue, 08 Jan 2019 08:12:38 GMT
Content-Length: 0
```

5.2.25 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 5-40 Request parameters

Parameter	Description	Mandatory
id	ID of the inventory configuration that you want to obtain.	Yes
	Type: string	
	Specifications: A maximum of 64 characters	
	There is no default value.	
	Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	

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 5-41 lists elements contained in the response body.

Table 5-41 Elements in a response body to the request for bucket inventory configurations

Element	Description	
InventoryConfigura-	Inventory configuration.	
tion	Type: container	
	Parent: none	
	Child: Id, IsEnabled, Filter, Destination, Schedule, IncludedObjectVersions, and OptionalFields	
Id	ID of an inventory configuration, which must be consistent with the inventory configuration ID specified in the request.	
	Type: string	
	Specifications: A maximum of 64 characters	
	There is no default value.	
	Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	
	Parent: InventoryConfiguration	
IsEnabled	Indicates whether the rule is enabled. If this parameter is set to true , the inventory is generated. If not, the inventory will not be generated.	
	Type: boolean	
	Value options: true , false	
	Parent: InventoryConfiguration	

Element	Description	
Filter	Inventory filter configuration. The inventory contains only objects that meet the filter criteria (filtering by object name prefix). If no filter criteria is configured, all objects are included.	
	Type: container	
	Parent: InventoryConfiguration Child: Prefix	
Prefix	Filtering by name prefix. Only objects with the specified name prefix are included in the inventory. Type: string Parent: Filter	
Schedule	Time scheduled for generation of inventories. Type: container Parent: InventoryConfiguration Child: Frequency	
Frequency	Intervals when inventories are generated. You can set this parameter to Daily or Weekly . An inventory is generated within one hour after it is configured for the first time. Then it is generated at the specified intervals.	
	Type: string Parent: Schedule	
	Value options: Daily , Weekly	
Destination	Destination bucket of an inventory.	
	Type: container	
	Parent: InventoryConfiguration	
Format	Inventory format. Only the CSV format is supported.	
	Type: string Parent: Destination	
	Value options: CSV	
Bucket	Name of the bucket for saving inventories.	
	Type: string	
	Parent: Destination	
Prefix	The name prefix of inventory files. If no prefix is configured, the names of inventory files will start with the BucketInventory by default. Type: string	
	Parent: Destination	

Element	Description		
IncludedObjectVer- sions	Indicates whether versions of objects are included in an inventory.		
	 If this parameter is set to All, all the versions of objects are included in the inventory, and versioning related fields are added to the inventory, including: VersionId, IsLatest, and DeleteMarker. 		
	If this parameter is set to Current , the inventory contains only the current objects versions at the time when the inventory is generated. No versioning fields are displayed in the inventory.		
	Type: string		
	Parent: InventoryConfiguration		
	Value options: All, Current		
OptionalFields	Extra metadata fields that can be added to an inventory. If this parameter is configured, fields specified in this parameter are contained in the inventory.		
	Type: container		
	Parent: InventoryConfiguration		
	Child: Field		
Field	Optional fields. The OptionalFields can contain multiple field elements.		
	Type: string		
	Parent: OptionalFields		
	Value options: Size, LastModifiedDate, StorageClass, ETag, IsMultipartUploaded, ReplicationStatus, EncryptionStatus		

Error Responses

In addition to common error codes, this API also returns other error codes. The following table lists common errors and possible causes. For details, see **Table 5-42**.

Table 5-42 Error codes related to obtaining inventory configurations

Error Code	Description	HTTP Status Code
NoSuchInventoryConfi- guration	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>
 <ld>id</ld>
 <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 5-43 lists elements contained in the response body.

Table 5-43 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 Table 5-41 .
	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: 32AAAQAAEAABAAAQAAEAABAAAQAAEABCSBjn5O7Jv9CqvUMO0BenehRdil1n8rR

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>

<ld>id1</ld>

<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>

</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 5-44 Request parameters

Parameter	Description	Mandatory
id	ID of the inventory to be deleted.	Yes
	Type: string	
	Specifications: A maximum of 64 characters	
	There is no default value.	
	Valid characters: letters, digits, hyphens (-), periods (.) and underscores (_)	

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: */*

Deter Tora

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.

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 5-45 Request parameters

Parameter	Description	Mandatory
customdomain	Explanation:	Yes
	Custom domain name of a bucket.	
	Type: String, which must meet the naming conventions of domain names.	
	Restrictions:	
	A bucket can have a maximum of 30 domain names. One custom domain name can be used for only one bucket.	
	Value range:	
	The maximum length is 256 bytes.	
	Default value:	
	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:u2kJF4kENs6KlIDcAZpAKSKPtnc=

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.

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/">

<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 5-46** lists details about each element.

Table 5-46 Response elements

Element	Description	
ListBucketCustomDomainsRe-	Container of the returned result	
sult	Type: container	
	Child: Domains	
	Parent: none	
Domains	Element indicating the custom domain name	
	Type: container	
	Child: DomainName and CreateTime	
	Parent: ListBucketCustomDomainsResult	
DomainName	Custom domain name	
	Type: string	
	Child: none	
	Parent: Domains	
CreateTime	Time when a custom domain name is created Type: string, which must be a UTC time. Child: none	
	Parent: Domains	

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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSM80AI9weqGUsIFJScVxSKlG4DmypX9

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/">

<Domain> <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.

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 5-47 Request parameters

Parameter	Description	Mandatory
customdomain	Specifies the custom domain name to be deleted.	Yes
	Type: string, which must meet the naming conventions of domain names.	
	Specifications: The value contains a maximum of 256 characters.	
	No default value.	

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)

Request Syntax (SSE-OBS)

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 5-48** lists the configuration elements.

Table 5-48 Configuration elements of bucket encryption

Header	Description	Mand atory
ServerSideEncryption- Configuration	Root element of the default encryption configuration of a bucket. Type: container	Yes
	Parent: none Child: Rule	
Rule	Sub-element of the default encryption configuration of a bucket. Type: container Parent: ServerSideEncryptionConfiguration Child: ApplyServerSideEncryptionByDefault	Yes
ApplyServerSideEncryp- tionByDefault	Sub-element of the default encryption configuration of a bucket. Type: container Parent: Rule Child: SSEAlgorithm and KMSMasterKeyID	Yes
SSEAlgorithm	Server-side encryption algorithm used for the default encryption configuration of a bucket. Type: string Value options: • kms: SSE-KMS encryption and the AES256 algorithm are used. • AES256: SSE-OBS encryption and the AES256 algorithm are used. Parent: ApplyServerSideEncryptionByDefault	Yes

Header	Description	Mand atory
KMSMasterKeyID	Customer master key (CMK) used in SSE-KMS encryption mode. If you do not specify this header, the default master key will be used. Type: string	No
	Valid value formats are as follows:	
	1. regionID:domainID:key key_id	
	2. key_id	
	In the preceding formats:	
	 regionID indicates the ID of the region where the key belongs. You can obtain the ID from Regions and Endpoints. 	
	 domainID indicates the ID of the account to which the key belongs. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. 	
	 key_id indicates the ID of the key created in DEW. For details about how to obtain the key ID, see Viewing a CMK. 	
	Parent: ApplyServerSideEncryptionByDefault	
ProjectID	ID of the project where the KMS master key belongs when SSE-KMS is used. If the project is not the default one, you must use this parameter to specify the project ID.	No
	Type: string	
	Value options:	
	Project ID that matches KMSMasterKeyID.	
	If KMSMasterKeyID is not specified, do not set the project ID.	
	Parent: ApplyServerSideEncryptionByDefault NOTE When 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.	

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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vqzpgtohkiFm
Date: Thu, 21 Feb 2019 03:05:34 GMT
Content-Length: 0
```

Sample Request (SSE-OBS)

Sample Response (SSE-OBS)

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

x-obs-request-id: BF26000001643670AC06E7B9A7767921 x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSvK6z8HV6nrJh49gsB5vqzpgtohkiFm Date: Thu, 21 Feb 2019 03:05:34 GMT Content-Length: 0

5.2.32 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

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 5-49 Configuration elements of bucket encryption

Header	Description
ServerSideEncryptionConfiguration	Root element of the default encryption configuration of a bucket.
	Type: container
	Parent: none
	Child: Rule
Rule	Sub-element of the default encryption configuration of a bucket.
	Type: container
	Parent: ServerSideEncryptionConfiguration
	Child: ApplyServerSideEncryptionByDefault
ApplyServerSideEncryptionBy- Default	Sub-element of the default encryption configuration of a bucket.
	Type: container
	Parent: Rule
	Child: SSEAlgorithm and KMSMasterKeyID
SSEAlgorithm	The server-side encryption algorithm used for encryption configuration of a bucket.
	Type: string
	Value options: kms
	Parent: ApplyServerSideEncryptionByDefault
KMSMasterKeylD	ID of the customer master key (CMK) used for SSE-KMS.
	Type: string
	Parent: ApplyServerSideEncryptionByDefault
ProjectID	ID of the project where the KMS master key belongs when SSE-KMS is used.
	Type: string
	Parent: ApplyServerSideEncryptionByDefault
	NOTE When 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.

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 5-50**.

Table 5-50 Error codes related to getting bucket encryption configuration

Error Code	Description	HTTP Status Code
NoSuchEncryptionConfi- guration	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

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 5-51 lists the request header.

Table 5-51 Request headers

Header	Description	Mandatory
Content- SHA256	Base64-encoded 256-bit SHA256 digest of the message according to SHA.	Yes
	Type: string	
	Example: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5 SCN55/OtMyI=	

Request Elements

This request contains elements to configure the direct reading status in XML format for Archive objects. **Table 5-52** lists the request elements.

Table 5-52 Elements required to configure the direct reading status for Archive objects

Element	Description	Mandator y
DirectColdAccessConfigu- ration	Root node for the configuration of the direct reading for Archive objects.	Yes
	Parent: none	
Status	Direct reading status of Archive objects in a bucket.	Yes
	Type: string	
	Parent: DirectColdAccessConfiguration	
	Value options: Enabled , Disabled	

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: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCStOlo1yxthHHo2GlS3WGgt1ekAlh3Vy

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 5-53** describes the elements.

Table 5-53 Response elements

ndicates the direct reading information of Archive objects.
Type: container
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. Type: string Value options: Enabled, Disabled
Tridod

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:4N5qQloluLO9xMY0m+8lln/UWXM=

Sample Response

HTTP/1.1 200 OK Server: OBS

x-obs-request-id: 0000016A6C21AD79654C09D9AA45EB5D

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSmfq4hegf1QZv8/ewfveE4B566v5DZ8

Content-Type: application/xml Date: Tue, 30 Apr 2019 02:45:07 GMT

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 H4IPJX0TQTHTHEBQQCEC:5DGAS7SBbMC1YTC4tNXY57Zl2Fo=

5.2.37 Configuring Mirroring Back-to-Source Rules

Functions

This operation configures mirroring back-to-source 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 5-54 Request elements

Element	Description	Mandato ry
rules	Number of rules.	Yes
	Type: container	
	Value range: array size ranging from 1 to 10	
	NOTE For the same bucket, prefixes of different rules cannot contain each other or have duplicate beginning characters. The same agency is recommended.	

Table 5-55 Rule parameters

Parameter	Description	Mandato ry
id	Rule ID. Unique ID of a back-to-source rule configured for the current bucket. Type: string	Yes
	Value range: 1 to 256. The value must be within the range of ^[a-zA-Z0-9]{1, 256}\$.	
condition	Condition for triggering back-to-source. Type: container	Yes
httpErrorCodeRetur- nedEquals	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.	Yes
	Type: integer Value range: 404	

Parameter	Description	Mandato ry
objectKeyPrefixEquals	Prefix of the object name that triggers the back-to-source function. Back-to-source is performed only when the specified object name prefix is contained in the request. If this parameter is left blank, all objects are matched by default. For the same bucket, prefixes of different rules cannot contain each other or have duplicate beginning characters. Type: string Valid value: a string of 0 to 1023	No
	characters	
redirect	Main parameters of back-to-source. Type: container	Yes
agency	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. Type: string	Yes
publicSource	Configuration of the source site that can be publicly accessed. This parameter is mandatory when the source site is a public accessible resource. Type: container	No
sourceEndpoint	Source site address that can be publicly accessed. Type: container	No

Parameter	Description	Mandato ry
master	Primary 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 address.	No
	Type: array	
	Valid value: A single source site address is in the format of https http://xxx.yyy.zzz, containing 10 to 255 characters.	
	NOTE The primary source site address is preferentially used during the back-to-source process. If multiple primary addresses are configured, all primary addresses are accessed in polling mode. If two or more primary addresses are configured, when the first request to the primary address fails and the retry conditions are met, the request will retry another primary address. At least one primary address must be configured. A maximum of five primary addresses can be configured.	
slave	Secondary source site 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 address.	No
	Type: array	
	Valid value: A single source site address is in the format of https http://xxx.yyy.zzz, containing 10 to 255 characters. NOTE A back-to-source request will retry the secondary source site address when primary source site address is not available. A maximum of five secondary addresses can be	
	configured.	

Parameter	Description	Mandato ry
retryConditions	Condition for switching the source site address. Type: array Value range: 4XX, 5XX, 400-499, and 500-599 error codes NOTE Error codes starting with 4XX and 4 cannot be configured together. Error codes starting with 5XX and 5 cannot be configured together. A maximum of 20 error codes can be configured.	No
passQueryString	Indicates whether to carry the request character string. If the value is true , the queryString value in the OBS request is passed to the source site. Otherwise, the queryString value will not be passed to the source site. The default value is false . Value false indicates that the parameter is ignored. Type: boolean Value range: false or true NOTE If the value is true but the query contains signature information, delete the signature information and pass the remaining parameters.	Yes
mirrorFollowRedirect	Indicates whether to obtain resources following the 3xx redirection request from the redirected source site. If the value is true , obtain resources following the 3xx redirection request from the redirected source site. Otherwise, OBS transparently passes the 3XX response and does not obtain resources. The default value is false . Value false indicates that the parameter is ignored. Type: boolean Value range: false or true	Yes
mirrorHttpHeader	HTTP header pass rule Type: container	No

Parameter	Description	Mandato ry
passAll	Indicates whether to pass all HTTP headers through the source site.	No
	The following HTTP header types do not support passthrough:	
	Headers starting with the following prefixes:	
	x-obs-	
	x-amz-	
	2. All standard HTTP headers, for example:	
	Content-Length	
	Authorization	
	Date	
	passAll and pass are mutually exclusive.	
	Value type: BOOL	
	Value range: false or true	
pass	Specifies the list of HTTP headers to be passed through.	No
	Type: list	
	Value range: a maximum of 10 lists. The length of each list ranges from 1 to 63 characters. The key can contain only letters (both upper and lower cases), digits, hyphens (-), and underscores (_).	
remove	List of HTTP headers that cannot be passed through.	No
	The remove operation takes precedence over the pass and passAll operations.	
	Type: list	
	Value range: a maximum of 10 lists. The length of each list ranges from 1 to 63 characters. The key can contain only letters (both upper and lower cases), digits, hyphens (-), and underscores (_).	

Parameter	Description	Mandato ry
set	Configuration of list of HTTP headers to be passed through.	No
	The set operation has a higher priority than the remove , pass , and passAll operations.	
	If the user-defined header contains Referer, redirectWithoutReferer must be set to true. Otherwise, Referer will be overwritten.	
	Type: list	
	Value range: a maximum of 10 lists	
key	Keyword of the HTTP header that needs to be passed through.	No
	Each key is unique.	
	Type: string	
	Value range: a string of 1 to 63 characters. Only letters (both upper and lower cases), digits, hyphens (-), and underscores (_) are allowed.	
value	Value of the HTTP header that needs to be passed through.	No
	Type: string	
	Value range: a string of 0 to 2048 characters	
replaceKeyWith	Adds prefix or suffix. If you need to add a prefix or suffix when downloading objects from the source site, set this parameter to prefix\${key}suffix . If no prefix or suffix needs to be added, set this parameter to \$ {key} .	No
	Type: string	
	Value range: prefix\${key}suffix	
	\${key} is the keyword, prefix and suffix are the ones to be added. Total length of the prefix and suffix. The value ranges from 0 to 1023 characters.	

Parameter	Description	Mandato ry
replaceKeyPrefixWith	Character string used to replace the prefix objectKeyPrefixEquals . If you need to replace the current object name prefix when downloading objects from the source site, modify this configuration item.	No
	If both replaceKeyWith and ReplaceKeyPrefixWith are empty, ReplaceKeyPrefixWith takes effect. The request is invalid if both the parameters are specified.	
	Type: string Value range: a string of 0 to 1023 characters	
vpcEndpointURN	URN of VPC Endpoint service. Type: string Value range: a string of 0 to 127 characters	No
redirectWithoutReferer	Indicates whether to carry the original host as the referer header to the destination address for redirection. Value false indicates that the original host will be carried, and true indicates that the original host will not be carried. Type: boolean Default value: false	No
mirrorAllowHttpMe- thod	If HEAD is added for a public bucket, you can use HEAD requests to retrieve objects' metadata, rather than objects, from the origin server. Type: list	No

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 H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0MwsI2Zpo=
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 Mirroring Back-to-Source 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/YZLK0MwsI2Zpo=
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": {
```

```
"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"],
      "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 Mirroring Back-to-Source Rules

Functions

This operation deletes mirroring back-to-source 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 H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0MwsI2Zpo= 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*

Request Parameters

This request contains no message parameters.

policy json body

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

Request Headers

Request Elements

Table 5-56 Request elements

Parameter	Description	Mandato ry
rules	Number of rules.	Yes
	Type: container	
	Value range: [1, 10]	
	NOTE For the same bucket, prefixes of different rules cannot contain each other or have duplicate beginning characters. The same agency is recommended.	

Table 5-57 Rule parameters

Parameter	Description	Mandato ry
id	Name of a decompression policy. It is the unique ID of the decompression policy configured for the current bucket. Type: string The value can contain 1 to 256 characters, matching the regular expression of ^[a-zA-Z0-9]{1, 256}\$. It consists of only uppercase letters, lowercase letters, digits, underscores (_), and hyphens (-), for example, event_0001.	Yes
project	Project ID. Type: string	Yes
agency	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. Type: string	Yes
events	Trigger event type. Type: string Supported event types: ["ObjectCreated:*"] ["ObjectCreated:Post"] ["ObjectCreated:Copy"] ["ObjectCreated:CompleteMultipartUpload"]	Yes

Parameter	Description	Mandato ry
prefix	Rule prefix. Type: string Value range: [0, 1023]	No
suffix	Rule suffix. Type: string Fixed value: .zip	Yes
overwrite	Method of processing the unzipped file if it has the same name as an existing file. Type: integer 0: Skip without overwriting; 1: Do not overwrite (rename the file with the CRC32 value); 2: 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 Value 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/YZLK0MwsI2Zpo=
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 H4IPJX0TQTHTHEBQQCEC:sc2PM13Wlfcoc/YZLK0MwsI2Zpo=
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/YZLK0MwsI2Zpo= 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 operation allows you to configure the default WORM policy and a 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. 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.

- 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 3-3.

Request Elements

Table 5-58 Request elements

Element	Description	Mandatory
ObjectLockConfiguration	Container for configuring WORM for a bucket. Type: container	Yes
ObjectLockEnabled	Indicates whether the bucket has WORM enabled. The value can only be Enabled . Type: string Example: Enabled	No
Rule	Rule container for the default bucket-level WORM policy. Type: container	This header is mandatory for configuring the default WORM policy for a bucket. If it is not contained, the existing default WORM policy will be deleted.
DefaultRetention	Container for the default WORM retention policy for the bucket. Type: container	Mandatory if the Rule container is included.
Mode	Default protection mode. It can only be set to COMPLIANCE now. Type: string Example: COMPLIANCE	Mandatory if the DefaultRetention container is included.
Days	Default protection period, in days. The value is from 1 to 36500. Type: integer Example: 1	If the DefaultRetention container is included, you must specify either Days or Years , but you cannot specify both at the same time.
Years	Default protection period, in years. The value is from 1 to 100. In a leap year, only 365 days are calculated. Type: integer Example: 1	If the DefaultRetention container is included, you must specify either Years or Days , but you cannot specify both at the same time.

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 5-59 describes possible special errors in this request.

Table 5-59

Error Code	Description	HTTP Status Code
InvalidRequest	The object lock is disabled for the bucket.	400
MalformedXML	Invalid format of the Object Lock configuration.	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 H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Type: application/xml

Content-Length: 157

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

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

<ObjectLockEnabled>Enabled</ObjectLockEnabled>

<Rule>

<Pears>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 H4IPJX0TQTHTHEBQQCEC: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

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. 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.

□ 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

Response Headers

This response uses common headers. For details, see Table 3-29.

Response Elements

Table 5-60 describes the elements of the default bucket-level WORM policy in the response.

Table 5-60	Elements	of the default	: bucket-leve	l WORM	policy
-------------------	----------	----------------	---------------	--------	--------

Element	Description
ObjectLockConfigura- tion	Container for configuring for a bucket. Type: container
ObjectLockEnabled	Indicates whether WORM is enabled for the bucket. The value can only be Enabled . Type: string Example: Enabled
Rule	Container for the default bucket-level WORM policy. If you have never configured the default policy, this header will not be included in the response. Type: container
DefaultRetention	Container for the default bucket-level WORM policy. Type: container
Mode	Default protection mode. It can only be set to COMPLIANCE now. Type: string
	Example: COMPLIANCE

Element	Description
Days	Default protection period, in days. The value is from 1 to 36500.
	Type: integer
	Example: 1
Years	Default protection period, in years. The value is from 1 to 100. In a leap year, only 365 days are calculated.
	Type: integer
	Example: 1

Error Responses

Table 5-61 describes possible special errors in this request.

Table 5-61

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/Y4Ng1izvzc1nTGxpMXTE6ynw=

Content-Length: 0

Sample Response 1

HTTP/1.1 200 OK Server: OBS

x-obs-request-id: BF260000016435CE298386946AE4C482

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz

Date: WED, 01 Jul 2015 02:25:06 GMT

Content-Length: 157

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

<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 H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=
Content-Length: 0
```

Sample Response 2

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: BF260000016435CE298386946AE4C482
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz
Date: WED, 01 Jul 2015 02:25:06 GMT
Content-Length: 157
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ObjectLockConfiguration xmlns="http://obs.region.myhuaweicloud.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.



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
```

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 5-62**.

Table 5-62 Request Elements

Element	Туре	Ma nda tory (Yes /No	Description
PublicAccessBl ockConfigurat ion	XML	Yes	Explanation: Root node of the PublicAccessBlockConfiguration parameter. Restrictions: None Value range: None Default value: None

Element	Туре	Ma nda tory (Yes /No	Description
BlockPublicAcl	Bool	No	 Explanation: Whether to prohibit specifying the ACL as public access to a bucket or objects in the bucket. If the parameter is set to true, the following applies: 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. 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. Restrictions: This configuration does not affect existing buckets or objects. Value range: true: This feature is enabled. false: This feature is disabled. Default value: false
BlockPublicPolicy	Bool	No	Explanation: Whether to prohibit the configuration of a bucket policy that allows public access to a bucket. If this parameter is set to true, such a bucket policy will fail to be configured and the error "403 Access Denied" will be returned. Restrictions: This configuration does not affect existing buckets. Value range: • true: This feature is enabled. • false: This feature is disabled. Default value: false

Element	Туре	Ma nda tory (Yes /No	Description
IgnorePublicA cls	Bool ean	No	Explanation: Whether to ignore the existing ACL that allows public access to the bucket or objects in the bucket. If this parameter is set to true, the public access ACL of the bucket or objects in the bucket becomes invalid. Restrictions: This configuration does not affect existing ACLs or prohibit the configuration of new public access ACLs. Value range: • true: This feature is enabled. • false: This feature is disabled. Default value: false
RestrictPublic Buckets	Bool	No	Explanation: Whether to restrict the existing public bucket policy. If this parameter is set to true, only the cloud service and bucket owner accounts are allowed to access the bucket. Restrictions: This configuration does not affect existing bucket policies or prohibit the configuration of new public bucket policies. Value range: true: This feature is enabled. false: This feature is disabled. Default value: false

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

#obs_04_0174/table13791928162213 describes possible special errors in this request.

Error	Description	HTTP Status Code
InvalidRequest	BlockPublicAcls, BlockPublicPolicy, IgnorePublicAcls, and RestrictPublicBuckets 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 H4IPJX0TQTHTHEBQQCEC: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

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

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 5-63** describes these elements.

Table 5-63 Response Elements

Element	Туре	Description
PublicAcces sBlockConfi guration	XML	Explanation : The public access block configuration of a bucket.
BlockPublic Acls	Boolean	 Explanation: Whether to prohibit specifying the ACL as public access to a bucket or objects in the bucket. If the parameter is set to true, the following applies: 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. 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. Value range: true: This feature is enabled. false: This feature is disabled.
IgnorePubli cAcls	Boolean	Explanation: Whether to ignore the existing ACL that allows public access to the bucket or objects in the bucket. If this parameter is set to true, the public access ACL of the bucket or objects in the bucket becomes invalid. Value range: true: This feature is enabled. false: This feature is disabled.

Element	Туре	Description
BlockPublic Policy	Boolean	Explanation: Whether to prohibit the configuration of a bucket policy that allows public access to a bucket. If this parameter is set to true, such a bucket policy will fail to be configured and the error "403 Access Denied" will be returned. Value range:
		true: This feature is enabled.
		false: This feature is disabled.
RestrictPubl icBuckets	Boolean	Explanation: Whether to restrict the existing public bucket policy. If this parameter is set to true and the existing bucket policy allows public access, only the cloud service and bucket owner accounts are allowed to access the bucket.
		Value range:
		• true: This feature is enabled.
		• false: This feature is disabled.

Error Responses

#obs_04_0175/table13791928162213 describes possible special errors in this request.

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

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: 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>
```

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

</PublicAccessBlockConfiguration>

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

Response Headers

This response uses common headers. For details, see Table 3-29.

Response Elements

This response contains no elements.

Error Responses

#obs_04_0176/table13791928162213 describes possible special errors in this request.

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 H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=

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

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 5-64** describes the elements.

Table	5-64	Response	Elements
-------	------	----------	----------

Element	Туре	Description
BucketStatu s	XML	Explanation: Public access status of the bucket.
IsPublic	Boolean	Explanation: Public access status of the bucket. Value range: • true: public • false: non-public

Error Responses

#obs_04_0177/table13791928162213 describes possible special errors in this request.

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/Y4Nq1izvzc1nTGxpMXTE6ynw=

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

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 5-65** describes the elements.

Table 5-65 Response Elements

Element	Туре	Description
PolicyStatus	XML	Explanation:
		Public access status of the bucket policy.
IsPublic	Boolean	Explanation:
		Public access status of the bucket policy.
		Value range:
		• true: public
		false: non-public

Error Responses

#obs_04_0178/table13791928162213 describes possible special errors in this request.

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 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: 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.

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 network configuration request 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 5-66**.

Table 5-66 Elements for redirecting all website requests

Element	Description	M an da tor y
WebsiteConfiguration	Root node configured on the website Type: container Parent: none	Yes
RedirectAllRequestsTo	Describes the redirection behavior for every request to this bucket's website endpoint. If this element is present, no other siblings are allowed. Type: container Parent: WebsiteConfiguration	Yes
HostName	Name of the host where requests will be redirected Type: string Parent: RedirectAllRequestsTo	Yes
Protocol	The HTTP or HTTPS protocol used in redirecting requests. The default protocol is HTTP. Type: string Parent: RedirectAllRequestsTo	No

• To configure redirection rules, add the elements as described in **Table 5-67**.

Table 5-67 Elements for adding rules that redirect requests

Element	Description	M an da tor y
WebsiteConfiguration	Root element for the website configuration Type: container Parent: none	Yes
IndexDocument	Suff element Type: container Parent: WebsiteConfiguration	Yes
Suffix	Suffix that is appended to a request initiated for a directory on the website endpoint. For example, if the suffix is index.html and you request for samplebucket/images/, the data that is returned will be for the object with the key name images/index.html in the samplebucket bucket. Suffix cannot be empty or contain slashes (/). Type: string Parent: IndexDocument	Yes
ErrorDocument	Key element Type: container Parent: WebsiteConfiguration	No
Key	Object key that is used when a 4XX error occurs. This element identifies the page that is returned when a 4XX error occurs. Type: string Parent: ErrorDocument Condition: Required when ErrorDocument is specified.	No
RoutingRules	Routing element Type: container Parent: WebsiteConfiguration	No

Element	Description	M an da tor y
RoutingRule	Element of a redirection rule. A redirection rule contains a Condition and a Redirect . When the Condition is matched, Redirect takes effect.	Yes
	Type: container	
	Parent: RoutingRules	
	At least the <i>RoutingRule</i> element is required.	
Condition	Element for describing a condition that must be met for the specified redirection to apply.	No
	Type: container	
	Parent: RoutingRule	
KeyPrefixEquals	Object key name prefix when the redirection is applied.	No
	Example:	
	 To redirect the request for object ExamplePage.html, the KeyPrefixEquals is set to ExamplePage.html. 	
	Type: string	
	Parent: Condition	
	Condition: Required when the ancestor element Condition is specified and sibling HttpErrorCodeReturnedEquals is not specified. If two conditions are specified, both conditions must be true for the Redirect to be applied.	

Element	Description	M an da tor y
HttpErrorCodeReturnedEq-uals	HTTP error code returned after the Redirect has taken effect. The specified Redirect is applied only when the error code returned equals this value. Example: If you want to redirect requests to NotFound.html when HTTP error code 404 is returned, set HttpErrorCodeReturnedEquals to 404 in Condition, and set ReplaceKeyWith to NotFound.html in Redirect.	No
	Type: string Parent: Condition Condition: Required when ancestor element Condition is specified and sibling KeyPrefixEquals is not specified. If multiple conditions are specified, the Redirect takes effect only after all conditions are met.	
Redirect	Element for redirection information. You can redirect requests to another host, to another web page, or with another protocol. You can specify an error code to be returned after an error. Type: container Parent: RoutingRule	Yes
Protocol	Protocol used in the redirection request Type: string Parent: Redirect Value options: http, https Condition: Not required if one of the siblings is present.	No
HostName	Host name used in the redirection request. Type: string Parent: Redirect Condition: Not required if one of the siblings is present.	No

Element	Description	M an da tor y
ReplaceKeyPrefixWith	The object name prefix used in the redirection request. OBS replaces the value of KeyPrefixEquals with the value you specified here for ReplaceKeyPrefixWith . Example:	No
	To redirect all requests for docs (objects in the docs directory) to documents (objects in the documents directory), set KeyPrefixEquals to docs under Condition and ReplaceKeyPrefixWith to documents under Redirect. This way, requests for object docs/a.html will be redirected to documents/a.html.	
	Type: string	
	Parent: Redirect	
	Condition: Not required if one of the siblings is present. Can be present only if ReplaceKeyWith is not provided.	
ReplaceKeyWith	The object name used in the redirection request. OBS replaces the entire object name in the request with the value you specified here for ReplaceKeyWith . Example:	No
	To redirect requests for all objects in the docs directory to documents/ error.html, set KeyPrefixEquals to docs under Condition and ReplaceKeyWith to documents/error.html under Redirect. This way, requests for both objects docs/a.html and docs/b.html will be redirected to documents/error.html.	
	Type: string	
	Parent: Redirect	
	Condition: Not required if one of the siblings is present. Can be present only if ReplaceKeyPrefixWith is not provided.	

Element	Description	M an da tor y
HttpRedirectCode	HTTP status code returned after the redirection request	No
	Type: string	
	Parent: Redirect	
	Condition: Not required if one of the siblings is present.	

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

 $<\!Website Configuration~xmlns = "http://obs.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">$

<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/AoFUX97l1xx8s67V3cCQtXWk Date: WED, 01 Jul 2015 03:40:29 GMT Content-Length: 0

Sample Request: Configuring a Bucket to Host a Static Website

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

<WebsiteConfiguration xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
  <IndexDocument>
        <Suffix>index.html</Suffix>
        </IndexDocument>
        <ErrorDocument>
        <Key>SomeErrorDocument.html</Key>
        </ErrorDocument>
    </WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSfxlr+FrXuJzYpLod1lrLK45tVx+GPR x-obs-request-id: 0000018A39F07D0DD3888442DC29719E Server: OBS Content-Length: 0 Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Configuring a Bucket to Host a Static Website, with an Optional Redirection Rule Specified

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
<WebsiteConfiguration xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
  <IndexDocument>
     <Suffix>index.html</Suffix>
  /IndexDocument>
  <ErrorDocument>
     <Key>Error.html</Key>
  </ErrorDocument>
  <RoutingRules>
     <RoutingRule>
       <Condition>
          <KeyPrefixEquals>docs/</KeyPrefixEquals>
       </Condition>
       <Redirect>
          <ReplaceKeyPrefixWith>documents/</ReplaceKeyPrefixWith>
       </Redirect>
     </RoutingRule>
  </RoutingRules>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website, with an Optional Redirection Rule Specified

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSxixo46vLYhGrY/zwgqlM0fMNpeFthi
x-obs-request-id: 0000018A39F2E328D3888F46DB9BB5A2
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Configuring a Bucket to Host a Static Website and Redirecting Errors

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
< WebsiteConfiguration xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
  <IndexDocument>
     <Suffix>index.html</Suffix>
  /IndexDocument>
  <ErrorDocument>
     <Key>Error.html</Key>
  </ErrorDocument>
  <RoutingRules>
     <RoutingRule>
       <Condition>
          <HttpErrorCodeReturnedEquals>404</HttpErrorCodeReturnedEquals >
       </Condition>
       <Redirect>
          <HostName>www.huaweicloud.com</HostName>
          <ReplaceKeyPrefixWith>report-404/</ReplaceKeyPrefixWith>
       </Redirect>
     </RoutingRule>
  </RoutingRules>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website and Redirecting Errors

```
x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCS/xBBLGZwRUiL439eWMw1v/vphFB6JY x-obs-request-id: 0000018A3A06C048D38610C04366B2F5
Server: OBS
Content-Length: 0
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Request: Configuring a Bucket to Host a Static Website and Redirecting Requests for Folders to Another Page

```
PUT /?website HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
< WebsiteConfiguration xmlns='http://obs.region.myhuaweicloud.com/doc/2015-06-30/'>
  <IndexDocument>
     <Suffix>index.html</Suffix>
  </IndexDocument>
  <ErrorDocument>
     <Key>Error.html</Key>
  </ErrorDocument>
  <RoutingRules>
     <RoutingRule>
       <Condition>
          <KeyPrefixEquals>images/</KeyPrefixEquals>
       </Condition>
       <Redirect>
          <ReplaceKeyWith>errorpage.html</ReplaceKeyWith>
       </Redirect>
     </RoutingRule>
  </RoutingRules>
</WebsiteConfiguration>
```

Sample Response: Configuring a Bucket to Host a Static Website and Redirecting Requests for Folders to Another Page

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSLjAKDDyha8LY/HcoFNfbLBeAKCAYcv x-obs-request-id: 0000018A3A09D30CD306902FC7572429

Server: OBS Content-Length: 0

Date: WED, 01 Jul 2015 02:37:22 GMT

5.3.2 Obtaining the Static Website Hosting Configuration of a Bucket

Functions

You can perform this operation to get the static website hosting configuration of a bucket.

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

Request Syntax

GET /?website HTTP/1.1

Host: bucketname.obs.region.myhuaweicloud.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.

This response contains elements the same as those used by the PutBucketWebsite request. For details, see **Request Elements**.

Error Responses

Table 5-68 describes possible special errors in this request.

Table 5-68 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 H4IPJX0TQTHTHEBQQCEC:Yxt1Ru+feHE0S94R7dcBp+hfLnI=

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 crossorigin 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 5-69**.

Table 5-69 CORS request headers

Header	Typ e	Man dato ry (Yes /No)	Description
Content- SHA256	Stri ng	Yes	Explanation : Base64-encoded 256-bit SHA256 digest of the message according to SHA.
			Example: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/ OtMyI= Default value: None

Request Elements

In this request body, you must configure the CORS rules for a bucket in XML format. Table 5-70 describes the specific configuration elements.

Table 5-70 CORS configuration elements

Element	Typ e	Man dato ry (Yes /No)	Description
CORSConfigu ration	Con tain er	Yes	Explanation: Root node of CORSRules. Parent: none Restrictions: The maximum size is 64 KB. Value range: None Default value: None

Element	Typ e	Man dato ry (Yes /No)	Description
CORSRule	Con tain er	Yes	Explanation: CORS rules Parent: CORSConfiguration Restrictions: CORSConfiguration can contain a maximum of 100 rules. Value range: None Default value: None
ID	Stri ng	No	Explanation: The ID of a CORS rule. Parent: CORSRule Restrictions: The ID cannot be longer than 255 characters. Value range: A string of 1 to 255 characters. Default value: None
AllowedMeth	Stri ng	Yes	Explanation: The allowed HTTP methods (types of operations on buckets and objects) for a cross-origin request. Parent: CORSRule Restrictions: None Value range: The following HTTP methods are supported: GET PUT HEAD POST DELETE Default value: None

Element	Typ e	Man dato ry (Yes /No)	Description
AllowedOrigi n	Stri ng	Yes	Explanation: The origin that is allowed to access the bucket.
			Parent: CORSRule Restrictions:
			Only English domain names are supported. Regular expressions are used to match. Each rule allows at most one asterisk (*). For example, https://*.vbs.example.com.
			Value range:
			The value must comply with the CORS protocol and contain 0 to 20480 characters.
			Default value:
			None
AllowedHead	Stri	No	Explanation:
er	ng		What headers are allowed in a CORS request. If a CORS request contains the Access-Control-Request-Headers header, the headers listed in this header must match the headers in the AllowedHeader element so that the request can be considered valid. The matching is based on regular expressions.
			Parent: CORSRule
			Restrictions:
			At most one asterisk (*) is allowed. Spaces, ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed.
			Value range:
			The value must comply with the CORS protocol and contain 0 to 20480 characters.
			Default value:
			None

Element	Typ e	Man dato ry (Yes /No)	Description
MaxAgeSeco nds	Inte ger	No	Explanation: How long the response can be cached on a client Parent: CORSRule Restrictions: Each CORS rule can contain at most one MaxAgeSeconds. Value range: An integer greater than or equal to 0, in seconds Default value: 3000
ExposeHeade	Stri ng	No	Explanation: Specifies additional headers allowed in the response by a CORS rule, which are used to provide extra information to clients. By default, a browser can access only headers Content-Length and Content-Type. If the browser needs to access other headers, you need to configure them in this parameter. Parent: CORSRule Restrictions: Spaces, asterisks (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. Value range: The value that complies with the CORS Default value: None

Response Syntax

HTTP/1.1 status_code

Date: date

Content-Length: length

Response Headers

The response to the request uses common headers. For details, see Table 3-29.

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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSYi6wLC4bkrvuS9sqnlRjxK2a5Fe3ry
Date: WED, 01 Jul 2015 03:51:52 GMT
Content-Length: 0
```

Sample Request: Configuring Two CORS Rules for a Bucket

```
PUT /?cors HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: HwVUAzslyD0rroMp/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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCTPXg+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.

This response contains elements to detail the configuration. **Table 5-71** describes the elements.

Table 5-71 CORS configuration elements

node of CORSRules and its capacity cannot exceed
B.
: container
nt: none
S rule. CORSConfiguration can contain a maximum 00 rules.
: container
nt: CORSConfiguration
ue identifier of a rule. The value can contain a imum of 255 characters.
: string
nt: CORSRule
nod allowed by a CORS rule.
: string
e options: GET, PUT, HEAD, POST, DELETE
nt: CORSRule
origin (domain name) that is allowed by a CORS The value is a string of 0 to 20480 characters. It vs at most one wildcard character (*). : string
nt: CORSRule
ders that can be carried in Access-Control-Request- ders of CORS requests. The value contains 0 to 80 characters. If a request contains Access-Control- uest- Headers, only a CORS request that matches configuration of AllowedHeader is considered as a 1 request. Each AllowedHeader can contain at most wildcard (*) and cannot contain spaces. :: string
nt: CORSRule

Element	Description
MaxAgeSeconds	Response time of CORS that can be cached by a client. It is expressed in seconds.
	Each CORS rule can contain at most one MaxAgeSeconds.
	Type: integer
	Parent: CORSRule
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 5-72 describes possible special errors in this request.

Table 5-72 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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSpngvwC5TskcLGh7Fz5KRmCFlayuY8p

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>

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 H4IPJX0TQTHTHEBQQCEC:mKUs/uIPb8BP0ZhvMd4wEy+Ebil=

Sample Response

HTTP/1.1 204 No Content

Server: OBS

x-obs-request-id: BF26000001643639F290185BB27F793A

x-obs-id-2: 32AAAQAAEAABSAAqAAEAABAAAQAAEAABCSLWMRFJfckapW+ktT/+1AnAz7XlNU0b

Date: WED, 01 Jul 2015 03:56:41 GMT

5.3.7 OPTIONS Bucket

Functions

OPTIONS refers to pre-requests that are sent to servers by clients. Generally, the requests are used to check whether clients have permissions to perform operations on servers. Only after a pre-request is returned successfully, clients start to execute the follow-up requests.

OBS allows static web resources to be stored in buckets with appropriate configurations. In this scenario, buckets in the OBS serve as servers to process OPTIONS pre-requests from clients.

OBS can process OPTIONS pre-requests only after CORS is configured for buckets in OBS. For details about CORS, see **Configuring Bucket CORS**.

Differences Between OPTIONS Bucket and OPTIONS Object

With the OPTIONS Object, you need to specify an object name in the URL, but an object name is not required with the OPTIONS Bucket, which uses the bucket domain name as the URL. The request lines of the two methods are as follows:

OPTIONS /object HTTP/1.1 OPTIONS / HTTP/1.1

Request Syntax

OPTIONS / HTTP/1.1

Host: bucketname.obs.region.myhuaweicloud.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 5-73.

Table 5-73 OPTIONS request headers

Header	Description	Mandatory
Origin	Origin of the cross-domain request specified by the pre-request. Generally, it is a domain name set in CORS. Type: string	Yes
Access- Control- Request- Method	An HTTP method that can be used by a request. The request can use multiple method headers. Type: string Value options: GET, PUT, HEAD, POST, DELETE	Yes
Access- Control- Request- Headers	HTTP headers of a request. The request can use multiple HTTP headers. Type: string	No

Request Elements

This request involves no elements.

Response Syntax

HTTP/1.1 status_code
Content-Type: application/xml
Access-Control-Allow-Origin: origin
Access-Control-Allow-Methods: method
Access-Control-Allow-Header: header
Access-Control-Max-Age: time
Access-Control-Expose-Headers: header
Date: date
Content-Length: length

Response Headers

The response uses the following headers as described in Table 5-74.

Table 5-74 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

Header	Description
Access-Control- Allow-Headers	If the headers of a request meet server CORS configuration requirements, the response contains the headers. Type: string
Access-Control-Max- Age	Value of MaxAgeSeconds in the CORS configuration of a server Type: integer
Access-Control- Allow-Methods	If the Access-Control-Request-Method of a request meets server CORS configuration requirements, the response contains the methods in the rule. Type: string Value options: GET, PUT, HEAD, POST, DELETE
Access-Control- Expose-Headers	Value of ExposeHeader in the CORS configuration of a server Type: string

This response contains no elements.

Error Responses

Table 5-75 describes possible special errors in the request.

Table 5-75 Special error

Error Code	Description	HTTP Status Code	
Bad Request	Invalid Access-Control-Request- Method: null	400 BadRequest	
	When CORS and OPTIONS are configured for a bucket, no method header is added.		
Bad Request	Insufficient information. Origin request header needed.	400 BadRequest	
	When CORS and OPTIONS are configured for a bucket, no origin header is added.		

Error Code	Description	HTTP Status Code
AccessForbidden	CORSResponse: This CORS request is not allowed. This is usually because the evaluation of Origin, request method / Access-Control-Request-Method or Access-Control-Request-Headers are not whitelisted by the resource's CORS specification.	403 Forbidden
	When CORS and OPTIONS are configured for a bucket, origin, method, and headers do not match any rule.	

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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTlYimJvOyJncCLNm5y/iz6MAGLNxTuS

Date: WED, 01 Jul 2015 04:02:15 GMT

Content-Length: 0

5.3.8 OPTIONS Object

Functions

For details, see **OPTIONS Bucket**.

Differences Between OPTIONS Bucket and OPTIONS Object

With the OPTIONS Object, you need to specify an object name in the URL, but an object name is not required with the OPTIONS Bucket, which uses the bucket domain name as the URL. The request lines of the two methods are as follows:

OPTIONS /object HTTP/1.1 OPTIONS / HTTP/1.1

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 5-76 describes headers used by this request.

Table 5-76 OPTIONS request headers

Header	Description	Mandatory
Origin	Origin of the cross-domain request specified by the pre-request. Generally, it is a domain name set in CORS. Type: string	Yes
Access- Control- Request- Method	Indicates an HTTP method that can be used by a request. The request can use multiple method headers. Type: string Value options: GET, PUT, HEAD, POST, DELETE	Yes
Access- Control- Request- Headers	Indicates the HTTP headers of a request. The request can use multiple HTTP headers. Type: string	No

Request Elements

This request involves no elements.

Response Syntax

HTTP/1.1 status_code

Content-Type: type

Access-Control-Allow-Origin: *origin*Access-Control-Allow-Methods: *method*Access-Control-Allow-Header: *header*

Access-Control-Max-Age: time

Access-Control-Expose-Headers: header

Date: date

Content-Length: length

Response Headers

The request uses the headers described in Table 5-77.

Table 5-77 CORS request headers

Header	Description
Access-Control- Allow-Origin	If the origin of a request meets server CORS configuration requirements, the response contains the origin.
	Type: string
Access-Control- Allow-Headers	If the headers of a request meet server CORS configuration requirements, the response contains the headers.
	Type: string
Access-Control-Max- Age	Value of MaxAgeSeconds in the CORS configuration of a server.
	Type: integer
Access-Control- Allow-Methods	If the Access-Control-Request-Method of a request meets server CORS configuration requirements, the response contains the methods in the rule.
	Type: string
	Value options: GET, PUT, HEAD, POST, DELETE
Access-Control- Expose-Headers	Indicates ExposeHeader in the CORS configuration of a server.
	Type: string

This response contains no elements.

Error Responses

Table 5-78 describes possible special errors in the request.

Table 5-78 Special error

Error Code	Description	HTTP Status Code
Bad Request	Invalid Access-Control-Request- Method: null	400 BadRequest
	When CORS and OPTIONS are configured for a bucket, no method header is added.	

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	403 Forbidden
	configured for a bucket, origin, method, and headers do not match any rule.	

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 H4IPJX0TQTHTHEBQQCEC:bQZG9c2aokAJsHOOkuVBK6cHZZQ=

Origin: www.example.com

Access-Control-Request-Method: PUT

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BF26000001643632D12EFCE1C1294555

Access-Control-Allow-Origin: www.example.com

Access-Control-Allow-Methods: POST,GET,HEAD,PUT,DELETE

Access-Control-Max-Age: 100

Access-Control-Expose-Headers: ExposeHeader_1,ExposeHeader_2

Access-Control-Allow-Credentials: true

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS+DXV4zZetbTqFehhEcuXywTa/mi3T3

Date: WED, 01 Jul 2015 04:02:19 GMT

Content-Length: 0

5.4 Operations on Objects

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 5-79**.

Ⅲ 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 5-79 Request headers

Header	Туре	Mand atory (Yes/ No)	Description
Content- MD5	String	No	Explanation : Base64-encoded 128-bit MD5 digest of the
			message according to RFC 1864.
			Example: n58IG6hfM7vqI4K0vnWpog==
			Restrictions:
			None
			Value range:
			None
			Default value:
			None
x-obs-acl	String	No	Explanation:
			When creating an object, you can use this parameter to set a pre-defined ACL.
			Restrictions:
			Pre-defined policies must be displayed in character strings.
			Value range:
			private
			public-read
			public-read-write
			For details about each policy, see the "Configuring an ACL Using Header Fields" section in ACLs.
			Default value:
			private

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- grant- read	String	No	Explanation: When creating an object, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. Example: x-obs-grant-read: id=domainID Restrictions: Use commas (,) to separate multiple domains. Value range: The value must be a valid ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None
x-obs- grant- read-acp	String	No	Explanation: When creating an object, you can use this header to grant all users in a domain the permissions to obtain the object ACL. Example: x-obs-grant-read-acp: id=domainID Restrictions: Use commas (,) to separate multiple domains. Value range: The value must be a valid ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- grant- write-acp	String	No	Explanation: When creating an object, you can use this header to grant all users in a domain the permission to write the object ACL. Example: x-obs-grant-write-acp: id=domainID Restrictions: Use commas (,) to separate multiple domains. Value range: The value must be a valid ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None
x-obs- grant-full- control	String	No	Explanation: When creating an object, you can use this header to grant all users in a domain the permissions to read the object, obtain the object metadata and ACL, and write the object ACL. Example: x-obs-grant-full-control: id=domainID Restrictions: Use commas (,) to separate multiple domains. Value range: The value must be a valid ID. For details, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information. Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- storage- class	String	No	Explanation: When creating an object, you can use this header to specify the storage class for the object. If you do not use this header, the object storage class is the default storage class of the bucket. Example: x-obs-storage-class: STANDARD Restrictions: The value is case-sensitive. Value range: STANDARD WARM COLD DEEP_ARCHIVE Default value: By default, the storage class of the bucket is
x-obs- meta-*	String	No	inherited. Explanation: When creating an object, you can use a header starting with x-obs-meta- to define object metadata in an HTTP request. Such metadata will be returned in the response when you retrieve the object or query the object metadata. For details, see Managing Object Metadata. Example: x-obs-meta-test: test metadata Restrictions: Both metadata keys and their values must conform to US-ASCII standards. Value range: None Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- persistent- headers	String	No	Explanation: When creating an object, you can add the x- obs-persistent-headers 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. Participations
			 Restrictions: Response headers customized in this way cannot be prefixed with x-obs For example, you should use key1 instead of x-obs-key1.
			 Standard HTTP headers, such as host, content-md5, origin, range, and Content- Disposition, cannot be specified as user- defined headers.
			The total length of this header and the custom metadata cannot exceed 8 KB.
			If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.
			 If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using ?UTF-8?B?<(str)>?=, but does not decode the value. For instance, value key1:abbc will be returned as key1:=? UTF-8?B?abbc?=.
			 The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.
			 Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2) Note: Items, such as key1 and key2, 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 value1 and value2 are the values of the corresponding headers. base64_encode indicates that the value is encoded using Base64. A user-

Header	Туре	Mand atory (Yes/ No)	Description
			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 x-obs-persistent-headers header. The server then decodes the uploaded value.
			Example: x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWUy
			The returned header for downloading the object or obtaining the object metadata is key1: value1 or key2: value2 respectively.
			Value range:
			None
			Default value:
			None
x-obs-	String	No	Explanation:
website- redirect- location			If a bucket is configured with the static website hosting function, it will redirect requests for this object to another object in the same bucket or to an external URL. OBS stores the value of this header in the object metadata.
			In the following example, the request header sets the redirection to an object (anotherPage.html) in the same bucket:
			x-obs-website-redirect-location:/ anotherPage.html
			In the following example, the request header sets the object redirection to an external URL:
			x-obs-website-redirect-location:http:// www.example.com/
			Restrictions:
			The value must start with a slash (/), http://, or https:// and cannot exceed 2 KB.
			Value range:
			None
			Default value:
			None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- server- side- encryptio n	String	No. This heade r is requir ed when SSE- KMS is used.	Explanation: Indicates that SSE-KMS is used. Example: x-obs-server-side-encryption: kms Restrictions: None Value range: kms, or AES256 Default value: None
x-obs- server- side- encryptio n-kms- key-id	String	No	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs- server- side- encryptio n- customer- algorithm	String	No. This heade r is requir ed when SSE-C is used.	Explanation: The algorithm used for encryption. Example: x-obs-server-side-encryption-customer-algorithm: AES256 Restrictions: This header is used only when SSE-C is used. This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- server- side- encryptio n- customer- key	String	No. This heade r is requir ed when SSE-C is used.	Explanation: The key used for encrypting an object. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None
x-obs- server- side- encryptio n- customer- key-MD5	String	No. This heade r is requir ed when SSE-C is used.	Explanation: The MD5 value of the key used for encryption. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-algorithm-customer-key. Value range: MD5 value of the key. Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
success- action- redirect	String	No	 Explanation: The redirection address used when requests were successfully responded to. If the value is valid and the request is successful, OBS returns status code 303. Location contains success_action_redirect as well as the bucket name, object name, and object ETag. If this parameter value is invalid, OBS ignores this parameter. In such case, the Location header is the object address, and OBS returns the response code based on whether the operation succeeds or fails. Restrictions: The value must be a valid URL, for example, http://domainname or https://domainname. Value range: URL Default value:
x-obs- expires	Integer	No	Explanation: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. (The validity calculates from the object's creation time.) You can configure this field when uploading an object or modify this field by using the metadata modification API after the object is uploaded. Example: x-obs-expires:3 Restrictions: 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. Value range: The value is an integer greater than 0. Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- tagging	String	No	Explanation: Object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: x-obs-tagging:TagA=A&TagB&TagC Restrictions: If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. If there is no equal sign (=) in a configuration, the tag value is considered left blank. Value range: None Default value: None
x-obs- object- lock-mode	String	No, but requir ed when x- obs- objec t- lock- retain - until-date is prese nt	Explanation: WORM mode applied to the object. Example: x-obs-object-lock- mode:COMPLIANCE Restrictions: Only COMPLIANCE (compliance mode) is supported. This parameter must be used together with x-obs-object-lock-retain-until-date. Value range: COMPLIANCE Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs- object- lock- retain- until-date	String	No, but requir ed when x- obs- objec t- lock- mode is prese nt.	Explanation: When the WORM policy of the object expires. Example: x-obs-object-lock-retain-untildate:2015-07-01T04:11:15Z Restrictions: • The value must be a UTC time that complies with the ISO 8601 standard. Example: 2015-07-01T04:11:15Z • This parameter must be used together with x-obs-object-lock-mode. Value range: The time must be later than the current time. Default value: None

Request Elements

This request contains no elements. Its body contains only the content of the requested object.

Response Syntax

HTTP/1.1 status_code Content-Length: length Content-Type: type

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

In addition to the common response headers, the headers listed in **Table 5-80** might also be needed.

Table 5-80 Additional response headers

Header	Туре	Description
x-obs-version-id	String	Explanation:
		Version ID of the object. If versioning is enabled for the bucket, the object version ID will be returned.
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side-encryption:kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-kms-key- id		ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption-customer- algorithm		The algorithm used for encryption.
algorithm		Example: x-obs-server-side-encryption-customer-algorithm: AES256
		Restrictions:
		This header is included in a response if SSE-C is used for server-side encryption.
		Value range:
		AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-customer-		The MD5 value of the key used for encryption.
key-MD5		Example: x-obs-server-side-encryption- customer-key-MD5:4XvB3tbNTN+tIEVa0/ fGaQ==
		Restrictions:
		This header is included in a response if SSE-C is used for server-side encryption.
		Value range:
		MD5 value of the key.
		Default value:
		None
x-obs-storage-class	String	Explanation:
		Storage class of an object
		Restrictions:
		This header is returned when the storage class of an object is not Standard.
		Value range:
		• WARM
		• COLD
		DEEP_ARCHIVE
		Default value:
		None

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: 32AAAWJAMAABAAAQAAEAABAAAQAAEAABCTzu4Jp2lquWuXsjnLyPPiT3cfGhqPoY

Date: WED, 01 Jul 2015 04:11:15 GMT

Content-Length: 0

Sample Request: Uploading an Object (with the ACL Configured)

PUT /object01 HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 04:13:55 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:gYqplLq30dEX7GMi2qFWyjdFsyw=

Content-Length: 10240 Expect: 100-continue

[1024 Byte data content]

Sample Response: Uploading an Object (with the ACL Configured)

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BB7800000164845759E4F3B39ABEE55E

ETag: "d41d8cd98f00b204e9800998ecf8427e"

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSReVRNuas0knI+Y96iXrZA7BLUgj06Z

Date: WED, 01 Jul 2015 04:13:55 GMT

Content-Length: 0

Sample Request: Uploading an Object to a Versioned Bucket

PUT /object01 HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.*region*.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 04:17:12 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 to a Versioned Bucket

HTTP/1.1 200 OK Server: OBS

x-obs-request-id: DCD2FC9CAB78000001439A51DB2B2577

ETag: "d41d8cd98f00b204e9800998ecf8427e"

X-OBS-ID-2: GcVgfeOJHx8JZHTHrRqkPsbKdB583fYbr3RBbHT6mMrBstReVILBZbMAdLiBYy1l

Date: WED, 01 Jul 2015 04:17:12 GMT

x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAAVURTRkha

Content-Length: 0

Sample Request: Uploading an Object (with Its MD5 Specified)

PUT /object01 HTTP/1.1

User-Agent: curl/7.29.0 Host: examplebucket.obs.*region*.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 04:17:50 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:uFVJhp/dJqj/CJIVLrSZ0gpw3ng=

Content-Length: 10

Content-MD5: 6Afx/PgtEy+bsBjKZzihnw==

Expect: 100-continue

1234567890

Sample Response: Uploading an Object (with Its MD5 Specified)

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BB7800000164B165971F91D82217D105

X-OBS-ID-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCSEKhBpS4BB3dSMNqMtuNxQDD9XvOw5h

ETag: "1072e1b96b47d7ec859710068aa70d57"

Date: WED, 01 Jul 2015 04:17:50 GMT

Content-Length: 0

Sample Request: Uploading an Object (with Website Hosting Configured)

If static website hosting has been configured for a bucket, you can configure parameters as follows when you upload an object. Then, users will be redirected when they download the object.

PUT /object01 HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.*region*.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 04:17:12 GMT

x-obs-website-redirect-location: http://www.example.com/

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:uFVJhp/dJqj/CJIVLrSZ0qpw3nq=

Sample Response: Uploading an Object (with Website Hosting Configured)

Content-Length: 10240 Expect: 100-continue [1024 Byte data content]

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: DCD2FC9CAB78000001439A51DB2B2577

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTmxB5ufMj/7/GzP8TFwTbp33u0xhn2Z

ETag: "1072e1b96b47d7ec859710068aa70d57"

Date: WED, 01 Jul 2015 04:17:12 GMT

x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAAVURTRkha

Content-Length: 0

Sample Request: Uploading an Object Using a Signed URL

PUT /object02?

Access Keyld = H4IPJX0TQTHTHEBQQCEC& Expires = 1532688887& Signature = EQmDuOhaLUrzrzRNZxwS72CXeX

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: DCD2FC9CAB78000001439A51DB2B2577

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTmxB5ufMj/7/GzP8TFwTbp33u0xhn2Z

ETag: "1072e1b96b47d7ec859710068aa70d57"

Date: Fri, 27 Jul 2018 10:52:31 GMT

x-obs-version-id: AAABQ4q2M9_c0vycq3gAAAAAVURTRkha

Content-Length: 0

Sample Request: Uploading an Object (with a Storage Class Specified)

PUT /object01 HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.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

Sample Response: Uploading an Object (with a Storage Class Specified)

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BB7800000164846A2112F98BF970AA7E

ETag: "d41d8cd98f00b204e9800998ecf8427e"

x-obs-id-2: a39E0UgAIAABAAAQAAEAABAAAQAAEAABCTPOUJu5XlNyU32fvKjM/92MQZK2gtoB

Date: WED, 01 Jul 2015 04:15:07 GMT

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: 32AAAWJAMAABAAAQAAEAABAAAQAAEAABCTzu4Jp2lquWuXsjnLyPPiT3cfGhqPoY

Date: WED, 01 Jul 2015 04:11:15 GMT

Content-Length: 0

5.4.2 Uploading an Object - POST

Functions

This API allows you to upload an object to a bucket. This requires the write permission for the bucket.

□ NOTE

The name of each object in a bucket must be unique.

If a bucket has versioning disabled, and you upload an object that has the same name as an existing object, the new object overwrites the existing one. You can also use **Content-MD5** in the form to verify in-transit integrity. OBS calculates an MD5 after the object is uploaded and checks if this MD5 matches the MD5 carried in the form. If they do not match, an error is reported. You can also use **x-obs-acl** to control access to objects.

You can also upload an object using the POST method.

A single upload allows at most 5 GB of objects. To upload more than 5 GB of objects, see **Operations on Multipart Upload**.

This API supports server-side encryption.

Differences Between PUT and POST Methods

PUT requests include parameters in the header, while POST requests include them in the form.

In the URL, PUT requests require object names be specified; POST requests only require bucket domain names. Request lines of PUT and POST are as follows:

PUT /ObjectName HTTP/1.1 POST / HTTP/1.1

For details about PUT upload, see **Uploading an Object - PUT**.

Versioning

If versioning is enabled for a bucket, each object uploaded has a unique version ID. If versioning is suspended, the version ID is **null**. Version IDs are returned in the **x-obs-version-id** header of the response. For details about versioning, see **Configuring Versioning for a Bucket**.

WORM

If a bucket has WORM enabled, you can configure WORM for its objects. To do so, use **x-obs-object-lock-mode** and **x-obs-object-lock-retain-until-date** in the

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"
--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"
--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 5-81.

Table 5-81 Request headers for obtaining CORS configuration

Header	Туре	Mand atory (Yes/ No)	Description
Origin	String	Yes	Explanation:
			Where a cross-domain request is from (usually a domain name), specified in a preflight request
			Restrictions:
			None
			Value range:
			An HTTP-compliant header value
			Default value:
			None
Access-Control-	String	No	Explanation:
Request-Headers			HTTP headers in a request. Multiple headers can be included.
			Restrictions:
			None
			Value range:
			An HTTP-compliant header value
			Default value:
			None

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 5-82 describes the form elements.

Table 5-82 Form elements

Element	Туре	Mandato ry (Yes/No)	Description
file	Binary	Yes	Explanation:
	or text		Object content to upload. Both the file name and path are ignored and will not be used as the object name. The object name is the value of parameter key .
			Restrictions:
			 This parameter must be the last to specify. Otherwise, the parameters that follow it will be discarded.
			A request can contain only one file parameter.
			Value range:
			None
			Default value:
			None
key	String	Yes	Explanation:
			Name of the object to be created. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.
			For example, if the access path is examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt, the object name is folder/test.txt.
			Restrictions:
			See Object Overview.
			Value range:
			1 to 1,024 characters
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
AccessKeyl d	String	Yes when the restrictio ns are met	Explanation: Access key ID (AK) of the requester. Restrictions: This parameter is mandatory if there is security policy parameter policy or signature in the request. Value range: AK of a user. Default value: None
policy	String	Yes when the restrictio ns are met	Explanation: A security policy Restrictions: This parameter is mandatory if AccessKeyId or signature is provided in the form. Value range: For the policy format, see Signing Browser-Based Upload Requests. Default value: None
signature	String	Yes when the restrictio ns are met	Explanation: A signature string calculated based on StringToSign. Restrictions: This parameter is mandatory if AccessKeyId or policy is provided in the form. Value range: None Default value: None

Element	Туре	Mandato ry (Yes/No)	Description
token	String	No	Explanation:
			Specifies the access key, signature, and security policy of the requester all together.
			Restrictions:
			The priority of a token is higher than that of a separately specified AK, signature, or security policy.
			Example:
			In HTML: <input name="token" type="text" value="ak:signature:policy"/>
			Value range:
			The value must be in the <i>ak:signature:policy</i> format.
			Default value:
			None
x-obs-acl	String	No	Explanation:
			Used to set a pre-defined ACL when creating an object
			Examples:
			In POLICY: {"acl": "public-read" }
			In HTML: <input name="acl" type="text" value="public-read"/>
			Restrictions:
			None
			Value range:
			private
			public-read
			public-read-write
			public-read-delivered
			public-read-write-delivered
			For details about each policy, see the "Configuring an ACL Using Header Fields" section in ACLs.
			Default value:
			private

Element	Туре	Mandato ry (Yes/No)	Description
x-obs-	String	No	Explanation:
grant-read			Used to — when creating an object — grant all users in a domain the permissions to read the object and obtain the object metadata
			Examples:
			In POLICY: {'grant-read': 'id=domainId1' },
			In HTML: <input name="grant-read" type="text" value="id=domainId1"/>
			Restrictions:
			Use commas (,) to separate multiple domains.
			Value range:
			The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information.
			Default value:
			None
x-obs-	String	No	Explanation:
grant- read-acp			Used to — when creating an object — grant all users in a domain the permission to obtain the object ACL.
			Examples:
			In POLICY: {"grant-read-acp": "id=domainId1" },
			In HTML: <input name="grant-read-acp" type="text" value="id=domainId1"/>
			Restrictions:
			None
			Value range:
			The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information.
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
x-obs-	String	No	Explanation:
grant- write-acp			Used to — when creating an object — grant all users in a domain the permission to write the object ACL.
			Examples:
			In POLICY: {"grant-write-acp": "id=domainId1" },
			In HTML: <input name="grant-write-acp" type="text" value="id=domainId1"/>
			Restrictions:
			None
			Value range:
			The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information.
			Default value:
			None
x-obs-	String	No	Explanation:
grant-full- control			When creating an object, you can use this header to grant all users in an account the permissions to read the object, obtain the object metadata and ACL, and write the object ACL.
			Examples:
			In POLICY: {"grant-full-control": "id=domainId1" },
			In HTML: <input name="grant-full-control" type="text" value="id=domainId1"/>
			Restrictions:
			None
			Value range:
			The value of <i>domainId</i> must be valid. For details about how to obtain the ID, see Obtaining Account, IAM User, Project, User Group, Region, and Agency Information.
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
x-obs-	String	No	Explanation:
storage- class			Used to — when creating an object — specify its storage class.
			Examples:
			In POLICY: {"storage-class": "STANDARD" },
			In HTML: <input name="x-obs-
storage-class" type="text" value="STANDARD"/>
			Restrictions:
			The value is case-sensitive.
			Value range:
			STANDARD
			WARM
			• COLD
			DEEP_ARCHIVE
			Default value:
			If you do not use this header, the object storage class is the default storage class of the bucket.
Cache-	String	No	Explanation:
Control			Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.
			Restrictions:
			None
			Value range:
			See the HTTP requirements for the Cache- Control header.
			Default value:
			None

Element	Туре	Mandato	Description
		ry (Yes/No)	
Content-	String	No	Explanation:
Туре			Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.
			Example:
			In POLICY: ["starts-with", "\$Content-Type", "text/"],
			In HTML: <input name="content-type" type="text" value="text/plain"/>
			Restrictions:
			None
			Value range:
			See the HTTP requirements for the Content- Type header.
			Default value:
			None
Content-	String	No	Explanation:
Dispositio n			Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.
			Restrictions:
			None
			Value range:
			See the HTTP requirements for the Content-Disposition header.
			Default value:
			None
Content-	String	No	Explanation:
Encoding			Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.
			Restrictions:
			None
			Value range:
			See the HTTP requirements for the Content- Encoding header.
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
Expires	String	No	Explanation:
			Standard HTTP header, returned in the response if a user downloads the object or makes a Head Object request.
			Restrictions:
			None
			Value range:
			See the HTTP requirements for the Expires header.
			Default value:
			None
success_ac	String	No	Explanation:
tion_redire ct			Where a successful request is redirected
Ct			 If the value is valid and the request is successful, OBS returns status code 303. Location contains success_action_redirect as well as the bucket name, object name, and object ETag. If the value is invalid, OBS ignores this
			parameter. Location contains the object address, and OBS returns the response code based on the actual result.
			Examples:
			In POLICY: {"success_action_redirect": "http://123458.com"},
			In HTML: <input name="success_action_redirect" type="text" value="http://123458.com"/>
			Restrictions:
			The value must start with http or https .
			Value range:
			URL
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
x-obs- meta-*	String	No	Explanation: Used when creating an object to define metadata. The defined metadata is returned in the response when you obtain the object or query its metadata. For details, see Managing Object Metadata. Examples: In POLICY: {" x-obs-meta-test ": " test metadata " }, In HTML: <input name=" x-obs-meta-test " type="text" value=" test metadata "/> Restrictions: None Value range:
			For details, see Managing Object Metadata.
			Default value:
			None

Element	Туре	Mandato ry	Description
		(Yes/No)	
x-obs- persistent- headers	String	No	Explanation: 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. Restrictions:
			 User-defined headers cannot contain the x-obs- prefix. For example, you should use key1 instead of x-obs-key1.
			 Do not use standard HTTP headers, such as host, content-md5, origin, range, and Content-Disposition.
			 The total length of this header and the custom metadata cannot exceed 8 KB.
			 If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.
			 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 ?UTF-8?B?<(str)>?=. For instance, key1:abbc will be returned as key1: =?UTF-8?B?abbc?=.
			 The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.
			• Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2) key1 and key2 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. value1 is the value of key1; value2 of key2. base64_encode 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 x-obs-persistent-headers header. The server then decodes the uploaded value.

Element	Туре	Mandato ry (Yes/No)	Description
			Examples:
			In POLICY: {"x-obs-persistent-headers": "key1:dmFsdWUx,key2:dmFsdWUy" },
			In HTML: <input <br="" name="x-
obs-persistent-headers" type="text"/> value="key1:dmFsdWUx,key2:dmFsdWUy " />
			When downloading the object or obtaining its metadata, <i>key1:value1</i> and <i>key2:value2</i> are returned.
			Value range:
			None
			Default value:
			None
success_ac	String	No	Explanation:
tion_status			The status code returned for a successful request.
			Examples:
			In POLICY: ["starts-with", "\$success_action_status", ""],
			In HTML: <input name="success_action_status" type="text" value="200"/>
			Restrictions:
			• If this parameter is set to 200 or 204 , the response body is left blank.
			If this parameter is set to 201, the response message contains an XML document that describes the response.
			If this parameter is not specified or is invalid, the status code is 204 .
			Value range:
			• 200
			• 201
			• 204
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
x-obs-	String	No	Explanation:
website- redirect- location			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.
			Restrictions:
			The value must start with a slash (/), http://, or https:// and cannot exceed 2K.
			Value range:
			None
			Default value:
			None
x-obs- server- side- encryption	String	No. This header is required when SSE-KMS is used.	Explanation: Indicates that SSE-KMS is used for serverside encryption. Example: x-obs-server-side-encryption:kms Restrictions:
			None
			Value range:
			• kms
			AES256 Default value:
			None
1	C1 .	N.	
x-obs- server- side- encryption -kms-key-	String	No	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
id			Restrictions:
			This header can only be used when you specify kms for the x-obs-server-side-encryption header.
			Default value:
			If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

Element	Туре	Mandato ry (Yes/No)	Description
x-obs- server- side- encryption -customer- algorithm	String	No. This header is required when SSE-C is used.	Explanation: The algorithm used for encryption. Example: x-obs-server-side-encryption-customer-algorithm:AES256 Restrictions: • This header is used only when SSE-C is used. • This header must be used with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None
x-obs- server- side- encryption -customer- key	String	No. This header is required when SSE-C is used.	Explanation: The key used for encrypting an object. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobnc nLht/rCB2o/9Cw= Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 256-bit key. It must be used with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None

Element	Туре	Mandato ry (Yes/No)	Description
x-obs- server- side- encryption -customer- key-MD5	String	No. This header is required when SSE-C is used.	Explanation: The MD5 value of the key used for encryption. Used to check whether any error occurs during the key transmission. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: • This header is used only when SSE-C is used. • This header is a Base64-encoded 128-bit MD5 value. It must be used with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key. Value range: MD5 value of the key. Default value:
			None
x-obs- expires	Integer	No	Explanation: When an object expires and is deleted (how many days after the last update).
			You can configure this parameter when uploading an object. You can also modify it after the object is uploaded by using the metadata modification API.
			Example: x-obs-expires:3
			Restrictions:
			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.
			Value range:
			The value is an integer greater than 0.
			Default value:
			None

Element	Туре	Mandato ry (Yes/No)	Description
x-obs- object- lock-mode	String	No, but required when x-obs-object-lock-retain-until-date is present.	Explanation: WORM mode applied to the object. Example: x-obs-object-lock- mode:COMPLIANCE Restrictions: Currently, only COMPLIANCE (compliance mode) is supported. This parameter must be used with x-obs- object-lock-retain-until-date. Value range: COMPLIANCE Default value: None
x-obs- object- lock- retain- until-date	String	No, but required when x-obs-object-lock-mode is present.	Explanation: When the WORM policy of the object expires. Example: x-obs-object-lock-retain-untildate:2015-07-01T04:11:15Z Restrictions: The value must be a UTC time that complies with the ISO 8601 standard. Example: 2015-07-01T04:11:15Z This parameter must be used with x-obs-object-lock-mode. Value range: The time must be later than the current time. Default value: None

Response Syntax

HTTP/1.1 status_code Content-Type: application/xml Location: location Date: date ETag: etag

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

In addition to the common response headers, the headers listed in **Table 5-83** may be used.

Table 5-83 Additional response headers

Header	Туре	Description
x-obs-version-id	String	Explanation:
		Object version ID.
		Restrictions:
		If versioning is enabled for the bucket, the object version ID will be returned.
		If versioning is suspended for the bucket, a string null is returned.
		Value range:
		The value is automatically generated by the server.
		Default value:
		None
Access-Control- Allow-Origin	String	Explanation:
		Returned if the request origin meets the CORS configured on the server.
		Restrictions:
		None
		Value range:
		The value that complies with the CORS
		Default value:
		None
Access-Control-	String	Explanation:
Allow-Headers		Returned if the request headers meet the CORS configured on the server.
		Restrictions:
		None
		Value range:
		The value that complies with the CORS
		Default value:
		None

Header	Туре	Description
Access-Control-	Integer	Explanation:
Max-Age		Value of MaxAgeSeconds in the CORS configuration on the server when CORS is configured for buckets.
		Restrictions:
		None
		Value range:
		An integer greater than or equal to 0, in seconds
		Default value:
		3000
Access-Control- Allow-Methods	String	Explanation:
		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.
		Restrictions:
		None
		Value range:
		• GET
		• PUT
		HEAD
		POST
		DELETE
		Default value:
		None

Header	Туре	Description
Access-Control-	String	Explanation:
Expose-Headers		ExposeHeader in the CORS rules of the bucket. It specifies additional headers allowed in the response by a CORS rule. These headers provide extra information to clients. By default, a browser can access only headers Content-Length and Content-Type. If the browser needs to access other headers, you need to configure them as additional headers.
		Restrictions:
		Spaces, asterisks (*), ampersands (&), colons (:), less-than signs (<), and fullwidth characters are not allowed.
		Value range:
		None
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side- encryption:kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption-kms- key-id		ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-	String	Explanation:
encryption- customer-		The algorithm used for encryption.
algorithm		Example: x-obs-server-side-encryption-customer-algorithm:AES256
		Restrictions:
		Only for SSE-C server-side encryption.
		Value range:
		AES256
		Default value:
		None
x-obs-server-side-	- String	Explanation:
encryption- customer-key-		The MD5 value of the key used for encryption.
MD5		Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==
		Restrictions:
		Only for SSE-C server-side encryption.
		Value range:
		MD5 value of the key.
		Default value:
		None

Response Elements

This response contains no elements.

Error Responses

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

Sample Request: 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"
glCB7lmJ1Y2tldCl6lCJleG1hcGxlYnVja2V0liB9LA0KlCAglHsiYWNsljogInB1YmxpYy1yZWFkliB9LA0KlCAglHsiRX
haaXJlcyI6ICIxMDAwIiB9LA0KICAgIFsiZXEiLCAiJGtleSIsICJvYmplY3QwMSJdLA0KICAgIFsic3RhcnRzLXdpdGgiLC
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"
--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: OTBFMkJBMDBDMjZDMDAwMDAxMzNCNDQyQTkwMDYzRkRBQUFBQWJiYmJiYmJi
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"
H4IPJX0TQTHTHEBQQCEC
--9431149156168
Content-Disposition: form-data; name="key"
my-obs-object-key-demo
--9431149156168
Content-Disposition: form-data; name="signature"
WNwv8P1ZiWdqPQqjXeLmAfzPDAI=
--9431149156168
Content-Disposition: form-data; name="policy"
eyJleHBpcmF0aW9uIjoiMjAxOC0wNy0xN1QwODozNDoyM1oiLCAiY29uZGl0aW9ucyl6W3siY29udGVudC10eX
BĺljoidGV4dC9wbGFpbiJ9ĹHsieC1vYnMtYWNsljoicHVibGĺjLXJlYWQifSxblnN0YXJ0cy13aXRoliwgliRidWNrZXQiL
CAill0sWyJzdGFydHMtd2l0aCIsICIka2V5IiwgIiJdXX0=
--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: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCSwj2PcBE0YcoLHUDO7GSj+rVByzjflA

Date: Tue, 17 Jul 2018 07:33:36 GMT

Sample Request: Using a Token for Authentication

POST / HTTP/1.1

Content-Type:multipart/form-data; boundary=9431149156168

Content-Length: 634

Host: examplebucket.obs.region.myhuaweicloud.com

--9431149156168

Content-Disposition: form-data; name="key" obi01

--9431149156168

Content-Disposition: form-data; name="token"

UDSIAMSTUBTEST002538:XsVcTzR2/

A284oE4VH9qPndGcuE=:eyJjb25kaXRpb25zIjogW3siYnVja2V0IjogInRlc3QzMDAzMDU4NzE2NjI2ODkzNjcuMT lifSwgeyJDb250ZW50LVR5cGUiOiAiYXBwbGljYXRpb24veG1sIn0sIFsiZXEiLCAiJGtleSIsICJvYmoudHh0ll1dLCAiZ XhwaXJhdGlvbiI6ICIyMDIyLTA5LTA5VDEyOjA5OjI3WiJ9

--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" obiect01 --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" --148828969260233905620870 Content-Disposition: form-data; name="file"; filename="test.txt" Content-Type: text/plain 01234567890 --148828969260233905620870 Content-Disposition: form-data; name="submit" Upload

Sample Response: Specifying an Object Expiration Time

HTTP/1.1 204 No Content

--148828969260233905620870--

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"

x-obs-request-id: 00000188BF11049553064911000FC30D x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCSwj2PcBE0YcoLHUDO7GSj+rVByzjflA x-forward-status: 0x40020000000001 x-dae-api-type: REST.POST.OBJECT

Sample Request: Specifying a Status Code

Set the status code of a successful action to 200.

```
POST /srcbucket HTTP/1.1
User-Agent: PostmanRuntime/7.26.8
Accept: */*
Postman-Token: 667dcc44-1c48-41ba-9e41-9f87d8975089
Host: obs.cn-north-4..com
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Content-Type: multipart/form-data; boundary=-----285613759795901770404350
Content-Length: 1134
                        -----285613759795901770404350
Content-Disposition: form-data; name="key"
obi
                       -----285613759795901770404350
Content-Disposition: form-data; name="ObsAccessKeyId"
XXXXXXXXXXXXXXXX000003
 -----285613759795901770404350
Content-Disposition: form-data; name="signature"
9rc4bVhDPQ7eHtw17hWtYxLnBWU=
       -----285613759795901770404350
Content-Disposition: form-data; name="policy"
ey J le HB pcmF0aW9uljoiMjAyMy0wNi0xNVQxNDoxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVja2V0ljoic3JjYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W3siYnVarnovAlloxMTozNFoiLCAiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY20UZGl0aW9ucyl6W10AiY29uZGl0aW9ucyl6W10AiY20UCyl6W10AiY20UCyl6W10AiY20UCyl6W10AiY20UCyl6W10AiY2
ja2V0MiJ9LHsic3VjY2Vzc19hY3Rpb25fc3RhdHVzIjoiMjAwIn0seyJjb250ZW50LXR5cGUiOiJ0ZXh0L3BsYWluIn0s
eyJrZXkiOiIzMzMifSxdfQ==
     -----285613759795901770404350
Content-Disposition: form-data; name="success_action_status"
    -----285613759795901770404350
Content-Disposition: form-data; name="file"; filename="test.txt"
Content-Type: text/plain
 -----285613759795901770404350
Content-Disposition: form-data; name="submit"
Upload to OBS
           -----285613759795901770404350--
```

Sample Response: Specifying a Status Code

Response to the configuration of success status code 200

HTTP/1.1 200 OK Server: OBS

Date: Thu, 15 Jun 2023 13:12:51 GMT

Content-Length: 0 Connection: keep-alive

Location: http://obs.cn-north-4..com/srcbucket/obj ETag: "d41d8cd98f00b204e9800998ecf8427e"

x-obs-request-id: 00000188BF2FF55F5306426E000FE366

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCScDjcXgZ7oMYSVnZnk4+HrClVwLVPTi

x-forward-status: 0x40020000000001 x-dae-api-type: REST.POST.OBJECT

Sample Request: Uploading an Object (with a WORM Retention Policy Configured)

POST /srcbucket HTTP/1.1 User-Agent: PostmanRuntime/7.26.8 Accept: */* Postman-Token: 4c2f4c7e-2e0b-46c0-b1a7-4a5da560b6a1 Host: obs.cn-north-4.com Accept-Encoding: gzip, deflate, br Connection: keep-alive Content-Type: multipart/form-data; boundary=-----940435396775653808840608 Content-Length: 1409 -----940435396775653808840608 Content-Disposition: form-data; name="key" -----940435396775653808840608 Content-Disposition: form-data; name="ObsAccessKeyId" XXXXXXXXXXXXXXX000003 -----940435396775653808840608 Content-Disposition: form-data; name="signature" X/7QiyMYUvxUWk0R5fToeTcgMMU= -----940435396775653808840608 Content-Disposition: form-data; name="policy" eyJleHBpcmF0aW9uljoiMjAyMy0wNi0xNVQxNDoyMjo1MVoiLCAiY29uZGl0aW9ucyI6W3sieC1vYnMtb2JqZW NOLWxvY2stcmV0YWluLXVudGlsLWRhdGUiOiJUaHUsIDIwIEp1biAyMDIzIDEzOjEyOjUxIEdNVCJ9LHsieC1vYn Mtb2JqZWN0LWxvY2stbW9kZSI6IkNPTVBMSUFOQ0UifSx7ImJ1Y2tldCl6InNyY2J1Y2tldDIifSx7ImNvbnRlbnQt dHlwZSI6InRleHQvcGxhaW4ifSx7ImtleSI6IjMzMyJ9LF19 ---940435396775653808840608 Content-Disposition: form-data; name="x-obs-object-lock-mode" COMPLIANCE -----940435396775653808840608 Content-Disposition: form-data; name="x-obs-object-lock-retain-until-date" Thu, 20 Jun 2023 13:12:51 GMT -----940435396775653808840608 Content-Disposition: form-data; name="file"; filename="test.txt" Content-Type: text/plain -----940435396775653808840608 Content-Disposition: form-data; name="submit" Upload to OBS -----940435396775653808840608--

Sample Response: Uploading an Object (with a WORM Retention Policy Configured)

HTTP/1.1 204 No Content

Server: OBS

Date: Thu, 15 Jun 2023 13:24:03 GMT

Connection: keep-alive

Location: http://obs.cn-north-4..com/srcbucket/obj ETag: "d41d8cd98f00b204e9800998ecf8427e"

x-obs-request-id: 00000188BF3A36EE5306427D000FEE0A

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS/5pj0p0hAQcDVI3B6E5y167zy4eAQv

x-forward-status: 0x40020000000001 x-dae-api-type: REST.POST.OBJECT

References

The following table lists the links to the POST description and sample code for different SDK languages:

Java	Pyth on	C: not suppo	Go: not	Brow serJS	.NET: not	Andr oid	iOS: not	PHP	Node .js
		rted	suppo rted		suppo rted		suppo rted		

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.

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.

Restoring 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 5-84 Request headers

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-acl	String	No	Explanation:
			When copying an object, you can use this parameter to set a pre-defined ACL.
			Example: x-obs-acl: acl
			Restrictions:
			Use character strings.
			Value range:
			private
			public-read
			public-read-write
			For details about each policy, see the "Configuring an ACL Using Header Fields" section in ACLs.
			Default value:
			private

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-grant- read	String	No	Explanation: 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. Restrictions: None Value range: None Default value: None
x-obs-grant- read-acp	String	No	Explanation: When copying an object, you can use this header to grant all users in a domain the permissions to obtain the object ACL. Restrictions: None Value range: None Default value: None
x-obs-grant- write-acp	String	No	Explanation: When copying an object, you can use this header to grant all users in a domain the permissions to write the object ACL. Restrictions: None Value range: None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-grant- full-control	String	No	Explanation: 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. Restrictions: None Value range:
			None Default value: None
x-obs-copy- source	String	Yes	Explanation: Indicates names of the source bucket and the source object. If the source object has multiple versions, the versionId parameter can be used to specify the desired version. Example: x-obs-copy-source: /source_bucket/sourceObject Restrictions: Full-width characters and percent signs (%) must be URL-encoded. Value range: None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs- metadata- directive	String	No	Explanation: Indicates whether the metadata of the target object is copied from the source object or replaced with the metadata contained in the request. Example: x-obs-metadata-directive: metadata_directive Restrictions:
			Values other than COPY or REPLACE result in an immediate 400-based error response. If you need to modify the metadata (the same for both the source and target objects), this parameter must be set to REPLACE. Otherwise, the request is invalid and the server returns a 400 HTTP status code error. This parameter cannot change an encrypted object to a non-encrypted one (for both the source and target objects). If you use this parameter to change the encryption of an object, OBS returns a 400 error. Value range:
			COPY REPLACE
			Default value:
			COPY
x-obs-copy- source-if- match	String	No	Explanation: Indicates that the source object is copied only if its ETag matches the one specified in this header. Otherwise, a 412 status code (failed precondition) is returned. Example: x-obs-copy-source-if-match: etag Restrictions: This parameter can be used with x-obs-copy-source-if-unmodified-since but cannot with other conditional copy headers. Value range: None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-copy-	String	No	Explanation:
source-if- none-match			Indicates that the source object is copied only if its ETag does not match the one specified in this header. Otherwise, a 412 status code (failed precondition) is returned.
			Example: x-obs-copy-source-if-none-match: etag
			Restrictions:
			This parameter can be used with x-obs-copy-source-if-modified-since but cannot with other conditional copy headers.
			Value range:
			None
			Default value:
			None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-copy- source-if- unmodified- since	String	No	Explanation: 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. Restrictions: The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. This parameter can be used with x-obs-copy-source-if-match but cannot with other conditional copy parameters. Format: HTTP time string complying with the format specified at http://www.ietf.org/rfc/rfc2616.txt, which can be any of the following: EEE, dd MMM yyyy HH:mm:ss z EEEE, dd-MMM-yy HH:mm:ss z EEEE MMM dd HH:mm:ss yyyy Examples: x-obs-copy-source-if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT x-obs-copy-source-if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT x-obs-copy-source-if-unmodified-since: Sun Nov 6 08:49:37 1994 Value range:
			None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-copy- source-if- modified- since	String	No	Explanation: 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. Restrictions: The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. This parameter can be used with x-obs-copy-source-if-none-match but cannot with other conditional copy parameters. Format: HTTP time string complying with the format specified at http://www.ietf.org/rfc/rfc2616.txt, which can be any of the following: EEE, dd MMM yyyy HH:mm:ss z EEEE, dd-MMM-yy HH:mm:ss z EEEE MMM dd HH:mm:ss yyyy Examples: 1. x-obs-copy-source-if-modified-since: Sun, 06 Nov 1994 08:49:37 GMT 2. x-obs-copy-source-if-modified-since: Sunday, 06-Nov-94 08:49:37 GMT 3. x-obs-copy-source-if-modified-since: Sun Nov 6 08:49:37 1994 Value range: None Default value:

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-	String	No	Explanation:
storage-class			When copying an object, you can use this header to specify the storage class for the object. If you do not use this header, the object storage class is the default storage class of the destination bucket where the object is copied to.
			Example: x-obs-storage-class: STANDARD
			Restrictions:
			The value is case-sensitive.
			Value range:
			STANDARD
			WARM
			• COLD
			DEEP_ARCHIVE
			Default value:
			By default, the storage class of the bucket is inherited.

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-	String	No	Explanation:
persistent- headers			When copying an object, you can add the x-obs-persistent-headers 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.
			Restrictions:
			 Response headers customized in this way cannot be prefixed with x-obs For example, you should use key1 instead of x-obs-key1.
			 Standard HTTP headers, such as host, content-md5, origin, range, and Content- Disposition, cannot be specified as user- defined headers.
			 The total length of this header and the custom metadata cannot exceed 8 KB.
			 If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.
			 If the source object already has a user- defined response header, this header will not be copied to the target object.
			 If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using ?UTF-8?B?<(str)>?=, but does not decode the value. For instance, value key1:abbc will be returned as key1:=? UTF-8?B?abbc?= in the response.
			 The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.
			 Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2) Note: Items, such as key1 and key2, are user-defined headers. If they contain non-ASCII or unrecognizable characters, they can be encoded using URL or Base64. The server

Header	Туре	Ma nda tory (Yes /No	Description
			processes these headers as character strings, but does not decode them. Items, such as value1 and value2 are the values of the corresponding headers. base64_encode 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 x-obs-persistent-headers header. The server then decodes the uploaded value. Example: x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWUy The returned header for downloading the target object or obtaining the metadata of the target object is key1:value1 or key2:value2 respectively. Value range: None Default value:
	Chuin -	NI-	
x-obs- website- redirect- location	String	No	Explanation: 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. Restrictions: The value must start with a slash (/), http://, or https:// and cannot exceed 2K. Value range: None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption	String	No. This hea der is requ ired whe n SSE- KM S is use d.	Explanation: Indicates that SSE-KMS is used for server-side encryption. Objects are encrypted using SSE-KMS. Example: x-obs-server-side-encryption: kms Restrictions: None Value range: • kms • AES256 Default value: None
x-obs-server- side- encryption- kms-key-id	String	No	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption- customer- algorithm	String	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: The algorithm used to encrypt a target object. Example: x-obs-server-side-encryption-customer-algorithm: AES256 Restrictions: • This header is used only when SSE-C is used. • This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None
x-obs-server- side- encryption- customer-key	String	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: The key used to encrypt a target object. Example: x-obs-server-side-encryption- customer- key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht /rCB2o/9Cw= Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 256-bit key and must be used together with x-obs- server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer- key-MD5. Value range: None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption- customer- key-MD5	String	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: The MD5 value of the key used to encrypt a target object. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key. Value range: MD5 value of the key. Default value: None
x-obs-copy- source- server-side- encryption- customer- algorithm	String	No. This hea der is required whe n SSE-C is use d to cop y a sour ce object.	Explanation: Indicates the algorithm used to decrypt a source object. Example: x-obs-copy-source-server-side-encryption-customer-algorithm: AES256 Restrictions: This header is used only when SSE-C is used. This header must be used together with x-obs-copy-source-server-side-encryption-customer-key and x-obs-copy-source-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-copy- source- server-side- encryption- customer-key	String	No. This hea der is requ ired whe n SSE- C is use d to cop y a sour ce obje ct.	Explanation: Indicates the key used to decrypt a source object. Example: x-obs-copy-source-server-side-encryption-customer-key: K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 256-bit key and must be used together with x-obs-copy-source-server-side-encryption-customer-algorithm and x-obs-copy-source-server-side-encryption-customer-key-MD5. Value range: None Default value: None
x-obs-copy- source- server-side- encryption- customer- key-MD5	String	No. This hea der is required whe n SSE-C is use d to cop y a sour ce obje ct.	Explanation: Indicates the MD5 value of the key used to decrypt a source object. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-copy-source-server-side-encryption-customer-algorithm and x-obs-copy-source-server-side-encryption-customer-key. Value range: MD5 value of the key. Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
success-	String	No	Explanation:
action- redirect			The redirection address used when requests were successfully responded to.
			 If the value is valid and the request is successful, OBS returns status code 303. Location contains success_action_redirect as well as the bucket name, object name, and object ETag.
			 If this parameter value is invalid, OBS ignores this parameter. In such case, the Location header is the object address, and OBS returns the response code based on whether the operation succeeds or fails.
			Restrictions:
			The value must be a valid URL, for example, http://domainname or https://domainname.
			Value range:
			URL
			Default value:
			None
x-obs-	String	No	Explanation:
tagging- directive			Used to specify how object tags are copied. If this header is not contained, tags are not copied from source objects to destination ones.
			Example: x-obs-tagging-directive:COPY
			Restrictions:
			None
			Value range:
			 COPY: Tags of source objects are copied to the target objects.
			 REPLACE: The tags specified in the request are added to the target objects.
			Default value:
			REPLACE

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-object- lock-mode	String	No, but required whe n x-obs-obje ct-lock - retain-until-dat e is present	Explanation: WORM mode applied to the object. Example: x-obs-object-lock- mode:COMPLIANCE Restrictions: This parameter must be used together with x- obs-object-lock-retain-until-date. Value range: COMPLIANCE Default value: None
x-obs-object- lock-retain- until-date	String	No, but required whe n x-obs-obje ct-lock - mo de is present.	Explanation: When the WORM policy of the object expires. Example: x-obs-object-lock-retain-untildate:2015-07-01T04:11:15Z Restrictions: • The value must be a UTC time that complies with the ISO 8601 standard. Example: 2015-07-01T04:11:15Z • This parameter must be used together with x-obs-object-lock-mode. Value range: The time must be later than the current time. Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-	String	No	Explanation:
tagging			Object's tag information in key-value pairs. Multiple tags can be added at the same time.
			Example: x-obs-tagging:TagA=A&TagB&TagC
			Restrictions:
			 If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.
			 If there is no equal sign (=) in a configuration, the tag value is considered left blank.
			Value range:
			None
			Default value:
			None

For details about other headers, see Table 3-3.

Request Elements

This request contains no elements.

Response Syntax

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

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

<CopyObjectResult xmlns="http://obs.region.myhuaweicloud.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 5-85** may be used.

Table 5-85 Additional response headers

Header	Туре	Description
x-obs-copy-source-	String	Explanation:
version-id		Version ID of the source object
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
x-obs-version-id	String	Explanation:
		Version ID of the target object
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side-encryption: kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None

Header	Туре	Description
x-obs-server-side- encryption-kms-key-id	String	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side- encryption-customer- algorithm	String	Explanation: The algorithm used for encryption. Example: x-obs-server-side-encryption-customer-algorithm: AES256 Restrictions: This header is included in a response if SSE-C is used for server-side encryption. Value range: AES256 Default value: None
x-obs-server-side- encryption-customer- key-MD5	String	Explanation: The MD5 value of the key used for encryption. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is included in a response if SSE-C is used for server-side encryption. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Header	Туре	Description
x-obs-storage-class String		Explanation:
		Storage class of an object.
		Restrictions:
		This header is returned when the storage class of an object is not Standard.
		Value range:
		• WARM
		• COLD
		DEEP_ARCHIVE
		Default value:
		Storage class of an object.

Response Elements

This response contains elements of a copy result. **Table 5-86** describes the elements.

Table 5-86 Response elements

Element	Туре	Description
CopyObjectResult	XML	Explanation:
		The copy results
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
LastModified	String	Explanation:
		Time (UTC) when an object was last modified
		Restrictions:
		The date is in the ISO8601 format.
		Example: 2018-01-01T00:00:00.000Z
		Value range:
		None
		Default value:
		None

Element	Туре	Description
ETag	String	Explanation:
		128-bit MD5 digest of the Base64 code of a new object. ETag is the unique identifier of the object content. It can be used to determine whether the object content is changed. For example, if the ETag value is A when an object is uploaded, but this value has changed to B when the object is downloaded, it indicates that the object content has been changed.
		Restrictions:
		If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.
		Value range:
		The value must contain 32 characters.
		Default value:
		None

Error Responses

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

Sample Request: Copying an Object

Copy the object **srcobject** in bucket **bucket** to the **destobject** object in bucket **examplebucket**.

PUT /destobject HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.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: MDAxQjlxQTYxQzZDMDAwMDAxMzQwMzFCRTgwMDUyOTNBQUFBQUFBQWJiYmJiYmJi

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+1UxfRSHBMvrhVLDszxvcY= x-obs-copy-source: /bucket/srcobject?versionId=AAABQ4uBLdLc0vycq3qAAAAEVURTRkha

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: AAABQ4uBLdLc0vycq3qAAAAEVURTRkha

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.

Restoring 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 5-87**.

Ⅲ 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 5-87 Request parameters

Parameter	Туре	Man dat ory (Yes /No	Description
response-content- type	String	No	Explanation: Content-Type is rewritten in the response. Restrictions: None Value range: See the Content-Type values defined in HTTP. Default value: None
response-content- language	String	No	Explanation: Content-Language is rewritten in the response. Restrictions: None Value range: See the Content-Language values defined in HTTP. Default value: None
response-expires	String	No	Explanation: Expires is rewritten in the response. Restrictions: None Value range: See the Expires values defined in HTTP. Default value: None

Parameter	Туре	Man dat ory (Yes /No	Description
response-cache-	String	No	Explanation:
control			Cache-Control is rewritten in the response.
			Restrictions:
			None
			Value range:
			See the Cache-control values defined in HTTP.
			Default value:
			None
response-content-	String	No	Explanation:
disposition			Content-Disposition is rewritten in the response.
			Example:
			response-content- disposition=attachment; filename*=utf-8"name1
			In this example, the downloaded object is renamed name1 . If the new name contains any full-width characters, such characters must be URL-encoded.
			Restrictions:
			None
			Value range:
			None
			Default value:
			None

Parameter	Туре	Man dat ory (Yes /No	Description
response-content- encoding	String	No	Explanation: Content-Encoding is rewritten in
			the response.
			Restrictions:
			None
			Value range:
			See the Content-Encoding values defined in HTTP.
			Default value:
			None
versionId	String	No	Explanation:
			Indicates the version ID of the object to be obtained.
			Restrictions:
			None
			Value range:
			The value must contain 32 characters.
			Default value:
			None. If this parameter is not configured, the latest version of the object is obtained.

Parameter	Туре	Man dat ory (Yes /No	Description
x-image-process	String	No	Explanation:
			Image processing command or style.
			An example is provided as follows:
			Command: x-image- process= image/commands
			Style: x-image-process= style/ stylename
			For details, see the <i>Image Processing Feature Guide</i> .
			Restrictions:
			None
			Value range:
			Command format: image/ commands
			Style format: style/ <i>style-name</i>
			Default value:
			If no commands are entered, the original image will be returned.
attname	String	No	Explanation:
			Content-Disposition is rewritten in the response.
			Example:
			attname=name1
			This example renames the downloaded object as name1 .
			Restrictions:
			None
			Value range:
			None
			Default value:
			None

Request Headers

This request uses common headers. In addition, you can add additional headers to this request. **Table 5-88** describes the additional headers.

Table 5-88 Request headers

Header	Туре	Mandat ory (Yes/No)	Description
Range	String	No	Explanation:
			Obtains the object content within the scope defined by Range . If the parameter value is invalid, the entire object is obtained.
			Restrictions:
			Range value starts from 0, and the maximum value equals the object length minus 1. The start value of Range is mandatory. If only the start value is specified, the system obtains the object content from the start value to default maximum value. bytes=byte_range
			Example 1: bytes=0-4
			Example 2: bytes=1024
			Example 3: bytes=10-20, 30-40 (multiple ranges)
			After the Range header field is carried, the value of ETag in the response message is the ETag of the object instead of the ETag of the object in the Range field.
			Value range:
			Range value starts from 0, and the maximum value equals the object length minus 1.
			Default value:
			None

If- HTTP No Explanation: Modified- time Since String String Modified since the time specified by this	Header	Туре	Mandat ory (Yes/No)	Description
complyin g with the format specified at http:// www.iet f.org/rfc // complyin g with the format specified at http:// www.iet f.org/rfc // Complyin header. Otherwise, 304 Not Modified is returned. Restrictions: The time specified by this parameter can be later than the current server time (GM time), or this parameter does not take effect. Value range:	Modified-	time string complyin g with the format specified at http:// www.iet f.org/rfc / rfc2616.	No	Returns the object only if it has been modified since the time specified by this header. Otherwise, 304 Not Modified is returned. Restrictions: The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect. Value range: HTTP time string complying with the format specified at http://www.ietf.org/rfc/rfc2616.txt. 1. EEE, dd MMM yyyy HH:mm:ss z 2. EEEE, dd-MMM-yy HH:mm:ss z 3. EEE MMM dd HH:mm:ss yyyy Examples: 1. if-modified-since: Sun, 06 Nov 1994 08:49:37 GMT 2. if-modified-since: Sunday, 06-Nov-94 08:49:37 GMT 3. if-modified-since: Sun Nov 6 08:49:37 1994 Default value:

Header	Туре	Mandat ory (Yes/No	Description
If- Unmodifie d-Since	Unmodifie time	No	Explanation: If the object has not been modified since the time specified by this header, it is returned. Otherwise, 412 (precondition failed) is returned.
	the		Restrictions:
	format specified at http:// www.iet		The time specified by this parameter cannot be later than the current server time (GMT time), or this parameter does not take effect.
	f.org/rfc		Value range:
	rfc2616. txt.		HTTP time string complying with the format specified at http://www.ietf.org/rfc/rfc2616.txt.
			1. EEE, dd MMM yyyy HH:mm:ss z
			2. EEEE, dd-MMM-yy HH:mm:ss z
			3. EEE MMM dd HH:mm:ss yyyy
			Examples:
			1. if-unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT
			2. if-unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT
			3. if-unmodified-since: Sun Nov 6 08:49:37 1994
			Default value:
			None
If-Match	String	No	Explanation:
			Returns the object only if its ETag is the same as the one specified by this header. Otherwise, 412 Precondition Failed is returned.
			ETag example: 0f64741bf7cb1089e988e4585d0d3434
			Restrictions:
			None
			Value range:
			Object ETag
			Default value:
			None

Header	Туре	Mandat ory (Yes/No)	Description
If-None- Match	String	No	Explanation: Returns the object only if its ETag is different from the one specified by this header. Otherwise, 304 Not Modified is returned. ETag example: 0f64741bf7cb1089e988e4585d0d3434 Restrictions: None Value range: Object ETag Default value: None
x-obs- server-side- encryption- customer- algorithm	String	No. This header is required when SSE-C is used.	Explanation: Indicates the encryption algorithm used when SSE-C is used. Example: x-obs-server-side-encryption-customer-algorithm:AES256 Restrictions: This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None

Header	Туре	Mandat ory (Yes/No)	Description
x-obs- server-side- encryption- customer- key	String	No. This header is required when SSE-C is used.	Explanation: Indicates the encryption key used when SSE-C is used. This key is used to decrypt objects. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobnc nLht/rCB2o/9Cw= Restrictions: This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None
x-obs- server-side- encryption- customer- key-MD5	String	No. This header is required when SSE-C is used.	Explanation: Indicates the MD5 value of the encryption key when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-algorithm customer-key. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Request Elements

This request involves no elements.

Response Syntax

HTTP/1.1 status_code
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 5-89** may be used.

Table 5-89 Additional response headers

Header	Туре	Description
x-obs-expiration	String	Explanation:
		Expiration time of an object.
		Restrictions:
		When an object has its lifecycle rule, the object expiration time is subject to its lifecycle rule. This header field is use expiry-date to describe the object expiration date. If the lifecycle rule is configured only for the entire bucket not individual objects, the object expiration time is subject to the bucket lifecycle rule. This header field uses the expiry-date and rule-id to describe the detailed expiration information of objects. If no lifecycle rule is configured, this header field is not contained in the response.
		Value range:
		The time format is EEE, dd MMM yyyy HH:mm:ss z.
		Example: expiry-date=Sun, 06 Nov 1994 08:49:37 GMT
		Default value:
		None

Header	Туре	Description
x-obs-website-redirect-location	String	Explanation: Indicates where an object request is redirected. If the bucket that contains the object is configured with Website settings, this parameter can be set in the object metadata so that the request for the object can be redirected to another object in the same bucket or an external URL after the website returns a 301 redirect response. To another object in the same bucket: x-obs-website-redirect-location:/ anotherPage.html To an external URL: x-obs-website-redirect-location:http://www.example.com/ OBS obtains the specified value from the header and stores it in the object metadata WebsiteRedirectLocation. Restrictions: The value must start with a slash (/), http://, or https:// and cannot exceed 2 KB. OBS supports redirection for objects in the root directory of a bucket, not for those in folders. Default value: None
x-obs-delete-marker	Boolean	Explanation: Whether the deleted object is a delete marker. If the object is not marked as deleted, the response does not contain this header. Value range: • true: The deleted object is a delete marker. • false: The deleted object is not a delete marker. Default value: false

Header	Туре	Description
x-obs-version-id	String	Explanation:
		Object version ID.
		Restrictions:
		If the object has no version number specified, the response does not contain this header.
		Value range:
		The value must contain 32 characters.
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side- encryption:kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-kms-key- id		ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption-customer- algorithm		Indicates a decryption algorithm. This header is included in a response if SSE-C is used.
		Example: x-obs-server-side- encryption-customer- algorithm:AES256
		Restrictions:
		None
		Value range:
		AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-customer- key-MD5		Indicates the MD5 value of a key used to decrypt objects. This header is included in a response if SSE-C is used.
		Example: x-obs-server-side- encryption-customer-key- MD5:4XvB3tbNTN+tIEVa0/fGaQ==
		Value range:
		Base64-encoded MD5 value of the key ID.
		Default value:
		None
x-obs-object-type	String	Explanation:
		Object type
		Restrictions:
		This header is returned when the object is not a Normal object.
		Value range:
		Appendable
		Default value:
		None

Header	Туре	Description
x-obs-next-append-	Integer	Explanation:
position		Indicates the position that should be provided in the next request.
		Restrictions:
		This header field is returned when the object is an appendable object.
		Value range:
		None
		Default value:
		None
x-obs-tagging-count	String	Explanation:
		Number of tags associated with an object.
		Example: x-obs-tagging-count:1
		Restrictions:
		This parameter is returned only when the user has the permission to read tags.
		Value range:
		None
		Default value:
		None

Response Elements

This response contains no elements.

Error Responses

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

Sample Request: Downloading an Object

GET /object01 HTTP/1.1 User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 04:24:33 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=

Sample Response: Downloading an Object

HTTP/1.1 200 OK Server: OBS

x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E

Accept-Ranges: bytes

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 H4IPJX0TQTHTHEBQQCEC:mNPLWQMDWg30PTkAWiqJaLl3ALg=

Download the specified range of an object (download multiple ranges of an object).

GET /object01 HTTP/1.1 User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: Mon, 14 Sep 2020 10:02:43 GMT

Range:bytes=20-30,40-50

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:ZwM7Vk2d7sD9o8zRsRKehgKQDkk=

Sample Response: Downloading a Specified Range of an Object

Download the specified range of an object (download a range of an object).

HTTP/1.1 206 Partial Content

Server: OBS

x-obs-request-id: 000001748C0DBC35802E360C9E869F31

Accept-Ranges: bytes

ETag: "2200446c2082f27ed2a569601ca4e360" Last-Modified: Mon, 14 Sep 2020 01:16:20 GMT

Content-Range: bytes 20-30/4583 Content-Type: binary/octet-stream

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSn2JHu4okx9NBRNZAvBGawa3lt3g31g

Date: Mon, 14 Sep 2020 09:59:04 GMT

Content-Length: 11

[11 Bytes object content]

Download the specified range of an object (download multiple ranges of an object).

HTTP/1.1 206 Partial Content

Server: OBS

x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E

Accept-Ranges: bytes

ETag: "2200446c2082f27ed2a569601ca4e360" Last-Modified: Mon, 14 Sep 2020 01:16:20 GMT

Content-Type: multipart/byteranges;boundary=35bcf444-e65f-4c76-9430-7e4a68dd3d26

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSIBWFOVW8eeWujkqSnoIANC2mNR1cdF

Date: Mon, 14 Sep 2020 10:02:43 GMT

Content-Length: 288

--35bcf444-e65f-4c76-9430-7e4a68dd3d26

Content-type: binary/octet-stream Content-range: bytes 20-30/4583

[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 H4IPJX0TQTHTHEBQQCEC: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 H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=

Sample Response: Checking the ETag Value of an Object (ETag Mismatch)

If the object's ETag value is not **682e760adb130c60c120da3e333a8b09**, the system displays a download failure message.

HTTP/1.1 412 Precondition Failed

Server: OBS

x-obs-request-id: 8DF400000163D3F2A89604C49ABEE55E

Content-Type: application/xml

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSQwxJ2I1VvxD/Xgwuw2G2RQax30gdXU

Date: WED, 01 Jul 2015 04:20:51 GMT

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

<Error>

- <Code>PreconditionFailed</Code>
- <Message>At least one of the pre-conditions you specified did not hold
- <RequestId>8DF400000163D3F2A89604C49ABEE55E</RequestId>
- <HostId>ha0ZGaSKVm+uLOrCXXtx4Qn1aLzvoeblctVXRAqA7pty10mzUUW/yOzFue04lBqu
- <Condition>If-Match</Condition>

</Error>

Sample Response: Checking the ETag Value of an Object (ETag Matched)

If the object's ETag value is 682e760adb130c60c120da3e333a8b09, the download is successful.

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 5DEB00000164A21E1FC826C58F6BA001

Accept-Ranges: bytes

ETag: "682e760adb130c60c120da3e333a8b09" Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT Content-Type: application/octet-stream

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSbkdml1sLSvKnoHaRcOwRI+6+ustDwk

Date: Mon, 16 Jul 2015 08:04:00 GMT

Content-Length: 8

[8 Bytes object content]

Sample Request: Downloading an Object Using a Signed URL

GET /object02?

AccessKeyId=H4IPJX0TQTHTHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrzrzRNZxwS72CXeX

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: 804F00000164DB5E5B7FB908D3BA8E00

ETag: "682e760adb130c60c120da3e333a8b09" Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT Content-Type: application/octet-stream

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAQAAEAABCTlpxILjhVK/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 responsecontent-disposition Used)

Use the response-content-disposition parameter to download and rename an

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 responsecontent-disposition Used)

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 804F00000164DB5E5B7FB908D3BA8E00

ETag: "682e760adb130c60c120da3e333a8b09" Last-Modified: Mon, 16 Jul 2015 08:03:34 GMT Content-Type: application/octet-stream

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAQAAEAABCTlpxILjhVK/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 H4IPJX0TQTHTHEBQQCEC: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: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxILjhVK/heKOWIP8Wn2IWmQoerfw

Date: Fri, 27 Jul 2018 10:52:31 GMT

Content-Length: 8

Content-Disposition: attachment; filename*=utf-8"name1

[8 Bytes object content]

Sample Request: Sending a Request That Includes Custom Response Headers

GET /obj001?response-expires=Thu%2C%2001%20Feb%202015%2017%3A00%3A00%20GMT HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 02:37:22 GMT

Authorization: OBS UDSIAMSTUBTEST000003:2tod8LyZOGA0+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: G001118A6803675AFFFFD3043F7F91D0

ETag: "21e7e5efb6b73de19e691d6c4e32a9cf"

Content-Disposition: attachment Date: WED, 01 Jul 2015 02:37:22 GMT Content-Type: binary/octet-stream

Content-Length: 392

[392 Bytes object content]

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 5-91**.

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 5-90 describes the request parameters.

Table 5-90 Request parameters

Paramet er	Туре	Man dator y (Yes/ No)	Description
versionId	String	No	Explanation:
			Version ID of the object.
			Restrictions:
			None
			Value range:
			The value must contain 32 characters.
			Default value:
			None

Request Headers

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

In addition, the request can use additional headers shown in **Table 5-91**.

Table 5-91 Request headers

Header	Туре	Ma nda tory (Yes /No	Description
Origin	Strin g	No	Explanation: Origin specified in a preflight request that makes a cross-domain request, usually as a domain name. Restrictions: You can enter multiple origins, with one separated from another using a line break. Each origin can contain at most one wildcard character (*). Value range: The value that complies with the CORS Default value: None
Access- Control- Request- Headers	Strin g	No	Explanation: Indicates the HTTP headers that are allowed in a request. The request can use multiple HTTP headers. Restrictions: 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. Value range: The value that complies with the CORS Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption- customer- algorithm	Strin g	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: Indicates the decryption algorithm used when SSE-C is used. Example: x-obs-server-side-encryption-customer-algorithm:AES256 Restrictions: This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None
x-obs-server- side- encryption- customer-key	Strin g	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: Indicates the decryption key used when SSE-C is used. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Restrictions: This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None

Header	Туре	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption- customer- key-MD5	Strin g	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: Indicates the MD5 value of the decryption key when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Request Elements

This request involves no elements.

Response Syntax

HTTP/1.1 status_code 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 5-92** may be used.

Table 5-92 Additional response headers

Header	Туре	Description
x-obs-expiration	String	Explanation:
		Expiration details
		Restrictions:
		None
		Value range:
		When an object has its lifecycle rule, the object expiration time is subject to its lifecycle rule. This header field is use expiry-date to describe the object expiration date. If the lifecycle rule is configured only for the entire bucket not individual objects, the object expiration time is subject to the bucket lifecycle rule. This header field uses the expiry-date and rule-id to describe the detailed expiration information of objects. If no lifecycle rule is configured, this header field is not contained in the response.
		Default value:
		None

Header	Туре	Description
x-obs-website-	String	Explanation:
redirect-location		Indicates where an object request is redirected. If the bucket that contains the object is configured with Website settings, this parameter can be set in the object metadata so that the request for the object can be redirected to another object in the same bucket or an external URL after the website returns a 301 redirect response.
		To another object in the same bucket:
		x-obs-website-redirect-location:/ anotherPage.html
		To an external URL:
		x-obs-website-redirect-location:http:// www.example.com/
		OBS obtains the specified value from the header and stores it in the object metadata WebsiteRedirectLocation .
		Restrictions:
		The value must start with a slash (/), http://, or https:// and cannot exceed 2 KB.
		OBS supports redirection for objects in the root directory of a bucket, not for those in folders.
		Default value:
		None
x-obs-version-id	String	Explanation:
		Version ID of the object. If the object has no version number specified, the response does not contain this header.
		Restrictions:
		The value must contain 32 characters.
		Value range:
		None
		Default value:
		None

Header	Туре	Description
Access-Control-	String	Explanation:
Allow-Origin		Returned if the request origin meets the CORS configured on the server.
		Restrictions:
		None
		Value range:
		The value that complies with the CORS
		Default value:
		None
Access-Control-	String	Explanation:
Allow-Headers		Returned if the request headers meet the CORS configured on the server.
		Restrictions:
		At most one asterisk (*) is allowed. Spaces, ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed.
		Value range:
		The value that complies with the CORS
		Default value:
		None
Access-Control-	Integer	Explanation:
Max-Age		MaxAgeSeconds in the CORS rules of the bucket. It specifies the time your client can cache the response for a cross-origin request.
		Restrictions:
		Each CORS rule can contain at most one MaxAgeSeconds.
		Value range:
		An integer greater than or equal to 0, in seconds
		Default value:
		3000

Header	Туре	Description
Access-Control- Allow-Methods	String	Explanation: 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. Value range: GET PUT HEAD POST DELETE
Access-Control- Expose-Headers	String	Explanation: ExposeHeader in the CORS rules of the bucket. It specifies additional headers allowed in the response by a CORS rule, which are used to provide extra information to clients. By default, a browser can access only headers Content-Length and Content-Type. If the browser needs to access other headers, you need to configure them as additional headers. Restrictions: Spaces, asterisks (*), ampersands (&), colons (:), less-than signs (<), and full-width characters are not allowed. Value range: None Default value: None
x-obs-server-side- encryption	String	Explanation: The encryption method used by the server. Example: x-obs-server-side- encryption:kms Restrictions: This header is included in a response if SSE-KMS is used. Value range: • kms • AES256 Default value: None

Header	Туре	Description
x-obs-server-side- encryption-kms- key-id	String	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side- encryption- customer- algorithm	String	Explanation: Indicates a decryption algorithm. This header is included in a response if SSE-C is used. Example: x-obs-server-side-encryption-customer-algorithm:AES256 Restrictions: None Value range: AES256 Default value: None
x-obs-server-side- encryption- customer-key- MD5	String	Explanation: Indicates the MD5 value of a key used to decrypt objects. This header is included in a response if SSE-C is used. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: Base64-encoded MD5 value of the key, for example, 4XvB3tbNTN+tIEVa0/fGaQ==. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Header	Туре	Description
x-obs-storage-	String	Explanation:
class		Storage class of an object.
		Restrictions:
		This header is returned only when the
		storage class of an object is not Standard.
		Value range:
		• WARM
		• COLD
		DEEP_ARCHIVE Control
		Default value:
		None
x-obs-restore	String	Explanation:
		Restore status of an object.
		For example, ongoing-request="true"
		indicates that the object is being restored. ongoing-request="false", expiry-
		date="Wed, 7 Nov 2012 00:00:00 GMT"
		indicates that the object has been restored,
		where expiry-date indicates when the restored object expires.
		Restrictions:
		This header is returned only when Archive
		or Deep Archive objects are being restored
		or has been restored. Value range:
		None
		Default value:
		None
x-obs-object-type	String	Explanation:
x-obs-object-type	String	
		Object type Restrictions:
		This header is returned only when the
		object is not a Normal object.
		Value range:
		Appendable
		Default value:
		None

Header	Туре	Description
x-obs-next-	Integer	Explanation:
append-position		Indicates the position that should be provided in the next request.
		Restrictions:
		This header is returned only when the object is an Appendable object.
		Value range:
		None
		Default value:
		None
x-obs-uploadId	String	Explanation:
		Indicates the ID of a multipart task.
		Restrictions:
		This header is returned only when the object is created from a multipart upload.
		Value range:
		None
		Default value:
		None
x-obs-tagging-	String	Explanation:
count		Number of tags associated with an object.
		Example: x-obs-tagging-count:1
		Restrictions:
		This header is returned only when you have the permission to read tags.
		Value range:
		None
		Default value:
		None

Header	Туре	Description
x-obs-object-lock-	String	Explanation:
mode		WORM mode applied to the object.
		Example: x-obs-object-lock-mode:COMPLIANCE
		Restrictions:
		This parameter is returned only when the object has any object-level WORM retention policy configured or has a default bucket-level WORM policy applied.
		The user must have the GetObjectRetention permission.
		Value range:
		Currently, only COMPLIANCE (compliance mode) is supported.
		Default value:
		None
x-obs-object-lock-	String	Explanation:
retain-until-date		When an object lock expires.
		Example: x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z
		Restrictions:
		The value must be a UTC time that complies with the ISO 8601 standard. Example: 2015-07-01T04:11:15Z
		This parameter is returned only when the object has any object-level WORM retention policy configured or has a default bucket-level WORM policy applied.
		The user must have the GetObjectRetention permission.
		Value range:
		The value must be later than the current time.
		Default value:
		None

Response Elements

This response contains no elements.

Error Responses

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

Sample Request

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:/cARjk81l2iExMfQqn6iT3qEZ74=

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 8DF400000163D3E4BB5905C41B6E65B6

Accept-Ranges: bytes

ETag: "3b46eaf02d3b6b1206078bb86a7b7013" Last-Modified: WED, 01 Jul 2015 01:19:21 GMT

Content-Type: binary/octet-stream

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSD3nAiTaBoeyt9oHp9vTYtXnLDmwV6D

Date: WED, 01 Jul 2015 04:19:21 GMT

Content-Length: 4572

Sample Request: Obtaining Object Metadata from a Versioning-enabled Bucket

HEAD /object1?versionId=G001118A49821905FFFFD28739D419DA HTTP/1.1 Authorization: OBS H4IPJX0TQTHTHEBQQCEC: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

Sample Response: Obtaining Object Metadata from a Versioning-enabled Bucket

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCShLiL70qeT0g5qpMquCeztsnr1jJmRs

Accept-Ranges: bytes

x-obs-request-id: 0000018A4986DDCDD24538ACF6B54255

Server: OBS ETag: \

x-obs-tagging-count: 0

Last-Modified: Thu, 31 Aug 2013 02:52:57 GMT

Content-Length: 0

Date: WED, 01 Jul 2015 02:37:22 GMT

Content-Type: text/plain

x-obs-version-id: G001118A49821905FFFFD28739D419DA

5.4.6 Deleting an Object

Functions

You can perform this operation to delete an object. If you try to delete an object that does not exist, OBS will return a success message.

Versioning

When versioning is enabled for a bucket, a delete request that does not specify a version ID cannot permanently delete the object. Instead, OBS creates a delete

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 5-93 describes the request parameters.

NOTICE

For deleting an object, only parameters listed in **Table 5-93** are supported. If the request contains parameters that cannot be identified by OBS, the server returns the 400 error code.

Table 5-93 Request parameters

Parameter	Description	Mandato ry
versionId	Explanation:	No
	Version ID of the object to be deleted.	
	Type: string	
	Restrictions:	
	None	
	Value range:	
	The value must contain 32 characters.	
	Default value:	
	None	

Request Headers

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

Request Elements

This request 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 5-94** may also be used.

Table 5-94 Additional response headers

Header	Description
x-obs-delete-marker	Explanation:
	Whether an object has a delete marker. If the object is not marked as deleted, the response does not contain this header.
	Type: boolean
	Restrictions:
	None
	Value range:
	• true
	• false
	Default value:
	false
x-obs-version-id	Explanation:
	Object version ID. If the object has no version number specified, the response does not contain this header.
	Type: string
	Restrictions:
	None
	Value range:
	The value must contain 32 characters.
	Default value:
	None

Response Elements

This response contains no elements.

Error Responses

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

Sample Request

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:MfK9JCnSFHCrJmjv7iRkRrrce2s=

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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50

x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F

Server: OBS

Date: WED, 01 Jul 2015 02:37:22 GMT

x-obs-version-id: G001118A49821905FFFFD28739D419DA

Sample Request: Specifying versionId to Delete a Delete Marker

DELETE /object2?versionId=G001118A6456208AFFFFD24829FCF614

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=

User-Agent: curl/7.29.0

Host: examplebucket.obs.*region*.myhuaweicloud.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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50

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 5-95** describes the elements.

Table 5-95 Request elements

Element	Description	Mandatory
Quiet	Specifies the quiet mode. With the quiet mode, OBS only returns the list of objects that failed to be deleted. This element is valid when set to true . Otherwise, OBS ignores it. Type: boolean	No
EncodingTyp e	This parameter specifies the encoding type of the object key to be deleted and the object key in the response. If an object key contains control characters that are not supported by the XML 1.0 standard, you can set this element to specify the encoding type of the object key. Type: string Value option: url	No
Delete	List of objects to be deleted Type: XML	Yes
Object	Names of objects to be deleted Type: XML	Yes
Key	Key of the object to be deleted. If EncodingType is specified, the object key must be encoded based on the encoding type. Type: string	Yes
VersionId	Version ID of the object to be deleted Type: string	No

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

```
<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 5-96** describes the elements.

Table 5-96 Response elements

Element	Description
DeleteResult	Root node of batch deletion responses Type: container
Deleted	Container for results of successful deletion Type: container
Error	Container for results of failed deletion Type: container
EncodingType	Encodes the Key in the response based on the specified type. If EncodingType is specified in the request, the Key in the response is encoded. Type: string
Key	Object names in a deletion result Type: string
Code	Error code of a deletion failure Type: string
Message	Error message of a deletion failure Type: string
VersionId	Version IDs of objects to be deleted Type: string
DeleteMarker	If this element is specified, true will be returned when you create or delete a delete marker in a bucket with versioning enabled. Type: boolean

Element	Description
DeleteMarkerVersio- nId	Indicates the version ID of the delete marker deleted or created by the request.
	If you create or delete a delete marker in a bucket with versioning enabled, OBS returns this element in the response. This element will be returned in either of the following cases:
	 You send a request that has only the object name but not the version ID specified. In this case, OBS creates a delete marker and returns its version ID in the response.
	 You send a request that has both the object key and version ID (that identifies a delete marker) specified. In this case, OBS deletes the delete marker and returns its version ID in the response.
	Type: boolean

Error Responses

- 1. If the resolution result of an XML request contains more than 1,000 objects, OBS returns **400 Bad Request**.
- 2. If the object key in an XML request is invalid (for example, containing more than 1,024 characters after being encoded with UTF-8), OBS returns **400 Bad Request**.
- 3. If the request header does not contain Content-SHA256, OBS returns **400 Bad Request**.

Other errors are included in Table 6-2.

Sample Request

```
POST /test333?delete HTTP/1.1
User-Agent: curl/7.29.0
Host: 127.0.0.1
Accept: */*
Date: WED, 01 Jul 2015 04:34:21 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:8sjZWJlWmYmYnK5JqXaFFQ+vHEg=
Content-SHA256: ogX9qClMrVJUBiUSIKDFM0qO41jJM0I5SCN55/OtMyI=
Content-Length: 188
<?xml version="1.0" encoding="utf-8"?>
<Delete>
 <Quiet>true</Quiet>
 <Object>
  <Key>obja02</Key>
 </Object>
 <Object>
  <Key>obja02</Key>
 </Object>
</Delete>
```

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3FE4CE80340D30B0542
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCRhY0FBWRm6qjOE1ACBZwS+0KYlPBq0f
Content-Type: application/xml
Date: WED, 01 Jul 2015 04:34:21 GMT
Content-Length: 120
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DeleteResult xmlns="http://obs.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 H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
Content-MD5: Y4+cxEPU7U9sgVFpRbdtUQ==
<Delete>
  <Object>
     <Key>object1</Key>
     <VersionId>G001118A646F2ACEFFFFD24530CFB5D8</VersionId>
  </Object>
  <Object>
     <Key>object2</Key>
     <VersionId>G001118A646F2ACEFFFFD24530CFB5D9</VersionId>
  </Object>
</Delete>
```

Sample Response: Specifying versionId to Delete Multiple Delete Markers

```
x-obs-id-2: 32AAAUqAIAABAAAQAAEAABAAAQAAEAABCS3WJqDiMsxgGHKQrlqST9veFKpDgE50
x-obs-request-id: 0000018A4997390DD306CCDA0DEC814F
Server: OBS
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Length: 545
Content-Type: application/xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DeleteResult xmlns="http://obs.myhwclouds.com/doc/2015-06-30/">
  <Deleted>
     <Key>object1</Key>
     <VersionId>G001118A646F2ACEFFFFD24530CFB5D9</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>G001118A646F2ACEFFFFD24530CFB5D9</DeleteMarkerVersionId>
  </Deleted>
  <Deleted>
    <Key>object2</Key>
    <VersionId>G001118A646F2ACEFFFFD24530CFB5D8</VersionId>
    <DeleteMarker>true</DeleteMarker>
    <DeleteMarkerVersionId>G001118A646F2ACEFFFFD24530CFB5D8</DeleteMarkerVersionId>
  </Deleted>
</DeleteResult>
```

Sample Request: Sending a Request in Wrong XML Format

```
The <Delete> end tag is missing.

POST /?delete HTTP/1.1

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
```

Sample Response: Sending a Request in Wrong XML Format

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

Request Parameters

Paramete r	Туре	Man dato ry (Yes /No	Description
versionId	String	No	Explanation:
			Version ID of the Archive or Deep Archive object to be restored
			Restrictions:
			None
			Value range:
			None
			Default value:
			None. If this parameter is not configured, the latest version of the object is specified.

Request Headers

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

Request Elements

Table 5-97 Request elements

Element	Туре	Mandat ory (Yes/No)	Description
RestoreRequ est	Container	Yes	Explanation: Container for the restore information Restrictions: None Value range: None Default value: None

Element	Туре	Mandat ory (Yes/No)	Description
Days	Integer	Yes	Explanation: 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. Restrictions: None Value range: The value ranges from 1 to 30, in days. Default value: None
RestoreJob	Container	No	Explanation: Container for the restore options Restrictions: None Value range: None Default value: None

Element	Туре	Mandat ory (Yes/No)	Description
Tier	String	No	Explanation: Retrieval speed tier. You can select a tier that suits your retrieval needs. NOTE 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. Value range: Expedited 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. Standard 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. Default value:
			Standard

Response Syntax

HTTP/1.1 status_code Date: date

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

Response Elements

This response contains no elements.

Error Responses

Table 5-98 List of OBS access error codes

Error Code	Description	HTTP Status Code
RestoreAlreadyIn- Progress	Explanation: The object is being restored. The request conflicts with another. ErrorMessage: Object restore is already in progress	409 Conflict
ObjectHasAlready Restored	Explanation: The objects have been restored and the retention period of the objects cannot be shortened. ErrorMessage: After restoring an archived object, you cannot shorten the restoration period of the archived object	409 Conflict
MalformedXML	Explanation: Invalid value for the Days field (supposed to be an integer) ErrorMessage: The XML you provided was not well-formed or did not validate against our published schema	400 Bad Request
InvalidArgument	Explanation: Invalid value for the Days field (valid range: 1 to 30). ErrorMessage: restoration days should be at least 1 and at most 30	400 Bad Request
MalformedXML	Explanation: Invalid value for the Tier field. ErrorMessage: The XML you provided was not well-formed or did not validate against our published schema	400 Bad Request
InvalidObjectState	Explanation: The restored object is not in the Archive or Deep Archive storage. ErrorMessage: 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:kaEwOixnSVuS6If3Q0Lnd6kxm5A=

Content-Length: 183

<RestoreRequest>

<Days>2</Days>

<RestoreJob>

<Tier>Expedited</Tier>

</RestoreJob> </RestoreRequest>

Sample Response

HTTP/1.1 202 Accepted

Server: OBS

x-obs-request-id: A2F500000163F374CCBB2063F834C6C4

x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSLbWls23RR95NVpkbWUdlm8Dq+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.

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 5-99**.

Table 5-99 Request parameters

Parameter	Typ e	Ma nda tory (Yes /No	Description
append	Stri ng	Yes	Explanation: Indicates that the object is uploaded in an append manner. Restrictions: None Value range: None Default value: None
position	Inte ger	Yes	Explanation: Location for the append upload Restrictions: Max. 5 GB Value range: For an object to be appended, the value of position must be set to 0 when the object is uploaded for the first time. The value of position will be carried in the x-obs-next-append-position header of the response returned by the server when the object is successfully uploaded next time. Default value: None

Request Headers

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

Table 5-100 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 5-101**.

Table 5-100 Request headers

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs-acl	Strin g	No	Explanation: When first calling this API, you can use this parameter to set a pre-defined object ACL. Restrictions: Use character strings. Value range: • private • public-read • public-read-write For details about each policy, see the "Configuring an ACL Using Header Fields" section in ACLs. Default value: private
x-obs-grant- read	Strin g	No	Explanation: When first calling this API, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. Example: x-obs-grant-read: id=domainID Restrictions: Use commas (,) to separate multiple domains. Value range: None Default value: None

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs-grant-	Strin g	No	Explanation:
read-acp			When first calling this API, you can use this header to grant all users in a domain the permissions to obtain the object ACL.
			Example: x-obs-grant-read-acp: id= domainID
			Restrictions:
			Use commas (,) to separate multiple domains.
			Value range:
			None
			Default value:
			None
x-obs-grant-	Strin	No	Explanation:
write-acp	g		When first calling this API, you can use this header to grant all users in a domain the permissions to write the object ACL.
			Example: x-obs-grant-write-acp: id=domainID
			Restrictions:
			Use commas (,) to separate multiple domains.
			Value range:
			None
			Default value:
			None
x-obs-grant-	Strin g	No	Explanation:
full-control			When first calling this API, you can use this header to grant all users in a domain the permissions to read the object, obtain the object metadata and ACL, and write the object ACL.
			Example: x-obs-grant-full-control: id=domainID
			Restrictions:
			Use commas (,) to separate multiple domains.
			Value range:
			None
			Default value:
			None

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs- storage-class	Strin g	No	Explanation: For the first write, you can use this header field to configure the object storage class. Example: x-obs-storage-class:STANDARD Restrictions: Archive and Deep Archive objects do not support append uploads. The value is case-sensitive. Value range: STANDARD WARM Default value: If you do not use this header, the object storage class is the default storage class of the bucket.
x-obs-meta-*	Strin g	No	Explanation: For the first write, you can use a header starting with x-obs-meta- to define object metadata in an HTTP request. Custom metadata will be returned in the response header when you retrieve or query the metadata of the object. Example: x-obs-meta-test:test metadata Restrictions: This parameter can only be passed in HTTP request headers and cannot exceed 8 KB. Value range: None Default value: None

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs- persistent-	String	No	Explanation:
headers			For the first appending, you can add the x-obs- persistent-headers 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.
			Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_encode(value2)
			Note: Items, such as key1 and key2 , 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. base64_encode 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 x-obs-persistent-headers header. The server then decodes the uploaded value.
			Example: x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWUy
			The returned header for downloading the object or obtaining the object metadata is key1 : <i>value1</i> or key2 : <i>value2</i> respectively.
			Restrictions:
			 Response headers customized in this way cannot be prefixed with x-obs For example, you should use key1 instead of x-obs-key1.
			 Standard HTTP headers, such as host, content- md5, origin, range, and Content-Disposition, cannot be specified as user-defined headers.
			The total length of this header and the custom metadata cannot exceed 8 KB.
			If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
			 If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using? UTF-8?B?<(str)>?=, but does not decode the value. For instance, value key1:abbc will be returned as key1: =?UTF-8?B?abbc?= in the response. The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding. Value range: None Default value: None
x-obs- website- redirect- location	Strin g	No	Explanation: 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. Restrictions: The value must start with a slash (/), http://, or https:// and cannot exceed 2K. Value range: None Default value: None

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs-expires	Inte ger	No	Explanation: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. (The calculation starts from when the object was last modified). Example: x-obs-expires:3 Restrictions: 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. Value range: The value is an integer greater than 0. Default value:
			None
x-obs- tagging	Strin g	No	 Explanation: An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: x-obs-tagging:TagA=A&TagB&TagC Restrictions: This request header takes effect only for the first append operation. If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. If there is no equal sign (=) in a configuration, the tag value is considered left blank. Value range: None Default value: None

Table 5-101 Server encryption request headers

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs-server- side- encryption	Strin g	No. This hea der is req uire d whe n SSE - KM S is use d.	Explanation: Indicates that SSE-KMS is used. Example: x-obs-server-side-encryption:kms Restrictions: None Value range: • kms • AES256 Default value: None
x-obs-server- side- encryption- kms-key-id	Strin g	No	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs-server- side- encryption- customer- algorithm	Strin g	No. This hea der is req uire d whe n SSE -C is use d.	Explanation: Indicates the encryption algorithm used when SSE-C is used. Example: x-obs-server-side-encryption-customeralgorithm:AES256 Restrictions: This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None
x-obs-server- side- encryption- customer-key	Strin g	No. This hea der is req uire d whe n SSE -C is use d.	Explanation: Indicates the encryption key used when SSE-C is used. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Restrictions: This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None

Header	Typ e	Ma nda tor y (Ye s/N o)	Description
x-obs-server- side- encryption- customer- key-MD5	Strin g	No. This hea der is req uire d whe n SSE -C is use d.	Explanation: Indicates the MD5 value of the encryption key when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Request Elements

This request involves no elements.

Response Syntax

HTTP/1.1 status_code
Date: date
ETag: etag
Content-Length: length

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

□ NOTE

The ETag returns the hash value of the data to be uploaded, not the hash value of the entire object.

Table 5-102 Additional response headers

Header	Туре	Description
x-obs-version-id	String	Explanation:
		Version ID of the object. If versioning is enabled for the bucket, the object version ID will be returned.
		Restrictions:
		None
		Value range:
		None
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side- encryption:kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-kms-key- id		ID of a specified key used for SSE- KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

Header	Туре	Description
x-obs-server-side- encryption- customer-algorithm	String	Explanation: Indicates the encryption algorithm. This header is included in a response when SSE-C is used. Example: x-obs-server-side-encryption-customer-algorithm:AES256 Restrictions: None Value range: AES256 Default value: None
x-obs-server-side- encryption- customer-key-MD5	String	Explanation: Indicates the MD5 value of the key for encrypting objects. This header is included in a response when SSE-C is used. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: None Value range: Base64-encoded MD5 value of the key ID. Default value: None
x-obs-next-append- position	Integer	Explanation: Indicates the position to be provided for the next request. Restrictions: This header is returned when the object is an Appendable object. Value range: None Default value: None

Response Elements

This response contains no elements.

Error Responses

- 1. If the object length exceeds the limit due to the appending upload, OBS returns **400 Bad Request** and the error code is **AppendTooLarge**.
- 2. If the value of position is different from the original length of the current object, OBS returns **409 Conflict** and the error code is **PositionNotEqualToLength**.
- 3. If an object with the same object name exists in a bucket and the object type is not Appendable, OBS returns **409 Conflict** and the error code is **ObjectNotAppendable**.
- 4. If the number of write times of an object exceeds 10000, OBS returns **409 Conflict** and the error code is **ObjectNotAppendable**.
- 5. If the object storage class is **COLD** (Archive) 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/jpg Content-Length: 1458

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:kZoYNv66bsmc10+dcGKw5x2PRrk=

[1458 bytes of object data]

Sample Response: Append Upload

HTTP/1.1 200 OK

Date: Wed, 27 Jun 2015 13:45:50 GMT ETag: "d41d8cd98f00b204e9800998ecf8427e"

Content-Length: 0

Server: OBS

x-obs-request-id: 8DF400000163D3F0FD2A03D2D30B0542

x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRpIrmrJdvcEWvZyjbztdd

x-obs-next-append-position: 1458

Sample Request: Append Upload (with redirect and a User-Defined Header Used)

The bucket **examplebucket** exists but the object **obj001** does not exist. Create an object by making the API call for the append operation. Set the redirection header field as follows: "x-obs-website-redirect-location":"http://www.example.com/", and set the user-defined header field to: "x-obs-meta-redirect":"redirect". The request is as follows:

POST /obj001?append&position=0 HTTP/1.1 Host: examplebucket.obs.*region*.myhuaweicloud.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 H4IPJX0TQTHTHEBQQCEC:kZoYNv66bsmc10+dcGKw5x2PRrk=

[6 bytes of object data]

Sample Response: Append Upload (with redirect and a User-Defined Header Used)

HTTP/1.1 200 OK

Date: Wed, 27 Jun 2015 13:45:50 GMT ETag: "9516dfb15f51c7ee19a4d46b8c0dbe1d"

Content-Length: 0

Server: OBS

x-obs-request-id: 5DEB00000164A3150AC36F8F0C120D50

x-obs-id-2: 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 H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Date: WED, 01 Jul 2015 02:37:22 GMT Content-Type: application/octet-stream

[1458 bytes of object data]

Sample Response: Appending Data to an Object in a Versioning-enabled Bucket

x-obs-id-2: 32AAAQAAEAABSAAqAAEAABAAAQAAEAABCSZbDadL1f7fYU44bvRLvc0l6D10+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>/D</ID>
  </Owner>
  <Delivered>true</Delivered>
  <AccessControlList>
     <Grant>
       <Grantee>
         <ID>/D</ID>
       </Grantee>
       <Permission>permission</Permission>
     </Grant>
  </AccessControlList>
</AccessControlPolicy>
```

Request Parameters

Table 5-103 describes the request parameters.

Table 5-103 Request parameters

Parameter	Description	Mandato ry
versionId	Object version ID. The ACL of the specified object version is to be changed.	No
	Type: string	

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 5-104**.

Table 5-104 Request elements

Element	Description	Mandatory
Owner	Bucket owner information, including the ID Type: XML	Yes
ID	Domain ID of a user. Type: string	Yes
Grant	Container for the grantee and the granted permissions. A single object ACL can contain no more than 100 grants. Type: XML	No
Grantee	Container for the details about the grantee. Type: XML	No
Canned	Grants permissions to all users. Value range: Everyone Type: string	No
Delivered	Indicates whether an object ACL inherits the ACL of a bucket. Type: boolean Default value: true	No
Permission	Authorized permission. Value options: READ, READ_ACP, WRITE_ACP, FULL_CONTROL Type: string	No
AccessControlList	Indicates an ACL, which consists of three elements: Grant , Grantee , and Permission . Type: XML	Yes

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 5-105** may be used.

Table 5-105 Additional response headers

Header	Description
x-obs-version-id	Version number of the object whose ACL is to be modified.
	Type: string

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

Sample Response

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

```
x-obs-request-id: 8DF400000163D3F0FD2A03D2D30B0542
x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRpIrmrJdvcEWvZyjbztdd
Date: WED, 01 Jul 2015 04:42:34 GMT
Content-Length: 0
```

Sample Request: Configuring the ACL for a Specific Object Version

```
PUT /object01?acl&versionId=G001118A6803675AFFFFD3043F7F91D0 HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
<AccessControlPolicy xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
     <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: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp x-obs-request-id: 0000018A2A73AF59D3085C8F8ABF0C65 Server: OBS Content-Length: 0 Date: WED, 01 Jul 2015 02:37:22 GMT x-obs-version-id: G001118A6803675AFFFFD3043F7F91D0
```

5.4.11 Obtaining Object ACL Configuration

Functions

The implementation of this operation returns the ACL configuration of an object. You can perform this operation to view the ACL of an object, as long as you have the read permission for the object ACL.

Versioning

By default, this operation obtains the ACL of the latest version of an object. If the object has a delete marker, status code 404 is returned. To obtain the ACL of a specified version, the **versionId** parameter can be used to specify the desired version.

Request Syntax

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

Request Parameters

The request parameter specifies the object ACL to be obtained. For details about the parameters, see **Table 5-106**.

Table 5-106 Request parameters

Parameter	Description	Mandatory
versionId	Version number of an object.	No
	Type: string	

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 5-107** may be used.

Table 5-107 Additional response header

Header	Description
x-obs-version-id	Version number of an object.
	Valid value: string
	Default value: none

Response Elements

The response message of the request returns the ACL information of the object. **Table 5-108** describes the elements.

Table 5-108 Response elements

Element	Description
ID	User account ID
	Type: string
AccessControlList	List of users and their permissions for the bucket.
	Type: XML
Grant	Identifies the grantee and the permissions of the grantee.
	Type: XML
Grantee	Container for the details about the grantee.
	Type: XML
Delivered	Indicates whether an object ACL inherits the ACL of a bucket.
	Type: boolean
Permission	Permissions of a specified user for the bucket.
	Type: string

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 H4IPJX0TQTHTHEBQQCEC:YcmvNQxItGjFeeC1K2HeUEp8MMM=

Sample Response

```
Server: OBS
x-obs-request-id: 8DF400000163D3E650F3065C2295674C
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCS+wsHqRuA2Tx+mXUpNtBbWLPMle9CIx
Content-Type: application/xml
Date: WED, 01 Jul 2015 04:45:55 GMT
Content-Length: 769
<?xml version="1.0" encoding="utf-8"?>
<AccessControlPolicy xmlns="http://obs.region.myhuaweicloud.com/doc/2015-06-30/">
 <Owner>
  <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
 </Owner>
 <Delivered>false</Delivered>
 <AccessControlList>
  <Grant>
   <Grantee>
    <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
   </Grantee>
   <Permission>FULL_CONTROL</Permission>
  </Grant>
  <Grant>
   <Grantee>
     <ID>783fc6652cf246c096ea836694f71855</ID>
   </Grantee>
   <Permission>READ</Permission>
   </Grant>
  <Grant>
   <Grantee>
     <Canned>Everyone</Canned>
   </Grantee>
   <Permission>READ_ACP</Permission>
  </Grant>
 </AccessControlList>
</AccessControlPolicy>
```

Sample Request: Obtaining the ACL of a Specific Object Version

```
GET /object01?acl&versionId=G001118A6803675AFFFFD3043F7F91D0 HTTP/1.1
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:iqSPeUBl66PwXDApxjRKk6hlcN4=
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Date: WED, 01 Jul 2015 02:37:22 GMT
Content-Type: application/xml
```

Sample Response: Obtaining the ACL of a Specific Object Version

```
x-obs-id-2: 32AAAQAAEAABSAAqAAEAABAAAQAAEAABCSmpL2dv6zZLM2HmUrXKTAi258MPqmrp
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>d6s58yhnm83f3081577800575ee4cf</ID>
  </Owner>
  <Delivered>false</Delivered>
  <AccessControlList>
     <Grant>
       <Grantee>
          <ID>f262a63g69422e8f330af1349c588f</ID>
       </Grantee>
       <Permission>READ</Permission>
    </Grant>
```

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 5-109 Request parameters

Parameter	Typ e	Man dato ry (Yes /No	Description
versionId	Stri ng	No	Explanation: Version ID of the object. Restrictions: None Value range: The value must contain 32 characters. Default value: None

Request Headers

□ NOTE

OBS supports the six HTTP request headers: Cache-Control, Expires, Content-Encoding, Content-Disposition, Content-Type, and Content-Language. It saves these header values in the metadata of the object. When the object is downloaded or queried, the saved values are set for corresponding HTTP headers and returned to the client.

Table 5-110 Request headers

Header	Туре	Man dator y (Yes/ No)	Description
x-obs- metadata- directive	Strin g	Yes	Explanation: Metadata operation directive. Restrictions: If you want to change the storage class of an object by modifying its metadata, x-obsmetadata-directive must be set to REPLACE_NEW. Value range: REPLACE_NEW: The metadata that has an existing value is replaced. A value is assigned to the metadata that does not have a value. The metadata that is not specified remains unchanged. Custom metadata is replaced. REPLACE: All original metadata is replaced by metadata specified in the request. Metadata that is not specified (except for x-obs-storage-class) is deleted. Default value: None
Cache- Control	Strin g	No	Explanation: It specifies the cache behavior of the web page when an object is downloaded. Restrictions: None Value range: See the Cache-Control values defined in HTTP. Default value: None

Header	Туре	Man dator y (Yes/ No)	Description
Content- Disposition	Strin g	No	Explanation: It specifies the name of an object when it is downloaded. Restrictions: None Value range: See the Content-Disposition values defined in HTTP. Default value: None
Content- Encoding	Strin g	No	Explanation: It specifies the content encoding format when an object is downloaded. Restrictions: None Value range: See the Content-Encoding values defined in HTTP. Default value: None
Content- Language	Strin g	No	Explanation: It specifies the content language format when an object is downloaded. Restrictions: None Value range: See the Content-Language values defined in HTTP. Default value: None

Header	Туре	Man dator y (Yes/ No)	Description
Content- Type	Strin g	No	Explanation: It specifies the file type of an object when it is downloaded. Restrictions: None Value range: See the Content-Type values defined in HTTP. Default value: None
Expires	Strin g	No	Explanation: It specifies the expiration time of a cached web page when an object is downloaded. CAUTION This parameter is not used to set the object expiration time, which is set using x-obs-expires. Restrictions: None Value range: See the Expires values defined in HTTP. Default value: None

Header	Туре	Man dator y (Yes/ No)	Description
x-obs- website- redirect- location	Strin g	No	Explanation: If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. In the following example, the request header sets the redirection to an object (anotherPage.html) in the same bucket: x-obs-website-redirect-location:/anotherPage.html In the following example, the request header sets the object redirection to an external URL: x-obs-website-redirect-location:http://www.example.com/ Restrictions: The value must start with a slash (/), http://, or https:// and cannot exceed 2 KB. Value range: None Default value: None
x-obs- storage- class	Strin g	No	Explanation: Specifies the storage class of an object. Example: x-obs-storage-class: STANDARD Restrictions: The value is case-sensitive. Value range: • STANDARD • WARM • COLD • DEEP_ARCHIVE Default value: None

Header	Туре	Man dator y (Yes/ No)	Description
l .	Strin g	No	Explanation: Custom metadata of the object. You can add a header starting with x-obs-meta- in the request to define metadata. The custom metadata will be returned in the response when you retrieve the object or query the object metadata. Example: x-obs-meta-test: test metadata Restrictions: • The total size of all custom metadata cannot
			 exceed 8K. To measure the size, calculate the sum of bytes of all UTF-8 encoded keys and values. The custom metadata keys are case-insensitive, but are stored in lowercase by OBS. The key
			 values are case-sensitive. Both custom metadata keys and their values must conform to US-ASCII standards. If non-ASCII or unrecognizable characters are required, they must be encoded and decoded in URL or Base64 on the client, because the server does not perform such operations.
			Value range:
			None
			Default value:
_			None
x-obs- expires	Integ er	No	Explanation: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. Example: x-obs-expires:3
			Restrictions:
			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.
			Value range:
			The value is an integer greater than 0.
			Default value:
			None

Header	Туре	Man dator y (Yes/ No)	Description
x-obs-	Strin	No	Explanation:
tagging	g		An object's tag information in key-value pairs. Multiple tags can be added at the same time.
			Example: x-obs-tagging:TagA=A&TagB&TagC
			Restrictions:
			 If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded.
			 If there is no equal sign (=) in a configuration, the tag value is considered left blank.
			Value range:
			None
			Default value:
			None

Request Elements

This request involves no elements.

Response Syntax

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

Content-Length: *length* Etag: *etag* Last-Modified: *time*

Response Headers

Table 5-111 Additional response headers

Header	Typ e	Description
x-obs-	Stri	Explanation:
metadata-	ng	Metadata operation directive.
directive		Value range:
		REPLACE_NEW: The metadata that has an existing value is replaced. A value is assigned to the metadata that does not have a value. The metadata that is not specified remains unchanged. Custom metadata is replaced.
		REPLACE: All original metadata is replaced by metadata specified in the request. Metadata that is not specified (except for x-obs-storage-class) is deleted.
		Default value:
		None
Cache-Control	Stri	Explanation:
	ng	It specifies the cache behavior of the web page when an object is downloaded.
		Restrictions:
		If a request carries this header field, the response message must contain this header field.
		Value range:
		See the Cache-control values defined in HTTP.
		Default value:
		None
Content-	Stri	Explanation:
Disposition	ng	It specifies the name of an object when it is downloaded.
		Restrictions:
		If a request carries this header field, the response message must contain this header field.
		Value range:
		See the Content-Disposition values defined in HTTP.
		Default value:
		None

Header	Typ e	Description
Content-	Stri	Explanation:
Encoding	ng	It specifies the content encoding format when an object is downloaded.
		Restrictions:
		If a request carries this header field, the response message must contain this header field.
		Value range:
		See the Content-Encoding values defined in HTTP.
		Default value:
		None
Content-	Stri	Explanation:
Language	ng	It specifies the content language format when an object is downloaded.
		Restrictions:
		If a request carries this header field, the response message must contain this header field.
		Value range:
		See the Content-Language values defined in HTTP.
		Default value:
		None
Expires	Stri	Explanation:
	ng	It specifies the expiration time of a cached web page when an object is downloaded.
		Restrictions:
		If a request carries this header field, the response message must contain this header field.
		Value range:
		See the Expires values defined in HTTP.
		Default value:
		None

Header	Typ e	Description
x-obs-website-	Stri	Explanation:
redirect- location	ng	If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL.
		In the following example, the request header sets the redirection to an object (anotherPage.html) in the same bucket:
		x-obs-website-redirect-location:/anotherPage.html
		In the following example, the request header sets the object redirection to an external URL:
		x-obs-website-redirect-location:http:// www.example.com/
		Restrictions:
		If a request carries this header field, the response message must contain this header field.
		 The value must start with a slash (/), http://, or https:// and cannot exceed 2 KB.
		Value range:
		None
		Default value:
		None
x-obs-storage-	Stri	Explanation:
class	ng	It specifies the storage class of an object.
		Restrictions:
		 If a request carries this header field, the response message must contain this header field.
		The value is case-sensitive.
		Value range:
		STANDARD
		WARM
		• COLD
		DEEP_ARCHIVE
		Default value:
		None

Header	Typ e	Description	
x-obs-meta-*	Stri	Explanation:	
	ng	Custom metadata of the object. You can add custom metadata headers that start with x-obs-meta- for easy object management. When you retrieve or query the metadata of the object, the added custom metadata headers will be returned in the response.	
		Restrictions:	
		If a request carries this header field, the response message must contain this header field.	
		 The total size of all custom metadata cannot exceed 8K. To measure the size, calculate the sum of bytes of all UTF-8 encoded keys and values. 	
		 The custom metadata keys are case-insensitive, but are stored in lowercase by OBS. The key values are case-sensitive. 	
		Both custom metadata keys and their values must conform to US-ASCII standards. If non-ASCII or unrecognizable characters are required, they must be encoded and decoded in URL or Base64 on the client, because the server does not perform such operations.	
		Value range:	
		None	
		Default value:	
		None	
x-obs-expires	Inte	Explanation:	
	ger	Specifies when an object expires. It is measured in days.	
		Restrictions:	
			 The value must be greater than the number of days that have passed since the object was created. For example, if the object was uploaded 10 days ago, you must specify a value greater than 10.
		If a request carries this header field, the response message must contain this header field.	
		Value range:	
		The value is an integer greater than 0.	
		Default value:	
		None	

Response Elements

This response contains no elements.

Error Responses

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

Sample Request: 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 H4IPJX0TQTHTHEBQQCEC:NxtSMS0jaVxlLnxlO9awaMTn47s=x-obs-metadata-directive:REPLACE
Content-Type:application/zip

Sample Response: Deleting Metadata of an Object

HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D3E4BB5905C41B6E65B6
Accept-Ranges: bytes
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSD3nAiTaBoeyt9oHp9vTYtXnLDmwV6D
Date: WED, 01 Jul 2015 04:19:21 GMT
Content-Length: 0
x-obs-metadata-directive:REPLACE

5.4.13 Modifying an Object

Functions

This operation can modify an object from a specified position.

□ NOTE

This API is supported only by parallel file systems. For details about how to create a parallel file system, see **Sample Request: Creating a Parallel File System**.

Request Syntax

PUT /ObjectName?modify&position=Position HTTP/1.1 Host: bucketname.obs.region.myhuaweicloud.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 5-112** describes the parameters.

Table 5-112 Request parameters

Parameter	Description	Mandator y
modify	Indicates that the file is uploaded for modification. Type: string	Yes
position	Position in the object where the modification starts Type: integer	Yes

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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCTjCqTmsA1XRpIrmrJdvcEWvZyjbztd

5.4.14 Truncating an Object

Functions

This operation can truncate an object to a specified size.

Ⅲ 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 5-113** describes the parameters.

Table 5-113 Request parameters

Parameter	Description	Mandat ory
truncate	Indicates that the upload is for truncation. Type: string	Yes
length	Size of the object after the truncation Type: integer	Yes

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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSgkM4Dij80gAeFY8pAZIwx72QhDeBZ5
Date: WED, 01 Jul 2015 04:19:21 GMT

5.4.15 Renaming an Object

Functions

This operation can rename an object.

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 5-114** describes the parameters.

Table 5-114 Request parameters

Parameter	Description	Mandato ry
name	New name for the object. Use the absolute path. Type: string	Yes
rename	Indicates that this is a renaming operation. Type: string	Yes

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: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSgkM4Dij80gAeFY8pAZlwx72QhDeBZ5

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

Request Parameters

Table 5-115 describes the parameters in the request.

Table 5-115 Request parameters

Parameter	Description	Mandato ry
tagging	Indicates an object tagging request. Type: string	Yes

Parameter	Description	Mandato ry
versionId	ID of the object version that the tag will be added to. Its response header is x-obs-version-id .	No
	Type: string	

Request Headers

Table 5-116 describes the headers in the request.

Table 5-116 Request headers

Header	Description	Mandato ry
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.	Yes
	Type: string	
	Example: n58IG6hfM7vqI4K0vnWpog==	

Request Elements

In this request body, you need to configure the object tags in XML. **Table 5-117** describes the tag elements to be configured.

Table 5-117 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

Header	Description	Mandatory
Key	Tag name	Yes
	Type: string	
	Parent: Tag	
Value	Tag value	Yes
	Type: string	
	Parent: Tag	

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 5-118** lists the common errors and possible causes.

Table 5-118 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>
<TagSet>
<Key>TagName1</Key>
<Value>TageSetVaule1</Value>
</Tag>
</TagSet>
</TagSet>
```

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**.

Ⅲ 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

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

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 5-117**.

Error Responses

In addition to common error codes, this API also returns others. **Table 5-119** lists the common errors and possible causes.

Table 5-119 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>
  <TagSet>
  <Key>TagName1</Key>
  <Value>TageSetVaule1</Value>
  </Tag>
  </TagSet>
</TagSet>
</TagSet>
```

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

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
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=G001018455096CE600005306000000DD HTTP/1.1 User-Agent: curl/7.19.7 Accept: */*
Date: Wed, 27 Jun 2018 13:46:58 GMT Authorization: authorization string

Sample Response

HTTP/1.1 204 No Content x-obs-request-id: 0002B7532E0000015BEB2C212E53A17L x-obs-id-2: CqT+86nnOkB+Cv9KZoVgZ28pSgMF+uGQBUC68flvkQeq6CxoCz65wWFMNBpXvea4 x-obs-version-id: 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.

- When you upload an object, if you do not configure a protection period or apply the default bucket-level protection rule to the object, you can perform this operation to configure a protection period for the object.
- When you upload an object, if you configure a protection period or apply the default bucket-level protection rule to the object, you can perform this operation to prolong the protection period for the object.
- The protection period of an object can only be modified, but not deleted.

□ NOTE

To configure or update the protection 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 HTTP/1.1
Host: bucketname.obs.region.myhuaweicloud.com
Date: date
Authorization: authorization

<Retention>
  <Mode>String</Mode>
  <RetainUntilDate>Timestamp</RetainUntilDate>
```

Request Parameters

Table 5-120 describes the parameters.

Table 5-120 Request parameters

Parameter	Description	Mandato ry
versionId	ID of the object version requested. If this header is not carried, this operation applies to the current object version.	No
	Type: string	

Request Headers

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

Request Elements

Element	Description	Mandatory
Retention	Container for configuring an object-level WORM retention policy. Type: container	Yes

Element	Description	Mandatory
Mode	Protection mode for the object. It can only be set to COMPLIANCE now.	Yes
	Type: string	
	Example: COMPLIANCE	
RetainUntilDate	NOTE The value of this field must be later than the current time and can be extended but not shortened.	Yes
	Example: 1435728035000	

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 5-121 describes possible special errors in this request.

Table 5-121

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
MalformedObjectLockEr- ror	Invalid format of the Object Lock configuration.	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 H4IPJX0TQTHTHEBQQCEC:75/Y4Ng1izvzc1nTGxpMXTE6ynw=

Content-Type: application/xml

Content-Length: 157

<Retention>

<Mode>COMPLIANCE</Mode>

<RetainUntilDate>1435728035000</RetainUntilDate>

</Retention>

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BF260000016435CE298386946AE4C482

x-obs-id-2: 32AAAQAAEAABSAAgAAEAABAAAQAAEAABCT9W2tcvLmMJ+plfdopaD62S0npbaRUz

Date: WED, 01 Jul 2015 02:25:06 GMT

Content-Length: 0

5.5 Operations on Multipart Upload

5.5.1 Listing Initiated Multipart Uploads in a Bucket

Functions

You can use this API to query all initiated multipart uploads that have not been completed or canceled in a bucket.

Request Syntax

GET /?uploads&max-uploads=max HTTP/1.1

Host: bucketname.obs.region.myhuaweicloud.com

Date: date

Authorization: authorization

Request Parameters

This request uses parameters to specify the query range for multipart uploads. **Table 5-122** describes the parameters.

Table 5-122 Request parameters

Parameter	Description	Mandato ry
delimiter	For a multipart upload that contains delimiters, the string between the first character and the first delimiter in the object name (excluding the prefix specified in the request, if any) are returned as CommonPrefix . Multipart uploads with objects that contain CommonPrefix are considered as a group and returned as one record. The record contains no information about the tasks, only informing the user that the group involves multipart uploads. Type: string	No
prefix	If a prefix is specified, the response only contains tasks whose names start with the prefix value. Type: string	No
max-uploads	Maximum number of multipart upload tasks returned. The value ranges from 1 to 1000. If the value has exceeded this range, 1000 tasks are returned by default. Type: integer	No
key-marker	Lists multipart uploads that follow the value of key-marker . Type: string	No
upload-id- marker	Lists multipart tasks that follow the value of upload-id-marker in key-marker. This parameter only functions together with key-marker. Type: string	No
encoding-type	Encodes some elements in the response based on the specified type. 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. Type: string Value option: url	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
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
  <Upload>
     <Key>key</Key>
    <UploadId>uploadID</UploadId>
    <Initiator>
       <ID>domainID/domainID:userID/userID</ID>
     <Owner>
       <ID>ownerID</ID>
    <StorageClass>storageclass</StorageClass>
    <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 5-123** describes the elements.

Table 5-123 Response elements

Element	Description		
ListMultipartUploadsResult	Container for responses of requests. Type: container Child: Bucket, KeyMarker, UploadIdMarker, NextKeyMarker, NextUploadIdMarker, MaxUploads, Delimiter, Prefix, Upload, CommonPrefixes, and IsTruncated Parent: none		
Bucket	Name of the bucket to which the multipart upload was initiated Type: string Parent: ListMultipartUploadsResult		

Element	Description
EncodingType	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. Type: string Parent: ListMultipartUploadsResult
Kauh Aardrau	
KeyMarker	Object keys at or after which the multipart upload listing begins Type: string Parent: ListMultipartUploadsResult
UploadIdMarker	Upload ID after which the multipart upload listing begins Type: string Parent: ListMultipartUploadsResult
NextKeyMarker	Value of KeyMarker in a subsequent request after a multipart upload list is truncated Type: string Parent: ListMultipartUploadsResult
NextUploadIdMarker	Value of UploadMarker in a subsequent request when a multipart upload list is truncated. Type: string Parent: ListMultipartUploadsResult
MaxUploads	Maximum of multipart uploads to be returned in the response Type: integer Parent: ListMultipartUploadsResult
IsTruncated	Indicates whether the returned list of multipart uploads is truncated. The value true indicates that the list was truncated and false indicates that the list was not truncated. Type: boolean Parent: ListMultipartUploadsResult
Upload	Container for elements related to a specific multipart upload Type: container Child: Key, UploadId, InitiatorOwner, StorageClass, and Initiated Parent: ListMultipartUploadsResult

Element	Description		
Key	Indicates the name of the object for which a multipart upload is initiated. Type: string Parent: Upload		
UploadId	ID of the multipart upload Type: string Parent: Upload		
Initiator	Container element that identifies who initiated the multipart upload Child: ID Type: container Parent: Upload		
ID	ID of the account to which the owner belongs. Type: string Parent: Initiator or Owner		
Owner	Owner of the part. Type: container Child: ID Parent: Upload		
StorageClass	Indicates the storage class that will be used for storing an object when the multipart is uploaded. Type: string Parent: Upload		
Initiated	Date and time when the multipart upload was initiated Type: date Parent: Upload		
ListMultipartUploadsRe- sult.Prefix	- Specified prefix in a request. Type: string Parent: ListMultipartUploadsResult		
Delimiter	Delimiter in a request. Type: string Parent: ListMultipartUploadsResult		

Element	Description	
CommonPrefixes	Indicates group information. If you specify a delimit in the request, the response contains group information in CommonPrefixes .	
	Type: container	
	Parent: ListMultipartUploadsResult	
CommonPrefixes. Prefix	Indicates a different prefix in the group information in CommonPrefixes .	
	Type: string	
	Parent: CommonPrefixes	

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: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSDaHP+a+Bp0RI6Mm9XvCOrf7q3qvBQW

Content-Type: application/xml Date: WED, 01 Jul 2015 04:51:21 GMT

Content-Length: 681

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

<ListMultipartUploadsResult xmlns="http://obs.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/b4bf1b36d9ca43d984fbcb9491b6fce9:userID/71f390117351534r88115ea2c26d1999</ID>
- <Owner>
- <ID>b4bf1b36d9ca43d984fbcb9491b6fce9</ID>
- </Owner>
- <StorageClass>STANDARD</StorageClass>
- <Initiated>2015-07-01T02:30:54.582Z</Initiated>

</Upload> </ListMultipartUploadsResult>

Sample Request: Listing Initiated Multipart Uploads (with a Prefix and Delimiter Specified)

The following example describes how to list two initiated multipart uploads (with objects multipart-object001 and part2-key02 in bucket examplebucket. In this listing operation, prefix is set to multipart and object001 is set to delimiter.

GET /?uploads&delimiter=object001&prefix=multipart HTTP/1.1 User-Agent: curl/7.29.0 Host: examplebucket.obs.*region*.myhuaweicloud.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 5-124** describes the parameters.

Table 5-124 Request parameters

Parameter	Туре	Ma nda tory (Yes /No	Description
uploads	Strin g	Yes	 Explanation: Indicates a multipart upload. Restrictions: This parameter is an empty string. If this parameter is not included, the request is treated as an ordinary POST upload. Value range:
			An empty string. Default value: None

Parameter	Туре	Ma nda tory (Yes /No	Description
encoding-type	Strin	No	Explanation:
	g		Encoding type for Key in the response. If Key in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode Key .
			Restrictions:
			None
			Value range:
			URL
			Default value:
			None. If you do not specify this parameter, encoding is not applied.

Request Headers

The request can use additional headers shown in Table 5-125.

Table 5-125 Request headers

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-acl	Stri ng	No	Explanation: When initiating a multipart upload, you can add this header to set an object ACL. Example: x-obs-acl: public-read-write Restrictions: Use character strings. Value range: • private • public-read • public-read-write For details about each policy, see the "Configuring an ACL Using Header Fields" section in ACLs. Default value:
x-obs-grant- read	Stri ng	No	Explanation: When initiating a multipart upload, you can use this header to grant all users in a domain the permissions to read the object and obtain the object metadata. Example: x-obs-grant-read: ID=domainID. Restrictions: Use commas (,) to separate multiple domains. Value range: None Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-grant- read-acp	Stri ng	No	Explanation: When initiating a multipart upload, you can use this header to grant all users in a domain the permissions to obtain the object ACL. Example: x-obs-grant-read-acp: ID=domainID. Restrictions: Use commas (,) to separate multiple domains. Value range: None Default value: None
x-obs-grant- write-acp	Stri ng	No	Explanation: When initiating a multipart upload, you can use this header to grant all users in a domain the permissions to write the object ACL. Example: x-obs-grant-write-acp: ID=domainID Restrictions: Use commas (,) to separate multiple domains. Value range: None Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-grant- full-control	Stri ng	No	Explanation: When initiating a multipart upload, you can use this header to grant all users in a domain the following permissions: Permissions to read objects, obtain object metadata, obtain object ACLs, and write object ACLs. Example: x-obs-grant-full-control: ID=domainID. Restrictions: Use commas (,) to separate multiple domains. Value range: None Default value: None
x-obs-storage- class	Stri ng	No	Explanation: When initiating a multipart upload, you can add this header to specify the storage class for the object. Example: x-obs-storage-class: STANDARD Restrictions: If you do not use this header, the object storage class is the default storage class of the bucket. The value is case-sensitive. Value range: STANDARD WARM COLD DEEP_ARCHIVE Default value: By default, the storage class of the bucket is inherited.

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-	Stri	No	Explanation:
persistent- headers	ng		When initiating a multipart upload, you can add the x-obs-persistent-headers 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.
			Restrictions:
			 Response headers customized in this way cannot be prefixed with x-obs For example, you should use key1 instead of x-obs-key1.
			 Standard HTTP headers, such as host, content-md5, origin, range, and Content- Disposition, cannot be specified as user- defined headers.
			The total length of this header and the custom metadata cannot exceed 8 KB.
			 If multiple values are passed for the same key, they are separated by commas (,) and returned all at once for that key.
			 If the decoded value contains non-US-ASCII or unrecognizable characters, the server processes the value as a string and encapsulates it using ?UTF-8?B?<(str)>?=, but does not decode the value. For instance, value key1:abbc will be returned as key1:=?UTF-8? B?abbc?= in the response.
			• The values cannot contain spaces, equal signs (=), commas (,), semicolons (;), colons (:), or periods (.). If such characters are required, use URL or Base64 encoding.
			 Format: x-obs-persistent-headers: key1:base64_encode(value1),key2:base64_e ncode(value2) Note: Items, such as key1 and key2, 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

Header	Typ e	Ma nda tory (Yes /No	Description
			value1 and value2 are the values of the corresponding headers. base64_encode 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 x-obs-persistent-headers header. The server then decodes the uploaded value.
			Example: x-obs-persistent-headers: key1:dmFsdWUx,key2:dmFsdWU
			After all parts in the multipart upload are assembled, headers key1: value1 and key2: value2 will be returned, respectively, when you download the object and obtain the object metadata.
			Value range:
			None
			Default value:
			None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-website-redirect-location	Stri	No	Explanation: If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. To another object in the same bucket: x-obs-website-redirect-location:/ anotherPage.html To an external URL: x-obs-website-redirect-location:http:// www.example.com/ OBS obtains the specified value from the header and stores it in the object metadata WebsiteRedirectLocation. Restrictions: The value must start with a slash (/), http://, or https:// and cannot exceed 2 KB. OBS supports redirection for objects in the root directory of a bucket, not for those in folders. Default value:
x-obs-server- side-encryption	Stri ng	No. This hea der is requ ired whe n SSE- KM S is use d.	None Explanation: Indicates that SSE-KMS is used. Example: x-obs-server-side-encryption: kms Restrictions: None Value range: • kms • AES256 Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption- kms-key-id	Stri ng	No	Explanation: ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key. Restrictions: This header can only be used when you specify kms for the x-obs-server-side-encryption header. Default value: If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server- side- encryption- customer- algorithm	Stri ng	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: The algorithm used for encryption. Example: x-obs-server-side-encryption-customer-algorithm: AES256 Restrictions: This header is used only when SSE-C is used. This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-server- side- encryption- customer-key	Stri	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: The key used for encrypting an object. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None
x-obs-server- side- encryption- customer-key- MD5	Stri ng	No. This hea der is requ ired whe n SSE- C is use d.	Explanation: The MD5 value of the encryption key. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is used only when SSE-C is used. This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-expires	Inte ger	No	Explanation: Specifies when an object expires. It is measured in days. Once the object expires, it is automatically deleted. (The calculation starts from when the object was last modified). Example: x-obs-expires:3 Restrictions: This parameter can be configured only when uploading the object. It cannot be modified by calling a metadata modification API. Value range: An integer greater than or equal to 0, in days Default value: None
x-obs-tagging	Stri ng	No	Explanation: An object's tag information in key-value pairs. Multiple tags can be added at the same time. Example: x-obs-tagging:TagA=A&TagB&TagC Restrictions: If a tag key or value contains special characters, equal signs (=), or full-width characters, it must be URL-encoded. If there is no equal sign (=) in a configuration, the tag value is considered left blank. Value range: None Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-object- lock-mode	Stri ng	No, but requ ired whe n x-obs-obje ct-lock - reta in-unti l-dat e is pres ent.	Explanation: WORM mode to be applied to an object. Example: x-obs-object-lock-mode:COMPLIANCE Restrictions: This parameter must be used together with x-obs-object-lock-retain-until-date. Value range: Only COMPLIANCE (compliance mode) is supported. Default value: None
x-obs-object- lock-retain- until-date	Stri ng	No, but required whe n x-obs-obje ct-lock - mo de is present.	Explanation: When the WORM policy of the object expires. Example: x-obs-object-lock-retain-until-date:2015-07-01T04:11:15Z Restrictions: • The value must be a UTC time that complies with the ISO 8601 standard. Example: 2015-07-01T04:11:15Z • This parameter must be used together with x-obs-object-lock-mode. Value range: The time must be later than the current time. Default value: None

Header	Typ e	Ma nda tory (Yes /No	Description
x-obs-meta-*	Stri	No	Explanation:
	ng		When initiating a multipart upload, you can use a header starting with x-obs-meta- in the HTTP request to define object metadata for easy management. The custom metadata will be returned in the response when you retrieve the object or query the object metadata. For details, see Managing Object Metadata .
			Example: x-obs-meta-test: test metadata
			Restrictions:
			This parameter can only be passed in HTTP request headers and cannot exceed 8 KB.
			Value range:
			None
			Default value:
			None

For details about other common message headers, see Table 3-3.

Request Elements

This request involves no elements.

Response Syntax

Response Headers

The response to the request uses common headers. For details, see Table 3-29.

Table 5-126 Additional response headers

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side-encryption: kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-kms-key-id		ID of a specified key used for SSE-KMS
		encryption. For details about how to obtain a key ID, see Viewing a Key .
		Restrictions:
		This header can only be used when you
		specify kms for the x-obs-server-side- encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-	String	Explanation:
encryption-customer-		The algorithm used for encryption.
algorithm		Example: x-obs-server-side-encryption-customer-algorithm: AES256
		Restrictions:
		This header is included in a response if SSE-C is used for server-side encryption.
		Value range:
		AES256
		Default value:
		None

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption-customer-		The MD5 value of the encryption key.
key-MD5		Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==
		Restrictions:
		This header is included in a response if SSE-C is used for server-side encryption.
		Value range:
		Base64-encoded MD5 value of the key ID.
		Default value:
		None

Response Elements

This response contains elements that indicate the multipart upload ID and the bucket and object names, which are used for uploading and assembling parts. **Table 5-127** describes the elements.

Table 5-127 Response elements

Element	Typ e	Description
InitiateMultipartU- ploadResult	XM L	Explanation: Container of a multipart upload task. Restrictions: None Value range: None Default value: None

Element	Typ e	Description	
Bucket	e Stri ng	Explanation: Indicates the bucket name in the multipart upload. Restrictions: A bucket name must be unique across all accounts and regions. A bucket name: Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. Cannot be formatted as an IP address. Cannot start or end with a hyphen (-) or period (.). Cannot contain two consecutive periods (), for example, mybucket. Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, mybucket or mybucket. 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. Value range: None	
		Default value: None	
Key	Stri ng	Explanation: Name of the object in the multipart upload. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the access path is examplebucket.obs.apsoutheast-1.myhuaweicloud.com/folder/test.txt, the object name is folder/test.txt. Restrictions: See Object Overview. Value range: The value must contain 1 to 1,024 characters. Default value: None	

Element	Typ e	Description	
UploadId	Stri ng	Explanation: ID of the multipart upload, which is used to specify a multipart upload in uploading parts Restrictions: None Value range: The value must contain 1 to 32 characters. Default value: None	
EncodingType	Stri ng	Explanation: Encoding type of the key of an object. If encoding-type is specified in the request, the Key in the response is encoded. Restrictions: None Value range: URL Default value: None. If you do not specify this parameter, encoding is not applied.	

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:VGhpcyBtZXNzYWdlIHNpZ25lZGGieSRlbHZpbmc=

Sample Response: Initiating a Multipart Upload (with the ACL Configured)

HTTP/1.1 200 OK

Server: OBS

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTnv+daB51p+lVhAvWN7s5rSKhcWqDFs

x-obs-request-id: BB78000001648457112DF37FDFADD7AD

Date: WED, 01 Jul 2015 05:15:43 GMT

Content-Length: 303

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

<InitiateMultipartUploadResult xmlns="http://obs.region.myhuaweicloud.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 5-128** describes the parameters.

Table 5-128 Request parameters

Parameter	Туре	Ma nda tory (Yes /No	Description
partNumber	Integ er	Yes	Explanation: Indicates the ID of a part to be uploaded. Restrictions: None Value range: An integer ranging from 1 to 10000. Default value: None
uploadId	Strin g	Yes	Explanation: Indicates a multipart upload ID. Restrictions: None Value range: None Default value: None

Request Headers

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

Table 5-129 Server-side encryption request headers

Header	Туре	Mand atory (Yes/ No)	Description
x-obs-server-side-encryption-customer-algorithm	Strin g	No. This heade r is required when SSE-C is used. The encry ption algorithm must be the same as that used to initiate multipart upload tasks.	Explanation: The algorithm used for encryption. Example: x-obs-server-side-encryption-customer-algorithm:AES256 Restrictions: Indicates the encryption algorithm used when SSE-C is used. This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5. Value range: AES256 Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs-server-side-encryption- customer-key	Strin g	No. This heade r is requir ed when SSE-C is used. The key must be the same as that used to initiat e multi part uploa d tasks.	Explanation: The key used for encrypting an object. Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Restrictions: This header is used only when SSE-C is used for encryption. This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key-MD5. Value range: None Default value: None

Header	Туре	Mand atory (Yes/ No)	Description
x-obs-server-side-encryption-customer-key-MD5	Strin g	No. This heade r is requir ed when SSE-C is used. The MD5 value must be the same as that used to initiat e multi part uploa d tasks.	Explanation: The MD5 value of the encryption key. The MD5 value is used to check whether any error occurs during the transmission of the key. Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Restrictions: This header is used only when SSE-C is used for encryption. This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key. Value range: Base64-encoded MD5 value of the key ID. Default value: None

Request Elements

This request involves no elements.

Response Syntax

HTTP/1.1 status_code
Date: date
ETag: etag
Content-Length: length

Response Headers

The response to the request uses common headers. For details, see **Table 3-29**.

Table 5-130 Additional response headers

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side- encryption:kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption-kms-key- id		ID of a specified key used for SSE- KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-	String	Explanation:
encryption-		The algorithm used for encryption.
customer-algorithm		Example: x-obs-server-side- encryption-customer- algorithm:AES256
		Restrictions:
		This header is included in a response if SSE-C is used for serverside encryption.
		Value range:
		AES256
		Default value:
		None

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption- customer-key-MD5		The MD5 value of the encryption key.
		Example: x-obs-server-side- encryption-customer-key- MD5:4XvB3tbNTN+tIEVa0/fGaQ==
		Restrictions:
		This header is included in a response if SSE-C is used for serverside encryption.
		Value range:
		Base64-encoded MD5 value of the key ID.
		Default value:
		None

Response Elements

This response contains no elements.

Error Responses

- 1. If a part number is not within the range from 1 to 10000, OBS returns **400 Bad Request**.
- 2. If a part size has exceeded 5 GB, the error code **400 Bad Request** is returned.
- 3. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
- 4. Check whether the bucket exists. If the bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
- 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 H4IPJX0TQTHTHEBQQCEC:ZB0hFwaHubi1aKHv7dSZjJts40g=

Content-Length: 102015348
[102015348 Byte part content]

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 8DF400000163D40956A703289CA066F1

ETag: "b026324c6904b2a9cb4b88d6d61c81d1"

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCUQu/EOEVSMa04GXVwy0z9WI+BsDKvfh

Date: WED, 01 Jul 2015 05:15:55 GMT

Content-Length: 0

Sample Request: Uploading a Part, with Server-Side Encryption Headers Included

PUT /object02?partNumber=1&uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 05:15:55 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:ZB0hFwaHubi1aKHv7dSZjJts40g=

Content-Length: 102015348

x-obs-server-side-encryption-customer-key: g0lCfA3Dv40jZz5SQJ1ZukLRFqtd093ksp192

x-obs-server-side-encryption-customer-key-MD5: Eo93ne1X/iTcs0132

x-obs-server-side-encryption-customer-algorithm: AES256

[102015348 Byte part content]

Sample Response: Uploading a Part, with Server-Side Encryption Headers Included

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 8DF400000163D40956A703289CA066F1

ETag: "b026324c6904b2a9cb4b88d6d61c81d1"

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCUQu/EOEVSMa04GXVwy0z9WI+BsDKvfh

Date: WED, 01 Jul 2015 05:15:55 GMT

Content-Length: 0

x-obs-server-side-encryption-customer-algorithm: AES256

x-obs-server-side-encryption-customer-key-MD5: Eo93ne1X/iTcs0132

5.5.4 Copying Parts

Functions

After a multipart upload task is created, you can upload parts for this task using the obtained multipart upload ID. Alternatively, you can make an API call to copy part or all of an 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 5-131** describes the parameters.

Table 5-131 Request parameters

Parameter	Description	Mandatory
partNumber	Indicates the ID of a part to be uploaded. Type: integer	Yes
uploadId	Indicates a multipart upload ID. Type: string	Yes

Request Headers

In addition to the common message headers, the request uses two extended headers. **Table 3-3** describes the common message header.

Table 5-132 Request headers

Header	Description	Mandatory
x-obs-copy-source	Indicates the source object to be copied. Type: string	Yes
x-obs-copy-source-range	Indicates the range of bytes (start - end) to be copied from the source object. start indicates the start byte of the part to be copied and end indicates the end byte. Type: integer	No
x-obs-server-side- encryption-customer- algorithm	Indicates the encryption algorithm for the part copy when SSE-C is used. Type: string	No. This header is required when SSE-C is used. The encryption algorithm must be the
	Example: x-obs-server- side-encryption- customer- algorithm:AES256	same as that used to initiate multipart upload tasks.
	Constraint: This header must be used together with x-obs-server-side-encryption-customer-key and x-obs-server-side-encryption-customer-key-MD5.	

Header	Description	Mandatory
x-obs-server-side- encryption-customer-key	Indicates the key for encrypting the part copy when SSE-C is used. Type: string Example: x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca2 7fsNkUnNVaobncnLht/rCB2o/9Cw= Constraint: This header is a Base64-encoded 256-bit key and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-livery MDE	No. This header is required when SSE-C is used. The key must be the same as that used to initiate multipart upload tasks.
x-obs-server-side- encryption-customer- key-MD5	Indicates the MD5 value of the key for encrypting the part copy when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key. Type: string Example: x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ== Constraint: This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-server-side-encryption-customer-algorithm and x-obs-server-side-encryption-customer-key.	No. This header is required when SSE-C is used. The MD5 value must be the same as that used to initiate multipart upload tasks.

Header	Description	Mandatory
x-obs-copy-source- server-side-encryption- customer-algorithm	Indicates the algorithm for the source object when SSE-C is used. Type: string Example: x-obs-copy-source-server-side-encryption-customer-algorithm:AES256 Constraint: This header must be used together with x-obs-copy-source-server-side-encryption-customer-key and x-obs-copy-source-server-side-encryption-customer-key-MD5.	No. This header is required when SSE-C is used to copy a source object.
x-obs-copy-source- server-side-encryption- customer-key	Indicates the key for decrypting the source object when SSE-C is used. Type: string Example: x-obs-copy-source-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw= Constraint: This header is a Base64-encoded 256-bit key and must be used together with x-obs-copy-source-server-side-encryption-customer-algorithm and x-obs-copy-source-server-side-encryption-customer-key-MD5.	No. This header is required when SSE-C is used to copy a source object.

Header	Description	Mandatory
x-obs-copy-source- server-side-encryption- customer-key-MD5	Indicates the MD5 value of the key for the source object when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key.	No. This header is required when SSE-C is used to copy a source object.
	Type: string Example: x-obs-copy- source-server-side- encryption-customer- key-MD5:4XvB3tbNTN +tIEVa0/fGaQ==	
	Constraint: This header is a Base64-encoded 128-bit MD5 value and must be used together with x-obs-copy-source-server-side-encryption-customer-algorithm and x-obs-copy-source-server-side-encryption-customer-key.	
x-obs-copy-source-if- match	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. Type: string	No
	Example: x-obs-copy-source-if-match: etag Constraint: This header can be used with x-obs-copy-source-if-unmodified-since but not other conditional copy headers.	

Header	Description	Mandatory
x-obs-copy-source-if- none-match	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.	No
	Type: string	
	Example: x-obs-copy- source-if-none-match: etag	
	Constraint: This header can be used with x-obs-copy-source-if-modified-since but not other conditional copy headers.	

Header	Description	Mandatory
x-obs-copy-source-if- unmodified-since	Indicates that the source object is copied only if it has not been modified since the time specified by this header. Otherwise, a 412 status code (failed precondition) is returned. This header can be used with x-obs-copy-source-if-match but not other conditional copy headers. Type: string	No
	Format: HTTP time string complying with the format specified at http://www.ietf.org/rfc/rfc2616.txt, which can be any of the following: 1. EEE, dd MMM yyyy	
	HH:mm:ss z 2. EEEE, dd-MMM-yy	
	HH:mm:ss z	
	3. EEE MMM dd HH:mm:ss yyyy	
	Examples:	
	1. x-obs-copy-source-if- unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT	
	2. x-obs-copy-source-if- unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT	
	3. x-obs-copy-source-if- unmodified-since: Sun Nov 6 08:49:37 1994	
	Constraint: The time specified by this header cannot be later than the current server time (GMT time), or this header does not take effect.	

Header	Description	Mandatory
x-obs-copy-source-if- modified-since	Indicates that the source object is copied only if it has been modified since the time specified by this header. Otherwise, a 412 status code (failed precondition) is returned. This header can be used with x-obs-copy-source-if-none-match but not other conditional copy headers.	No
	Type: string Format: HTTP time string complying with the format specified at http://www.ietf.org/rfc/rfc2616.txt, which can be any of the following: 1. EEE, dd MMM yyyy HH:mm:ss z	
	2. EEEE, dd-MMM-yy HH:mm:ss z	
	3. EEE MMM dd HH:mm:ss yyyy	
	Examples:	
	1. x-obs-copy-source-if- unmodified-since: Sun, 06 Nov 1994 08:49:37 GMT	
	2. x-obs-copy-source-if- unmodified-since: Sunday, 06-Nov-94 08:49:37 GMT	
	3. x-obs-copy-source-if- unmodified-since: Sun Nov 6 08:49:37 1994	
	Constraint: The time specified by this header cannot be later than the current server time (GMT time), or this header does not take effect.	

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 5-133 Additional response headers

Header	Description
x-obs-server-side-encryption	This header is included in a response if SSE-KMS is used.
	Type: string
	Example: x-obs-server-side- encryption:kms
x-obs-server-side-encryption-kms-key-	Explanation:
id	ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
	Restrictions:
	This header can only be used when you specify kms for the x-obs-server-side-encryption header.
	Default value:
	If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-encryption-customer- algorithm	Indicates the encryption algorithm. This header is included in a response when SSE-C is used.
	Type: string
	Example: x-obs-server-side- encryption-customer- algorithm:AES256

Header	Description
x-obs-server-side-encryption-customer- key-MD5	Indicates the MD5 value of the key for encrypting objects. This header is included in a response when SSE-C is used.
	Type: string
	Example: x-obs-server-side- encryption-customer-key- MD5:4XvB3tbNTN+tIEVa0/fGaQ==

Response Elements

This response contains elements of a part copy result. **Table 5-134** describes the elements.

Table 5-134 Response elements

Element	Description
LastModified	Indicates the latest time an object was modified. Type: string
ETag	ETag value of the target part. It is the unique identifier of the part content and is used to verify data consistency when merging parts. Type: string

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:dSnpnNpawDSsLg/xXxaqFzrAmMw=

x-obs-copy-source: /destbucket/object01

Sample Response

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 8DF400000163D40ABBD20405D30B0542

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIJpD2efLy5o8sTTComwBb2He0j11Ne

Content-Type: application/xml

Date: WED, 01 Jul 2015 05:16:32 GMT

Transfer-Encoding: chunked

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

<CopyPartResult xmlns="http://obs.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:dSnpnNpawDSsLg/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

 $x-obs-id-2:\ 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTIJpD2efLy5o8sTTComwBb2He0j11NeContent-properties and the content-properties of the content-properti$

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. 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 5-135** describes the parameters.

Table 5-135 Request parameters

Parameter	Description	Mandatory
uploadId	ID of the multipart upload	Yes
	Type: string	
	Default value: none	
max-parts	Maximum number of parts that can be listed	No
	Type: integer	
	Default value: 1,000	
part-number -marker	Part after which the part listing begins. OBS lists only parts with greater numbers than that specified by this parameter.	No
	Type: integer	
	Default value: none	
encoding-type	Encoding type for Key in the response. If Key in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode Key .	No
	Type: string	
	Default value: none	
	Value option: url	

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>
  <Owner>
    <ID>ownerid</ID>
  </Owner>
  <StorageClass>storageclass</StorageClass>
  <PartNumberMarker>partNmebermarker</PartNumberMarker>
  <NextPartNumberMarker>nextPartnumberMarker/NextPartNumberMarker>
  <MaxParts>maxParts</MaxParts>
  <lsTruncated>true</lsTruncated>
  <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** 5-136 describes the elements.

Table 5-136 Response elements

Element	Description
ListPartsResult	Container for responses to part listing requests
	Type: container
	Child: Bucket, Key, UploadId, PartNumberMarker, NextPartNumberMarker, MaxParts, IsTruncated, and Part
	Parent: none
Bucket	Name of the bucket
	Type: string
	Parent: ListPartsResult
EncodingType	Encoding type of an object key. If encoding-type is specified in the request, the Key in the response is encoded.
	Type: string
	Parent: ListPartsResult

Element	Description
Key	Object name
	Type: string
	Parent: ListPartsResult
UploadId	ID of the multipart upload
	Type: string
	Parent: ListPartsResult
Initiator	Initiator of the multipart upload
	Type: container
	Child: ID
	Parent: ListPartsResult
Owner	The value of this parameter is the same as that of Initiator .
	Type: container
	Child: ID
	Parent: ListPartsResult
ID	ID of the domain where the owner belongs
	Type: string
	Parent: Initiator or Owner
StorageClass	Storage class
	Type: string
	Value options: STANDARD , WARM , COLD
	Parent: ListPartsResult
PartNumberMarker	Part number after which listing parts begins
	Type: integer
	Parent: ListPartsResult
NextPartNumberM arker	Value of PartNumberMarker in the next request when the returned result is incomplete
	Type: integer
	Parent: ListPartsResult
MaxParts	Maximum number of parts returned in a response
	Type: integer
	Parent: ListPartsResult
IsTruncated	Whether the returned part list is truncated. The value true indicates that the list was truncated and false indicates that the list was not truncated.
	Type: boolean
	Parent: ListPartsResult

Element	Description
Part	Container for elements related to a particular part.
	Type: string
	Child: PartNumber, LastModified, ETag, and Size
	Parent: ListPartsResult
	PartNumber identifies a part.
PartNumber	Number of an uploaded part
	Type: integer
	Parent: ListPartsResult.Part
LastModified	When a part was uploaded
	Type: date
	Parent: ListPartsResult.Part
ETag	ETag value of the uploaded parts. It is the unique identifier of the part content and is used to verify data consistency during the combination of parts.
	Type: string Parent: ListPartsResult.Part
Size	Size of an uploaded part
	Type: integer
	Parent: ListPartsResult.Part

Error Responses

- 1. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
- 2. If the requested bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
- 3. If the requested multipart upload task does not exist, OBS returns **404 Not Found** and the error code is **NoSuchUpload**.
- 4. OBS determines whether the use's domain ID has the read permission for the specified bucket. If the user does not have the permission, OBS returns **403 Forbidden** and the error code is **AccessDenied**.

Other errors are included in Table 6-2.

Sample Request

GET /object02?uploadId=00000163D40171ED8DF4050919BD02B8 HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: WED, 01 Jul 2015 05:20:35 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:xkABdSrBPrz5yqzuZdJnK5oL/yU=

Sample Response

```
HTTP/1.1 200 OK
Server: OBS
x-obs-request-id: 8DF400000163D40C099A04EF4DD1BDD9
x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCSK71fr+hDnzB0JBvQC1B9+S12AWxC41
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>obi2</Key>
   <UploadId>00000163D40171ED8DF4050919BD02B8</UploadId>
     < ID> domain ID/domain iddomain iddomain iddo000008: user ID/user iduser idus
   <Owner>
     <ID>domainiddomainiddo000008</ID>
   <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>
      <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, those uploaded but not assembled 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

```
<Part>
    <PartNumber> partNum</PartNumber>
    <ETag> etag</ETag>
    </Part>
    <Part>
    <PartNumber> partNum</PartNumber>
    <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 5-137** describes the parameters.

Table 5-137 Request parameters

Parameter	Туре	Mand atory (Yes/ No)	Description
uploadId	Strin g	Yes	Explanation: Multipart upload ID. Value range: The value must contain 32 characters. Default value: None
encoding-type	Strin g	No	Explanation: Encodes the Key in the response based on the specified type. If Key in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode Key .
			Restrictions:
			None Value range:
			URL
			Default value:
			None. If you do not configure this parameter, encoding is not applied.

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 5-138** describes the elements.

Table 5-138 Request elements

	st eterne		
Element	Туре	Man dato ry (Yes /No)	Description
CompleteMultip	XML	Yes	Explanation:
artUpload			List of parts to be assembled
			Restrictions:
			None
			Value range:
			None
			Default value:
			None
PartNumber	Intege	Yes	Explanation:
	r		Part number
			Restrictions:
			None
			Value range:
			[1,10000]
			Default value:
			None
ETag	String	Yes	Explanation:
			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.
			Restrictions:
			None
			Value range:
			The value must contain 32 characters.
			Default value:
			None

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.

In addition to the common response headers, the message headers listed in **Table 5-139** may be used.

Table 5-139 Additional response headers

Header	Туре	Description
x-obs-version-id	String	Explanation:
		Version of the object after parts are assembled.
		Restrictions:
		None
		Value range:
		The value must contain 32 characters.
		Default value:
		None
x-obs-server-side-	String	Explanation:
encryption		The encryption method used by the server.
		Example: x-obs-server-side- encryption:kms
		Restrictions:
		This header is included in a response if SSE-KMS is used.
		Value range:
		• kms
		• AES256
		Default value:
		None

Header	Туре	Description
x-obs-server-side-	String	Explanation:
encryption-kms-key-id		ID of a specified key used for SSE-KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.
x-obs-server-side-	String	Explanation:
encryption-customer- algorithm		The algorithm used for encryption.
atgoritiiii		Example: x-obs-server-side-encryption-customer-algorithm:AES256
		Restrictions:
		This header is included in a response if SSE-C is used for server-side encryption.
		Value range:
		AES256
		Default value:
		None

Response Elements

This response uses elements to return the result of assembling parts. **Table 5-140** describes the elements.

Table 5-140 Response elements

Element	Туре	Description
Location	String	Explanation:
		Path of the object after parts are assembled.
		Restrictions:
		Format: / <i>bucketName</i> / <i>objectName</i>
		Value range:
		None
		Default value:
		None

Element	Туре	Description
Bucket	String	Explanation:
		Bucket where parts are assembled
		Restrictions:
		 A bucket name must be unique across all accounts and regions.
		A bucket name:
		 Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.
		 Cannot be formatted as an IP address.
		 Cannot start or end with a hyphen (-) or period (.).
		 Cannot contain two consecutive periods (), for example, mybucket.
		 Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, mybucket or mybucket.
		 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.
		Value range:
		None
		Default value:
		None
EncodingType	String	Explanation:
		Encoding type of an object key. If Key in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode Key .
		Restrictions:
		None
		Value range:
		URL
		Default value:
		None. If you do not configure this parameter, encoding is not applied.

Element	Туре	Description
Key	String	Explanation:
		Object name obtained after part assembling.
		An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.
		For example, if the access path is examplebucket.obs.ap-southeast-1.myhuaweicloud.com/folder/test.txt,
		the object name is folder/test.txt . Restrictions :
		See Object Overview.
		Value range:
		The value must contain 1 to 1,024 characters. Default value :
		None
		None
ETag	String	Explanation:
		The ETag that uniquely identifies the object after its parts were assembled, calculated based on the ETag of each part.
		Restrictions:
		If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.
		Value range:
		The value must contain 32 characters.
		Default value:
		None

Error Responses

- 1. If no message body exists, OBS returns **400 Bad Request**.
- 2. If the message body format is incorrect, OBS returns **400 Bad Request**.
- 3. If the part information in the message body is not sorted by part sequence number, OBS returns **400 Bad Request** and the error code is **InvalidPartOrder**.
- 4. If the AK or signature is invalid, OBS returns **403 Forbidden** and the error code is **AccessDenied**.
- 5. If the requested bucket is not found, OBS returns **404 Not Found** and the error code is **NoSuchBucket**.
- 6. If the requested multipart upload does not exist, OBS returns **404 Not Found** and error code **NoSuchUpload**.
- 7. If the user is not the initiator of the task, OBS returns **403 Forbidden** and the error code is **AccessDenied**.

- 8. If the request part list contains a part that does not exist, OBS returns **400 Bad Request** and the error code is **InvalidPart**.
- 9. If the part's ETag contained in the request list is incorrect, OBS returns **400 Bad Request** with an error code of **InvalidPart**.
- 10. If the size of a part other than the last part is smaller than 100 KB, OBS returns **400 Bad Request**.
- 11. If the size of the object is greater than 48.8 TB after parts being merged, OBS returns status code **400 Bad Request**.

Other errors are included in Table 6-2.

Sample Request

```
POST /object02?uploadId=00000163D46218698DF407362295674C HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
Accept: */
Date: WED, 01 Jul 2015 05:23:46 GMT
Authorization: OBS H4IPJX0TQTHTHEBQQCEC:dOfK9iILcKxo58tRp3fWeDoYzKA=
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>
  <PartNumber>3</PartNumber>
  <ETag>acbd18db4cc2f85cedef654fccc4a4d8</ETag>
</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.ap-southeast-1.myhuaweicloud.com/doc/2015-06-30/">
<Location>/examplebucket/object02</Location>
<Bucket>examplebucket</Bucket>
<Key>object02</Key>
<ETag>"03f814825e5a691489b947a2e120b2d3-3"</ETag>
</CompleteMultipartUploadResult>
```

5.5.7 Canceling a Multipart Upload Task

Functions

You can call this API to cancel a multipart upload task. You cannot upload or list parts after operations to merge parts or abort a multipart upload are performed.

Request Syntax

DELETE /ObjectName?uploadId=uplaodID HTTP/1.1 Host: *bucketname*.obs.*region*.myhuaweicloud.com

Date: *date* Authorization: *auth*

Request Parameters

This request uses message parameters to specify the multipart upload task number of the segment task. **Table 5-141** describes the parameters.

Table 5-141 Request parameters

Parameter	Description	Mandatory
uploadId	Indicates a multipart upload.	Yes
	Type: string	

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 H4IPJX0TQTHTHEBQQCEC:QmM2d1DBXZ/b8drqtEv1QJHPbM0=

Sample Response

HTTP/1.1 204 No Content

Server: OBS

x-obs-request-id: 8DF400000163D463E02A07EC2295674C

x-obs-id-2: 32AAAQAAEAABAAAQAAEAABAAAQAAEAABCTp5YDlzn0UgqG3laRfkHLGyz7RpR9ON

Date: WED, 01 Jul 2015 05:28:27 GMT

5.6 Server-Side Encryption

5.6.1 Server-Side Encryption Overview

You can configure server-side encryption for objects, so that they will be encrypted or decrypted when you upload them to or download them from a bucket.

The encryption and decryption happen on the server side.

The encryption methods provided include SSE-KMS, 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 5-142** 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 5-142 Headers used in SSE-KMS

Header	Туре	Description
x-obs-server-side- encryption	String	Explanation: Indicates that SSE-KMS is used for server-side encryption. Example: x-obs-server-side-encryption:kms
		Restrictions:
		None Value range:
		• kms
		• AES256
		Default value:
		kms

Header	Туре	Description
x-obs-server-side- encryption-kms-key-id	String	Explanation:
		ID of a specified key used for SSE- KMS encryption. For details about how to obtain a key ID, see Viewing a Key.
		Restrictions:
		This header can only be used when you specify kms for the x-obs-server-side-encryption header.
		Default value:
		If you specify kms for encryption but do not specify a key ID, the default master key will be used. If there is not a default master key, OBS will create one and use it.

APIs Where SSE-KMS Headers Apply

You can configure headers about SSE-KMS in the APIs below:

- Uploading Objects PUT
- Uploading Objects POST: x-obs-server-side-encryption and x-obs-server-side-encryption-kms-key-id need to be placed in the form instead of headers.
- Copying Objects (The newly added headers apply to object copies.)
- Initiating a Multipart Upload

You can configure a bucket policy to restrict the request headers for a specified bucket. For example, if you require that object upload requests do not contain header **x-obs-server-side-encryption:"kms"**, you can use the following bucket policy:

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:kms

Content-Length: 5242 Expect: 100-continue

[5242 Byte object contents]

Sample Response: Using the Default Key to Encrypt an Object

HTTP/1.1 200 OK Server: OBS

x-obs-request-id: 8DF400000163D45AA81D038B6AE4C482

ETag: "d8bffdfbab5345d91ac05141789d2477"

x-obs-server-side-encryption: kms

x-obs-server-side-encryption-kms-key-id: region.783fc6652cf246c096ea836694f71855:key/

522d6070-5ad3-4765-9737-9312ddc72cdb

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTv7cHmAnGfBAGXUHeibUsiETTNqlCqC

Date: Wed, 06 Jun 2018 09:08:21 GMT

Content-Length: 0

Sample Request: Using a Custom Key to Encrypt an Object

PUT /encryp1 HTTP/1.1 User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.com

Accept: */*

Date: Wed, 06 Jun 2018 09:08:50 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:f3/PWjkXYTYGs5lPOctTNEI2QENU=

x-obs-server-side-encryption:kms

x-obs-server-side-encryption-kms-key-id: 522d6070-5ad3-4765-43a7-a7d1-ab21f498482d

Content-Length: 5242 Expect: 100-continue

[5242 Byte object contents]

Sample Response: Using a Custom Key to Encrypt an Object

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 8DF400000163D45AA81D038B6AE4C482

ETag: "d8bffdfbab5345d91ac05141789d2477"

x-obs-server-side-encryption: kms

x-obs-server-side-encryption-kms-key-id: region.783fc6652cf246c096ea836694f71855:key/

522d6070-5ad3-4765-43a7-a7d1-ab21f498482d

x-obs-id-2: 32AAAUJAIAABAdiAEAABA09AEAABCTv7cHmAn12BAG83ibUsiET5eqlCqg

Date: Wed, 06 Jun 2018 09:08:50 GMT

Content-Length: 0

Sample Request: Using a Key to Encrypt an Object Copy

PUT /destobject HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.*region*.myhuaweicloud.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 H4IPJX0TQTHTHEBQQCEC:SH3uTrElaGWarVI1uTq325kTVCI=

x-obs-copy-source: /bucket/srcobject1

Sample Response: Using a Key to Encrypt an Object Copy

HTTP/1.1 200 OK Server: OBS x-obs-request-id: BB78000001648480AF3900CED7F15155

ETag: "d8bffdfbab5345d91ac05141789d2477"

x-obs-server-side-encryption: kms

x-obs-server-side-encryption-kms-key-id: region.783fc6652cf246c096ea836694f71855:key/

522d6070-5ad3-4765-9737-9312ddc72cdb

x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS

Date: Wed, 06 Jun 2018 09:10:29 GMT

Content-Length: 0

Sample Request: Uploading an Encrypted Object Using a Signed URL

PUT /destobject?AccessKeyId=UI3SN1SRUQE14OYBKTZB&Expires=1534152518&x-obs-server-side-encryption=kms&Signature=chvmG7%2FDA%2FDCQmTRJu3xngldJpg%3D HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.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: kms

x-obs-server-side-encryption-kms-key-id: region:783fc6652cf246c096ea836694f71855:key/

522d6070-5ad3-4765-9737-9312ddc72cdb

x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS

Date: Wed, 06 Jun 2018 09:10:29 GMT

Content-Length: 0

5.6.3 SSE-OBS

Functions

With SSE-OBS, OBS uses the keys provided by itself for server-side encryption. Unlike SSE-KMS where KMS manages keys, in SSE-OBS, OBS manages keys.

Newly Added Headers

Use the header listed in Table 5-143 to implement SSE-OBS.

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 5-143 Header used in SSE-OBS

Header	Description
x-obs-server-side-encryption	Indicates that SSE-OBS is used for encrypting objects.
	Type: string
	Example: x-obs-server-side- encryption:AES256

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:

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: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTv7cHmAnGfBAGXUHeibUsiETTNqlCqC
Date: Wed, 06 Jun 2018 09:08:21 GMT
Content-Length: 0
```

Sample Request: Copying an Object as an Encrypted Object

```
PUT /destobject HTTP/1.1
User-Agent: curl/7.29.0
Host: examplebucket.obs.region.myhuaweicloud.com
x-obs-server-side-encryption:AES256
Accept: */*
```

Date: Wed, 06 Jun 2018 09:10:29 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:SH3uTrElaGWarVI1uTq325kTVCI=

x-obs-copy-source: /bucket/srcobject1

Sample Response: Copying an Object as an Encrypted Object

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BB78000001648480AF3900CED7F15155

ETag: "d8bffdfbab5345d91ac05141789d2477"

x-obs-server-side-encryption: AES256

x-obs-id-2: oRAXhgwdaLc9wKVHqTLSmQB7I35D+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS

Date: Wed, 06 Jun 2018 09:10:29 GMT

Content-Length: 0

Sample Request: Uploading an Encrypted Object Using a Signed URL

PUT / destobject? Access Keyld = 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+32AAAUJAIAABAAAQAAEAABAAAQAAEAABCS

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 5-144 Header fields used for encrypting objects in SSE-C mode

Element	Description
x-obs-server-side-encryption-customer- algorithm	Indicates the encryption algorithm for the object when SSE-C is used.
	Example: x-obs-server-side- encryption-customer-algorithm: AES256

Element	Description
x-obs-server-side-encryption-customer- key	Indicates the key for encrypting objects when SSE-C is used. Its value is a Base64-encoded 256-bit key.
	Example: x-obs-server-side- encryption-customer- key:K7QkYpBkM5+hca27fsNkUnNVa obncnLht/rCB2o/9Cw=
x-obs-server-side-encryption-customer- key-MD5	Indicates the MD5 value of the key for encrypting objects when SSE-C is used. Its value is a Base64-encoded MD5 hash. The MD5 value is used to check whether any error occurs during the transmission of the key.
	Example: x-obs-server-side- encryption-customer-key- MD5:4XvB3tbNTN+tIEVa0/fGaQ==

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 5-145 Header fields for source objects encrypted by the SSE-C

Element	Description
x-obs-copy-source-server-side- encryption-customer-algorithm	Indicates the algorithm for decrypting the source object when SSE-C is used. Example: x-obs-server-side-encryption-customer-algorithm: AES256

Element	Description
x-obs-copy-source-server-side- encryption-customer-key	Indicates the key for decrypting the source object when SSE-C is used.
	Example: x-obs-copy-source-server- side-encryption-customer-algorithm: K7QkYpBkM5+hca27fsNkUnNVaobnc nLht/rCB2o/9Cw=
x-obs-copy-source-server-side- encryption-customer-key-MD5	Indicates the MD5 value of the key for decrypting the source object when SSE-C is used. The MD5 value is used to check whether any error occurs during the transmission of the key.
	Example: x-obs-copy-source-server- side-encryption-customer- key:4XvB3tbNTN+tIEVa0/fGaQ==

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 H4IPJX0TQTHTHEBQQCEC:mZSfafoM+llApk0HGOThlqeccu0=

x-obs-server-side-encryption-customer-algorithm:AES256

x-obs-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=

x-obs-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==

Content-Length: 5242

[5242 Byte object contents]

Sample Response: Uploading an Object Encrypted with SSE-C

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: 8DF400000163D45E0017055619BD02B8

ETag: "0f91242c7f3d86f98ae572a686d0696e"

x-obs-server-side-encryption-customer-algorithm: AES256

x-obs-server-side-encryption-customer-key-MD5: 4XvB3tbNTN+tIEVa0/fGaQ==

x-obs-id-2: 32AAAUgAIAABAAAQAAEAABAAAQAAEAABCSSAJ8bTNJV0X+Ote1PtuWecqyMh6zBJ

Date: Wed, 06 Jun 2018 09:12:00 GMT

Content-Length: 0

Sample Request: Copying an SSE-C Encrypted Object and Saving It as a KMS Encrypted Object

PUT /kmsobject HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.*region*.myhuaweicloud.com

Accept: */*

Date: Wed, 06 Jun 2018 09:20:10 GMT

Authorization: OBS H4IPJX0TQTHTHEBQQCEC:mZSfafoM+llApk0HGOThlqeccu0=

x-obs-copy-source-server-side-encryption-customer-algorithm:AES256

x-obs-copy-source-server-side-encryption-customer-key:K7QkYpBkM5+hca27fsNkUnNVaobncnLht/rCB2o/9Cw=

x-obs-copy-source-server-side-encryption-customer-key-MD5:4XvB3tbNTN+tIEVa0/fGaQ==

x-obs-server-side-encryption: kms

x-obs-copy-source: /examplebucket/encryp2 Content-Length: 5242

[5242 Byte object contents]

Sample Response: Copying an SSE-C Encrypted Object and Saving It as a KMS Encrypted Object

HTTP/1.1 200 OK

Server: OBS

x-obs-request-id: BB7800000164848E0FC70528B9D92C41

ETag: "1072e1b96b47d7ec859710068aa70d57"

x-obs-server-side-encryption: kms

x-obs-server-side-encryption-kms-key-id: region.783fc6652cf246c096ea836694f71855:key/

522d6070-5ad3-4765-9737-9312ddc72cdb

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTkkRzQXs9ECzZcavVRncBqqYNkoAEsr

Date: Wed, 06 Jun 2018 09:20:10 GMT

Content-Length: 0

Sample Request: Uploading an SSE-C Encrypted Object Using a Signed URL

PUT /encrypobject?

AccessKeyId=H4IPJX0TQTHTHEBQQCEC&Expires=1532688887&Signature=EQmDuOhaLUrzrzRNZxwS72CXeX

M%3D HTTP/1.1

User-Agent: curl/7.29.0

Host: examplebucket.obs.region.myhuaweicloud.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"

 $x\hbox{-}obs\hbox{-}server\hbox{-}side\hbox{-}encryption\hbox{-}customer\hbox{-}algorithm\hbox{:}}\ AES256$

 $x-obs-server-side-encryption-customer-key-MD5:\ 4XvB3tbNTN+tlEVa0/fGaQ==$

x-obs-id-2: 32AAAUJAIAABAAAQAAEAABAAAQAAEAABCTlpxILjhVK/heKOWIP8Wn2IWmQoerfw

Content-Length: 0

5.6.5 API Operations Related to Server-Side Encryption

This section lists the operations related to server-side encryption and describes HTTP protocols applicable to the operations.

The following table describes the requirements on the transmission protocols used by the API operation related to server-side encryption.

Table 5-146 Requirements for the transmission protocol used by the operations related to the SSE-C

Operation	Transfer Protocol
PutObject	HTTPS
PostObject	HTTPS

Operation	Transfer Protocol
InitiateMultipartUpload	HTTPS
HeadObject	HTTPS
GetObject	HTTPS
UploadPart	HTTPS
CompleteMultipartUpload	HTTP or HTTPS

Table 5-147 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 5-148 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
Non-encrypted object	Object encrypted using SSE-C	HTTPS
Object encrypted using SSE-KMS	Object encrypted using SSE-C	HTTPS

Source Object	Target Object	Transfer Protocol
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 5-149 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
Non-encrypted object	Part encrypted using SSE-C	HTTPS
Object encrypted using SSE-KMS	Part encrypted using SSE-C	HTTPS

Source Object	Target Part	Transfer Protocol
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 Table 6-2 .

Element	Description
Message	Details the error in the XML error response body. For details about error messages, see Table 6-2 .
RequestId	ID of the request whose error response is returned. The ID is used for locating the error.
HostId	ID of the server that returns an error response
Resource	Bucket or object related to an error.

□ NOTE

Some error responses contain more detailed information. It is recommended that all error information be logged for easier rectification of errors.

Description

If OBS encounters an error when processing a request, a response containing the error code and description is returned. **Table 6-2** describes the error codes of OBS.

Table 6-2 Error codes

Status Code	Error Code	Error Message	Solution
301 Moved Permanently	PermanentRe direct	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	WebsiteRedire ct	The website request lacks bucketName .	Put the bucket name in the request and try again.
307 Moved Temporarily	TemporaryRe direct	Temporary redirection. If the DNS is updated, the request is redirected to the bucket.	The system automatically redirects the request or sends the request to the redirection address.
400 Bad Request	BadDigest	The specified value of Content-MD5 does not match the value received by OBS.	Check whether the MD5 value carried in the header is the same as that calculated by the message body.
400 Bad Request	BadDomainN ame	The domain name is invalid.	Use a valid domain name.

Status Code	Error Code	Error Message	Solution
400 Bad Request	BadRequest	Invalid request parameters.	Modify the parameters according to the error details in the message body.
400 Bad Request	CustomDomai nAreadyExist	The configured domain already exists.	It has been configured and does not need to be configured again.
400 Bad Request	CustomDomai nNotExist	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	EntityTooLarg	 The size of the file uploaded using the PUT, POST, or Append methods of SDKs or APIs exceeds 5 GB. The part uploaded is larger than 5 GB in size. The size of the bucket configurations exceeds 20 KB. The file size exceeds the upper limit defined in the policy of the POST form. The size of the file uploaded using the multipart upload of SDKs or APIs or the resumable upload of SDKs exceeds 	Modify the conditions specified in the upload policy or reduce the object size.

Status Code	Error Code	Error Message	Solution
400 Bad Request	EntityTooSmal l	 The part uploaded, except the last one, is smaller than 100 KB. The file size is smaller than the lower limit defined in the policy of the POST form. 	Modify the conditions specified in the upload policy or increase the object size.
400 Bad Request	IllegalLocatio nConstraintEx ception	A request without Location is sent for creating a bucket in a non-default region.	Send the bucket creation request to the default region, or send the request with the Location of the nondefault region.
400 Bad Request	IncompleteBo dy	No complete request body is received due to network or other problems.	Upload the object again.
400 Bad Request	IncorrectNum berOfFilesInP ost Request	Each POST request must contain one file to be uploaded.	Carry a file to be uploaded.
400 Bad Request	InvalidArgum ent	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	InvalidBucket Name	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	InvalidConten tLength	Invalid Content- Length value.	Check the encapsulation header or submit a service ticket for technical support.

Status Code	Error Code	Error Message	Solution	
400 Bad Request	InvalidDefault StorageClass	The default storage class is invalid.	Check which storage classes can be used.	
400 Bad Request	InvalidEncrypt ionAlgorithmE rror			
400 Bad Request	InvalidLocatio nConstraint	The specified Location in the bucket creation request is invalid or does not exist.	Correct the Location in the bucket creation request.	
400 Bad Request	InvalidPart	One or more specified parts are not found. The parts may not be uploaded or the specified entity tags (ETags) do not match the parts' ETags.	Merge the parts correctly according to the ETags.	
400 Bad Request	InvalidPartOr der	Parts are not listed in ascending order by part number.	Sort the parts in ascending order and merge them again.	
400 Bad Request	InvalidPolicyD ocument	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	InvalidRedirec tLocation	Invalid redirect location.	Specifies the correct IP address.	
400 Bad Request	InvalidReques t	Invalid request.	Modify the parameter according to the error details in the message body.	
400 Bad Request	InvalidReques tBody	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.	

Status Code	Error Code	Error Message	Solution
400 Bad Request	InvalidTargetB ucketForLoggi ng	The delivery group has no ACL permission for the target bucket.	Configure the target bucket ACL and try again.
400 Bad Request	KeyTooLongEr ror	The provided key is too long.	Use a shorter key.
400 Bad Request	KMS.Disabled Exception	The customer master key (CMK) is disabled in SSE-KMS mode.	Change a key and try again, or submit a service ticket for technical support.
400 Bad Request	KMS.NotFoun dException	The customer master key (CMK) does not exist in SSE-KMS mode.	Retry with the correct CMK.
400 Bad Request	MalformedAC LError	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	MalformedErr or	The XML format in the request is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedLo ggingStatus	The XML format of Logging is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedPol icy	The bucket policy does not pass.	Modify the bucket policy according to the error details returned in the message body.
400 Bad Request	MalformedQu otaError	The Quota XML format is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedX ML	An XML file of a configuration item is in incorrect format.	Use the correct XML format to retry.
400 Bad Request	MaxMessageL engthExceede d	Copying an object does not require a message body in the request.	Remove the message body and retry.
400 Bad Request	MetadataToo Large	The size of the metadata header has exceeded the upper limit.	Reduce the size of the metadata header.

Status Code	Error Code	Error Message	Solution
400 Bad Request	MissingRegio n	No region contained in the request and no default region defined in the system.	Carry the region information in the request.
400 Bad Request	MissingReque stBodyError	This error code is returned after you send an empty XML file.	Provide the correct XML file.
400 Bad Request	MissingRequir edHeader	Required headers are missing in the request.	Provide required headers.
400 Bad Request	MissingSecuri tyHeader	A required header is not provided.	Provide required headers.
400 Bad Request	MultipleConte ntLengths	There are multiple Content-Length headers.	Check the encapsulation header or submit a service ticket for technical support.
400 Bad Request	TooManyBuck ets	You have attempted to create more buckets than allowed.	Delete some buckets and try again.
400 Bad Request	TooManyCust omDomains	Too many user accounts are configured.	Delete some user accounts and try again.
400 Bad Request	TooManyWro ngSignature	The request is rejected due to high-frequency errors.	Replace the Access Key and try again.
400 Bad Request	UnexpectedC ontent	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	UserKeyMust BeSpecified	This operation is available only to specific users.	Submit a service ticket for technical support.

Status Code	Error Code	Error Message	Solution
400 Bad Request	ContentSHA2 56Mismatch	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 is correct.	
400 Bad Request	FileGatewayB ucket	Bucket inventories cannot be configured for parallel file systems.	Use an object bucket.
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	AccessForbidd en	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	AllAccessDisa bled	You have no permission to perform the operation. The bucket name is forbidden.	Change the bucket name.
403 Forbidden	DeregisterUse rld	The user has been deregistered.	Top up or re-register.
403 Forbidden	InArrearOrIns ufficientBalan ce	The subscriber owes fees or the account balance is insufficient, and the subscriber does not have the permission to perform an operation.	Тор ир.

Status Code	Error Code	Error Message	Solution
403 Forbidden	InsufficientSto rageSpace	Insufficient storage space.	If the quota is exceeded, increase quota or delete some objects.
403 Forbidden	InvalidAccess KeyId	The access key ID provided by the customer does not exist in the system.	Provide correct access key Id.
403 Forbidden	InvalidObjectS tate	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.
403 Forbidden	RequestTimeT ooSkewed	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	SignatureDoe sNotMatch	The provided signature does not match the signature calculated by OBS.	Check your secret access key and signature calculation method. For details, see Why Don't the Signatures Match?
403 Forbidden	VirtualHostDo mainRequired	Virtual hosting access domain name is not used.	Use the virtual hosting access domain name. For details, see Constructing a Request.
403 Forbidden	Unauthorized	The user has not been authenticated in real name.	Authenticate the user's real name and try again.

Status Code	Error Code	Error Message	Solution
404 Not Found	NoSuchBucke t	The specified bucket does not exist.	Create a bucket and perform the operation again.
404 Not Found	NoSuchBucke tPolicy	No bucket policy exists.	Configure a bucket policy.
404 Not Found	NoSuchCORS Configuration	No CORS configuration exists.	Configure CORS first.
404 Not Found	NoSuchCusto mDomain	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	NoSuchLifecy cleConfigurati on	The requested lifecycle rule does not exist.	Configure a lifecycle rule first.
404 Not Found	NoSuchUploa d	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	NoSuchVersio n	The specified version ID does not match any existing version.	Use a correct version ID.
404 Not Found	NoSuchWebsi teConfiguratio n	The requested website does not exist.	Configure the website first.
405 Method Not Allowed	MethodNotAll owed	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	POSIX buckets do not support this API.	The method is not allowed.

Status Code	Error Code	Error Message	Solution	
408 Request Timeout	RequestTimeo ut	The socket connection to the server has no read or write operations within the timeout period. Check the network try again, or subm service ticket for technical support.		
409 Conflict	BucketAlready Exists	The requested bucket name already exists. The bucket namespace is shared by all users of OBS. Select another name and retry.		
409 Conflict	BucketAlready OwnedByYou	Your previous request for creating the namesake bucket succeeded and you already own it.	No more buckets need to be created.	
409 Conflict	BucketNotEm pty	The bucket that you tried to delete is not empty.	Delete the objects in the bucket and then delete the bucket.	
409 Conflict	InvalidBucket State	Invalid bucket status. After cross-region replication is configured, bucket versioning cannot be disabled.	Enable bucket versioning or cancel cross-region replication.	
409 Conflict	OperationAbo rted	A conflicting operation is being performed on this resource. Retry later.	Try again later.	
409 Conflict	ServiceNotSu pported	The request method is not supported by the server.	Submit a service ticket for technical support.	
409 Conflict	FsObjectConfl ict	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.	

Status Code	Error Code	Error Message	Solution	
409 Conflict	FsRenameConf lict	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	DirectoryNotE mpty	Non-empty directories cannot be deleted.	Empty the directory first.	
409 ObjectNotApp endable	ObjectNotApp endable	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	MissingConte ntLength	The HTTP header Content-Length is not provided.	Provide the Content- Length header.	
412 Precondition Failed	PreconditionF ailed	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.	
500 Internal Server Error	InternalError	An internal error occurs. Retry later.	Submit a service ticket for technical support.	
501 Not Implemented	ServiceNotIm plemented	The request method is not implemented by the server.	Submit a service ticket for technical support.	
503 Service Unavailable	ServiceUnavai lable	The server is overloaded or has internal errors.	Try again later or submit a service ticket for technical support.	
503 Service Unavailable	SlowDown	Too frequent requests. Reduce your request frequency.	Too frequent requests. Reduce your request frequency.	

Table 6-3 OEF error codes

Status Code	Error Code	Error Message	Solution	
500 Internal Server Error	SYS.0001	Internal service error.	Submit a service ticket for technical support.	
404 Not Found	SYS.0003	Unsupported API.	Use another API.	
401 Unauthorized	SYS.0004	Unauthenticated request.	Submit a service ticket for technical support.	
403 Forbidden	SYS.0005	No access permission.	Submit a service ticket for technical support.	
400 Bad Request	SYS.0006	Incorrect request format.	Check the request format.	
400 Bad Request	SYS.0007	Invalid request for range download.	Submit a service ticket 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.	

Status Code	Error Code	Error Message	Solution	
500 Internal Server Error	SYS.0016	OBS access error.	Submit a service ticket 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.	Submit a service ticket for technical support.	
500 Internal Server Error	SYS.0020	Failed to access the background task management service.	Submit a service ticket 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.	
400 Bad Request	SYS.0023	Incorrect region.	Try with another region name.	
500 Internal Server Error	SYS.0024	Failed to access an authorized service.	Submit a service ticket for technical support.	
500 Internal Server Error	SYS.0025	Incorrect response content.	Submit a service ticket for technical support.	
500 Internal Server Error	SYS.0026	Incorrect read response content.	Submit a service ticket for technical support.	
400 Bad Request	SYS.0027	The agency does not have any permissions.	Submit a service ticket 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.	Submit a service ticket for technical support.	

Status Code	Error Code	Error Message	Solution
500 Internal Server Error	SYS.0032	Failed to authorize OBS to automatically modify an agency.	Submit a service ticket for technical support.
500 Internal Server Error	SYS.0033	Failed to grant OBS to automatically create custom permissions.	Submit a service ticket for technical support.
500 Internal Server Error	SYS.0034	Failed to grant OBS to automatically query custom permissions.	Submit a service ticket for technical support.
500 Internal Server Error	SYS.0035	Failed to grant OBS to automatically update custom permissions.	Submit a service ticket 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.	Submit a service ticket for technical support.
400 Bad Request	SYS.0038	Multi-range download is not supported.	Submit a service ticket 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.	Submit a service ticket for technical support.
400 Bad Request	SYS.0041	Failed to replace the magic parameter.	Submit a service ticket for technical support.
500 Internal Server Error	SYS.0042	Server processing times out.	Submit a service ticket for technical support.
500 Internal Server Error	SYS.0043	Failed to deserialize the JSON character string.	Submit a service ticket for technical support.
500 Internal Server Error	SYS.0044	An error occurred when obtaining the internal cache status.	Submit a service ticket for technical support.

Permissions and Supported Actions

7.1 Introduction

This section describes fine-grained permissions management for your OBS. If your Huawei Cloud account does not require individual IAM users, skip this section.

By default, new IAM users do not have any permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

For details about policies and roles related to OBS in IAM, see **Permissions**Management. For more information about the syntax structure and examples of IAM permissions, see IAM Permissions.

You can grant users permissions by using **roles** and **policies**. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

□ NOTE

- Policy-based authorization is useful if you want to allow or deny the access to an API.
- Because of caching, it takes about 15 to 30 minutes for the OBS role to take effect after being granted to users, 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 (\checkmark) 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	Enterpr ise Project
Listing all buckets	Listing Buckets	obs:bucket:ListAll MyBuckets	Support ed	Support ed
Creating a bucket	Creating a Bucket	obs:bucket:Create Bucket	Support ed	Support ed
Listing objects in a bucket	Listing Objects in a Bucket	obs:bucket:ListBuc ket	Support ed	Support ed
Listing object versions in a bucket	Listing Objects in a Bucket	obs:bucket:ListBuc ketVersions	Support ed	Support ed

Permission	API	Action	IAM Project	Enterpr ise Project
Determining whether a bucket exists and obtaining the bucket metadata	Obtaining Bucket Metadata	obs:bucket:HeadB ucket	Support ed	Support ed
Obtaining the bucket location	Obtaining Bucket Location	obs:bucket:GetBuc ketLocation	Support ed	Support ed
Deleting a bucket	Deleting Buckets	obs:bucket:Delete Bucket	Support ed	Support ed
Configuring a bucket policy	Configuring a Bucket Policy	obs:bucket:PutBuc ketPolicy	Support ed	Support ed
Obtain the bucket policy configurations	Obtaining Bucket Policy Information	obs:bucket:GetBuc ketPolicy	Support ed	Support ed
Deleting a bucket policy	Deleting a Bucket Policy	obs:bucket:Delete BucketPolicy	Support ed	Support ed
Configuring the bucket ACL	Configuring a Bucket ACL	obs:bucket:PutBuc ketAcl	Support ed	Support ed
Obtaining the bucket ACL information	Obtaining Bucket ACL Information	obs:bucket:GetBuc ketAcl	Support ed	Support ed
Configuring logging for a bucket	Configuring Logging for a Bucket	obs:bucket:PutBuc ketLogging	Support ed	Support ed
Obtaining the logging configurations of a bucket	Obtaining a Bucket Logging Configuration	obs:bucket:GetBuc ketLogging	Support ed	Support ed
Configuring or deleting a lifecycle rule	Configuring Bucket Lifecycle Rules Deleting Lifecycle Rules	obs:bucket:PutLife cycleConfiguratio n	Support ed	Support ed
Obtaining the lifecycle rule configurations	Obtaining Bucket Lifecycle Configuration	obs:bucket:GetLife cycleConfiguratio n	Support ed	Support ed
Configuring versioning for a bucket	Configuring Versioning for a Bucket	obs:bucket:PutBuc ketVersioning	Support ed	Support ed

Permission	АРІ	Action	IAM Project	Enterpr ise Project
Obtaining the versioning configurations of a bucket	Obtaining Bucket Versioning Status	obs:bucket:GetBuc ketVersioning	Support ed	Support ed
Configuring storage class for a bucket	Configuring Storage Class for a Bucket	obs:bucket:PutBuc ketStoragePolicy	Support ed	Support ed
Obtaining the storage class of a bucket	Obtaining Bucket Storage Class Information	obs:bucket:GetBuc ketStoragePolicy	Support ed	Support ed
Configuring cross- region replication for a bucket	Configuring Cross-Region Replication for a Bucket	obs:bucket:PutRep licationConfigura- tion	Support ed	Support ed
Obtaining the cross-region replication configuration of a bucket	Obtaining the Cross-Region Replication Configuration of a Bucket	obs:bucket:GetRep licationConfigura- tion	Support ed	Support ed
Deleting the cross-region replication configuration of a bucket	Deleting the Cross-Region Replication Configuration of a Bucket	obs:bucket:Delete ReplicationConfi- guration	Support ed	Support ed
Adding tags to a bucket	Configuring Tags for a Bucket	obs:bucket:PutBuc ketTagging	Support ed	Support ed
Obtaining bucket tags	Obtaining Bucket Tags	obs:bucket:GetBuc ketTagging	Support ed	Support ed
Deleting bucket tags	Deleting Tags	obs:bucket:Delete BucketTagging	Support ed	Support ed
Limiting storage capacity for a bucket	Configuring Bucket Storage Quota	obs:bucket:PutBuc ketQuota	Support ed	Support ed
Querying the storage capacity limit of a bucket	Querying Bucket Storage Quota	obs:bucket:GetBuc ketQuota	Support ed	Support ed
Querying the used capacity of a bucket	Obtaining Storage Information of a Bucket	obs:bucket:GetBuc ketStorage	Support ed	Support ed

Permission	АРІ	Action	IAM Project	Enterpr ise Project
Configuring inventories for a bucket	Configuring Bucket Inventories	obs:bucket:PutBuc ketInventoryCon- figuration	Support ed	Support ed
Obtaining a specific inventory or listing all inventories of a bucket	Obtaining a Specific Inventory of a Bucket Listing All Inventories of a Bucket	obs:bucket:GetBuc ketInventoryCon- figuration	Support ed	Support ed
Deleting bucket inventories	Deleting Bucket Inventories	obs:bucket:Delete BucketInventory- Configuration	Support ed	Support ed
Configuring a user-defined domain name for a bucket	Configuring a Custom Domain Name for a Bucket	obs:bucket:PutBuc ketCustomDomai nConfiguration	Support ed	Support ed
Obtaining the user-defined domain name of a bucket	Obtaining the Custom Domain Name of a Bucket	obs:bucket:GetBuc ketCustomDomai nConfiguration	Support ed	Support ed
Deleting the user- defined domain name of a bucket	Deleting the Custom Domain Name of a Bucket	obs:bucket:Delete BucketCustomDo mainConfiguratio n	Support ed	Support ed
Configuring or deleting encryption for a bucket	Configuring Bucket Encryption Deleting the Encryption Configuration of a Bucket	obs:bucket:PutEnc ryptionConfigura- tion	Support ed	Support ed
Obtaining the encryption configurations of a bucket	Obtaining Bucket Encryption Configuration	obs:bucket:GetEnc ryptionConfigura- tion	Support ed	Support ed
Configuring direct reading for a bucket	Configuring Direct Reading for Archive Objects in a Bucket	obs:bucket:PutDir ectColdAccessConf iguration	Support ed	Support ed

Permission	API	Action	IAM Project	Enterpr ise Project
Obtaining the direct reading configurations of a bucket	Obtaining the Direct Reading Policy of Archive Objects in a Bucket	obs:bucket:GetDir ectColdAccessConf iguration	Support ed	Support ed
Deleting the direct reading configurations of a bucket	Deleting the Direct Reading Policy of Archive Objects in a Bucket	obs:bucket:Delete DirectColdAccess- Configuration	Support ed	Support ed
Configuring static website hosting for a bucket	Configuring Static Website Hosting for a Bucket	obs:bucket:PutBuc ketWebsite	Support ed	Support ed
Obtaining the static website hosting configurations of a bucket	Obtaining the Static Website Hosting Configuration of a Bucket	obs:bucket:GetBuc ketWebsite	Support ed	Support ed
Deleting the static website hosting configurations of a bucket	Deleting the Static Website Hosting Configuration of a Bucket	obs:bucket:Delete BucketWebsite	Support ed	Support ed
Configuring or deleting CORS rules for a bucket	Configuring Bucket CORS Deleting the CORS Configuration of a Bucket	obs:bucket:PutBuc ketCORS	Support ed	Support ed
Obtaining the CORS configurations of a bucket	Obtaining the CORS Configuration of a Bucket	obs:bucket:GetBuc ketCORS	Support ed	Support ed
Configuring a default WORM policy for a bucket	Configuring a Default WORM Policy for a Bucket	obs:bucket:PutBuc ketObjectLockConf iguration	Support ed	Support ed
Obtaining the default WORM policy of a bucket	Obtaining the Default WORM Policy of a Bucket	obs:bucket:GetBuc ketObjectLockConf iguration	Support ed	Support ed

Permission	API	Action	IAM Project	Enterpr ise Project
Listing initiated multipart uploads in a bucket	Listing Initiated Multipart Uploads in a Bucket	obs:bucket:ListBuc ketMultipartUploa ds	Support ed	Support ed
Configuring public access block for a bucket	Configuring Public Access Block for a Bucket	obs:bucket:PutBuc ketPublicAccess- Block	Support ed	Support ed
Obtaining the public access block configuration of a bucket	Obtaining the Public Access Block Configuration of a Bucket	obs:bucket:GetBuc ketPublicAccess- Block	Support ed	Support ed
Deleting the public access block configuration of a bucket	Deleting the Public Access Block Configuration of a Bucket	obs:bucket:Delete BucketPublicAcces sBlock	Support ed	Support ed
Obtaining the public access status of a bucket	Obtaining the Public Access Status of a Bucket	obs:bucket:GetBuc ketPublicStatus	Support ed	Support ed
Obtaining the public access status of a bucket policy	Obtaining the Public Access Status of a Bucket Policy	obs:bucket:GetBuc ketPolicyPublic- Status	Support ed	Support ed

7.3 Object Actions

Table 7-2 Object actions

Permission	API	Action	IAM Project	Enterpr ise Project
Uploading objects with PUT or POST, appending content to objects, initiating a multipart upload, and uploading, copying, and assembling parts	Uploading an Object - PUT Uploading an Object - POST Appending an Object Initiating a Multipart Upload Uploading Parts Completing a Multipart Upload	obs:object:PutObj ect	Support ed	Support ed
Copying an object	Copying an Object	obs:object:GetObj ect obs:object:PutObj ect	Support ed	Support ed
Obtaining the content and metadata of an object	Downloading an Object Querying Object Metadata	obs:object:GetObj ect	Support ed	Support ed
Obtaining the content and metadata of a specific object version	Downloading an Object Querying Object Metadata	obs:object:GetObj ectVersion	Support ed	Support ed
Deleting a single object or a batch of objects	Deleting an Object Deleting Objects	obs:object:Delete Object	Support ed	Support ed
Deleting a single object version or a batch of object versions	Deleting an Object Deleting Objects	obs:object:Delete ObjectVersion	Support ed	Support ed
Restores the Archive object.	Restoring Archive or Deep Archive Objects	obs:object:Restore Object	Support ed	Support ed

Permission	API	Action	IAM Project	Enterpr ise Project
Configuring the object ACL	Configuring an Object ACL	obs:object:PutObj ectAcl	Support ed	Support ed
Configuring the ACL for a specific object version	Configuring an Object ACL	obs:object:PutObj ectVersionAcl	Support ed	Support ed
Obtaining the object ACL information	Obtaining Object ACL Configuration	obs:object:GetObj ectAcl	Support ed	Support ed
Obtaining the ACL information of a specific object version	Obtaining Object ACL Configuration	obs:object:GetObj ectVersionAcl	Support ed	Support ed
Modifying object metadata	Modifying Object Metadata	obs:object:Modify ObjectMetaData	Support ed	Support ed
Listing uploaded parts	Listing Uploaded Parts that Have Not Been Assembled	obs:object:ListMul tipartUploadParts	Support ed	Support ed
Aborting a multipart upload	Canceling a Multipart Upload Task	obs:object:AbortM ultipartUpload	Support ed	Support ed
Configuring WORM retention for an object	Configuring WORM Retention for an Object	obs:object:PutObj ectRetention	Support ed	Support ed
Obtaining the object-level WORM retention configuration	Querying Object Metadata	obs:object:GetObj ectRetention	Support ed	Support ed
Adding object tags	Adding Object Tags	obs:object:PutObj ectTagging	Not support ed	Not support ed
Obtaining object tags	Obtaining Object Tags	obs:object:GetObj ectTagging	Not support ed	Not support ed
Deleting object tags	Deleting Object Tags	obs:object:Delete ObjectTagging	Not support ed	Not support ed

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.

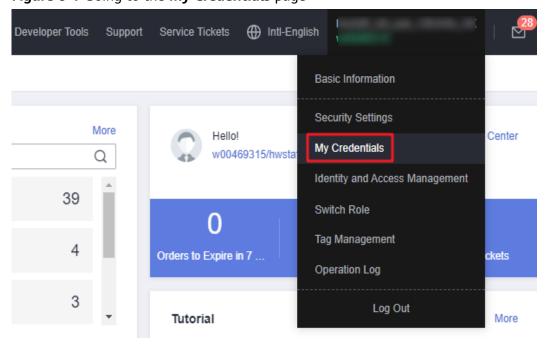
----End

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.
 - 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

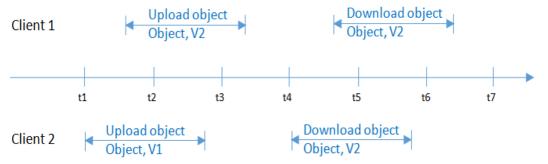
occurs, query whether the data has been successfully uploaded to the server. If not, upload the data again.

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

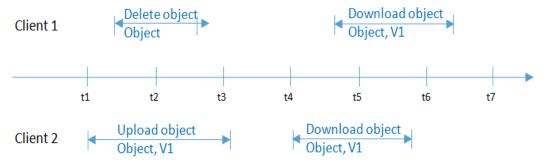
1. When client1 is uploading an object V1, client2 is uploading an object V2 with the same name. After the successful uploads, both client1 and client2 can access the latest object data V2, as shown in **Figure 8-3**.

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.

Client 2

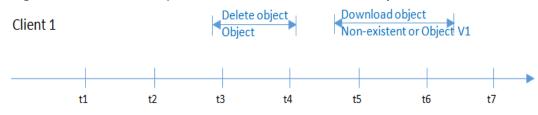


Figure 8-5 Concurrent upload and deletion of the same object (2)

Upload object

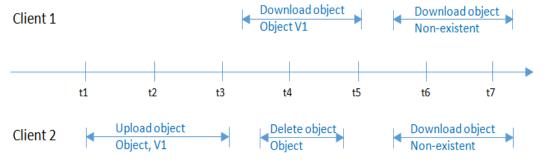
Object, V1

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**.

Write metadata

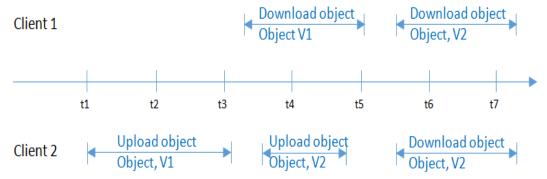
Download object

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

